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SIMATIC HMI
WinCC Unified project
30
46,23
44,78
2,4

SIMATIC HMI / PC-based Automation

# Human Machine Interface Systems/ PC-based Automation

Catalog
ST 80/
ST PC

Edition
2020

siemens.com/simatic

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# Related catalogs

**Siemens TIA Selection Tool**
for the selection, configuration and ordering of TIA products and devices

www.siemens.com/tst

**SIMATIC** ST 70
Products for
Totally Integrated Automation

PDF (E86060-K4670-A101-B7-7600)

**SIMATIC** ST 70 N
Products for
Totally Integrated Automation

PDF (E86060-K4670-A151-B1-7600)

**SIMATIC** ST PCS 7
SIMATIC PCS 7 Process Control System
Vol. 1: System components

E86060-K4678-A111-C6-7600

**Industrial Communication** IK PI
SIMATIC NET

E86060-K6710-A101-B8-7600

**SITOP** KT 10.1
SITOP
Power supply

E86060-D4001-A510-D8

**SITRAIN**
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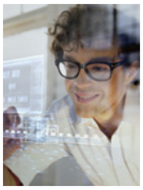

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# TIA Selection Tool

## The smart configurator for the entire Siemens automation portfolio

## Prime reasons for the TIA Selection Tool

### Quick, easy and secure

Components can be selected, configured and ordered quickly, easily and securely from the Siemens automation portfolio

### Intelligent

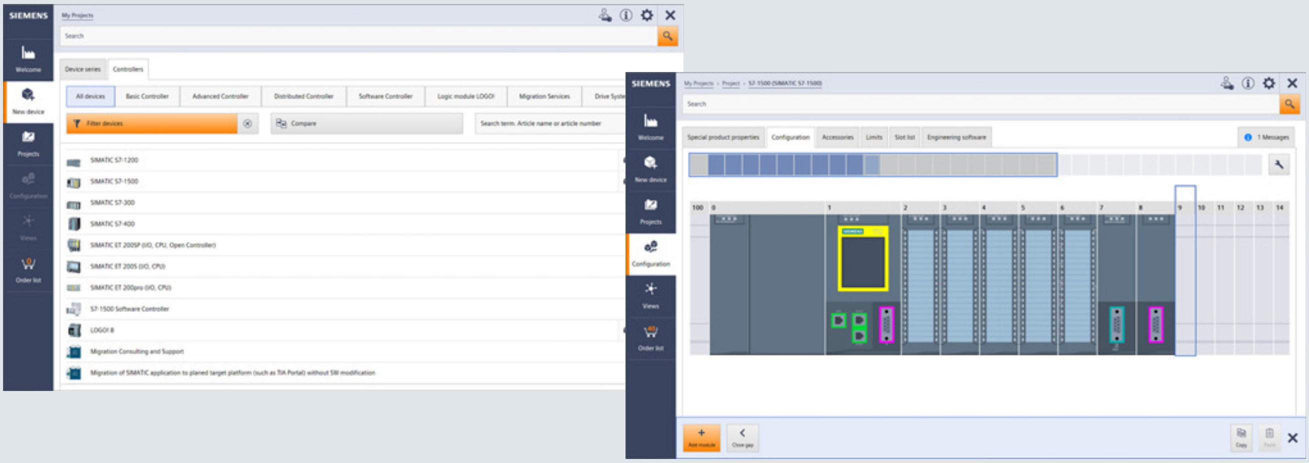
Intelligent selection wizards check the compatibility of the configured components and enable error-free ordering

### Clear

Required modules, devices and networks are automatically generated and clearly compared to one another

### Time-saving

Time savings of 80% in design – thanks to ease of use and intelligent support


SIEMENS
My Projects
Search
Welcome
New device
Projects
Configuration
Views
Order list
Device series
Controllers
All devices
Basic Controller
Advanced Controller
Distributed Controller
Software Controller
Logic module LOGO!
Migration Services
Filter devices
Compare
Search term: Article name or article number
SIMATIC S7-1200
SIMATIC S7-1500
SIMATIC S7-300
SIMATIC S7-400
SIMATIC ET 200SP (I/O, CPU, Open Controller)
SIMATIC ET 200S (I/O, CPU)
SIMATIC ET 200pro (I/O, CPU)
S7-1500 Software Controller
LOGO! 8
Migration Consulting and Support
Migration of SIMATIC application to planed target platform (such as TIA Portal) without SW modification
My Projects › Project › S7-1500 (SIMATIC S7-1500)
Special product properties
Configuration
Accessories
Limits
Slot list
Engineering software
1 Messages
Add module
Close gap

**The TIA Selection Tool is a completely paperless solution.**

**Download it now:**

**www.siemens.com/tst**

**For more information, scan the QR code**

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# Siemens Industrial Edge

## Totally Integrated Automation enhanced by Edge Computing

### Integrated into production – Simple, flexible and secure

Industrial Edge enables the local evaluation and analysis of machine and production data, and allows it to be quickly and instantaneously processed for further use, e.g. in ERP systems or in the cloud.

This leads to numerous application uses from analyzing machine data for better planning of the next maintenance job to cloud-based data use for machine manufacturers to further improve development of the next generation of machines based on the data. The respective application determines whether and how the cloud can be used in addition to Industrial Edge.

### Advantages of Industrial Edge at a glance

Conventional data processing solutions close to the production are often complicated and less scalable, with security aspects often presenting a constant challenge.

Industrial Edge comes with the familiar standards from the IT branch, such as central software deployment, (mass) device management, container technology (apps), as well as system-wide security solutions at the machine – integrated in the SIMATIC S7-1500, SIMATIC HMI Unified Comfort Panels or other Edge-enabled devices, such as Industry PCs.

**Local, safe mass data processing**

The advantages of IT in automation technology are used to securely collect machine and plant data and analyze it flexibly using the app.

**Faster innovation cycles**

The constant updatability of applications and device firmware provide both a continuing supply of innovations from the IT branch and increased data security.

**Reduced time to market launch**

Platform functionalities such as central updates, security and integrated connectivity, as well as integration in automation save time and effort during software development and in operation.

**Open ecosystem**

Open standards such as the Docker container technology offer future-proof security and a low barrier to implementation. An industrial app store offers users and manufacturers completely new possibilities.

**www.siemens.com/industrial-edge**

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# Operator control and monitoring systems/ PC-based Automation

**SIMATIC HMI / PC-based Automation**

## Catalog ST 80 / ST PC · 2020

Supersedes:
Catalog ST 80 / ST PC · 2019

Refer to the Industry Mall for current updates of this catalog:
www.siemens.com/industrymall

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**Introduction** 1

**Operator Panels** 2

**HMI Software** 3

**PC-based Automation** 4

**Customized Automation** 5

**Accessories** 6

**Appendix** 7

The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with DIN EN ISO 9001 (Certified Registration No. 2613-05). The certificate is recognized by all IQNet countries.

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# Operator control and monitoring systems PC-based Automation

1/2 SIMATIC HMI operator control and monitoring systems
1/6 PC-based Automation

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## Overview

### *SIMATIC HMI operator control and monitoring systems – efficient machine-level operator control and monitoring*

Equipment for monitoring and operator control is needed wherever people have to work with or on machinery and plants performing diverse tasks from cylinder driers to waste compactors. It is not difficult to find the right device for your specific task. The challenge is to find a solution that is future-proof and flexible, that can be integrated into higher-level networks, and that can also meet the ever-increasing demands for transparency and data provision.

SIMATIC HMI Panels have proven their value in a variety of different applications in all industrial sectors over many years. The range of the systems in use is just as wide as that of the applications and technologies in the respective plants.

### *SIMATIC HMI*
### *stands for highly efficient machine-level operator control and monitoring and has some unique advantages:*

- Efficient engineering
  Visualization can be created more quickly and easily than ever before.
- Innovative design and operation
  Visualization becomes the outstanding feature of the machine.
- Brilliant HMI operator panels
  The right operator panel for every application.
- Backup – with security
  Protection for investments and know-how, secure operation.
- Commissioning in the fast lane
  Lose no time with testing and servicing.
- Openness with PC-based
  For flexible, independent applications

http://www.siemens.com/hmi

### *NEW: SIMATIC WinCC Unified system – unlimited visualization for every application*

SIMATIC WinCC Unified is a totally new visualization system for meeting the challenges of digitalization in machine and plant construction.
State-of-the-art hardware and software technologies make this possible now and in the future. Tried and tested engineering in the TIA Portal, the latest web technology and great reserves of performance for the coming years combined with the freedom to implement your ideas as you imagine them.

http://www.siemens.com/wincc-unified

### *SIMATIC HMI software – a lot more than just visualization software*

With the SIMATIC WinCC (TIA Portal), SIMATIC WinCC and SIMATIC WinCC Open Architecture product families, SIMATIC HMI covers the entire engineering and visualization software spectrum for the human machine interface.

- Almost the entire range of SIMATIC operator panels can be configured with SIMATIC WinCC (TIA Portal), the successor to SIMATIC WinCC flexible.
  The functionality covers both visualization tasks at machine level and SCADA applications on PC-based multi-user systems.
- The current version 7.5 of SIMATIC WinCC is available for extremely complex process visualization tasks and SCADA applications, e.g. taking account of redundant solutions and vertical integration all the way to plant intelligence solutions.
- Ultimately, SIMATIC WinCC Open Architecture addresses applications that require extensive customer-specific adaptations or manage large and/or complex applications, as well as projects that demand special system requirements and functions.

http://www.siemens.com/hmi-software

### *NEW: SIMATIC WinCC Unified visualization software*

SIMATIC WinCC Unified software enables access to open interfaces, modern web technologies and consistent integration in order to implement modern visualization concepts simply and easily in the TIA Portal.

http://www.siemens.com/wincc-unified-software

### *SIMATIC HMI – brilliant and rugged operator panel*

Basic HMI – for the entry level

- Key Panels
  Pre-assembled and ready for installation, for conventional operator panels. No configuration required with WinCC!
  http://www.siemens.com/key-panels
- Basic Panels
  The entry level series for simple HMI applications.
  http://www.siemens.com/basic-panels

Panel-based HMI Advanced - for more sophistication

- ***New:*** SIMATIC HMI Unified Comfort Panels
  High-end performance and state-of-the-art technology for the future of visualization
  http://www.siemens.com/wincc-unified-hardware
- Comfort Panels
  High-end functionality for demanding indoor and outdoor HMI applications.
  http://www.siemens.com/comfort-panels
- Mobile Panels
  Portable HMI operator panels for mobile deployment on site.
  http://www.siemens.com/mobile-panels

### *Individual HMI devices in customized versions*

http://www.siemens.com/customized-automation

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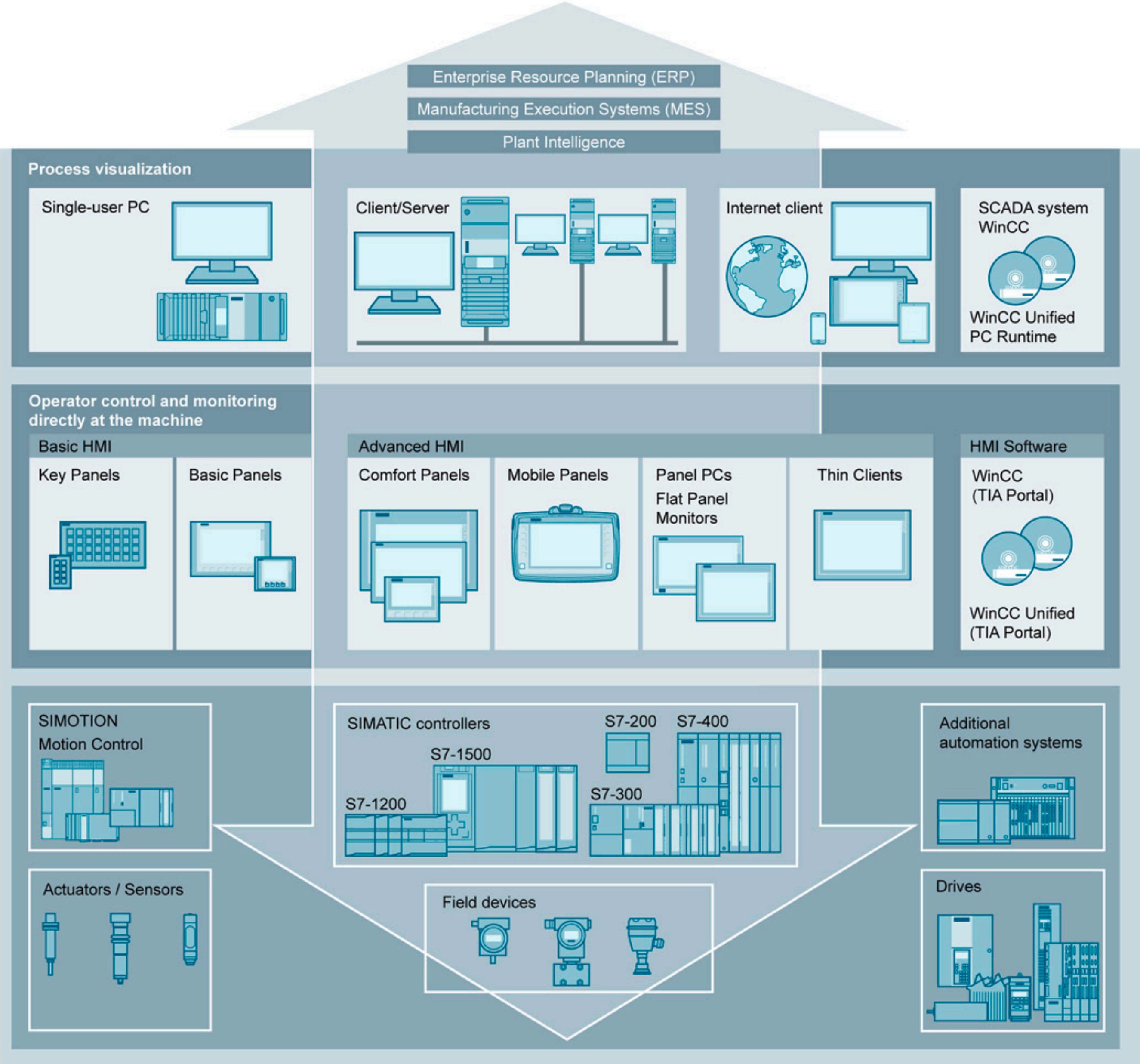
## Overview (continued)


Enterprise Resource Planning (ERP)
Manufacturing Execution Systems (MES)
Plant Intelligence
Process visualization
Single-user PC
Client/Server
Internet client
SCADA system WinCC
WinCC Unified PC Runtime
Operator control and monitoring directly at the machine
Basic HMI
Key Panels
Basic Panels
Advanced HMI
Comfort Panels
Mobile Panels
Panel PCs Flat Panel Monitors
Thin Clients
HMI Software
WinCC (TIA Portal)
WinCC Unified (TIA Portal)
SIMOTION Motion Control
SIMATIC controllers
S7-200
S7-400
S7-1500
S7-1200
S7-300
Additional automation systems
Actuators / Sensors
Field devices
Drives

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## SIMATIC HMI operator control and monitoring systems

### Overview (continued)

Control system optimizes the productivity of a hot dip galvanizing plant

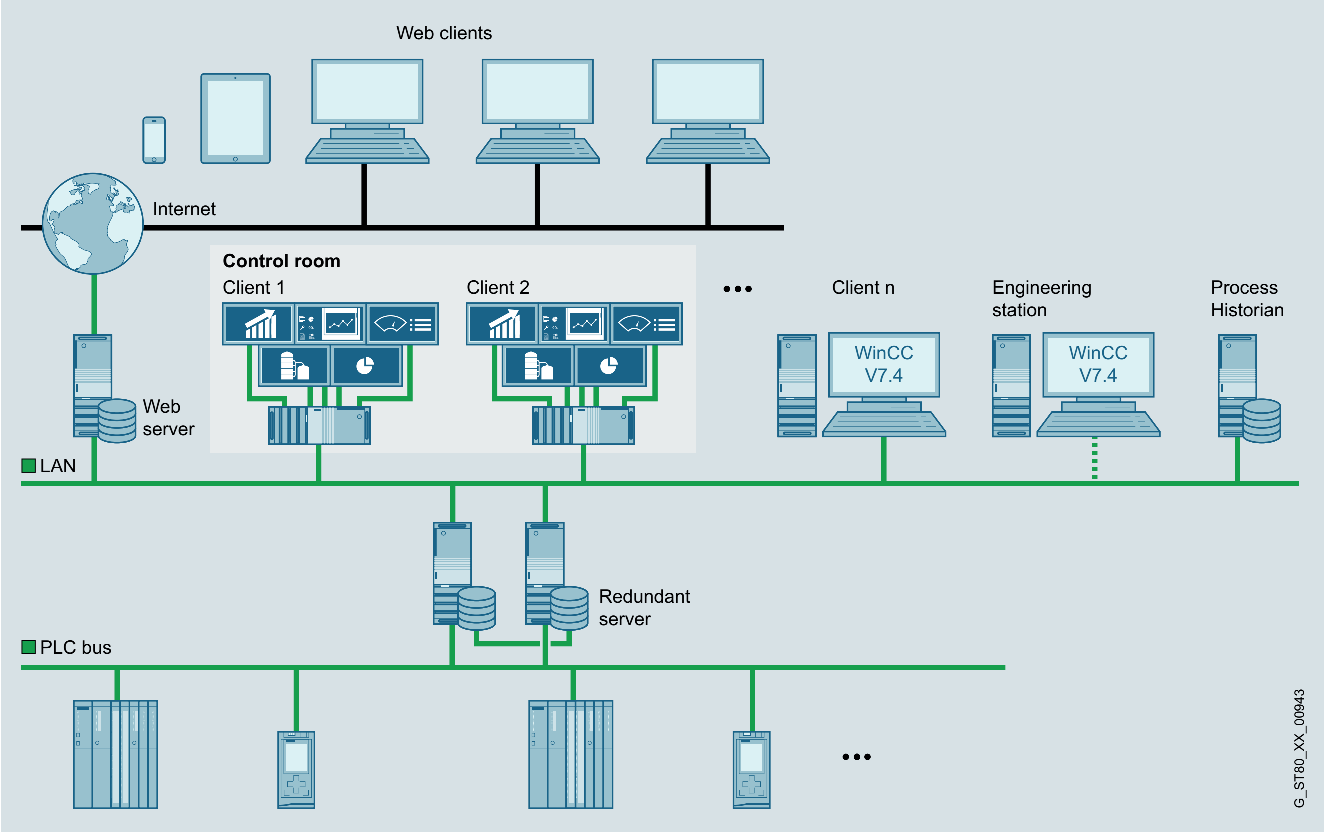
Reference: V7 Control room

As semi-finished products, galvanized steel sheets play a key role in industrial production, such as car manufacturing. One proven method of protecting steel sheets from rust is the application of a zinc coating in a hot dip galvanizing process, in which strips of sheet steel are drawn through a bath containing liquid zinc.

Plants for this process are complex and in continuous operation, thus placing high demands on the process control system and the hardware used.

Advantages of the SIMATIC SCADA system and SIMATIC IPC solution:

- SIMATIC WinCC V7 SCADA control system whose scalability and openness also permits the implementation of future functional expansions.
- Redundant setup of the control system and operating stations with industry-compatible SIMATIC industrial PCs and Thin Clients.
- Optimum overview thanks to multi-monitor solution in the control room and more than 27 operating stations throughout the plant and production hall.
- Availability of the production data over a long period in SIMATIC Process Historian for reasons of traceability.
- Increased productivity using long-term analyses of plant availability, productivity, energy consumption and quality.
- More effective support and shorter downtimes thanks to fast, web-based access to plants with the SIMATIC WinCC WebNavigator.


Web clients
Internet
Control room
Client 1
Client 2
•••
Client n
WinCC V7.4
Engineering station
WinCC V7.4
Process Historian
Web server
LAN
Redundant server
PLC bus
•••
G_ST80_XX_00943

SIMATIC WinCC V7 SCADA system

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## Overview (continued)

### Modernization of a plant in the food and beverage industry on the basis of an integrated automation and visualization solution

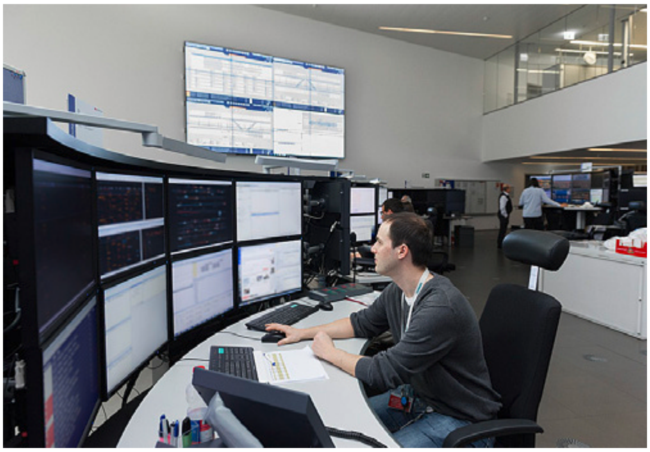
WinCC Professional reference

The modernization involved equipping 3 production lines with an expanded SCADA system, a new control architecture, converters and motor starters. The project was implemented smoothly, and the integrated hardware and software solution with the TIA Portal enabled the simplification of the engineering process.

Advantages of the solution with the SIMATIC SCADA system WinCC Professional in the TIA Portal, S7-1500 and SIMATIC IPC:

- Simplified application engineering
- Efficient monitoring of the production lines enables the optimal path through the production to be defined for each batch.
- Increased productivity
- Simple and intuitive operation implemented thanks to good visual support
- Better control of the motors involved with the process
- Integration of the production data into the existing ERP system
- Faults in the current process can be easily localized

### Tunnel control system for the longest railway tunnel in the world



Control room with WinCC OA

The SIMATIC WinCC Open Architecture tunnel control system is at the heart of the monitoring systems for the entire tunnel infrastructure. Continuous availability of the entire system is essential to ensure the trouble-free operation of the Gotthard Base Tunnel.

The Gotthard Base Tunnel has a tunnel control center at the south and north portals. The two tunnel control systems installed there monitor and control all of the installed systems and plants. All the required data are acquired, collated and visualized on the tunnel control system. A fully integrated maintenance management tool and an operations control system are also part of the tunnel control system with a large screen display.

The advantages of the solution:

- Highest failure safety thanks to the presence of doubly redundant tunnel control equipment – Disaster Recovery System (2x2 redundancy)
- Central monitoring of the infrastructure simplifies fault management
- More efficient operation through central control of the entire infrastructure
- Integration of many (sub-)systems thanks to OPC UA as a standardized interface throughout the entire project
- Optimal user friendliness through uniform user interface across all plants, overview of all systems at one workstation as well as large screen display (multi-monitor management)

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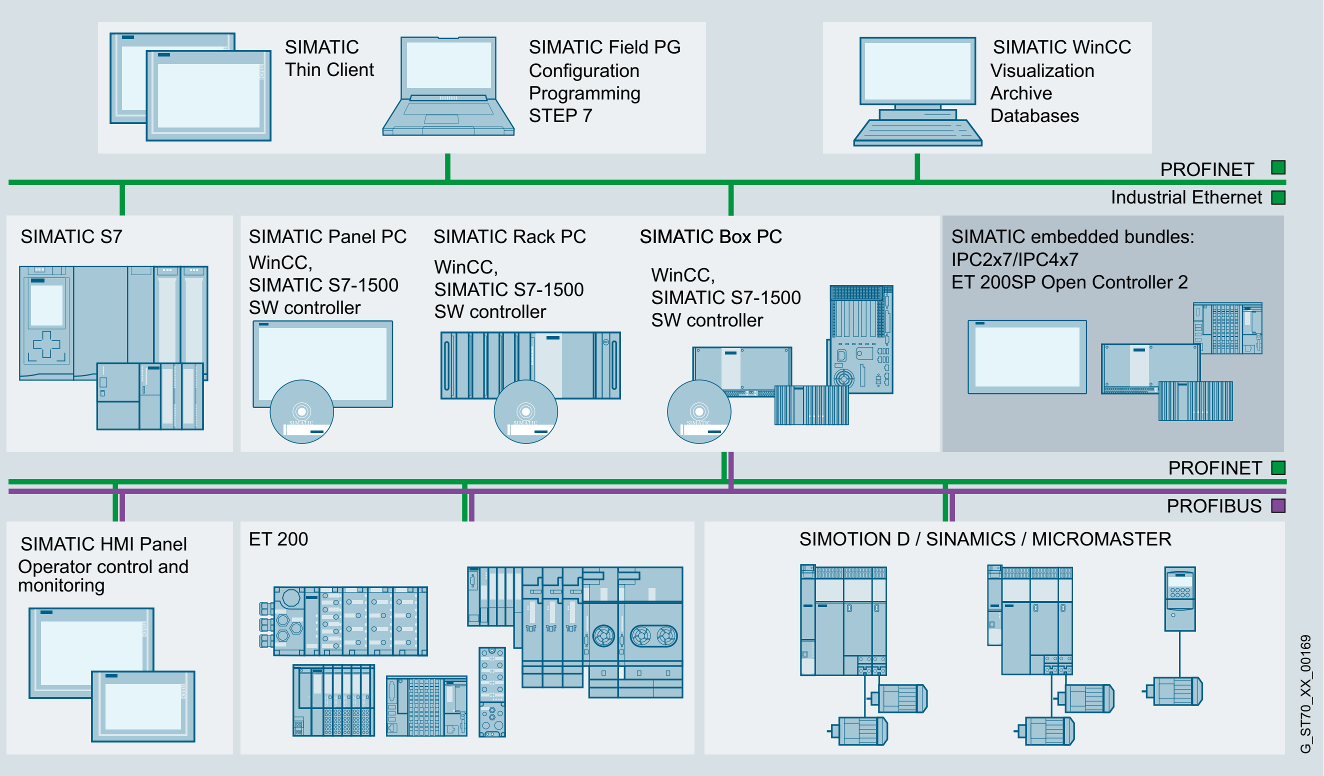
## PC-based Automation

### Overview


SIMATIC Thin Client
SIMATIC Field PG Configuration Programming STEP 7
SIMATIC WinCC Visualization Archive Databases
PROFINET 🟩
Industrial Ethernet 🟩
SIMATIC S7
SIMATIC Panel PC WinCC, SIMATIC S7-1500 SW controller
SIMATIC Rack PC WinCC, SIMATIC S7-1500 SW controller
SIMATIC Box PC WinCC, SIMATIC S7-1500 SW controller
SIMATIC embedded bundles: IPC2x7/IPC4x7 ET 200SP Open Controller 2
PROFINET 🟩
PROFIBUS 🟪
SIMATIC HMI Panel Operator control and monitoring
ET 200
SIMOTION D / SINAMICS / MICROMASTER
G_ST70_XX_00169

***SIMATIC PC-based Automation***

http://www.siemens.com/pc-based

Industrial IoT Gateway - SIMATIC IOT2000

An intelligent gateway which harmonizes communication between the various sources of data before analyzing it and forwarding it to the corresponding recipients.
An easy-to-implement solution.

http://siemens.com/iot2000

Industrial PCs

Our reliable and innovative industrial PCs are the optimal PC hardware platform for PC-based Automation from Siemens.

- Rack PC
- Box PC
- Panel PC
- Tablet PC
- Industrial monitors and thin clients
- Devices for special requirements
  - Fully-enclosed IP65 devices
  - Devices with stainless steel fronts
  - Devices for hazardous areas
- IPC software
- Embedded bundles/software packages

http://www.siemens.com/simatic-ipc

Software controller

The SIMATIC S7-1500 Software Controller implements a SIMATIC S7-1500 controller on SIMATIC IPC.

It is particularly suitable for control solutions in special-purpose machine manufacturing which involve a high-performance implementation of complex control tasks, the integration of PC applications, or the realization of multiple tasks on a single device.

http://www.siemens.com/software-controller

PC-based controllers

PC-based controllers combine the functions of a PC-based software controller with visualization, PC applications and central I/Os (inputs/outputs) in a single, compact device.

The SIMATIC ET 200SP Open Controller 2 is an industrial PC with the design of the ET 200SP I/O system and a pre-installed S7-1500 Software Controller.

http://www.siemens.com/open-controller

Application examples and references

You can find an overview of the references and application examples at the Reference Center and on the following web pages:

http://www.siemens.com/automation/references

or

https://new.siemens.com/global/en/products/automation/references.html

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# Operator panels

# 2

**2/2 Introduction**

**2/5 Basic HMI**
2/5 Key Panels
2/6 SIMATIC HMI KP8/KP8F/KP32F
2/12 SIPLUS HMI KP8/KP8F/KP32F
Basic Panels
2/15 Standard devices 2nd Generation
2/23 SIPLUS Basic Panels (2nd Generation)

**2/26 Advanced HMI – Panel-based**
2/26 Introduction
Unified Comfort Panels NEW
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2/28 SIMATIC HMI Unified Comfort Panels
Comfort Panels
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2/83 Mobile Panels 2nd Generation
2/93 SIMATIC HMI KTP700F Mobile Arctic NEW

System components for Mobile Panels
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**2/100 Advanced HMI – PC-based**

**2/101 System interfaces with WinCC (TIA Portal)**
2/101 Introduction
2/102 SIMATIC S7
2/103 Controllers from other manufacturers

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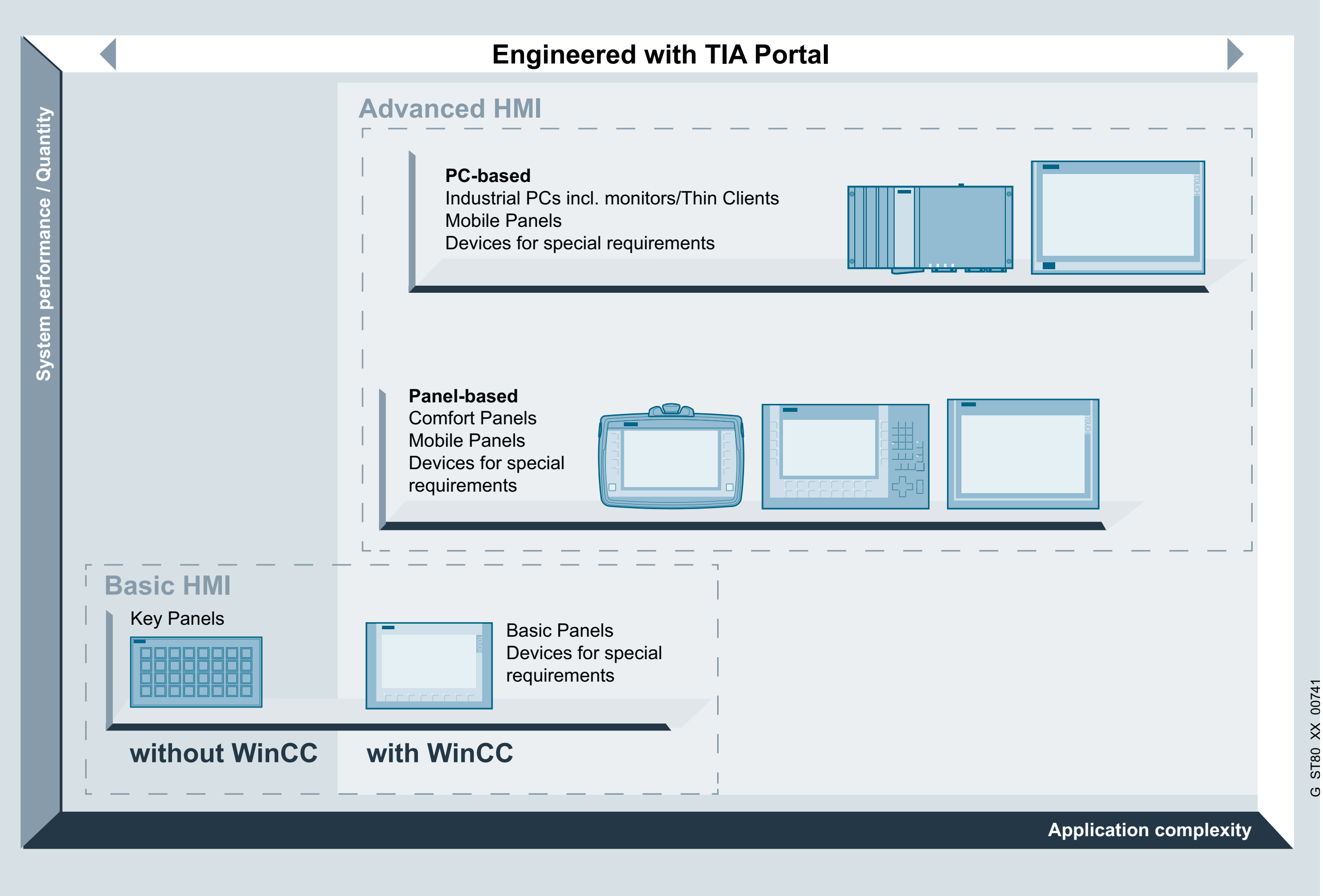
## Overview


Engineered with TIA Portal
System performance / Quantity
Advanced HMI
PC-based
Industrial PCs incl. monitors/Thin Clients
Mobile Panels
Devices for special requirements
Panel-based
Comfort Panels
Mobile Panels
Devices for special requirements
Basic HMI
Key Panels
Basic Panels
Devices for special requirements
without WinCC
with WinCC
Application complexity
G_ST80_XX_00741

SIMATIC operator panels overview

### *SIMATIC HMI Panels – HMI devices for efficient machine-level interaction*

A complete range of powerful and innovative operator control and monitoring devices is available for implementing efficient, machine-level HMI solutions in the most diverse applications and industries.

One unique and highly efficient feature is the integrated configuring via SIMATIC WinCC in the TIA Portal, with which users can achieve significant savings with regard to engineering time, costs and effort.

http://www.siemens.com/hmi-panels

Basic HMI

- Panel-based:
  HMI devices with excellent price-performance ratio for simple visualization tasks.
  http://www.siemens.com/basic-hmi

Advanced HMI

- Panel-based:
  Powerful HMI devices for realization of demanding visualization tasks with a high level of convenience.
  http://www.siemens.com/advanced-hmi-panel
- PC-based:
  High-performance operator panels for complex, data-intensive, visualization tasks.
  http://www.siemens.com/advanced-hmi-pc

### *Rugged and compact for use at machine level*

With IP65/NEMA 4 degree of protection at the front, high EMC and extreme vibration resistance, the SIMATIC HMI operator panels are ideally suited for use at machine level in rough industrial environments. Thanks to their compact design with a shallow mounting depth, the stationary operator panels can be fitted anywhere, even where only restricted space is available. For distributed configurations, there are also devices available with all-round IP65/NEMA 4 protection.

The extremely rugged and shock-proof enclosure with degree of protection IP65 makes the Mobile Panels especially suitable for industrial applications. Their low weight and ergonomic design means that they are user-friendly and easy to operate.

### *One configuration software for everything*

SIMATIC WinCC (TIA Portal) is a tool for the uniform configuration of all SIMATIC HMI Panels as well as PC-based systems. Graded variants are available for every task. The software permits simple and efficient configuration. Programming experience is not required.

Once created, configurations can be reused within the family. Key Panels only need to be configured, not programmed.

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## Overview (continued)

### *Component of Totally Integrated Automation*

Siemens provides the complete modular system of matched components for automation solutions from one source and — with Totally Integrated Automation — one of the most globally successful automation concepts.

SIMATIC WinCC (TIA Portal) is an integral component of this world. It offers crucial advantages. Thanks to the triple uniformity in configuration/programming, data management and communication, automation solution engineering costs are significantly reduced.

### *Open for a wide variety of automation systems*

Despite being consistently incorporated into the SIMATIC world, the panels are nevertheless open for connection to PLCs from many different manufacturers. The standard delivery includes a comprehensive range of user-friendly drivers.

### *Innovative operator control and monitoring*

The SIMATIC HMI Panels facilitate innovative operator control and monitoring combined with ruggedness, stability and simplicity.

On the Comfort Panels in particular, standard hardware and software interfaces, e.g. the Multimedia Card/SD Card, USB, Ethernet, PROFINET, PROFIBUS DP and Visual Basic scripts, provide more flexibility and openness as well as access to the office world.

### *Worldwide application*

The SIMATIC HMI Panels are ideally equipped for global use. Online language switching permits selection of up to 32 languages during operation simply by pressing a button.

The wide variety of languages available also includes, for example, Asian logographic languages (Chinese, Taiwanese, Korean, Japanese) and Russian.

The configuration interface of WinCC (TIA Portal) including the online help and the complete documentation is also multilingual. Up to 32 languages can be used in one project. And all this is complemented by global service and support from Siemens.

### *Configuration at a glance*

| | **WinCC Unified (TIA Portal) engineering software** | | **WinCC (TIA Portal) engineering software** | | | | **STEP 7** |
|---|---|---|---|---|---|---|---|
| | **Comfort** | **PC** | **Basic** | **Comfort** | **Advanced** | **Professional** | **STEP 7** |
| **Key Panels** | - | - | - | - | - | - | • |
| **Basic Panels 2nd Generation 1)** | • | • | • | • | • | • | - |
| **Unified Comfort Panels** | • | • | - | - | - | - | - |
| **Comfort Panels** | • | • | - | • 3) | • | • | - |
| **Mobile Panels 2nd Generation** | • | • | - | • 2) | • 2) | • 2) | - |

• Possible

1) As of WinCC (TIA Portal) V13

2) As of WinCC (TIA Portal) V13 SP1

3) Outdoor versions from WinCC (TIA Portal) V13 SP1, Update 6 and HSP (download), or Comfort Panels 15" - 22" (-0AX1) from V14 SP1 HSP

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## Overview (continued)

| | WinCC flexible engineering software | | | |
|---|---|---|---|---|
| | Micro | Compact | Standard | Advanced |
| **Key Panels** | - | - | - | - |
| **Basic Panels (1st Generation)** | | | | |
| KTP400 Basic mono PN | - | • | • | • |
| KTP600 Basic | - | • | • | • |
| KTP1000 Basic | - | • | • | • |
| TP1500 Basic | - | • | • | • |
| **Mobile Panels** | | | | |
| Mobile Panel 177 | - | • | • | • |
| Mobile Panel 277 | - | - | • | • |
| Mobile Panel 277(F) IWLAN | - | - | • | • |
| **Micro Panels** | | | | |
| OP 73micro | • | • | • | • |
| TP 177micro | • | • | • | • |
| **Panels – 70 Series** | | | | |
| OP 73 | - | • | • | • |
| OP 77A/B | - | • | • | • |
| **Panels – 170 Series** | | | | |
| TP 177A | - | • | • | • |
| TP/OP 177B | - | • [1] | • [1] | • [1] |
| **Panels – 270 Series** | | | | |
| TP 277/OP 277 | - | - | • [2] | • [2] |
| **Multi Panels – 170 Series** | | | | |
| MP 177 | - | • [5] | • [4] | • [4] |
| **Multi Panels – 270 Series** | | | | |
| MP 277 | - | - | • | • |
| **Panels – 370 Series** | | | | |
| MP 377 | - | - | • [3] | • [3] |
| **WinAC MP** | | | | |
| WinAC MP 177 | - | • [5] | • [5] | • [5] |
| WinAC MP 277 | - | - | • [5] | • [5] |
| WinAC MP 377 | - | - | • [5] | • [5] |

• Possible

[1] WinCC flexible 2005 or higher and TP 177B 4" with WinCC flexible 2008 and higher

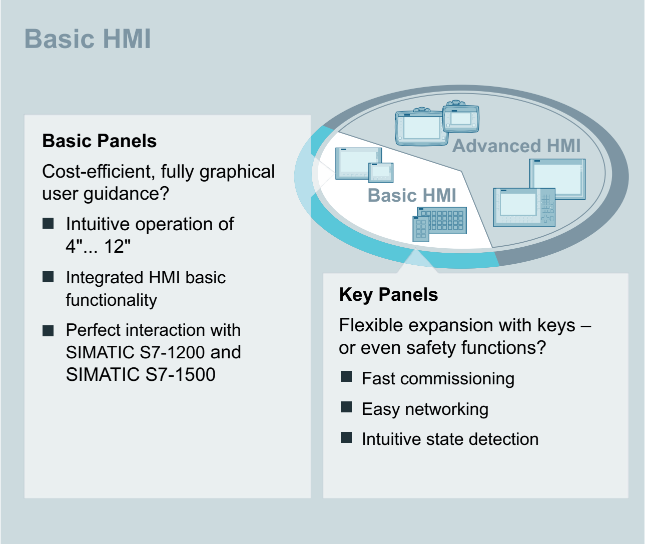
[2] WinCC flexible 2005 SP1 and higher

[3] WinCC flexible 2007 and higher: Mobile Panel 277(F) IWLAN V1; WinCC flexible 2008 SP2 and higher: Mobile Panel 277(F) IWLAN V2

[4] WinCC flexible 2008 and higher

[5] WinCC flexible 2008 SP1 and higher

## Overview



**Basic Panels**

Cost-efficient, fully graphical user guidance?

- Intuitive operation of 4"... 12"
- Integrated HMI basic functionality
- Perfect interaction with SIMATIC S7-1200 and SIMATIC S7-1500

**Key Panels**

Flexible expansion with keys – or even safety functions?

- Fast commissioning
- Easy networking
- Intuitive state detection

### *Inexpensive realization of simple HMI tasks*

Basic HMI is recommended for simple applications with a limited quantity structure, where the price-performance ratio counts as well as fast, intuitive operation.

The devices offer a brilliant display quality and high-power visualization, which significantly simplifies the operation of simple machines and equipment.

You can also save valuable time during installation, commissioning and engineering with turnkey and flexible solutions.

SIMATIC HMI Key Panels

You can use the Key Panels to realize operator panels quickly, as well as save a lot of time and money setting them up since they are prefabricated and ready for installation.

All illuminated pushbuttons are freely configurable and equipped with five colored LEDs (red, green, blue, yellow and white). All buttons can also easily be inscribed in IP65.
On the back, there are integrated IO terminals for connecting actuators and sensors.

SIMATIC HMI Basic Panels

Basic Panels are perfect for the cost-effective implementation of simple visualization tasks at machine level. Their basic features and functionality as well as the especially attractive price make them perfect entry-level devices.

The following modules are available:

- Key Panels
  - SIMATIC HMI KP8/KP8F/KP32F (key devices with multicolored LEDs)
- Basic Panels
  - Standard devices 2$^{nd}$ Generation

### *Key Panels*

The Key Panels, PROFINET successors to the PROFIBUS-based Push Button Panels, are operator panels which are ready-to-run without any configuration effort at all.

Alternatives to individually wired long-stroke keys. They are designed for direct operator control of the machine.

Key Panels provide many basic functions for direct operator control and monitoring instead of machine operator control, a cost-effective, versatile and space-saving combination, and they reduce configuration and installation costs to a minimum. Furthermore, additional actuators and sensors can also be optionally connected directly on the back of the devices.

The Key Panels can be used directly in line and ring topologies thanks to an integrated switch and two RJ45 PN sockets.

In addition there are two fully configured IP65 installation enclosures for KP8(F) available.
Exact cutouts included. Even supply cables with plugs can easily be connected in IP65 without any drilling or milling. These ready-made enclosures can be used as small local operator stations.

They can be found under Accessories -> Fasteners, and depending on the version can come supplied with features such as EMERGENCY OFF buttons.

- SIMATIC HMI blank front design
- SIMATIC HMI KP8 PN
- SIMATIC HMI KP8F PN (shared device with GSD file possible)
- SIMATIC HMI KP32F PN (PROFIsafe can be switched off)
- Installation enclosure KP8 (Accessories -> Fasteners)
- Installation enclosure KP8F (Accessories -> Fasteners)

More information is available at:

http://www.siemens.com/key-panels

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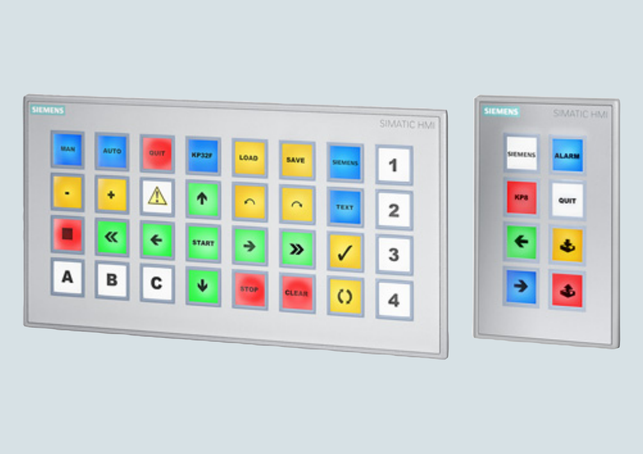
## SIMATIC HMI KP8/KP8F/KP32F

### Overview



SIMATIC HMI KP32F and HMI KP8

Key Panel, empty front, at the front populated, at the back not populated

***SIMATIC HMI Key Panels***

- Optimum operability thanks to large mechanical keys and multi-colored LED backlighting (daylight readable)
- Over 60% time savings for wiring and installation (Plug&Play)
- More than 30% savings in material costs compared to conventional keypad operator panels
- 2 PROFINET ports (incl. switch) already integrated for setting up line and ring topologies
- Freely configurable digital I/Os on the rear for connecting key-operated switches, indicator lamps, etc.
- Connection of fail-safe emergency stop buttons or other fail-safe signals with KP8F and KP32F (in SIL2 or SIL3)
- Functionally compatible with all standard PROFINET master CPUs, also non-Siemens
- KP8 and empty front design, also optimized for installation in IPC Extension Units in IP65
- Maximum flexibility due to parameterization
- Empty front design for standardized assembly of flexible operator panels
- Installation enclosure, fully enclosed IP65, no drilling or milling necessary, KP8(F) not included;
  for accessories see technical specifications for installation enclosure

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## Technical specifications

| Article number | **6AV3688-3AY36-0AX0**<br>SIMATIC HMI KP8 PN | **6AV3688-3AF37-0AX0**<br>SIMATIC HMI KP8F PN | **6AV3688-3EH47-0AX0**<br>SIMATIC HMI KP32F PN |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KP8 PN | KP8F PN | KP32F PN |
| **Control elements** | | | |
| With parameterizable keys | Yes | Yes | Yes |
| **Keyboard fonts** | | | |
| • Membrane keyboard | | | |
| - user-definable label membrane keys | Yes | Yes | Yes |
| • Function keys | | | |
| - Number of function keys | 8 | 8 | 32 |
| • Short-stroke keys | | | |
| - Number of short-stroke keys | 8 | 8 | 32 |
| **Expansions for operator control of the process** | | | |
| • DP direct LEDs (LEDs as S7 output I/O) | 8; Adjustable brightness | 8; Adjustable brightness | 8; Adjustable brightness |
| • Number of color modes for LED | 5; red, green, blue, yellow, white | 5; red, green, blue, yellow, white | 5; red, green, blue, yellow, white |
| • Direct keys (keys as S7 input I/O) | 8 | 8 | 32 |
| **Installation type/mounting** | | | |
| Mounting type | Mounting clip | Mounting clip | Mounting clip |
| Mounting position | vertical | vertical | vertical |
| Rack mounting | No | No | No |
| Front mounting | Yes; Compatible with Extension Units dimensions | Yes; Compatible with Extension Units dimensions | Yes |
| Rail mounting | No | No | No |
| Wall mounting/direct mounting | No | No | No |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| maximum permissible angle of inclination without external ventilation | 30°; To the front/rear | 30°; To the front/rear | 30°; To the front/rear |
| Number of slots for command devices and signaling units | 0 | 0 | 0 |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V; 24 V can be looped through connector, interrupted when pulled | 24 V; 24 V can be looped through connector, interrupted when pulled | 24 V; 24 V looped through at connector, no interruption on pulling |
| permissible range, lower limit (DC) | 20.4 V | 20.4 V | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 0.3 A | 0.3 A | 1 A |
| **Type of output** | | | |
| LED colors | | | |
| • red | Yes | Yes | Yes |
| • yellow | Yes | Yes | Yes |
| • green | Yes | Yes | Yes |
| • white | Yes | Yes | Yes |
| • blue | Yes | Yes | Yes |
| **Digital inputs** | | | |
| Number of digital inputs | 8; Total inputs and outputs max. 8 and 1x SIL 2 or 2x SIL 3 | 8; Total inputs and outputs max. 8 and 1x SIL 2 or 2x SIL 3 | 32; Total inputs and outputs max. 32 and 2x SIL 2 or 4x SIL 3 |
| **Input voltage** | | | |
| • Rated value (DC) | 24 V | 24 V | 24 V |
| **Digital outputs** | | | |
| Number of digital outputs | 8; Max. 8 inputs and outputs (total) | 8; Max. 8 inputs and outputs (total) | 16; Max. 32 inputs and outputs (total) |
| Short-circuit protection | Yes | Yes | Yes |
| **Switching capacity of the outputs** | | | |
| • with resistive load, max. | 100 mA | 100 mA | 100 mA |
| **Output voltage** | | | |
| • Rated value (DC) | 24 V; Non-isolated | 24 V; Non-isolated | 24 V; Non-isolated |
| **Total current of the outputs** | | | |
| • Current per channel, max. | 100 mA | 100 mA | 100 mA |
| • Current per group, max. | 800 mA | 800 mA | 800 mA |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |

## Technical specifications (continued)

| Article number | **6AV3688-3AY36-0AX0**<br>SIMATIC HMI KP8 PN | **6AV3688-3AF37-0AX0**<br>SIMATIC HMI KP8F PN | **6AV3688-3EH47-0AX0**<br>SIMATIC HMI KP32F PN |
|---|---|---|---|
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 2; Per port | 2; Per port | 2; Per port |
| • Number of ports of the integrated switch | 2; Per port | 2; Per port | 2; Per port |
| **Protocols** | | | |
| PROFINET | Yes; also 3rd party PLC | Yes; also 3rd party PLC | Yes; incl. shared device, 3rd party PLC |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| PROFINET CBA | No | No | No |
| IRT | Yes | Yes | Yes |
| PROFIsafe | No | Yes; 1x SIL 3 (two-channel) or 2x SIL 2 (single-channel) emergency stop sensors | Yes; 2x SIL 3 (two-channel) or 4x SIL 2 (single-channel) emergency stop sensors |
| PROFIBUS | No | No | No |
| MPI | No | No | No |
| AS-Interface | No | No | No |
| EIB/KNX | No | No | No |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | No | No | No |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes | Yes | Yes |
| **Test commissioning functions** | | | |
| Illuminant test | Yes; During switch on | Yes; During switch on | Yes; During switch on |
| Key and signal lamp test | Yes; automatically when switching on | Yes; automatically when switching on | Yes; automatically when switching on |
| **EMC** | | | |
| **Emission of radio interference acc. to EN 55 011** | | | |
| • Limit class A, for use in industrial areas | Yes; Group 1, measured at a distance of 10 m | Yes; Group 1, measured at a distance of 10 m | Yes; Group 1, measured at a distance of 10 m |
| • Limit class B, for use in residential areas | No | No | No |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | No | No | No |
| • Enclosure Type 4x at the front | Yes; Incl. NEMA12 | Yes; Incl. NEMA12 | Yes; Incl. NEMA12 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| CCC | | No; not necessary | No; not necessary |
| Suitable for safety functions | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes | Yes | No |
| • ATEX Zone 22 | Yes | Yes | No |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | No |
| • FM Class I Division 2 | Yes | Yes | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No |
| • Bureau Veritas (BV) | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No |
| • Lloyds Register of Shipping (LRS) | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |

## Technical specifications (continued)

| Article number | **6AV3688-3AY36-0AX0**<br>SIMATIC HMI KP8 PN | **6AV3688-3AF37-0AX0**<br>SIMATIC HMI KP8F PN | **6AV3688-3EH47-0AX0**<br>SIMATIC HMI KP32F PN |
|---|---|---|---|
| - For vertical installation, max. | 55 °C | 55 °C | 55 °C |
| • Operation (max. tilt angle) | | | |
| - At maximum tilt angle, min. | 0 °C | 0 °C | 0 °C |
| - At maximum tilt angle, min. | 45 °C | 45 °C | 45 °C |
| • Operation (vertical installation, portrait format) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 55 °C | 55 °C | 55 °C |
| • Operation (max. tilt angle, portrait format) | | | |
| - At maximum tilt angle, min. | 0 °C | 0 °C | 0 °C |
| - At maximum tilt angle, min. | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • STEP 7 Basic (TIA Portal) | Yes | Yes | Yes |
| • STEP 7 Professional (TIA Portal) | Yes | Yes | Yes |
| **Functionality under WinCC (TIA Portal)** | | | |
| **Process coupling** | | | |
| • S7-1200 | Yes; with ET 200pro CPU and ET 200S CPU | Yes; with ET 200pro CPU and ET 200S CPU | Yes; with ET 200pro CPU and ET 200S CPU |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | No | No | No |
| • S7-300/400 | Yes; with F-CPU: STEP 7 V11 SP1 (or higher) and Safety V11 (or higher) or SIMATIC STEP 7 Basic V11 (or higher) | Yes; with F-CPU: STEP 7 V11 SP1 (or higher) and Safety V11 (or higher) or SIMATIC STEP 7 Basic V11 (or higher) | Yes; with F-CPU: STEP 7 V11 SP1 or higher and Safety V11 (or higher), without F-CPU STEP 7 or SIMATIC STEP 7 Basic V11 (or higher) |
| • LOGO! | No | No | No |
| • WinAC | Yes | Yes | Yes |
| • SINUMERIK | No | No | No |
| • SIMOTION | No | No | No |
| • Allen Bradley (EtherNet/IP) | No | No | No |
| • Allen Bradley (DF1) | No | No | No |
| • Mitsubishi (MC TCP/IP) | No | No | No |
| • Mitsubishi (FX) | No | No | No |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | No | No | No |
| • Modicon (Modbus TCP/IP) | No | No | No |
| • Modicon (Modbus) | No | No | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | No |
| • Aluminum | No | No | Yes |
| • Stainless steel | No | No | No |
| **Service life** | | | |
| • Short-stroke keys (in switching cycles) | 1 500 000 | 1 500 000 | 1 500 000 |
| • LEDs (ON period) | 100 % | 100 % | 100 % |
| **Dimensions** | | | |
| Width of the housing front | 98 mm | 98 mm | 295 mm |
| Height of housing front | 155 mm | 155 mm | 155 mm |
| Mounting cutout, width | 68 mm; Max. thickness of mounting plate 2 - 6 mm | 68 mm; Max. thickness of mounting plate 2 - 6 mm | 277 mm; Max. thickness of mounting plate 2 - 6 mm |
| Mounting cutout, height | 129 mm | 129 mm | 137 mm |
| Overall depth | 49 mm;<br>Incl. angled SIMATIC Ethernet connector | 49 mm;<br>Incl. angled SIMATIC Ethernet connector | 69 mm;<br>Incl. angled SIMATIC Ethernet connector |
| **Weights** | | | |
| Weight without packaging | 280 g | 280 g | 1 220 g |

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## Technical specifications (continued)

| Article number | **6AV3688-3XY38-3AX0**<br>KP8 Design blank Front |
|---|---|
| **General information** | |
| Product type designation | Empty front design |
| **Installation type/mounting** | |
| Mounting type | Clamp terminals |
| Mounting position | Any |
| Rack mounting | No |
| Front mounting | Yes; Compatible with Extension Units dimensions |
| Rail mounting | No |
| Wall mounting/direct mounting | No |
| Mounting in portrait format possible | Yes |
| Mounting in landscape format possible | Yes |
| maximum permissible angle of inclination without external ventilation | 180°; To the front/rear |
| Number of slots for command devices and signaling units | 5; Max. 5 possible |
| **Supply voltage** | |
| Type of supply voltage | external |
| **Interfaces** | |
| Number of USB interfaces | 0 |
| **Test commissioning functions** | |
| Key and signal lamp test | No |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |
| NEMA (front) | |
| • Enclosure Type 4 at the front | No |
| • Enclosure Type 4x at the front | No |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | No |
| RCM (formerly C-TICK) | No |
| KC approval | No |
| Suitable for safety functions | Yes;<br>e.g. installation of emergency stop |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | No |
| • ATEX Zone 22 | No |
| • cULus Class I Zone 1 | No |
| • cULus Class I Zone 2, Division 2 | No |
| • FM Class I Division 2 | No |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | No |
| • American Bureau of Shipping (ABS) | No |
| • Bureau Veritas (BV) | No |
| • Det Norske Veritas (DNV) | No |
| • Lloyds Register of Shipping (LRS) | No |
| • Nippon Kaiji Kyokai (Class NK) | No |
| • Polski Rejestr Statkow (PRS) | No |

| Article number | **6AV3688-3XY38-3AX0**<br>KP8 Design blank Front |
|---|---|
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 55 °C |
| • Operation (vertical installation) | |
| - For vertical installation, min. | 0 °C |
| - For vertical installation, max. | 55 °C |
| • Operation (max. tilt angle) | |
| - At maximum tilt angle, min. | 0 °C |
| - At maximum tilt angle, min. | 45 °C |
| • Operation (vertical installation, portrait format) | |
| - For vertical installation, min. | 0 °C |
| - For vertical installation, max. | 45 °C |
| • Operation (max. tilt angle, portrait format) | |
| - At maximum tilt angle, min. | 0 °C |
| - At maximum tilt angle, min. | 45 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Operation, max. | 95 % |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | No |
| • Aluminum | Yes |
| • Stainless steel | No |
| **Dimensions** | |
| Width of the housing front | 98 mm |
| Height of housing front | 155 mm |
| Mounting cutout, width | 68 mm; Max. thickness of mounting plate 2 - 6 mm |
| Mounting cutout, height | 129 mm |
| Overall depth | 49 mm |
| **Weights** | |
| Weight without packaging | 240 g |
| **Other** | |
| Merchandise | Yes |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI KP8 PN** | |
| Key Panel, 8 short-stroke keys with multicolored LEDs,<br>PROFINET interfaces,<br>2 x parameterizable with STEP 7 V5.5 or higher | |
| • SIEMENS design | **6AV3688-3AY36-0AX0** |
| • As neutral design without Siemens imprint | **6AV3688-5AY00-0YY0** |
| **SIMATIC HMI KP8F PN** | |
| Key Panel, 8 short-stroke keys with multicolored LEDs,<br>PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; 4 additional fail-safe inputs.<br>Can be used as 2 x SIL 2 or 1 x SIL 3 | |
| • SIEMENS design | **6AV3688-3AF37-0AX0** |
| • As neutral design without Siemens imprint | **6AV3688-3AF37-0AX0-Z A01+S00** |
| **SIMATIC HMI KP32F PN** | **6AV3688-3EH47-0AX0** |
| Key Panel, 32 short-stroke keys with multicolored LEDs,<br>PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; including 8 fail-safe inputs.<br>Can be used as 4 x SIL 2 or 2 x SIL 3 | |
| **Empty front design** | **6AV3688-3XY38-3AX0** |
| For standard 22.5 mm operator controls, same mounting dimensions as KP8 | |
| **Documentation** | |
| You can find the manual for the Key Panels on the Internet at: | http://support.automation.siemens.com/WW/view/en/56652789 |
| **Accessories** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

## More information

More information is available on the Internet at:

http://www.siemens.com/key-panels

For accessories see "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories"

Note:

Do you need a specific modification or extension to the products described here? Then look up "Customized Automation", where you will find information about additional and generally available sector-specific products, as well as options for customer-specific modifications and adaptations.

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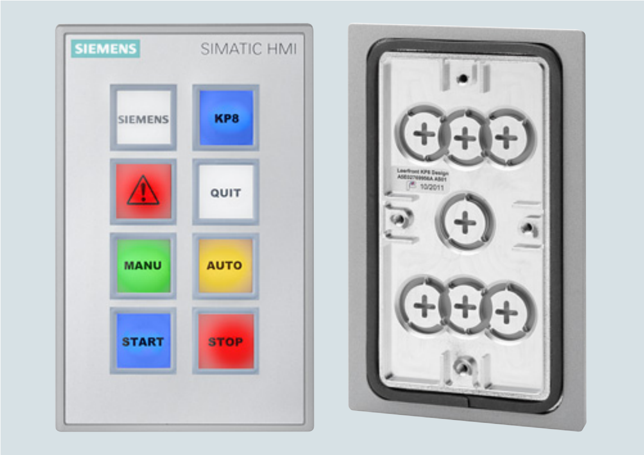
## SIPLUS HMI KP8/KP8F/KP32F

### Overview



SIPLUS HMI KP8 PN, Empty front

***SIPLUS HMI Key Panels***

- Optimum operability thanks to large mechanical keys and multicolored LED backlighting (daylight readable)
- Over 60% time savings for wiring and installation (Plug&Play)
- More than 30% savings in material costs compared to conventional keypad operator panels
- 2 PROFINET ports (incl. switch) already integrated for setting up line and ring topologies
- Freely configurable digital I/Os on the rear for connecting key-operated switches, indicator lamps, etc.
- Connection of fail-safe emergency stop buttons or other fail-safe signals with KP8F and KP32F (in SIL 2 or SIL 3)
- Functionally compatible with all standard PROFINET master CPUs, also non-Siemens
- KP8 and empty front design, also optimized for installation in IPC Extension Units in IP65
- Maximum flexibility due to parameterization
- Empty front design for standardized assembly of flexible operator panels

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products.

SIPLUS extreme-specific information was added.

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## Technical specifications

| Article number | **6AG1688-3AY36-2AX0**<br>SIPLUS HMI KP8 PN | **6AG1688-3AF37-2AX0**<br>SIPLUS HMI KP8F PN | **6AG1688-3EH47-2AX0**<br>SIPLUS HMI KP32F PN |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KP8 PN | KP8F PN | KP32F PN |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C; = Tmin; Startup @ -25 °C | -20 °C;<br>= Tmin (incl. condensation/frost) | -20 °C;<br>= Tmin (incl. condensation/frost) |
| • max. | 60 °C; = Tmax | 55 °C; = Tmax | 55 °C; = Tmax |
| **Altitude during operation relating to sea level** | | | |
| • Installation altitude above sea level, max. | 5 000 m | 2 000 m | 2 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) //<br>Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) //<br>Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) |
| **Relative humidity** | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation / frost (no commissioning under condensation conditions) | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation |
| **Resistance** | | | |
| **Coolants and lubricants** | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air |
| **Use in stationary industrial systems** | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * |
| **Use on ships/at sea** | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna);<br>Class 6B3 on request | Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna) | Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna) |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * |
| **Usage in industrial process technology** | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | |
| **Remark** | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | * The supplied plug covers must remain in place over the unused interfaces during operation! | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| **Conformal coating** | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

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## SIPLUS HMI KP8/KP8F/KP32F

### Ordering data

| | Article No. |
|---|---|
| **SIPLUS HMI KP8 PN**<br>(extended temperature range and exposure to environmental substances)<br>Key Panel, 8 short-stroke keys with multicolored LEDs, PROFINET interfaces, 2 x parameterizable with STEP 7 V5.5 or higher | **6AG1688-3AY36-2AX0** |
| **SIPLUS HMI KP8F PN**<br>(extended temperature range and exposure to environmental substances)<br>Key Panel, 8 short-stroke keys with multicolored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; 4 additional fail-safe inputs. Can be used as 2 x SIL 2 or 1 x SIL 3 | **6AG1688-3AF37-2AX0** |
| **SIPLUS HMI KP32F PN**<br>(extended temperature range and exposure to environmental substances)<br>Key Panel, 32 short-stroke keys with multicolored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; including 8 fail-safe inputs. Can be used as 4 x SIL 2 or 2 x SIL 3 | **6AG1688-3EH47-2AX0** |

| | Article No. |
|---|---|
| **Empty front design**<br>(Exposure to environmental substances)<br>For standard 22.5 mm operator controls, same mounting dimensions as KP8 | **6AG1688-3XY38-2AX0** |
| **Documentation** | |
| You can find the manual for the Key Panels on the Internet at: | http://support.automation.siemens.com/WW/view/en/56652789 |
| **Accessories** | See SIMATIC HMI accessories |

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## Overview

### *Basic Panels (2nd Generation)*

SIMATIC HMI Basic Panels (2nd Generation) with their fully developed HMI basic functions are the ideal entry-level series for simple HMI applications.

The device family offers panels with 4", 7", 9" and 12" displays, as well as combined key and touch operation.

The innovative high-resolution widescreen displays with 64 000 colors are also suitable for upright installation, and they can be dimmed down to 100%.

The innovative operator interface with improved usability opens up a diverse range of options thanks to new controls and graphics. The new USB interface enables the connection of keyboard, mouse or barcode scanner, and supports the simple archiving of data on a USB flash drive as well as the manual backup and restoring of the complete panel.

The integrated Ethernet or RS 485/422 interface (version-specific) enables simple connection to the controller.

http://www.siemens.com/basic-panels

## Technical specifications

| Article number | **6AV2123-2DB03-0AX0**<br>SIMATIC HMI KTP400 Basic | **6AV2123-2GB03-0AX0**<br>SIMATIC HMI KTP700 Basic | **6AV2123-2GA03-0AX0**<br>SIMATIC HMI KTP700 Basic DP |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KTP400 Basic color PN | KTP700 Basic color PN | KTP700 Basic color DP |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 4.3 in | 7 in | 7 in |
| Display width | 95 mm | 154.1 mm | 154.1 mm |
| Display height | 53.9 mm | 85.9 mm | 85.9 mm |
| Number of colors | 65 536 | 65 536 | 65 536 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 480 Pixel | 800 Pixel | 800 Pixel |
| • Vertical image resolution | 272 Pixel | 480 Pixel | 480 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 20 000 h | 20 000 h | 20 000 h |
| • Backlight dimmable | Yes | Yes | Yes |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 4 | 8 | 8 |
| **Memory** | | | |
| Flash | Yes | Yes | Yes |
| RAM | Yes | Yes | Yes |
| Memory available for user data | 10 Mbyte | 10 Mbyte | 10 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Buzzer | Yes | Yes | Yes |
| • Speaker | No | No | No |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 1 | 1 | 0 |
| Number of RS 485 interfaces | 0 | 0 | 1 |
| Number of RS 422 interfaces | 0 | 0 | 1; together with RS 485 |
| Number of RS 232 interfaces | 0 | 0 | 0; with optional adapter |

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## **Technical specifications** (continued)

| Article number | **6AV2123-2DB03-0AX0**<br>SIMATIC HMI KTP400 Basic | **6AV2123-2GB03-0AX0**<br>SIMATIC HMI KTP700 Basic | **6AV2123-2GA03-0AX0**<br>SIMATIC HMI KTP700 Basic DP |
|---|---|---|---|
| Number of USB interfaces | 1; Up to 16 GB | 1; Up to 16 GB | 1; Up to 16 GB |
| Number of 20 mA interfaces (TTY) | 0 | 0 | 0 |
| Number of parallel interfaces | 0 | 0 | 0 |
| Number of other interfaces | 0 | 0 | 0 |
| Number of SD card slots | 0 | 0 | 0 |
| With software interfaces | No | No | No |
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 2 | 2 | 0 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | No |
| Supports protocol for PROFINET IO | No | No | No |
| IRT | No | No | No |
| PROFIBUS | No | No | Yes |
| MPI | No | No | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | No | No | No |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |
| • ATEX Zone 22 | No | No | No |
| • IECEx Zone 2 | No | No | No |
| • IECEx Zone 22 | No | No | No |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | Yes | Yes | Yes |
| • American Bureau of Shipping (ABS) | Yes | Yes | Yes |
| • Bureau Veritas (BV) | Yes | Yes | Yes |
| • Det Norske Veritas (DNV) | Yes | Yes | Yes |
| • Lloyds Register of Shipping (LRS) | Yes | Yes | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes | Yes |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | | Yes |
| Suited for outdoor use | No | | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Operating systems** | | | |
| proprietary | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2123-2DB03-0AX0** | **6AV2123-2GB03-0AX0** | **6AV2123-2GA03-0AX0** |
|---|---|---|---|
| | SIMATIC HMI KTP400 Basic | SIMATIC HMI KTP700 Basic | SIMATIC HMI KTP700 Basic DP |
| **Configuration software** | | | |
| • STEP 7 Basic (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) |
| • STEP 7 Professional (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) | Yes; via integrated WinCC Basic (TIA Portal) |
| • WinCC flexible Compact | No | No | No |
| • WinCC flexible Standard | No | No | No |
| • WinCC flexible Advanced | No | No | No |
| • WinCC Basic (TIA Portal) | Yes | Yes | Yes |
| • WinCC Comfort (TIA Portal) | Yes | Yes | Yes |
| • WinCC Advanced (TIA Portal) | Yes | Yes | Yes |
| • WinCC Professional (TIA Portal) | Yes | Yes | Yes |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 10 | 10 | 10 |
| **Project languages** | | | |
| • Languages per project | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | No |
| • SIMATIC WinCC Sm@rtServer | Yes; Available with WinCC (TIA Portal) V14 or higher | Yes; Available with WinCC (TIA Portal) V14 or higher | No |
| Number of Visual Basic Scripts | No | No | No |
| Task planner | Yes | Yes | Yes |
| • time-controlled | No | No | No |
| • task-controlled | Yes | Yes | Yes |
| Help system | Yes | Yes | Yes |
| • Number of characters per info text | 500 | 500 | 500 |
| **Recipe management** | | | |
| • Number of recipes | 50 | 50 | 50 |
| • Data records per recipe | 100 | 100 | 100 |
| • Entries per data record | 100 | 100 | 100 |
| • Size of internal recipe memory | 256 kbyte | 256 kbyte | 256 kbyte |
| • Recipe memory expandable | No | No | No |
| **Archiving** | | | |
| • Number of archives per device | 2; One message and one process value archive | 2; One message and one process value archive | 2; One message and one process value archive |
| • Number of entries per archive | 10 000 | 10 000 | 10 000 |
| • Message archive | Yes | Yes | Yes |
| • Process value archive | Yes | Yes | Yes |
| • Archiving methods | | | |
| - Sequential archive | Yes | Yes | Yes |
| - Short-term archive | Yes | Yes | Yes |
| • Memory location | | | |
| - Memory card | No | No | No |
| - USB memory | Yes | Yes | Yes |
| - Ethernet | No | No | No |
| • Data storage format | | | |
| - CSV | No | No | No |
| - TXT | Yes | Yes | Yes |
| - RDB | No | No | No |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of user rights | 32 | 32 | 32 |
| • Number of users | 50 | 50 | 50 |
| • Password export/import | Yes | Yes | Yes |
| • SIMATIC Logon | No | No | No |

## Technical specifications (continued)

| Article number | **6AV2123-2DB03-0AX0**<br>SIMATIC HMI KTP400 Basic | **6AV2123-2GB03-0AX0**<br>SIMATIC HMI KTP700 Basic | **6AV2123-2GA03-0AX0**<br>SIMATIC HMI KTP700 Basic DP |
|---|---|---|---|
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | No | No | Yes |
| • USB | No | No | No |
| • Ethernet | Yes | Yes | No |
| • using external storage medium | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SINUMERIK | Yes; No access to NCK data | Yes; No access to NCK data | Yes; No access to NCK data |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | No |
| • Allen Bradley (DF1) | No | No | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | No |
| • Mitsubishi (FX) | No | No | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | No | No | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | No |
| • Modicon (Modbus) | No | No | Yes |
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| SIMATIC HMI MM memory card: Multi Media Card | No | No | No |
| SIMATIC HMI SD memory card: Secure Digital memory card | No | No | No |
| SIMATIC HMI CF memory card Compact Flash Card | No | No | No |
| USB memory | Yes | Yes | Yes |
| SIMATIC IPC USB Flashdrive (USB stick) | Yes | Yes | Yes |
| SIMATIC HMI USB stick | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | Yes |
| • Aluminum | No | No | No |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 141 mm | 214 mm | 214 mm |
| Height of housing front | 116 mm | 158 mm | 158 mm |
| Mounting cutout, width | 123 mm | 197 mm | 197 mm |
| Mounting cutout, height | 99 mm | 141 mm | 141 mm |
| Overall depth | 33 mm | 39 mm | 39 mm |
| **Weights** | | | |
| Weight without packaging | 360 g | 780 g | 800 g |
| Weight incl. packaging | 470 g | 990 g | 1 kg |

| Article number | **6AV2123-2JB03-0AX0**<br>SIMATIC HMI KTP900 Basic | **6AV2123-2MB03-0AX0**<br>SIMATIC HMI KTP1200 Basic | **6AV2123-2MA03-0AX0**<br>SIMATIC HMI KTP1200 Basic DP |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KTP900 Basic color PN | KTP1200 Basic color PN | KTP1200 Basic color DP |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 9 in | 12 in | 12 in |
| Display width | 198 mm | 261.1 mm | 261.1 mm |
| Display height | 111.7 mm | 163.2 mm | 163.2 mm |
| Number of colors | 65 536 | 65 536 | 65 536 |

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## Technical specifications (continued)

| Article number | 6AV2123-2JB03-0AX0<br>SIMATIC HMI KTP900 Basic | 6AV2123-2MB03-0AX0<br>SIMATIC HMI KTP1200 Basic | 6AV2123-2MA03-0AX0<br>SIMATIC HMI KTP1200 Basic DP |
|---|---|---|---|
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 800 Pixel | 1 280 Pixel | 1 280 Pixel |
| • Vertical image resolution | 480 Pixel | 800 Pixel | 800 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 20 000 h | 20 000 h | 20 000 h |
| • Backlight dimmable | Yes | Yes | Yes |
| **Touch operation** | | | |
| • Design as touch screen | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Mounting position | vertical | vertical | vertical |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| maximum permissible angle of inclination without external ventilation | 35° | 35° | 35° |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | |
| Flash | Yes | Yes | Yes |
| RAM | Yes | Yes | Yes |
| Memory available for user data | 10 Mbyte | 10 Mbyte | 10 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Buzzer | Yes | Yes | Yes |
| • Speaker | No | No | No |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Protocols** | | | |
| PROFINET | Yes | Yes | No |
| Supports protocol for PROFINET IO | No | No | No |
| IRT | No | No | No |
| PROFIBUS | No | No | Yes |
| MPI | No | No | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | No | No | No |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |

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## **Technical specifications** (continued)

| Article number | **6AV2123-2JB03-0AX0**<br>SIMATIC HMI KTP900 Basic | **6AV2123-2MB03-0AX0**<br>SIMATIC HMI KTP1200 Basic | **6AV2123-2MA03-0AX0**<br>SIMATIC HMI KTP1200 Basic DP |
|---|---|---|---|
| **Operating systems** | | | |
| proprietary | Yes | Yes | Yes |
| **pre-installed operating system** | | | |
| • Windows CE | No | No | No |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 10 | 10 | 10 |
| **Project languages** | | | |
| • Languages per project | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | No |
| • SIMATIC WinCC Sm@rtServer | Yes; Available with WinCC (TIA Portal) V14 or higher | Yes; Available with WinCC (TIA Portal) V14 or higher | No |
| Number of Visual Basic Scripts | No | No | No |
| Task planner | Yes | Yes | Yes |
| • time-controlled | No | No | No |
| • task-controlled | Yes | Yes | Yes |
| Help system | Yes | Yes | Yes |
| • Number of characters per info text | 500 | 500 | 500 |
| **Message system** | | | |
| • Number of alarm classes | 32 | 32 | 32 |
| • Bit messages | | | |
| - Number of bit messages | 1 000 | 1 000 | 1 000 |
| • Analog messages | | | |
| - Number of analog messages | 25 | 25 | 25 |
| • S7 alarm number procedure | No | No | No |
| • System messages HMI | Yes | Yes | Yes |
| • System messages, other (SIMATIC S7, Sinumerik, Simotion, etc.) | Yes; System message buffer of the SIMATIC S7-1200 and S7-1500 | Yes; System message buffer of the SIMATIC S7-1200 and S7-1500 | Yes; System message buffer of the SIMATIC S7-1200 and S7-1500 |
| • Number of characters per message | 80 | 80 | 80 |
| • Number of process values per message | 8 | 8 | 8 |
| • Acknowledgment groups | Yes | Yes | Yes |
| • Message indicator | Yes | Yes | Yes |
| • Message buffer | | | |
| - Number of entries | 256 | 256 | 256 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| - maintenance-free | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 50 | 50 | 50 |
| • Data records per recipe | 100 | 100 | 100 |
| • Entries per data record | 100 | 100 | 100 |
| • Size of internal recipe memory | 256 kbyte | 256 kbyte | 256 kbyte |
| • Recipe memory expandable | No | No | No |
| **Variables** | | | |
| • Number of variables per device | 800 | 800 | 800 |
| • Number of variables per screen | 100 | 100 | 100 |
| • Limit values | Yes | Yes | Yes |
| • Multiplexing | Yes | Yes | Yes |
| • Structures | No | No | No |
| • Arrays | Yes | Yes | Yes |
| **Images** | | | |
| • Number of configurable images | 250 | 250 | 250 |
| • Permanent window/default | Yes | Yes | Yes |
| • Global image | Yes | Yes | Yes |
| • Pop-up images | No | No | No |
| • Slide-in images | No | No | No |
| • Image selection by PLC | Yes | Yes | Yes |
| • Image number in the PLC | Yes | Yes | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2123-2JB03-0AX0**<br>SIMATIC HMI KTP900 Basic | **6AV2123-2MB03-0AX0**<br>SIMATIC HMI KTP1200 Basic | **6AV2123-2MA03-0AX0**<br>SIMATIC HMI KTP1200 Basic DP |
|---|---|---|---|
| **Archiving** | | | |
| • Number of archives per device | 2; One message and one process value archive | 2; One message and one process value archive | 2; One message and one process value archive |
| • Number of entries per archive | 10 000 | 10 000 | 10 000 |
| • Message archive | Yes | Yes | Yes |
| • Process value archive | Yes | Yes | Yes |
| • Archiving methods | | | |
| - Sequential archive | Yes | Yes | Yes |
| - Short-term archive | Yes | Yes | Yes |
| • Memory location | | | |
| - Memory card | No | No | No |
| - USB memory | Yes | Yes | Yes |
| - Ethernet | No | No | No |
| • Data storage format | | | |
| - CSV | No | No | No |
| - TXT | Yes | Yes | Yes |
| - RDB | No | No | No |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of user rights | 32 | 32 | 32 |
| • Number of users | 50 | 50 | 50 |
| • Password export/import | Yes | Yes | Yes |
| • SIMATIC Logon | No | No | No |
| **Character sets** | | | |
| • Keyboard fonts | | | |
| - US English | Yes | Yes | Yes |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | No | No | Yes |
| • USB | No | No | No |
| • Ethernet | Yes | Yes | No |
| • using external storage medium | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SINUMERIK | Yes; No access to NCK data | Yes; No access to NCK data | Yes; No access to NCK data |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | No |
| • Allen Bradley (DF1) | No | No | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | No |
| • Mitsubishi (FX) | No | No | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | No | No | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | No |
| • Modicon (Modbus) | No | No | Yes |
| **Service tools/configuration aids** | | | |
| • Backup/Restore manually | Yes | Yes | Yes |
| • Backup/Restore automatically | No | No | No |
| • Simulation | Yes | Yes | Yes |
| • Device switchover | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | 6AV2123-2JB03-0AX0<br>SIMATIC HMI KTP900 Basic | 6AV2123-2MB03-0AX0<br>SIMATIC HMI KTP1200 Basic | 6AV2123-2MA03-0AX0<br>SIMATIC HMI KTP1200 Basic DP |
|---|---|---|---|
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| SIMATIC HMI MM memory card: Multi Media Card | No | No | No |
| SIMATIC HMI SD memory card: Secure Digital memory card | No | No | No |
| SIMATIC HMI CF memory card Compact Flash Card | No | No | No |
| USB memory | Yes | Yes | Yes |
| SIMATIC IPC USB Flashdrive (USB stick) | Yes | Yes | Yes |
| SIMATIC HMI USB stick | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | Yes |
| • Aluminum | No | No | No |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 267 mm | 330 mm | 330 mm |
| Height of housing front | 182 mm | 245 mm | 245 mm |
| Mounting cutout, width | 251 mm | 310 mm | 310 mm |
| Mounting cutout, height | 166 mm | 221 mm | 221 mm |
| Overall depth | 55 mm | 60 mm | 60 mm |
| **Weights** | | | |
| Weight without packaging | 1 130 g | 1 710 g | 1 710 g |
| Weight incl. packaging | 1 393 g | 2.2 kg | 2.2 kg |

## Ordering data

| | Article No. |
|---|---|
| ***SIMATIC HMI Basic Panels ($2^{nd}$ Generation)*** | |
| ***Key and touch devices*** | |
| **SIMATIC HMI KTP400 Basic**<br>Key/touch-screen operation;<br>4" TFT widescreen display,<br>65 536 colors,<br>PROFINET interface | **6AV2123-2DB03-0AX0** |
| **SIMATIC HMI KTP700 Basic**<br>Key/touch-screen operation;<br>7" TFT display,<br>65 536 colors,<br>PROFINET interface | **6AV2123-2GB03-0AX0** |
| **SIMATIC HMI KTP700 Basic DP**<br>Key/touch-screen operation;<br>7" TFT display,<br>65 536 colors,<br>PROFIBUS interface | **6AV2123-2GA03-0AX0** |
| **SIMATIC HMI KTP900 Basic**<br>Key/touch-screen operation;<br>9" TFT display,<br>65 536 colors,<br>PROFINET interface | **6AV2123-2JB03-0AX0** |
| **SIMATIC HMI KTP1200 Basic**<br>Key/touch-screen operation;<br>12" TFT display,<br>65 536 colors,<br>PROFINET interface | **6AV2123-2MB03-0AX0** |
| **SIMATIC HMI KTP1200 Basic DP**<br>Key/touch-screen operation;<br>12" TFT display,<br>65 536 colors,<br>PROFIBUS interface | **6AV2123-2MA03-0AX0** |

| | Article No. |
|---|---|
| ***Starter kits*** | |
| **Starter kits with a LOGO!**<br>consist of:<br>• the respective SIMATIC HMI Basic Panel SIMATIC HMI KP300 Basic mono PN SIMATIC HMI KTP400 Basic SIMATIC HMI KTP700 Basic<br>• LOGO! 12/24 RCE<br>• LOGO! POWER 24 V 1.3 A<br>• LOGO! SOFT COMFORT V7<br>• WINCC BASIC (TIA Portal)<br>• Ethernet CAT5 cable, 2 m | |
| **Starter kit LOGO! + KP300 Basic mono PN** | **6AV2132-0HA00-0AA1** |
| **Starter kit LOGO! + KTP400 Basic** | **6AV2132-0KA00-0AA1** |
| **Starter kit LOGO! + KTP700 Basic** | **6AV2132-3GB00-0AA1** |
| **Documentation** | |
| You can find the manual for the Basic Panels on the Internet at: | http://support.automation.siemens.com |
| **Accessories** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

More information is available on the Internet at:

http://www.siemens.com/basic-panels

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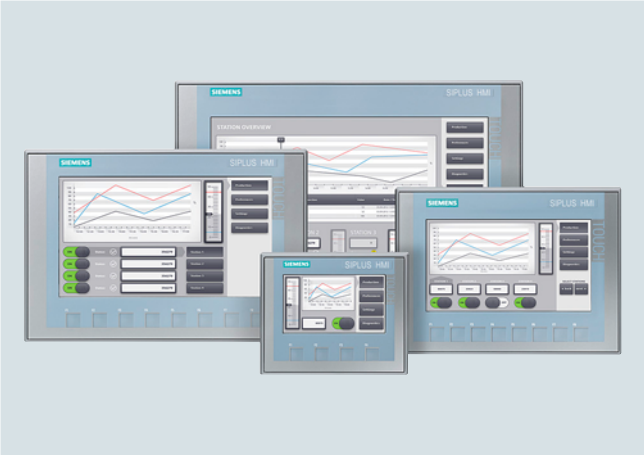
## Overview



With their fully developed HMI basic functions, 2nd Generation SIPLUS Basic Panels are the ideal entry-level series for simple HMI applications.

The device family offers panels with 4", 7", 9" and 12" displays, as well as combined key and touch operation.

The innovative high-resolution widescreen displays with 64 000 colors are also suitable for upright installation, and they can be dimmed down to 100%. The innovative operator interface with improved usability opens up a diverse range of options thanks to new controls and graphics.
The new USB interface enables the connection of keyboard, mouse or barcode scanner, and supports the simple archiving of data on a USB flash drive.
The integrated Ethernet or RS 485/422 interface (version-specific) enables simple connection to the controller.

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products.

SIPLUS extreme-specific information was added.

Technical documentation on SIPLUS can be found here:
http://www.siemens.com/siplus-extreme

## Technical specifications

| Article number | **6AG1123-2DB03-2AX0**<br>SIPLUS HMI KTP400 BASIC | **6AG1123-2GB03-2AX0**<br>SIPLUS HMI KTP700 BASIC | **6AG1123-2GA03-2AX0**<br>SIPLUS HMI KTP700 BASIC DP |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KTP400 Basic color PN | KTP700 Basic color PN | KTP700 Basic color DP |
| **Ambient conditions** | | | |
| Suited for indoor use | | Yes | Yes |
| Suited for outdoor use | | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | -20 °C; = Tmin | -20 °C | -20 °C; = Tmin |
| - For vertical installation, max. | 60 °C; = Tmax | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| **Relative humidity** | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | | |
| **Resistance** | | | |
| **Coolants and lubricants** | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | | |
| **Use in stationary industrial systems** | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | | |

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## **Technical specifications** (continued)

| Article number | **6AG1123-2DB03-2AX0**<br>SIPLUS HMI KTP400 BASIC | **6AG1123-2GB03-2AX0**<br>SIPLUS HMI KTP700 BASIC | **6AG1123-2GA03-2AX0**<br>SIPLUS HMI KTP700 BASIC DP |
|---|---|---|---|
| **Use on ships/at sea** | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | | |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | | |
| **Usage in industrial process technology** | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | |
| **Remark** | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | | |
| **Conformal coating** | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

| Article number | **6AG1123-2JB03-2AX0**<br>SIPLUS HMI KTP900 BASIC | **6AG1123-2MB03-2AX0**<br>SIPLUS HMI KTP1200 BASIC | **6AG1123-2MA03-2AX0**<br>SIPLUS HMI KTP1200 BASIC DP |
|---|---|---|---|
| **General information** | | | |
| Product type designation | KTP900 Basic color PN | KTP1200 Basic color PN | KTP1200 Basic color DP |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | -20 °C | -10 °C; = Tmin | -10 °C; = Tmin |
| - For vertical installation, max. | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| **Relative humidity** | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation | 100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position |
| **Resistance** | | | |
| **Coolants and lubricants** | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | | |

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## Technical specifications (continued)

| Article number | **6AG1123-2JB03-2AX0**<br>SIPLUS HMI KTP900 BASIC | **6AG1123-2MB03-2AX0**<br>SIPLUS HMI KTP1200 BASIC | **6AG1123-2MA03-2AX0**<br>SIPLUS HMI KTP1200 BASIC DP |
|---|---|---|---|
| **Use in stationary industrial systems** | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * |
| **Use on ships/at sea** | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | | |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | | |
| **Usage in industrial process technology** | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | |
| **Remark** | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | | |
| **Conformal coating** | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | | |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

## Ordering data

| | Article No. |
|---|---|
| **SIPLUS HMI Basic Panels, Key and Touch** | |
| **SIPLUS HMI KTP400 Basic**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +60 °C | **6AG1123-2DB03-2AX0** |
| **SIPLUS HMI KTP700 Basic**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C | **6AG1123-2GB03-2AX0** |
| **SIPLUS HMI KTP700 Basic DP**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C | **6AG1123-2GA03-2AX0** |
| **SIPLUS HMI KTP900 Basic**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C | **6AG1123-2JB03-2AX0** |
| **SIPLUS HMI KTP1200 Basic**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -10 ... +50 °C | **6AG1123-2MB03-2AX0** |
| **SIPLUS HMI KTP1200 Basic DP**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -10 ... +50 °C | **6AG1123-2MA03-2AX0** |
| **Accessories** | See SIMATIC Basic Panels 2<sup>nd</sup> Generation |

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## Overview

### *Realization of demanding, complex HMI tasks with a high level of user convenience*

Advanced HMI is the Panel-based solution for demanding applications with large configuration limits.

The user benefits from excellent functionality and a wide range of devices and applications, with key or touch operation.
Both stationary and mobile solutions are available.

### *SIMATIC HMI Unified Comfort Panels*

The new generation of high-end, 7–22-inch operator panels, part of the new SIMATIC WinCC Unified System, boasts numerous improvements over the predecessor devices in terms of performance, openness and user-friendliness.

- Rugged multi-touch technology
- Innovative SIMATIC WinCC Unified visualization software
- Integrated EDGE functionality

### *SIMATIC HMI Comfort Panels*

SIMATIC HMI Comfort Panels are designed for implementing high-performance visualization tasks at machine-level. High performance, functionality and numerous integrated interfaces offer the greatest convenience in high-end applications.

- Brilliant widescreen display of 4" – 22"
- Easy commissioning and service concept

### *SIMATIC HMI Mobile Panels*

Panels for high-end mobile applications – even in the fail-safe area of machines and widely distributed plants. The process communication can be wired or via WLAN.

- Innovative operation from 4" to 9"
- Rugged for location-related local operation
- Integrated security concept

## Overview

***SIMATIC HMI Unified Comfort Panel***

The new generation of high-end, 7–22-inch operator panels, part of the new SIMATIC WinCC Unified System, boasts numerous improvements over the predecessor devices in terms of performance, openness and user-friendliness.

Thanks to their capacitive glass front with multi-touch technology, the Unified Comfort Panels are as convenient to use as a smartphone or tablet. The sharp colors and high contrast improve the readability and ease of use.

Visualization on the devices is based on SIMATIC WinCC Unified, the new visualization system in the TIA Portal. This opens up many new opportunities and functionalities for the user – across all device sizes.

Brand new to the SIMATIC HMI product portfolio is the option to expand device functionality with apps. Previously, HMI Panels were used exclusively for visualization software. Thanks to the integration of Siemens Industrial Edge, users can now run other programs simultaneously alongside this standard device functionality. Project-specific requirements can thus be implemented quickly and easily.

The following SIMATIC HMI Unified Comfort Panels are available:

- Standard design:
  - MTP700 Comfort
  - MTP1000 Comfort
  - MTP1200 Comfort
  - MTP1500 Comfort
  - MTP1900 Comfort
  - MTP2200 Comfort
- Neutral design:
  - MTP700 Comfort
  - MTP1000 Comfort
  - MTP1200 Comfort
  - MTP1500 Comfort
  - MTP1900 Comfort
  - MTP2200 Comfort

Starter kits are available for standard design devices.
These consist of:

- HMI Unified Comfort Panel
- WinCC Unified V16 Comfort
- EDGE Runtime for Unified Comfort (Device-managed) license
- 1.5 m PROFINET cable
- Memory card (32 GB)
- Protective membrane

http://www.siemens.com/unified-comfort-panels

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## Unified Comfort Panels Standard

### Overview

***SIMATIC HMI Unified Comfort Panels - standard devices***

The SIMATIC HMI Unified Comfort Panels consist of six different devices with varying display sizes.

All devices come with the same number of hardware interfaces and the same functionality – just select the perfect device for your needs based on the screen size.

Each Unified Comfort Panel is available in the standard design with Siemens and SIMATIC HMI branding and a silver-colored aluminum frame.

All Unified Comfort Panels come with integrated Edge functionality.

Siemens Industrial Edge can be used in two different ways:

- Device-managed Edge
- Centrally-managed Edge (planned)

SIMATIC HMI Unified Comfort Panels can also be ordered with a neutral design. Starter kits are available for standard design devices.

Note:

The technical specifications of the neutral design devices correspond to the technical specifications of the devices with standard design.

### Technical specifications

| Article number | **6AV2128-3GB06-0AX0**<br>SIMATIC HMI MTP700 Unified Comfort | **6AV2128-3KB06-0AX0**<br>SIMATIC HMI MTP1000 Unified Comfort | **6AV2128-3MB06-0AX0**<br>SIMATIC HMI MTP1200 Unified Comfort | **6AV2128-3QB06-0AX0**<br>SIMATIC HMI MTP1500 Unified Comfort | **6AV2128-3UB06-0AX0**<br>SIMATIC HMI MTP1900 Unified Comfort | **6AV2128-3XB06-0AX0**<br>SIMATIC HMI MTP2200 Unified Comfort |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | MTP700 Unified Comfort | MTP1000 Unified Comfort | MTP1200 Unified Comfort | MTP1500 Unified Comfort | MTP1900 Unified Comfort | MTP2200 Unified Comfort |
| **Display** | | | | | | |
| Design of display | TFT | TFT | TFT | TFT | TFT | TFT |
| Screen diagonal | 7 in | 10.1 in | 12.1 in | 15.6 in | 18.5 in | 21.5 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 800 Pixel | 1 280 Pixel | 1 280 Pixel | 1 366 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 480 Pixel | 800 Pixel | 800 Pixel | 768 Pixel | 1 080 Pixel | 1 080 Pixel |
| **Backlighting** | | | | | | |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h | 50 000 h; At 25°C | 30 000 h; At 25°C |
| • Backlight dimmable | Yes; 5-100 % | Yes; 5-100 % | Yes; 5-100 % | Yes; 10 ... 100% | Yes; 10 ... 100% | Yes; 10 ... 100% |
| **Installation type/mounting** | | | | | | |
| Mounting position | vertical | vertical | vertical | vertical | vertical | vertical |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| maximum permissible angle of inclination without external ventilation | 35° | 35° | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | | | |
| Type of supply voltage | DC | DC | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Type of output** | | | | | | |
| Acoustics | | | | | | |
| • Buzzer | Yes | Yes | Yes | Yes | Yes | Yes |
| • Speaker | No | No | No | No | No | No |
| **Time of day** | | | | | | |
| **Clock** | | | | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes | Yes | Yes | Yes |

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## Technical specifications (continued)

| Article number | **6AV2128-3GB06-0AX0**<br>SIMATIC HMI MTP700 Unified Comfort | **6AV2128-3KB06-0AX0**<br>SIMATIC HMI MTP1000 Unified Comfort | **6AV2128-3MB06-0AX0**<br>SIMATIC HMI MTP1200 Unified Comfort | **6AV2128-3QB06-0AX0**<br>SIMATIC HMI MTP1500 Unified Comfort | **6AV2128-3UB06-0AX0**<br>SIMATIC HMI MTP1900 Unified Comfort | **6AV2128-3XB06-0AX0**<br>SIMATIC HMI MTP2200 Unified Comfort |
|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) + independent port | | | | | |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of RS 422 interfaces | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 |
| Number of USB interfaces | 4; USB 3.0 | 4; USB 3.0 | 4; USB 3.0 | 4; USB 3.0 | 4; USB 3.0 | 4; USB 3.0 |
| Number of SD card slots | 2 | 2 | 2 | 2 | 2 | 2 |
| **Protocols** | | | | | | |
| PROFINET | Yes | Yes | Yes | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | No | No | No | No | No | No |
| PROFIBUS | No | No | No | No | No | No |
| **Redundancy mode** | | | | | | |
| **Media redundancy** | | | | | | |
| - MRP | Yes | Yes | Yes | Yes | Yes | Yes |
| **EMC** | | | | | | |
| **Emission of radio interference acc. to EN 55 011** | | | | | | |
| • Limit class A, for use in industrial areas | Yes | Yes | Yes | Yes | Yes | Yes |
| • Limit class B, for use in residential areas | No | No | No | No | No | No |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | | | |
| • Enclosure Type 4x at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | No | No | No | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes | Yes |
| KC approval | No; Available soon | | | | | |
| EAC (formerly Gost-R) | No | No | No | No | No | No |
| **Use in hazardous areas** | | | | | | |
| • ATEX Zone 2 | No; Available soon | | | | | |
| • ATEX Zone 22 | No; Available soon | | | | | |
| • IECEx Zone 2 | No; Available soon | | | | | |
| • IECEx Zone 22 | No; Available soon | | | | | |
| • cULus Class I Zone 2, Division 2 | No; Available soon | | | | | |
| • cULus Class II Division 2 | No | No | No | No | No | No |
| • FM Class I Division 2 | No; Available soon | | | | | |
| • FM Class II Division 2 | No | No | No | No | No | No |
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | No; Available soon | | | | | |
| • American Bureau of Shipping (ABS) | No; Available soon | | | | | |
| • Bureau Veritas (BV) | No; Available soon | | | | | |
| • Det Norske Veritas (DNV) | No; Available soon | | | | | |
| • Lloyds Register of Shipping (LRS) | No; Available soon | | | | | |
| • Nippon Kaiji Kyokai (Class NK) | No; Available soon | | | | | |
| • Chinese Classification Society (CCS) | No; Available soon | | | | | |

## **Technical specifications** (continued)

| Article number | **6AV2128-3GB06-0AX0**<br>SIMATIC HMI MTP700 Unified Comfort | **6AV2128-3KB06-0AX0**<br>SIMATIC HMI MTP1000 Unified Comfort | **6AV2128-3MB06-0AX0**<br>SIMATIC HMI MTP1200 Unified Comfort | **6AV2128-3QB06-0AX0**<br>SIMATIC HMI MTP1500 Unified Comfort | **6AV2128-3UB06-0AX0**<br>SIMATIC HMI MTP1900 Unified Comfort | **6AV2128-3XB06-0AX0**<br>SIMATIC HMI MTP2200 Unified Comfort |
|---|---|---|---|---|---|---|
| **Ambient conditions** | | | | | | |
| Suited for indoor use | Yes | Yes | Yes | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No | No | No | No |
| **Ambient temperature during operation** | | | | | | |
| • Operation (vertical installation) | | | | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | | | | |
| **Configuration software** | | | | | | |
| • WinCC Unified Comfort Engineering (TIA Portal) | Yes | Yes | Yes | Yes | Yes | Yes |
| • WinCC Unified PC Engineering (TIA Portal) | Yes | Yes | Yes | Yes | Yes | Yes |
| **Languages** | | | | | | |
| **Online languages** | | | | | | |
| • Number of online/runtime languages | 32 | 32 | 32 | 32 | 32 | 32 |
| **Functionality under WinCC Unified** | | | | | | |
| Libraries | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Visual Basic Scripts | No | | | | | |
| JavaScript | Yes | Yes | Yes | Yes | Yes | Yes |
| **Message system** | | | | | | |
| • Bit messages | | | | | | |
| - Number of bit messages | 9 000 | 9 000 | 9 000 | 9 000 | 9 000 | 9 000 |
| • Analog messages | | | | | | |
| - Number of analog messages | 300 | 300 | 300 | 300 | 300 | 300 |
| • Message buffer | Yes; Configured as alarm archive | | | | | |
| - Circulating buffer | Yes | Yes | Yes | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes | Yes | Yes | Yes |
| **Parameter set management (recipes)** | | | | | | |
| • Number of parameter set types | 750 | 750 | 750 | 750 | 750 | 750 |
| • Parameter sets per parameter set type | 2 000 | 2 000 | 2 000 | 2 000 | 2 000 | 2 000 |
| • Entries per parameter set | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 |
| • Size of internal parameter set memory | 12 Mbyte | | | 12 Mbyte | | |
| • Parameter set memory expandable | Yes | Yes | Yes | Yes | Yes | Yes |

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## Technical specifications (continued)

| Article number | **6AV2128-3GB06-0AX0**<br>SIMATIC HMI MTP700 Unified Comfort | **6AV2128-3KB06-0AX0**<br>SIMATIC HMI MTP1000 Unified Comfort | **6AV2128-3MB06-0AX0**<br>SIMATIC HMI MTP1200 Unified Comfort | **6AV2128-3QB06-0AX0**<br>SIMATIC HMI MTP1500 Unified Comfort | **6AV2128-3UB06-0AX0**<br>SIMATIC HMI MTP1900 Unified Comfort | **6AV2128-3XB06-0AX0**<br>SIMATIC HMI MTP2200 Unified Comfort |
|---|---|---|---|---|---|---|
| **Variables** | | | | | | |
| • Number of variables per device | 8 000 | 8 000 | 8 000 | 8 000 | 8 000 | 8 000 |
| • Number of variables per screen | 600 | 600 | 600 | 800 | 800 | 800 |
| **Images** | | | | | | |
| • Number of configurable images | 1 200 | 1 200 | 1 200 | 1 200 | 1 200 | 1 200 |
| • Faceplate | Yes | Yes | Yes | Yes | Yes | Yes |
| **Archiving** | | | | | | |
| • Number of archives per device | 50 | 50 | 50 | 50 | 50 | 50 |
| **Transfer (upload/download)** | | | | | | |
| • USB | No | No | No | No | No | No |
| • Ethernet | Yes | Yes | Yes | Yes | Yes | Yes |
| • using external storage medium | No | No | No | No | No | No |
| **Peripherals/Options** | | | | | | |
| Peripherals | Printer, barcode reader | Printer, barcode reader | Printer, barcode reader | Printer, barcode reader | Printer, barcode reader | Printer, barcode reader |
| Printer | Yes | Yes | Yes | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | No | No | No | No | No | No |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes | Yes | Yes | Yes | Yes | Yes |
| SIMATIC HMI CF memory card Compact Flash Card | No | No | No | No | No | No |
| USB memory | Yes | Yes | Yes | Yes | Yes | Yes |
| SIMATIC IPC USB Flashdrive (USB stick) | Yes | Yes | Yes | Yes | Yes | Yes |
| SIMATIC HMI USB stick | Yes | Yes | Yes | Yes | Yes | Yes |
| Network camera | No | No | No | No | No | No |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | | | |
| Width of the housing front | 214 mm | 280 mm | 326 mm | 398 mm | 464 mm | 529 mm |
| Height of housing front | 158 mm | 205 mm | 237 mm | 257 mm | 294 mm | 331 mm |
| Mounting cutout, width | 197 mm | 264 mm | 310 mm | 382 mm | 448 mm | 513 mm |
| Mounting cutout, height | 141 mm | 189 mm | 221 mm | 241 mm | 278 mm | 315 mm |
| Overall depth | 64 mm | 64 mm | 64 mm | 73 mm | 73 mm | 73 mm |
| **Weights** | | | | | | |
| Weight without packaging | 1.4 kg | 2.1 kg | 2.8 kg | 4.3 kg | 5.5 kg | 6.9 kg |

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## Unified Comfort Panels Standard

### Ordering data

| | Article No. |
|---|---|
| *Standard design* | |
| **SIMATIC HMI MTP700 Unified Comfort**<br>Touch operation;<br>7" widescreen display | **6AV2128-3GB06-0AX0** |
| **SIMATIC HMI MTP1000 Unified Comfort**<br>Touch operation;<br>10" widescreen display | **6AV2128-3KB06-0AX0** |
| **SIMATIC HMI MTP1200 Unified Comfort**<br>Touch operation;<br>12" widescreen display | **6AV2128-3MB06-0AX0** |
| **SIMATIC HMI MTP1500 Unified Comfort**<br>Touch operation;<br>15" widescreen display | **6AV2128-3QB06-0AX0** |
| **SIMATIC HMI MTP1900 Unified Comfort**<br>Touch operation;<br>19" widescreen display | **6AV2128-3UB06-0AX0** |
| **SIMATIC HMI MTP2200 Unified Comfort**<br>Touch operation;<br>22" widescreen display | **6AV2128-3XB06-0AX0** |
| *Neutral design* | |
| **SIMATIC HMI MTP700 Unified Comfort**<br>Touch operation;<br>7" widescreen display | **6AV2128-3GB36-0AX0** |
| **SIMATIC HMI MTP1000 Unified Comfort**<br>Touch operation;<br>10" widescreen display | **6AV2128-3KB36-0AX0** |
| **SIMATIC HMI MTP1200 Unified Comfort**<br>Touch operation;<br>12" widescreen display | **6AV2128-3MB36-0AX0** |
| **SIMATIC HMI MTP1500 Unified Comfort**<br>Touch operation;<br>15" widescreen display | **6AV2128-3QB36-0AX0** |
| **SIMATIC HMI MTP1900 Unified Comfort**<br>Touch operation;<br>19" widescreen display | **6AV2128-3UB36-0AX0** |
| **SIMATIC HMI MTP2200 Unified Comfort**<br>Touch operation;<br>22" widescreen display | **6AV2128-3XB36-0AX0** |

| | Article No. |
|---|---|
| *Starter kits* | |
| *Standard design* | |
| Each consisting of:<br>• The corresponding Unified Comfort Panel<br>• WinCC Unified Comfort (TIA Portal)<br>• EDGE runtime license<br>• Industrial Ethernet cable, for test purposes<br>• SIMATIC SD Card Indoor 32 GB<br>• 5 protective films | |
| **SIMATIC HMI MTP700 Unified Comfort** | **6AV2128-3GB06-0AP0** |
| **SIMATIC HMI MTP1000 Unified Comfort** | **6AV2128-3KB06-0AP0** |
| **SIMATIC HMI MTP1200 Unified Comfort** | **6AV2128-3MB06-0AP0** |
| **SIMATIC HMI MTP1500 Unified Comfort** | **6AV2128-3QB06-0AP0** |
| **SIMATIC HMI MTP1900 Unified Comfort** | **6AV2128-3UB06-0AP0** |
| **SIMATIC HMI MTP2200 Unified Comfort** | **6AV2128-3XB06-0AP0** |
| **Software** | |
| **EDGE Runtime for SIMATIC Unified Comfort**<br>Runtime software, single license, license key for download, without software and documentation, class A, e-mail address is essential for delivery | **6AV2170-2BA00-0AA0** |

You can find more information on the Internet at:
http://www.siemens.com/unified-comfort-panels

Every Unified Comfort Panel is available in two different design variants.

- The standard design has Siemens and SIMATIC HMI branding on the front and a silver-colored aluminum frame.
- The neutral design has no branding on the front and a black aluminum frame.

For selected SIMATIC HMI Unified Comfort Panels, the option exists to apply the customer name or logo or to select the membrane color in accordance with the customer's corporate design. This is also possible for small quantities.

More information is available at:

http://www.siemens.com/express-hmi-tool

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## Overview

Comfort Panel family, KP, TP, KTP

***SIMATIC HMI Comfort Panels - Standard devices***

- Excellent HMI functionality for demanding applications
- Widescreen TFT displays with 4", 7", 9", 12", 15", 19" and 22" diagonals (all 16 million colors) with up to 40% more visualization area as compared to the predecessor devices
- Integrated high-end functionality with archives, scripts, PDF/Word/Excel viewer, Internet Explorer, Media Player and Web Server
- Dimmable displays from 0 to 100% via PROFIenergy, via the HMI project or via a controller
- Modern industrial design, cast aluminum fronts for 7" upwards
- Upright installation for all touch devices
- Data security in the event of a power failure for the device and for the SIMATIC HMI memory card
- Innovative service and commissioning concept
- Maximum performance with short screen refresh times
- Suitable for extremely harsh industrial environments thanks to extended approvals such as ATEX 2/22 and marine approvals
- All versions can be used as an OPC UA client or as a server
- Key-operated devices with LED in every function key and new text input mechanism, similar to the keypads of mobile phones
- All keys have a service life of 2 million operations
- Configuring with the WinCC engineering software of the TIA Portal engineering framework

Note:

A 7" and a 15" Comfort Outdoor version are available. These devices have been specially designed for outdoor applications in difficult environments. Best display quality, even under sunlight, UV-resistant fronts and much more.

For further information, please go to:

http://www.siemens.com/comfort-panels

## Technical specifications

| Article number | **6AV2124-2DC01-0AX0**<br>SIMATIC HMI KTP400 Comfort |
|---|---|
| **General information** | |
| Product type designation | KTP400 Comfort |
| **Display** | |
| Design of display | TFT |
| Screen diagonal | 4.3 in |
| Display width | 95 mm |
| Display height | 53.8 mm |
| Number of colors | 16 777 216 |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 480 Pixel |
| • Vertical image resolution | 272 Pixel |
| **Backlighting** | |
| • MTBF backlighting (at 25 °C) | 80 000 h |
| • Backlight dimmable | Yes; 0-100 % |
| **Control elements** | |
| **Keyboard fonts** | |
| • Function keys | |
| - Number of function keys | 4 |
| - Number of function keys with LEDs | 4 |
| • Keys with LED | Yes |
| • System keys | No |
| • Numeric keyboard | Yes; Onscreen keyboard |
| • alphanumeric keyboard | Yes; Onscreen keyboard |
| **Installation type/mounting** | |
| Mounting position | vertical |
| Mounting in portrait format possible | Yes |
| Mounting in landscape format possible | Yes |
| maximum permissible angle of inclination without external ventilation | 35° |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| **Memory** | |
| Flash | Yes |
| RAM | Yes |
| Memory available for user data | 4 Mbyte |
| **Type of output** | |
| Info LED | No |
| Power LED | No |
| Error LED | No |
| Acoustics | |
| • Buzzer | Yes |
| • Speaker | No |
| **Time of day** | |
| **Clock** | |
| • Hardware clock (real-time) | Yes |
| • Software clock | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes |

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## Technical specifications (continued)

| Article number | 6AV2124-2DC01-0AX0<br>SIMATIC HMI KTP400 Comfort |
|---|---|
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1 |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined |
| Number of RS 422 interfaces | 1 |
| Number of RS 232 interfaces | 0 |
| Number of USB interfaces | 1; USB 2.0 |
| • USB Mini B | 1; 5-pole |
| Number of 20 mA interfaces (TTY) | 0 |
| Number of parallel interfaces | 0 |
| Number of other interfaces | 0 |
| Number of SD card slots | 2 |
| With software interfaces | No |
| **Industrial Ethernet** | |
| • Industrial Ethernet status LED | 2 |
| • Number of ports of the integrated switch | 1; No switch integrated |
| **Protocols** | |
| PROFINET | Yes |
| Supports protocol for PROFINET IO | Yes |
| IRT | No |
| PROFIBUS | Yes |
| MPI | Yes |
| **Redundancy mode** | |
| **Media redundancy** | |
| - MRP | No |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes |
| • ATEX Zone 22 | Yes |
| • IECEx Zone 2 | Yes |
| • IECEx Zone 22 | Yes |
| • cULus Class I Zone 1 | No |
| • cULus Class I Zone 2, Division 2 | Yes |
| • FM Class I Division 2 | Yes |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| • Polski Rejestr Statkow (PRS) | No |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Operation (vertical installation) | |
| - For vertical installation, min. | 0 °C |
| - For vertical installation, max. | 50 °C |
| **Relative humidity** | |
| • Operation, max. | 90 %; no condensation |
| **Operating systems** | |
| proprietary | No |
| **pre-installed operating system** | |
| • Windows CE | Yes |

| Article number | 6AV2124-2DC01-0AX0<br>SIMATIC HMI KTP400 Comfort |
|---|---|
| **Configuration** | |
| Message indicator | Yes |
| Alarm system (incl. buffer and acknowledgment) | Yes |
| Process value display (output) | Yes |
| Process value default (input) possible | Yes |
| Recipe management | Yes |
| **Configuration software** | |
| • STEP 7 Basic (TIA Portal) | No |
| • STEP 7 Professional (TIA Portal) | No |
| • WinCC flexible Compact | No |
| • WinCC flexible Standard | No |
| • WinCC flexible Advanced | No |
| • WinCC Basic (TIA Portal) | No |
| • WinCC Comfort (TIA Portal) | Yes; from V11 |
| • WinCC Advanced (TIA Portal) | Yes; from V11 |
| • WinCC Professional (TIA Portal) | Yes; from V11 |
| **Languages** | |
| **Online languages** | |
| • Number of online/runtime languages | 32 |
| **Project languages** | |
| • Languages per project | 32 |
| **Functionality under WinCC (TIA Portal)** | |
| Libraries | Yes |
| Applications/options | |
| • Web browser | Yes |
| • Pocket Word | Yes |
| • Pocket Excel | Yes |
| • PDF Viewer | Yes |
| • Media Player | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes |
| • SIMATIC WinCC Audit | Yes |
| Number of Visual Basic Scripts | Yes |
| Task planner | |
| • time-controlled | Yes |
| • task-controlled | Yes |
| Help system | |
| • Number of characters per info text | 70 |
| **Message system** | |
| • Number of alarm classes | 32 |
| • Bit messages | |
| - Number of bit messages | 2 000 |
| • Analog messages | |
| - Number of analog messages | 50 |
| • S7 alarm number procedure | Yes |
| • System messages HMI | Yes |
| • System messages, other (SIMATIC S7, Sinumerik, Simotion, etc.) | Yes |
| • Number of characters per message | 80 |
| • Number of process values per message | 8 |
| • Acknowledgment groups | Yes |
| • Message indicator | Yes |
| • Message buffer | |
| - Number of entries | 256 |
| - Circulating buffer | Yes |
| - retentive | Yes |
| - maintenance-free | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2124-2DC01-0AX0**<br>SIMATIC HMI KTP400 Comfort |
|---|---|
| **Recipe management** | |
| • Number of recipes | 100 |
| • Data records per recipe | 200 |
| • Entries per data record | 200 |
| • Size of internal recipe memory | 512 kbyte |
| • Recipe memory expandable | Yes |
| **Variables** | |
| • Number of variables per device | 1 024 |
| • Number of variables per screen | 50 |
| • Limit values | Yes |
| • Multiplexing | Yes |
| • Structures | Yes |
| • Arrays | Yes |
| **Images** | |
| • Number of configurable images | 500 |
| • Permanent window/default | Yes |
| • Global image | Yes |
| • Pop-up images | Yes |
| • Slide-in images | Yes |
| • Image selection by PLC | Yes |
| • Image number in the PLC | Yes |
| **Archiving** | |
| • Number of archives per device | 10 |
| • Number of entries per archive | 10 000 |
| • Message archive | Yes |
| • Process value archive | Yes |
| • Archiving methods | |
| - Sequential archive | Yes |
| - Short-term archive | Yes |
| • Memory location | |
| - Memory card | Yes |
| - USB memory | Yes |
| - Ethernet | Yes |
| • Data storage format | |
| - CSV | Yes |
| - TXT | Yes |
| - RDB | Yes |
| **Security** | |
| • Number of user groups | 50 |
| • Number of user rights | 32 |
| • Number of users | 50 |
| • Password export/import | Yes |
| • SIMATIC Logon | Yes |
| **Logging through printer** | |
| • Alarms | Yes |
| • Report (shift log) | Yes |
| • Hardcopy | Yes |
| • Electronic print to file | Yes; PDF, HTML |
| **Character sets** | |
| • Keyboard fonts | |
| - US English | Yes |
| **Transfer (upload/download)** | |
| • MPI/PROFIBUS DP | Yes |
| • USB | Yes |
| • Ethernet | Yes |
| • using external storage medium | Yes |

| Article number | **6AV2124-2DC01-0AX0**<br>SIMATIC HMI KTP400 Comfort |
|---|---|
| **Process coupling** | |
| • S7-1200 | Yes |
| • S7-1500 | Yes |
| • S7-200 | Yes |
| • S7-300/400 | Yes |
| • LOGO! | Yes |
| • WinAC | Yes |
| • SINUMERIK | Yes; with SINUMERIK option package |
| • SIMOTION | Yes |
| • Allen Bradley (EtherNet/IP) | Yes |
| • Allen Bradley (DF1) | Yes |
| • Mitsubishi (MC TCP/IP) | Yes |
| • Mitsubishi (FX) | Yes |
| • OMRON (FINS TCP) | No |
| • OMRON (LINK/Multilink) | Yes |
| • Modicon (Modbus TCP/IP) | Yes |
| • Modicon (Modbus) | Yes |
| • OPC UA Client | Yes |
| • OPC UA Server | Yes |
| **Service tools/configuration aids** | |
| • Backup/Restore manually | Yes |
| • Backup/Restore automatically | Yes |
| • Simulation | Yes |
| • Device switchover | Yes |
| **Peripherals/Options** | |
| Printer | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB |
| SIMATIC HMI CF memory card Compact Flash Card | No |
| USB memory | Yes |
| SIMATIC IPC USB Flashdrive (USB stick) | Yes; Up to 16 GB |
| SIMATIC HMI USB stick | Yes; Up to 8 GB |
| Network camera | Yes |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | Yes |
| • Aluminum | No |
| • Stainless steel | No |
| **Dimensions** | |
| Width of the housing front | 140 mm |
| Height of housing front | 116 mm |
| Mounting cutout, width | 123 mm |
| Mounting cutout, height | 99 mm |
| Overall depth | 49 mm |
| **Weights** | |
| Weight without packaging | 0.6 kg |
| Weight incl. packaging | 0.7 kg |

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## Technical specifications (continued)

| Article number | **6AV2124-1DC01-0AX0**<br>SIMATIC HMI KP400 Comfort | **6AV2124-1GC01-0AX0**<br>SIMATIC HMI KP700 Comfort | **6AV2124-1JC01-0AX0**<br>SIMATIC HMI KP900 Comfort | **6AV2124-1MC01-0AX0**<br>SIMATIC HMI KP1200 Comfort | **6AV2124-1QC02-0AX1**<br>SIMATIC HMI KP1500 Comfort |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | KP400 Comfort | KP700 Comfort | KP900 Comfort | KP1200 Comfort | KP1500 Comfort |
| **Display** | | | | | |
| Design of display | TFT | TFT | TFT | TFT | TFT |
| Screen diagonal | 4.3 in | 7 in | 9 in | 12.1 in | 15.4 in |
| Display width | 95 mm | 152.4 mm | 195 mm | 261.1 mm | 331.2 mm |
| Display height | 53.8 mm | 91.4 mm | 117 mm | 163.2 mm | 207 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | | | |
| • Horizontal image resolution | 480 Pixel | 800 Pixel | 800 Pixel | 1 280 Pixel | 1 280 Pixel |
| • Vertical image resolution | 272 Pixel | 480 Pixel | 480 Pixel | 800 Pixel | 800 Pixel |
| **Backlighting** | | | | | |
| • MTBF backlighting (at 25 °C) | 80 000 h | 80 000 h | 80 000 h | 80 000 h | 80 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; LED, dimmable |
| **Control elements** | | | | | |
| **Keyboard fonts** | | | | | |
| • Function keys | | | | | |
| - Number of function keys | 8 | 24 | 26 | 34 | 36 |
| **Touch operation** | | | | | |
| • Design as touch screen | No | No | No | No | No |
| **Installation type/mounting** | | | | | |
| Mounting in portrait format possible | No | No | No | No | No |
| **Supply voltage** | | | | | |
| Type of supply voltage | DC | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | | | |
| Flash | Yes | Yes | Yes | Yes | Yes |
| RAM | Yes | Yes | Yes | Yes | Yes |
| Memory available for user data | 4 Mbyte | 12 Mbyte | 12 Mbyte | 12 Mbyte | 24 Mbyte |
| **Type of output** | | | | | |
| Acoustics | | | | | |
| • Speaker | No | Yes | Yes | Yes | Yes |
| **Time of day** | | | | | |
| **Clock** | | | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | | | | |
| • synchronizable | Yes | Yes | Yes | Yes | Yes |
| **Interfaces** | | | | | |
| Number of industrial Ethernet interfaces | 1 | 1; 2 ports (switch) | 1; 2 ports (switch) | 1; 2 ports (switch) | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | | | | |
| Number of RS 422 interfaces | 1 | 1 | 1 | 1 | 0 |
| Number of RS 232 interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of USB interfaces | 1; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole | 1; 5-pole | 1; 5-pole | 1; 5-pole | |
| Number of 20 mA interfaces (TTY) | 0 | 0 | 0 | 0 | 0 |
| Number of parallel interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of other interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of SD card slots | 2 | 2 | 2 | 2 | 2 |
| With software interfaces | No | No | No | No | No |
| **Industrial Ethernet** | | | | | |
| • Industrial Ethernet status LED | 2 | 2 | 2 | 2 | 3 |
| • Number of ports of the integrated switch | 1; No switch integrated | 2 | 2 | 2 | 2 |
| **Protocols** | | | | | |
| PROFINET | Yes | Yes | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes | Yes | Yes |
| IRT | No | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes |
| PROFIBUS | Yes | Yes | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes | Yes | Yes |
| **Redundancy mode** | | | | | |
| **Media redundancy** | | | | | |
| - MRP | No | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2124-1DC01-0AX0**<br>SIMATIC HMI KP400 Comfort | **6AV2124-1GC01-0AX0**<br>SIMATIC HMI KP700 Comfort | **6AV2124-1JC01-0AX0**<br>SIMATIC HMI KP900 Comfort | **6AV2124-1MC01-0AX0**<br>SIMATIC HMI KP1200 Comfort | **6AV2124-1QC02-0AX1**<br>SIMATIC HMI KP1500 Comfort |
|---|---|---|---|---|---|
| **Degree and class of protection** | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | | | | | Yes |
| **Use in hazardous areas** | | | | | |
| • ATEX Zone 2 | Yes | Yes | Yes | Yes | No |
| • ATEX Zone 22 | Yes | Yes | Yes | Yes | No |
| • IECEx Zone 2 | Yes | Yes | Yes | Yes | No |
| • IECEx Zone 22 | Yes | Yes | Yes | Yes | No |
| • cULus Class I Zone 1 | No | No | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes | Yes | Yes; For inscription on device rating plate |
| • cULus Class II Division 2 | | | | | No; Available soon |
| • FM Class I Division 2 | Yes | Yes | Yes | Yes | Yes; For inscription on device rating plate |
| • FM Class II Division 2 | | | | | No; Available soon |
| **Marine approval** | | | | | |
| • Germanischer Lloyd (GL) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • American Bureau of Shipping (ABS) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • Bureau Veritas (BV) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • Det Norske Veritas (DNV) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • Korean Register of Shipping (KRS) | | | | | No |
| • Lloyds Register of Shipping (LRS) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes | Yes | Yes; As of product version: 10 | No |
| • Polski Rejestr Statkow (PRS) | No | No | No | No | No |
| • Chinese Classification Society (CCS) | | | | | No |
| **Ambient conditions** | | | | | |
| Suited for indoor use | | | | | Yes |
| Suited for outdoor use | | | | | No |
| **Ambient temperature during operation** | | | | | |
| • Operation (vertical installation) | | | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) |
| **Relative humidity** | | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Operating systems** | | | | | |
| proprietary | No | No | No | No | No |
| **pre-installed operating system** | | | | | |
| • Windows CE | Yes | Yes | Yes | Yes | Yes; Windows Embedded Compact 2013 |
| **Configuration** | | | | | |
| **Configuration software** | | | | | |
| • WinCC Comfort (TIA Portal) | Yes; from V11 | Yes; from V11 | Yes; from V11 | Yes; from V11 | Yes; V14 SP1 HSP and higher |
| **Languages** | | | | | |
| **Online languages** | | | | | |
| • Number of online/runtime languages | 32 | 32 | 32 | 32 | 32 |

## Technical specifications (continued)

| Article number | **6AV2124-1DC01-0AX0**<br>SIMATIC HMI KP400 Comfort | **6AV2124-1GC01-0AX0**<br>SIMATIC HMI KP700 Comfort | **6AV2124-1JC01-0AX0**<br>SIMATIC HMI KP900 Comfort | **6AV2124-1MC01-0AX0**<br>SIMATIC HMI KP1200 Comfort | **6AV2124-1QC02-0AX1**<br>SIMATIC HMI KP1500 Comfort |
|---|---|---|---|---|---|
| **Functionality under WinCC (TIA Portal)** | | | | | |
| Libraries | Yes | Yes | Yes | Yes | Yes |
| Applications/options | | | | | |
| • Web browser | Yes | Yes | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes | Yes | Yes |
| Task planner | | | | | |
| • time-controlled | Yes | Yes | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes | Yes | Yes |
| Help system | | | | | |
| • Number of characters per info text | 70 | 70 | 70 | 70 | 320 |
| **Message system** | | | | | |
| • Bit messages | | | | | |
| - Number of bit messages | 2 000 | 4 000 | 4 000 | 4 000 | 6 000 |
| • Analog messages | | | | | |
| - Number of analog messages | 50 | 200 | 200 | 200 | 200 |
| • Message buffer | | | | | |
| - Number of entries | 256 | 1 024 | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes | Yes | Yes |
| - maintenance-free | Yes | Yes | Yes | Yes | Yes |
| **Recipe management** | | | | | |
| • Number of recipes | 100 | 300 | 300 | 300 | 500 |
| • Size of internal recipe memory | 512 kbyte | 2 Mbyte | 2 Mbyte | 2 Mbyte | 4 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes | Yes | Yes |
| **Variables** | | | | | |
| • Number of variables per device | 1 024 | 2 048 | 2 048 | 2 048 | 4 096 |
| • Number of variables per screen | 50 | 400 | 400 | 400 | 400 |
| **Images** | | | | | |
| • Number of configurable images | 500 | 500 | 500 | 500 | 750 |
| **Archiving** | | | | | |
| • Number of archives per device | 10 | 50 | 50 | 50 | 50 |
| **Security** | | | | | |
| • Number of user groups | 50 | 50 | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes | Yes | Yes |
| **Logging through printer** | | | | | |
| • Alarms | Yes | Yes | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes | Yes | Yes |
| • USB | Yes | Yes | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes | Yes | Yes |
| • using external storage medium | Yes | Yes | Yes | Yes | Yes |

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## Technical specifications (continued)

| Article number | **6AV2124-1DC01-0AX0**<br>SIMATIC HMI KP400 Comfort | **6AV2124-1GC01-0AX0**<br>SIMATIC HMI KP700 Comfort | **6AV2124-1JC01-0AX0**<br>SIMATIC HMI KP900 Comfort | **6AV2124-1MC01-0AX0**<br>SIMATIC HMI KP1200 Comfort | **6AV2124-1QC02-0AX1**<br>SIMATIC HMI KP1500 Comfort |
|---|---|---|---|---|---|
| **Process coupling** | | | | | |
| • S7-1200 | Yes | Yes | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes | Yes | Yes |
| • SINUMERIK | Yes; with SINUMERIK option package | Yes; with SINUMERIK option package | Yes; with SINUMERIK option package | Yes; with SINUMERIK option package | Yes; With SINUMERIK option package as from WinCC V15 or higher |
| • SIMOTION | Yes | Yes | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes | Yes | Yes |
| **Peripherals/Options** | | | | | |
| Printer | Yes | Yes | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes | Yes | Yes |
| **Mechanics/material** | | | | | |
| Enclosure material (front) | | | | | |
| • Plastic | Yes | No | No | No | No |
| • Aluminum | No | Yes | Yes | Yes | Yes |
| • Stainless steel | No | No | No | No | No |
| **Dimensions** | | | | | |
| Width of the housing front | 152 mm | 308 mm | 362 mm | 454 mm | 483 mm |
| Height of housing front | 188 mm | 204 mm | 230 mm | 289 mm | 310 mm |
| Mounting cutout, width | 135 mm | 281 mm | 338 mm | 434 mm | 450 mm |
| Mounting cutout, height | 171 mm | 177 mm | 206 mm | 269 mm | 291 mm |
| Overall depth | 49 mm | 63 mm | 63 mm | 65 mm | 75 mm |
| **Weights** | | | | | |
| Weight without packaging | 0.8 kg | 2.2 kg | 2.7 kg | 4.4 kg | 4.7 kg |
| Weight incl. packaging | 0.9 kg | 2.8 kg | 3.4 kg | 5.7 kg | |

| Article number | **6AV2124-0GC01-0AX0**<br>SIMATIC HMI TP700 Comfort | **6AV2124-0JC01-0AX0**<br>SIMATIC HMI TP900 Comfort | **6AV2124-0MC01-0AX0**<br>SIMATIC HMI TP1200 Comfort | **6AV2124-0QC02-0AX1**<br>SIMATIC HMI TP1500 Comfort | **6AV2124-0UC02-0AX1**<br>SIMATIC HMI TP1900 Comfort | **6AV2124-0XC02-0AX1**<br>SIMATIC HMI TP2200 Comfort |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | TP700 Comfort | TP900 Comfort | TP1200 Comfort | TP1500 Comfort | TP1900 Comfort | TP2200 Comfort |
| **Display** | | | | | | |
| Design of display | TFT | TFT | TFT | TFT | TFT | TFT |
| Screen diagonal | 7 in | 9 in | 12.1 in | 15.4 in | 18.5 in | 21.5 in |
| Display width | 152.4 mm | 195 mm | 261.1 mm | 331.2 mm | 409.8 mm | 475.2 mm |
| Display height | 91.4 mm | 117 mm | 163.2 mm | 207 mm | 230.4 mm | 267.3 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 800 Pixel | 800 Pixel | 1 280 Pixel | 1 280 Pixel | 1 366 Pixel | 1 920 Pixel |
| • Vertical image resolution | 480 Pixel | 480 Pixel | 800 Pixel | 800 Pixel | 768 Pixel | 1 080 Pixel |
| **Backlighting** | | | | | | |
| • MTBF backlighting (at 25 °C) | 80 000 h | 80 000 h | 80 000 h | 80 000 h | 50 000 h | 30 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | | |
| **Keyboard fonts** | | | | | | |
| • Function keys | | | | | | |
| - Number of function keys | 0 | 0 | 0 | 0 | 0 | 0 |

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## Technical specifications (continued)

| Article number | **6AV2124-0GC01-0AX0**<br>SIMATIC HMI TP700 Comfort | **6AV2124-0JC01-0AX0**<br>SIMATIC HMI TP900 Comfort | **6AV2124-0MC01-0AX0**<br>SIMATIC HMI TP1200 Comfort | **6AV2124-0QC02-0AX1**<br>SIMATIC HMI TP1500 Comfort | **6AV2124-0UC02-0AX1**<br>SIMATIC HMI TP1900 Comfort | **6AV2124-0XC02-0AX1**<br>SIMATIC HMI TP2200 Comfort |
|---|---|---|---|---|---|---|
| **Touch operation** | | | | | | |
| • Design as touch screen | Yes | Yes | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | | | |
| Mounting position | vertical | vertical | vertical | vertical | vertical | vertical |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| maximum permissible angle of inclination without external ventilation | 35° | 35° | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | | | |
| Type of supply voltage | DC | DC | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | | | | |
| Flash | Yes | Yes | Yes | Yes | Yes | Yes |
| RAM | Yes | Yes | Yes | Yes | Yes | Yes |
| Memory available for user data | 12 Mbyte | 12 Mbyte | 12 Mbyte | 24 Mbyte | 24 Mbyte | 24 Mbyte |
| **Type of output** | | | | | | |
| Acoustics | | | | | | |
| • Buzzer | No | No | No | No | No | No |
| **Time of day** | | | | | | |
| **Clock** | | | | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | | | | | |
| • synchronizable | Yes | Yes | Yes | Yes | Yes | Yes |
| **Interfaces** | | | | | | |
| Number of industrial Ethernet interfaces | 1; 2 ports (switch) | 1; 2 ports (switch) | 1; 2 ports (switch) | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of RS 422 interfaces | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 |
| Number of RS 232 interfaces | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole | 1; 5-pole | 1; 5-pole | | | |
| Number of 20 mA interfaces (TTY) | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of parallel interfaces | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of other interfaces | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of SD card slots | 2 | 2 | 2 | 2 | 2 | 2 |
| With software interfaces | No | No | No | No | No | No |
| **Industrial Ethernet** | | | | | | |
| • Industrial Ethernet status LED | 2 | 2 | 2 | 3 | 3 | 3 |
| • Number of ports of the integrated switch | 2 | 2 | 2 | 2 | 2 | 2 |

## Technical specifications (continued)

| Article number | **6AV2124-0GC01-0AX0**<br>SIMATIC HMI TP700 Comfort | **6AV2124-0JC01-0AX0**<br>SIMATIC HMI TP900 Comfort | **6AV2124-0MC01-0AX0**<br>SIMATIC HMI TP1200 Comfort | **6AV2124-0QC02-0AX1**<br>SIMATIC HMI TP1500 Comfort | **6AV2124-0UC02-0AX1**<br>SIMATIC HMI TP1900 Comfort | **6AV2124-0XC02-0AX1**<br>SIMATIC HMI TP2200 Comfort |
|---|---|---|---|---|---|---|
| **Protocols** | | | | | | |
| PROFINET | Yes | Yes | Yes | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes | Yes | Yes | Yes |
| IRT | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes | Yes | Yes |
| PROFIBUS | Yes | Yes | Yes | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes | Yes | Yes | Yes |
| **Redundancy mode** | | | | | | |
| **Media redundancy** | | | | | | |
| - MRP | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | | | | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | | | |
| • ATEX Zone 2 | Yes | Yes | Yes | No | No | No |
| • ATEX Zone 22 | Yes | Yes | Yes | No | No | No |
| • IECEx Zone 2 | Yes | Yes | Yes | No | No | No |
| • IECEx Zone 22 | Yes | Yes | Yes | No | No | No |
| • cULus Class I Zone 1 | No | No | No | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • cULus Class II Division 2 | | | | No; Available soon | No; Available soon | No; Available soon |
| • FM Class I Division 2 | Yes | Yes | Yes | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • FM Class II Division 2 | | | | No; Available soon | No; Available soon | No; Available soon |
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • American Bureau of Shipping (ABS) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • Bureau Veritas (BV) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • Det Norske Veritas (DNV) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • Korean Register of Shipping (KRS) | | | | No | No | No |
| • Lloyds Register of Shipping (LRS) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes | Yes; As of product version: 10 | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No | No | No | No |
| • Chinese Classification Society (CCS) | | | | No | No | No |

## Technical specifications (continued)

| Article number | **6AV2124-0GC01-0AX0**<br>SIMATIC HMI TP700 Comfort | **6AV2124-0JC01-0AX0**<br>SIMATIC HMI TP900 Comfort | **6AV2124-0MC01-0AX0**<br>SIMATIC HMI TP1200 Comfort | **6AV2124-0QC02-0AX1**<br>SIMATIC HMI TP1500 Comfort | **6AV2124-0UC02-0AX1**<br>SIMATIC HMI TP1900 Comfort | **6AV2124-0XC02-0AX1**<br>SIMATIC HMI TP2200 Comfort |
|---|---|---|---|---|---|---|
| **Ambient conditions** | | | | | | |
| Suited for indoor use | | | | Yes | Yes | Yes |
| Suited for outdoor use | | | | No | No | No |
| **Ambient temperature during operation** | | | | | | |
| • Operation (vertical installation) | | | | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 45 °C | 45 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | | | | |
| **Configuration software** | | | | | | |
| • WinCC Comfort (TIA Portal) | Yes; from V11 | Yes; from V11 | Yes; from V11 | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher |
| **Languages** | | | | | | |
| **Online languages** | | | | | | |
| • Number of online/runtime languages | 32 | 32 | 32 | 32 | 32 | 32 |
| **Project languages** | | | | | | |
| • Languages per project | 32 | 32 | 32 | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | | | | |
| Libraries | Yes | Yes | Yes | Yes | Yes | Yes |
| Applications/options | | | | | | |
| • Web browser | Yes | Yes | Yes | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes | Yes | Yes | Yes |
| Task planner | | | | | | |
| • time-controlled | Yes | Yes | Yes | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes | Yes | Yes | Yes |
| Help system | | | | | | |
| • Number of characters per info text | 70 | 70 | 70 | 320 | 320 | 320 |
| **Message system** | | | | | | |
| • Bit messages | | | | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 | 6 000 | 6 000 | 6 000 |
| • Analog messages | | | | | | |
| - Number of analog messages | 200 | 200 | 200 | 200 | 200 | 200 |
| • Message buffer | | | | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes | Yes | Yes | Yes |
| - maintenance-free | Yes | Yes | Yes | Yes | Yes | Yes |
| **Recipe management** | | | | | | |
| • Number of recipes | 300 | 300 | 300 | 500 | 500 | 500 |
| • Data records per recipe | 500 | 500 | 500 | 1 000 | 1 000 | 1 000 |
| • Entries per data record | 1 000 | 1 000 | 1 000 | 2 000 | 2 000 | 2 000 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte | 4 Mbyte | 4 Mbyte | 4 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes | Yes | Yes | Yes |
| **Variables** | | | | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 | 4 096 | 4 096 | 4 096 |
| • Number of variables per screen | 400 | 400 | 400 | 400 | 400 | 400 |
| • Limit values | Yes | Yes | Yes | Yes | Yes | Yes |
| • Multiplexing | Yes | Yes | Yes | Yes | Yes | Yes |
| • Structures | Yes | Yes | Yes | Yes | Yes | Yes |
| • Arrays | Yes | Yes | Yes | Yes | Yes | Yes |
| **Images** | | | | | | |
| • Number of configurable images | 500 | 500 | 500 | 750 | 750 | 750 |
| **Archiving** | | | | | | |
| • Number of archives per device | 50 | 50 | 50 | 50 | 50 | 50 |

## Technical specifications (continued)

| Article number | **6AV2124-0GC01-0AX0**<br>SIMATIC HMI TP700 Comfort | **6AV2124-0JC01-0AX0**<br>SIMATIC HMI TP900 Comfort | **6AV2124-0MC01-0AX0**<br>SIMATIC HMI TP1200 Comfort | **6AV2124-0QC02-0AX1**<br>SIMATIC HMI TP1500 Comfort | **6AV2124-0UC02-0AX1**<br>SIMATIC HMI TP1900 Comfort | **6AV2124-0XC02-0AX1**<br>SIMATIC HMI TP2200 Comfort |
|---|---|---|---|---|---|---|
| **Security** | | | | | | |
| • Number of user groups | 50 | 50 | 50 | 50 | 50 | 50 |
| • Number of user rights | 32 | 32 | 32 | 32 | 32 | 32 |
| • Number of users | 50 | 50 | 50 | 50 | 50 | 50 |
| • Password export/import | Yes | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC Logon | Yes | Yes | Yes | Yes | Yes | Yes |
| **Logging through printer** | | | | | | |
| • Alarms | Yes | Yes | Yes | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes | Yes | Yes | Yes |
| **Process coupling** | | | | | | |
| • S7-1200 | Yes | Yes | Yes | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes | Yes | Yes | Yes |
| **Peripherals/Options** | | | | | | |
| Printer | Yes | Yes | Yes | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes | Yes | Yes | Yes |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Plastic | No | No | No | No | No | No |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | Yes |
| • Stainless steel | No | No | No | No | No | No |
| **Dimensions** | | | | | | |
| Width of the housing front | 214 mm | 274 mm | 330 mm | 415 mm | 483 mm | 560 mm |
| Height of housing front | 158 mm | 190 mm | 241 mm | 310 mm | 337 mm | 380 mm |
| Mounting cutout, width | 197 mm | 251 mm | 310 mm | 396 mm | 465 mm | 542 mm |
| Mounting cutout, height | 141 mm | 166 mm | 221 mm | 291 mm | 319 mm | 362 mm |
| Overall depth | 63 mm | 63 mm | 65 mm | 75 mm | 75 mm | 75 mm |
| **Weights** | | | | | | |
| Weight without packaging | 1.4 kg | 1.9 kg | 2.8 kg | 4.4 kg | 5.6 kg | 6.7 kg |
| Weight incl. packaging | 1.6 kg | 2.6 kg | 3.5 kg | | | |

## Comfort Panels Standard devices

### Ordering data

| | Article No. |
|---|---|
| ***SIMATIC HMI Comfort Panels*** | |
| ***Key and touch devices*** | |
| **SIMATIC HMI KTP400 Comfort**<br>Key/touch-screen operation;<br>4" widescreen display | **6AV2124-2DC01-0AX0** |
| ***Touch devices*** | |
| **SIMATIC HMI TP700 Comfort**<br>Touch-screen operation;<br>7" widescreen display | **6AV2124-0GC01-0AX0** |
| **SIMATIC HMI TP900 Comfort**<br>Touch-screen operation;<br>9" widescreen display | **6AV2124-0JC01-0AX0** |
| **SIMATIC HMI TP1200 Comfort**<br>Touch-screen operation;<br>12" widescreen display | **6AV2124-0MC01-0AX0** |
| **SIMATIC HMI TP1500 Comfort**<br>Touch-screen operation;<br>15" widescreen display | **6AV2124-0QC02-0AX1** |
| **SIMATIC HMI TP1900 Comfort**<br>Touch-screen operation;<br>19" widescreen display | **6AV2124-0UC02-0AX1** |
| **SIMATIC HMI TP2200 Comfort**<br>Touch-screen operation;<br>22" widescreen display | **6AV2124-0XC02-0AX1** |
| ***Key devices*** | |
| **SIMATIC HMI KP400 Comfort**<br>Key operation;<br>4" widescreen display | **6AV2124-1DC01-0AX0** |
| **SIMATIC HMI KP700 Comfort**<br>Key operation;<br>7" widescreen display | **6AV2124-1GC01-0AX0** |
| **SIMATIC HMI KP900 Comfort**<br>Key operation;<br>9" widescreen display | **6AV2124-1JC01-0AX0** |
| **SIMATIC HMI KP1200 Comfort**<br>Key operation;<br>12" widescreen display | **6AV2124-1MC01-0AX0** |
| **SIMATIC HMI KP1500 Comfort**<br>Key operation;<br>15" widescreen display | **6AV2124-1QC02-0AX1** |
| ***Accessories*** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

### More information

More information is available on the Internet at:

http://www.siemens.com/comfort-panels

You can find an overview of approved printers, supply sources and printer settings on the Internet at:

http://support.industry.siemens.com/cs/ww/en/view/11376409

Certain SIMATIC HMI Comfort Panels allow the application of a customer name or logo, or selection of the membrane color in accordance with the customer's corporate design. This is also possible for small quantities.

More information is available at:

http://www.siemens.com/express-hmi-tool

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## Overview

- Excellent HMI functionality for demanding applications
- Widescreen TFT displays with 4", 7", 9", 12", 15", 19" and 22" diagonals (all 16 million colors) with up to 40% more visualization area as compared to the predecessor devices
- Integrated high-end functionality with archives, scripts, PDF/Word/Excel viewer, Internet Explorer, Media Player
- Dimmable displays from 0 to 100% via PROFIenergy, via the HMI project or via a controller
- Modern industrial design, cast aluminum fronts for 7" upwards
- Upright installation for all touch devices
- Optimal selection option: seven touch and five key versions are available
- Data security in the event of a power failure for the device and for the SIMATIC HMI memory card
- Innovative service and commissioning concept through second SD card (automatic backup)
- Easy project transfer via standard cable (standard Ethernet cable, standard USB cable)
- Maximum performance with short screen refresh times
- Suitable for extremely harsh industrial environments thanks to extended approvals such as ATEX 2/22
- Wide range of communication options: PROFIBUS and PROFINET onboard; 2x PROFINET with integrated switch for 7" models or larger; plus 1 additional PROFINET with Gigabit support for 15" models or larger
- All variants can be used as an OPC UA client or as an OPC DA server
- Key-operated devices with LED in every function key and new text input mechanism, similar to the keypads of mobile phones
- Key-operated devices with stamped keys for optimum tactile feedback
- All keys have a service life of 2 million operations
- Configuring with the WinCC engineering software of the TIA Portal

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products.

SIPLUS extreme-specific information was added.

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## Technical specifications

| Article number | **6AG1124-2DC01-4AX0**<br>SIPLUS HMI KTP400 COMFORT | **6AG1124-0GC01-4AX0**<br>SIPLUS HMI TP700 COMFORT | **6AG1124-0JC01-4AX0**<br>SIPLUS HMI TP900 COMFORT | **6AG1124-0MC01-4AX0**<br>SIPLUS HMI TP1200 COMFORT |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | KTP400 Comfort | TP700 Comfort | TP900 Comfort | TP1200 Comfort |
| **Ambient conditions** | | | | |
| Suited for indoor use | Yes | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No | No |
| **Ambient temperature during operation** | | | | |
| • Operation (vertical installation) | | | | |
| - For vertical installation, min. | 0 °C; = Tmin | 0 °C; = Tmin | 0 °C; = Tmin | 0 °C; = Tmin |
| - For vertical installation, max. | 50 °C; = Tmax | 50 °C; = Tmax | 50 °C; = Tmax | 50 °C; = Tmax |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| **Relative humidity** | | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | | | |
| **Resistance** | | | | |
| **Coolants and lubricants** | | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air |
| **Use in stationary industrial systems** | | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * |
| **Use on ships/at sea** | | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | | | |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | | |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * |
| **Usage in industrial process technology** | | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | | |
| **Remark** | | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | | | |
| **Conformal coating** | | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | | | |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

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## Technical specifications (continued)

| Article number | **6AG1124-1DC01-4AX0**<br>SIPLUS HMI KP400 COMFORT | **6AG1124-1GC01-4AX0**<br>SIPLUS HMI KP700 COMFORT | **6AG1124-1JC01-4AX0**<br>SIPLUS HMI KP900 COMFORT | **6AG1124-1MC01-4AX0**<br>SIPLUS HMI KP1200 COMFORT | **6AG1124-1QC02-4AX1**<br>SIPLUS HMI KP1500 Comfort |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | KP400 Comfort | KP700 Comfort | KP900 Comfort | KP1200 Comfort | KP1500 Comfort |
| **Ambient conditions** | | | | | |
| Suited for indoor use | Yes | Yes | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No | No | No |
| **Ambient temperature during operation** | | | | | |
| • Operation (vertical installation) | | | | | |
| - For vertical installation, min. | 0 °C; = Tmin | 0 °C; = Tmin | 0 °C; = Tmin | 0 °C; = Tmin | 0 °C |
| - For vertical installation, max. | 50 °C; = Tmax | 50 °C; = Tmax | 50 °C; = Tmax | 50 °C; = Tmax | 50 °C; (55 °C, see entry ID: 64847814) |
| **Altitude during operation relating to sea level** | | | | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m | 5 000 m | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) //<br>Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) //<br>Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | | | | |
| **Relative humidity** | | | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | | | | |
| **Resistance** | | | | | |
| **Coolants and lubricants** | | | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air |
| **Use in stationary industrial systems** | | | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | | | | |
| **Use on ships/at sea** | | | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | | | | |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | | | |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * |
| **Usage in industrial process technology** | | | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | | | |
| **Remark** | | | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | | | | |
| **Conformal coating** | | | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | | | | |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

## Technical specifications (continued)

| Article number | **6AG1124-0QC02-4AX1**<br>SIPLUS HMI TP1500 Comfort | **6AG1124-0UC02-4AX1**<br>SIPLUS HMI TP1900 Comfort | **6AG1124-0XC02-4AX1**<br>SIPLUS HMI TP2200 Comfort |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP1500 Comfort | TP1900 Comfort | TP2200 Comfort |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C; = Tmin | 0 °C; = Tmin |
| - For vertical installation, max. | 50 °C; (55 °C, see entry ID: 64847814) | 45 °C; = Tmax | 45 °C; = Tmax |
| **Altitude during operation relating to sea level** | | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| **Relative humidity** | | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| **Resistance** | | | |
| **Coolants and lubricants** | | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air |
| **Use in stationary industrial systems** | | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | | |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * |
| **Use on ships/at sea** | | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | | |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | | |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * |
| **Usage in industrial process technology** | | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | | |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | | |
| **Remark** | | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | | |
| **Conformal coating** | | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

## Ordering data

| | Article No. |
|---|---|
| *SIPLUS HMI Comfort Panels, Keys and Touch* | |
| **SIPLUS HMI KTP400 Comfort** | **6AG1124-2DC01-4AX0** |
| *SIPLUS HMI Comfort Panels, Touch* | |
| **SIPLUS HMI TP700 Comfort** | **6AG1124-0GC01-4AX0** |
| **SIPLUS HMI TP900 Comfort** | **6AG1124-0JC01-4AX0** |
| **SIPLUS HMI TP1200 Comfort** | **6AG1124-0MC01-4AX0** |
| **SIPLUS HMI TP1500 Comfort** | **6AG1124-0QC02-4AX1** |
| **SIPLUS HMI TP1900 Comfort** | **6AG1124-0UC02-4AX1** |
| **SIPLUS HMI TP2200 Comfort** | **6AG1124-0XC02-4AX1** |
| *SIPLUS HMI Comfort Panels, Keys* | |
| **SIPLUS HMI KP400 Comfort** | **6AG1124-1DC01-4AX0** |
| **SIPLUS HMI KP700 Comfort** | **6AG1124-1GC01-4AX0** |
| **SIPLUS HMI KP900 Comfort** | **6AG1124-1JC01-4AX0** |
| **SIPLUS HMI KP1200 Comfort** | **6AG1124-1MC01-4AX0** |
| **SIPLUS HMI KP1500 Comfort** | **6AG1124-1QC02-4AX1** |
| *Accessories* | See HMI accessories |

## More information

More information is available on the Internet at:

http://www.siemens.com/comfort-panels

You can find an overview of approved printers, supply sources and printer settings on the Internet at:

http://support.industry.siemens.com/cs/ww/en/view/11376409

Certain SIMATIC HMI Comfort Panels allow the application of a customer name or logo, or selection of the membrane color in accordance with the customer's corporate design. This is also possible for small quantities.

More information is available at:

http://www.siemens.com/express-hmi-tool

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## SIMATIC HMI Comfort Panels Outdoor

### Overview

SIEMENS
SIMATIC HMI

- For outdoor operation without additional measures
- 7" and 15" daylight-readable display, widescreen
- Automatic, central or manual dimming of the backlight, with integrated sensor
- Panel front 100% UV protected
- Front resistant to salt mist
- Front IP66 and Nema4 x (indoor/outdoor)
- Numerous explosion protection and shipbuilding certifications
- Extended operating temperature range: from -30 °C to +60 °C at 3 000 m installation altitude
- TIA Portal central engineering tool (WinCC V13 SP1&HSP or higher)
- Comfort Panel functionality and performance

**SIMATIC HMI Comfort Panels Outdoor**

Special HMI Panels have been developed which are designed to withstand outdoor environments.

It's not only extreme temperatures which call for robust hardware. Direct sunlight, too, must not be allowed to impair display readability and the panel front must be protected from UV radiation. The specially-bonded outdoor fronts and the rugged hardware of the Outdoor Panels make the SIMATIC HMI Comfort Panels Outdoor a reliable partner in this environment.

Notice:

The 7" Comfort Panel Outdoor corresponds to a 7" Comfort Panel Standard, the 15" Comfort Panel Outdoor corresponds to a 12" Comfort Panel Standard in respect of performance, functionality and quantity structure.

http://www.siemens.com/comfort-panels-outdoor

### Technical specifications

| Article number | **6AV2124-0GC13-0AX0**<br>SIMATIC HMI TP700 Comfort Outdoor | **6AV2124-0QC13-0AX0**<br>SIMATIC HMI TP1500 Comfort Outdoor |
|---|---|---|
| **General information** | | |
| Product type designation | TP700 Comfort Outdoor | TP1500 Comfort Outdoor |
| **Display** | | |
| Design of display | TFT, bonded, daylight-readable | TFT, bonded, daylight-readable |
| Screen diagonal | 7 in | 15.4 in |
| Display width | 152.4 mm | 331.2 mm |
| Display height | 91.4 mm | 207 mm |
| Number of colors | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | |
| • Horizontal image resolution | 800 Pixel | 1 280 Pixel |
| • Vertical image resolution | 480 Pixel | 800 Pixel |
| **Backlighting** | | |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h |
| • Backlight dimmable | Yes; LED, can be dimmed manually or automatically | Yes; LED, can be dimmed manually or automatically |
| **Control elements** | | |
| **Keyboard fonts** | | |
| • Function keys | | |
| - Number of function keys | 0 | 0 |
| **Touch operation** | | |
| • Design as touch screen | Yes; analog, resistive | Yes; analog, resistive |
| **Installation type/mounting** | | |
| Mounting position | vertical | vertical |
| Mounting in portrait format possible | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes |
| maximum permissible angle of inclination without external ventilation | 35° | 35° |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0GC13-0AX0**<br>SIMATIC HMI TP700 Comfort Outdoor | **6AV2124-0QC13-0AX0**<br>SIMATIC HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Supply voltage** | | |
| Type of supply voltage | DC | DC |
| Rated value (DC) | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V |
| **Memory** | | |
| Flash | Yes | Yes |
| RAM | Yes | Yes |
| Memory available for user data | 12 Mbyte | 12 Mbyte |
| **Type of output** | | |
| Acoustics | | |
| • Speaker | Yes | Yes |
| **Time of day** | | |
| **Clock** | | |
| • Hardware clock (real-time) | Yes | Yes |
| • Software clock | No | No |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes |
| **Interfaces** | | |
| Number of industrial Ethernet interfaces | 2 | 2 |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole | 1; 5-pole |
| Number of SD card slots | 2 | 2 |
| **Industrial Ethernet** | | |
| • Industrial Ethernet status LED | 2 | 2 |
| • Number of ports of the integrated switch | 2 | 2 |
| **Protocols** | | |
| PROFINET | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes |
| IRT | Yes; WinCC V13 SP1 HSP or higher | Yes; WinCC V13 SP1 HSP or higher |
| PROFIBUS | Yes | Yes |
| MPI | Yes | Yes |
| **Redundancy mode** | | |
| **Media redundancy** | | |
| - MRP | Yes; WinCC V13 SP1 HSP or higher | Yes; WinCC V13 SP1 HSP or higher |
| **Degree and class of protection** | | |
| IP (at the front) | IP66 | IP66 |
| IP (rear) | IP20 | IP20 |
| NEMA (front) | | |
| • Enclosure Type 4 at the front | Yes | Yes |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| cULus | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes |
| KC approval | Yes | Yes |
| **Use in hazardous areas** | | |
| • ATEX Zone 2 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • ATEX Zone 22 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • IECEx Zone 2 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • IECEx Zone 22 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • cULus Class I Zone 1 | No | No |
| • cULus Class I Zone 2, Division 2 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |
| • FM Class I Division 2 | Yes; For inscription on device rating plate | Yes; For inscription on device rating plate |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0GC13-0AX0**<br>SIMATIC HMI TP700 Comfort Outdoor | **6AV2124-0QC13-0AX0**<br>SIMATIC HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Marine approval** | | |
| • Germanischer Lloyd (GL) | Yes | Yes |
| • American Bureau of Shipping (ABS) | Yes | Yes |
| • Bureau Veritas (BV) | Yes; Available soon | Yes; Available soon |
| • Det Norske Veritas (DNV) | Yes | Yes |
| • Korean Register of Shipping (KRS) | No; Available soon | No; Available soon |
| • Lloyds Register of Shipping (LRS) | Yes | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes; Available soon | Yes; Available soon |
| • Polski Rejestr Statkow (PRS) | No | No |
| • Chinese Classification Society (CCS) | Yes; Available soon | Yes; Available soon |
| • Compass working clearance | 5 m | 5 m |
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | Yes; Powder-coated, UV resistant | Yes; Powder-coated, UV resistant |
| **Ambient temperature during operation** | | |
| • Operation (vertical installation) | | |
| - For vertical installation, min. | -30 °C | -30 °C |
| - For vertical installation, max. | 60 °C; (55 °C, see entry ID: 64847814) | 60 °C; (55 °C, see entry ID: 64847814) |
| **Altitude during operation relating to sea level** | | |
| • Installation altitude above sea level, max. | 3 000 m; Depending on the operating temperature | 3 000 m; Depending on the operating temperature |
| **Relative humidity** | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | |
| **Configuration software** | | |
| • WinCC Comfort (TIA Portal) | Yes; WinCC V13 SP1 Update 7 + HSP or higher | Yes; WinCC V13 SP1 Update 7 + HSP or higher |
| **Languages** | | |
| **Online languages** | | |
| • Number of online/runtime languages | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | |
| Libraries | Yes | Yes |
| Applications/options | | |
| • Web browser | Yes | Yes |
| • Pocket Word | Yes | Yes |
| • Pocket Excel | Yes | Yes |
| • PDF Viewer | Yes | Yes |
| • Media Player | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes |
| Task planner | | |
| • time-controlled | Yes | Yes |
| • task-controlled | Yes | Yes |
| Help system | | |
| • Number of characters per info text | 70 | 70 |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0GC13-0AX0**<br>SIMATIC HMI TP700 Comfort Outdoor | **6AV2124-0QC13-0AX0**<br>SIMATIC HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Message system** | | |
| • Bit messages | | |
| - Number of bit messages | 4 000 | 4 000 |
| • Analog messages | | |
| - Number of analog messages | 200 | 200 |
| • Message buffer | | |
| - Number of entries | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes |
| - retentive | Yes | Yes |
| **Recipe management** | | |
| • Number of recipes | 300 | 300 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes |
| **Variables** | | |
| • Number of variables per device | 2 048 | 2 048 |
| • Number of variables per screen | 400 | 400 |
| **Images** | | |
| • Number of configurable images | 500 | 500 |
| **Archiving** | | |
| • Number of archives per device | 50 | 50 |
| **Security** | | |
| • Number of user groups | 50 | 50 |
| • Number of users | 50 | 50 |
| • SIMATIC Logon | Yes | Yes |
| **Logging through printer** | | |
| • Alarms | Yes | Yes |
| • Report (shift log) | Yes | Yes |
| • Hardcopy | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | |
| • MPI/PROFIBUS DP | Yes | Yes |
| • Ethernet | Yes | Yes |
| **Process coupling** | | |
| • S7-1200 | Yes | Yes |
| • S7-1500 | Yes | Yes |
| • S7-200 | Yes | Yes |
| • S7-300/400 | Yes | Yes |
| • LOGO! | Yes | Yes |
| • WinAC | Yes | Yes |
| • SINUMERIK | Yes; with SINUMERIK option package | Yes; with SINUMERIK option package |
| • SIMOTION | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes |
| • OMRON (FINS TCP) | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes |
| • OPC UA Client | Yes | Yes |
| • OPC UA Server | Yes | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0GC13-0AX0**<br>SIMATIC HMI TP700 Comfort Outdoor | **6AV2124-0QC13-0AX0**<br>SIMATIC HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Peripherals/Options** | | |
| Printer | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes | Yes |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes | Yes |
| SIMATIC HMI CF memory card Compact Flash Card | No | No |
| USB memory | Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171 | Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171 |
| SIMATIC IPC USB Flashdrive (USB stick) | Yes | Yes |
| SIMATIC HMI USB stick | Yes | Yes |
| Network camera | Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473 | Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473 |
| **Accessories** | | |
| Expansion module | Optional e.g. USB RFID reader, see FAQ entry ID: 99808171 | Optional e.g. USB RFID reader, see FAQ entry ID: 99808171 |
| Further accessories are available | Yes; Mounting clips and 2-pin power supply connector | Yes; Mounting clips and 2-pin power supply connector |
| **Mechanics/material** | | |
| Enclosure material (front) | | |
| • Plastic | No | No |
| • Aluminum | Yes; Powder-coated, UV resistant | Yes; Powder-coated, UV resistant |
| • Stainless steel | No | No |
| **Dimensions** | | |
| Width of the housing front | 214 mm | 415 mm |
| Height of housing front | 158 mm | 310 mm |
| Mounting cutout, width | 197 mm | 396 mm |
| Mounting cutout, height | 141 mm | 291 mm |
| Overall depth | 67 mm | 77 mm |
| **Weights** | | |
| Weight without packaging | 1.5 kg | 4 kg |
| Weight incl. packaging | 1.7 kg | 6.2 kg |
| **Other** | | |
| Note: | Power, quantity structure and performance correspond to a standard 7" Comfort Panel | Power, quantity structure and performance correspond to a standard 12" Comfort Panel |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC HMI Comfort Panels Outdoor** | |
| **SIMATIC TP700 Comfort Panel Outdoor**<br>Touch operation,<br>7" widescreen TFT display,<br>16 million colors,<br>PROFINET interface,<br>MPI/PROFIBUS DP interface,<br>12 MB configuration memory,<br>Windows CE 6.0,<br>configurable as from<br>WinCC Comfort V13, SP1, HSP | **6AV2124-0GC13-0AX0** |
| **SIMATIC TP1500 Comfort Panel Outdoor**<br>Touch operation,<br>15" widescreen TFT display,<br>16 million colors,<br>PROFINET interface,<br>MPI/PROFIBUS DP interface,<br>12 MB configuration memory,<br>Windows CE 6.0,<br>configurable as from<br>WinCC Comfort V13, SP1, HSP | **6AV2124-0QC13-0AX0** |
| **Starter kit for SIMATIC HMI TP700 Comfort Panel Outdoor**<br>Contents:<br>• 1x touch panel<br>• 1x SD system outdoor card<br>• 1x touch pen system<br>• 1x SIMATIC WinCC Comfort | **6AV2124-0GC10-0SA0** |
| **Starter kit for SIMATIC HMI TP1500 Comfort Panel Outdoor**<br>Contents:<br>• 1x touch panel<br>• 1x SD system outdoor card<br>• 1x touch pen system<br>• 1x SIMATIC WinCC Comfort | **6AV2124-0QC10-0SA0** |
| **Accessories** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

## More information

More information is available on the Internet at:

http://www.siemens.com/comfort-panels-outdoor

Note:

The TP700 Comfort Panel Outdoor is comparable with the TP700 Comfort Panel Standard.

The TP1500 Comfort Panel Outdoor is comparable with the TP1200 Comfort Panel Standard with a 15" display.

A TP1500 Comfort Standard unit with the maximum possible configuration cannot be installed on a TP1500 Comfort Panel Outdoor.

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## SIPLUS Comfort Panels Outdoor

### Overview

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SIMATIC HMI

***SIPLUS HMI Comfort Panels Outdoor***

Special HMI Panels have been developed which are designed to withstand outdoor environments.

It's not only extreme temperatures which call for robust hardware. Direct sunlight, too, must not be allowed to impair display readability and the panel front must be protected from UV radiation. The specially-bonded outdoor fronts and the rugged hardware of the Outdoor Panels make the SIMATIC HMI Comfort Panels Outdoor a reliable partner in this environment.

- For outdoor operation without additional measures
- 7" and 15" daylight-readable display, widescreen
- Automatic, central or manual dimming of the backlight, with integrated sensor
- Panel front 100% UV protected
- Front resistant to salt mist
- Front IP66 and Nema4 x (indoor/outdoor)
- Many explosion protection and shipbuilding certifications
- Extended operating temperature range: from -30 °C to +60 °C at 3 000 m installation altitude
- TIA Portal central engineering tool (WinCC V13 SP1&HSP or higher)
- Comfort Panel functionality and performance

Notice:

The SIPLUS HMI 7" Comfort Panel Outdoor corresponds to a SIPLUS HMI 7" Comfort Panel Standard, the SIPLUS HMI 15" Comfort Panel Outdoor corresponds to a SIPLUS HMI 12" Comfort Panel Standard in respect of performance, functionality and quantity structure.

http://www.siemens.com/comfort-panels-outdoor

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme-specific information was added.

### Technical specifications

| Article number | **6AG1124-0GC13-2AX0**<br>SIPLUS HMI TP700 COMFORT OUTDOOR | **6AG1124-0QC13-2AX0**<br>SIPLUS HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | Yes; Powder-coated, UV resistant | Yes; Powder-coated, UV resistant |
| **Ambient temperature during operation** | | |
| • Operation (vertical installation) | | |
| - For vertical installation, min. | -30 °C; = Tmin | -30 °C; = Tmin |
| - For vertical installation, max. | 60 °C; (55 °C, see entry ID: 64847814) | 60 °C; (55 °C, see entry ID: 64847814) |
| **Altitude during operation relating to sea level** | | |
| • Installation altitude above sea level, max. | 5 000 m | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| **Relative humidity** | | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position | 100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position |
| **Resistance** | | |
| **Coolants and lubricants** | | |
| - Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air | Yes; Incl. diesel and oil droplets in the air |
| **Use in stationary industrial systems** | | |
| - to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| - to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| - to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * | Yes; Class 3S4 incl. sand, dust, * |

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## Technical specifications (continued)

| Article number | **6AG1124-0GC13-2AX0**<br>SIPLUS HMI TP700 COMFORT OUTDOOR | **6AG1124-0QC13-2AX0**<br>SIPLUS HMI TP1500 Comfort Outdoor |
|---|---|---|
| **Use on ships/at sea** | | |
| - to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request |
| - to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| - to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * | Yes; Class 6S3 incl. sand, dust; * |
| **Usage in industrial process technology** | | |
| - Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) | Yes; Class 3 (excluding trichlorethylene) |
| - Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| **Remark** | | |
| - Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| **Conformal coating** | | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes | Yes |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A | Yes; Conformal coating, Class A |

## Ordering data

| | **Article No.** |
|---|---|
| *SIPLUS HMI Comfort Outdoor Panels* | |
| **SIPLUS HMI TP700 Comfort Panel Outdoor**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -30 ... +60 °C<br>Touch operation, 7" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP | **6AG1124-0GC13-2AX0** |
| **SIPLUS HMI TP1500 Comfort Panel Outdoor**<br>For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -30 ... +60 °C<br>Touch operation, 15" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP | **6AG1124-0QC13-2AX0** |
| *Accessories* | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/comfort-panels-outdoor

Note:

The SIPLUS HMI TP700 Comfort Panel Outdoor is comparable with the SIPLUS HMI TP700 Comfort Panel Standard.

The SIPLUS HMI TP1500 Comfort Panel Outdoor is comparable with the SIPLUS HMI TP1200 Comfort Panel Standard with a 15" display.

A TP1500 Comfort Standard unit with the maximum possible configuration cannot be installed on a SIPLUS HMI TP1500 Comfort Panel Outdoor.

## Overview

SIMATIC IFP PRO, ITC PRO, IPC PRO, Comfort PRO,
for pedestal (extendable, flange below)

### *SIMATIC HMI Comfort PRO: The new Comfort Panel PRO with all-round IP65 protection – powerful, ready-to-use, and can be installed directly at the machine*

SIMATIC HMI Comfort Panels PRO with 12", 15", 19" and 22" widescreen format expand the Comfort Panel portfolio to include devices with glass fronts.

The rugged aluminum housing enables it to be used directly at the machine and guarantees durability, even in harsh and extreme operating environments.

Highlights:

- All-round IP65 protection
- Comfort Panel functionality and performance
- Rugged, industrial 12", 15", 19" and 22" widescreen displays
- Slim, modern design
- Can be adapted to support arm system of various manufacturers
- Integration of operator controls with Extension Units
- High degree of investment security
- Fast integration capability

12", 15", 19" and 22" SIMATIC HMI Comfort Panels PRO are available in three different versions, depending on the application:

- For support arm (extendable, round tube): mounting by means of standard 48 mm round tube or Siemens flange mount adapter
- For support arm (not extendable, flange on top): mounting by means of basic adapter and flange on top, included in scope of delivery
- For pedestal (extendable, flange below): mounting by means of basic adapter and flange below, included in scope of delivery

For more information, please go to:

http://siemens.com/simatic-hmi-pro

### *System components for fully enclosed IP65 devices*

System components for PRO devices are only suitable for SIMATIC HMI/IPC PRO devices.

In combination with the SIMATIC HMI PRO basic devices, these components enable easy adaptation to individual customer requirements for operator control and monitoring at the machine level, as well as offering a versatile and attractive solution for visualization and automation without a control cabinet.

The following system components are available:

- Fasteners
  - Adapter sets
  - Basic adapter
  - Flange mount adapter
- Extension Units 12" - 22" with operator controls
- Extension components
  - Stainless steel keyboard
  - Tool and keyboard tray

For more detailed information about system components refer to "PC-based Automation" -> "Devices for special requirements" -> "System components".

## Technical specifications

| Article number | **6AV2124-0MC24-0AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-1AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-0BX0**<br>SIMATIC HMI TP1200 Comfort Pro |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP1200 PRO | TP1200 PRO | TP1200 PRO |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 12.1 in | 12.1 in | 12.1 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel |
| • Vertical image resolution | 800 Pixel | 800 Pixel | 800 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 80 000 h | 80 000 h | 80 000 h |
| • Backlight dimmable | Yes; LED, dimmable | Yes; LED, dimmable | Yes; LED, dimmable |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| **Installation type/mounting** | | | |
| Mounting | Support arm | Pedestal | Support arm |
| Mounting position | vertical | vertical | vertical |
| Mounting in portrait format possible | No | No | No |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | |
| Memory available for user data | 12 Mbyte | 12 Mbyte | 12 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of RS 422 interfaces | 0; together with RS 485 | 0; together with RS 485 | 0; together with RS 485 |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| Number of SD card slots | 2 | 2 | 2 |
| With software interfaces | No | No | No |
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 3 | 3 | 3 |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes | Yes | Yes |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes | Yes | Yes |

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## Technical specifications (continued)

| Article number | **6AV2124-0MC24-0AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-1AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-0BX0**<br>SIMATIC HMI TP1200 Comfort Pro |
|---|---|---|---|
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon |
| EAC (formerly Gost-R) | No; Available soon | No; Available soon | No; Available soon |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Project languages** | | | |
| • Languages per project | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 300 | 300 | 300 |
| • Data records per recipe | 500 | 500 | 500 |
| • Entries per data record | 1 000 | 1 000 | 1 000 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2124-0MC24-0AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-1AX0**<br>SIMATIC HMI TP1200 Comfort Pro | **6AV2124-0MC24-0BX0**<br>SIMATIC HMI TP1200 Comfort Pro |
|---|---|---|---|
| **Variables** | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 500 | 500 | 500 |
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | Yes | Yes | Yes |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 313 mm | 313 mm | 313 mm |
| Height of housing front | 226 mm; Without basic adapter | 226 mm; Without basic adapter | 226 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 4.9 kg | 4.9 kg | 4.5 kg |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0QC24-0AX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-0BX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-1AX0**<br>SIMATIC HMI TP1500 Comfort PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP1500 Comfort PRO | TP1500 Comfort PRO | TP1500 Comfort PRO |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 15.6 in | 15.6 in | 15.6 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h | 50 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| **Installation type/mounting** | | | |
| Mounting | Support arm | Support arm | Pedestal |
| Mounting in portrait format possible | No | No | No |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| **Memory** | | | |
| Memory available for user data | 24 Mbyte | 24 Mbyte | 24 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| Number of SD card slots | 2 | 2 | 2 |
| **Industrial Ethernet** | | | |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes | Yes | Yes |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |

## **Technical specifications** (continued)

| Article number | **6AV2124-0QC24-0AX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-0BX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-1AX0**<br>SIMATIC HMI TP1500 Comfort PRO |
|---|---|---|---|
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon |
| EAC (formerly Gost-R) | No; Available soon | No; Available soon | No; Available soon |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Project languages** | | | |
| • Languages per project | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| Help system | | | |
| • Number of characters per info text | 320 | 320 | 320 |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 6 000 | 6 000 | 6 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 500 | 500 | 500 |
| • Size of internal recipe memory | 4 Mbyte | 4 Mbyte | 4 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |
| **Variables** | | | |
| • Number of variables per device | 4 096 | 4 096 | 4 096 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 750 | 750 | 750 |

## Technical specifications (continued)

| Article number | **6AV2124-0QC24-0AX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-0BX0**<br>SIMATIC HMI TP1500 Comfort PRO | **6AV2124-0QC24-1AX0**<br>SIMATIC HMI TP1500 Comfort PRO |
|---|---|---|---|
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Character sets** | | | |
| • Keyboard fonts | | | |
| - US English | Yes | Yes | Yes |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | Yes | Yes | Yes |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 396 mm | 396 mm | 396 mm |
| Height of housing front | 256 mm; Without basic adapter | 256 mm; Without basic adapter | 256 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 6.3 kg | 6.3 kg | 6.3 kg |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0UC24-0AX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-0BX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-1AX0**<br>SIMATIC HMI TP1900 Comfort PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP1900 Comfort PRO | TP1900 Comfort PRO | TP1900 Comfort PRO |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 18.5 in | 18.5 in | 18.5 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h | 50 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| **Installation type/mounting** | | | |
| Mounting | Support arm | Support arm | Pedestal |
| Mounting in portrait format possible | No | No | No |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| **Memory** | | | |
| Memory available for user data | 24 Mbyte | 24 Mbyte | 24 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| Number of SD card slots | 2 | 2 | 2 |
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 3 | 3 | 3 |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes | Yes | Yes |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes | Yes | Yes |

## **Technical specifications** (continued)

| Article number | **6AV2124-0UC24-0AX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-0BX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-1AX0**<br>SIMATIC HMI TP1900 Comfort PRO |
|---|---|---|---|
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon |
| EAC (formerly Gost-R) | No; Available soon | No; Available soon | No; Available soon |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 6 000 | 6 000 | 6 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 500 | 500 | 500 |
| • Size of internal recipe memory | 4 Mbyte | 4 Mbyte | 4 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2124-0UC24-0AX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-0BX0**<br>SIMATIC HMI TP1900 Comfort PRO | **6AV2124-0UC24-1AX0**<br>SIMATIC HMI TP1900 Comfort PRO |
|---|---|---|---|
| **Variables** | | | |
| • Number of variables per device | 4 096 | 4 096 | 4 096 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 750 | 750 | 750 |
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • USB | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |
| • using external storage medium | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | Yes | Yes | Yes |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 462 mm | 462 mm | 462 mm |
| Height of housing front | 296 mm; Without basic adapter | 296 mm; Without basic adapter | 296 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 7.4 kg | 7.4 kg | 7.4 kg |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0XC24-0AX0**<br>SIMATIC HMI TP2200 Comfort PRO | **6AV2124-0XC24-0BX0**<br>SIMATIC HMI TP2200 Comfort PRO | **6AV2124-0XC24-1AX0**<br>SIMATIC HMI TP2200 Comfort PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP2200 Comfort PRO | TP2200 Comfort PRO | TP2200 Comfort PRO |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 21.5 in | 21.5 in | 21.5 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 30 000 h | 30 000 h | 30 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| **Installation type/mounting** | | | |
| Mounting | Support arm | Support arm | Pedestal |
| Mounting in portrait format possible | No | No | No |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | |
| Memory available for user data | 24 Mbyte | 24 Mbyte | 24 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • Software clock | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port | 2; 2 ports (switch) + independent port |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| Number of SD card slots | 2 | 2 | 2 |
| **Industrial Ethernet** | | | |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes | Yes | Yes |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2124-0XC24-0AX0** | **6AV2124-0XC24-0BX0** | **6AV2124-0XC24-1AX0** |
|---|---|---|---|
| | SIMATIC HMI TP2200 Comfort PRO | SIMATIC HMI TP2200 Comfort PRO | SIMATIC HMI TP2200 Comfort PRO |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon |
| EAC (formerly Gost-R) | No; Available soon | No; Available soon | No; Available soon |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher | Yes; V14 SP1 HSP and higher |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 6 000 | 6 000 | 6 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 500 | 500 | 500 |
| • Size of internal recipe memory | 4 Mbyte | 4 Mbyte | 4 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |
| **Variables** | | | |
| • Number of variables per device | 4 096 | 4 096 | 4 096 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 750 | 750 | 750 |

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## **Technical specifications** (continued)

| Article number | **6AV2124-0XC24-0AX0**<br>SIMATIC HMI TP2200 Comfort PRO | **6AV2124-0XC24-0BX0**<br>SIMATIC HMI TP2200 Comfort PRO | **6AV2124-0XC24-1AX0**<br>SIMATIC HMI TP2200 Comfort PRO |
|---|---|---|---|
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • USB | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |
| • using external storage medium | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | Yes | Yes | Yes |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 527 mm | 527 mm | 527 mm |
| Height of housing front | 330 mm; Without basic adapter | 330 mm; Without basic adapter | 330 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 8.5 kg | 8.5 kg | 8.5 kg |

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| **Ordering data** | **Article No.** |
|---|---|
| *Comfort Panels PRO* | |
| **TP1200 Comfort PRO**<br>12.1'' TFT display,<br>1 280 x 800 pixels, 16 M colors;<br>touch screen;<br>1 x MPI/PROFIBUS DP,<br>1 x PROFINET/Industrial Ethernet interface with MRP and RT/IRT support (2 ports);<br>1 x Ethernet (Gigabit);<br>2 x SD card slots; 2 x USB | |
| • For support arm (not extendable, flange on top) | **6AV2124-0MC24-0AX0** |
| • For support arm (extendable, round tube) | **6AV2124-0MC24-0BX0** |
| • For pedestal (extendable, flange below) | **6AV2124-0MC24-1AX0** |
| **TP1500 Comfort PRO**<br>15.6'' TFT display,<br>1 366 x 768 pixels, 16 M colors;<br>touch screen;<br>1 x MPI/PROFIBUS DP,<br>1 x PROFINET/Industrial Ethernet Interface with MRP and RT/IRT support (2 ports);<br>1 x Ethernet (Gigabit);<br>2 x SD card slots; 2 x USB | |
| • For support arm (not extendable, flange on top) | **6AV2124-0QC24-0AX0** |
| • For support arm (extendable, round tube) | **6AV2124-0QC24-0BX0** |
| • For pedestal (extendable, flange below) | **6AV2124-0QC24-1AX0** |
| **TP1900 Comfort PRO**<br>18.5'' TFT display,<br>1 366 x 768 pixels, 16 M colors;<br>touch screen;<br>1 x MPI/PROFIBUS DP,<br>1 x PROFINET/Industrial Ethernet Interface with MRP and RT/IRT support (2 ports);<br>1 x Ethernet (Gigabit);<br>2 x SD card slots; 2 x USB | |
| • For support arm (not extendable, flange on top) | **6AV2124-0UC24-0AX0** |
| • For support arm (extendable, round tube) | **6AV2124-0UC24-0BX0** |
| • For pedestal (extendable, flange below) | **6AV2124-0UC24-1AX0** |
| **TP2200 Comfort PRO**<br>21.5'' TFT display,<br>1 920 x 1 080 pixels, 16 M colors;<br>touch screen;<br>1 x MPI/PROFIBUS DP,<br>1 x PROFINET/Industrial Ethernet Interface with MRP and RT/IRT support (2 ports);<br>1 x Ethernet (Gigabit);<br>2 x SD card slots; 2 x USB | |
| • For support arm (not extendable, flange on top) | **6AV2124-0XC24-0AX0** |
| • For support arm (extendable, round tube) | **6AV2124-0XC24-0BX0** |
| • For pedestal (extendable, flange below) | **6AV2124-0XC24-1AX0** |

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## SIMATIC HMI Comfort Panels INOX and INOX PCT

### Overview

SIMATIC HMI TP1200 Comfort INOX PCT

***SIMATIC HMI TP Comfort Panels INOX and INOX PCT (PCT = Projected Capacitive Touchscreen)***

Panels with touch screens (analog-resistive or projective-capacitive) and stainless steel fronts are designed for use in the food, beverages and tobacco industry, the pharmaceutical industry, fine chemicals and in other hygiene areas for machine-level operator control and monitoring.

For this reason, the devices with stainless steel front have been developed in compliance with EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".

http://www.siemens.com/comfort-panels-inox

### Technical specifications

| Article number | **6AV2144-8GC10-0AA0**<br>SIMATIC HMI TP700 COMFORT INOX | **6AV2144-8JC10-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX | **6AV2144-8MC10-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP700 Comfort INOX | TP900 INOX | TP1200 Comfort INOX |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 7 in | 9 in | 12.1 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 800 Pixel | 800 Pixel | 1 280 Pixel |
| • Vertical image resolution | 480 Pixel | 480 Pixel | 800 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 80 000 h | 80 000 h | 80 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Memory** | | | |
| Memory available for user data | 12 Mbyte | 12 Mbyte | 12 Mbyte |
| **Type of output** | | | |
| Acoustics | | | |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2144-8GC10-0AA0**<br>SIMATIC HMI TP700 COMFORT INOX | **6AV2144-8JC10-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX | **6AV2144-8MC10-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX |
|---|---|---|---|
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 1; 2 ports (switch) | 1; 2 ports (switch) | 1; 2 ports (switch) |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole | 1; 5-pole | 1; 5-pole |
| Number of SD card slots | 2 | 2 | 2 |
| **Industrial Ethernet** | | | |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes; As of WinCC V12 | Yes; As of WinCC V12 | Yes; As of WinCC V12 |
| **Degree and class of protection** | | | |
| IP (at the front) | IP66K | IP66K | IP66K |
| IP (rear) | IP20 | IP20 | IP20 |
| NEMA (front) | | | |
| • Enclosure Type 4x at the front | Yes; indoor use only | Yes; indoor use only | Yes; indoor use only |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FM approval | Yes | | Yes |
| RCM (formerly C-TICK) | Yes | | Yes |
| KC approval | Yes | | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes | Yes |
| • IECEx Zone 2 | Yes | Yes | Yes |
| • IECEx Zone 22 | Yes | Yes | Yes |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes |
| • FM Class I Division 2 | Yes | No | Yes |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No |
| • Bureau Veritas (BV) | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No |
| • Korean Register of Shipping (KRS) | | | No |
| • Lloyds Register of Shipping (LRS) | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | | | |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 80 %; no condensation |

## **Technical specifications** (continued)

| Article number | **6AV2144-8GC10-0AA0**<br>SIMATIC HMI TP700 COMFORT INOX | **6AV2144-8JC10-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX | **6AV2144-8MC10-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX |
|---|---|---|---|
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; from V11 | Yes; from V11 | Yes; from V11 |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes | Yes | Yes |
| • Pocket Excel | Yes | Yes | Yes |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 300 | 300 | 300 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |
| **Variables** | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 500 | 500 | 500 |
| **Image objects** | | | |
| • Number of objects per image | 400 | 400 | 400 |
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | Yes; PDF, HTML | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2144-8GC10-0AA0**<br>SIMATIC HMI TP700 COMFORT INOX | **6AV2144-8JC10-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX | **6AV2144-8MC10-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX |
|---|---|---|---|
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Service tools/configuration aids** | | | |
| • Backup/Restore manually | Yes | Yes | Yes |
| • Backup/Restore automatically | Yes | Yes | Yes |
| • Simulation | Yes | Yes | Yes |
| • Device switchover | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | No | No | No |
| • Stainless steel | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 214 mm | 274 mm | 330 mm |
| Height of housing front | 158 mm | 190 mm | 241 mm |
| Mounting cutout, width | 197 mm | 250 mm | 310 mm |
| Mounting cutout, height | 141 mm | 166 mm | 221 mm |
| Overall depth | 65 mm | 65 mm | 67 mm |
| **Weights** | | | |
| Weight without packaging | 1.9 kg | 2.5 kg | 3.6 kg |
| Weight incl. packaging | 2 kg | 3.1 kg | 4.2 kg |

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## Technical specifications (continued)

| Article number | **6AV2144-8GC20-0AA0**<br>SIMATIC HMI TP700 Comfort INOX PCT | **6AV2144-8JC20-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX PCT | **6AV2144-8MC20-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX PCT |
|---|---|---|---|
| **General information** | | | |
| Product type designation | TP700 Comfort INOX PCT | TP900 Comfort INOX PCT | TP1200 Comfort INOX PCT |
| **Display** | | | |
| Design of display | TFT | TFT | TFT |
| Screen diagonal | 7 in | 9 in | 12.1 in |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 800 Pixel | 800 Pixel | 1 280 Pixel |
| • Vertical image resolution | 480 Pixel | 480 Pixel | 800 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 80 000 h | 80 000 h | 80 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes | Yes | Yes |
| • Design as multi-touch screen | No | No | No |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | No | Yes | Yes |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| **Memory** | | | |
| Memory available for user data | 12 Mbyte | 12 Mbyte | 12 Mbyte |
| **Type of output** | | | |
| Acoustics | Speaker | Speaker | Speaker |
| • Speaker | Yes | Yes | Yes |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 1; 2 ports (switch) | 1; 2 ports (switch) | 1; 2 ports (switch) |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole | 1; 5-pole | 1; 5-pole |
| Number of SD card slots | 2 | 2 | 2 |
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 2 | 2 | 2 |
| • Number of ports of the integrated switch | 2 | 2 | 2 |
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| Supports protocol for PROFINET IO | Yes | Yes | Yes |
| IRT | Yes; As of WinCC V15.1 | Yes; As of WinCC V15 | Yes; As of WinCC V15 |
| PROFIBUS | Yes | Yes | Yes |
| MPI | Yes | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | Yes; As of WinCC V15.1 | Yes; As of WinCC V15 | Yes; As of WinCC V15 |

## Technical specifications (continued)

| Article number | **6AV2144-8GC20-0AA0**<br>SIMATIC HMI TP700 Comfort INOX PCT | **6AV2144-8JC20-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX PCT | **6AV2144-8MC20-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX PCT |
|---|---|---|---|
| **Degree and class of protection** | | | |
| IP (at the front) | IP66 / IPx6K and IP69 / IPx9K | IP69K | IP69K |
| IP (rear) | IP20 | IP20 | IP20 |
| NEMA (front) | | | NEMA 4, NEMA 12 (when installed) |
| • Enclosure Type 4x at the front | | No | Yes |
| • Enclosure Type 12 at the front | No | No | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | No | No | Yes |
| RCM (formerly C-TICK) | No | Yes | Yes |
| KC approval | No | No | No |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes | Yes |
| • IECEx Zone 2 | Yes | Yes | Yes |
| • IECEx Zone 22 | Yes | Yes | Yes |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes |
| • cULus Class II Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |
| • FM Class II Division 2 | No | No | No |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No | No | No |
| **Ambient temperature during operation** | | | |
| • Operation (vertical installation) | 0 to +50 °C | 0 to +50 °C | 0 to +50 °C |
| - For vertical installation, min. | 0 °C | 0 °C | 0 °C |
| - For vertical installation, max. | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C; (55 °C, see entry ID: 64847814) | 50 °C |
| **Altitude during operation relating to sea level** | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Configuration** | | | |
| **Configuration software** | | | |
| • WinCC Comfort (TIA Portal) | Yes; From WinCC V15.1 HSP | Yes; As of WinCC V15 | Yes; As of WinCC V15 |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Libraries | Yes | Yes | Yes |
| Applications/options | | Internet Explorer, PDF/Word/Excel Viewer, Sm@rtService, Sm@rtAccess, ProAgent | Internet Explorer, PDF/Word/Excel Viewer, Sm@rtService, Sm@rtAccess, ProAgent |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | Yes; Viewer | Yes; Viewer | Yes; Viewer |
| • Pocket Excel | Yes; Viewer | Yes; Viewer | Yes; Viewer |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | Yes | Yes | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | Yes | Yes | Yes |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2144-8GC20-0AA0**<br>SIMATIC HMI TP700 Comfort INOX PCT | **6AV2144-8JC20-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX PCT | **6AV2144-8MC20-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX PCT |
|---|---|---|---|
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | Ring buffer (n x 1024 entries), retentive, maintenance-free | Ring buffer (n x 1024 entries), retentive, maintenance-free | Ring buffer (n x 1024 entries), retentive, maintenance-free |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 300 | 300 | 300 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |
| **Variables** | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 500 | 500 | 500 |
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |
| **Logging through printer** | | | |
| • Alarms | Yes | Yes | Yes |
| • Report (shift log) | Yes | Yes | Yes |
| • Hardcopy | Yes | Yes | Yes |
| • Electronic print to file | No | Yes; PDF, HTML | Yes; PDF, HTML |
| **Transfer (upload/download)** | | | |
| • MPI/PROFIBUS DP | Yes | Yes | Yes |
| • Ethernet | Yes | Yes | Yes |
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | Yes | Yes | Yes |
| • SIMOTION | Yes | Yes | Yes |
| • Allen Bradley (EtherNet/IP) | Yes | Yes | Yes |
| • Allen Bradley (DF1) | Yes | Yes | Yes |
| • Mitsubishi (MC TCP/IP) | Yes | Yes | Yes |
| • Mitsubishi (FX) | Yes | Yes | Yes |
| • OMRON (FINS TCP) | No | No | No |
| • OMRON (LINK/Multilink) | Yes | Yes | Yes |
| • Modicon (Modbus TCP/IP) | Yes | Yes | Yes |
| • Modicon (Modbus) | Yes | Yes | Yes |
| • OPC UA Client | Yes | Yes | Yes |
| • OPC UA Server | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| Printer | Yes | Yes | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB | Yes; Up to 128 MB | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB | Yes; Up to 2 GB | Yes; Up to 2 GB |
| USB memory | Yes | Yes | Yes |
| Network camera | Yes | Yes | Yes |

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## **Technical specifications** (continued)

| Article number | **6AV2144-8GC20-0AA0**<br>SIMATIC HMI TP700 Comfort INOX PCT | **6AV2144-8JC20-0AA0**<br>SIMATIC HMI TP900 COMFORT INOX PCT | **6AV2144-8MC20-0AA0**<br>SIMATIC HMI TP1200 COMFORT INOX PCT |
|---|---|---|---|
| **Accessories** | | | |
| Further accessories are available | Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector) | Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector) | Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector) |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | No | No | No |
| • Aluminum | No | No | No |
| • Stainless steel | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 214 mm | 274 mm | 330 mm |
| Height of housing front | 158 mm | 190 mm | 241 mm |
| Mounting cutout, width | 197 mm | 251 mm | 310 mm |
| Mounting cutout, height | 141 mm | 166 mm | 221 mm |
| Overall depth | 66 mm | 66 mm | 65 mm |
| **Weights** | | | |
| Weight without packaging | 2 kg | 2.9 kg | 4.2 kg |
| Weight incl. packaging | 2.3 kg | 3.6 kg | 4.9 kg |

| Article number | **6AV2144-8MC10-0AC0**<br>SIMATIC HMI TP1200 COMFORT INOX LF |
|---|---|
| **General information** | |
| Product type designation | TP1200 Comfort INOX LF |
| **Display** | |
| Design of display | TFT |
| Screen diagonal | 12.1 in |
| Number of colors | 16 777 216 |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 1 280 Pixel |
| • Vertical image resolution | 800 Pixel |
| **Backlighting** | |
| • MTBF backlighting (at 25 °C) | 80 000 h |
| • Backlight dimmable | Yes; 0-100 % |
| **Control elements** | |
| **Keyboard fonts** | |
| • Function keys | |
| - Number of function keys | 0 |
| **Touch operation** | |
| • Design as touch screen | Yes |
| **Installation type/mounting** | |
| Mounting in portrait format possible | Yes |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 24 V |
| **Memory** | |
| Memory available for user data | 12 Mbyte |
| **Type of output** | |
| Acoustics | |
| • Speaker | Yes |

| Article number | **6AV2144-8MC10-0AC0**<br>SIMATIC HMI TP1200 COMFORT INOX LF |
|---|---|
| **Time of day** | |
| **Clock** | |
| • Hardware clock (real-time) | Yes |
| • retentive | Yes; Back-up duration typically 6 weeks |
| • synchronizable | Yes |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1; 2 ports (switch) |
| Number of RS 485 interfaces | 1; RS 422 / 485 combined |
| Number of USB interfaces | 2; USB 2.0 |
| • USB Mini B | 1; 5-pole |
| Number of SD card slots | 2 |
| **Industrial Ethernet** | |
| • Industrial Ethernet status LED | 2 |
| • Number of ports of the integrated switch | 2 |
| **Protocols** | |
| PROFINET | Yes |
| IRT | Yes; As of WinCC V12 |
| PROFIBUS | Yes |
| MPI | Yes |
| **Degree and class of protection** | |
| IP (at the front) | IP66K |
| IP (rear) | IP20 |
| NEMA (front) | |
| • Enclosure Type 4 at the front | No |
| • Enclosure Type 4x at the front | Yes; indoor use only |

## Technical specifications (continued)

| Article number | **6AV2144-8MC10-0AC0**<br>SIMATIC HMI TP1200 COMFORT INOX LF |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes |
| FM approval | No |
| RCM (formerly C-TICK) | No |
| KC approval | No |
| EAC (formerly Gost-R) | Yes |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes |
| • ATEX Zone 22 | Yes |
| • IECEx Zone 2 | Yes |
| • IECEx Zone 22 | Yes |
| • cULus Class I Zone 1 | No |
| • cULus Class I Zone 2, Division 2 | Yes |
| • FM Class I Division 2 | No |
| **Marine approval** | No |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Operation (vertical installation) | |
| - For vertical installation, min. | 0 °C |
| - For vertical installation, max. | 50 °C |
| **Relative humidity** | |
| • Operation, max. | 80 %; no condensation |
| **Configuration** | |
| **Configuration software** | |
| • WinCC Comfort (TIA Portal) | Yes; from V11 |
| **Languages** | |
| **Online languages** | |
| • Number of online/runtime languages | 32 |
| **Functionality under WinCC (TIA Portal)** | |
| Libraries | Yes |
| Applications/options | |
| • Web browser | Yes |
| • Pocket Word | Yes |
| • Pocket Excel | Yes |
| • PDF Viewer | Yes |
| • Media Player | Yes |
| • SIMATIC WinCC Sm@rtServer | Yes |
| • SIMATIC WinCC Audit | Yes |
| Number of Visual Basic Scripts | Yes |
| Task planner | |
| • time-controlled | Yes |
| • task-controlled | Yes |
| Help system | |
| • Number of characters per info text | 70 |
| **Message system** | |
| • Bit messages | |
| - Number of bit messages | 4 000 |
| • Analog messages | |
| - Number of analog messages | 200 |
| • Message buffer | |
| - Number of entries | 1 024 |
| - Circulating buffer | Yes |
| - retentive | Yes |
| **Recipe management** | |
| • Number of recipes | 300 |
| • Size of internal recipe memory | 2 Mbyte |
| • Recipe memory expandable | Yes |

| Article number | **6AV2144-8MC10-0AC0**<br>SIMATIC HMI TP1200 COMFORT INOX LF |
|---|---|
| **Variables** | |
| • Number of variables per device | 2 048 |
| • Number of variables per screen | 400 |
| **Images** | |
| • Number of configurable images | 500 |
| **Archiving** | |
| • Number of archives per device | 50 |
| **Security** | |
| • Number of user groups | 50 |
| • Number of users | 50 |
| • SIMATIC Logon | Yes |
| **Logging through printer** | |
| • Alarms | Yes |
| • Report (shift log) | Yes |
| • Hardcopy | Yes |
| • Electronic print to file | Yes; PDF, HTML |
| **Transfer (upload/download)** | |
| • MPI/PROFIBUS DP | Yes |
| • Ethernet | Yes |
| **Process coupling** | |
| • S7-1200 | Yes |
| • S7-1500 | Yes |
| • S7-200 | Yes |
| • S7-300/400 | Yes |
| • LOGO! | Yes |
| • WinAC | Yes |
| • SIMOTION | Yes |
| • Allen Bradley (EtherNet/IP) | Yes |
| • Allen Bradley (DF1) | Yes |
| • Mitsubishi (MC TCP/IP) | Yes |
| • Mitsubishi (FX) | Yes |
| • OMRON (FINS TCP) | No |
| • OMRON (LINK/Multilink) | Yes |
| • Modicon (Modbus TCP/IP) | Yes |
| • Modicon (Modbus) | Yes |
| • OPC UA Client | Yes |
| • OPC UA Server | Yes |
| **Peripherals/Options** | |
| Printer | Yes |
| SIMATIC HMI MM memory card: Multi Media Card | Yes; Up to 128 MB |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes; Up to 2 GB |
| USB memory | Yes |
| Network camera | Yes |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | No |
| • Aluminum | No |
| • Stainless steel | Yes |
| **Dimensions** | |
| Width of the housing front | 330 mm |
| Height of housing front | 269 mm |
| Mounting cutout, width | 310 mm |
| Mounting cutout, height | 248 mm |
| Overall depth | 67 mm |
| **Weights** | |
| Weight without packaging | 4.2 kg |
| Weight incl. packaging | 4.9 kg |

## Ordering data

| | Article No. |
|---|---|
| ***SIMATIC HMI TP Comfort Panel INOX with analog-resistive touch and front film*** | |
| **SIMATIC HMI TP700 Comfort Panel INOX**<br>With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions. | **6AV2144-8GC10-0AA0** |
| **SIMATIC HMI TP900 Comfort Panel INOX**<br>With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions. | **6AV2144-8JC10-0AA0** |
| **SIMATIC HMI TP1200 Comfort Panel INOX**<br>With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions. | **6AV2144-8MC10-0AA0** |
| ***SIMATIC HMI TP Comfort Panel INOX PCT with projective-capacitive touch and front glass*** | |
| **SIMATIC HMI TP700 Comfort Panel INOX PCT**<br>Stainless steel front, glass pane, capacitive touch, IP69K degree of protection front, 7" widescreen TFT display, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, Windows CE 6.0, WinCC Comfort V15.1 | **6AV2144-8GC20-0AA0** |
| **SIMATIC HMI TP900 Comfort Panel INOX PCT**<br>With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions. | **6AV2144-8JC20-0AA0** |
| **SIMATIC HMI TP1200 Comfort Panel INOX PCT**<br>With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions. | **6AV2144-8MC20-0AA0** |

| | Article No. |
|---|---|
| ***Comfort Panels Large Front*** | |
| **SIMATIC HMI TP1200 Comfort INOX LF**<br>12" widescreen TFT display with long stainless steel front, decorative membrane, IP66K degree of protection front, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0 (Microsoft support including safety updates set), configurable as from WinCC Comfort V11 or higher | **6AV2144-8MC10-0AC0** |
| ***Accessories*** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

The device seals can be replaced using the corresponding service packages from the accessories.

Customer-specific modifications

- Customized design (logo, type designation and background color)
- Protection against condensation and corrosive gases

More information is available on the Internet at:

http://www.siemens.com/comfort-panels-inox

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## Overview

### *SIMATIC Mobile Panels*

### *Mobile Panels 2nd Generation*

The second generation of SIMATIC HMI Mobile Panels impresses with its convenience, performance and quality.

The highlights:

A brilliant widescreen display, particularly simple configuration and the unique illuminated EMERGENCY STOP button.

This series of devices offers Panels with 7", 9" and 10" displays, some of which are available with or without safety-related operator controls.

The Mobile Panels of the 2nd Generation are the successors to the SIMATIC HMI Mobile Panels x77 with cable connections.

- SIMATIC HMI KTP400F Mobile
- SIMATIC HMI KTP700 Mobile
- SIMATIC HMI KTP700F Mobile
- SIMATIC HMI KTP700F Mobile HW
- SIMATIC HMI KTP700F Mobile HW/OR
- SIMATIC HMI KTP900 Mobile
- SIMATIC HMI KTP900F Mobile
- SIMATIC HMI TP1000F Mobile

### *Mobile Panels for low-temperature environment*

***SIMATIC HMI KTP700F Mobile Arctic*** is designed for use in weather-protected areas with low ambient temperatures down to -28 °C.

For optimum operation even at low temperatures, a touch pen has been integrated in the front panel at the center underneath the display.

The operator panel has the same functionality as the SIMATIC HMI Mobile Panels 2nd Generation and is integrated in the "Totally Integrated Automation Portal" engineering framework.

http://www.siemens.com/mobile-panels

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## Overview

Mobile Panels 2nd Generation

- SIMATIC HMI KTP700F Mobile HW
- SIMATIC HMI KTP700F Mobile HW/OR
- SIMATIC HMI TP1000F Mobile
- SIMATIC HMI KTP400F Mobile
- SIMATIC HMI KTP700 Mobile
- SIMATIC HMI KTP700F Mobile
- SIMATIC HMI KTP900 Mobile
- SIMATIC HMI KTP900F Mobile

## Technical specifications

| Article number | **6AV2125-2DB23-0AX0**<br>SIMATIC HMI KTP400F Mobile | **6AV2125-2GB03-0AX0**<br>SIMATIC HMI KTP700 Mobile | **6AV2125-2GB23-0AX0**<br>SIMATIC HMI KTP700F Mobile | **6AV2125-2JB03-0AX0**<br>SIMATIC HMI KTP900 Mobile | **6AV2125-2JB23-0AX0**<br>SIMATIC HMI KTP900F Mobile |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | KTP400F Mobile | KTP700 Mobile | KTP700F Mobile | KTP900 Mobile | KTP900F Mobile |
| **Display** | | | | | |
| Design of display | TFT | TFT widescreen display, LED backlighting | | | |
| Screen diagonal | 4.3 in | 7 in | 7 in | 9 in | 9 in |
| Color display | Yes | Yes | Yes | Yes | Yes |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | | | |
| • Horizontal image resolution | 480 Pixel | 800 Pixel | 800 Pixel | 800 Pixel | 800 Pixel |
| • Vertical image resolution | 272 Pixel | 480 Pixel | 480 Pixel | 480 Pixel | 480 Pixel |
| **Backlighting** | | | | | |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h | 50 000 h | 50 000 h | 50 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | |
| **Keyboard fonts** | | | | | |
| • Function keys | | | | | |
| **Touch operation** | | | | | |
| • Design as touch screen | Yes | Yes | Yes | Yes | Yes |
| • Design as multi-touch screen | No | No | No | No | No |

## Technical specifications (continued)

| Article number | **6AV2125-2DB23-0AX0**<br>SIMATIC HMI KTP400F Mobile | **6AV2125-2GB03-0AX0**<br>SIMATIC HMI KTP700 Mobile | **6AV2125-2GB23-0AX0**<br>SIMATIC HMI KTP700F Mobile | **6AV2125-2JB03-0AX0**<br>SIMATIC HMI KTP900 Mobile | **6AV2125-2JB23-0AX0**<br>SIMATIC HMI KTP900F Mobile |
|---|---|---|---|---|---|
| **Special operator controls** | | | | | |
| • Stop button (forced blocking) | Yes | No | Yes | No | Yes |
| • Emergency stop button (illuminated and forced blocking) | Yes | No | Yes | No | Yes |
| • Acknowledgement button (3-stage) | Yes | No | Yes | No | Yes |
| • Key-operated switch | No | No | Yes | No | Yes |
| • Illuminated pushbutton | Yes | Yes | Yes | Yes | Yes |
| **Camera** | | | | | |
| • integrated camera | No | No | No | No | No |
| **Expansions for operator control of the process** | | | | | |
| • DP direct LEDs (LEDs as S7 output I/O) | | | | | |
| - F1...Fx | 4 | 8 | 8 | 10 | 10 |
| • Direct keys (keys as S7 input I/O) | | | | | |
| - F1...Fx | 4 | 8 | 8 | 10 | 10 |
| • Direct keys (touch buttons as S7 input I/O) | 32 | 32 | 32 | 32 | 32 |
| **Supply voltage** | | | | | |
| Type of supply voltage | DC | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V |
| **Memory** | | | | | |
| Memory available for user data | 4 Mbyte | 12 Mbyte | 12 Mbyte | 12 Mbyte | 12 Mbyte |
| **Time of day** | | | | | |
| **Clock** | | | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes | Yes | Yes |
| **Interfaces** | | | | | |
| Number of industrial Ethernet interfaces | 1 | 1 | 1 | 1 | 1 |
| Number of PROFINET interfaces | 1 | 1 | 1 | 1 | 1 |
| Number of RS 485 interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of RS 422 interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of RS 232 interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of USB interfaces | 1; USB 2.0 | 1; USB 2.0 | 1; USB 2.0 | 1; USB 2.0 | 1; USB 2.0 |
| Number of 20 mA interfaces (TTY) | 0 | 0 | 0 | 0 | 0 |
| Number of parallel interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of other interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of wireless interfaces | 0 | 0 | 0 | 0 | 0 |
| Number of SD card slots | 0 | 1 | 1 | 1 | 1 |
| With software interfaces | No | No | No | No | No |

## Technical specifications (continued)

| Article number | **6AV2125-2DB23-0AX0**<br>SIMATIC HMI KTP400F Mobile | **6AV2125-2GB03-0AX0**<br>SIMATIC HMI KTP700 Mobile | **6AV2125-2GB23-0AX0**<br>SIMATIC HMI KTP700F Mobile | **6AV2125-2JB03-0AX0**<br>SIMATIC HMI KTP900 Mobile | **6AV2125-2JB23-0AX0**<br>SIMATIC HMI KTP900F Mobile |
|---|---|---|---|---|---|
| **Protocols** | | | | | |
| PROFINET | Yes | Yes | Yes | Yes | Yes |
| PROFIsafe | Yes | No | Yes | No | Yes |
| PROFIBUS | No | No | No | No | No |
| **Protocols (Ethernet)** | | | | | |
| • TCP/IP | Yes | Yes | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes | Yes | Yes |
| **WEB characteristics** | | | | | |
| • HTTP | Yes | Yes | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes | Yes | Yes |
| • HTML | Yes | Yes | Yes | Yes | Yes |
| • XML | No | No | No | No | No |
| • CSS | Yes | Yes | Yes | Yes | Yes |
| • Active X | No | No | No | No | No |
| • JavaScript | Yes | Yes | Yes | Yes | Yes |
| • Java VM | No | No | No | No | No |
| **Further protocols** | | | | | |
| • EtherNet/IP | Yes | Yes | Yes | Yes | Yes |
| • MODBUS | Yes | Yes | Yes | Yes | Yes |
| **Communication functions** | | | | | |
| **Wireless communication** | | | | | |
| • supported standards | | | | | |
| - Radio standard WLAN 802.11 | No | No | No | No | No |
| - Bluetooth radio standard | No | No | No | No | No |
| **Degree and class of protection** | | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| Suitable for safety functions | Yes | No | Yes | No | Yes |
| Marine approval | Yes | Yes | Yes | Yes | Yes |
| **Highest safety class achievable in safety mode** | | | | | |
| • Performance level according to ISO 13849-1 | PLe | none | PLe | none | PLe |
| • SIL acc. to IEC 61508 | SIL 3 | No | SIL 3 | No | SIL 3 |
| **Use in hazardous areas** | | | | | |
| • ATEX Zone 2 | No | No | No | No | No |
| • ATEX Zone 22 | No | No | No | No | No |
| • IECEx Zone 2 | No | No | No | No | No |
| • IECEx Zone 22 | No | No | No | No | No |
| • cULus Class I Zone 1 | No | No | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No | No | No |
| • FM Class I Division 2 | No | No | No | No | No |

## **Technical specifications** (continued)

| Article number | **6AV2125-2DB23-0AX0**<br>SIMATIC HMI KTP400F Mobile | **6AV2125-2GB03-0AX0**<br>SIMATIC HMI KTP700 Mobile | **6AV2125-2GB23-0AX0**<br>SIMATIC HMI KTP700F Mobile | **6AV2125-2JB03-0AX0**<br>SIMATIC HMI KTP900 Mobile | **6AV2125-2JB23-0AX0**<br>SIMATIC HMI KTP900F Mobile |
|---|---|---|---|---|---|
| **Ambient conditions** | | | | | |
| **Free fall** | | | | | |
| • Fall height, max. | 1.2 m | 1.2 m | 1.2 m | 1.2 m | 1.2 m |
| **Ambient temperature during operation** | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Languages** | | | | | |
| **Online languages** | | | | | |
| • Number of online/runtime languages | 32 | 32 | 32 | 32 | 32 |
| **Project languages** | | | | | |
| • Languages per project | 32 | 32 | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | | | |
| Libraries | Yes | Yes | Yes | Yes | Yes |
| Applications/options | | | | | |
| • Web browser | Yes | Yes | Yes | Yes | Yes |
| • Pocket Word | No | No | No | No | No |
| • Pocket Excel | No | No | No | No | No |
| • PDF Viewer | Yes | Yes | Yes | Yes | Yes |
| • Media Player | No | No | No | No | No |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes | Yes | Yes |
| Task planner | | | | | |
| • time-controlled | Yes | Yes | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes | Yes | Yes |
| Help system | | | | | |
| • Number of characters per info text | 500 | 500 | 500 | 500 | 500 |
| **Multiproject** | | | | | |
| • Number of projects (internal) | 0 | 0 | 0 | 0 | 0 |
| • Number of projects (external) | 0 | 0 | 0 | 0 | 0 |
| **Message system** | | | | | |
| • Bit messages | | | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 | 4 000 | 4 000 |
| • Analog messages | | | | | |
| - Number of analog messages | 200 | 200 | 200 | 200 | 200 |
| • Message buffer | | | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes | Yes | Yes |
| **Recipe management** | | | | | |
| • Number of recipes | 300 | 300 | 300 | 300 | 300 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV2125-2DB23-0AX0**<br>SIMATIC HMI KTP400F Mobile | **6AV2125-2GB03-0AX0**<br>SIMATIC HMI KTP700 Mobile | **6AV2125-2GB23-0AX0**<br>SIMATIC HMI KTP700F Mobile | **6AV2125-2JB03-0AX0**<br>SIMATIC HMI KTP900 Mobile | **6AV2125-2JB23-0AX0**<br>SIMATIC HMI KTP900F Mobile |
|---|---|---|---|---|---|
| **Variables** | | | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 | 2 048 | 2 048 |
| • Number of variables per screen | 50 | 400 | 400 | 400 | 400 |
| **Images** | | | | | |
| • Number of configurable images | 500 | 500 | 500 | 500 | 500 |
| **Archiving** | | | | | |
| • Number of archives per device | 50 | 50 | 50 | 50 | 50 |
| • Number of entries per archive | 20 000 | 20 000 | 20 000 | 20 000 | 20 000 |
| **Security** | | | | | |
| • Number of user groups | 50 | 50 | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes | Yes | Yes |
| **Process coupling** | | | | | |
| • S7-1200 | Yes | Yes | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes | Yes | Yes |
| • WinAC | Yes; WinAC RTX | Yes; WinAC RTX | Yes; WinAC RTX | Yes; WinAC RTX | Yes; WinAC RTX |
| • SIMOTION | Yes | Yes | Yes | Yes | Yes |
| **Peripherals/Options** | | | | | |
| SIMATIC HMI MM memory card: Multi Media Card | No | Yes | Yes | Yes | Yes |
| SIMATIC HMI SD memory card: Secure Digital memory card | No | Yes | Yes | Yes | Yes |
| USB memory | Yes | Yes | Yes | Yes | Yes |
| **Mechanics/material** | | | | | |
| Enclosure material (front) | | | | | |
| • Plastic | Yes | Yes | Yes | Yes | Yes |
| • Aluminum | No | No | No | No | No |
| • Stainless steel | No | No | No | No | No |
| **Dimensions** | | | | | |
| Width of the housing front | 194 mm | 248.4 mm | 248.4 mm | 307.5 mm | 307.5 mm |
| Height of housing front | 166 mm | 171.7 mm | 194.9 mm | 200.9 mm | 223.5 mm |
| **Weights** | | | | | |
| Weight (without packaging) | 0.7 kg | 1.2 kg | 1.3 kg | 1.5 kg | 1.6 kg |
| Weight incl. packaging | 0.95 kg | 1.3 kg | 1.4 kg | 1.6 kg | 1.7 kg |

## Technical specifications (continued)

| Article number | **6AV2145-8GB00-0AA0**<br>SIMATIC HMI KTP700F Mobile HW | **6AV2145-8GB01-0AA0**<br>SIMATIC HMI KTP700F Mobile HW/OR | **6AV2145-6KB20-0AS0**<br>SIMATIC HMI TP1000F Mobile |
|---|---|---|---|
| **General information** | | | |
| Product type designation | SIMATIC HMI KTP700F Mobile HW | SIMATIC HMI KTP700F Mobile HW/ OR | TP1000F Mobile |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 7 in | 7 in | 10.1 in |
| Number of colors | 16 000 000 | 16 000 000 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 800 Pixel | 800 Pixel | 1 280 Pixel |
| • Vertical image resolution | 480 Pixel | 480 Pixel | 800 Pixel |
| **Backlighting** | | | |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h | 50 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Keyboard fonts** | | | |
| • Function keys | | | |
| - Number of function keys | 6 | 6 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes | Yes | Yes |
| • Design as multi-touch screen | No | No | No |
| **Special operator controls** | | | |
| • Stop button (forced blocking) | Yes | Yes | Yes |
| • Emergency stop button (illuminated and forced blocking) | Yes | Yes | Yes |
| • Acknowledgement button (3-stage) | Yes | Yes | Yes |
| • Key-operated switch | Yes | Yes | Yes |
| • Illuminated pushbutton | Yes | Yes | Yes |
| • Handwheel | Yes | Yes | No |
| **Camera** | | | |
| • integrated camera | No | No | No |
| **Expansions for operator control of the process** | | | |
| • DP direct LEDs (LEDs as S7 output I/O) | | | |
| - F1...Fx | 6 | 6 | 0 |
| • Direct keys (keys as S7 input I/O) | | | |
| - F1...Fx | 6 | 6 | 0 |
| • Direct keys (touch buttons as S7 input I/O) | 32 | 32 | 0 |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| **Memory** | | | |
| Memory available for user data | 12 Mbyte | 12 Mbyte | 12 Mbyte |
| **Time of day** | | | |
| **Clock** | | | |
| • Hardware clock (real-time) | Yes | Yes | Yes |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 1 | 1 | 1 |
| Number of PROFINET interfaces | 1 | 1 | 1 |
| Number of RS 485 interfaces | 0 | 0 | 0 |
| Number of RS 422 interfaces | 0 | 0 | 0 |
| Number of RS 232 interfaces | 0 | 0 | 0 |
| Number of USB interfaces | 1; USB 2.0 | 1; USB 2.0 | 1; USB 2.0 |
| Number of wireless interfaces | 0 | 0 | 0 |
| Number of SD card slots | 1 | 1 | 1 |

## Technical specifications (continued)

| Article number | **6AV2145-8GB00-0AA0**<br>SIMATIC HMI KTP700F Mobile HW | **6AV2145-8GB01-0AA0**<br>SIMATIC HMI KTP700F Mobile HW/OR | **6AV2145-6KB20-0AS0**<br>SIMATIC HMI TP1000F Mobile |
|---|---|---|---|
| **Protocols** | | | |
| PROFINET | Yes | Yes | Yes |
| PROFIsafe | Yes | Yes | Yes |
| PROFIBUS | No | No | No |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes |
| **WEB characteristics** | | | |
| • HTTP | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes |
| • HTML | Yes | Yes | Yes |
| • XML | No | No | No |
| • CSS | Yes | Yes | Yes |
| • Active X | No | No | No |
| • JavaScript | Yes | Yes | Yes |
| • Java VM | No | No | No |
| **Further protocols** | | | |
| • EtherNet/IP | Yes | Yes | Yes |
| • MODBUS | Yes | Yes | Yes |
| **Communication functions** | | | |
| **Wireless communication** | | | |
| • supported standards | | | |
| - Radio standard WLAN 802.11 | No | No | No |
| - Bluetooth radio standard | No | No | No |
| **Degree and class of protection** | | | |
| IP65 (all-round) | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| UL approval | Yes | Yes | |
| cULus | Yes | Yes | Yes |
| FM approval | No | No | |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No | No | No |
| EAC (formerly Gost-R) | Yes | Yes | |
| Suitable for safety functions | Yes | Yes | Yes |
| Marine approval | No | No | No |
| **Highest safety class achievable in safety mode** | | | |
| • Performance level according to ISO 13849-1 | PLe | PLe | PLe |
| • SIL acc. to IEC 61508 | SIL 3 | SIL 3 | SIL 3 |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |
| • ATEX Zone 22 | No | No | No |
| • IECEx Zone 2 | No | No | No |
| • IECEx Zone 22 | No | No | No |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • cULus Class II Division 2 | No | No | |
| • FM Class I Division 2 | No | No | No |
| • FM Class II Division 2 | No | No | |

## Technical specifications (continued)

| Article number | **6AV2145-8GB00-0AA0**<br>SIMATIC HMI KTP700F Mobile HW | **6AV2145-8GB01-0AA0**<br>SIMATIC HMI KTP700F Mobile HW/OR | **6AV2145-6KB20-0AS0**<br>SIMATIC HMI TP1000F Mobile |
|---|---|---|---|
| **Ambient conditions** | | | |
| **Free fall** | | | |
| • Fall height, max. | 1.2 m | 1.2 m | 1.2 m |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 32 | 32 | 32 |
| **Functionality under WinCC (TIA Portal)** | | | |
| Applications/options | | | |
| • Web browser | Yes | Yes | Yes |
| • Pocket Word | No | No | No |
| • Pocket Excel | No | No | No |
| • PDF Viewer | Yes | Yes | Yes |
| • Media Player | No | No | No |
| • SIMATIC WinCC Sm@rtServer | Yes | Yes | Yes |
| • SIMATIC WinCC Audit | Yes | Yes | Yes |
| Number of Visual Basic Scripts | Yes | Yes | Yes |
| Task planner | | | |
| • time-controlled | Yes | Yes | Yes |
| • task-controlled | Yes | Yes | Yes |
| **Multiproject** | | | |
| • Number of projects (internal) | 0 | 0 | 0 |
| • Number of projects (external) | 0 | 0 | 0 |
| **Message system** | | | |
| • Bit messages | | | |
| - Number of bit messages | 4 000 | 4 000 | 4 000 |
| • Analog messages | | | |
| - Number of analog messages | 200 | 200 | 200 |
| • Message buffer | | | |
| - Number of entries | 1 024 | 1 024 | 1 024 |
| - Circulating buffer | Yes | Yes | Yes |
| - retentive | Yes | Yes | Yes |
| **Recipe management** | | | |
| • Number of recipes | 300 | 300 | 300 |
| • Size of internal recipe memory | 2 Mbyte | 2 Mbyte | 2 Mbyte |
| • Recipe memory expandable | Yes | Yes | Yes |
| **Variables** | | | |
| • Number of variables per device | 2 048 | 2 048 | 2 048 |
| • Number of variables per screen | 400 | 400 | 400 |
| **Images** | | | |
| • Number of configurable images | 500 | 500 | 500 |
| **Archiving** | | | |
| • Number of archives per device | 50 | 50 | 50 |
| • Number of entries per archive | 20 000 | 20 000 | 20 000 |
| **Security** | | | |
| • Number of user groups | 50 | 50 | 50 |
| • Number of users | 50 | 50 | 50 |
| • SIMATIC Logon | Yes | Yes | Yes |

## **Technical specifications** (continued)

| Article number | **6AV2145-8GB00-0AA0**<br>SIMATIC HMI KTP700F Mobile HW | **6AV2145-8GB01-0AA0**<br>SIMATIC HMI KTP700F Mobile HW/OR | **6AV2145-6KB20-0AS0**<br>SIMATIC HMI TP1000F Mobile |
|---|---|---|---|
| **Process coupling** | | | |
| • S7-1200 | Yes | Yes | Yes |
| • S7-1500 | Yes | Yes | Yes |
| • S7-200 | Yes | Yes | Yes |
| • S7-300/400 | Yes | Yes | Yes |
| • LOGO! | Yes | Yes | Yes |
| • WinAC | No | No | Yes; WinAC RTX |
| • SIMOTION | Yes | Yes | Yes |
| **Peripherals/Options** | | | |
| SIMATIC HMI MM memory card: Multi Media Card | Yes | Yes | Yes |
| SIMATIC HMI SD memory card: Secure Digital memory card | Yes | Yes | Yes |
| USB memory | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | Yes |
| • Aluminum | No | No | No |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | | | 307.5 mm |
| Height of housing front | | | 223.5 mm |
| **Weights** | | | |
| Weight (without packaging) | 1.48 kg | 1.48 kg | 1.6 kg |
| Weight incl. packaging | 1.8 kg | 1.8 kg | 1.7 kg |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| *SIMATIC Mobile Panels for 2nd Generation [1)]* | |
| **SIMATIC HMI KTP700F Mobile HW**<br>7.0" TFT display, 800 x 480 pixels, 16 million colors, key and touch operation, 6 function keys, 2 illuminated pushbuttons, 1x PROFINET/Industrial Ethernet interface, 1x Multimedia card, 1x USB, key-operated switch, acknowledgment button, emergency stop button, handwheel, configurable as from WinCC Comfort V15 | **6AV2145-8GB00-0AA0** |
| **SIMATIC HMI KTP700F Mobile HW/OR**<br>7.0" TFT display, 800 x 480 pixels, 16 million colors, key and touch operation, 6 function keys, 2 illuminated pushbuttons, 1x PROFINET/Industrial Ethernet interface, 1x Multimedia card, 1x USB, key-operated switch, acknowledgment button, emergency stop button, handwheel and override, configurable as from WinCC Comfort V15 | **6AV2145-8GB01-0AA0** |
| **SIMATIC HMI TP1000F Mobile**<br>10.0" TFT display, 1 280 x 800 pixels, 16 million colors, touch operation, touch pen, 1x PROFINET/Industrial Ethernet interface, 1x Multimedia card, 1x USB, key-operated switch, acknowledgment button, emergency stop button, configurable as from WinCC Comfort V14 | **6AV2145-6KB20-0AS0** |
| **KTP400F Mobile** | **6AV2125-2DB23-0AX0** |
| **KTP700 Mobile** | **6AV2125-2GB03-0AX0** |
| **KTP700F Mobile** | **6AV2125-2GB23-0AX0** |
| **KTP900 Mobile** | **6AV2125-2JB03-0AX0** |
| **KTP900F Mobile** | **6AV2125-2JB23-0AX0** |
| **Starter kit Mobile Panel**<br>Consisting of:<br>1x KTP700F Mobile,<br>1x connection box standard,<br>1x connecting cable 2 m,<br>1x wall bracket,<br>1x WinCC Comfort (TIA Portal) | **6AV2133-5GA00-0AA0** |
| *Accessories* | |
| **Connecting cable and accessories for Mobile Panels** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

[1)] The system components (connecting cables and connection boxes) must be ordered separately.

## More information

More information is available on the Internet at:

http://www.siemens.com/mobile-panels

Note:

Do you need a specific modification or extension to the products described here? Then look up "Customized products", where you will find information about additional and generally available sector-specific products, as well as options for customer-specific modifications and adaptations.

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## Overview

### *SIMATIC HMI KTP700F Mobile Arctic*

The operator panel with glass touch screen is designed for use in weather-protected areas with low ambient temperatures, e.g. in cooling technology.

It has the same functionality as the SIMATIC HMI Mobile Panels 2$^{nd}$ Generation and is configured exclusively with the innovative HMI software WinCC.

The engineering software is integrated into the "Totally Integrated Automation Portal" engineering framework.

WinCC (TIA Portal) as of V15.1 is required to configure the device.

## Technical specifications

| Article number | **6AV2145-6GB06-0AA0**<br>SIMATIC HMI KTP700F Mobile Arctic |
|---|---|
| **General information** | |
| Product type designation | KTP700F Mobile Arctic |
| **Display** | |
| Design of display | TFT, bonded, daylight-readable |
| Screen diagonal | 7 in |
| Number of colors | 16 000 000 |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 800 Pixel |
| • Vertical image resolution | 480 Pixel |
| **Backlighting** | |
| • MTBF backlighting (at 25 °C) | 50 000 h |
| • Backlight dimmable | Yes; 0-100 % |
| **Control elements** | |
| **Keyboard fonts** | |
| • Function keys | |
| - Number of function keys | 8 |
| **Touch operation** | |
| • Design as touch screen | Yes |
| • Design as multi-touch screen | No |
| **Special operator controls** | |
| • Stop button (forced blocking) | Yes |
| • Emergency stop button (illuminated and forced blocking) | Yes |
| • Acknowledgement button (3-stage) | Yes |
| • Key-operated switch | Yes |
| • Illuminated pushbutton | Yes |
| **Camera** | |
| • integrated camera | No |
| **Expansions for operator control of the process** | |
| • DP direct LEDs (LEDs as S7 output I/O) | |
| - F1...Fx | 8 |
| • Direct keys (keys as S7 input I/O) | |
| - F1...Fx | 8 |
| • Direct keys (touch buttons as S7 input I/O) | 32 |

| Article number | **6AV2145-6GB06-0AA0**<br>SIMATIC HMI KTP700F Mobile Arctic |
|---|---|
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 24 V |
| **Memory** | |
| Memory available for user data | 12 Mbyte |
| **Time of day** | |
| **Clock** | |
| • Hardware clock (real-time) | Yes |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1 |
| Number of PROFINET interfaces | 1 |
| Number of RS 485 interfaces | 0 |
| Number of RS 422 interfaces | 0 |
| Number of RS 232 interfaces | 0 |
| Number of USB interfaces | 1; USB 2.0 |
| Number of wireless interfaces | 0 |
| Number of SD card slots | 1 |
| **Protocols** | |
| PROFINET | Yes |
| PROFIsafe | Yes |
| PROFIBUS | No |
| **Protocols (Ethernet)** | |
| • TCP/IP | Yes |
| • DHCP | Yes |
| • SNMP | Yes |
| • DCP | Yes |
| • LLDP | Yes |
| **WEB characteristics** | |
| • HTTP | Yes |
| • HTTPS | Yes |
| • HTML | Yes |
| • XML | No |
| • CSS | Yes |
| • Active X | No |
| • JavaScript | Yes |
| • Java VM | No |
| **Further protocols** | |
| • EtherNet/IP | Yes |
| • MODBUS | Yes |

## **Technical specifications** (continued)

| Article number | **6AV2145-6GB06-0AA0** |
|---|---|
| | SIMATIC HMI KTP700F Mobile Arctic |
| **Communication functions** | |
| **Wireless communication** | |
| • supported standards | |
| - Radio standard WLAN 802.11 | No |
| - Bluetooth radio standard | No |
| **Degree and class of protection** | |
| IP65 (all-round) | Yes |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes |
| FM approval | No |
| RCM (formerly C-TICK) | Yes |
| KC approval | No |
| Suitable for safety functions | Yes |
| Marine approval | No |
| **Highest safety class achievable in safety mode** | |
| • Performance level according to ISO 13849-1 | PLe |
| • SIL acc. to IEC 61508 | SIL 3 |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | No |
| • ATEX Zone 22 | No |
| • IECEx Zone 2 | No |
| • IECEx Zone 22 | No |
| • cULus Class I Zone 1 | No |
| • cULus Class I Zone 2, Division 2 | No |
| • cULus Class II Division 2 | No |
| • FM Class I Division 2 | No |
| • FM Class II Division 2 | No |
| **Ambient conditions** | |
| **Free fall** | |
| • Fall height, max. | 1.2 m |
| **Ambient temperature during operation** | |
| • min. | -28 °C |
| • max. | 45 °C |
| **Relative humidity** | |
| • Operation, max. | 90 %; no condensation |
| **Languages** | |
| **Online languages** | |
| • Number of online/runtime languages | 32 |
| **Functionality under WinCC (TIA Portal)** | |
| Libraries | Yes |
| Applications/options | |
| • Web browser | Yes |
| • Pocket Word | No |
| • Pocket Excel | No |
| • PDF Viewer | Yes |
| • Media Player | No |
| • SIMATIC WinCC Sm@rtServer | Yes |
| • SIMATIC WinCC Audit | Yes |
| Number of Visual Basic Scripts | Yes |
| Task planner | |
| • time-controlled | Yes |
| • task-controlled | Yes |

| Article number | **6AV2145-6GB06-0AA0** |
|---|---|
| | SIMATIC HMI KTP700F Mobile Arctic |
| **Multiproject** | |
| • Number of projects (internal) | 0 |
| • Number of projects (external) | 0 |
| **Message system** | |
| • Bit messages | |
| - Number of bit messages | 4 000 |
| • Analog messages | |
| - Number of analog messages | 200 |
| • Message buffer | |
| - Number of entries | 1 024 |
| - Circulating buffer | Yes |
| - retentive | Yes |
| **Recipe management** | |
| • Number of recipes | 300 |
| • Size of internal recipe memory | 2 Mbyte |
| • Recipe memory expandable | Yes |
| **Variables** | |
| • Number of variables per device | 2 048 |
| • Number of variables per screen | 400 |
| **Images** | |
| • Number of configurable images | 500 |
| **Archiving** | |
| • Number of archives per device | 50 |
| • Number of entries per archive | 20 000 |
| **Security** | |
| • Number of user groups | 50 |
| • Number of users | 50 |
| • SIMATIC Logon | Yes |
| **Process coupling** | |
| • S7-1200 | Yes |
| • S7-1500 | Yes |
| • S7-200 | Yes |
| • S7-300/400 | Yes |
| • LOGO! | Yes |
| • WinAC | Yes; WinAC RTX |
| • SIMOTION | Yes |
| **Peripherals/Options** | |
| Printer | Yes |
| • SIMATIC HMI MM memory card: Multi Media Card | Yes |
| • SIMATIC HMI SD memory card: Secure Digital memory card | Yes |
| • USB memory | Yes |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | Yes |
| • Aluminum | No |
| • Stainless steel | No |
| **Dimensions** | |
| Width of the housing front | 307.5 mm |
| Height of housing front | 223.5 mm |
| **Weights** | |
| Weight (without packaging) | 1.4 kg |
| Weight incl. packaging | 1.6 kg |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC HMI KTP700F Mobile Arctic**<br>Extended operating temperature range,<br>7.0" TFT display,<br>800 x 480 pixels, 16 million colors,<br>key and touch operation,<br>8 function keys,<br>1x PROFINET/Industrial Ethernet interface,<br>1x Multimedia card, 1x USB,<br>1x touch pen, key-operated switch,<br>acknowledgment button,<br>EMERGENCY STOP button,<br>configurable as of<br>WinCC Comfort V15.1 | **6AV2145-6GB06-0AA0** |
| ***Accessories*** | |
| **Connection boxes Compact and Advanced** | see System components for Mobile Panels |
| **Connecting cable** | Connecting cable KTP Mobile |

## More information

You can find more information on the Internet at:

http://www.siemens.com/mobile-panels

Customized modification options

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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## Connection box for Mobile Panels (2nd Generation)

### Overview

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Mobile Panels with emergency stop buttons can be wired into the emergency stop circuit of a machine or plant by means of the connection boxes.

Pressing the emergency stop button on the Mobile Panel activates the emergency stop function.

The emergency stop button on the Mobile Panel supplements, but does not replace, the emergency stop equipment permanently installed on the machine.

### Technical specifications

| Article number | **6AV2125-2AE03-0AX0**<br>SIMATIC HMI Connection Box Compact | **6AV2125-2AE13-0AX0**<br>SIMATIC HMI Connection Box Standard | **6AV2125-2AE23-0AX0**<br>SIMATIC HMI Connection Box Advanced |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Compact | Standard | Advanced |
| **Product function** | | | |
| • Web-based management | No | Yes | Yes |
| **FH technology** | | | |
| **Safety evaluation through direct wiring** | | | |
| • Reconnection without emergency stop circuit interruption | No | No | Yes |
| • Reconnection with emergency stop circuit interruption | Yes | Yes | No |
| • Monitoring the STOP button | Yes | Yes | Yes |
| • Monitoring of emergency stop button | Yes | Yes | Yes |
| • Monitoring of acknowledgement button | Yes | Yes | Yes |
| **Safety evaluation via PROFIsafe** | | | |
| • Reconnection without emergency stop circuit interruption | Yes | Yes | Yes |
| • Reconnection with emergency stop circuit interruption | No | No | No |
| • Monitoring the STOP button | Yes | Yes | Yes |
| • Monitoring of emergency stop button | Yes | Yes | Yes |
| • Monitoring of acknowledgement button | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Wall mounting/direct mounting | No | Yes | Yes |
| Control cabinet installation | Yes | No | No |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 18 mA | 96 mA | 95 mA |
| Starting current inrush $I^2t$ | 0.003 $A^2 \cdot s$ | 0.15 $A^2 \cdot s$ | 0.16 $A^2 \cdot s$ |
| **Power** | | | |
| Active power input, typ. | 0.43 W | 2.3 W | 2.3 W |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2 | 3 | 3 |

## Technical specifications (continued)

| Article number | **6AV2125-2AE03-0AX0**<br>SIMATIC HMI Connection Box Compact | **6AV2125-2AE13-0AX0**<br>SIMATIC HMI Connection Box Standard | **6AV2125-2AE23-0AX0**<br>SIMATIC HMI Connection Box Advanced |
|---|---|---|---|
| Number of PROFINET interfaces | 2 | 3 | 3 |
| Connection point identification | Yes | Yes | Yes |
| **Industrial Ethernet** | | | |
| • Industrial Ethernet status LED | 0 | 3 | 3 |
| **Protocols** | | | |
| PROFINET | Yes; No switch functionality | Yes | Yes |
| IRT | No | No | Yes |
| PROFIsafe | Yes; No switch functionality | Yes | Yes |
| AS-Interface | No | No | No |
| EIB/KNX | No | No | No |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes; No switch functionality | Yes | Yes |
| • DHCP | No | Yes | Yes |
| • SNMP | No | Yes | Yes |
| • DCP | No | Yes | Yes |
| • LLDP | No | Yes | Yes |
| **Redundancy mode** | | | |
| **Media redundancy** | | | |
| - MRP | No | No | Yes |
| **Further protocols** | | | |
| • AS-Interface Safety at Work | No | No | No |
| • CAN | No | No | No |
| • Data-Highway | No | No | No |
| • DeviceNet | No | No | No |
| • DeviceNet Safety | No | No | No |
| • EtherNet/IP | Yes | Yes | Yes |
| • Foundation Fieldbus | No | No | No |
| • INTERBUS | No | No | No |
| • INTERBUS-Safety | No | No | No |
| • Local Operating Network | No | No | No |
| • MODBUS | Yes | Yes | Yes |
| • SafetyBUS p | No | No | No |
| • SERCOS | No | No | No |
| • SUCOnet | No | No | No |
| • other bus systems | No | No | No |
| **EMC** | | | |
| **Emission of radio interference acc. to EN 55 011** | | | |
| • Limit class A, for use in industrial areas | Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas. | No | No |
| • Limit class B, for use in residential areas | No | No | No |
| **Degree and class of protection** | | | |
| IP degree of protection | | IP65 | IP65 |
| IP65 (all-round) | | Yes | Yes |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | | |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon |
| Suitable for safety functions | Yes | Yes | Yes |
| **Highest safety class achievable in safety mode** | | | |
| • Performance level according to ISO 13849-1 | PLe | PLe | PLe |
| • SIL acc. to IEC 61508 | SIL 3 | SIL 3 | SIL 3 |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |

## Technical specifications (continued)

| Article number | **6AV2125-2AE03-0AX0**<br>SIMATIC HMI Connection Box Compact | **6AV2125-2AE13-0AX0**<br>SIMATIC HMI Connection Box Standard | **6AV2125-2AE23-0AX0**<br>SIMATIC HMI Connection Box Advanced |
|---|---|---|---|
| • ATEX Zone 22 | No | No | No |
| • cULus Class I Zone 1 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | Yes | Yes | Yes |
| • American Bureau of Shipping (ABS) | Yes | Yes | Yes |
| • Bureau Veritas (BV) | No; Available soon | No; Available soon | No; Available soon |
| • Det Norske Veritas (DNV) | Yes | Yes | Yes |
| • Korean Register of Shipping (KRS) | No | No | No |
| • Lloyds Register of Shipping (LRS) | Yes | Yes | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes | Yes |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Configuration** | | | |
| **Configuration software** | | | |
| • STEP 7 Professional (TIA Portal) | No | No | No |
| • WinCC Comfort (TIA Portal) | No | Yes; Optional | Yes; Optional |
| • WinCC Advanced (TIA Portal) | No | Yes; Optional | Yes; Optional |
| • WinCC Professional (TIA Portal) | No | Yes; Optional | Yes; Optional |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | Yes |
| • Aluminum | No | No | No |
| • Stainless steel | No | No | No |
| **Dimensions** | | | |
| Width of the housing front | 96 mm | 230 mm | 230 mm |
| Height of housing front | 125 mm | 145 mm | 145 mm |
| Depth of housing | 78 mm | 76 mm | 76 mm |
| Mounting cutout, width | 77.5 mm | | |
| Mounting cutout, height | 106.5 mm | | |
| Overall depth | 30 mm | | |
| **Weights** | | | |
| Weight without packaging | 0.25 kg | 0.72 kg | 0.72 kg |
| Weight incl. packaging | 0.29 kg | 0.8 kg | 0.8 kg |
| **Other** | | | |
| **Usable in the following products** | | | |
| • Product 1 | 6AV2125-* | 6AV2125-* | 6AV2125-* |

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## Ordering data

| | Article No. |
|---|---|
| **Connection boxes for SIMATIC Mobile Panels for 2nd Generation and Arctic Panel** | |
| • Connection Box, Compact | **6AV2125-2AE03-0AX0** |
| • Connection Box, Standard | **6AV2125-2AE13-0AX0** |
| • Connection Box, Advanced | **6AV2125-2AE23-0AX0** |
| **Connecting cable and accessories for Mobile Panels** | See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories" |

## More information

More information is available on the Internet at:

http://www.siemens.com/mobile-panels

## Overview

***SIMATIC HMI Advanced – efficient realization of even the most demanding and sophisticated HMI tasks***

A PC-based system is recommended if the production places particularly high demands on the quantity and type of information to be processed and documented.

It offers the appropriate options for sufficient storage space, processor performance and data connection. The user can either opt for a centralized solution in which the visualization and PC are combined in a single unit, or for a distributed solution with an industrial monitor as thin client.

SIMATIC Industrial Panel PCs

The most complex visualization and control tasks can be realized centrally on the machine with extremely compact industrial panel PCs. You can always find an optimum solution in our portfolio – from the embedded to the high-end industrial PC – to meet the many requirements of manufacturing and process automation.

SIMATIC IFP and SIMATIC ITC

Two innovative options are available for distributed control concepts. SIMATIC industrial monitors and thin clients are used as desktop devices for control centers, as built-in devices for operator panels or as PC-based visualization and control solutions, in which the control unit is operated separately.

The following modules are available:

- Panel PC
- Industrial monitors and thin clients
- Embedded bundles/software packages

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## Overview

The SIMATIC Basic Panel, Comfort Panel and Mobile Panel offer HMI functionality for the control systems:

- SIMATIC S7
- Non-Siemens controllers:
  - Allen Bradley
  - Mitsubishi
  - Modicon
  - Omron

For more detailed information, refer to the WinCC (TIA Portal) user manual, the "Windows-based systems communication" manual, or the WinCC (TIA Portal) online help.

OPC communication and HTTP communication are offered for Comfort Panels and Mobile Panels with an integrated Ethernet interface. Both OPC and HTTP communication can be used in parallel with the process links to SIMATIC S7 or non-Siemens PLCs.

Note:

Interface options for HMI devices: See the individual device descriptions.

### *OPC communication*

OPC Data Access is an open standard for exchanging both local and remote variables between various applications via Industrial Ethernet.

### *HTTP communication for variable exchange between SIMATIC HMI systems*

Communication based on HTTP message frames enables variables to be exchanged between SIMATIC HMI systems.

| **Communication standard** | **SIMATIC HMI** | | |
|---|---|---|---|
| **Version** | **Comfort Panel** | **Mobile Panel KTPx00** | **WinCC Runtime Advanced** |
| **OPC Data Access V2.05a + OPC UA Data Access V1.01 + OPC Data Access XML V1.00** | | | |
| OPC DA client (COM/DCOM) | – | – | • |
| OPC DA server (COM/DCOM) | – | – | • |
| OPC UA DA client | • | • | • |
| OPC UA DA server | • | • | • |
| **HTTP communication for variable exchange between SIMATIC HMI systems** | | | |
| HTTP client | • | • | • |
| HTTP server | • | • | • |

• System interface possible

– System interface not possible

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## Overview

The following types of interface are differentiated in respect of the link between the SIMATIC Panels and SIMATIC S7 controllers:

- PROFINET interface:
  Coupling of SIMATIC Panel to SIMATIC S7 controllers via Industrial Ethernet TCP/IP using the integrated PROFINET interface of the CPU or, alternatively, a PROFINET interface module.
- MPI/PROFIBUS interface:
  Coupling of SIMATIC Panel to SIMATIC S7 controllers via MPI/PROFIBUS using the integrated MPI/PROFIBUS interface of the CPU or the integrated PPI interface of the CPU in the case of S7-200 or, alternatively, a PROFIBUS interface module in the case of S7-1200, S7-1500, S7-300 and S7-400.
- PPI interface:
  Coupling of SIMATIC Panel to SIMATIC S7-200 via PPI network using the integrated PPI interface of the CPU.

The maximum possible number of S7 connections of one CPU is determined by its performance capacity (see Catalog ST 70); from the point of view of the SIMATIC Panel, the following restrictions apply:

- Basic Panel, Comfort Panel 4",
  Mobile Panel 177: max. 4 connections
- Comfort Panels from 7" to 22" (incl. Outdoor),
  Mobile Panel 2nd Generation: max. 8 connections
- Mobile Panel 277: max. 6 connections
- PC with WinCC Runtime Advanced: max. 8 connections

### *PPI interface*

The PPI interface is a point-to-point connection between a SIMATIC Panel (PPI master) or alternatively a PG (PPI master) and an S7-200 (PPI slave).

### *MPI/PROFIBUS interface or PROFINET interface*

The corresponding multipoint-enabled SIMATIC Panel and SIMATIC S7 communication interfaces are used.
The following are possible:

- Interface between one or more SIMATIC Panels (MPI master) and one or more S7-1200/S7-1500/S7-300/S7-400s or WinAC (MPI master) (possible network topology: MPI/PROFIBUS or Industrial Ethernet TCP/IP)
- Interface between one or more SIMATIC Panels (MPI master) and one or more S7-200s (MPI slave)[1] (possible network topology: PPI, MPI/PROFIBUS)

Unlike PPI connections, MPI connections are static connections that are set up during booting and then monitored.

In principle this type of information exchange between SIMATIC Panels and SIMATIC S7 is independent of the network used, PPI, MPI/PROFIBUS or Industrial Ethernet:
SIMATIC Panels are S7 clients and SIMATIC S7 CPUs are S7 servers.

| **Controller** | **SIMATIC HMI** | | | | | |
|---|---|---|---|---|---|---|
| **Target hardware (PROTOCOL) (physics)** | **Basic Panel** | **Comfort Panel** | **Mobile Panel 177 DP / PN [1]** | **Mobile Panel 277 [1]** | **KTPx00(F) Mobile [1]** | **WinCC Runtime Advanced** |
| **SIMATIC S7-1200 [2]** | | | | | | |
| over Ethernet (TCP/IP) | • [3] | • | • [3] | • | • | • |
| over MPI or PROFIBUS network | • [4] | • | • [3] | • | – | • [5] |
| **SIMATIC S7-1500 [2]** | | | | | | |
| over Ethernet (TCP/IP) | • [3] | • | • [3] | • | • | • |
| over PROFIBUS network | • [3] | • | • [3] | • | – | • [5] |
| **SIMATIC S7-300, -400, Win AC [2]** | | | | | | |
| over Ethernet (TCP/IP) | • [3] | • | • [3] | • | • | • |
| over MPI or PROFIBUS network | | • | • [4] | • | – | • [5] |
| **SIMATIC S7-200 [2]** | | | | | | |
| over Ethernet (TCP/IP) (MPI protocol) | • [3] | • | • [3] | • | • | • |
| over MPI or PROFIBUS network | • [4] | • [6] | • [4] [6] | • [6] | – | • [5] [6] |
| over PPI network (MPI protocol) | • [4] | – | • | – | – | – |
| over PPI network (PPI protocol) | – | • [7] | • [7] | • [7] | – | • [5] [7] |

• System interface possible

- System interface not possible

---

[1] Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

[2] Controllers can be combined as desired

[3] Basic Panel PN only

[4] Basic Panel DP only

[5] Connection via integrated MPI/PROFIBUS interface; in the case of a standard PC, a communications processor (CP) is to be used (e.g. CP 5612/5622)

[6] Only on passive S7-200

[7] Can be interfaced via PPI to max. 1 x S7-200 (PPI); network operation (parallel PG, etc.) is possible

Note:

For detailed information on cable assignment, refer to WinCC Online Help.

## Overview

The SIMATIC Basic Panels, Comfort Panels and Mobile Panels, as well as the SIMATIC HMI software package for PC WinCC Runtime Advanced support the following protocols for linking the control systems of other manufacturers:

- Allen Bradley
  - Ethernet IP protocol
  - DF1 protocol
- Mitsubishi
  - MC TCP/IP protocol
  - FX protocol
- Modicon
  - Modbus TCP/IP protocol
  - Modbus RTU protocol
- Omron
  - Link/Multi-Link protocol

The following table contains more detailed information.

### *Connection overview*

| **Controller** | **SIMATIC HMI** | | | |
|---|---|---|---|---|
| **Target hardware (PROTOCOL) (physics)** | **Basic Panel** | **Comfort Panel Outdoor** | **KTPx00(F) Mobile** | **WinCC Runtime Advanced** |
| **Allen Bradley (Ethernet IP)** | | | | |
| via Ethernet TCP/IP network to max. 4 x controllers 2)<br>• ControlLogix 1756-L6x, -L6xS with Ethernet module 1756-ENBT<br>• GuardLogix System<br>• CompactLogix 1769-L2xE, -L3xE<br>• CompactLogix 1769-L4x with Ethernet module 1768-ENBT<br>• SLC 5/05<br>• MicroLogix 1100, 1400 | • 3) | • | • | • |
| **Allen Bradley (DF1)** | | | | |
| to max. 1 x controller<br>• SLC 5/03, /04, /05<br>• MicroLogix (RS 232) | • 4) 5) | • 4) | – | • 6) |
| to max. 1 x controller<br>• PLC5/11, /20, /30, /40, /60, /80 (RS 232) | • 4) 5) | • 4) | – | • 7) |
| via KF2 gateway and DH+ network to max. 4 x controllers 2)<br>• SLC 5/04<br>• PLC5/11, /20, /30, /40, /60, /80 (RS 232) | • 4) 5) | • 4) | – | • 7) 8) |
| via KF2 gateway and DH+ network to max. 4 x controllers 2)<br>• SLC 5/04<br>• PLC5/11, /20, /30, /40, /60, /80 (RS 422) | • 5) | • | – | – |
| via KF3 gateway and DH485 network to max. 4 x controllers 2)<br>• SLC 500<br>• MicroLogix (RS 232) | • 4) 5) | • 4) | – | • 7) 8) |

• System interface possible

- System interface not possible

1) Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

2) The following listed controllers can be combined as required

3) Basic Panel PN only

4) The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for Basic Panels and Comfort Panels

5) Basic Panel DP only

6) Connection via Allen Bradley PC cable 1747 CP3

7) Connection via Allen Bradley PC cable 1784 CP10

8) For connection to KF2/KF3 gateway, a gender-changer (25-pin socket/ 25-pin socket) is required on the gateway side

Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also FAQs:

http://support.automation.siemens.com/WW/view/en/29034071

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## **Overview** (continued)

| **Controller** | **SIMATIC HMI** | | | |
|---|---|---|---|---|
| **Target hardware (PROTOCOL) (physics)** | **Basic Panel** | **Comfort Panel Outdoor** | **KTPx00(F) Mobile** | **WinCC Runtime Advanced** |
| **Mitsubishi (MC TCP/IP)** | | | | |
| via Ethernet IP network to max. 4 x controllers [2)]<br>• FX series FX3G, FX3U, FX3UC with Ethernet module FX3U ENET,<br>• Series Q with Ethernet module QJ71E71-100<br>• iQ series/QnUD QnUDEH | • [3)] | • | • | • |
| **Mitsubishi FX (serial)** | | | | |
| to max. 1 x controller<br>FX series FX1N, FX2N (RS 232) | • [4)] | • | – | • [5)] |

• System interface possible

- System interface not possible

[1)] Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

[2)] The following listed controllers can be combined as required

[3)] Basic Panel PN only

[4)] Basic Panel DP only

[5)] Connection using a Mitsubishi PC cable SC-09 with integrated level converter RS 232/RS 422

Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also FAQs:

http://support.automation.siemens.com/WW/view/en/29034071

| **Controller** | **SIMATIC HMI** | | | |
|---|---|---|---|---|
| **Target hardware (PROTOCOL) (physics)** | **Basic Panel** | **Comfort Panel Outdoor** | **KTPx00(F) Mobile** | **WinCC Runtime Advanced** |
| **Modicon (MODBUS TCP/IP)** | | | | |
| via MODBUS TCP/IP network to max. 4 x controllers [2)]<br>• Concept Quantum, Unity Quantum<br>• Momentum<br>• Premium (TSX57)<br>• TSX Micro (TSX37)<br>• Modicon M340 20x0 (except 2010) | • [3)] | • | • | • |
| via TCP/IP Modbus Plus Bridge 174 CEV 200 40 and MODBUS PLUS network to max. 4 x controllers [2)]<br>• Concept Quantum, Unity Quantum<br>• Momentum<br>• Compact | • [3)] | • | • | • |
| **Modicon (MODBUS RTU)** | | | | |
| to max. 1 x controller<br>• Concept Quantum<br>• Momentum<br>• Compact<br>(RS 232) | • [4) 5)] | • [4)] | – | • |
| via bridge BM85-000 or PLC with bridge functionality and MODBUS PLUS network to max. 4 x controllers [2)]<br>• Concept Quantum<br>• Compact (RS 232) | • [4) 5)] | • [4)] | – | • |

• System interface possible

- System interface not possible

[1)] Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

[2)] The following listed controllers can be combined as required

[3)] Basic Panel PN only

[4)] The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for Basic Panels and Mobile Panels

[5)] Basic Panel DP only

Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also FAQs:

http://support.automation.siemens.com/WW/view/en/29034071

## **Overview** (continued)

| **Controller** | **SIMATIC HMI** | | | |
|---|---|---|---|---|
| **Target hardware (PROTOCOL) (physics)** | **Basic Panel** | **Comfort Panel Outdoor** | **KTPx00(F) Mobile** | **WinCC Runtime Advanced** |
| **Omron (Link/Multi Link)** | | | | |
| to max. 1 x controller<br>• CP1L, CP1H, CP1E<br>• CJ1M, CJ1H, CJ1G<br>• CJ2H<br>• CS1G, CS1H, CS1D<br>• CP2MC (RS 232) | – | • [2) | – | • |
| via converter NT-AL001 and RS 422 network to max. 4 x controllers [2)<br>• CP1L, CP1H, CP1E<br>• CJ1M, CJ1H, CJ1G<br>• CJ2H<br>• CS1G, CS1H, CS1D<br>• CP2MC (RS 232) | – | • [2) | – | • |
| via RS 422 network to max. 4 x controllers [2)<br>• CP1L, CP1H, CP1E<br>• CJ1M, CJ1H, CJ1G (RS 422) | • [3) | • | – | – |
| via RS422 network to max. 4 x controllers [2)<br>• CJ2H<br>• CS1G, CS1H, CS1D<br>• CP2MC (RS 422) | – | – | – | – |

• System interface possible

- System interface not possible

---

[1) The controllers listed below can be combined in any way required; connection via RS 422 interface of the controller or via RS 422 module

[2) The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for Basic Panels and Mobile Panels

[3) Basic Panel DP only

Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also FAQs:

http://support.automation.siemens.com/WW/view/en/29034071

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## Notes

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# HMI Software

# 3

**3/2 Introduction**

**3/5 HMI Software in the TIA Portal**
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- 3/7 SIMATIC WinCC Unified Engineering
- 3/8 SIMATIC WinCC Unified Runtime
- 3/9 WinCC Unified (TIA Portal) options NEW
  - 3/9 WinCC Unified Clients
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## Introduction

### Overview

***SIMATIC HMI – Efficient to a new level***

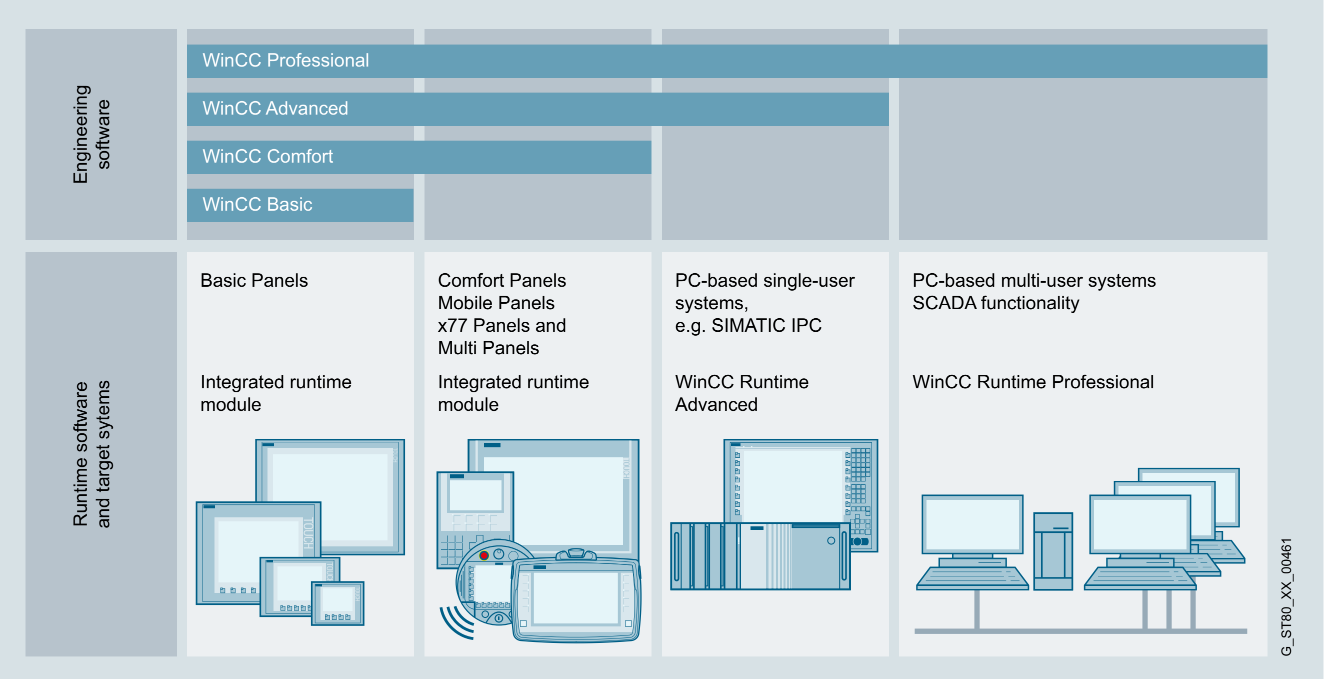
Innovative, efficient, scalable and open software for the machine-level area and for SCADA solutions.

With the SIMATIC WinCC (TIA Portal), SIMATIC WinCC and SIMATIC WinCC Open Architecture product families, SIMATIC HMI offers visualization and configuration software for the entire HMI spectrum, from the machine-level area right up to SCADA systems:

- ***SIMATIC WinCC (TIA Portal)***
  Creation of applications in the machine-level area and of process visualization or SCADA systems
- ***SIMATIC WinCC flexible***
  Maintenance of visualization solutions in the machine-level area:
- ***SIMATIC WinCC V7 SCADA system***
  Creation of process visualization or SCADA systems
- ***SIMATIC WinCC Open Architecture SCADA system***
  Creation of applications with a high demand for customer-specific adaptations, large and/or complex applications, as well as projects that demand special system requirements and functions.

http://www.siemens.com/hmi-software

***SIMATIC WinCC (TIA Portal)***


Engineering software
WinCC Professional
WinCC Advanced
WinCC Comfort
WinCC Basic
Runtime software and target sytems
Basic Panels
Integrated runtime module
Comfort Panels
Mobile Panels
x77 Panels and
Multi Panels
Integrated runtime module
PC-based single-user systems,
e.g. SIMATIC IPC
WinCC Runtime Advanced
PC-based multi-user systems
SCADA functionality
WinCC Runtime Professional
G_ST80_XX_00461

WinCC (TIA Portal) is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal) which offers users a uniform, efficient and intuitive solution to all their automation tasks. SIMATIC WinCC (TIA Portal) covers applications in the machine-level area and applications in the process visualization or SCADA environment.
WinCC (TIA Portal) offers the uniform and scalable configuration tools WinCC Basic, Comfort, Advanced and Professional for configuring the current SIMATIC HMI operator panels:

- SIMATIC Basic Panels (without Key Panel)
- SIMATIC Comfort Panels
- SIMATIC Mobile Panels
- PC-based systems for the machine-level area
  - SIMATIC WinCC Runtime Advanced
  - SIMATIC WinCC Runtime Professional

In addition, WinCC (TIA Portal) offers:

- Intuitive user interface with maximum degree of operator friendliness
- Clear configuration of devices and network topologies
- Shared data management and uniform symbols via controller and HMI
- Optimum interaction with the controller and HMI in a working environment
- Powerful editors for efficient engineering
- Integrated mass data operations for efficient configuration
- System diagnostics as an integral component
- Comprehensive library concept

http://www.siemens.com/wincc-tia-portal

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## **Overview** (continued)

### *SIMATIC SCADA Systems*

The data volume in modern industrial plants is growing continuously – and along with it the challenges faced by the SCADA solutions used: Enormous data volumes must be administered and archived for the long term. This is accompanied by increasing demands on performance. Technologies, including some from the consumer environment, are finding their way into industry. Globalization calls for higher-level SCADA systems that can be used worldwide – and the need for mobile access to plant information is also growing.
On top of all these requirements – in these times of ever increasing (energy) costs – is the need to improve energy efficiency and productivity.

**With SIMATIC SCADA systems, you are fit for the future**

Efficiency

As a key to greater productivity, SIMATIC SCADA systems combine efficient engineering with high-performance archiving and maximum data security. These features provide the basis for efficient operations management and intelligent production analyses.

Scalability

We offer stationary and mobile solutions to cover increasing demands – security guaranteed. In this area, we apply more than 15 years of SCADA know-how from all industry sectors. No matter how large or small your request is – we have the right answer.

Innovation

Stay informed with mobile SCADA solutions anywhere and at any time – including with existing tablet and smartphone hardware. The use of multi-touch gestures in the industrial environment opens the door for modern operating concepts.

Openness

Since international standards and system-internal script and programming interfaces are supported, it is easy to implement special requests.

http://www.siemens.com/scada

### *SIMATIC WinCC V7 SCADA system*

The process visualization or SCADA system for visualizing and operating processes, production flows, machines and plants in all sectors – from the simple single-user station through to distributed multi-user systems with redundant servers and cross-location solutions with web clients. WinCC is the information hub for company-wide, vertical integration (process visualization and platform for IT & business integration).

- All HMI functions on-board with industry-standard functions for signaling and acknowledging events, archiving of messages and measured values, logging of all process and configuration data, user administration and visualization (WinCC basic software).
- Company-wide, flexible client/server structures with operator stations on the web, distributed servers and data integrity thanks to redundancy
- Easy to integrate over standard interfaces such as OPC (OLE for Process Control), WinCC OLE DB, VBA (Visual Basic for Applications), VB script, C-API (ODK)
- Integration platform in the company thanks to the Historian functionality integrated into WinCC based on the Microsoft SQL Server, standard and programming interfaces and tools and clients for evaluation
- Modular expansion with options and add-ons as well as individual functional expansions with VB Script, Visual Basic for Applications, C-API (ODK) and integration of ActiveX elements.

http://www.siemens.com/wincc-v7

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## **Overview** (continued)

### ***SIMATIC WinCC Open Architecture SCADA system***

The SIMATIC WinCC Open Architecture (WinCC OA) SCADA system is designed for applications with high demand for customer-specific adaptations, large and/or complex applications, as well as projects that demand special system requirements and functions.

SIMATIC WinCC Open Architecture demonstrates its high performance in networked and redundant high-end control systems in particular. From the field level to the control station, from the machine to the company headquarters – integrated, high-performance communication is ensured. In every situation, a high level of availability, reliable information, fast interaction and user friendliness are guaranteed. Applications can also be changed without interrupting the process. Profitability, efficiency and safety are therefore always in equilibrium.

With its hot-standby redundancy and disaster recovery system, SIMATIC WinCC Open Architecture demonstrates its reliability in a wide range of business-critical applications.
SIMATIC WinCC Open Architecture can be used on any platform and is available for Windows, Linux, iOS and Android.

SIMATIC WinCC Open Architecture is open for independent in-house developments, which means that ideas can be turned into new applications quickly and easily.

- Object-orientation supports efficient engineering and flexible plant expansion
- For large, distributed systems with up to 2 048 servers
- Scalable – from a small single-user system up to a networked, redundant high-end system
- WinCC OA can be used on any platform, and is available for Windows, Linux, iOS and Android
- Hot-standby redundancy and disaster recovery system assure maximum fail-safety and availability
- WinCC OA offers a platform for customer-specific solutions
- Extensive driver and interfacing options: S7, SINAUT, OPC, OPC UA, Modbus, IEC 60870-5-101/104, DNP3, BACnet, and more than 25 native drivers available
- Flexible logging of data either in file-based value archive or in a relational database (ORACLE)
- Create and reuse your own libraries – working with already existing object libraries and easy, individual modifications (customer design, specific changes)
- Modular expansion using options and add-ons as well as individual functional expansions by means of own script language CONTROL, API (C++) and integration of ActiveX elements
- Integration of TIA Projects using TIA Importer for S7-1200 and S7-1500

http://www.siemens.com/wincc-open-architecture

### ***PC-based HMI solutions (machine-level / SCADA) with SIMATIC industrial PCs***

Our reliable and innovative SIMATIC IPC industrial PCs are the optimal PC hardware platforms. SIMATIC industrial PCs are offered with low-cost software packages. For runtime versions with SIMATIC WinCC V7, WinCC Runtime Professional or WinCC Runtime Advanced visualization software products, as well as the SIMATIC WinAC RTX (F) software controller. The simultaneous purchase of industrial PC and software package results in a price advantage.

SIMATIC SCADA and SIMATIC IPCs

Perfect interaction for optimum productivity.

- Price advantage as "Package" comprising hardware and software
- System-tested solutions reduce testing overhead
- Simple ordering and synchronized logistics

Only if ordered together with the SIMATIC IPC.

http://www.siemens.com/scada-ipc

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## Overview

### *Much more than visualization software*

From machine-level visualization all the way to the high-performance SCADA system, SIMATIC WinCC in the TIA Portal and its efficient tools covers the entire engineering and visualization software spectrum – integrated across all performance classes.

The following software is currently offered:

- ***SIMATIC WinCC Unified (TIA Portal)***
  - SIMATIC WinCC Unified Engineering
  - SIMATIC WinCC Unified Runtime
  - SIMATIC WinCC Unified options
- ***SIMATIC WinCC (TIA Portal)***
  - SIMATIC WinCC (TIA Portal) Runtime
  - SIMATIC WinCC (TIA Portal) options
- ***TIA Portal options***
  - SIMATIC Visualization Architect
  - SIMATIC ProDiag

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## SIMATIC WinCC Unified (TIA Portal)

### Overview

***SIMATIC WinCC Unified (TIA Portal)***

SIMATIC WinCC Unified is the new visualization system which permits users to competently meet the challenges of digitalization in machine and plant construction. SIMATIC WinCC Unified combines the know-how accumulated from more than 30 years of experience in the area of Human Machine Interface with state-of-the-art hardware and software technologies.

Highlights:

- The latest technology with proven engineering
  - The runtime of the newly developed SIMATIC WinCC Unified visualization software uses native web technologies such as HTML5, SVG, and JavaScript.
  - Visualization is created simply and efficiently with SIMATIC WinCC Unified Engineering in the proven Totally Integrated Automation Portal (TIA Portal).
- Simple and unlimited scalability
  - Simple and consistently scalable for all applications, from the operator panel directly on the machine through to the complex SCADA solution.
  - SIMATIC Unified Comfort Panels and SIMATIC IPCs are provided to ensure optimum utilization of the performance capability of WinCC Unified.
  - Expandable to meet every demand and diverse possibilities for the implementation of requirements using open interfaces.
  - Through flexible data exchange, the system facilitates the interaction of all devices during operation and allows direct access to authorized users from any modern web browser – without the need for any additional installation.

https://intranet.entry.siemens.com

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## Overview

***SIMATIC WinCC Unified Engineering***

- Proven engineering in the TIA Portal allows a consistent, efficient, and intuitive solution for all automation tasks.
- Together with the STEP 7 (TIA Portal) products, WinCC (TIA Portal) forms the optimum solution for integrated engineering.
- WinCC Unified Engineering is the configuration software for all applications, from the operator panel directly on the machine through to the complex SCADA solution.
- WinCC Unified Engineering also supports configuration of the SIMATIC Basic Panel, SIMATIC Comfort Panel and WinCC Runtime Advanced.

## Application

Depending on the selected product, various target systems can be configured:

- WinCC Unified Comfort Engineering
  - Unified Comfort Panels
  - Additionally Basic Panels, Comfort Panels and Mobile Panels from WinCC Comfort
- WinCC Unified PC Engineering
  - WinCC Unified PC and Unified Comfort Panels
  - Additionally the Basic Panels, Comfort Panels, Mobile Panels and WinCC Runtime Advanced

## Design

The engineering tools of the SIMATIC WinCC (TIA Portal) family build on one another with regard to their respective capacities. The available editors are largely determined by the respective configurable target systems and their function.

The larger edition, such as WinCC Unified PC Engineering, always offers the additional possibilities of configuring the target devices of smaller editions (e.g. Unified Comfort Panels).

WinCC Unified Engineering also includes configuration of the Basic Panels, Comfort Panels, Mobile Panels, and the WinCC Runtime Advanced.

A Powerpack can be used to upgrade from a smaller edition to a larger one.

The functional scope of the WinCC engineering tools already includes the configuration support for available runtime options, regardless of the RT licenses purchased.

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| ***SIMATIC WinCC Unified Engineering System*** | |
| **SIMATIC WinCC Unified Engineering System** | |
| **Base packages** | |
| Data storage medium | |
| • WinCC Unified Comfort V16 | **6AV2151-0XB01-6AA5** |
| • WinCC Unified PC (10k) ES V16 | **6AV2153-2FB01-6AA5** |
| • WinCC Unified PC (100k) ES V16 | **6AV2153-2GB01-6AA5** |
| • WinCC Unified PC (max.) ES V16 | **6AV2153-0XB01-6AA5** |
| Download 1) | |
| • WinCC Unified Comfort V16 | **6AV2151-0XB01-6LA5** |
| • WinCC Unified PC (10k) ES V16 | **6AV2153-2FB01-6LA5** |
| • WinCC Unified PC (100k) ES V16 | **6AV2153-2GB01-6LA5** |
| • WinCC Unified PC (max.) ES V16 | **6AV2153-0XB01-6LA5** |
| **SIMATIC WinCC Unified Engineering System** | |
| **PowerPacks** | |
| Data storage medium | |
| • WinCC Comfort -> WinCC Unified PC (10k) | **6AV2153-2FB21-6AB5** |
| • WinCC Unified PC (10k) -> WinCC Unified PC (100k) | **6AV2153-2GB21-6AB5** |
| • WinCC Unified PC (100k) -> WinCC Unified PC (max.) | **6AV2153-0XB21-6AB5** |
| Download 1) | |
| • WinCC Comfort -> WinCC Unified PC (10k) | **6AV2153-2FB21-6LB5** |
| • WinCC Unified PC (10k) -> WinCC Unified PC (100k) | **6AV2153-2GB21-6LB5** |
| • WinCC Unified PC (100k) -> WinCC Unified PC (max.) | **6AV2153-0XB21-6LB5** |
| **Software Update Service** | |
| **WinCC Unified Comfort ES Software Update Service** | |
| • Data storage medium | **6AV2151-0XB00-0LL5** |
| • Download 1) | **6AV2151-0XB00-0LY5** |
| **WinCC Unified PC (100k) ES Software Update Service** | |
| • Data storage medium | **6AV2153-2GB00-0LL5** |
| • Download 1) | **6AV2153-2GB00-0LY5** |
| **WinCC Unified PC (10k) ES Software Update Service** | |
| • Data storage medium | **6AV2153-2FB00-0LL5** |
| • Download 1) | **6AV2153-2FB00-0LY5** |
| **WinCC Unified PC (max.) ES Software Update Service** | |
| • Data storage medium | **6AV2153-0XB00-0LL5** |
| • Download 1) | **6AV2153-0XB00-0LY5** |

1) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

## SIMATIC WinCC Unified Runtime

### Overview

***SIMATIC WinCC Unified Runtime***

A simple and consistently scalable PC-based visualization system for all applications, from single-user solutions directly on the machine through to complex SCADA solutions.

The basic package includes visualization, communication, alarms/messages, report creation, system structuring, and user administration. Furthermore, a client for local operation and an additional WinCC Unified Client for remote operator control and monitoring are also included in the basic package. Additional clients can be enabled with a license.

SIMATIC WinCC Unified uses native web technologies such as HTML5, SVG, and JavaScript. The visualization can be accessed via any modern web browser – without the need for additional installation. Open interfaces and option packages allow the expansion and implementation of industry-specific application cases. Once created, components can be used comprehensively on all platforms, whether Panel or PC.

### Benefits

Functions for all visualization tasks:

- Operator functions
- Graphics and trend displays
- Alarm logging
- Archiving (optional)
- Management of parameter sets (optional)
- Report creation
- User administration
- Flexible runtime

Functionality with Java scripts:

- Consistently scalable expandable from single-user station to distributed systems
- Process visualization using any modern HTML5-capable web browser

Part of the Totally Integrated Automation Portal:

- Support of the SIMATIC S7-1200/1500 and the SIMATIC S7-300/400 Controllers
  - Access to tags with symbolic and absolute addressing
  - Full text alarms of the SIMATIC S7-1500 Controller

Open standards for easy integration:

- Efficient real-time database (option)
- Application Program Interface (API)
- OpenPipe interface
- Integration of your own HTML5 controls in the user interface of WinCC Unified

### Design

SIMATIC WinCC Unified PC is available as a software package with 150, 500, 1 000, 2 500, 5 000, 10 000, 50 000 or 100 000 PowerTags. Additionally, a license for the maximum number of PowerTags within the system limit is also available. Data points with an external connection are designated as PowerTags. At the same time, internal tags which are exempt from the PowerTag license are provided at no charge.

The basic system can be extended as required with option packages.

### Ordering data

| Ordering data | Article No. |
|---|---|
| ***SIMATIC WinCC Unified Runtime System*** | |
| **Base packages** | |
| Data storage medium | |
| • WinCC Unified PC (150) RT | **6AV2154-3DB01-6AA0** |
| • WinCC Unified PC (500) RT | **6AV2154-1EB01-6AA0** |
| • WinCC Unified PC (1 000) RT | **6AV2154-2EB01-6AA0** |
| • WinCC Unified PC (2 500) RT | **6AV2154-2MB01-6AA0** |
| • WinCC Unified PC (5 000) RT | **6AV2154-1FB01-6AA0** |
| • WinCC Unified PC (10k) RT | **6AV2154-2FB01-6AA0** |
| • WinCC Unified PC (50k) RT | **6AV2154-1GB01-6AA0** |
| • WinCC Unified PC (100k) RT | **6AV2154-2GB01-6AA0** |
| • WinCC Unified PC (max.) RT | **6AV2154-0XB01-6AA0** |
| Download [1] | |
| • WinCC Unified PC (150) RT | **6AV2154-3DB01-6LA0** |
| • WinCC Unified PC (500) RT | **6AV2154-1EB01-6LA0** |
| • WinCC Unified PC (1 000) RT | **6AV2154-2EB01-6LA0** |
| • WinCC Unified PC (2 500) RT | **6AV2154-2MB01-6LA0** |
| • WinCC Unified PC (5 000) RT | **6AV2154-1FB01-6LA0** |
| • WinCC Unified PC (10k) RT | **6AV2154-2FB01-6LA0** |
| • WinCC Unified PC (50k) RT | **6AV2154-1GB01-6LA0** |
| • WinCC Unified PC (100k) RT | **6AV2154-2GB01-6LA0** |
| • WinCC Unified PC (max.) RT | **6AV2154-0XB01-6LA0** |
| **PowerPacks** | |
| Data storage medium | |
| • WinCC Unified PC (150->500) RT Powerpack (V16) | **6AV2154-1EB21-6AB0** |
| • WinCC Unified PC (500->1k) RT Powerpack (V16) | **6AV2154-2EB21-6AB0** |
| • WinCC Unified PC (1k->2.5k) RT Powerpack (V16) | **6AV2154-2MB21-6AB0** |
| • WinCC Unified PC (2.5k->5k) RT Powerpack (V16) | **6AV2154-1FB21-6AB0** |
| • WinCC Unified PC (5k->10k) RT Powerpack (V16) | **6AV2154-2FB21-6AB0** |
| • WinCC Unified PC (10k->50k) RT Powerpack (V16) | **6AV2154-1GB21-6AB0** |
| • WinCC Unified PC (50k->100k) RT Powerpack (V16) | **6AV2154-2GB21-6AB0** |
| • WinCC Unified PC (100k->max.) RT Powerpack (V16) | **6AV2154-0XB21-6AB0** |
| Download [1] | |
| • WinCC Unified PC (150->500) RT Powerpack (V16) | **6AV2154-1EB21-6LB0** |
| • WinCC Unified PC (500->1k) RT Powerpack (V16) | **6AV2154-2EB21-6LB0** |
| • WinCC Unified PC (1k->2.5k) RT Powerpack (V16) | **6AV2154-2MB21-6LB0** |
| • WinCC Unified PC (2.5k->5k) RT Powerpack (V16) | **6AV2154-1FB21-6LB0** |
| • WinCC Unified PC (5k->10k) RT Powerpack (V16) | **6AV2154-2FB21-6LB0** |
| • WinCC Unified PC (10k->50k) RT Powerpack (V16) | **6AV2154-1GB21-6LB0** |
| • WinCC Unified PC (50k->100k) RT Powerpack (V16) | **6AV2154-2GB21-6LB0** |
| • WinCC Unified PC (100k->max.) RT Powerpack (V16) | **6AV2154-0XB21-6LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

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## Overview

### *WinCC Unified Clients*

The WinCC Unified Client is the graphical interface for the WinCC Unified Runtime.

The WinCC Unified Client accesses the WinCC Unified Runtime via web mechanisms (on the Runtime Station itself or via a network) to operate and monitor machines and plants. Using the standard web mechanisms, the WinCC Unified images can be displayed on any PCs or mobile devices in the HTML5-capable browser.

No additional know-how of the web is necessary for engineering of the WinCC Unified screens in the TIA Portal.

Licensing:

A (server-based) license of WinCC Unified Runtime is required for the WinCC Unified Client.

This WinCC Unified Runtime licensing contains two WinCC Unified Client licenses – for local operation on the runtime station and for operation using an additional independent client.

The client licenses are provided on the runtime station (the server) and are graded in accordance with the number of simultaneous WinCC Unified Web Client access operations. The number can be increased at any time via additive WinCC Unified Client licenses (countable licenses). The version-independent license packages are divided into 1, 3, 10, 30 and 100 WinCC Unified Clients.

## Benefits

WinCC Unified Client

- Parallel, global web-based operator control and monitoring
- Highest level of flexibility
  - Independent of browser and platform (PCs, tablets, smartphones)
  - No installation of software required on the client device, a web browser is generally present
- Minimized maintenance costs with central software administration on the server
  - No maintenance workload on the client
  - No engineering on the client side
- Scalability
  - Supplementation of new operating stations without installation
  - Central license management on the runtime station (the server)
- Independent of version between WinCC Unified PC Runtime and WinCC Unified Client
- High Internet security standards
- Fast update rates (e.g. after value change, picture change)
- Efficient remote diagnostics for production plant through web access
- Future-proof due to the utilization of accepted standards (HTML5, SVG)

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SIMATIC WinCC Unified options* | |
| **WinCC Unified Clients** | |
| Data storage medium | |
| • WinCC Unified Clients Operate (1) | **6AV2157-1JW00-0AB0** |
| • WinCC Unified Clients Operate (3) | **6AV2157-3JW00-0AB0** |
| • WinCC Unified Clients Operate (10) | **6AV2157-2CW00-0AB0** |
| • WinCC Unified Clients Operate (30) | **6AV2157-6CW00-0AB0** |
| • WinCC Unified Clients Operate (100) | **6AV2157-2DW00-0AB0** |
| Download [1] | |
| • WinCC Unified Clients Operate (1) | **6AV2157-1JW00-0LB0** |
| • WinCC Unified Clients Operate (3) | **6AV2157-3JW00-0LB0** |
| • WinCC Unified Clients Operate (10) | **6AV2157-2CW00-0LB0** |
| • WinCC Unified Clients Operate (30) | **6AV2157-6CW00-0LB0** |
| • WinCC Unified Clients Operate (100) | **6AV2157-2DW00-0LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/mobile-panels

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# WinCC Unified Database option

## Overview

### *WinCC Unified Database Storage*

WinCC Unified PC uses a file-based database (SQLite) in the basic system for the archiving of process values and messages.

The WinCC Unified Databased Storage option is available for use with greater quantity frameworks or lengthy archiving periods. All archive data is stored in an MS SQL server after installing the option and the license.

Licensing:

WinCC Unified PC:

- One license per WinCC Unified PC Runtime is required for activating the functionality.

## Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Database option** | |
| Data storage medium | |
| • WinCC Unified Database option | **6AV2154-0BS01-6AA0** |
| Download [1] | |
| • WinCC Unified Database option | **6AV2154-0BS01-6LA0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

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## Overview

***WinCC Unified Logging***

Option for WinCC Unified for archiving of process values and messages. Process value archiving for the recording, compression and storage of measured values and alarm logging to record events.

Online evaluation of process value archives and alarm logs with display and possible operations, for example representation of trends and display of tables, as well as further processing. Powerful standard functions permit user-friendly and flexible utilization of the logs.

Licensing:

SIMATIC Unified Comfort Panels:

- Messages can be logged without an additional license.
- Process values (tags) can be archived without an additional license.
- Utilization of file-based archiving, with the possibility of a maximum 5 000 logging tags

WinCC Unified PC:

- Messages can be logged without an additional license.
- Graded licenses for the number of logging tags used are available for the archiving of process values (tags).
  This number can be increased at any time via additive WinCC Unified logging tags (countable licenses).
- The licenses are divided into 100, 500, 1 000, 5 000, 10 000 and 30 000 logging tags.
- A maximum of 5 000 logging tags are possible with utilization of the file-based archiving (default)
- When using the database-based archiving (optional), the number of logging tags is limited by the performance capability of the PC system being used.

## Benefits

WinCC Unified Logging

- Process value logging is used to record and archive process data from the plant.
- The alarm log archives any alarms which are issued in the monitored process.
- This archiving can be used to analyze fault states and to document the process.
- A subsequent evaluation of the archived process data then provides you with essential information regarding the operating state of a plant.
- The logs allow hazardous conditions and faults to be identified in good time, known as predictive diagnostics, which in turn avoids downtimes
- Increase of product quality and productivity due to regular evaluation of the logs

## Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Logging** | |
| Data storage medium | |
| • WinCC Unified Logging Tags (100) | **6AV2157-2DA00-0AB0** |
| • WinCC Unified Logging Tags (500) | **6AV2157-1EA00-0AB0** |
| • WinCC Unified Logging Tags (1000) | **6AV2157-2EA00-0AB0** |
| • WinCC Unified Logging Tags (5000) | **6AV2157-1FA00-0AB0** |
| • WinCC Unified Logging Tags (10k) | **6AV2157-2FA00-0AB0** |
| • WinCC Unified Logging Tags (30k) | **6AV2157-6FA00-0AB0** |
| Download [1] | |
| • WinCC Unified Logging Tags (100) | **6AV2157-2DA00-0LB0** |
| • WinCC Unified Logging Tags (500) | **6AV2157-1EA00-0LB0** |
| • WinCC Unified Logging Tags (1000) | **6AV2157-2EA00-0LB0** |
| • WinCC Unified Logging Tags (5000) | **6AV2157-1FA00-0LB0** |
| • WinCC Unified Logging Tags (10k) | **6AV2157-2FA00-0LB0** |
| • WinCC Unified Logging Tags (30k) | **6AV2157-6FA00-0LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

## WinCC Unified Parameter Control, WinCC Unified Report Execution, WinCC Unified Collaboration

### Overview

#### *WinCC Unified Parameter Control*

Option for SIMATIC WinCC Unified for the generation and management of parameter sets which contain associated machine or production data.
The structure of a user data type (PLC UDT or HMI UDT) can be adopted for one or more parameter set types and can be changed automatically using a new user data type version.

Licensing:

SIMATIC Unified Comfort Panels:

- No license is required

WinCC Unified PC:

- One license per WinCC Unified PC Runtime is required for activating the functionality.

### Benefits

WinCC Unified Parameter Control

- An expansive selection of parameters can be exchanged between the operator panel and control system manually or automatically in order to convert production to another product variant.
- Simple operator guidance due to configurable image object
- Export/import of parameter sets for creation or further processing with other tools (e.g. MS Excel)

### Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Parameter Control** | |
| Data storage medium | |
| • WinCC Unified Parameter Control (PC) | **6AV2154-0BP01-6AB0** |
| Download [1] | |
| • WinCC Unified Parameter Control (PC) | **6AV2154-0BP01-6LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

### Overview

#### *WinCC Unified Report Execution*

Excel Addin is included in the scope of delivery of WinCC Unified to connect WinCC Unified tags, logging tags and alarms with an Excel report template. The report templates are imported into the WinCC Unified Runtime without the engineering system at runtime, and connected with execution parameters. Reports are automatically created cyclically, dependent on requirements and events, and then stored in Excel or PDF format.

Licensing:

No license is required for the creation of reports in Excel and manual execution of the reports in Excel or from the Report Runtime Control. A WinCC Unified Report Execution license is required for the automated cyclic report dependent on requirements and events.

### Benefits

WinCC Unified Report Execution

- Full transparency via WinCC Unified tags, logging tags and alarms
- Filter mechanism for the selection of alarms and tags
- Insertion of individual values and time series data
- Automatic insertion of predefined formulas for time series data
- Individual creation of report templates with the familiar MS Excel and Excel Online
- Activation of created report templates during the runtime without Engineering System
- Automated cyclic report creation based on requirements or events
- Individual reports in Excel format without Excel installation
- Individual reports in PDF format with Excel or LibreOffice-Calc installation

### Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Reporting** | |
| Data storage medium | |
| • WinCC Unified Report | **6AV2157-0BQ01-6AB0** |
| Download [1] | |
| • WinCC Unified Report | **6AV2157-0BQ01-6LB0** |

### Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Collaboration** | |
| Data storage medium | |
| • WinCC Unified Collaboration (PC) | **6AV2154-0BR01-6AB0** |
| • WinCC Unified Collaboration (Panel) | **6AV2151-0BR01-6AB0** |
| Download [1] | |
| • WinCC Unified Collaboration (PC) | **6AV2154-0BR01-6LB0** |
| • WinCC Unified Collaboration (Panel) | **6AV2151-0BR01-6LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

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## Overview

***Plant Intelligence options***

With the SIMATIC WinCC Unified Plant Intelligence options, it is possible to expand SIMATIC WinCC Unified Runtime in line with the requirements on the production plant and visualize it in HMI.

The options enable planning of production processes as well as analysis and optimization of the overall effectiveness of the plant.
Furthermore, flexible production sequences can be designed, and complex and chained production sequences in the plant can be coordinated.

WinCC Unified Calendar:

Planning, configuration and management of events and actions in one general calendar in WinCC Unified (including connection of tags or scripts).

WinCC Unified Line Coordination:

Coordination and monitoring of complex processes in the production line. Control and management of recipe-controlled procedures and orders for the production of various end products.

WinCC Unified Performance Insight:

Definition, calculation and analysis of plant-specific KPIs for individual plant units, machines or entire production lines in machine or line-oriented production plants.

Note:

The SIMATIC WinCC Unified Plant Intelligence options can be used on a PC system. The technological plant hierarchy is a prerequisite for using the SIMATIC WinCC Unified Plant Intelligence options.

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## WinCC Unified Calendar

### Overview

***WinCC Unified Calendar***

Recurring, calendar-related working times (shifts) and processes (switching commands) can be planned and modified in advance using the WinCC Unified Calendar.

Planning is based on predefined templates and a time model. This time model is used equally for the "WinCC Unified Calendar" and "WinCC Unified Performance Insight" options.

A technological system hierarchy for the project is created in the TIA Portal. One main calendar is assigned to one branch (main node or root node) within this hierarchy. For runtime (within WinCC Unified Runtime), templates can be created for this main calendar and planning for working times and processes can be defined. Planning takes effect automatically for its "hierarchical children"; they can be supplemented or modified there.

The "WinCC Unified Calendar" option is only available for the WinCC Unified PC system.

### Benefits

- Definition of uniform time categories and the selection of usable process tags as a switching command in the TIA Portal
- Planning of working times and processes during runtime
  - Management of shift and day templates, as well as switching actions relative to shift events (start, end)
  - Creation of planning based on templates
  - Modification of planning of hierarchically subordinate system components
  - Definition of recurring, cyclic shifts
- Import and export of templates and planning
- Runtime openness (API) interface
- Use of maintained shifts as criteria for calculating indicators via the "WinCC Unified Performance Insight" option

### Application

WinCC Unified Calendar serves user groups which have structured a plant via a plant hierarchy and want to define recurring events within this hierarchy.

### Design

With WinCC Unified Calendar licensing, it is possible to manage templates and the use/planning within a main node via the option. Modifications and adaptations of planning hierarchically subordinate system components is possible. The license is stored on the assigned WinCC Unified runtime station. If other main nodes are created and managed on this WinCC Unified runtime station, additional extension licenses for each additional main node are necessary. These extension licenses are additive (countable licenses).

The necessary runtime and engineering components are supplied with the licenses.

### Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Calendar** | |
| Data storage medium | |
| • WinCC Unified Calendar Base | **6AV2156-0BC01-6AA0** |
| • WinCC Unified Calendar Extension (1) | **6AV2156-1JC00-0AB0** |
| Download[1] | |
| • WinCC Unified Calendar Base | **6AV2156-0BC01-6LA0** |
| • WinCC Unified Calendar Extension (1) | **6AV2156-1JC00-0LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

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## Overview

### *WinCC Unified Line Coordination*

With WinCC Unified Line Coordination, recipe- and batch-controlled production processes like those used in the food and beverages industry, but also in other industries, can be automated.

Complex sequences of chained machines in the production line can hereby be coordinated, synchronized and monitored based on SIMATIC S7-1500 and WinCC Unified.

Together with WinCC Unified, WinCC Unified Line Coordination is coordinated to the technological requirements and offers corresponding standard functions. For example, a technological plant hierarchy in line with ISA-88 can be created in the TIA Portal. Moreover, recipe management and controls for visualization are available.

## Benefits

- Reliable operation of the plant based on robust, tried-and-tested standard industrial components such as SIMATIC S7-1500
- Flexible and efficient engineering based on the TIA Portal
- Definition of standardized procedures for reduced workload; standardization based on ISA-88
- Reproducibility of recipes to ensure consistent product quality
- Planning and management of orders in a central location
- Various monitoring options for improved transparency and control of planning or running production processes
- Logging of production data for transparency and traceability in production

## Application

WinCC Unified Line Coordination is suitable for all user groups that wish to structure a plant using a technological hierarchy and standardize production processes using a recipe system.

## Design

WinCC Unified Line Coordination is a software package containing the required Engineering and Runtime components which can be installed in addition to WinCC Unified Engineering and WinCC Unified Runtime (PC system).

A basic license (WinCC Unified Line Coordination Base) containing the basic functionalities such as recipe management, order definition and material definition, as well as three units for synchronization within a recipe, is available for WinCC Unified Line Coordination. In addition, the number of units to be synchronized can be increased (countable licenses) at any time by means of additive licenses (WinCC Unified Line Coordination Extension).

## Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Line Coordination** | |
| Data storage medium | |
| • WinCC Unified Line Coordination V16 Base (incl. 3 Units) | **6AV2156-0BL01-6AA0** |
| • WinCC Unified Line Coordination Extension (5) | **6AV2156-1CL00-0AB0** |
| • WinCC Unified Line Coordination Extension (10) | **6AV2156-2CL00-0AB0** |
| • WinCC Unified Line Coordination Extension (50) | **6AV2156-1DL00-0AB0** |
| Download[1] | |
| • WinCC Unified Line Coordination V16 Base (incl. 3 Units) | **6AV2156-0BL01-6LA0** |
| • WinCC Unified Line Coordination Extension (5) | **6AV2156-1CL00-0LB0** |
| • WinCC Unified Line Coordination Extension (10) | **6AV2156-2CL00-0LB0** |
| • WinCC Unified Line Coordination Extension (50) | **6AV2156-1DL00-0LB0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

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## WinCC Unified Performance Insight

### Overview

***WinCC Unified Performance Insight***

The WinCC Unified Performance Insight can be used to calculate and analyze plant-specific indicators for individual plant units, machines or entire production lines in machine or line-oriented production plants with WinCC Unified PC systems.

### Benefits

Demonstration of weak points in production processes and deriving optimization potential.

- Flexible - individual calculation of plant-specific indicators in WinCC Unified
- Creating relationships - recognizing indicators in context, e.g. availability per shift
- Optimally informed - analyzing indicators in WinCC Unified Runtime as a bar graph, Gantt chart or table even via Web
- Expandable - adding indicators in existing plants without production losses
- Getting results fast - short configuration time and familiarization time thanks to integration in WinCC Unified

### Application

All user groups benefit from the Performance Insight, from the application engineer to management-level evaluators.

The engineer can use the application environment integrated in WinCC Unified to derive individual formulas for calculating performance indicators.

KPIs and operands from Performance Insight are automatically created in  event- or time-controlled Excel reports and used by management for production analysis and documentation.

For maintenance, the web client of the WinCC Unified can be used for analysis with the bar (for performance), progression (Gantt) and table controls.

Performance indicators can be displayed on local user interfaces using standard WinCC Unified resources to keep machine operators up to date.

### Design

Fault analyses provide information about the frequency and duration of machine or plant downtimes. The included controls can be effortlessly be integrated in WinCC Unified process pictures.

The determined data gives information on the effectiveness of individual machines and of entire production plants.
The transparency of the data allows for a quick response and countermeasures in the event of faults, which increases the availability of the machine. Structuring of the production plant constituting central elements for evaluation (equipment efficiency)

- Can be used for individual machines or even complete production plants
- Easy integration in existing WinCC Unified plants
- Cyclic or event-controlled calculation of indicators (KPIs)

All of the analysis results are integrated in the form of controls in WinCC Unified screens. Bar (performance), trend (Gantt) and table views are available in WinCC-Unified process pictures. Complete transparency throughout the machine park as the basis for optimizing plant productivity via automatic execution of reports.

- Recognition of production relationships
- Calculation of downtimes and localization of sources
- Weak-point analysis in production processes.

### Ordering data

| | Article No. |
|---|---|
| **WinCC Unified Performance Insight** | |
| Data storage medium | |
| • WinCC Unified Performance Insight (PC) Base incl. 3 analyzed plant objects | **6AV2156-0BP01-6AA0** |
| • 10 analyzed plant objects | **6AV2156-2CP00-0AB0** |
| • 30 analyzed plant objects | **6AV2156-6CP00-0AB0** |
| • 100 analyzed plant objects | **6AV2156-2DP00-0AB0** |
| • 300 analyzed plant objects | **6AV2156-0XP00-0AB0** |
| Download | |
| • WinCC Unified Performance Insight (PC) Base incl. 3 analyzed plant objects | **6AV2156-0BP01-6LA0** |
| • 10 analyzed plant objects | **6AV2156-2CP00-0LB0** |
| • 30 analyzed plant objects | **6AV2156-6CP00-0LB0** |
| • 100 analyzed plant objects | **6AV2156-2DP00-0LB0** |
| • 300 analyzed plant objects | **6AV2156-0XP00-0LB0** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

## Overview

***SIMATIC WinCC (TIA Portal) engineering software***

Family of configuration systems with WinCC Basic, Comfort, Advanced and Professional for SIMATIC operator panels, as well as for the WinCC Runtime Advanced and WinCC Runtime Professional PC-based visualization systems.

SIMATIC WinCC Runtime Advanced visualization software

- PC-based HMI solution for single-user systems directly at the machine
- Basic package for visualization, reporting and logging, user administration, can be expanded flexibly with VB scripts
- Basic package expandable by means of option packages
- Can be integrated into automation solutions based on TCP/IP networks
- Expanded service concepts with remote operation, diagnostics and administration over the intranet and Internet in combination with email communication

http://www.siemens.com/wincc-advanced

SIMATIC WinCC Runtime Professional visualization software

- PC-based operator control and monitoring system for visualization and operator control of processes, production flows, machines and plants in all sectors – from the simple single-user station through to distributed multi-user systems and cross-location solutions with web clients.
  WinCC Runtime Professional is the information hub for corporation-wide vertical integration.
- Industry-standard functions for signaling and acknowledging events, archiving of messages and measured values, logging of all process and configuration data, user administration, can be expanded flexibly with VB and C scripts
- Basic package expandable by means of option packages
- Also included are APIs for the Runtime to utilize the open programming interfaces

http://www.siemens.com/wincc-professional

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## SIMATIC WinCC (TIA Portal) Engineering

### Overview

- Integrated family of engineering tools for configuring SIMATIC HMI operator panels, as well as for the PC-based visualization systems WinCC Runtime Advanced and WinCC Runtime Professional.
- WinCC (TIA Portal) is based on the new central engineering framework Totally Integrated Automation Portal (TIA Portal), which offers the user a uniform, efficient and intuitive solution to all automation tasks.
- WinCC (TIA Portal) also offers uniform engineering from the Basic Panel through to SCADA applications.
- Together with the STEP 7 (TIA Portal) products, WinCC (TIA Portal) forms the optimum solution for integrated, efficient engineering.

Current version:

- SIMATIC WinCC Basic V16
- SIMATIC WinCC Comfort V16
- SIMATIC WinCC Advanced V16
- SIMATIC WinCC Professional V16

### Benefits

- The integrated configuration software reduces training, maintenance and service overhead and protects the customer's investments.
- Minimized engineering overhead and reduction of lifecycle costs thanks to Totally Integrated Automation (TIA)
- Minimized configuration overhead due to reuse of scalable and dynamizable objects
- Intelligent tools for efficient and simple configuration:
  - Wizard for defining the basic structure of the HMI project
  - Table-based editors simplify the generation and processing of similar types of objects, e.g. for tags, texts, or alarms.
  - Complex configuration tasks such as the definition of paths of motion or the creation of the fundamental operator prompting are simplified by means of graphical configuration.
- Comprehensive support of multi-language configurations for worldwide use
  - Selectable views for entering configuration data in several languages
  - System and user-specific text lexicons
  - Export/import of language-dependent texts
- Security of investment due to
  - Import of the configuration from WinCC flexible 2008 SP2, 2008 SP3 and 2008 SP5
  - Import of the configuration from WinCC V7.3, V7.4 and V7.5

### Application

SIMATIC WinCC in the editions Basic, Comfort, Advanced and Professional are innovative engineering tools for configuring SIMATIC HMI operator panels, as well as for the PC-based visualization systems WinCC Runtime Advanced and WinCC Runtime Professional.

Depending on the selected product, various target systems can be configured:

WinCC Basic

- Basic Panels 1st Generation
- Basic Panels 2nd Generation

WinCC Comfort

As WinCC Basic, plus:

- Comfort Panels
- Mobile Panels 2nd Generation
- Mobile Panels x77 Series

WinCC Advanced

As WinCC Comfort, plus:

- SIMATIC PCs with WinCC Runtime Advanced:
  - SIMATIC Rack PCs
  - SIMATIC Box PCs
  - SIMATIC Panel PCs
  - SIMATIC S7 Open Controllers
- Standard PC with WinCC Runtime Advanced
- SINUMERIK PC: PCU 50.3, PCU 50.5

WinCC Professional

As WinCC Advanced, plus:

- SIMATIC PCs with WinCC Runtime Professional
  - SIMATIC Rack PCs
  - SIMATIC Box PCs
  - SIMATIC Panel PCs
- Standard PC with WinCC Runtime Professional

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## Design

The functionalities of the engineering tools of the SIMATIC WinCC family are based on each other. The available editors are largely determined by the respective configurable target systems and their function.

A more comprehensive engineering tool such as WinCC Advanced can always be used to configure lower-level target devices as well (e.g. Basic Panels)

A Powerpack can be used to upgrade from a smaller edition to a larger one. This does not apply to WinCC Basic.

The functionality of WinCC engineering tools already contains the configuration support of the available Runtime options for SIMATIC Panels, WinCC Runtime Advanced or WinCC Runtime Professional, irrespective of the purchased RT licenses. A separate license is required for the target system when using the configured Runtime options.

## Function

### *Integration into automation systems*

Integration into the SIMATIC Totally Integrated Automation Portal (TIA Portal)

- Shared data management and uniform symbols via the controller and HMI
- Optimum interaction between the controller and HMI in a working environment
- System diagnostics as an integral component
- Shared use of communication settings and process point definitions
- Simple dragging and dropping of tags from STEP 7 to an HMI device, e.g. onto a screen
- Excellent support for the new SIMATIC S7-1500 controllers
  - With symbolic addressing
  - Access to the new memory-optimized data blocks
  - New alarm and diagnostics concept

### *Configuration interface*

- Intuitive user interfaces with maximum degree of user friendliness
- Comprehensive and fast access to editors and project data
- Adaptive user interface of engineering tools depending on configured target system
- User-definable user interface settings, e.g. layout, toolbars
- Integrated mass data operations for efficient configuration

### *Project handling*

- Device-independent configuration data can be used on a variety of target systems without the need for conversion. The interface adapts itself to the functional possibilities of the target device.
- Cross-device utilization of common configuration data (e.g. message classes, text library) in multi-device projects
- Wizard-assisted definition of basic structure of HMI projects (e.g. display layout, operator prompting)

### *Screen editor with comprehensive options for efficient and fast screen configuration*

- Generation of interconnected screen objects via Drag&Drop, e.g. tags for the creation of input/output fields with process interfacing or buttons with screen selection function
- Definition of screen templates and functions (comparable with the Slide Master in MS PowerPoint)
- User-friendly editor for the creation of faceplates with defined external interface from screen objects
- Graphics-based configuration of motion paths
- Layer technology with up to 32 layers
- Tools for the Align, Rotate and Mirror functions

### *Import/export*

- of tags, links, text lists, and alarms

### *Tabular editors*

- Quick and easy generation and modification of configuration objects of the same type, e.g. tags, texts or messages, in tabular editors
- Intelligent default settings depending on previously configured data, e.g. automatic incrementing of addresses when generating consecutive tags
- Simple access to the properties of an object without superfluous user intervention
- Simultaneous modification of common object properties

### *Object-based data management with user-friendly search and edit options*

- Configuration of alarms and logs directly on the HMI tag, no switching between different editors
- Cross-reference list with direct access to all objects, e.g. for editing or selection
- Search for objects in entire project
- Text search and replace functions

### *Project documentation*

- Selective project documentation, the following contents can be printed:
  - An entire project
  - One or more project-associated devices
  - Contents of an editor
  - Libraries

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## **Function** (continued)

### *Libraries for predefined/user-defined configuration objects*

- Storage of all configuration objects in the library, e.g. blocks and even entire screens or tags
- Faceplates can be constructed from simple screen objects on a customer-specific or project-specific basis. Changes to these faceplates can be made centrally (block definition).
- A large number of scalable and dynamizable screen objects is included in the scope of supply
- Size-scalable graphics for industrial applications are included in the scope of supply
- Preview function for library objects

### *Language support*

- Multilingual project creation (max. 32 languages) in editors thanks to selectable views
- Central management of language-specific texts and graphics in libraries
- Edit, export and import of texts for translation
- Language-specific graphics

### *Visual Basic and C-Script Support*

- IntelliSense function for fast programming of access to runtime objects
- Simple creation of control sequences in script code
- Visual Basic Script debugging in simulator and WinCC Runtime Advanced and WinCC Runtime Professional

### *Test and commissioning support*

- Simulation of HMI projects on engineering PC
- Marking of incomplete or incorrect configuration directly in the respective editor
- Jump to error cause based on alarm messages in the Compiler

### *Migration of existing HMI projects*

- Data transfer in projects from WinCC flexible
- Data transfer in projects from WinCC

### *System prerequisites*

| | **WinCC engineering software** |
|---|---|
| **Processor type (recommended)** | Intel® Core™ i5-6440EQ (2.7 GHz) |
| **RAM (recommended)** | 16 GB or more (32 GB for large projects) |
| **Hard disk** | SSD with at least 50 GB storage space available |
| **Operating systems** | 64-bit operating systems<br>• Windows 7 Home Premium SP1 (WinCC Basic only)<br>• Windows 7 Professional SP1<br>• Windows 7 Enterprise SP1<br>• Windows 7 Ultimate SP1<br>• Windows 10 Home Version 1703 (WinCC Basic only)<br>• Windows 10 Professional Version 1703<br>• Windows 10 Enterprise Version 1703<br>• Windows 10 Enterprise 2016 LTSB<br>• Windows Server 2012 R2 StdE<br>• Windows Server 2016 Standard |
| **Screen resolution** | Recommended 1 920 x 1 080 |
| **Optical drive** | DVD-ROM |

Note:

Opening several instances of WinCC on your engineering PC at the same time may result in more demanding hardware requirements.

In addition to WinCC, Windows also requires space on the hard disk; e.g. free disk space should be available for the swap file.

The following formula has proven itself in the past:
Size of swap file = 3 x size of RAM.

For further information, refer to your Windows documentation

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## Ordering data

| Ordering data | Article No. |
|---|---|
| ***SIMATIC WinCC Basic software*** | |
| **SIMATIC WinCC Basic V16** | |
| • Data storage medium | **6AV2100-0AA06-0AA5** |
| • Download 1) | **6AV2100-0AA06-0AH5** |
| **SIMATIC WinCC Comfort V16** | |
| • Data storage medium | **6AV2101-0AA06-0AA5** |
| • Download 1) | **6AV2101-0AA06-0AH5** |
| **SIMATIC WinCC Advanced V16** | |
| • Data storage medium | **6AV2102-0AA06-0AA5** |
| • Download 1) | **6AV2102-0AA06-0AH5** |
| **SIMATIC WinCC Professional V16** | |
| Data storage medium | |
| • 512 PowerTags | **6AV2103-0DA06-0AA5** |
| • 4 096 PowerTags | **6AV2103-0HA06-0AA5** |
| • Max. PowerTags | **6AV2103-0XA06-0AA5** |
| Download 1) | |
| • 512 PowerTags | **6AV2103-0DA06-0AH5** |
| • 4 096 PowerTags | **6AV2103-0HA06-0AH5** |
| • Max. PowerTags | **6AV2103-0XA06-0AH5** |
| ***SIMATIC WinCC V16 Trial Licenses*** | |
| **SIMATIC WinCC Basic/Comfort/ Advanced V16, Trial License on data storage medium** | **6AV2102-0AA06-0AA7** |
| **SIMATIC WinCC Professional V16, Trial License on data storage medium** | **6AV2103-0AA06-0AA7** |
| ***Powerpacks*** | |
| **SIMATIC WinCC Comfort V16** | |
| • Data storage medium | **6AV2101-2AA06-0BD5** |
| • Download 1) | **6AV2101-2AA06-0BJ5** |
| **SIMATIC WinCC Advanced V16** | |
| • Data storage medium | **6AV2102-2AA06-0BD5** |
| • Download 1) | **6AV2102-2AA06-0BJ5** |
| **SIMATIC WinCC Professional V16** | |
| Data storage medium | |
| • 512 PowerTags | **6AV2103-2AD06-0BD5** |
| • 4 096 PowerTags | **6AV2103-2DH06-0BD5** |
| • Max. PowerTags | **6AV2103-2HX06-0BD5** |
| Download1) | |
| • 512 PowerTags | **6AV2103-2AD06-0BJ5** |
| • 4 096 PowerTags | **6AV2103-2DH06-0BJ5** |
| • Max. PowerTags | **6AV2103-2HX06-0BJ5** |

| | Article No. |
|---|---|
| ***Upgrades*** | |
| **WinCC V11..V15.1 -> WinCC V16** | |
| Data storage medium | |
| • SIMATIC WinCC Basic | **6AV2100-3AA06-0AE5** |
| • SIMATIC WinCC Comfort | **6AV2101-3AA06-0AE5** |
| • SIMATIC WinCC Advanced | **6AV2102-3AA06-0AE5** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-3DA06-0AE5** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-3HA06-0AE5** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-3XA06-0AE5** |
| Download 1) | |
| • SIMATIC WinCC Basic | **6AV2100-3AA06-0AK5** |
| • SIMATIC WinCC Comfort | **6AV2101-3AA06-0AK5** |
| • SIMATIC WinCC Advanced | **6AV2102-3AA06-0AK5** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-3DA06-0AK5** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-3HA06-0AK5** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-3XA06-0AK5** |
| **WinCC flexible 2008 to WinCC V16** | |
| • WinCC flexible Compact to WinCC Comfort | **6AV2101-4AB06-0AE5** |
| • WinCC flexible Standard to WinCC Comfort | **6AV2101-4BB06-0AE5** |
| • WinCC flexible Advanced to WinCC Advanced | **6AV2102-4AA06-0AE5** |
| As download 1) | |
| • WinCC flexible Compact to WinCC Comfort | **6AV2101-4AB06-0AK5** |
| • WinCC flexible Standard to WinCC Comfort | **6AV2101-4BB06-0AK5** |
| • WinCC flexible Advanced to WinCC Advanced | **6AV2102-4AA06-0AK5** |

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1) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## Ordering data

| Ordering data | Article No. |
|---|---|
| ***SIMATIC WinCC Basic software*** | |
| **SIMATIC WinCC Basic V15.1** | |
| • Data storage medium | **6AV2100-0AA05-0AA5** |
| • Download 1) | **6AV2100-0AA05-0AH5** |
| **SIMATIC WinCC Comfort V15.1** | |
| • Data storage medium | **6AV2101-0AA05-0AA5** |
| • Download 1) | **6AV2101-0AA05-0AH5** |
| **SIMATIC WinCC Advanced V15.1** | |
| Engineering software in the TIA Portal; for configuring SIMATIC Panels, WinCC Runtime Advanced; runs with Windows 7 (64-bit), Windows 10 (64-bit), WinSrv 2012 R2/2016 (64-bit), Class A; 6 languages: en, de, fr, es, it, zh | |
| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA05-0AA5** |
| • Floating license; software, documentation and license key for downloading 1): E-mail address required for delivery | **6AV2102-0AA05-0AH5** |
| **SIMATIC WinCC Professional V15.1** | |
| Data storage medium | |
| • 512 PowerTags | **6AV2103-0DA05-0AA5** |
| • 4 096 PowerTags | **6AV2103-0HA05-0AA5** |
| • Max. PowerTags | **6AV2103-0XA05-0AA5** |
| Download 1) | |
| • 512 PowerTags | **6AV2103-0DA05-0AH5** |
| • 4 096 PowerTags | **6AV2103-0HA05-0AH5** |
| • Max. PowerTags | **6AV2103-0XA05-0AH5** |
| ***SIMATIC STEP 7/SIMATIC WinCC Trial Licenses*** | |
| On DVD, 21 day trial | |
| **SIMATIC STEP 7 Basic/Professional SIMATIC WinCC Basic/Comfort/ Advanced V15.1, trial license** | **6AV2102-0AA05-0AA7** |
| **SIMATIC STEP 7 Professional SIMATIC WinCC Professional V15.1, trial license** | **6AV2103-0AA05-0AA7** |
| **License: SIMATIC 50 h engineering with STEP 7 Professional Combo, WinCC Professional (incl. WinCC flexible 2008) and STEP 7 Safety Advanced (incl. Distributed Safety)** | **6ES7823-1GE05-0YA5** |

| | Article No. |
|---|---|
| ***Powerpacks (without version change)*** | |
| **SIMATIC WinCC Basic to WinCC Comfort V15.1 2)** | |
| • Data storage medium | **6AV2101-2AA05-0BD5** |
| • Download 1) | **6AV2101-2AA05-0BJ5** |
| **SIMATIC WinCC Comfort to WinCC Advanced V15.1** | |
| • Data storage medium | **6AV2102-2AA05-0BD5** |
| • Download 1) | **6AV2102-2AA05-0BJ5** |
| **SIMATIC WinCC Advanced to WinCC Professional V15.1** | |
| • 512 PowerTags | **6AV2103-2AD05-0BD5** |
| • Download 1); 512 PowerTags | **6AV2103-2AD05-0BJ5** |
| **SIMATIC WinCC Professional V15.1** | |
| • 512 PowerTags -> 4 096 PowerTags | **6AV2103-2DH05-0BD5** |
| • 4 096 PowerTags -> max. PowerTags | **6AV2103-2HX05-0BD5** |
| Download1) | |
| • 512 PowerTags -> 4 096 PowerTags | **6AV2103-2DH05-0BJ5** |
| • 4 096 PowerTags -> max. PowerTags | **6AV2103-2HX05-0BJ5** |
| ***Software Update Service*** | |
| For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs for each installed WinCC engineering system or option.<br>The contract is automatically extended by a further year unless canceled at least 12 weeks prior to expiration. | |
| **Software Update Service (Standard Edition)** | |
| The delivery is implemented according to the number of ordered SUS products (e.g. 10 upgrade packages with 10 DVDs, 10 USB flash drives, etc.) | |
| • SIMATIC WinCC Comfort | **6AV6612-0AA00-0AL0** |
| • SIMATIC WinCC Advanced | **6AV6613-0AA00-0AL0** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-0DA00-0AL0** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-0HA00-0AL0** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-0XA00-0AL0** |

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## Ordering data

| | Article No. |
|---|---|
| **Software Update Service (Compact Edition)** | |
| The delivery items are combined. For several contracts, only 1 package with 1 data storage medium set, 1 USB flash drive with the corresponding number of licenses and the corresponding number of CoLs will be supplied. | |
| Delivery items to be combined must be ordered as one item. | |
| • SIMATIC WinCC Comfort | **6AV6612-0AA00-0AM0** |
| • SIMATIC WinCC Advanced | **6AV6613-0AA00-0AM0** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-0DA00-0AM0** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-0HA00-0AM0** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-0XA00-0AM0** |
| Download [1] | |
| E-mail address required for delivery | |
| • SIMATIC WinCC Comfort | **6AV6612-0AA00-0AY0** |
| • SIMATIC WinCC Advanced | **6AV6613-0AA00-0AY0** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-0DA00-0AY0** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-0HA00-0AY0** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-0XA00-0AY0** |

| | Article No. |
|---|---|
| *Upgrades* | |
| Data storage medium | |
| **WinCC V11..V14 -> WinCC V15.1** | |
| • SIMATIC WinCC Basic | **6AV2100-3AA05-0AE5** |
| • SIMATIC WinCC Comfort | **6AV2101-3AA05-0AE5** |
| • SIMATIC WinCC Advanced | **6AV2102-3AA05-0AE5** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-3DA05-0AE5** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-3HA05-0AE5** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-3XA05-0AE5** |
| Download [1] | |
| • SIMATIC WinCC Basic | **6AV2100-3AA05-0AK5** |
| • SIMATIC WinCC Comfort | **6AV2101-3AA05-0AK5** |
| • SIMATIC WinCC Advanced | **6AV2102-3AA05-0AK5** |
| • SIMATIC WinCC Professional 512 PowerTags | **6AV2103-3DA05-0AK5** |
| • SIMATIC WinCC Professional 4 096 PowerTags | **6AV2103-3HA05-0AK5** |
| • SIMATIC WinCC Professional max. PowerTags | **6AV2103-3XA05-0AK5** |
| **WinCC flexible 2008 to WinCC V15.1** | |
| • WinCC flexible Compact to WinCC Comfort | **6AV2101-4AB05-0AE5** |
| • WinCC flexible Standard to WinCC Comfort | **6AV2101-4BB05-0AE5** |
| • WinCC flexible Advanced to WinCC Advanced | **6AV2102-4AA05-0AE5** |
| As download [1] | |
| • WinCC flexible Compact to WinCC Comfort | **6AV2101-4AB05-0AK5** |
| • WinCC flexible Standard to WinCC Comfort | **6AV2101-4BB05-0AK5** |
| • WinCC flexible Advanced to WinCC Advanced | **6AV2102-4AA05-0AK5** |

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[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

[2] Valid only for Article No.'s 6AV2100-0AA05-0AA5 or 6AV2100-0AA05-0AH5

Additional information is available on the Internet at:

http://www.siemens.com/wincc-unified-system

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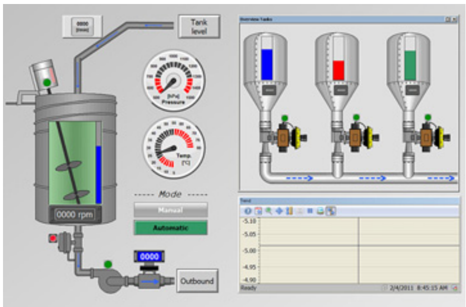
## Introduction

### Overview



***SIMATIC WinCC Runtime Advanced visualization software***

- PC-based operator control and monitoring solution for single-user systems directly at the machine
- Basic package for visualization, reporting and logging, user administration, can be expanded flexibly with VB scripts
- Basic package expandable by means of option packages
- Can be integrated into automation solutions based on TCP/IP networks
- Expanded service concepts with remote operation, diagnostics and administration over the intranet and Internet in combination with email communication

http://www.siemens.com/wincc-advanced

***SIMATIC WinCC Runtime Professional visualization software***

- PC-based operator control and monitoring system for visualization and operator control of processes, production flows, machines and plants in all sectors – from the simple single-user station through to distributed multi-user systems and cross-location solutions with web clients.
  WinCC Runtime Professional is the information hub for corporation-wide vertical integration.
- Industry-standard functions for signaling and acknowledging events, archiving of messages and measured values, logging of all process and configuration data, user administration, can be expanded flexibly with VB and C scripts
- Basic package expandable by means of option packages
- Also included are APIs for the Runtime to utilize the open programming interfaces

Additional information is available on the Internet at:

http://www.siemens.com/wincc-professional

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## Overview

PC-based operator control and monitoring system for single-user systems directly at the machine.
SIMATIC WinCC Runtime Advanced is configured with the SIMATIC WinCC Advanced or SIMATIC WinCC Professional configuration software.

## Benefits

- Functions for all visualization tasks:
  - Operator functions
  - Graphics and trend displays
  - Alarm logging
  - Report system
  - Archiving (option)
  - Recipe management (option)
  - Audit Trail (option)
- Flexible runtime functionality due to Visual Basic scripts
- Service concepts with remote operation, diagnostics and administration via intranet/Internet as well as email communication increase availability (option)
- Support for simple distributed automation solutions based on TCP/IP networks at the machine-level (option)
- Part of the Totally Integrated Automation Portal
  - Direct access to the tag and message configuration of the SIMATIC controller
  - Excellent support of the new SIMATIC S7-1500 controller
    With symbolic addressing
    Access to the new memory-optimized data blocks
    New alarm and diagnostics concept (incl. ProDiag)
  - Integrated diagnostic functions for increasing productivity

## Application

SIMATIC WinCC Runtime Advanced is the high-performance visualization software for simple, machine-oriented visualization tasks. It can be used as a single-user solution for all automation applications in production automation, process automation and building services automation.

SIMATIC WinCC Runtime Advanced can be used in combination with the following operator panels:

- SIMATIC Rack PC:
  - IPC347, IPC547, IPC647, IPC847
- SIMATIC Box PC:
  - IPC227, IPC427, IPC627, IPC827
- SIMATIC Panel PC:
  - IPC277, IPC477, IPC677, Panel PC Ex OG
- SIMATIC S7 Open Controller: ET 200SP Open Controller
- SINUMERIK PC: PCU 50.3, PCU 50.5
- Standard PCs with resolutions (W x H in pixels) of:
  - 4:3 format: 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200
  - Widescreen format: 800 x 480, 1280 x 800, 1366 x 768, 1440 x 900, 1680 x 1050, 1920 x 1080, 1920 x 1200, 1980 x 1080

## Design

SIMATIC WinCC Runtime Advanced is available as a software package with 128, 512, 2 048, 4 096, 8 192 and 16 384 PowerTags.

The term PowerTags is used to identify process tags and area pointers that have a process link to the controller. Tags without process links, constant limit values of tags, and messages (up to 4 000 bit-triggered messages) are also available for additional system performance. The range of functions of WinCC Runtime Advanced includes the centralized HMI components for visualizing and reporting, and it can be expanded to suit requirements and costs by using optional packages.

SIMATIC WinCC Runtime Advanced is configured with the SIMATIC WinCC Advanced or SIMATIC WinCC Professional configuration software.

## Function

### *Visualization via Windows-compliant user interface*

Made up of parameterizable screen objects and faceplates created on a project-specific basis:

- Numeric and alphanumeric input/output fields
- Static text and graphic display plus vector graphics
- Dynamizable graphics from HMI symbol library
- Bar graph, trend curve graph with scroll and zoom function as well as read line
- Signal-specific text and graphic lists
- Buttons and switches for operator-process communication
- Editing fields for process values (signals)
- Analog display, slider as example for further screen objects
- Project-specific faceplates created from basic objects of the system
- Graphic displays for various standard graphic formats, e.g. bitmaps, .jpg, .wmf

### *Alarms and messages*

- Discrete alarms and analog alarms as well as event-driven Alarm-S/Alarm-D message procedure with SIMATIC S7
- The new ProDiag alarm and diagnostics concept of the S7-1500 controller is also supported
- Freely-definable message classes for definition of acknowledgment response and display of alarm events

### *Logging of alarms and process values* 1)

- Logging in files (e.g. CSV or TXT file) and Microsoft SQL databases
- Online evaluation of process value and alarm logs
- Evaluation of process value and alarm logs using standard Microsoft tools such as Excel

### *Recipes* 1)

- Generation of data records for machine data or production data
- Display or entry of data records via a configurable screen object or via process screens distributed within the project
- Transmission of data records from or to the controller
- Import/export of data records from/to CSV files for further processing with other tools (e.g. MS Excel)

**Function** (continued)

### *Documentation of process data, alarm events, and recipes*

- Time or event-driven report output
- User-definable layout

### *Flexible expansion of integrated system function using Visual Basic script*

### *Language support for multilingual projects*

- Up to 32 online languages
- Language-dependent texts and graphics
- Language selection during runtime

### *User-oriented access protection according to requirements of regulated sectors*

- Authentication with user ID and password
- User group-specific rights
- Central system-wide user administration based on SIMATIC Logon[1)]
- Monitoring of changes by operators in runtime operation[1)]
- Recording of operator actions in an Audit Trail [1)]

### *Onboard controller connection to many different controllers*

- Communication via native drivers and standard OPC channel
- Simultaneous connection using several protocols: OPC client and SIMATIC HMI HTTP protocol are additive, i.e. they can be used in conjunction with other controller connections

### *Open communication between HMI systems and with higher-level systems*

- OPC servers
  - Use of the visualization system as a data server (OPC server) for higher-level automation components, e.g. control systems or systems in the office area
  - OPC-DA server: tags, e.g. process values
- Communication between HMI systems is established on the basis of Ethernet networks, or via the intranet/Internet
  - Read and write access to tags. The WinCC Runtime Advanced or SIMATIC Panels provide other SIMATIC HMI systems or office applications with data (tags)
- Sending of emails on demand or event-driven
  - e.g. to maintenance personnel via SMTP server (Simple Mail Transfer Protocol)
  - The optional use of email/SMS gateways enables access to standard networks (external service provider required)
- System diagnostics via device-specific HTML pages. The following functions are available:
  - Starting and stopping the HMI runtime for maintenance
  - Remote access to recipe data records, passwords and information specific to the HMI system
  - Access to the HMI system files via a file explorer
  - Download of configuration data via the intranet/Internet
  - Supplement with own HTML pages

### *WinCC Sm@rtServer for the remote control via the intranet and Internet [1)]*

- Display and control of process screens on remote PC or Panel
- A SIMATIC HMI system can be used to control or monitor another system remotely; entry level for client/server configurations for distributed operator stations or for solutions with head-end stations or control rooms

[1)] Option for SIMATIC WinCC Runtime Advanced; runtime licenses must be purchased separately. Additional information is available under "WinCC options".

### *System requirements*

| | **SIMATIC WinCC Runtime Advanced** |
|---|---|
| **Processor type (min.) [2)]** | 32-bit operating system:<br>at least Intel® Atom™ 1.3 GHz or comparable<br>64-bit operating system:<br>at least Intel® Celeron™ 1.4 GHz or comparable |
| **RAM (min.) [3)]** | 4 GB or more |
| **Hard disk** | 8 GB disk space available |
| **Operating systems** | 32-bit operating systems:<br>• Windows 7 Professional SP1<br>• Windows 7 Enterprise SP1<br>• Windows 7 Ultimate SP1<br>• Windows Embedded Standard Edition 7 SP1 (SIMATIC IPC only)<br>64-bit operating systems:<br>• Windows 7 Professional SP1 Windows 7 Enterprise SP1 Windows 7 Ultimate SP1<br>• Windows Embedded Standard Edition 7 SP1 (SIMATIC IPC only)<br>• Windows 8.1 Professional Windows 8.1 Enterprise<br>• Windows Embedded 8.1 Industry<br>• Windows 10 Professional Version 1703<br>• Windows 10 Enterprise Version 1703<br>• Windows 10 Enterprise 2016 LTSB<br>• Windows Server 2008 R2 Standard Edition SP1<br>• Windows Server 2012 R2 Standard Edition<br>• Windows Server 2016 Standard Edition |
| **Optical drive** | DVD-ROM |

[2)] In combination with options, more powerful systems may be required

[3)] The required RAM is determined primarily by the size of the graphics used.

Note:

In addition to WinCC, Windows also requires space on the hard disk; e.g. free storage space should be available for the swap file. The following formula has proven itself in the past: Size of swap file = 3 x size of RAM.

For further information, refer to your Windows documentation.

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## Technical specifications

The following tables of system limitations provide assistance in estimating whether a specific project is still within the system limitations for WinCC Runtime Advanced. The stated maximum values are not additive.

We cannot guarantee proper functioning of configurations that make full use of all system limits on the HMI devices. In addition to the limitations specified, allowances must be made for restrictions in configuration memory resources.

| | SIMATIC WinCC Runtime Advanced |
|---|---|
| **Tags** | |
| Number of tags in the project | 24 576 |
| Number of PowerTags | 128–16 384 |
| Number of elements per array | 1 600 |
| Number of local tags | 8 192 |
| **Alarms** | |
| Number of alarm classes | 32 |
| Number of discrete alarms | 6 000 |
| Number of analog alarms | 500 |
| Length of an alarm in characters | 80 |
| Number of process values per alarm | 8 |
| Size of the alarm buffer | 2 048 |
| Number of queued alarm events | 500 |
| **Screens** | |
| Number of screens | 750 |
| Number of fields per screen | 600 |
| Number of tags per screen | 400 |
| Number of complex objects per screen(1) | 40 |
| **Recipes** | |
| Number of recipes | 1 000 |
| Number of elements per recipe(2) | 2 000 |
| User data length in KB per data record | 512 |
| Number of data records per recipe | 5 000 |
| **Logs** | |
| Number of logs | 100 |
| Number of entries per log (including all log segments)(3) | 500 000 |
| Number of log segments | 400 |
| Cyclical trigger for tag logging | 1 s |
| Number of tags that can be logged per log | 24 576 |

| | SIMATIC WinCC Runtime Advanced |
|---|---|
| **Trends** | |
| Number of trends | 800 |
| **Text lists and graphics lists** | |
| Number of graphic lists | 500 |
| Number of text lists | 500 |
| Number of entries per text or graphic list | 3 500 |
| Number of graphic objects | 24 576 |
| Number of text elements | 40 000 |
| **Scripts** | |
| Number of scripts | 200 |
| **Communication** | |
| Number of connections | 8 |
| Number of connections based on "SIMATIC HMI HTTP" | 16 |
| Maximum number of connected Sm@rtClients (including a service client) | 4 (4) |
| **Help system** | |
| Number of characters in a help text | 500 |
| **Languages** | |
| Number of runtime languages | 32 |
| **Scheduler** | |
| Time-triggered tasks(5) | 48 |
| **User administration** | |
| Number of user groups | 50 |
| Number of user rights | 32 |
| Number of users | 100 |

(1) Complex objects are: Bars, sliders, symbol library, clock, and all objects from the Controls area.

(2) When using arrays, each array element represents a recipe element

(3) For the "segmented circular log" logging method, the number of entries for all sequence logs is valid. The product derived from the number of circular logs times the number of data records in this log may not be exceeded.

(4) Up to three Sm@rtClients can interconnect with the Sm@rtServer on Panel PC 477.

(5) Event-triggered tasks are not relevant for the system limits.

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SIMATIC WinCC Runtime Advanced V16* | |
| *Basic software* | |
| Data storage medium | |
| • 128 PowerTags | **6AV2104-0BA06-0AA0** |
| • 512 PowerTags | **6AV2104-0DA06-0AA0** |
| • 2 048 PowerTags | **6AV2104-0FA06-0AA0** |
| • 4 096 PowerTags | **6AV2104-0HA06-0AA0** |
| • 8 192 PowerTags | **6AV2104-0KA06-0AA0** |
| • 16 384 PowerTags | **6AV2104-0LA06-0AA0** |
| As download[1] | |
| E-mail address required for delivery | |
| • 128 PowerTags | **6AV2104-0BA06-0AH0** |
| • 512 PowerTags | **6AV2104-0DA06-0AH0** |
| • 2 048 PowerTags | **6AV2104-0FA06-0AH0** |
| • 4 096 PowerTags | **6AV2104-0HA06-0AH0** |
| • 8 192 PowerTags | **6AV2104-0KA06-0AH0** |
| • 16 384 PowerTags | **6AV2104-0LA06-0AH0** |
| *Powerpacks* | |
| **SIMATIC WinCC Runtime Advanced V16** | |
| Data storage medium | |
| • 128 PowerTags to 512 PowerTags | **6AV2104-2BD06-0BD0** |
| • 512 PowerTags to 2 048 PowerTags | **6AV2104-2DF06-0BD0** |
| • 2 048 PowerTags to 4 096 PowerTags | **6AV2104-2FH06-0BD0** |
| • 4 096 PowerTags to 8 192 PowerTags | **6AV2104-2HK06-0BD0** |
| • 8 192 PowerTags to 16 384 PowerTags | **6AV2104-2KL06-0BD0** |
| As download[1] | |
| E-mail address required for delivery | |
| • 128 PowerTags to 512 PowerTags | **6AV2104-2BD06-0BJ0** |
| • 512 PowerTags to 2 048 PowerTags | **6AV2104-2DF06-0BJ0** |
| • 2 048 PowerTags to 4 096 PowerTags | **6AV2104-2FH06-0BJ0** |
| • 4 096 PowerTags to 8 192 PowerTags | **6AV2104-2HK06-0BJ0** |
| • 8 192 PowerTags to 16 384 PowerTags | **6AV2104-2KL06-0BJ0** |

| | Article No. |
|---|---|
| *Upgrades* | |
| **SIMATIC WinCC Runtime Advanced V11..15.1 to V16** | |
| • 128 PowerTags | **6AV2104-3BB06-0AE0** |
| • 512 PowerTags | **6AV2104-3DD06-0AE0** |
| • 2 048 PowerTags | **6AV2104-3FF06-0AE0** |
| • 4 096 PowerTags | **6AV2104-3HH06-0AE0** |
| • 8 192 - 16 384 PowerTags | **6AV2105-3KK06-0AE0** |
| As download[1] | |
| E-mail address required for delivery | |
| • 128 PowerTags | **6AV2104-3BB06-0AK0** |
| • 512 PowerTags | **6AV2104-3DD06-0AK0** |
| • 2 048 PowerTags | **6AV2104-3FF06-0AK0** |
| • 4 096 PowerTags | **6AV2104-3HH06-0AK0** |
| • 8 192 - 16 384 PowerTags | **6AV2105-3KK06-0AK0** |
| **SIMATIC WinCC flexible 2008 to SIMATIC WinCC Runtime Advanced V16** | |
| • 128 PowerTags to 128 PowerTags [2] | **6AV2104-4BB06-0AE0** |
| • 512 PowerTags to 512 PowerTags [2] | **6AV2104-4DD06-0AE0** |
| • 2 048 PowerTags to 2 048 PowerTags [2] | **6AV2104-4FF06-0AE0** |
| • 4 096 PowerTags to 4 096 PowerTags [2] | **6AV2104-4HH06-0AE0** |
| • 8 000 PowerTags to 8 192 PowerTags [2] | **6AV2104-4KK06-0AE0** |
| As download[1] | |
| E-mail address required for delivery | |
| • 128 PowerTags to 128 PowerTags [2] | **6AV2104-4BB06-0AK0** |
| • 512 PowerTags to 512 PowerTags [2] | **6AV2104-4DD06-0AK0** |
| • 2 048 PowerTags to 2 048 PowerTags [2] | **6AV2104-4FF06-0AK0** |
| • 4 096 PowerTags to 4 096 PowerTags [2] | **6AV2104-4HH06-0AK0** |
| • 8 000 PowerTags to 8 192 PowerTags [2] | **6AV2104-4KK06-0AK0** |

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[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

[2] Each including 1 upgrade license to the WinCC Runtime Advanced options

## Ordering data

| Ordering data | Article No. |
|---|---|
| ***SIMATIC WinCC Runtime Advanced V15.1*** | |
| ***Basic software*** | |
| Software and documentation on DVD, including options software 1)<br>Single license,<br>license key on USB flash drive for | |
| • 128 PowerTags | **6AV2104-0BA05-0AA0** |
| • 512 PowerTags | **6AV2104-0DA05-0AA0** |
| • 2 048 PowerTags | **6AV2104-0FA05-0AA0** |
| • 4 096 PowerTags | **6AV2104-0HA05-0AA0** |
| • 8 192 PowerTags | **6AV2104-0KA05-0AA0** |
| • 16 384 PowerTags | **6AV2104-0LA05-0AA0** |
| As download 3)<br>Single license, software and license key download.<br>E-mail address required for delivery | |
| • 128 PowerTags | **6AV2104-0BA05-0AH0** |
| • 512 PowerTags | **6AV2104-0DA05-0AH0** |
| • 2 048 PowerTags | **6AV2104-0FA05-0AH0** |
| • 4 096 PowerTags | **6AV2104-0HA05-0AH0** |
| • 8 192 PowerTags | **6AV2104-0KA05-0AH0** |
| • 16 384 PowerTags | **6AV2104-0LA05-0AH0** |
| ***Powerpacks*** | |
| **SIMATIC WinCC Runtime Advanced V15.1 (without version change)** | |
| Single license, license key only on USB flash drive for PowerTags from | |
| Data storage medium | |
| • 128 PT to 512 PT | **6AV2104-2BD05-0BD0** |
| • 512 PT to 2 048 PT | **6AV2104-2DF05-0BD0** |
| • 2 048 PT to 4 096 PT | **6AV2104-2FH05-0BD0** |
| • 4 096 PT to 8 192 PT | **6AV2104-2HK05-0BD0** |
| • 8 192 PT to 16 384 PT | **6AV2104-2KL05-0BD0** |
| As download 3)<br>Single license, software and license key download.<br>E-mail address required for delivery | |
| • 128 PT to 512 PT | **6AV2104-2BD05-0BJ0** |
| • 512 PT to 2 048 PT | **6AV2104-2DF05-0BJ0** |
| • 2 048 PT to 4 096 PT | **6AV2104-2FH05-0BJ0** |
| • 4 096 PT to 8 192 PT | **6AV2104-2HK05-0BJ0** |
| • 8 192 PT to 16 384 PT | **6AV2104-2KL05-0BJ0** |
| ***Upgrades*** | |
| **SIMATIC WinCC Runtime Advanced V11..14 to V15.1** | |
| Software and documentation on DVD, including options software<br>Single license,<br>license keys on USB flash drive for | |
| • 128 PowerTags | **6AV2104-3BB05-0AE0** |
| • 512 PowerTags | **6AV2104-3DD05-0AE0** |
| • 2 048 PowerTags | **6AV2104-3FF05-0AE0** |
| • 4 096 PowerTags | **6AV2104-3HH05-0AE0** |
| • 8 192 - 16 384 PowerTags | **6AV2105-3KK05-0AE0** |
| As download 3)<br>Single license, software and license key download.<br>E-mail address required for delivery | |
| • 128 PowerTags | **6AV2104-3BB05-0AK0** |
| • 512 PowerTags | **6AV2104-3DD05-0AK0** |
| • 2 048 PowerTags | **6AV2104-3FF05-0AK0** |
| • 4 096 PowerTags | **6AV2104-3HH05-0AK0** |
| • 8 192 - 16 384 PowerTags | **6AV2105-3KK05-0AK0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC flexible 2008 to SIMATIC WinCC Runtime Advanced V15.1** | |
| Software and documentation on DVD, including options software<br>Single license,<br>license keys on USB flash drive for | |
| • 128 PowerTags to 128 PowerTags 2) | **6AV2104-4BB05-0AE0** |
| • 512 PowerTags to 512 PowerTags 2) | **6AV2104-4DD05-0AE0** |
| • 2 048 PowerTags to 2 048 PowerTags 2) | **6AV2104-4FF05-0AE0** |
| • 4 096 PowerTags to 4 096 PowerTags 2) | **6AV2104-4HH05-0AE0** |
| • 8 000 PowerTags to 8 192 PowerTags 2) | **6AV2104-4KK05-0AE0** |
| As download 3)<br>Single license, software and license key download.<br>E-mail address required for delivery | |
| • 128 PowerTags to 128 PowerTags 2) | **6AV2104-4BB05-0AK0** |
| • 512 PowerTags to 512 PowerTags 2) | **6AV2104-4DD05-0AK0** |
| • 2 048 PowerTags to 2 048 PowerTags 2) | **6AV2104-4FF05-0AK0** |
| • 4 096 PowerTags to 4 096 PowerTags 2) | **6AV2104-4HH05-0AK0** |
| • 8 000 PowerTags to 8 192 PowerTags 2) | **6AV2104-4KK05-0AK0** |
| **SIMATIC WinCC flexible Panel Options to SIMATIC WinCC (TIA Portal) Panel Options** | |
| • WinCC flexible /Audit for SIMATIC Panels to SIMATIC WinCC Audit for SIMATIC Comfort/Mobile Panels<br>• WinCC flexible /Sm@rtAccess for SIMATIC Panel to SIMATIC WinCC Sm@rtServer for SIMATIC Panels<br>• WinCC flexible /Sm@rtService for SIMATIC Panels to SIMATIC WinCC Sm@rtServer for SIMATIC Panels<br>• WinCC flexible/ProAgent for Panels to SIMATIC ProDiag for Comfort/Mobile Panel | |
| • Data storage medium | **6AV2107-4XP00-0BF0** |
| • As download 3)<br>Single license, software and license key download. E-mail address required for delivery | **6AV2107-4XP00-0BK0** |

1) Runtime licenses for WinCC Runtime Advanced options must be purchased separately for each target system

2) Each including 1 upgrade license to the WinCC Runtime Advanced options

3) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

Additional information is available on the Internet at:

http://www.siemens.com/wincc-advanced

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## WinCC Runtime Professional

### Overview

PC-based operator control and monitoring system for visualization and operator control of processes, production flows, machines and plants in all sectors – from the simple single-user station through to distributed multi-user systems and cross-location solutions with web clients.

SIMATIC WinCC Runtime Professional is the information hub for corporation-wide vertical integration.
SIMATIC WinCC Runtime Professional is configured with the SIMATIC WinCC Professional configuration software.

### Benefits

- Functions for all visualization tasks:
  - Operator functions
  - Graphics and trend displays
  - Alarm logging
  - Report system
  - Archiving (option)
  - Recipe management (option)
- Universally scalable
  - Expandable from single station to client-server configurations
  - Process visualization via the web with the WinCC WebNavigator
- Open standards for easy integration
  - Efficient real-time database MS SQL Server
  - Open for application modules with ActiveX controls
  - Visual Basic for Applications for individual expansions
  - OPC for cross-vendor communication
- Part of the Totally Integrated Automation Portal
  - Direct access to the tag and message configuration of the SIMATIC controller
  - Excellent support of the new SIMATIC S7-1500 controller
    With symbolic addressing
    Access to the new memory-optimized data blocks
    New ProDiag alarm and diagnostics concept
  - Integrated diagnostic functions for increasing productivity

### Application

SIMATIC WinCC Runtime Professional is designed for visualization and operator control of processes, production flows, machines and plants. With its powerful process interface, especially to the SIMATIC family, and the secure data logging, WinCC Runtime Professional enables solutions for the process control.

The sector-neutral basic system enables universal usage in all automation applications.

SIMATIC WinCC Runtime Professional can be used in combination with the following operator panels:

SIMATIC PCs:

- SIMATIC Rack PC: IPC547, IPC647, IPC847
- SIMATIC Box PC: IPC427, IPC627, IPC827
- SIMATIC Panel PC: IPC477, IPC677
- Standard PC

### Design

SIMATIC WinCC Runtime Professional is available as a software package with 128, 512, 2 048, 4 096, 8 192, 65 536, 102 400, 153 600 and 262 144 PowerTags.

PowerTags are data points that are connected to controllers or other data sources via a WinCC Runtime Professional channel. Up to 32 alarms can be obtained from one data point. Moreover, internal tags without coupling are available for additional system performance. WinCC Runtime Professional also contains 500 archive tags. Additional archive licenses can be obtained for greater quantity structures.

#### *Licenses for a multi-user configuration*

The system software with the required number of PowerTags and additionally the SIMATIC WinCC Server for Runtime Professional option must be installed on the server. For the clients in the basic configuration, a SIMATIC WinCC Client for Runtime Professional license is sufficient.

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## Function

Visualization via Windows-compliant user interface

Made up of parameterizable screen objects and faceplates created on a project-specific basis:

- Numeric and alphanumeric input/output fields
- Static text and graphic display plus vector graphics
- Dynamizable graphics from HMI symbol library
- Bar graph, trend curve graph with scroll and zoom function as well as read line
- Signal-specific text and graphic lists
- Buttons and switches for operator-process communication
- Editing fields for process values (signals)
- Analog display, slider as example for further screen objects
- Project-specific faceplates created from basic objects of the system
- Graphic displays for various standard graphic formats, e.g. bitmaps, .jpg, .wmf, .svg

Alarms and messages

- Discrete alarms and analog alarms, as well as event-driven Alarm-S/Alarm-D message procedure with SIMATIC S7
- The new ProDiag alarm and diagnostics concept of the S7-1500 controller is also supported
- Freely-definable message classes for definition of acknowledgment response and display of alarm events

Logging of messages and process values 1)

- Signaling system for detecting and archiving events with display and control options according to DIN 19235
- Process logging for the acquisition, compression and storage of measured values
- Online evaluation of process value and alarm logs

Recipes 1)

- Generation of data records for machine data or production data
- Display or entry of data records via a configurable screen object or via process screens distributed within the project
- Transmission of data records from or to the controller
- Import/export of data records for further processing with other tools (e.g. MS Excel)

Documentation of process data, alarm events, and recipes

- Time or event-driven report output
- User-definable layout

Flexible expansion by means of Visual Basic Script and ANSI-C

- Programming interfaces for individual access to data and functions of WinCC Runtime Professional and for the integration in user programs with VBA, VB Script, C-API, C-Script (ANSI-C)

Open communication between HMI systems and with higher-level systems

- OPC server/client
  Use of the visualization system as a data server (OPC server) for higher-level automation components such as control systems or systems in the office area
  - OPC DA server: tags, e.g. process values
  - OPC HDA server: logged process values
  - OPC A&E server: Alarms
  - OPC XML DA server: tags, e.g. process values
  - OPC XML DA server: tags, e.g. process values
  - OPC UA DA client Tags, e.g. process values
- OLE DB server
  - Standardized and user-friendly access to WinCC log data (MS SQL Server 2005).
  - Access via the OLE DB Provider supplies all WinCC log data available along with the accompanying process values, as well as alarm and user texts.
  - The WinCC OLE DB Provider also supports analysis functions such as minimum, maximum, alarm hit list, etc.
- WinCC WebUX for Runtime Professional 1)
  - The WebUX option enables platform and browser-independent operator control and monitoring via the Internet or the in-house intranet or LAN.
  - Installation on the terminal is unnecessary – an HTML5-compatible browser is sufficient. WebUX can then also be used on mobile terminals.
- WinCC WebNavigator for Runtime Professional1)
  - Option for SIMATIC WinCC Runtime Professional for operating and monitoring plants over the Internet, company Intranet or LAN.
  - Configuration from a web server with the SIMATIC WinCC Runtime Professional software as a single-user, client or server version and a web client that enables operator control and monitoring of a current WinCC Runtime Professional project via an Internet browser with ActiveX support.
    The WinCC basic system does not have to be installed on the client computer.
- WinCC DataMonitor for Runtime Professional 1)
  - The WinCC DataMonitor is used for displaying and evaluating current process states and historical data on office PCs using standard tools such as Microsoft Internet Explorer or Microsoft Excel.
    The DataMonitor client is supported by a web server with current and historic process data and alarms.
    All staff ranging from machine operators to corporate managers can use the DataMonitor to obtain information.

Option for SIMATIC WinCC Runtime Professional; runtime licenses must be purchased separately.
Additional information is available under "WinCC options".

Language support for multilingual projects

- Language-dependent texts and graphics
- Language selection during runtime

Onboard controller connection to many different controllers

- Communication via native drivers and standard OPC channel
- For communication with subordinate controls (SIMATIC protocols, PROFIBUS DP, PROFIBUS FMS, DDE and OPC server included in the scope of supply)

Note:

The SIMATIC Net V16 SP1 included in the delivery must be installed for communication.
Before installing SIMATIC WinCC RT Professional, please always ensure compatibility with the add-on packages and options you require and use.

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## **Function** (continued)

| System prerequisites | SIMATIC WinCC Runtime Professional |
|---|---|
| **Processor type (min.)** [1] | - Intel Celeron Dual Core 2.2 GHz (Ivy/Sandy Bridge) |
| **RAM (min.)** [2] | 4 GB |
| **Free hard disk space** [3] | 8 GB on system drive "C:" |
| **Operating systems** | All 32-bit operating systems<br>64-bit operating systems:<br>• Windows 8.1 (Professional, Enterprise)<br>• Windows Embedded 8.1 Industry<br>• Windows 7 SP1 (Professional, Enterprise, Ultimate)<br>• Windows Embedded Standard Edition 7 SP |
| **Graphics card** | 32 MB RAM, 24-bit color depth |
| **Network** | Ethernet 10 Mbps or higher |
| **Optical drive** | DVD-ROM |

[1] In combination with options, more powerful systems may be required

[2] The required RAM is determined primarily by the size of the graphics used.

[3] Without taking archives into account.

Note:

In addition to WinCC, Windows also requires space on the hard disk; e.g. free disk space should be available for the swap file.

The following formula has proven itself in the past:
Size of swap file = 3 x size of RAM.

For further information, refer to your Windows documentation.

## **Integration**

### *Integration in company-wide solutions (IT and business integration)*

WinCC Runtime Professional is strictly based on Microsoft technology, which provides for the greatest possible compatibility and integration ability.

Cross-manufacturer communication is also a simply exercise. The reason: WinCC Runtime Professional can be used as an OPC client and server, and in addition to access to current process values, it also supports standards such as OPC HDA (Historical Data Access), OPC Alarm & Events, OPC UA Data Access and OPC XML Data Access.

Just as important: Visual Basic Scripting (VBS) as an easy-to-learn, open Runtime language. If desired, professional application developers can also use ANSI-C.

WinCC Runtime Professional integrates a powerful and scalable Historian function based on the Microsoft SQL Server in the basic system.

Thus the user is given all possibilities: from high-performance archiving of current process data, to long-term archiving with high data compression, through to a central information hub in the form of a company-wide Process Historian. Open interfaces form the basis for an effective IT and business integration.

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## Technical specifications

The following tables of system limits provide assistance in estimating whether a specific project is still within the system limitations for WinCC Runtime Professional. The stated maximum values are not additive.

We cannot guarantee proper functioning of configurations that make full use of all system limits on the HMI devices.

In addition to the limitations specified, allowances must be made for restrictions in configuration memory resources.

| | SIMATIC WinCC Runtime Professional |
|---|---|
| **Alarms** | |
| Configurable alarms per server/ single user | 150,000 |
| PowerTags per alarm line | 10 |
| User text blocks per alarm line | 10 |
| Message classes | 256 |
| Alarm types | 16 |
| Alarm priorities | 17 (0...16) |
| **Alarms in Runtime** | |
| Alarms per alarm log | Unlimited [1] |
| Alarms per short-term log list | 1,000 |
| Alarms per long-term log list | 1,000[2] |
| Alarms per alarm display | 5,000[3] |
| **Screens** | |
| Objects per screen [4] | Unlimited [5] |
| Levels per screen | 32 |
| Screens per project | Unlimited [5] |
| Instances of fixed faceplates in a process screen | 31 instances of the same picture type |
| Screen size in pixels | 10 000 x 10 000 |
| Nesting levels of screen objects | 20 |
| **Recipes** | |
| Number of recipes | Unlimited [5] |
| Number of recipe elements | 500 [6] |
| Number of recipe data records | 10,000 [6] |
| Number of views | Unlimited [5] |
| **Logs** | |
| Trend views per screen | 25 |
| Trends per trend view | 80 |
| Tables per screen | 25 |
| Columns per table | 12 |
| Values per table | 30,000 |
| Logs per single-user station/server | 100 |
| Log tags per single-user station/ server [7] | 80,000 |

| | SIMATIC WinCC Runtime Professional |
|---|---|
| **Trends** | |
| Trend views per image | 25 |
| Trends per trend view | 80 |
| **User administration** | |
| Number of user groups | 128 |
| Number of user rights | 999 |
| Number of users | 128 |
| **Configurations – Quantity structure in a multi-user system** | |
| WinCC clients in a system | 32 [8] [9] |
| Web clients in a system | 150 [10] |

[1] Limited by system resources.

[2] On single-user station or server or on client per server if "LongTimeArchiveConsistency" is set to "No". On single-user station, server, or client if "LongTimeArchiveConsistency" is set to "Yes".

[3] On single-user station or server or on client per server.

[4] The number and complexity of the objects affect the performance.

[5] Limited by system resources.

[6] The sum of the number of recipe elements and number of data records must not exceed a value of 1,000,000

[7] Dependent on the Logging PowerPack used for the log tags. 500 log tags are contained in the basis version.

[8] If the server is also used as an operating unit, the number of clients for this server is reduced to four.

[9] Mixed configuration: 32 clients + 3 web clients

[10] Mixed configuration: 50 web clients + 1 WinCC client

## Ordering data

| | Article No. |
|---|---|
| ***SIMATIC WinCC Runtime Professional V16*** | |
| ***Basic software*** | |
| • 128 PowerTags | **6AV2105-0BA06-0AA0** |
| • 512 PowerTags | **6AV2105-0DA06-0AA0** |
| • 2 048 PowerTags | **6AV2105-0FA06-0AA0** |
| • 4 096 PowerTags | **6AV2105-0HA06-0AA0** |
| • 8 192 PowerTags | **6AV2105-0KA06-0AA0** |
| • 65 536 PowerTags | **6AV2105-0MA06-0AA0** |
| • 102 400 PowerTags | **6AV2105-0PA06-0AA0** |
| • 153 600 PowerTags | **6AV2105-0RA06-0AA0** |
| • 262 144 PowerTags | **6AV2105-0TA06-0AA0** |
| • Client for Runtime Professional | **6AV2107-0DB06-0AA0** |
| Incl. 500 archive tags each | |
| As download1)<br>E-mail address required for delivery. | |
| • 128 PowerTags | **6AV2105-0BA06-0AH0** |
| • 512 PowerTags | **6AV2105-0DA06-0AH0** |
| • 2 048 PowerTags | **6AV2105-0FA06-0AH0** |
| • 4 096 PowerTags | **6AV2105-0HA06-0AH0** |
| • 8 192 PowerTags | **6AV2105-0KA06-0AH0** |
| • 65 536 PowerTags | **6AV2105-0MA06-0AH0** |
| • 102 400 PowerTags | **6AV2105-0PA06-0AH0** |
| • 153 600 PowerTags | **6AV2105-0RA06-0AH0** |
| • 262 144 PowerTags | **6AV2105-0TA06-0AH0** |
| • Client for Runtime Professional | **6AV2107-0DB06-0AH0** |
| Incl. 500 archive tags each | |
| **SIMATIC WinCC Runtime Professional ASIA V16** | |
| • 128 PowerTags | **6AV2105-0BA16-0AA0** |
| • 512 PowerTags | **6AV2105-0DA16-0AA0** |
| • 2 048 PowerTags | **6AV2105-0FA16-0AA0** |
| • 4 096 PowerTags | **6AV2105-0HA16-0AA0** |
| • 8 192 PowerTags | **6AV2105-0KA16-0AA0** |
| • 65 536 PowerTags | **6AV2105-0MA16-0AA0** |
| • 102 400 PowerTags | **6AV2105-0PA16-0AA0** |
| • 153 600 PowerTags | **6AV2105-0RA16-0AA0** |
| • 262 144 PowerTags | **6AV2105-0TA16-0AA0** |
| • Client for Runtime Professional | **6AV2107-0DB16-0AH0** |
| Incl. 500 archive tags each | |
| ***Powerpacks*** | |
| **SIMATIC WinCC Runtime Professional V16 and SIMATIC WinCC Runtime Professional ASIA V16** | |
| • 128 to 512 PowerTags | **6AV2105-2BD06-0BD0** |
| • 512 to 2 048 PowerTags | **6AV2105-2DF06-0BD0** |
| • 2 048 to 4 096 PowerTags | **6AV2105-2FH06-0BD0** |
| • 4 096 to 8 192 PowerTags | **6AV2105-2HK06-0BD0** |
| • 8 192 to 65 536 PowerTags | **6AV2105-2KM06-0BD0** |
| • 65 536 to 102 400 PowerTags | **6AV2105-2MP06-0BD0** |
| • 102 400 to 153 600 PowerTags | **6AV2105-2PR06-0BD0** |
| • 153 600 to 262 144 PowerTags | **6AV2105-2RT06-0BD0** |
| As download1)<br>E-mail address required for delivery. | |
| • 128 to 512 PowerTags | **6AV2105-2BD06-0BJ0** |
| • 512 to 2 048 PowerTags | **6AV2105-2DF06-0BJ0** |
| • 2 048 to 4 096 PowerTags | **6AV2105-2FH06-0BJ0** |
| • 4 096 to 8 192 PowerTags | **6AV2105-2HK06-0BJ0** |
| • 8 192 to 65 536 PowerTags | **6AV2105-2KM06-0BJ0** |
| • 65 536 to 102 400 PowerTags | **6AV2105-2MP06-0BJ0** |
| • 102 400 to 153 600 PowerTags | **6AV2105-2PR06-0BJ0** |
| • 153 600 to 262 144 PowerTags | **6AV2105-2RT06-0BJ0** |

| | Article No. |
|---|---|
| ***Upgrades V11..15.1 to WinCC V16*** | |
| **SIMATIC WinCC Runtime Professional V11..15.1 and** | |
| **SIMATIC WinCC Runtime Professional ASIA V11..V15.1 to V16** | |
| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-3BB06-0AE0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-3DD06-0AE0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-3FF06-0AE0** |
| • SIMATIC WinCC Runtime Professional 4 096 PowerTags | **6AV2105-3HH06-0AE0** |
| • SIMATIC WinCC Runtime Professional 8 192 PowerTags | **6AV2105-3KK06-0AE0** |
| • SIMATIC WinCC Runtime Professional 64k to 256k PowerTags | **6AV2105-3MM06-0AE0** |
| • Client for Runtime Professional | **6AV2107-3DB06-0AE0** |
| As download1)<br>E-mail address required for delivery. | |
| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-3BB06-0AK0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-3DD06-0AK0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-3FF06-0AK0** |
| • SIMATIC WinCC Runtime Professional 4 096 PowerTags | **6AV2105-3HH06-0AK0** |
| • SIMATIC WinCC Runtime Professional 8 192 PowerTags | **6AV2105-3KK06-0AK0** |
| • SIMATIC WinCC Runtime Professional 64k to 256k PowerTags | **6AV2105-3MM06-0AK0** |
| • Client for Runtime Professional | **6AV2107-3DB06-0AK0** |
| ***Upgrades*** | |
| **to SIMATIC WinCC RT Professional V16** | |
| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-4BB06-0AE0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-4DD06-0AE0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-4FF06-0AE0** |
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| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-4BB06-0AK0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-4DD06-0AK0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-4FF06-0AK0** |
| • SIMATIC WinCC Runtime Professional 8 192 PowerTags | **6AV2105-4KK06-0AK0** |
| • SIMATIC WinCC Runtime Professional 64k to 256k PowerTags | **6AV2105-4MM06-0AK0** |
| • Client for Runtime Professional | **6AV2107-4DB06-0AK0** |

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1) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

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| Ordering data | Article No. |
|---|---|
| *SIMATIC WinCC Runtime Professional V15.1* | |
| *Basic software* | |
| For PC systems; incl. software options 1), language/script versions: en, de, fr, it, es Single license, on DVD incl. licensing, on USB flash drive, for: | |
| • 128 PowerTags | **6AV2105-0BA05-0AA0** |
| • 512 PowerTags | **6AV2105-0DA05-0AA0** |
| • 2 048 PowerTags | **6AV2105-0FA05-0AA0** |
| • 4 096 PowerTags | **6AV2105-0HA05-0AA0** |
| • 8 192 PowerTags | **6AV2105-0KA05-0AA0** |
| • 65 536 PowerTags | **6AV2105-0MA05-0AA0** |
| • 102 400 PowerTags | **6AV2105-0PA05-0AA0** |
| • 153 600 PowerTags | **6AV2105-0RA05-0AA0** |
| • 262 144 PowerTags | **6AV2105-0TA05-0AA0** |
| Incl. 500 archive tags each | |
| As download3) Single License, software and license key download. E-mail address required for delivery. | |
| • 128 PowerTags | **6AV2105-0BA05-0AH0** |
| • 512 PowerTags | **6AV2105-0DA05-0AH0** |
| • 2 048 PowerTags | **6AV2105-0FA05-0AH0** |
| • 4 096 PowerTags | **6AV2105-0HA05-0AH0** |
| • 8 192 PowerTags | **6AV2105-0KA05-0AH0** |
| • 65 536 PowerTags | **6AV2105-0MA05-0AH0** |
| • 102 400 PowerTags | **6AV2105-0PA05-0AH0** |
| • 153 600 PowerTags | **6AV2105-0RA05-0AH0** |
| • 262 144 PowerTags | **6AV2105-0TA05-0AH0** |
| Incl. 500 archive tags each | |
| **SIMATIC WinCC Runtime Professional ASIA V15.1** | |
| For PC systems; incl. software options 1), language/script versions: en, zh-CHS, zh-CHT, ko, ja Single license, on DVD incl. licensing, for: | |
| • 128 PowerTags | **6AV2105-0BA15-0AA0** |
| • 512 PowerTags | **6AV2105-0DA15-0AA0** |
| • 2 048 PowerTags | **6AV2105-0FA15-0AA0** |
| • 4 096 PowerTags | **6AV2105-0HA15-0AA0** |
| • 8 192 PowerTags | **6AV2105-0KA15-0AA0** |
| • 65 536 PowerTags | **6AV2105-0MA15-0AA0** |
| • 102 400 PowerTags | **6AV2105-0PA15-0AA0** |
| • 153 600 PowerTags | **6AV2105-0RA15-0AA0** |
| • 262 144 PowerTags | **6AV2105-0TA15-0AA0** |
| Incl. 500 archive tags each | |
| **SIMATIC WinCC Client for Runtime Professional V15.1** | |
| • WinCC Client for Runtime Professional | **6AV2107-0DB05-0AA0** |
| • WinCC Client for Runtime Professional (as download 3)) | **6AV2107-0DB05-0AH0** |
| • WinCC Client for Runtime Professional ASIA | **6AV2107-0DB15-0AA0** |
| *Powerpacks* | |
| **SIMATIC WinCC Runtime Professional V15.1 and SIMATIC WinCC Runtime Professional ASIA V15.1** | |
| Single license, license key only on USB flash drives for PowerTags from | |
| • 128 to 512 PowerTags | **6AV2105-2BD05-0BD0** |
| • 512 to 2 048 PowerTags | **6AV2105-2DF05-0BD0** |
| • 2 048 to 4 096 PowerTags | **6AV2105-2FH05-0BD0** |
| • 4 096 to 8 192 PowerTags | **6AV2105-2HK05-0BD0** |
| • 8 192 to 65 536 PowerTags | **6AV2105-2KM05-0BD0** |
| • 65 536 to 102 400 PowerTags | **6AV2105-2MP05-0BD0** |
| • 102 400 to 153 600 PowerTags | **6AV2105-2PR05-0BD0** |
| • 153 600 to 262 144 PowerTags | **6AV2105-2RT05-0BD0** |
| As download3) Single License, software and license key download. E-mail address required for delivery. | |
| • 128 to 512 PowerTags | **6AV2105-2BD05-0BJ0** |
| • 512 to 2 048 PowerTags | **6AV2105-2DF05-0BJ0** |
| • 2 048 to 4 096 PowerTags | **6AV2105-2FH05-0BJ0** |
| • 4 096 to 8 192 PowerTags | **6AV2105-2HK05-0BJ0** |
| • 8 192 to 65 536 PowerTags | **6AV2105-2KM05-0BJ0** |
| • 65 536 to 102 400 PowerTags | **6AV2105-2MP05-0BJ0** |
| • 102 400 to 153 600 PowerTags | **6AV2105-2PR05-0BJ0** |
| • 153 600 to 262 144 PowerTags | **6AV2105-2RT05-0BJ0** |
| *Upgrades V11..14 to WinCC V15.1* | |
| **SIMATIC WinCC Runtime Professional V11..14 and** | |
| **SIMATIC WinCC Runtime Professional ASIA V11..V14 to V15.1** | |
| Single license, on DVD including licensing on USB flash drive: The upgrades include WinCC RT Prof. upgrade licenses for the options (WebNavigator, DataMonitor, WebDiag Client, excluding WinCC Upgrade Client) | |
| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-3BB05-0AE0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-3DD05-0AE0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-3FF05-0AE0** |
| • SIMATIC WinCC Runtime Professional 4 096 PowerTags | **6AV2105-3HH05-0AE0** |
| • SIMATIC WinCC Runtime Professional 8 192 PowerTags | **6AV2105-3KK05-0AE0** |
| • SIMATIC WinCC Runtime Professional 64k to 256k PowerTags | **6AV2105-3MM05-0AE0** |
| • SIMATIC WinCC Client for Runtime Professional V15.1 | **6AV2107-3DB05-0AE0** |
| As download3) Single License, software and license key download. E-mail address required for delivery. | |
| • SIMATIC WinCC Runtime Professional 128 PowerTags | **6AV2105-3BB05-0AK0** |
| • SIMATIC WinCC Runtime Professional 512 PowerTags | **6AV2105-3DD05-0AK0** |
| • SIMATIC WinCC Runtime Professional 2 048 PowerTags | **6AV2105-3FF05-0AK0** |
| • SIMATIC WinCC Runtime Professional 4 096 PowerTags | **6AV2105-3HH05-0AK0** |
| • SIMATIC WinCC Runtime Professional 8 192 PowerTags | **6AV2105-3KK05-0AK0** |
| • SIMATIC WinCC Runtime Professional 64k to 256k PowerTags | **6AV2105-3MM05-0AK0** |
| • SIMATIC WinCC Client for Runtime Professional V15.1 | **6AV2107-3DB05-0AK0** |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC Software Update Service (SUS) RT Professional** 4) 5) 6) | |
| Software Update Service for WinCC RT Professional Software | |
| • WinCC RT Professional Client (SUS) | **6AV2107-0DB00-0AL0** |
| • WinCC RT Professional (SUS) | **6AV2105-0XA00-0AL0** |
| As download 3) | |
| • WinCC RT Professional Client (SUS) | **6AV2107-0DB00-0AY0** |
| • WinCC RT Professional (SUS) | **6AV2105-0XA00-0AY0** |

| | Article No. |
|---|---|
| *Upgrades WinCC V7.0..V7.4 to WinCC V15.1* | |
| **SIMATIC WinCC RC or RT V7.0..V7.4 to SIMATIC WinCC RT Professional V15.1 and** | |
| **SIMATIC WinCC RC or RT V7.0..V7.4 ASIA to SIMATIC WinCC RT Professional ASIA V15.1** | |
| Single license, on DVD incl. licensing on USB flash drive | |
| • WinCC RC/RT 128 PowerTags to WinCC Runtime Professional 128 PowerTags 2) | **6AV2105-4BB05-0AE0** |
| • WinCC RC/RT 512 PowerTags to WinCC Runtime Professional 512 PowerTags 2) | **6AV2105-4DD05-0AE0** |
| • WinCC RC/RT 2 048 PowerTags to WinCC Runtime Professional 2 048 PowerTags 2) | **6AV2105-4FF05-0AE0** |
| • WinCC RC/RT 8 192 PowerTags to WinCC Runtime Professional 8 192 PowerTags 2) | **6AV2105-4KK05-0AE0** |
| • WinCC RC/RT 64k to 256k PowerTags to WinCC Runtime Professional 64k to 256k PowerTags 2) | **6AV2105-4MM05-0AE0** |
| • WinCC RC/RT128 / RC/RT Client to WinCC RT Professional Client | **6AV2107-4DB05-0AE0** |
| As download 3) | |
| Single License, software and license key download. E-mail address required for delivery. | |
| • WinCC RC/RT 128 PowerTags to WinCC Runtime Professional 128 PowerTags 2) | **6AV2105-4BB05-0AK0** |
| • WinCC RC/RT 512 PowerTags to WinCC Runtime Professional 512 PowerTags 2) | **6AV2105-4DD05-0AK0** |
| • WinCC RC/RT 2 048 PowerTags to WinCC Runtime Professional 2 048 PowerTags 2) | **6AV2105-4FF05-0AK0** |
| • WinCC RC/RT 8 192 PowerTags to WinCC Runtime Professional 8 192 PowerTags 2) | **6AV2105-4KK05-0AK0** |
| • WinCC RC/RT 64k to 256k PowerTags to WinCC Runtime Professional 64k to 256k PowerTags 2) | **6AV2105-4MM05-0AK0** |
| • WinCC RC/RT128 / RC/RT Client to WinCC RT Professional Client | **6AV2107-4DB05-0AK0** |

1) Runtime licenses for WinCC Runtime Professional options must be purchased separately for each target system

2) Each including 1 upgrade license to the WinCC Runtime Professional options

3) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

4) Software Update Service valid for 1 year. Contract automatically extended by 1 more year unless canceled 3 months prior to expiration. According to license agreement, 1 Software Update Service must be ordered for each WinCC station

5) Requires the current software version.

6) SUS available as download.

Additional information is available on the Internet at:

http://www.siemens.com/wincc-professional

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## Overview

### *Communication – SIMATIC WinCC Runtime Advanced*

WinCC Advanced is an open visualization system and offers the option of connecting the most diverse control systems.

Number of connectable controllers

WinCC Advanced permits the parallel coupling of up to 8 controllers.

Connection to third-party controllers.

The following "Connection overview" table includes lists of third-party protocols and controllers which are directly supported by WinCC Advanced.

Generally it is also possible to connect third-party controllers via OPC (OLE for Process Control).

Current notes and information about OPC servers from many different suppliers can be found at:
http://www.opcfoundation.org/

WinCC Advanced supports the standards:

- OPC Data Access 2.05a
- OPC UA Data Access 1.01
- OPC XML Data Access 1.00 (client via DCOM/XML gateway)

### *Coupling overview for WinCC Runtime Advanced*

| Protocol | Description | PC interface |
|---|---|---|
| SIMATIC HMI | | |
| **Ethernet TCP/IP (HTTP communication)** | HTTP communication for data exchange between SIMATIC HMI (client + server) [1)] | CP 1612 A2 |
| SIMATIC S7 | | |
| **Ethernet TCP/IP (S7 communication)** | Channel for communication via Ethernet TCP/IP with max. 8 x SIMATIC S7 controllers S7-1200, S7-1500 S7-300, S7-400,<br>S7-200 with CP 243-1 | CP 1612 A2<br>CP 1613 A2<br>CP 1623 |
| **MPI, PROFIBUS (S7 communication)** | Channel for communication via MPI, PROFIBUS with max. 8 x SIMATIC S7 controllers<br>S7-1200 with CM 1243-5 (DP master), S7-1500<br>S7-300, S7-400,<br>S7-200 (passive S7-200 only) | CP 5612<br>CP 5622<br>CP 5711<br>CP 5613 A3<br>CP 5623 |
| **PPI (PPI protocol)** | Channel for communication via PPI with 1 x SIMATIC S7-200 (network operation, e.g. parallel PG possible) | CP 5612<br>CP 5622<br>CP 5711<br>CP 5613 A3<br>CP 5623 |
| **Software interface (S7 communication)** | Channel for communication via software interface with WinAC | |
| SINUMERIK [2)] | | |
| **Ethernet TCP/IP (S7 communication)** | Channel for communication via Ethernet TCP/IP with SINUMERIK 840D sl | CP 1612 A2<br>CP 1613 A2<br>CP 1623 |
| **MPI (S7 communication)** | Channel for communication via MPI with SINUMERIK 840D sl | CP 5612<br>CP 5622<br>CP 5711<br>CP 5613 A3<br>CP 5623 |

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## Overview (continued)

| Protocol | Description | PC interface |
|---|---|---|
| Third-party controllers (WinCC V11.0 and higher) [3] | | |
| **Allen Bradley Ethernet IP** | Channel for communication with max. 4 x Allen Bradley controllers via Ethernet TCP/IP with Allen Bradley Ethernet IP protocol<br>The ControlLogix / CompactLogix, SLC500 / MicroLogix and PLC5 controllers are supported | CP 1612 A2 |
| **Allen Bradley DF1** | Channel for communication with Allen Bradley controllers via DF1 protocol<br>The controllers SLC500 / MicroLogix and PLC5 are supported [3] | COM1/COM2 |
| **Mitsubishi MC TCP/IP** | Channel for communication with max. 4 x Mitsubishi controllers via Ethernet TCP/IP with Mitsubishi MC TCP/IP protocol<br>The FX3, Q, and iQ/QnUD controller series are supported | CP 1612 A2 |
| **Mitsubishi FX** | Channel for communication with Mitsubishi controllers via FX protocol<br>The FX1N, FX2N controllers are supported | COM1/COM2 |
| **Modbus TCP/IP** | Channel for communication with max. 4 x Modicon controllers via Ethernet TCP/IP using the Modbus TCP/IP protocol<br>The Quantum, Momentum, Premium, TSX Micro, Compact and M340 controllers are supported | CP 1612 A2 |
| **Modbus RTU** | Channel for communication with Modicon controllers via the Modbus RTU protocol<br>The Quantum, Momentum, and Compact controllers are supported | COM1/COM2 |
| **Omron Link / Multi Link** | Channel for communication with Omron controllers via the Link/Multi protocol<br>The CP1x, CJ1x, CJ2H, CS1x, and CP2MC controllers are supported | COM1/COM2 |
| Cross-vendor | | |
| **OPC client [1] [4] for OPC DA, OPC UA DA, XML DA** | Channel for OPC communication,<br>WinCC can acquire data from OPC server applications | CP 1612 A2 |
| **OPC server for OPC DA** | Server applications for OPC communication;<br>WinCC provides process data to OPC clients | CP 1612 A2 |

[1] HTTP and OPC communication can be used in combination with the other couplings; regarding SIMATIC Panels that support HTTP or OPC communication, see the overview under "System interfaces (WinCC V11)".

[2] "SINUMERIK Operate WinCC RT Advanced" license required; for further information, see NC 60 Catalog.

[3] For detailed information regarding supported controllers, see "System interfaces (WinCC V11)"

[4] Application note:
Parallel use of the OPC client channel allows, for example, connection to an SNMP OPC server for visualization of the data present there.
The SNMP OPC server enables monitoring of any network components (e.g. switches) that support the SNMP protocol. Further information can be found under SIMATIC NET communications systems/SNMP OPC server.

### *Communication – SIMATIC WinCC Runtime Professional*

WinCC Professional is an open process visualization system and offers the option of connecting the most diverse control systems.

Released communication software

Only communication software with the listed (or higher) product versions should be used. Corresponding SIMATIC NET upgrades are available for the upgrading of older versions.

Number of connectable controllers

With CP 1613 A2/CP 1623, a maximum of 64 S7 controllers can be connected via Industrial Ethernet; with CP 5612/CP 5622 a maximum of 8 and with CP 5613 A3 a maximum of 44 S7 controllers via PROFIBUS. With approx. 10 or more controllers, the use of Industrial Ethernet is recommended.

Client-server communication

Communication between the clients and the server is implemented using the TCP/IP protocol. The construction of a separate PC-LAN is recommended. For small projects with correspondingly small message frame advent, a SIMATIC NET Industrial Ethernet can be used for both process communication (WinCC/server ↔ PLC) and for PC-PC communication (WinCC/client ↔ WinCC/server)

Connection to third-party controllers

The following "Connection overview" table includes lists of third-party protocols and controllers which are directly supported by WinCC Professional. Generally it is also possible to connect third-party controllers via OPC (OLE for Process Control).

Current notes and information about OPC servers from many different suppliers can be found at:
http://www.opcfoundation.org/

WinCC Professional supports the standards:

- OPC Data Access 2.05a
- OPC Data Access 3.00
- OPC UA Data Access 1.01
- OPC XML Data Access 1.00
- OPC HDA 1.20
- OPC A&E 1.10

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## **Overview** (continued)

### *Coupling overview for WinCC Runtime Professional*

| Protocol | Description | PC interface |
|---|---|---|
| SIMATIC S7 | | |
| **SIMATIC S7** | Protocol Suite with channel units for communication with SIMATIC S7 via<br>• Ethernet TCP/IP (S7 communication) to S7-1200, S7-1500, S7-300, S7-400<br>• MPI, PROFIBUS (S7 communication) to S7-1200 with CM 1243-5 (DP master), S7-1500, S7-300, S7-400<br>• Software interface (S7 communication) to Win AC | CP 5612<br>CP 5622<br>CP 5711<br>CP 5613 A3<br>CP 5623 |
| Non-Siemens controllers (WinCC V11.0 and higher) | | |
| **Allen Bradley Ethernet IP** | Channel for communication with Allen Bradley controllers via Ethernet TCP/IP with Ethernet IP protocol<br>The ControlLogix / CompactLogix, SLC500 / MicroLogix, and PLC5 controllers are supported | CP 1612 A2 |
| **Mitsubishi MC TCP/IP** | Channel for communication with Mitsubishi controllers via Ethernet TCP/IP with Mitsubishi MC TCP/IP protocol<br>The FX3, Q, and iQ/QnUD controller series are supported | CP 1612 A2 |
| **Modbus TCP/IP** | Channel for communication with Modicon controllers via Ethernet TCP/IP using the Modbus TCP/IP protocol<br>The Quantum, Momentum, Premium, TSX Micro, Compact and M340 controllers are supported | CP 1612 A2 |
| Cross-vendor | | |
| **OPC client [1] for OPC DA, OPC XML DA** | Channel for OPC communication,<br>WinCC can acquire data from OPC server applications | CP 1612 A2 |
| **OPC server for OPC DA, OPC UA DA, OPC XML DA, OPC A&E, OPC HDA** | Server applications for OPC communication;<br>WinCC provides process data to OPC clients | CP 1612 A2 |

[1] Application note:
Parallel use of the OPC client channel allows, for example, connection to an SNMP OPC server for visualization of the data present there.
The SNMP OPC server enables monitoring of any network components (e.g. switches) that support the SNMP protocol. Further information can be found under SIMATIC NET communications systems/SNMP OPC server.

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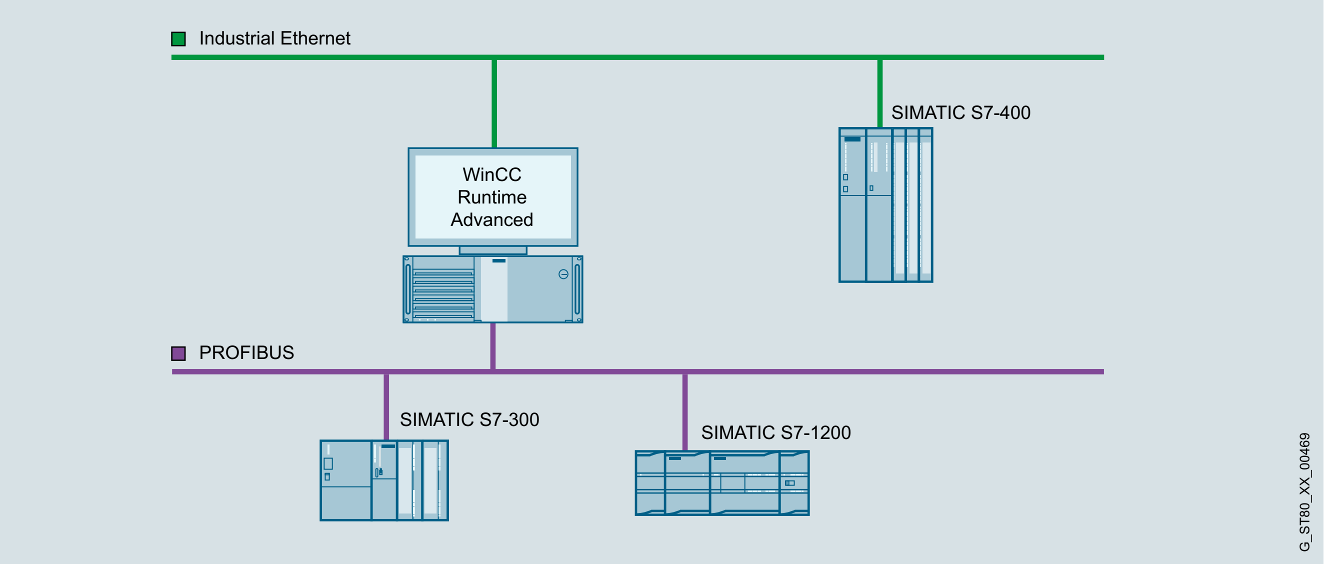
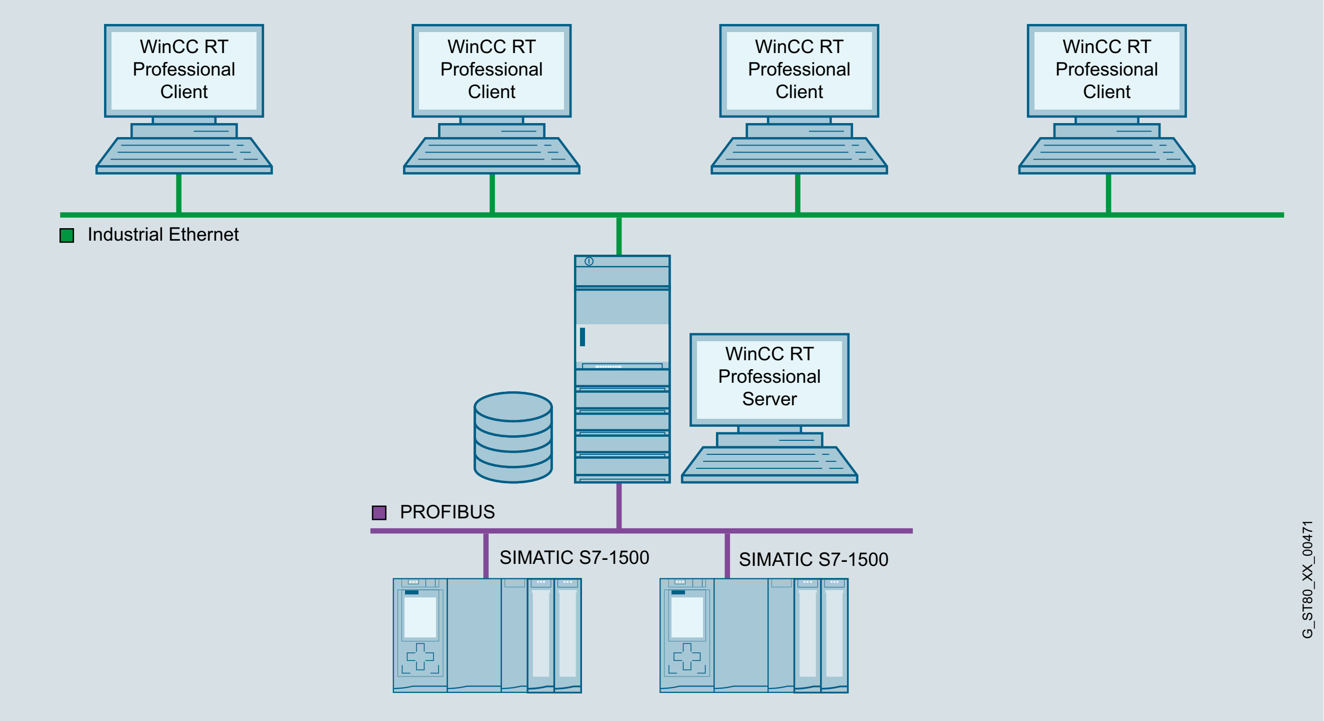
## **Overview** (continued)

### ***Communications examples***


🟩 Industrial Ethernet
SIMATIC S7-400
WinCC
Runtime
Advanced
🟪 PROFIBUS
SIMATIC S7-300
SIMATIC S7-1200
G_ST80_XX_00469

WinCC Runtime Advanced single-user system


WinCC RT
Professional
Client
WinCC RT
Professional
Client
WinCC RT
Professional
Client
WinCC RT
Professional
Client
🟩 Industrial Ethernet
WinCC RT
Professional
Server
🟪 PROFIBUS
SIMATIC S7-1500
SIMATIC S7-1500
G_ST80_XX_00471

WinCC Runtime Professional multi-user system with operable server

## Ordering data

| | Article No. |
|---|---|
| ***SIMATIC WinCC (TIA Portal) Communication via Industrial Ethernet TCP/IP*** | |
| **CP 1612 A2**<br>PCI card (32-bit) for connecting a programming device or PC to Industrial Ethernet (10/100/1000 Mbps) with RJ45 connection via SOFTNET-S7 and SOFTNET PG.<br>Software requirement: WinCC Runtime Advanced: No further installation is required (SOFTNET-S7)<br>WinCC Runtime Professional: SOFTNET-S7 Lean (maximum of 8 connections) or SOFTNET-S7 (maximum of 64 connections) must be installed (SOFTNET-S7 Lean is included in the scope of delivery of WinCC Runtime Professional) | **6GK1161-2AA01** |
| **SIMATIC NET SOFTNET-IE S7 V16**<br>Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC, up to 64 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| • Single license for 1 installation | **6GK1704-1CW16-0AA0** |
| • Upgrade package for SIMATIC NET from Edition 2006 | **6GK1704-1CW00-3AE0** |
| **SOFTNET-IE S7 Extended V16**<br>Software for S7-, S5-compatible communication, OPC; PG/OP communication, proj. SW up to 255 connections (S7) or 512 connections (S7-1200/S7-1500); single license for 1 installation | **6GK1704-1BW16-0AA0** |
| **SIMATIC NET SOFTNET-IE S7 LEAN V16**<br>(included in the scope of delivery of WinCC Runtime Professional)<br>Software for S7-compatible and S5-compatible communication incl. OPC server, PG/OP communication and NCM PC, up to 8 connections, single license for one installation of runtime software, software and electronic manual on CD-ROM, license key on USB flash drive; Class A | |
| • Single license for 1 installation | **6GK1704-1LW16-0AA0** |
| • Upgrade package for SIMATIC NET from Edition 2006 | **6GK1704-1LW00-3AE0** |

| | Article No. |
|---|---|
| **SIMATIC NET HARDNET-IE S7 V16**<br>Software for S7, open communication; OPC, PG/OP communication, project software; up to 120 connections; single license for one installation of runtime software, software and electronic manual on DVD; license key on USB flash drive; Class A | |
| • Single license for 1 installation | **6GK1716-1CB16-0AA0** |
| • Upgrade package for SIMATIC NET from Edition 2006 | **6GK1716-1CB00-3AE0** |
| **CP 1623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1162-3AA00** |
| ***Communication via PROFIBUS*** | |
| **USB A2 PC adapter**<br>Can be used under Windows XP, Windows 7 32/64-bit | **6GK1571-0BA00-0AA0** |
| **CP 5612**<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in the WinCC basic package) | **6GK1561-2AA00** |
| **CP 5622**<br>PCI Express X1 card (32-bit) for connection of PG/PC to PROFIBUS (communications software included in WinCC basic package) | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter (USB V2.0) for connecting a PG/notebook to PROFIBUS or MPI (communications software included in WinCC Basic package) | **6GK1571-1AA00** |
| **CP 5613 A3**<br>PCI Card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-3AA02** |
| **CP 5623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1562-3AA00** |

## SIMATIC WinCC (TIA Portal) options

### Overview

***Options for SIMATIC Panels, SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional***

SIMATIC ProDiag

- Fully-integrated TIA solution for machine and plant diagnostics
- Saves the need for programming diagnostics in the CPU during the engineering phase and provides support for troubleshooting directly on the HMI without an engineering system using diagnostic overviews and PLC code

SIMATIC Logon

- Creates user administration on a central computer to which one or more WinCC stations can be connected over Ethernet.
- With each user logon/logoff on one of the connected stations, SIMATIC Logon checks whether a user password has been created and that the required privileges exist.
- SIMATIC Logon supports the user in combination with the Audit option in meeting requirements in accordance with FDA 21 CFR Part 11 and EU178.

***Options for SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional***

SIMATIC WinCC Logging

- Logging of messages and process values
- Online evaluation of process value logs and alarm logs
- Evaluation of process value and alarm logs using standard MS tools such as Excel

SIMATIC WinCC Recipes

- Generation and management of data records for machine or production data
- Display or entry of data records via a configurable screen object or via process pictures distributed within the project
- Transmission of data records from or to the controller
- Import/export of data records for further processing with other tools (e.g. MS Excel)

***Options for SIMATIC Panels and SIMATIC WinCC Runtime Advanced***

SIMATIC WinCC Audit

- Recording of operator actions in an audit trail
- Electronic signature for important user actions relevant to production
- Audit supports users in meeting special quality requirements, e.g.
  - Production plants requiring validation according to FDA 21 CFR Part 11
  - In respect of traceability according to EU 175/2002 (EU directive)

SIMATIC WinCC Sm@rtServer

- Flexible solution for location-independent access to HMI systems
- Remote maintenance of machines and plants via the Internet/intranet
- Reduced downtimes for machines and plants due to direct remote access
- Flexible solution for location-independent access to machines and plants

***Options for SIMATIC WinCC Runtime Professional***

SIMATIC WinCC DataMonitor

- Display and analysis of current process states and historical data on office PCs with standard tools.
- Information can be individually compiled online during runtime via the Internet/intranet.

WinCC IndustrialDataBridge for WinCC Runtime Professional (V13 SP1 and higher)

Using the SIMATIC WinCC IndustrialDataBridge, communication links between different data sources and data targets can be created by means of simple configuration/parameter assignment. The WinCC IndustrialDataBridge can either be integrated into WinCC or used as a stand-alone application (not in conjunction with WinCC).

SIMATIC Information Server 2014 SP3

The SIMATIC Information Server 2014 SP3 is an open, web-based reporting system for interactive areas. Reports can be used in Internet Explorer, for Excel, Word or PowerPoint, as well as for Adobe Reader (pdf).
The SIMATIC Information Server has access to archived process values and messages, and can be used either directly in conjunction with WinCC / WinCC RT Professional / PCS7 OS as well as with SIMATIC Process Historian 2014.

For more detailed information on the SIMATIC Information Server and Article No.'s, see SCADA System SIMATIC WinCC.

SIMATIC Process Historian 2014

The SIMATIC Process Historian 2014 is a powerful, long-term archive server solution that stores the WinCC process values and messages in a central database. The system offers full scalability for performance and scope. It records and stores data from one or more WinCC, WinCC RT Professional and PCS 7 projects. The number of connected single stations, servers, or redundant server pairs is unrestricted.
SIMATIC Process Historian is designed for use throughout your plant, and is positioned below the corporate management level (ERP, MES).

For more detailed information on the SIMATIC Process Historian and Article No.'s, see SCADA System SIMATIC WinCC.

SIMATIC WinCC Redundancy

For configuring a high-performance, fail-safe, client-server system. One WinCC/Redundancy package is required for each redundant pair of servers.

SIMATIC WinCC Server and SIMATIC WinCC Client

For setting up a high-performance client-server system

- A number of coordinated HMI stations can be operated in a single group with networked automation systems
- Client/server solution:
  - One server supplies up to 32 connected clients with process and archive data, messages, screens and reports.

## **Overview** (continued)

SIMATIC WinCC WebNavigator

- Operator control and monitoring of plants via the Internet or the in-house intranet/LAN
- Web Client permits the operator control and monitoring of a current WinCC Runtime Professional project via an Internet browser with ActiveX support

SIMATIC WinCC WebUX

- Mobile operator control and monitoring via the Internet or the in-house intranet/LAN, using commercially available mobile devices.
- Platform and browser can be used independently on HTML5-capable and SVG-capable data terminal equipment without installation on the client.

### *Overview of the individual options*

| Options | WinCC RT Advanced | WinCC RT Professional | SIMATIC Panels |
|---|---|---|---|
| **SIMATIC ProDiag** | • | • | • |
| **SIMATIC Logon** | • | • | • |
| **WinCC Logging** | • | • | • 1) |
| **WinCC Recipes** | • | • | • 1) |
| **WinCC Audit** | • | - | • |
| **WinCC Sm@rtServer** | • 1) | - | • 1) |
| **WinCC DataMonitor** | - | • | - |
| **WinCC IndustrialDataBridge** | - | • | - |
| **SIMATIC Information Server** | - | • | - |
| **SIMATIC Process Historian** | - | • | - |
| **WinCC Redundancy** | - | • | - |
| **WinCC Server/WinCC Client** | - | • | - |
| **WinCC WebNavigator** | - | • | - |
| **WinCC WebUX** | - | • | - |

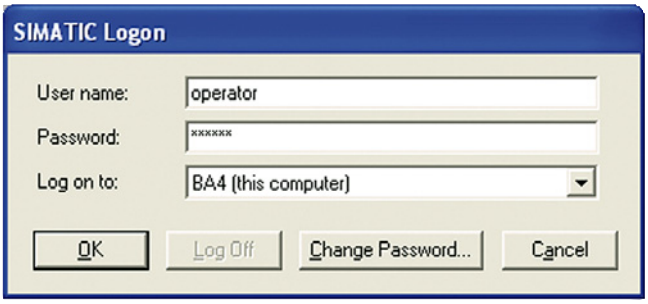
- possible

1) integrated in basic system

http://www.siemens.com/wincc-tia-portal-options

## SIMATIC Logon

### Overview



User name: operator
Password: ******
Log on to: BA4 (this computer)

- Option for connecting SIMATIC Panels and PCs with SIMATIC WinCC Runtime Advanced as well as WinCC Runtime Professional to a central user administration.
- Creates user administration on a central computer to which one or more panels or WinCC stations can be connected over Ethernet.
- With each logging-on/off of a user on one of the connected stations, SIMATIC Logon checks whether a user password has been created and that the required privileges exist.

#### *SIMATIC Logon for Panels and WinCC Runtime Advanced*

- All users of the SIMATIC Panels or WinCC Runtime Advanced stations can be managed plant-wide from a central location
- Supports the user in combination with the Audit option in meeting requirements in accordance with FDA 21 CFR Part 11 and EU178.
- Licensing:
  SIMATIC Logon (basic license) and SIMATIC Logon Remote Access (3-pack license) for the connection of 3 panels or WinCC Runtime Advanced stations to a central user administration. Additional stations can be connected by using further SIMATIC Logon Remote Access licenses (3-pack/10-pack).

#### *SIMATIC Logon for WinCC Runtime Professional*

- All users of WinCC Runtime Professional can be managed plant-wide from a central location.
- The central user management with SL utilizes Windows mechanisms and must be installed on all participating WinCC Runtime Professional stations.
- Licensing:
  SIMATIC Logon (basic license) is included in the basic package of WinCC Runtime Professional

### Benefits

- Centralized configuration of all access authorizations of a distributed system avoids unnecessary travel times. Time-consuming multiple configurations for each individual local station become unnecessary. Accordingly, users can be easily configured from a central location.
- All access data apply throughout the plant on every connected station. Additional access data on local subsystems is no longer necessary.

### Design

#### *SIMATIC Logon for Panels and WinCC Runtime Advanced*

SIMATIC Logon and SIMATIC Logon Remote Access are installed on a central station.

The following Runtime stations are connected to the central station via the Ethernet network:

- PCs with WinCC Runtime Advanced
- SIMATIC Panels from the 177 series or higher (with Ethernet interface)
- SIMATIC Mobile Panels from the 177 series or higher (with Ethernet interface)
- SIMATIC Multi Panels
- SIMATIC Comfort Panels

#### *SIMATIC Logon for WinCC Runtime Professional*

The SIMATIC Logon can be used for the central user management of several WinCC Runtime Professional stations. Operation in a Windows Workgroup or even in a domain is possible.

### Function

Users receive a unique user ID, user name and password.

This information is encrypted and stored at a central point (for SIMATIC Logon in the Windows user management). Functions such as changing the password, automatic log-off after a predefined time and lockout after several incorrect entries of a password ensure maximum security of operation.

In addition, SIMATIC Logon allows setting up new users online, plant-wide and across applications, or blocking of existing users. SIMATIC Logon also supports electronic signature.

| Ordering data | Article No. |
|---|---|
| **SIMATIC Logon V1.6**<br>Basic license [1)]<br>For Panels or WinCC Runtime Advanced stations, the corresponding number of additional SIMATIC Logon Remote Access licenses is required.<br>No SIMATIC Logon Remote Access licenses are required for WinCC Runtime Professional | **6ES7658-7BX61-0YA0** |
| **SIMATIC Logon upgrade to V1.6** | **6ES7658-7BX61-0YE0** |
| **SIMATIC Logon Remote Access (3 clients)**<br>Remote Access for 3 clients; single license for 3 SIMATIC Logon Remote Access clients; the number of licensed clients is determined from the sum of the installed SIMATIC Logon Remote Access licenses. | **6ES7658-7BA00-2YB0** |
| **SIMATIC Logon Remote Access (10 clients)**<br>Remote Access for 10 clients; single license for 10 SIMATIC Logon Remote Access clients; the number of licensed clients is determined from the sum of the installed SIMATIC Logon Remote Access licenses. | **6ES7658-7BB00-2YB0** |

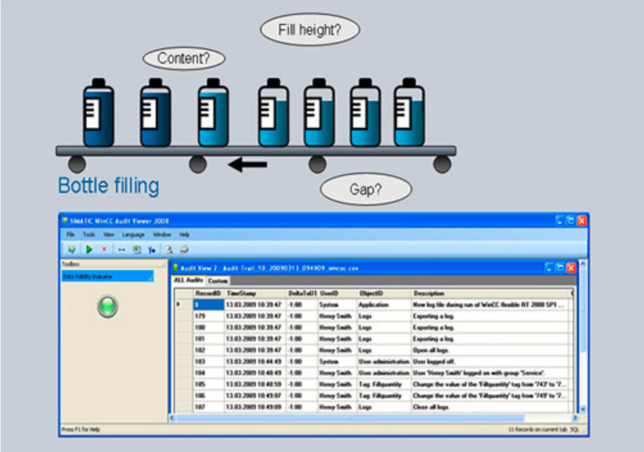
[1)] SIMATIC Logon V1.5 included in scope of supply of WinCC Runtime Professional.

More information is available at:

http://www.siemens.com/simatic-logon

## WinCC Audit

### Overview


Fill height?
Content?
Bottle filling
Gap?

- Option for SIMATIC WinCC Runtime Advanced as well as SIMATIC Panels for recording operations in an audit trail, and electronic signature
- The audit trail is furnished with a security mechanism that displays subsequent manipulations.
- A user-friendly configuration function, which is included as standard in WinCC, is used to define the following:
  - Which user actions should be recorded in the audit trail during runtime
  - Which important operator actions during runtime require electronic signature/comments
- Available for the following SIMATIC HMI systems:
  - Comfort Panels
  - Mobile Panels
  - TP/OP 277
  - MP 277
  - MP 377
  - WinCC Runtime Advanced
- Licensing:
  - A license for SIMATIC WinCC Logging and SIMATIC WinCC Audit is required for every operator control unit (panel or PC).

### Benefits

- Audit supports the user in meeting special quality requirements, e.g.
  - Production plant requiring validation according to 21 CFR Part 11 FDA [1]
  - In respect of traceability according to EU 175/2002 [2]
- The entries in the audit trail are uniquely assigned to users. This means that responsibilities are clearly identifiable.
- The audit trail, stored as a CSV file [3], can be checked via a security mechanism to find out if subsequent changes have been made.
- For particularly important user actions, e.g., starting production or loading new recipes, electronic signatures and comments can be configured and then called up and logged during runtime.

[1] The FDA (Food and Drug Administration) is the American public health body

[2] 21 CFR Part 11- law on plant validation

[3] CSV Comma Separated Values

### Technical specifications

| | **WinCC Audit** |
|---|---|
| Storage location for Audit Trail when used on the Panel | Plug-in Flash memory card or<br>via Ethernet in the higher-level PC |
| Storage location for Audit Trail when using WinCC Runtime Advanced | Local hard disk or<br>via Ethernet in the higher-level PC |
| **Execution platform** | |
| SIMATIC Panels | Mobile Panel 277, TP/OP 277 |
| SIMATIC Multi Panels | MP 277, MP 377 |
| SIMATIC Comfort Panels | all |
| PC systems | SIMATIC WinCC Runtime Advanced |

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC Audit for SIMATIC Comfort/Mobile Panels** | |
| • Single license, license key only on USB flash drive | **6AV2107-0RP00-0BB0** |
| • Download[4]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0RP00-0BH0** |
| **SIMATIC WinCC Audit for Runtime Advanced [5]** | |
| • Single license, license key only on USB flash drive | **6AV2107-0RA00-0BB0** |
| • Download[4]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0RA00-0BH0** |

[4] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

[5] The following license is also required: SIMATIC WinCC Logging for Runtime Advanced

More information is available at:

http://www.siemens.com/wincc-audit-tia-portal

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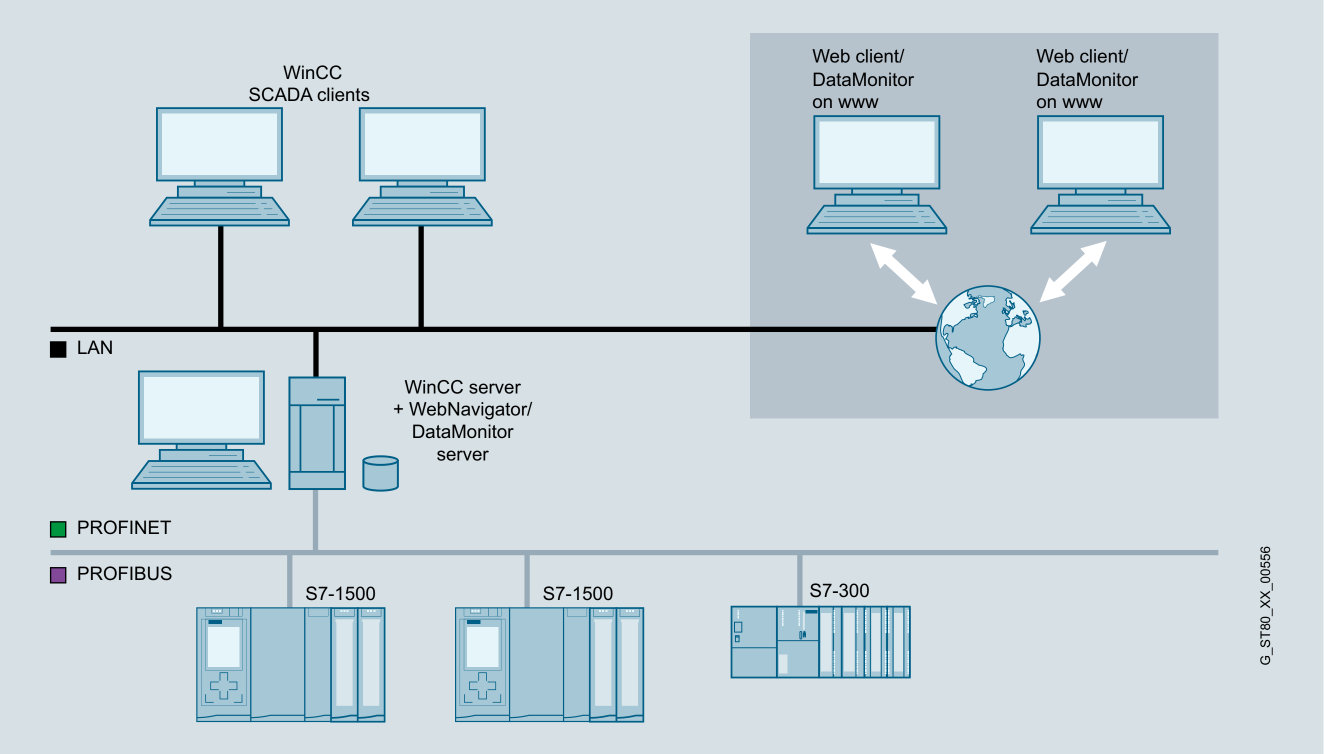
## Overview



WinCC DataMonitor

- The WinCC DataMonitor is used for displaying and evaluating current process states and historical data on office PCs using standard tools such as Microsoft Internet Explorer or Microsoft Excel.
  The DataMonitor Client is supported by a web server with current and historical process data and alarms. All staff ranging from machine operators to corporate managers can use the DataMonitor to obtain information. In combination with WinCC V7 and with the aid of the multiclient architecture, access can be made to several lower-level WinCC stations.
- DataMonitor is a suite of Internet-capable tools:
  - Process Screens
    Tool exclusively for monitoring and navigating via WinCC or WinCC Runtime Professional screens using the WinCC Web Viewer (WinCCViewer RT) in the "view only" mode
  - Excel Workbooks
    Logging tool that integrates WinCC or WinCC Runtime Professional Archive and online values into Microsoft Excel and supports online analysis
  - Published Reports
    Event- or time-driven execution of Excel or PDF reports for the output of process data and analysis results.
  - WebCenter
    Individual configuration of Internet pages and compilation of information within a portal.
- DataMonitor does not require manual client installation because it loads the required components from the DataMonitor server
- There is no installation required on the client for the WebCenter, Trends and Alarms functions.

Licenses

- A (server-based) license is required for the WinCC DataMonitor. This is a graduated license based on the number of simultaneous web client access operations and can be incremented at any time using additive web client licenses (countable licenses).
- The DataMonitor client software can be installed as many times as required without the need for a license.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

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## WinCC DataMonitor

### Benefits

- Information can be compiled online individually during runtime via the Internet/Intranet.
- Efficiently monitor and analyze production lines.
- Easily collect and distribute information.
- Substantiate decisions with reports.
- View production status anywhere and anytime.

***Highlights:***

- With the WebCenter function, archive tags can be accessed without changing the configuration system.
- Dedicated Internet pages can be created for displaying data with the WebCenter.
  For this purpose, for example, a bar chart, a pie chart or a trend graph is available.
- The analyses can be made with relative or absolute time specification.
  This enables comparisons of identical time periods on different days.
- Reports can be made available on the DataMonitor server or emailed automatically based on time intervals or triggered by events.
- Support of Microsoft Internet Explorer version, including "tabbed browsing".

### Function

- All tools are fully Internet-compatible and, therefore, support access via any type of connection (LAN, GSM, radio, modem, Internet, etc.).
- All popular security mechanisms such as login/password, firewalls, encryption, etc. are supported.
- Users can combine the available tools at will.
  Licensing only takes into account simultaneous access to one web server.
- For display purposes, screens from the WinCC project can be used or special overview displays configured.
  Animations, scripts, navigation and access rights remain valid.
- The WinCC DataMonitor has purely a display function
- Company-wide Excel reports, which contain historical and current process values, can be stored centrally for general access (reports, statistics).
  However, local queries to meet individual requirements can also be compiled and executed online.
  Plot and trend displays are supported for archive data already swapped out.
- Enhanced user management for the WebCenter in order to assign individual Internet pages and created reports to specific user groups.
- A search function simplifies the management of connections to the WinCC server

### Ordering data

| | Article No. |
|---|---|
| **SIMATIC WinCC DataMonitor as from Runtime Professional V14 and WinCC as from V7.4** [2] | |
| Standard scope of supply | |
| • 1 client license (countable) | **6AV6362-3AB00-0BB0** |
| • 3 client licenses (countable) | **6AV6362-3AD00-0BB0** |
| • 10 client licenses (countable) | **6AV6362-3AF00-0BB0** |
| • 30 client licenses (countable) | **6AV6362-3AJ00-0BB0** |
| As download [1] | |
| • 1 client license (countable) | **6AV6362-3AB00-0AH0** |
| • 3 client licenses (countable) | **6AV6362-3AD00-0AH0** |
| • 10 client licenses (countable) | **6AV6362-3AF00-0AH0** |
| • 30 client licenses (countable) | **6AV6362-3AJ00-0AH0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

[2] As from WinCC V14 the licenses are cumulative (countable), i.e. one 10 client license and one 30 client license permit access by 40 clients.

A license is not required for the engineering system for configuring the runtime option.

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-datamonitor

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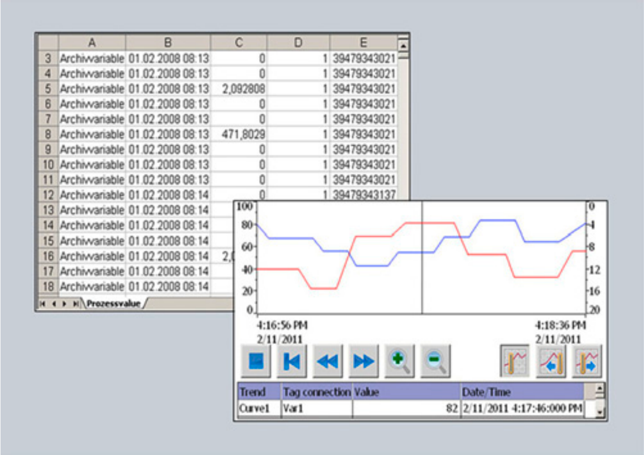
## Overview



|  | A | B | C | D | E |
|---|---|---|---|---|---|
| 3 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 4 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 5 | Archivvariable | 01.02.2008 08:13 | 2,092808 | 1 | 39479343021 |
| 6 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 7 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 8 | Archivvariable | 01.02.2008 08:13 | 471,8029 | 1 | 39479343021 |
| 9 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 10 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 11 | Archivvariable | 01.02.2008 08:13 | 0 | 1 | 39479343021 |
| 12 | Archivvariable | 01.02.2008 08:14 | 0 | 1 | 39479343137 |
| 13 | Archivvariable | 01.02.2008 08:14 |  |  |  |
| 14 | Archivvariable | 01.02.2008 08:14 |  |  |  |
| 15 | Archivvariable | 01.02.2008 08:14 |  |  |  |
| 16 | Archivvariable | 01.02.2008 08:14 | 2, |  |  |
| 17 | Archivvariable | 01.02.2008 08:14 |  |  |  |
| 18 | Archivvariable | 01.02.2008 08:14 |  |  |  |

| Trend | Tag connection | Value | Date/Time |
|---|---|---|---|
| Curve1 | Var1 | 82 | 2/11/2011 4:17:46:000 PM |

- Option for SIMATIC WinCC Runtime Advanced and WinCC Runtime Professional for logging process values and alarms
- Logging of process values and alarms supports the acquisition and processing of process data from an industrial plant or machine. Evaluation of the logged process data provides information about the operating states of the plant or machine
- Licensing:
  - SIMATIC Panels / Multi Panels / Comfort Panels: No license is required.
  - WinCC Runtime Advanced: One license is required per operator station
  - WinCC Runtime Professional: 500 Logging Tags are already included in the basic package The number of Logging Tags can be increased by means of additional licenses

## Benefits

- Alarm and process value logs enable predictive diagnostics, which avoids downtimes
- Early detection of danger and fault conditions
- Increase of the product quality and the productivity thanks to regular analysis of the alarm and process value logs

## Application

- Transfer of the logs for evaluation and long-term archiving
- Detection of recurring error states
- Optimization of maintenance cycles
- Ensuring quality standards
- Quality assurance and checking the utilization of production sequences
- Documentation of process sequences

## Function

- Time-controlled as well as manual or process-controlled swapping out of process data and alarms for long-term archiving
- During runtime, swapped out data are read in and selectively analyzed using WinCC Runtime Professional
  - Presentation and evaluation of archived process data based on a configurable trend display. Reading of the values is facilitated by a read line.
  - Presentation and evaluation of archived alarms based on a configurable alarm view.
  - User-friendly navigation in the logs
- External evaluation of the logs using MS standard tools
- Various log types are supported: sequence and circular logs
- Logging of process values and alarms on external, Windows-supported storage media
  - SIMATIC Panels and WinCC Runtime Advanced: CSV files, RDB files, Microsoft SQL Server via ODBC
  - WinCC Runtime Professional: Microsoft SQL Server 2005
- Powerful standard functions permit user-friendly and flexible utilization of the logs

## Technical specifications

| | **WinCC Logging for Runtime Advanced** |
|---|---|
| | The values specified are maximum values |
| Number of logs | 100 |
| Archivable data | Process values, alarms |
| Cyclical trigger for archiving process values (variables) | 1 s |
| Max. number of entries per log (incl. sequence log) | 500.000 [1] |
| Log types | Circular logs,<br>sequence logs (max. 400 per log) |
| Data storage format | CSV (Comma Separated Variable),<br>RDB (Runtime Data Base),<br>Microsoft SQL database (database not included in scope of delivery) |

[1] Dependent on memory medium used

| | **WinCC Logging for Runtime Professional** |
|---|---|
| | The values specified are maximum values |
| Number of logs per single-user station/server | 100 |
| Archivable data | Process values, alarms |
| Measured values per second, max. | Server/single-user station:<br>5 000 per sec. |
| Log tags per single-user station/server | 8.000 [2] |
| Log types | Circular log with and without long-term logging |
| Data storage format | Microsoft SQL 2008 database |

[2] Dependent on the Logging PowerPack used for the log tags. 500 log tags are contained in the basis version.

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC WinCC Logging for Runtime Advanced [1]** | |
| • Single license, license key only on USB flash drive | 6AV2107-0GA00-0BB0 |
| • As download [2]<br>Single license, license key download only<br>Email address required for delivery | 6AV2107-0GA00-0BH0 |
| **SIMATIC WinCC Recipes + Logging for Runtime Advanced [1]** | |
| • Single license per option, license key only on USB flash drive | 6AV2107-0HA00-0BB0 |
| • As download [2]<br>Single license, license key download only<br>Email address required for delivery | 6AV2107-0HA00-0BH0 |
| **SIMATIC WinCC Logging for Runtime Professional 1500 logging tags** | |
| • Single license, license key only on USB flash drive | 6AV2107-0GB00-0BB0 |
| • As download [2]<br>Single license, license key download only<br>Email address required for delivery | 6AV2107-0GB00-0BH0 |
| **SIMATIC WinCC Logging for Runtime Professional 5 000 logging tags** | |
| • Single license, license key only on USB flash drive | 6AV2107-0GD00-0BB0 |
| • As download [2]<br>Single license, license key download only<br>Email address required for delivery | 6AV2107-0GD00-0BH0 |
| **WinCC Logging for Runtime Professional Powerpack 1 500 -> 5 000 logging tags** | |
| • Single license, license key only on USB flash drive | 6AV2107-2GD00-0BD0 |
| • As download [2]<br>Single license, license key download only<br>Email address required for delivery | 6AV2107-2GD00-0BJ0 |
| **WinCC Logging Upgrade for SIMATIC WinCC Archives V7.0 (10 licenses)**<br>Single license per option, license key only on USB flash drive | 6AV2107-4GX00-0BF0 |

[1] One license is required for each operator console. A license is not required for the engineering system for configuring the runtime option.

[2] Current information and availability regarding the new delivery form can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-logging-tia-portal

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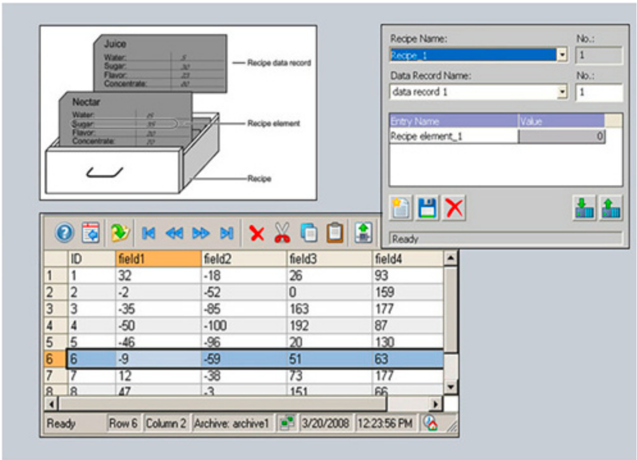
## Overview



Recipe Name: Recipe_1 No.: 1
Data Record Name: data record 1 No.: 1

| Entry Name | Value |
|---|---|
| Recipe element_1 | 0 |

| | ID | field1 | field2 | field3 | field4 |
|---|---|---|---|---|---|
| 1 | 1 | 32 | -18 | 26 | 93 |
| 2 | 2 | -2 | -52 | 0 | 159 |
| 3 | 3 | -35 | -85 | 163 | 177 |
| 4 | 4 | -50 | -100 | 192 | 87 |
| 5 | 5 | -46 | -96 | 20 | 130 |
| 6 | 6 | -9 | -59 | 51 | 63 |
| 7 | 7 | 12 | -38 | 73 | 177 |
| 8 | 8 | 47 | -3 | 151 | 66 |

Ready | Row 6 | Column 2 | Archive: archive1 | 3/20/2008 | 12:23:56 PM

- Option for SIMATIC WinCC Runtime Advanced and WinCC Runtime Professional for managing data records in recipes that contain related machine or production data
- The data in a data set can be transferred, for example, from the control unit to the PLC to switch production to a different product variant
- Licensing:
  - SIMATIC Panels / Multi Panels / Comfort Panels: No license is required.
  - WinCC Runtime Advanced: One license is required per operator station
  - WinCC Runtime Professional: A license is only required on the server (or single-user system).

## Benefits

- Generation and management of machine parameters and production data on the basis of data records, and exchange with the automation device, e.g. with the machine.
- Clear tabular representation of the data elements with the aid of a configurable screen object, or depiction in technological relationships across several process screens.
- Simple operator guidance through standard functions.
- Export/import of data records for further processing with other tools (e.g. MS Excel)

## Function

- Input of data records (e.g. operating parameters of a machine, production data for a plastics machine) on the HMI device as well as their storage and transfer to the control
- Display or entry of data records via a configurable screen object or via several process screens distributed within the project
- The data record elements are coupled with the process via a direct tag connection
- Transmission of data records from or to the controller
- Powerful interfaces enable a synchronized data exchange with the controller.
- Storage of data records on local data carriers or on remote data servers via networks
- Logging of data records, e.g. as batch report/shift report
- User-friendly and flexible management of data records by powerful standard functions

The recipes and the associated data records are created using a separate, user-friendly WinCC Engineering editor and data is pre-assigned to them. A configurable table object is used for displaying the data at runtime. Furthermore, the individual data record elements can also be displayed directly based on standard input/output fields across several process screens. In this way, the data in technological views can be presented clearly to the operator.

Import and export functions support the importing and exporting of data via external applications (e.g. MS Excel).

## Technical specifications

| | WinCC Recipes for Runtime Advanced |
|---|---|
| | The values specified are maximum values |
| Number of recipes | 1 000 |
| Number of elements per recipe [1] | 2 000 |
| User data length in KB per data record | 256 |
| Number of data records per recipe | 5 000 |

| | WinCC Recipes for Runtime Professional |
|---|---|
| | The values specified are maximum values |
| Number of recipes | 1 000 [2] |
| Number of elements per recipe [1] | 500 [3] |
| User data length in KB per data record | 3 000 [3] |
| Number of data records per recipe | 3 000 [2] |

[1] When using arrays, each array element represents a recipe element

[2] Limited by system resources.

[3] The product of the number of recipe elements and the number of data records must not exceed a value of 320 000.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC Recipes for Runtime Advanced** [4] | |
| • Single license, license key only on USB flash drive | **6AV2107-0JA00-0BB0** |
| • As download [5]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0JA00-0BH0** |
| **SIMATIC WinCC Recipes + Logging for Runtime Advanced** [4] | |
| • Single license, license key only on USB flash drive | **6AV2107-0HA00-0BB0** |
| • As download [5]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0HA00-0BH0** |
| **SIMATIC WinCC Recipes for Runtime Professional** [4] | |
| • Single license, license key only on USB flash drive | **6AV2107-0JB00-0BB0** |
| • As download [5]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0JB00-0BH0** |

[4] One license is required for each operator console. A license is not required for the engineering system for configuring the runtime option.

[5] Current information and availability regarding the new delivery form can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-recipes-tia-portal

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## Overview

Option for SIMATIC WinCC (TIA Portal), supporting the parallel operation of two interfaced WinCC single-user systems or process data servers for mutual monitoring

If one of the two server PCs or one of the two WinCC stations fails, the second one will take over control of the entire system. Once the failed server or station is restored to operation, the contents of all the message and process value archives are copied to it.

One WinCC Redundancy package is required for each redundant pair of servers.

## Benefits

- Increased system availability with gap-free data integrity
- Automatic switchover of the client when a server fails or the communication to the server fails
- Continuous operation and visualization through automatic switchover of the clients to the intact server
- Automatic synchronization of all archives in the background after a fault is cleared

## Function

Normally, two WinCC stations or process data servers run in parallel. Each station has its own process connection and its own data archives. WinCC Redundancy ensures automatic matching of system and user archive data.

If one of the two server computers or WinCC stations fails, the second will take over the archiving of messages and process data, thereby ensuring seamless data integrity. In client/server mode, the clients are automatically switched from the failed server to the redundant partner. This ensures continuous plant visualization and operation on every operator station.

When the failed partner resumes operation, all process values, messages and data archived during the fail period are automatically matched with the partner. This process runs in the background and does not affect plant continuity. Once this is complete, two equivalent servers/stations will be available again.

Communication with the SIMATIC S7 PLC can also be configured with redundancy (an H Series SIMATIC S7 is required) by plugging in two communication modules and configuring two communication paths (S7-REDCONNECT software package). The use of failsafe H Series SIMATIC S7 PLCs can, if required, further increase availability at control level.

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC WinCC Redundancy for Runtime Professional** | |
| • Single license for 2 installations, license key on USB flash drive, software and documentation on DVD | **6AV2107-0FB00-0BB0** |
| • As download[1]<br>Single license for 2 installations, license key download only<br>Email address required for delivery | **6AV2107-0FB00-0BH0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

A license is not required for the engineering system for configuring the runtime option.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-redundancy-tia-portal

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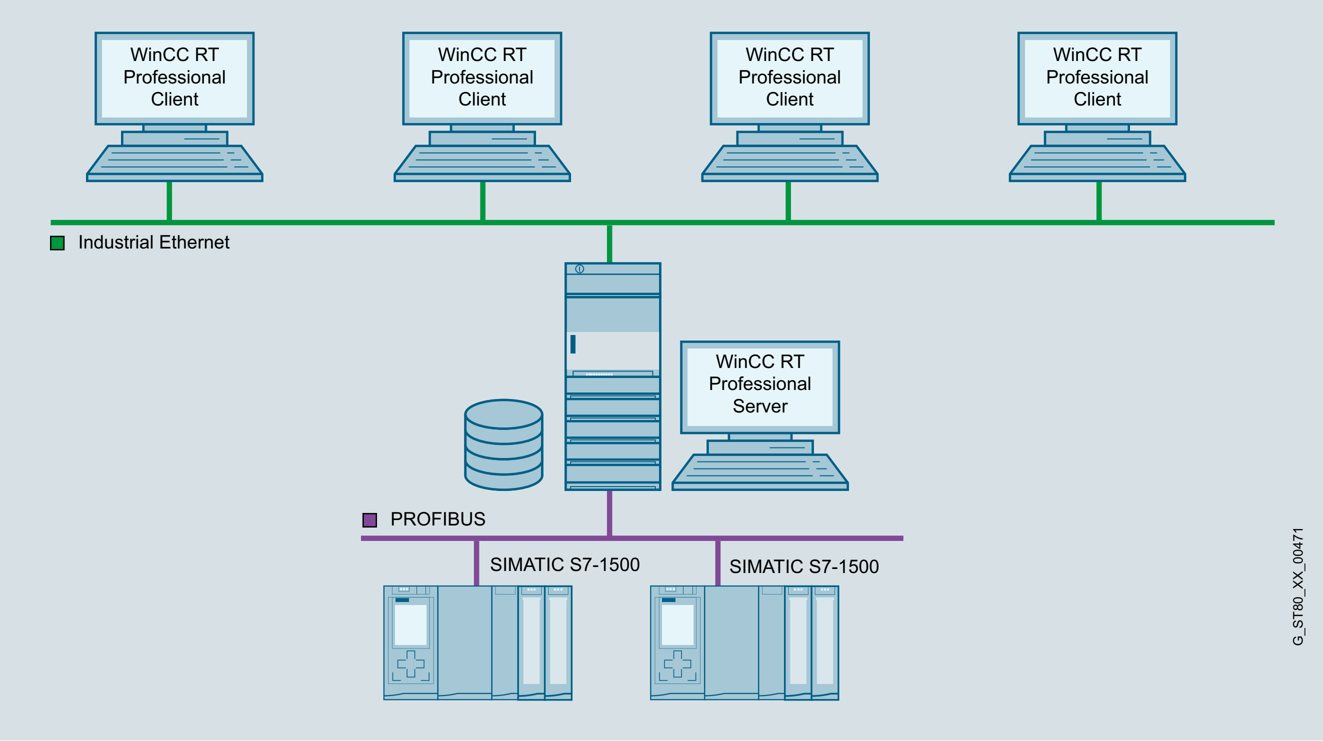
## WinCC Server / WinCC Client

### Overview


WinCC RT Professional Client
WinCC RT Professional Client
WinCC RT Professional Client
WinCC RT Professional Client
🟩 Industrial Ethernet
WinCC RT Professional Server
🟪 PROFIBUS
SIMATIC S7-1500
SIMATIC S7-1500
G_ST80_XX_00471

- Option for SIMATIC WinCC Runtime Professional, which permits the configuration of a powerful client/server system
- One of the following operating systems must be available to install the option on the server:
  Windows Server 2012 R2 64-bit StdE,
  Windows Server 2016 64-bit Standard,
  Windows Server 2019 64-bit Standard.
  When using Windows 10, a maximum of 3 clients can be connected.
- A number of coordinated HMI stations can be operated in a single group with networked automation systems.
- Client/server solution: One server supplies up to 32 connected clients with process and archive data, alarms, screens and reports.
  - Requirement: Network connection (TCP/IP) between the server PC and the connected clients.
- Licensing:
  - A WinCC Runtime Professional license on the server with the appropriate number of PowerTags and the "WinCC Server for RT Professional" license.
  - The "WinCC Client for RT Professional" license on the clients.

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## Benefits

- Integrated scalability from the single-user system to the client/server solution
- Considerably expanded quantity structure, relieves the load on the individual servers, and thus better performance through the distribution of the overall application or of the tasks among several servers

## Application

In a complex plant, WinCC Runtime Professional can be configured as a distributed system depending on the requirements:

- Functional distribution (e.g. alarm server, log server, etc.), or
- Distribution corresponding to the physical plant structure (e.g. body-in-white, paint shop, etc.).

## Function

All process data of a WinCC project is stored in different Runtime databases, e.g. alarms, trend values, etc. These Runtime databases are located on a central computer, the WinCC Server, instead on each HMI device. The operator stations, i.e. the WinCC Clients, then access the WinCC Server.

WinCC Clients and WinCC Server are independent systems. You can also connect WinCC Clients subsequently. Alternatively, you can activate and deactivate a project from a WinCC Client.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC Server for Runtime Professional** | |
| • Single license, license key only on USB flash drive | **6AV2107-0EB00-0BB0** |
| As download[1] | |
| • Single license, license key download only, email address required for delivery | **6AV2107-0EB00-0BH0** |
| **SIMATIC WinCC Client for Runtime Professional** | |
| **V16** | |
| • Single license, license key on USB flash drive, software and documentation on DVD | **6AV2107-0DB06-0AA0** |
| • Single license, software and license key download. Email address required for delivery | **6AV2107-0DB06-0AH0** |
| **SIMATIC WinCC Client for Runtime Professional ASIA V16**<br>Single license, license key on USB flash drive, software and documentation on DVD | **6AV2107-0DB16-0AA0** |
| **V15** | |
| • Single license, license key on USB flash drive, software and documentation on DVD | **6AV2107-0DB05-0AA0** |
| As download[1] | |
| • Single license, software and license key download. Email address required for delivery | **6AV2107-0DB05-0AH0** |
| **SIMATIC WinCC Client for Runtime Professional ASIA V15**<br>Single license, license key on USB flash drive, software and documentation on DVD | **6AV2107-0DB15-0AA0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

A license is not required for the engineering system for configuring the runtime option.

More information is available at:

http://www.siemens.com/wincc-server-tia-portal

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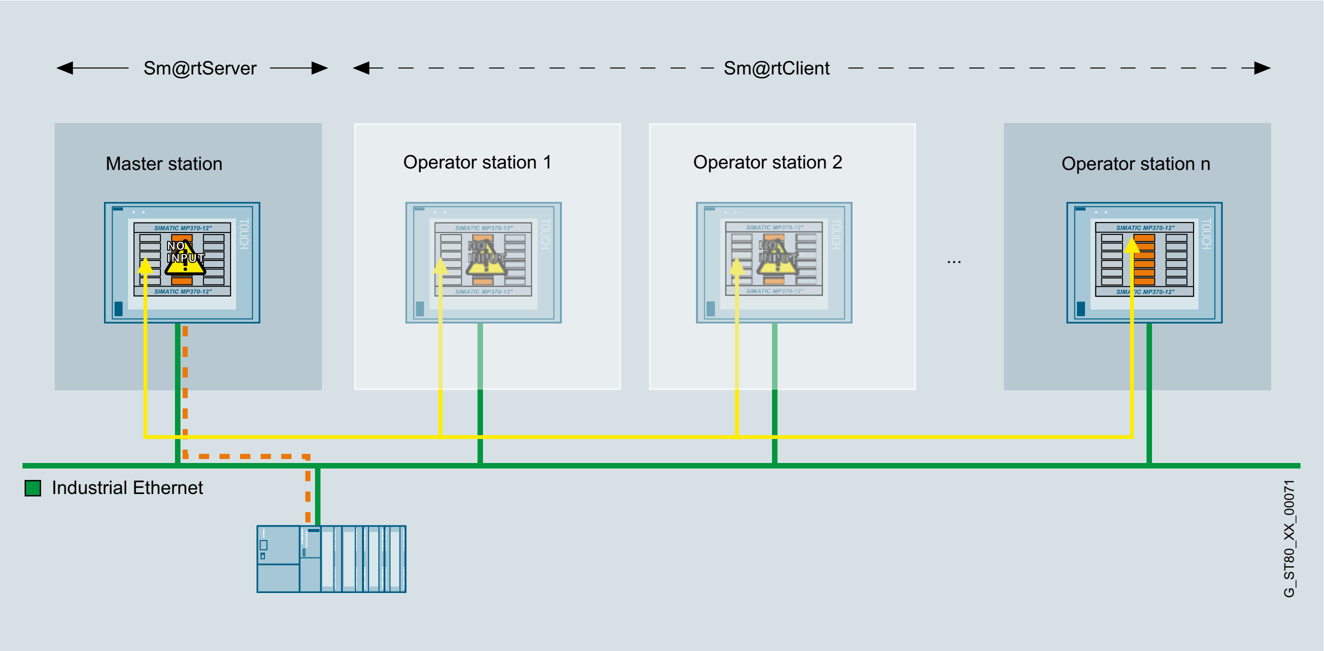
## WinCC Sm@rtServer

### Overview



- Option for SIMATIC WinCC Runtime Advanced plus SIMATIC Panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - Basic Panels 2nd Generation (with Ethernet interface)
  - Comfort Panels
  - Mobile Panel 2nd Generation, Mobile Panel 277, Mobile Panel 177 PN
  - TP 177B PN/DP, OP 177B PN/DP
  - TP 277, OP 277
  - MP 177, MP 277, MP 377
  - WinCC Runtime Advanced
- A SIMATIC HMI system can be used to control or monitor another system remotely; entry level for client/server configurations for distributed operator stations or for solutions with head end or control room
- Local operation, visualization and data processing are as possible as plant-wide access to information. Integrated information flows ensure an overview of the status of all processes.
- Licensing:
  The "SIMATIC WinCC Sm@rtServer for Panel" or "SIMATIC WinCC Sm@rtServer for Basic Panel" or "SIMATIC WinCC Sm@rtServer for Runtime Advanced" license must be installed on the server HMI device.
  A separate license is no longer required for Comfort / Mobile Panels Version V14 or higher and for Runtime Advanced Version V14 SP1 or higher.
  A license is not required for the engineering system for configuring the runtime option.

Note:

When accessing the operator stations via the Sm@rtServer option, suitable protective measures (including IT security such as network segmentation) should be taken in order to ensure safe operation of the system. Additional information on the topic of industrial security is available on the Internet at:

http://www.siemens.com/industrialsecurity

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## Benefits

- Flexible solution for remote access to HMI systems
- Quick elimination of malfunctions or downtimes – thus increasing the productivity – through global access to machines/plants by the service and maintenance personnel.
- Avoidance of on-site service calls.

## Application

- Operator control and monitoring of machines covering large areas with several operator stations by one operator.
- Operator control and monitoring of machine-level HMI systems from one central station (e.g. head-end station of a production line or from a control room)
- Remote maintenance and servicing of machines/plants over the Internet/Intranet

## Function

Coordinated operation of several operator stations:

- The HMI application and communication with the controller takes place via the master station. "Sm@rtClients" can be activated from here in the case of machines/plants with larger dimensions which require a larger number of operator panels. The Sm@rtClients are then provided with access to the master station and thus to the process. Access procedures guarantee that only one operator system can actively access the process at any given time.
- Embedded in process screens, a configurable screen object (Sm@rtClient display) represents the screen of the relevant HMI system (Sm@rtServer)
- Powerful standard functions permit user-friendly and flexible operation of the display

Remote control of an operating station:

- The HMI application and communication with the controller takes place via the HMI system. Using the Sm@rtServer, the HMI systems in the machines/systems can be serviced remotely. An access process ensures that only one operator (either locally at the machine or remotely via Internet Explorer) can actively access the process at one time.
- Microsoft Internet Explorer V6.0 SP1 or higher is sufficient for accessing an HMI system.

## Technical specifications

| | **WinCC Sm@rtServer** |
|---|---|
| | The values specified are maximum values |
| **Execution platform** | |
| SIMATIC Basic Panels 2nd Generation | All devices with Ethernet interfaces |
| SIMATIC Comfort Panels | all |
| SIMATIC Panels | Mobile Panel 177 PN,<br>Mobile Panel 277, TP/OP 177B PN/DP,<br>TP/OP 277 |
| SIMATIC Multi Panels | MP 177, MP 277, MP 377 |
| PC systems | SIMATIC WinCC Runtime Advanced |
| **Number of Sm@rtClients that can simultaneously connect to a Sm@rtServer** | |
| SIMATIC Basic Panels 2nd Generation | 1 client |
| Comfort Panel, Mobile Panel 2nd Generation as Sm@rtServer | 2 clients for 4" devices<br>3 clients for 7", 9", 12" and 15" devices<br>2 clients for 19" devices<br>1 client for 22" devices |
| Mobile Panel 177 PN, TP/OP 177B PN/DP, MP 177 as Sm@rtServer | 2 clients |
| Mobile Panel 277, TP/OP 277, MP 277 as Sm@rtServer | 3 clients for 6" devices<br>2 clients for 8" and 10" devices |
| MP 377 as Sm@rtServer | 3 clients for 12" devices<br>2 clients for 15" devices<br>1 client for 19" devices |
| WinCC Runtime Advanced as Sm@rtServer | 5 clients |

## Ordering data

| | **Article No.** |
|---|---|
| **WinCC Sm@rtServer for SIMATIC Basic Panels** [1] | |
| • Single license<br>License key only on USB flash drive | **6AV2107-0CR00-0BB0** |
| • As download[2]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0CR00-0BH0** |
| **WinCC Sm@rtServer for SIMATIC Panels** [1] [3] | |
| • Single license<br>License key only on USB flash drive | **6AV2107-0CP00-0BB0** |
| • As download[2]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0CP00-0BH0** |
| **WinCC Sm@rtServer for Runtime Advanced** [1] [4] | |
| • Single license<br>License key only on USB flash drive | **6AV2107-0CA00-0BB0** |
| • As download[2]<br>Single license, license key download only<br>Email address required for delivery | **6AV2107-0CA00-0BH0** |

[1] The license must be installed on the Sm@rtServer HMI device. A license is not required for the engineering system for configuring the runtime option.

[2] Current information and availability regarding the new delivery form can be found at: http://www.siemens.com/tia-online-software-delivery

[3] The license is no longer required for version V14 or higher

[4] The license is no longer required for version V14 SP1 or higher

More information is available at:
http://www.siemens.com/wincc-smartserver-tia-portal

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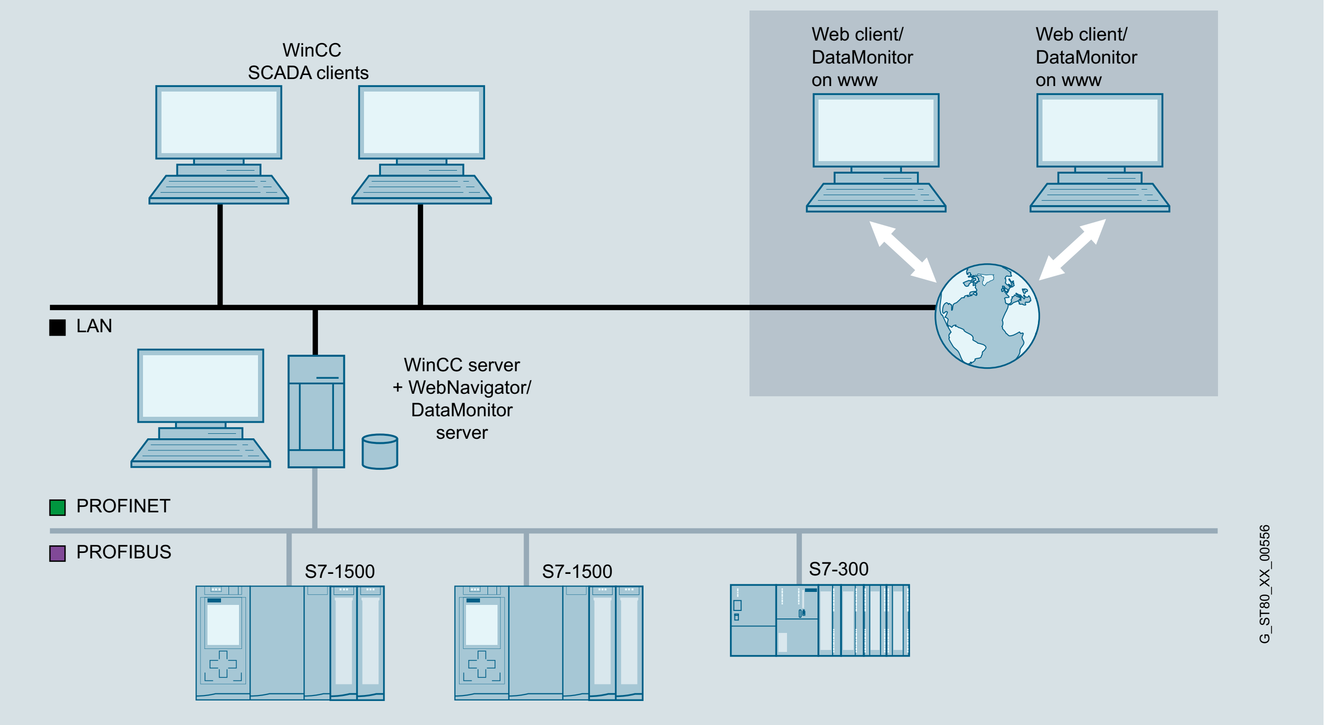
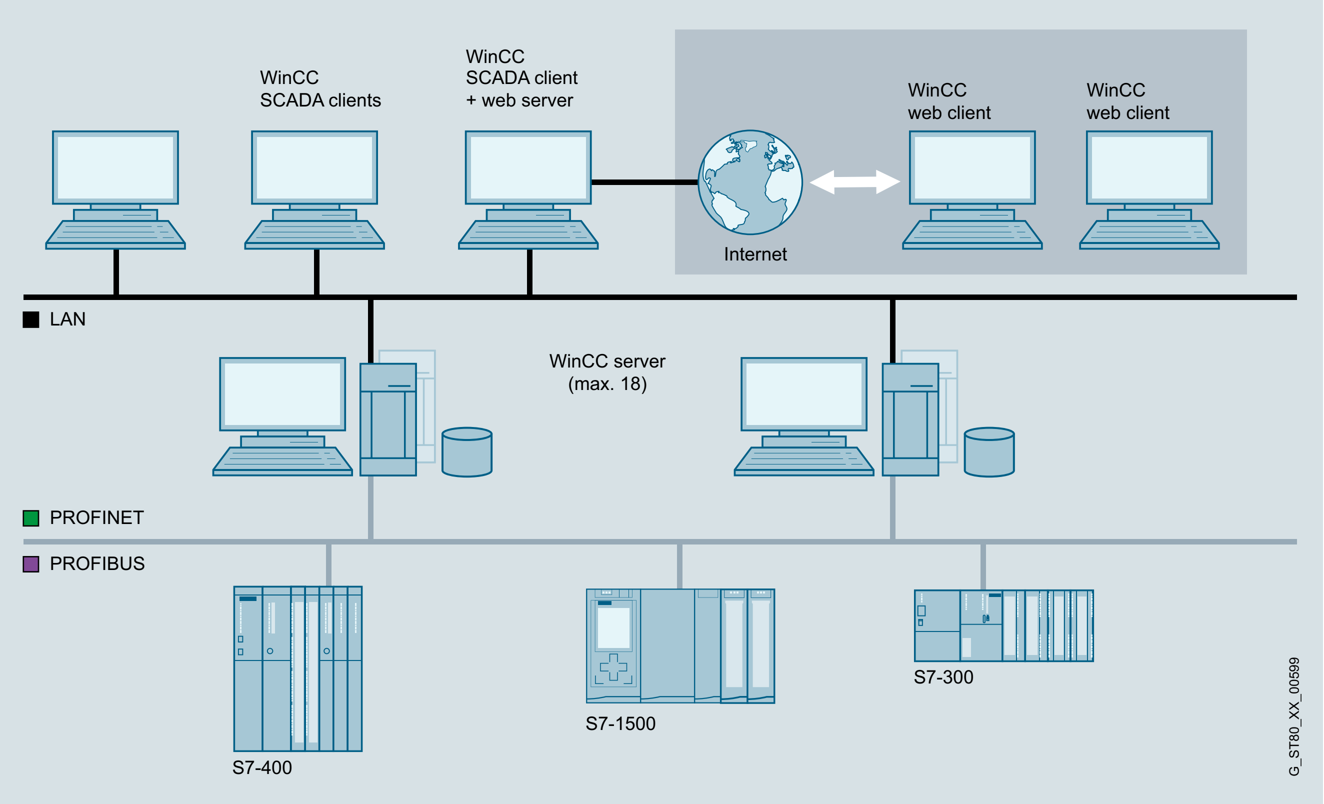
## WinCC WebNavigator

### Overview

***WinCC WebNavigator***


WinCC
SCADA clients
Web client/
DataMonitor
on www
Web client/
DataMonitor
on www
■ LAN
WinCC server
+ WebNavigator/
DataMonitor
server
🟩 PROFINET
🟪 PROFIBUS
S7-1500
S7-1500
S7-300
G_ST80_XX_00556

WinCC Server as web server


WinCC
SCADA clients
WinCC
SCADA client
+ web server
WinCC
web client
WinCC
web client
Internet
■ LAN
WinCC server
(max. 18)
🟩 PROFINET
🟪 PROFIBUS
S7-400
S7-1500
S7-300
G_ST80_XX_00599

WinCC MultiClient as web server

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## **Overview** (continued)

### *WinCC WebNavigator*

- Option for SIMATIC WinCC or WinCC Runtime Professional for operating and monitoring plants over the Internet, company Intranet or LAN.
- Configuration from:
  - A web server with SIMATIC WinCC as single-user or server version and a web client that permits operator control and monitoring of a current WinCC project using the Internet Explorer. In combination with WinCC V7, the WebNavigator Server can be operated on a MultiClient

Licenses

- A (server-based) license is required for the WebNavigator. This is a graduated license based on the number of simultaneous web client access operations and can be incremented at any time using additive web client licenses (countable licenses).
- The WebNavigator client software can be installed as many times as required without the need for a license.
- A (client-based) license is required for the WebNavigator diagnostics. This provides access to all web servers with a WebNavigator Server or WebNavigator Diagnostic Server license.
- The WinCC/WebUX and WinCC/WebNavigator licenses can be combined, if necessary.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

Note:

When accessing the operator stations via the WinCC WebNavigator option, suitable protective measures (including IT security such as network segmentation) should be taken in order to ensure safe operation of the system.

You will find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

## Benefits

- Operator control and monitoring across long distances and on different platforms (PC, local panel, mobile PDA)
- Large configurations with up to 150 operator stations (depending on the plant complexity and communication load)
- Optimally tailored clients for operating and monitoring, analysis, service and diagnostics
- Acceptance of configuration data for the web, generally without changes
- Minimum maintenance costs due to central software administration
- With the WinCC Web Viewer (WinCC Viewer RT), the process screens can be displayed on the web client independently of the Internet Explorer. Settings for the client are made on the client itself. The WinCC Web Viewer can also be used in conjunction with the MS Terminal Service.
- The SIMATIC WinCC WebNavigator can also be operated in "view only" mode and is thus used as tool for monitoring and navigating using Internet Explorer or WinCC Web Viewer (WinCC Viewer RT).
- Security is increased by adjustable automatic logout. If an automatic logout is to take place, an absolute or inactive time period can be set.

## Application

In addition to the standard WebNavigator licensing, there is the "Diagnostics Client" with identical functionality but different licensing. It is especially suitable for the following applications:

- Remote diagnostics/operation of several unmanned WinCC server stations
- Central control rooms that monitor several web servers via one user interface
- Maintenance personnel who require guaranteed access to the server at any time, regardless of the number of users already logged on to the server.
  On the server side, only one WebNavigator Diagnostics Server license or, alternatively, one Standard WebNavigator license is required.

## Design

### *Thin Client solutions*

The WebNavigator can also run under Windows Server 2008 R2 SP1 or Windows Server 2012 R2 terminal services.
The Windows Server 2008 R2 SP1 or Windows Server 2012 R2 operating system is required.
This makes it possible, for example, to connect SIMATIC Thin Clients to the WinCC server as visualization stations.

For this purpose, the Windows terminal services must be installed on the PC on which the web client is installed.
The Windows Server 2008 R2 SP1 or Windows Server 2012 R2 operating system is required.

Up to 25 Thin Clients can be connected to one terminal server.

Applications:

- Mobile devices
- Handhelds
- Rugged on-site visualizations

## Function

The WinCC basic system makes setting up and configuring a WebNavigator Server very easy. WinCC process screens to be visualized via the Internet are created as usual using the graphic editor.

To display WinCC process screens on the web client, the Microsoft Internet Explorer or the supplied browser-independent WinCC Web Viewer (WinCC Viewer RT) is used.

The operator on the web client is integrated in the central WinCC user administration and can operate and monitor the system according to the configured access rights.

The WebNavigator supports all standard security mechanisms that can be used for applications on the Internet, e.g. routers, firewalls and proxy servers.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC WebNavigator as from Runtime Professional V14 and WinCC as from V7.4** [2] | |
| Single license, license key on USB flash drive | |
| • 1 client license (countable) | **6AV6362-1AB00-0BB0** |
| • 3 client licenses (countable) | **6AV6362-1AD00-0BB0** |
| • 10 client licenses (countable) | **6AV6362-1AF00-0BB0** |
| • 30 client licenses (countable) | **6AV6362-1AJ00-0BB0** |
| • 100 client licenses (countable) | **6AV6362-1AM00-0BB0** |
| As download [1] | |
| Single license, license key download.<br>Email address mandatory | |
| • 1 client license (countable) | **6AV6362-1AB00-0AH0** |
| • 3 client licenses (countable) | **6AV6362-1AD00-0AH0** |
| • 10 client licenses (countable) | **6AV6362-1AF00-0AH0** |
| • 30 client licenses (countable) | **6AV6362-1AJ00-0AH0** |
| • 100 client licenses (countable) | **6AV6362-1AM00-0AH0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC WebNavigator Diagnostics Client** | |
| For WinCC V14 Runtime Professional and WinCC as from V7.4 | |
| • Standard scope of supply | **6AV6362-1BA00-0BB0** |
| • As download | **6AV6362-1BA00-0AH0** |
| **WinCC WebNavigator Load Balancing** | |
| For WinCC V7.4 only | |
| • Load Balancing | **6AV6362-1FA00-0BB0** |
| • Load Balancing Step Up | **6AV6362-1GA00-0BB0** |
| As download | |
| RT-SW, single license, license key download.<br>Email address mandatory | |
| • Load Balancing | **6AV6362-1FA00-0AH0** |
| • Load Balancing Step Up | **6AV6362-1GA00-0AH0** |

[1] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

[2] As from WinCC V14 the licenses are cumulative (countable), i.e. one 10 client license and one 30 client license permit access by 40 clients.

A license is not required for the engineering system for configuring the runtime option.

You can find more information at:

http://www.siemens.com/wincc-webnavigator

## Overview

***SIMATIC Visualization Architect***

Challenge:

- To standardize the user interfaces of the visualizations throughout the plant
- Significant reduction of the engineering costs for generating the visualizations
- To make the in-house work standard usable

Solution:

- Automatic generation and creation of the visualizations, based on the program code of the PLC and corresponding visualization objects within the framework of system-wide library concepts.

***Licensing***

- The software can be installed on multiple computers. The number of existing licenses determines the number of computers on which the software can be used simultaneously (floating license).
- An upgrade to the subsequent version is offered for users of previous versions.
- A rental license is available for temporary use
- A Trial License is available for testing purposes
- It is possible to conclude Software Update Service (SUS) contracts

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:

http://www.siemens.com/simatic-licenses

## Benefits

- Automatic creation of visualizations – drastic reduction of the engineering time
- Reduction of the commissioning times by the early detection and avoidance of faults
- Adaptation at the touch of a button to the visualizations on the basis of changes/adaptations in the control program

## Function

- Integration in the TIA Portal V14 or higher
- Support of controllers:
  - S7-1200, S7-1500, ET200SP
- Support of HMI:
  - Basic Panels, Comfort Panels and Mobile Panels of the 2nd Generation
- Support of PC-based:
  - WinCC Runtime Advanced, WinCC Runtime Professional, S7-1500 Software Controller
- SiVArc is configured using rules (not programmed!)

## Technical specifications

| **SIMATIC Visualization Architect** | |
|---|---|
| Operating system requirements | In accordance with the requirements of the TIA Portal components:<br>• SIMATIC STEP 7 (TIA Portal)<br>• SIMATIC WinCC Professional, Advanced, Comfort, Basic |
| Supported STEP 7 version | SIMATIC STEP 7 V16 |
| Supported WinCC versions | SIMATIC WinCC V16 Professional, Advanced, Comfort, Basic |

## SIMATIC Visualization Architect

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC Visualization Architect V16** | |
| As package | |
| • SIMATIC Visualization Architect V16 | **6AV2107-0PX06-0AA5** |
| • SIMATIC Visualization Architect V16 Rental | **6AV2107-0PX06-0AA6** |
| • SIMATIC Visualization Architect V16 Trial<br>Download in Customer Support Portal | **6AV2107-0PX06-0AA7** |
| As download [1] | |
| • SIMATIC Visualization Architect V16 | **6AV2107-0PX06-0AH5** |
| • SIMATIC Visualization Architect V16 Rental | **6AV2107-0PX06-0AH6** |
| **Upgrade SIMATIC Visualization Architect V15.1 -> V16** | |
| Engineering software in the TIA Portal;<br>software and documentation on CD,<br>License key on USB flash drive<br>Class A;<br>6 languages: en, de, fr, es, it, zh | |
| • As package | **6AV2107-3PX06-0AA5** |
| • As download [1]<br>Email address required for delivery | **6AV2107-3PX06-0AH5** |

[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

### More information

For up-to-date information and availability, see:

http://www.siemens.com/sivarc

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## Overview

The TIA Portal option ProDiag makes it possible to monitor a machine or plant and to intervene in the event of a fault. The monitoring messages which can be generated for the various faults provide specific information on the monitoring mode, location and cause of the fault. Information on troubleshooting can be provided in addition. Plant operators can then not only recognize faults, they can also identify any potential danger in advance and take appropriate countermeasures.

### *Licensing*

- The runtime license for controllers includes 250 supervisions or an unlimited number of supervisions per CPU. From FW 2.0 onwards, the software can run on S7-1500/ET 200SP CPUs regardless of the TIA Portal version.
- For the visualization of the messages, the controls are licensed according to the HMI runtime platforms.

You can find more information on the Software Update Service, license types, online software delivery and handling your software licenses with the Automation License Manager here:

http://www.siemens.com/simatic-licenses

## Benefits

- Automatic code generation in the CPU
- Message texts are derived automatically from the information existing in the project
- Simple visualization on the HMI by means of prepared controls

## Application

SIMATIC ProDiag is the fully-integrated TIA solution for machine and plant diagnostics. It saves the need for programming diagnostics in the CPU during the engineering phase and provides support for troubleshooting on the HMI.

## Function

- Central, cycle-exact time stamping of the fault messages
- Automatic generation of the monitoring logic and message calls
- Automatic updating of the SIMATIC HMI when changing the message configuration for 3 languages
- HMI systems do not have to exit runtime mode in the event of changes
- Directly available in the language editors LAD, FBD, SCL and STL
- Monitoring can be parameterized at a later date on F blocks and know-how-protected blocks
- Central definition of message structure for the project

## Technical specifications

| **Can be used for** | |
|---|---|
| SIMATIC ProDiag S7-1500 | For all S7-1500 CPUs and ET 200SP CPUs with FW V2.0 and higher |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC ProDiag S7-1500 for 250 monitoring functions** | |
| For SIMATIC S7-1500 CPUs and ET 200SP CPUs with FW 2.0 and higher. Independent of the TIA Portal version. | |
| • Package with data storage medium | **6ES7823-0AA00-1AA0** |
| • Download incl. license key [1)] E-mail address required for delivery | **6ES7823-0AE00-1AA0** |
| **SIMATIC ProDiag S7-1500 for all planned monitoring tasks on a CPU** | |
| For SIMATIC S7-1500 CPUs and ET 200SP CPUs with FW 2.0 and higher. Independent of the TIA Portal version. | |
| • Package with data storage medium | **6ES7823-0AA00-1DA0** |
| • Download incl. license key [1)] E-mail address required for delivery | **6ES7823-0AE00-1DA0** |
| **SIMATIC ProDiag for SIMATIC Comfort / Mobile Panels** | |
| Controls for SIMATIC WinCC as of V14. | |
| • Package with data storage medium | **6AV2107-0UP00-0BB0** |
| • Download incl. license key [1)] E-mail address required for delivery | **6AV2107-0UP00-0BH0** |
| **SIMATIC ProDiag for WinCC Runtime Advanced** | |
| Controls for SIMATIC WinCC as of V14. | |
| • Package with data storage medium | **6AV2107-0UA00-0BB0** |
| • Download incl. license key [1)] E-mail address required for delivery | **6AV2107-0UA00-0BH0** |
| **SIMATIC ProDiag for WinCC Runtime Professional** | |
| Controls for SIMATIC WinCC as of V14 | |
| • Package with data storage medium | **6AV2107-0UB00-0BB0** |
| • Download incl. license key [1)] E-mail address required for delivery | **6AV2107-0UB00-0BH0** |

[1)] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

## More information

### *TIA Portal highlights*

http://www.siemens.com/tiaportal

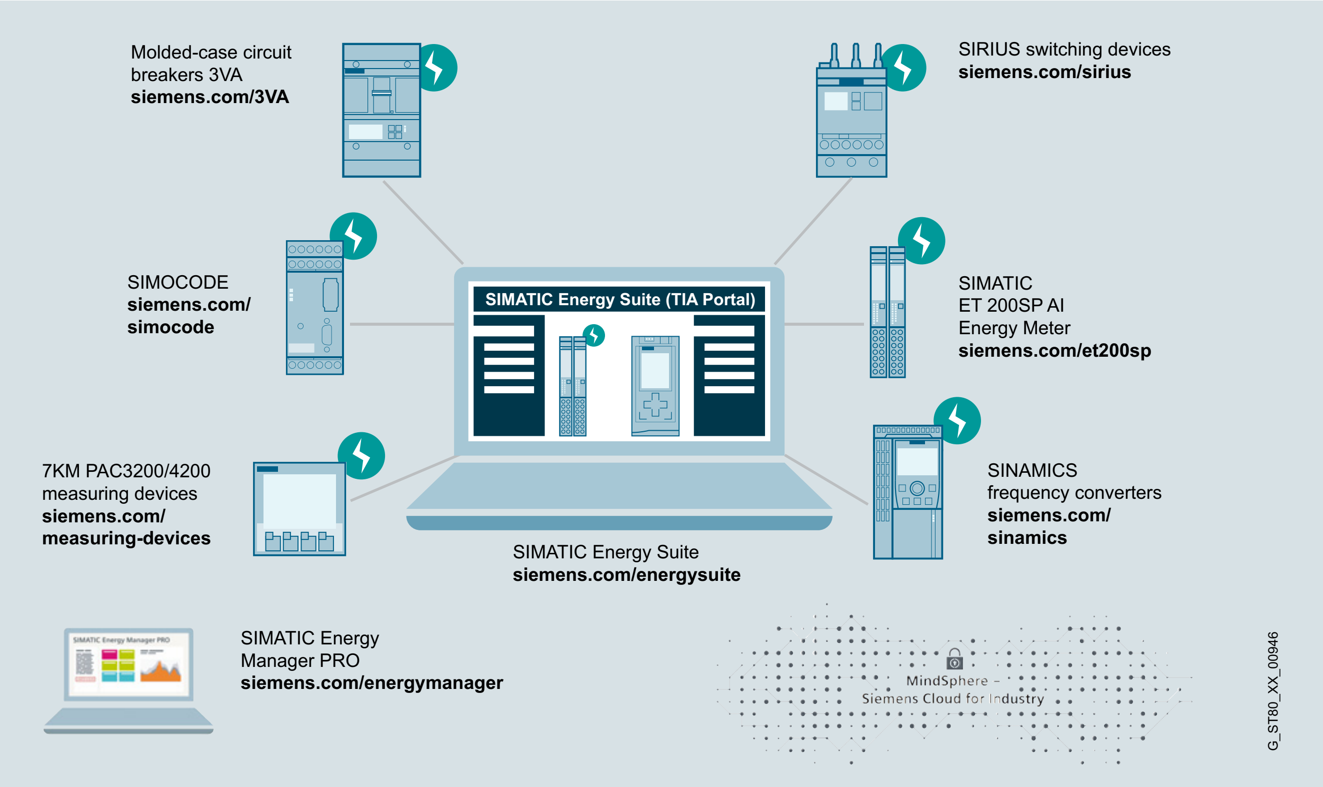
### *Software download*

For up-to-date information and download availability, see:

http://www.siemens.com/tia-online-software-delivery

## Introduction

### Overview


Molded-case circuit breakers 3VA
**siemens.com/3VA**
SIRIUS switching devices
**siemens.com/sirius**
SIMOCODE
**siemens.com/simocode**
SIMATIC Energy Suite (TIA Portal)
SIMATIC ET 200SP AI Energy Meter
**siemens.com/et200sp**
7KM PAC3200/4200 measuring devices
**siemens.com/measuring-devices**
SINAMICS frequency converters
**siemens.com/sinamics**
SIMATIC Energy Suite
**siemens.com/energysuite**
SIMATIC Energy Manager PRO
SIMATIC Energy Manager PRO
**siemens.com/energymanager**
MindSphere – Siemens Cloud for Industry
G_ST80_XX_00946

Energy Management, system overview

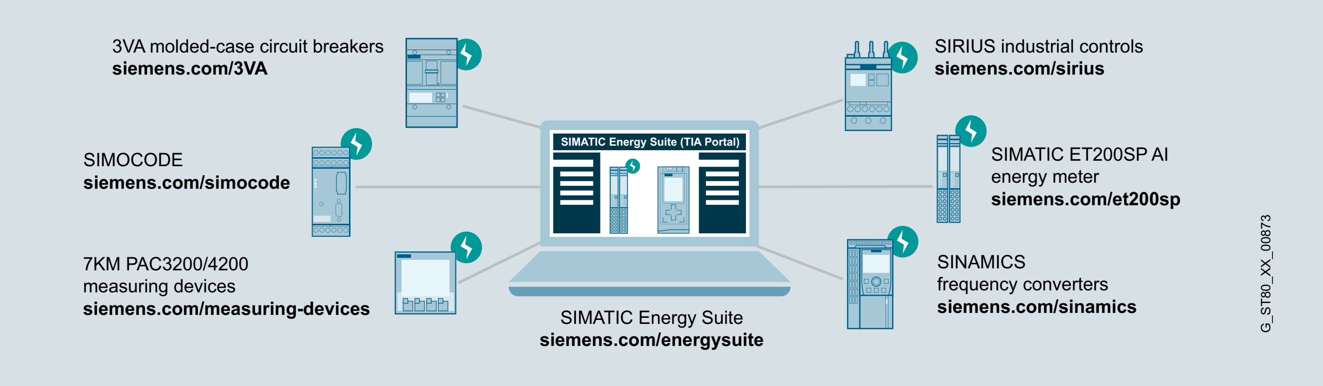
SIMATIC offers numerous reasons for corporate energy management in industrial plants.

However, there is one in particular: It makes an important contribution towards improving plant productivity. This results in enhanced competitiveness. Energy management with SIMATIC makes energy flows transparent in production plants. This supports the analysis and derivation of energy saving potential.

The result: Permanently increased efficiency, higher productivity and an improved cost situation.

http://www.siemens.com/simatic-energy-management

## Overview


3VA molded-case circuit breakers
siemens.com/3VA
SIMOCODE
siemens.com/simocode
7KM PAC3200/4200
measuring devices
siemens.com/measuring-devices
SIMATIC Energy Suite (TIA Portal)
SIMATIC Energy Suite
siemens.com/energysuite
SIRIUS industrial controls
siemens.com/sirius
SIMATIC ET200SP AI
energy meter
siemens.com/et200sp
SINAMICS
frequency converters
siemens.com/sinamics
G_ST80_XX_00873

### *SIMATIC Energy Suite – Energy data acquisition and load management*

A high energy consumption and automated production are typical for many industries. If you want to keep your energy costs under control in the long term and you are already focusing on the digital future, you will equip your plant with integrated energy measuring technology, thus anchoring your energy management in the automation of your production processes – which is where most energy is consumed.

SIMATIC Energy Suite as an integrated option for the TIA Portal efficiently links energy management with automation, thus creating energy transparency in the production system.

Functional enhancement for energy efficiency evaluation of machines:

Especially for evaluation of the product-related energy efficiency of machines, the S7 instruction "Energy efficiency monitor for machines" extends the scope of the SIMATIC Energy Suite functions.

As part of the instruction library of STEP 7 (TIA Portal), the function can be integrated in the machine control system by the machine manufacturer.

By linking the energy consumption, the production counter and the operating state, easy evaluation of the energy efficiency is possible based on energy performance indicators (EnPI).

### *Highlights:*

Energy measurement and load management

- Integrated into the TIA Portal and automation
- Easy and intuitive configuration of energy data recording and of load management instead of complex manual programming
- Automatic generation of the PLC energy program for S7-1500 controllers
- Generation of Energy Suite screens with SiVArc (no SiVArc license required)
- Archiving in the tags archive of WinCC Professional or on the PLC-internal SIMATIC memory card

Production-related energy efficiency of machines (energy efficiency monitor for machines):

- Production-related and standardized determination of energy consumption in machines (in accordance with VDMA 34179)
- Easy integration into machine control system (S7-1500 / S7-1200) and on-site visualization of the efficiency status and the energy performance indicators (EnPI)
- Automatic long-term measurements (e.g. batch, layer)
- Creation of an efficiency log (.csv) for detailed evaluation and documentation

## Design

SIMATIC Energy Suite consists of the following components:

Engineering components (TIA Portal):

- Adds new, integrated editors to the TIA Portal for configuring the energy recording and load management system
- Library with preconfigured WinCC Professional screens for displaying energy consumption and the load management system
- Includes S7 program generator for the automatic generation of the complete S7 program
  - For acquisition, processing, buffering and archiving (WinCC Professional or SIMATIC memory card) of the basic energy values relevant to billing (power rating and energy)
  - For the priority-controlled connection and disconnection of loads and producers
  - Also for the extended energy values (including voltage, current, frequency) for measuring devices that offer this function and are supported within the scope of the Energy Support Library (see below).

WinCC Runtime components (toolbox for WinCC Professional):

- Export tool for exporting the energy data archived periodically in WinCC Professional in Excel files
- Transfer tool for buffered communication of the periodic energy values relevant to billing from S7-1500 CPUs to the tag archive of WinCC Professional

S7 driver block library (Energy Support Library - EnSL):

- Contains S7 blocks for simplified communication with measuring components from the product families SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE. Installation of the Energy Support Library (EnSL) enables the supported devices to be recognized by the Energy Suite. They can then be configured as energy data sources simply by selecting the devices – making complex communication programming unnecessary.
  Details on the currently supported devices can be found here: http://www.siemens.com/energysuite-hardware

## Function

Simple configuration direct in the TIA Portal

The SIMATIC Energy Suite is an option package for STEP 7 and WinCC (TIA Portal) which integrates new editors into the engineering HMI of the TIA Portal. These editors can be used to create and configure energy measuring points ('acquisition objects') and load management actuators ('actuator objects') in a simple manner.

Automatic program generation instead of complex programming

Following the completed configuration of all energy objects (acquisition objects and actuator objects), the S7 energy program is automatically generated by the program generator of the Energy Suite. This energy program can be downloaded to the controller (S7-1500) immediately after the compilation. The recording objects begin recording and pre-processing the energy values immediately after the start-up of the PLC.

Energy data recording and preprocessing is already carried out in the automation environment, close to the consumers

The recorded energy data is standardized and calculated according to the set archiving period, provided with a time stamp, and is ready for archiving.

Free choice of archive location

Archiving of the power rating and energy values relevant to billing can be made directly on the PLC-internal SIMATIC memory card or in a connected WinCC Professional archive.

- Archiving on SIMATIC memory card
  The energy data is directly saved on the CPU-internal SIMATIC memory card according to the respective archiving period. The data is always available there as a CSV file for direct downloading via the CPU's web server
- Archiving in the WinCC Professional archive
  The basic energy data (power rating and energy values) relevant to billing is saved in the archive of a connected WinCC Professional system according to the respective archiving period.
  Buffered communication
  To ensure high data quality, the basic energy data (power rating and energy values) is buffered in the WinCC archive prior to transfer. This data relevant to billing is then still available in the WinCC archive without losses or errors, even after a longer interruption in communication with the archive system (e.g. when restarting the PC or when there is a fault in the IT infrastructure).

## **Function** (continued)

Export tool for simple reading of energy data

The power rating and energy data (basic energy values relevant to billing) in the archive of the WinCC Professional system can be directly exported from the archive database to an Excel file using the supplied export tool. It is possible to create individual export templates with free selection of measuring points and time periods. These templates can subsequently be started fully automatically, or manually at a time selected by the user (e.g. at the beginning of each month).

Display and monitoring of the energy data

When generating the energy program, the power rating and energy data (basic energy values relevant to billing) of the individual measuring points (acquisition objects) are made available in uniform S7 blocks with standardized data structures. These data include all the relevant configuration data in addition to the current and periodic energy values. Thanks to this central and homogenized provision of data in the S7 CPU, it is very easy to implement additional real-time monitoring and evaluation (e.g. calculation of key statistics) in the control program, as well as uniform visualization of the energy data and energy parameters on HMI and SCADA screens.

***New as of V16***: Automatic screen generation with SIMATIC Visualization Architect (SiVArc)

Especially in larger configurations, the screens for energy recording and load management objects can be automatically generated through the use of the SiVArc option package, which saves time. To this end, an additional installation of SiVArc on the same station as Energy Suite is required. However, no SiVArc license is required for the exclusive generation of the Energy Suite screens.

***New as of V16***: PLC-based load management

In the corresponding editors of the TIA Portal, a load management system is first created and a recording object is assigned to it as an infeed signal. The individual actuator objects are then created in this load management system and their basic properties are configured. Actuators of the type load and producer can be configured. For each actuator type, a distinction can be made between a binary-switching (on/off) or an analog-switching (0-100%) behavior.

After the S7 program has been successfully generated and downloaded to the PLC and WinCC Professional Runtime has been activated, the runtime parameters of the load management system and of the associated actuator objects are set - this primarily includes the output limit, the priorities, and the chronological limit values of the actuators. With these settings, if the set output limits are exceeded, the load management system will escalate the configured actuators based on their priority and availability (disconnection of loads or connection of producers). When the current power consumption once again drops below the output limit, the load management system de-escalates these actuators (also in accordance with the respective priorities).

## Technical specifications

| | **SIMATIC Energy Suite V16** |
|---|---|
| **PC hardware requirements** | • In accordance with the requirement of the TIA Portal components:<br>- SIMATIC STEP 7 (TIA Portal)<br>- SIMATIC WinCC Professional, Advanced, Comfort, Basic |
| **Operating system requirements** | • In accordance with the requirement of the TIA Portal components:<br>- SIMATIC STEP 7 (TIA Portal)<br>- SIMATIC WinCC Professional, Advanced, Comfort, Basic |
| **Supported STEP 7 version** | • SIMATIC STEP 7 V16 |
| **Supported WinCC versions** | • SIMATIC WinCC V16 Professional, Advanced, Comfort, Basic |
| **Supported SIMATIC CPUs** | |
| • SIMATIC Energy Suite | • Runs on all S7-1500 CPUs (except S7-1500S) and ET 200SP CPU; with FW V2.0 and higher. |
| • S7 Energy Efficiency Monitor for Machines | • Runs on all S7-1500 CPUs and ET 200SP CPUs; with FW V2.1<br>• Runs on all S7-1200 CPUs; with FW V4.2 |

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## Ordering data

| | Article No. |
|---|---|
| **Engineering package**<br>Includes installation medium, floating license for engineering as well as license certificates[3] for 10 energy objects[1] (2x5 EnO). | |
| **SIMATIC Energy Suite V16 Engineering**<br>including 10 energy objects[1] (2x5 EnO) | |
| • As package | 6AV2108-0AA06-0AA5 |
| • Download [4] | 6AV2108-0AA06-0AH5 |
| **SIMATIC Energy Suite Upgrade V14 or 15 to V16** | |
| • As package | 6AV2108-3AA06-0AE5 |
| • Download [4] | 6AV2108-3AA06-0AK5 |
| **Trial package** | |
| **SIMATIC Energy Suite V16 Engineering Trial (21 days)**<br>As package | 6AV2108-0AA06-0AA7 |
| **SIMATIC Energy Suite Engineering Software Update Service** [5] | |
| • Data storage medium package | 6AV2108-0AA00-0AL0 |
| • Download [4]<br>Email address required for delivery | 6AV2108-0AA00-0AY0 |
| **PLC runtime licenses** [2]<br>Includes license certificates[3] for activating additional energy objects[1] (EnO). | |

| | Article No. |
|---|---|
| **SIMATIC Energy Suite S7-1500**<br>SIMATIC Energy Suite S7-1500, 5 energy objects[1] (1 x 5 EnO) | |
| • As package | 6AV2108-0CF00-0BB0 |
| • Download [4] | 6AV2108-0CF00-0BH0 |
| SIMATIC Energy Suite S7-1500, 10 energy objects[1] (1 x 10 EnO) | |
| • As package | 6AV2108-0CH00-0BB0 |
| • Download [4] | 6AV2108-0CH00-0BH0 |
| SIMATIC Energy Suite S7-1500, 10 energy objects[1] (2 x 5 EnO) | |
| • As package | 6AV2108-0DF00-0BB0 |
| • Download [4] | 6AV2108-0DF00-0BH0 |
| SIMATIC Energy Suite S7-1500, 50 energy objects[1] (5 x 10 EnO) | |
| • As package | 6AV2108-0FH00-0BB0 |
| • Download [4] | 6AV2108-0FH00-0BH0 |
| SIMATIC Energy Suite S7-1500, 100 energy objects[1] (10 x 10 EnO) | |
| • As package | 6AV2108-0HH00-0BB0 |
| • Download [4] | 6AV2108-0HH00-0BH0 |
| ***S7 Energy Efficiency Monitor for Machines***<br>Includes license certificate [5] for activating the S7 instruction for energy efficiency evaluation especially for machines | |
| **S7 Energy Efficiency Monitor for Machines S7-1500 / S7-1200** | |
| • As package | 6AV2108-1CF00-0BB0 |
| • Download [4] | 6AV2108-1CF00-0BH0 |

[1] Energy objects (EnO) are used for licensing the recording functionality and the load management. This requires: - 1 recording object (measuring point) = 1x energy object - 1 actuator object (consumer or producer) = 3x energy objects

[2] PLC runtime licenses are countable and version-neutral

[3] The correct number of existing license certificates must be configured in the properties of the CPU hardware in the TIA Portal.

[4] For up-to-date information and download availability:
http://www.siemens.com/tia-online-software-delivery

[5] The license number on the certificate is used to activate the S7 instruction; one license certificate is required for each machine.

Additional information is available on the Internet at:

SIMATIC Energy Suite:
http://www.siemens.com/simatic-energy-suite

Energy Support Library (EnSL):
http://www.siemens.com/energysuite-hardware

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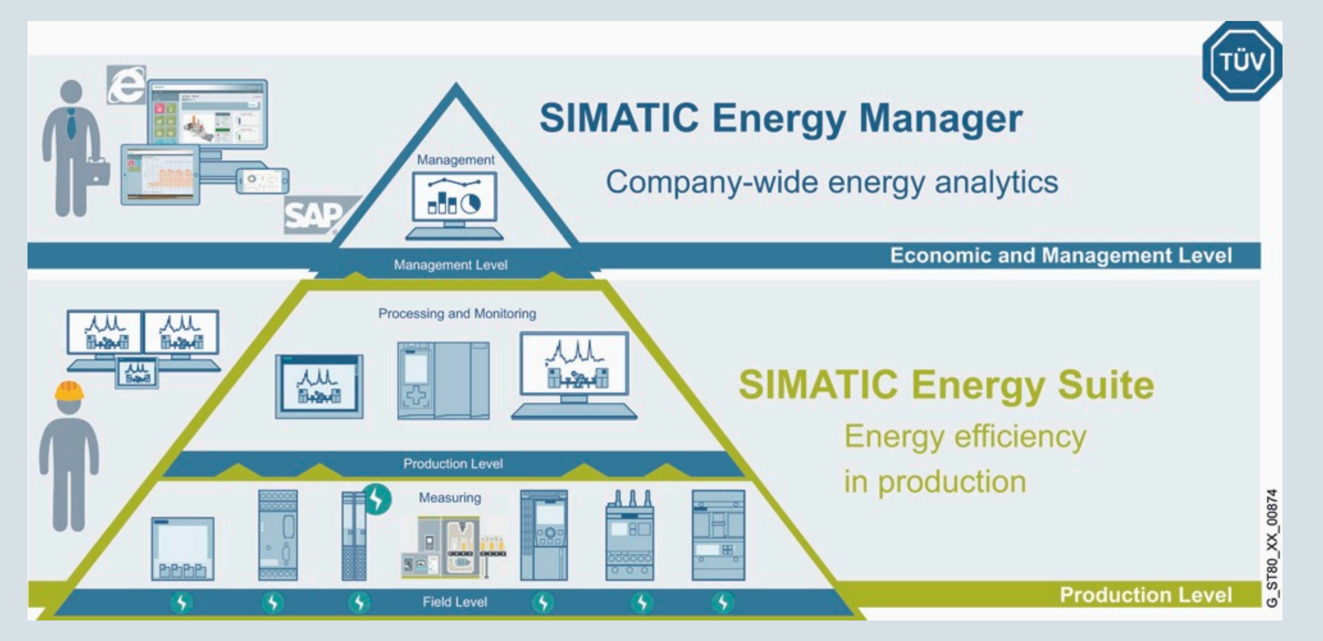
## Overview


TÜV
SIMATIC Energy Manager
Company-wide energy analytics
Management
SAP
Management Level
Economic and Management Level
Processing and Monitoring
SIMATIC Energy Suite
Energy efficiency
in production
Production Level
Measuring
Field Level
Production Level
G_ST80_XX_00874

***SIMATIC Energy Manager V7.2 energy management system***

SIMATIC Energy Manager V7.2 makes energy flows and costs transparent – in both infrastructure and production.

SIMATIC Energy Manager provides users with a scalable, non-sector-specific energy data management system.
Its functions range from energy monitoring, energy controlling, energy invoicing, baseline management and prognosis, through to the management of energy efficiency measures.

Among other things, SIMATIC Energy Manager provides an extensive and easy-to-use report system, as well as a dynamic, widget-based web dashboard for analyzing and distributing data once it has been acquired and analyzed.

***SIMATIC Energy Manager*** is available in a ***Basic*** and a ***PRO version***.

Advantages:

- Appropriate energy efficiency measures can be devised based on performance indicators and display options. When implemented successfully, cost savings are achieved.
- Power monitoring offers the basis for a secure power supply
- Transparency at cost center level raises employee awareness and forms the basis for specifying clear, easy-to-understand aims, as well as for monitoring their achievement
- Technological processes and plants in production (E.g. analysis based on machine status) can easily be connected and allow for energy performance evaluation.
- Transparency combined with prognosis functions increases planning reliability and opens up new opportunities in energy procurement
- Energy controlling, with its flexible reporting and analysis functions, helps to ensure that efficient systems remains efficient
- Characteristic values can be freely defined to facilitate substantiated statements on increasing the efficiency of power generation systems and consumers
- Transparency – with the OPC UA (HA) server, data can be made available to additional applications
- It fulfills the legal obligations for monitoring and reporting on greenhouse gas emissions (CO2 emissions)

## **Overview** (continued)

Easy introduction to energy data management with the Energy Manager Basic:

- Easy configuration of dashboards, charts and reports
- With power monitoring, it is possible to analyze detail data of the measuring instruments
- Configuration of data points and the OPC UA, OPC DA, OPC HDA, Energy Suite, WinCC/PCS 7, Modbus/TCP, Modbus/TCP, Desigo CC and ASCII interfaces, as well as manual data acquisition
- Definition of derived data points in order to store performance indicators as a time series and export them, for example.
- Simple authorization concept
- Web client available in the languages en, de, it, fr, es and cn
- Configuration of performance indicators data with a formula editor
- Configuration of parameters to display prices or factors
- Tabular overview and options for structuring data sources, data points, performance indicators and parameters
- Configuration of essential settings, e.g. email settings, backup, units, regional settings, account settings
- Provision of data with the OPC UA server

Support of the S7 energy efficiency monitor by Energy Manager PRO:

- The S7 energy efficiency monitor as an instruction in the TIA Portal allows machine status-related energy data acquisition. Data is transferred to Energy Manager PRO via a communication module.
- Uniform and comparable display of efficiency indicators of machines/lines/cost centers
- Display of energy consumption and costs at machine level and cost center level
- Energy consumption and costs per workpiece or shift
- Benchmarking of same machines/workpieces from different manufacturers

Note:

Upgrading from SIMATIC Energy Manager 7.1 to SIMATIC Energy Manager 7.2 is possible at any time and is included in the SIMATIC Energy Manager SUS.

## Benefits

### *Highlights of version 7.2*

- Parameter selection via a structure web browser
- Power monitoring – acquisition and analysis of the measuring instruments to enhance availability of their electrical power distribution
- Provision of data via OPC UA server (HA) possible, even with Energy Manager Basic
- Additional interfaces in Energy Manager Basic:
  - ASCII interface
  - Desigo CC WebService interface
- Simple data analysis with the new chart in the Web Client
- Filtering of rogue data for counter values
- Batch analysis based on data from the short-term archive
- Settings for the Internal information Services can be defined directly from setup

## Design

### *SIMATIC Energy Manager V7.2*

SIMATIC Energy Manager is available in a Basic and a PRO version.
Basic is the starter version and is entirely web-based.
An upgrade from the Basic to PRO version is possible by means of a license key.
Both versions are supplied in a basic package to which tag packages can be added.

The ***SIMATIC Energy Manager Basic*** package includes:

- 50 tags
- 1 Energy Manager PRO acquisition component
- 1 Energy Manager web client

The ***SIMATIC Energy Manager PRO*** basic package includes:

- 50 tags
- 1 Energy Manager PRO acquisition component
- 1 Energy Manager PRO client
- 1 Energy Manager web client

Available tag packages:

- 50 tags
- 100 tags
- 250 tags
- 500 tags
- 1 000 tags
- 5 000 tags
- 30 000 tags

### *SIMATIC Energy Manager Software Update Service (SUS)*

For each Energy Manager system there is a corresponding SUS (Software Update Service), which is dependent on the number of tags or consumer packages.

The SUS is valid for 1 year. The contract is automatically extended by 1 more year unless canceled 3 months prior to expiration.

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## Design (continued)

### *SIMATIC Energy Manager extensions*

The scope of Energy Manager can be extended with add-on packages:

- Energy Manager web clients (3, 20 or 60)
- Energy Manager PRO client
- Energy Manager PRO acquisition component
- Energy Manager PRO Planning and Forecast
- Consumer Package 1 with S7-EE monitor
- Consumer Package 5 with S7-EE monitor
- Consumer Package 25 with S7-EE monitor
- Consumer Package 1 without S7-EE monitor
- Consumer Package 5 without S7-EE monitor
- Consumer Package 25 without S7-EE monitor

The number of clients and web clients indicates the number of times simultaneous access is possible.

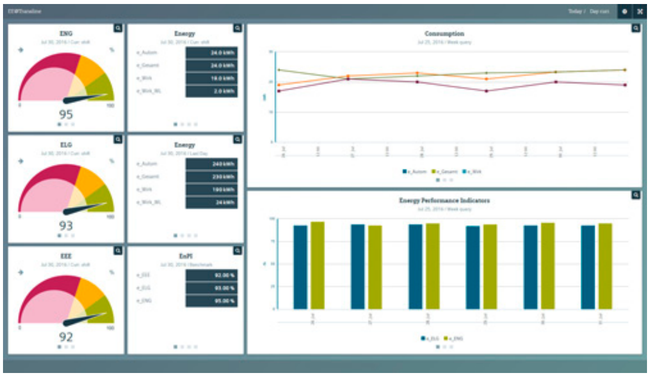
## Function

### *Acquisition and pre-processing of energy and operating data*

- In addition to an interface to the SIMATIC Energy Suite, SIMATIC Energy Manager also offers the latest interface standards such as WinCC, PCS7, Desigo CC, OPC UA, OPC DA (DA, HA), OPC HDA, MODBUS TCP, ODBC, ASCII and XML, as well as machine drivers to the S7-EE monitor
- Preprocessing of energy data in a real-time calculation core that can be freely modeled including a formula editor for defining and configuring new calculation functions (heat calculations for boilers, quality for cogeneration plants, etc.)

Simple definition of performance indicators enabling rapid identification of relationships and dependencies:

- Energy Manager app for iOS and Android for mobile counter data acquisition
- Automatic plausibility check and generation of substitute values
- Long-term archive with versioning and compression functions
- Matrix editor and measured value editor for entering and processing energy and operating values
- Chart for presenting up-to-date (online) and historical load curves, as well as setpoint/actual value analyses
- Management and analysis of energy data
- Energy management dashboards for creating cross-company transparency through visualization of performance indicators and display of Sankey diagrams.

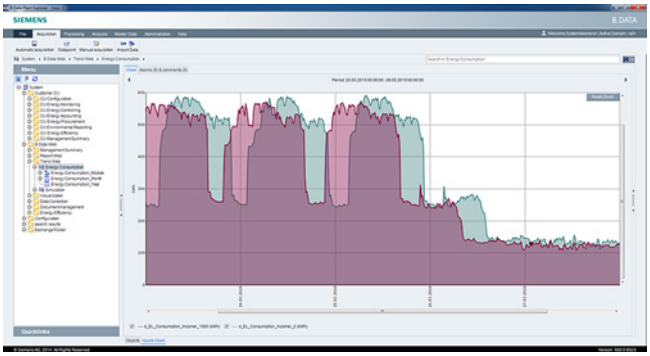


Monitoring

An important component of energy data management is the display and evaluation of operating data and performance indicators for the purpose of identifying actions for optimization and lowering costs and consumption.

Energy Manager provides the appropriate tools for displaying and evaluating operating data and performance indicators:

- Display of current and projected operating values together in one chart
- Reporting on quantities produced, consumption and costs
- Display of all relevant company data on a single dashboard



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## **Function** (continued)

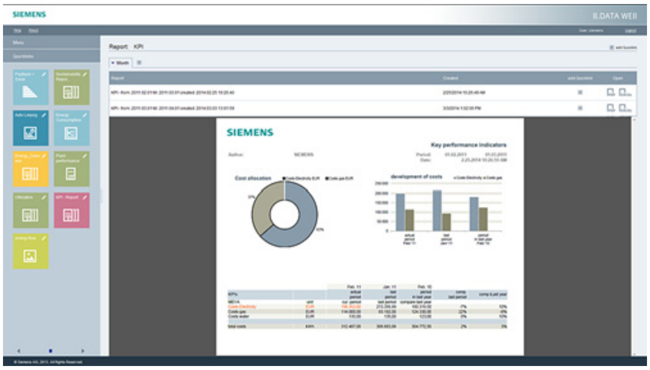
### Controlling

Effective energy controlling is based on information about when and where energy is required. This is the only way that detailed information about optimization and potential savings can be provided. Reliable performance indicators form the basis for reports, such as those required for implementation of ISO 50001 requirements.

Energy Manager is the tool for effective controlling tasks:

- Freely configurable accounting of the energy flows of different media such as electricity, gas, or steam, from the main supply down to sub-distribution systems
- Determination of performance indicator values with direct reference to production batches or quantities for energy-related evaluation of production equipment
- Evaluation of energy purchase invoices for various media by entering counter readings, power and calculation parameters
- Target-performance analysis of energy consumption and costs according to predefined reference profiles or parameters
- Determination and display of statistical parameters such as time lines, distribution of hours or daily temperature figures
- Benchmarking of various plants or sites
- Machine-status-related energy analyses

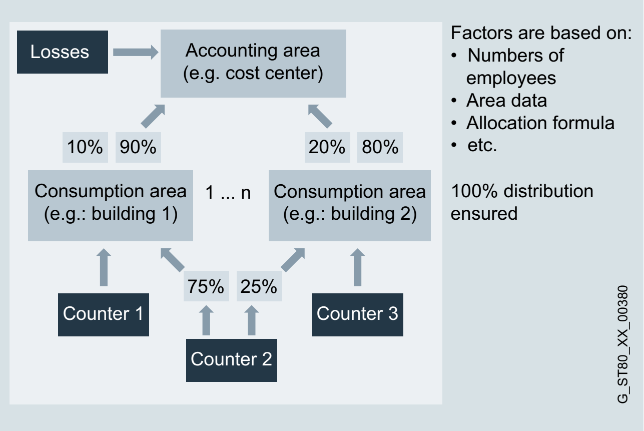
Energy Manager's automatic reporting system is used for presentations:
Information is displayed in Microsoft Excel or Microsoft Word and can be prepared there as a table or diagram overview.
In this way, you can generate, for example, monthly reports with current figures in Microsoft Excel, Microsoft Word or PDF format without additional configuration effort.



### Cost-center-oriented accounting

Clear allocation creates awareness for saving energy and regulates accountability. Only those who are charged directly with the costs that they cause will be willing to change their behavior.
By assigning costs according to the "costs-by-cause principle" and through incentive systems, cost center managers can accelerate energy-saving measures. Energy Manager enables costs-by-cause accounting of energy and material flows as well as allocation to individual plants, customers or cost units.

- Flexible modeling of hierarchic accounting structures
- Tariff allocation of quantities, flexible price assessment with tariff and price time series
- Transfer of consumption figures/costs to the ERP system



### Baseline management

The ability to calculate performance indicators is a core task of an energy data management system. However, even if performance indicators are available, the user often still has to interpret them. With baseline management, a model based on historical data can calculate a theoretical energy consumption (baseline) for any time.

This theoretical energy consumption serves as a default value for energy monitoring or energy controlling. This enables the user to see at any time whether the actual energy consumption is above or below the calculated theoretical level. If the cumulative deviation of these two values over time is calculated, it is possible to determine the efficiency of a plant.

## Function (continued)

Energy forecast

Energy Manager PRO places all relevant information at your fingertips to give you the most accurate forecast possible of energy demand and of the load curve for one or more sites, buildings, production areas or individual consumers.

- Generation of requirement forecasts based on production-dependent factors (production planning) and basic load profiles (typical days)
- With multi-variable regression analysis, it is simple to evaluate and model influencing factors. This model can be used to calculate the future energy demand

Management of energy efficiency measures

- All of a site's energy efficiency measures are recorded centrally in Energy Manager PRO. Each energy efficiency measure can be assigned to a certain region, department or even a specific plant
- Automatic calculation of efficiency based on potential savings and costs of each energy efficiency measure
- Predefined status for implementation progress of energy efficiency measures
- Categorization: Predefined priorities or categories help to prioritize energy efficiency measures

Power monitoring

With power monitoring, it is easy to acquire and analyze detail data of the measuring instruments in order to enhance the availability of their electrical power distribution.

- With just a few clicks, it is possible to make measured values of current, voltage and cos phi, visible.
- Should a system fail, it is possible to accurately analyze the detail data for this point in time and detect potential causes such as transients and voltage dips.

Energy reporting

- Freely parameterizable report generator for creating balances, protocols, bills
- Fully automated reporting, email dispatch and document management
- Energy Manager web client for company-wide viewing of dashboards, reports and results
- Information about discrepancies from specified parameters through KPI warning system

## Technical specifications

| | **SIMATIC Energy Manager PRO V7.2** |
|---|---|
| **Operating system** | • Windows Server 2008 R2 (English/German)<br>• Windows Server 2012 R2 (English/German)<br>• Windows Server 2016 (English/German)<br>• Windows Server 2019 (English/German)<br>• Windows 7 Professional/Ultimate SP1 (English/German)<br>• Windows 8.1 Pro/Enterprise 64-bit (English/German)<br>• Windows 10 Pro/Enterprise 64-bit (English/German)<br>• Minimum of 16 GB RAM |
| **Interface** | In addition to an interface to WinCC, PCS7, Desigo CC and S7 controllers Energy Manager PRO also offers the latest interface standards such as OPC DA, OPC HDA, OPC UA, MODBUS TCP, ODBC, ASCII and XML. |
| **WinCC versions** [1] | • SIMATIC WinCC V7.3 SE, V7.4, V7.5<br>• SIMATIC WinCC RT Professional V14, V15, V15.1 |
| **PCS 7 versions** [2] | • SIMATIC PCS 7 V8.2<br>• SIMATIC PCS 7 V9 |
| **Virtualization** | • VMWare Workstation 12.5, 14, 15<br>• VMWare ESX 6.5, 6.7<br>• Microsoft Hyper-V for Windows Server 2012 R2, 2016, 2019<br>• Microsoft Hyper-V server 2012 R2, 2016, 2019 |

[1] If an acquisition component is installed on a WinCC system, these requirements must also be complied with

[2] The SIMATIC Energy Manager PRO system for connection to the PCS 7 must always be installed on a separate PC

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC Energy Manager V7.2** | |
| Standard scope of supply | |
| • SIMATIC Energy Manager Basic incl. 50 tags 1) | **6AV6372-1DF07-2AX0** |
| • SIMATIC Energy Manager PRO incl. 50 tags 1) | **6AV6372-2DF07-2AX0** |
| • SIMATIC Energy Manager PRO Powerpack Basic -> PRO | **6AV6372-2DF07-2AX3** |
| • Tag Package 50 1) | **6AV6372-2DF07-0CX0** |
| • Tag Package 100 1) | **6AV6372-2DF07-0DX0** |
| • Tag Package 250 1) | **6AV6372-2DF07-0EX0** |
| • Tag Package 500 1) | **6AV6372-2DF07-0FX0** |
| • Tag Package 1 000 1) | **6AV6372-2DF07-0GX0** |
| • Tag Package 5 000 1) | **6AV6372-2DF07-0HX0** |
| • Tag Package 30 000 1) | **6AV6372-2DF07-0JX0** |
| Download | |
| • SIMATIC Energy Manager Basic incl. 50 tags 1) | **6AV6372-1DF07-2AH0** |
| • SIMATIC Energy Manager PRO incl. 50 tags 1) | **6AV6372-2DF07-2AH0** |
| • SIMATIC Energy Manager PRO Powerpack Basic -> PRO | **6AV6372-2DF07-2AH3** |
| • Tag Package 50 1) | **6AV6372-2DF07-0CH0** |
| • Tag Package 100 1) | **6AV6372-2DF07-0DH0** |
| • Tag Package 250 1) | **6AV6372-2DF07-0EH0** |
| • Tag Package 500 1) | **6AV6372-2DF07-0FH0** |
| • Tag Package 1 000 1) | **6AV6372-2DF07-0GH0** |
| • Tag Package 5 000 1) | **6AV6372-2DF07-0HH0** |
| • Tag Package 30 000 1) | **6AV6372-2DF07-0JH0** |
| **SIMATIC Energy Manager extensions** | |
| Standard scope of supply | |
| • SIMATIC Energy Manager, 3 web clients 4) | **6AV6372-2DF27-0AX0** |
| • SIMATIC Energy Manager, 20 web clients 4) | **6AV6372-2DF27-0BX0** |
| • SIMATIC Energy Manager, 60 web clients 4) | **6AV6372-2DF27-0CX0** |
| • SIMATIC Energy Manager PRO client 4) | **6AV6372-2DF37-0AX0** |
| • SIMATIC Energy Manager PRO Planning and Forecast | **6AV6372-2DF47-0AX0** |
| • SIMATIC Energy Manager PRO acquisition component | **6AV6372-2DF57-0AX0** |
| Download | |
| • SIMATIC Energy Manager, 3 web clients 4) | **6AV6372-2DF27-0AH0** |
| • SIMATIC Energy Manager, 20 web clients 4) | **6AV6372-2DF27-0BH0** |
| • SIMATIC Energy Manager, 60 web clients 4) | **6AV6372-2DF27-0CH0** |
| • SIMATIC Energy Manager PRO client 4) | **6AV6372-2DF37-0AH0** |
| • SIMATIC Energy Manager PRO Planning and Forecast | **6AV6372-2DF47-0AH0** |
| • SIMATIC Energy Manager PRO acquisition component | **6AV6372-2DF57-0AH0** |

| | Article No. |
|---|---|
| **SIMATIC Energy Manager PRO Consumer Package** | |
| Standard scope of supply | |
| • Consumer Package 1 with S7 EE monitor 3) | **6AV6372-2DF67-1AX0** |
| • Consumer Package 5 with S7 EE monitor 3) | **6AV6372-2DF67-1BX0** |
| • Consumer Package 25 with S7 EE monitor 3) | **6AV6372-2DF67-1CX0** |
| • Consumer Package 1 without S7-EE monitor | **6AV6372-2DF77-1AX0** |
| • Consumer Package 5 without S7-EE monitor | **6AV6372-2DF77-1BX0** |
| • Consumer Package 25 without S7-EE monitor | **6AV6372-2DF77-1CX0** |
| Download | |
| • Consumer Package 1 with S7 EE monitor 3) | **6AV6372-2DF67-1AH0** |
| • Consumer Package 5 with S7 EE monitor 3) | **6AV6372-2DF67-1BH0** |
| • Consumer Package 25 with S7 EE monitor 3) | **6AV6372-2DF67-1CH0** |
| • Consumer Package 1 without S7-EE monitor | **6AV6372-2DF77-1AH0** |
| • Consumer Package 5 without S7-EE monitor | **6AV6372-2DF77-1BH0** |
| • Consumer Package 25 without S7-EE monitor | **6AV6372-2DF77-1CH0** |
| **SIMATIC Energy Manager SUS 2)** | |
| Standard scope of supply | |
| • For max. additional 50 tags and/or 1 Consumer Package 2) | **6AV6372-2DF00-0CL0** |
| • For max. additional 100 tags and/or 5 Consumer Packages 2) | **6AV6372-2DF00-0DL0** |
| • For max. additional 500 tags and/or 25 Consumer Packages 2) | **6AV6372-2DF00-0FL0** |
| • For max. additional 5 000 tags and/or 100 Consumer Packages 2) | **6AV6372-2DF00-0HL0** |
| • For more than 5 000 tags and/or 100 Consumer Packages 2) | **6AV6372-2DF70-0XL0** |
| Download | |
| • For max. additional 50 tags and/or 1 Consumer Package 2) | **6AV6372-2DF00-0CY0** |
| • For max. additional 100 tags and/or 5 Consumer Packages 2) | **6AV6372-2DF00-0DY0** |
| • For max. additional 500 tags and/or 25 Consumer Packages 2) | **6AV6372-2DF00-0FY0** |
| • For max. additional 5 000 tags and/or 100 Consumer Packages 2) | **6AV6372-2DF00-0HY0** |
| • For more than 5 000 tags and/or 100 Consumer Packages 2) | **6AV6372-2DF70-0XY0** |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC Energy Manager upgrades** | |
| Standard scope of supply | |
| • Upgrade of systems with up to 50 tags and/or 1 Consumer Package | **6AV6372-2DF07-2CX4** |
| • Upgrade of systems with up to 100 tags and/or 5 Consumer Packages | **6AV6372-2DF07-2DX4** |
| • Upgrade of systems with up to 500 tags and/or 25 Consumer Packages | **6AV6372-2DF07-2FX4** |
| • Upgrade of systems with up to 5 000 tags and/or 100 Consumer Packages | **6AV6372-2DF07-2HX4** |
| • Upgrade of systems with more than 5 000 tags and/or more than 100 Consumer Packages | **6AV6372-2DF77-2XX4** |
| Download | |
| • Upgrade of systems with up to 50 tags and/or 1 Consumer Package | **6AV6372-2DF07-2CH4** |
| • Upgrade of systems with up to 100 tags and/or 5 Consumer Packages | **6AV6372-2DF07-2DH4** |
| • Upgrade of systems with up to 500 tags and/or 25 Consumer Packages | **6AV6372-2DF07-2FH4** |
| • Upgrade of systems with up to 5 000 tags and/or 100 Consumer Packages | **6AV6372-2DF07-2HH4** |
| • Upgrade of systems with more than 5 000 tags and/or more than 100 Consumer Packages | **6AV6372-2DF77-2XH4** |

| | Article No. |
|---|---|
| **SIMATIC Energy Manager TRIAL** | **6AV6372-2DF17-2AX0** |
| Standard scope of supply | |

[1] The tag packages dynamically expand the number of tags. The total number of tags is incremented by the value of the tag package in each case.

[2] The SUS contract runs for 1 year. The contract is automatically extended by a further year unless canceled 3 months prior to expiration.

[3] The license number on the certificate is used to activate the S7 instruction; a separate license certificate is required for each machine.

[4] The Client license and Web Client license are licensing which only takes into account one simultaneous access. Example: If 5 users use the Energy Manager via the web client but only 3 work with it simultaneously, only 3 web client licenses are necessary. The same applies for the desktop client.

Additional information is available on the Internet at:

http://www.siemens.com/energymanager

## Overview

***SIMATIC WinCC V7 SCADA system***

The scalable and open SCADA system for maximum plant transparency and productivity

- Efficiency:
  As a key to greater productivity, SIMATIC WinCC combines efficient engineering with high-performance archiving and maximum data security. With integrated diagnostics functions and flexible production analysis, you shorten the time-to-market and also reduce your plant standstill times.
  SIMATIC WinCC is the basis for efficient operations management and intelligent production analyses, so it offers a secure basis for deciding on optimization measures, and thus more productivity at lower cost.
- Scalability:
  With SIMATIC WinCC, it is possible to implement plants in all industrial sectors and technologies, and easily expand or modernize them by means of options or add-ons, in functional terms or sector-specifically. You can benefit from the redundancy concepts for enhanced availability, or decide on centralized archiving and analysis of plant information.
  SIMATIC WinCC offers stationary and mobile solutions to cover increasing demands.
- Innovation:
  With innovative technology, you have all the important information in view at all times. In this way, SIMATIC WinCC simplifies intuitive operation and monitoring of the production plant – even remotely. Stay informed with mobile SCADA solutions anywhere and at any time – including with existing tablet and smartphone hardware.
  The use of multi-touch gestures in the industrial environment opens the door to modern operator concepts.
- Openness:
  Since international standards and system-internal script and programming interfaces are supported, special requests can also be easily implemented.
  SIMATIC WinCC backs cross-vendor communication for integrating existing hardware, as well as for simple integration into the IT world. WinCC specialists are available worldwide as qualified solution providers. These certified and centrally audited partners are ready to implement your individual SCADA project even in diversified client-server architectures with redundancy, or in applications with energy data management systems.
  SIMATIC WinCC is designed to be independent of any specific technology or industrial sector, modular in structure, and easy to expand. It is used worldwide in single-user applications in mechanical engineering, as well as in complex multi-user solutions with redundant servers or Web-based client access. References from many industries prove the versatility and performance capability.

http://www.siemens.com/wincc-v7

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## Overview

- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and plants in all sectors – from the simple single-user station through to distributed multi-user systems with redundant servers and cross-location solutions with web clients. WinCC is the information hub for corporation-wide vertical integration.
- The basic system configuration (WinCC basic software) includes industry-standard functions for signaling and acknowledging events, archiving of messages and measured values, logging of all process and configuration data, user administration and visualization.
- The WinCC basic software forms the core of a wide range of different applications. Based on the open programming interfaces, a wide range of WinCC options (from Siemens Industry Automation) and WinCC add-ons have been developed (by Siemens-internal and external partners).
- WinCC can be operated with every PC that meets the given HW requirements. The SIMATIC IPC product range is available in particular for the industrial use of WinCC systems. SIMATIC IPCs impress with their powerful PC technology, are designed for round-the-clock operation, and can be operated in both office areas and harsh industrial environments.

Current versions:

***SIMATIC WinCC V7.5***

Runs on:
ONLY supports 64-bit operating systems!

- Windows10 (Professional, Enterprise)
- Windows 10 LTSB 2015/2016, LTSC 2019 (64-Bit)
- Windows Server 2012 R2 64-bit (Datacenter & Standard)
- Windows Server 2016 (Datacenter & Standard)
- Windows Server 2019 (Datacenter & Standard)

For WebNavigator clients and DataMonitor clients, additionally:

- Windows 7 SP1 Professional, Enterprise, Ultimate 32-bit / 64-bit (if possible, Windows 10 1 should be used)
- Windows 8.1 Professional, Enterprise 32-bit /64-bit (if possible, Windows 10 1 should be used)

[1] End of Support of Windows 7 / 8.1 (14.01.2020 / 10.01.2023)

Please check the Siemens Online Support compatibility list for details:

https://support.industry.siemens.com/kompatool/pages/main/index.jsf

***SIMATIC WinCC V7.4 SP1***

Runs on:

- Windows 7 Professional, Enterprise, Ultimate (32-/64-bit)
- Windows 8.1 Professional, Enterprise (32-/64-bit)
- Windows 10 Professional, Enterprise, 2015 LTSB, 2016 LTSB (64-bit)
- Windows 2008 Server R2 SP1 (64-bit)
- Windows 2012 Server R2 (64-bit)
- Windows 2016 Server (64-bit)
- Includes Microsoft SQL Server 2014 SP1 (32-bit)

Use in virtual environments – for more information see:

http://support.automation.siemens.com/WW/view/en/49370459

***SIMATIC SCADA and SIMATIC IPCs***

Perfect interaction for optimum productivity.

- Price advantage as "Package" comprising hardware and software
- System-tested solutions reduce testing overhead
- Simple ordering and synchronized logistics

Only if ordered together with the SIMATIC IPC.

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## Benefits

- All-purpose
  - Solutions for all sectors
  - Multi-language for worldwide usage
  - Can be integrated into all automation solutions
- All operator control & monitoring functions on board
  - User administration
  - Operator control and monitoring
  - Reporting, acknowledging, and archiving of events
  - Collecting, consolidating and archiving measured values (including long-term backup)
  - Logging and documenting of process and configuration data
- Can be configured simply and efficiently
  - Configuration wizards let the user focus on the essentials
  - In the picture by means of cross-reference lists and screen property displays
  - Configuration of multi-language applications
  - Configuring tool for configuring bulk data
- Universally scalable
  - Expandable from single station to client-server configurations
  - Increased availability by means of redundant servers
  - Process visualization via the Web with the WinCC WebNavigator or WebUX
- Open standards for simple integration
  - Efficient real-time database MS SQL Server
  - Open for application modules with ActiveX controls
  - Visual Basic for Applications for individual expansions
  - OPC for cross-vendor communication
- Process visualization with Plant Intelligence
  - Integrated evaluation functions for the online analysis (statistical process control)
  - Production optimization with the help of diverse options
- Expandable using options and add-ons
  - Options for scalable configurations
  - Options for increasing the availability
  - Options for IT & business integration
  - Options for SCADA expansions
  - Options for validation in accordance with FDA 21 CFR Part 11
  - Options for the use of telecontrol protocols
- Part of Totally Integrated Automation
  - Direct access to the tag and message configuration of the SIMATIC control system
  - Integrated diagnostic functions for increasing productivity

### *New with V7.5 SP1*

- Extended functionality for object-oriented configuration
  - Import and use of structured data types from S7-1500 PLCs and OPC UA data sources
  - Use of structure data types as an interface to the faceplates
- Extended functionality for the design of the runtime interface
  - Additional characteristics for dynamization of SVG graphics from the WinCC library including support for WebUX
  - Integration of the central color palette in the project design template including option for changeover during runtime
- Communication
  - OPC UA client enhanced for Alarm & Condition
  - Possible to configure access rights for WinCC tags via the WinCC OPC server
  - WinCC Cloud Connect for sending WinCC data to cloud systems using the MQTT protocol
- Graphics Designer
  - Easier configuration of multi-language texts and font settings for all text elements in graphics
  - New animation option for dynamization of object properties without script programming
- Other innovations
  - WinCC WebUX: Auto-Login for operate mode, enhanced features for trend control dynamization and central color palette for alarm configuration
  - Reworked tag simulator with new options for system tags for monitoring communication channel and login performance values
  - Structuring of WinCC images (PDLs) in subfolders possible
  - Menu and toolbars can be configured via new editor in Config Studio

## Application

SIMATIC WinCC is designed for visualization and operation of processes, production flows, machines and plants. With its powerful process interface, especially to the SIMATIC family, and the secure data archiving, WinCC enables highly available solutions for the process control.

The sector-neutral basic system enables universal usage in all automation applications. Sector-specific solutions can, for example, be implemented using WinCC options (e.g. FDA options for the pharmaceutical industry) and sector-specific add-ons (e.g. for the water industry).

## Design

SIMATIC WinCC is available as a complete package and as a runtime package with 128, 512, 2 048, 8 192, 65 536, 102 400, 153 600, 262 144 PowerTags. PowerTags are data points that are connected to controllers or other data sources over a WinCC channel. Up to 32 alarms can be obtained from one data point. Moreover, internal tags without coupling are available for additional system performance. In addition WinCC also contains 512 archive tags. Additional archive licenses can be obtained for larger quantity structures.

### *Licenses for a multi-user configuration*

The system software with the required number of PowerTags and additionally the option WinCC/Server must be installed on the WinCC server. In the basic configuration, one RT Client License is sufficient for the WinCC Clients 1).
An RC Client License is required to configure on clients 1).
Remote configuration is possible if WinCC Clients without their own project (Uni Client) are configured on the server project.

1) The SQL Server Express is installed for RT / RC Clients.

## Function

The powerful configuration functions of SIMATIC WinCC contribute to a reduced engineering and training overhead and lead to a more flexible use of personnel and greater operational reliability.

Anyone familiar with Microsoft Windows can also operate the WinCC Explorer, the central switching point of WinCC. Even large quantities of data can be processed intuitively and efficiently with the WinCC Configuration Studio.

In combination with other SIMATIC components, the system is also equipped with auxiliary functions, such as process diagnostics and maintenance. All SIMATIC engineering tools work together in the configuration of the functions.

SIMATIC WinCC offers a complete basic functionality for process visualization and operation. To this end WinCC has a number of editors and interfaces that can be used to individually configure this functionality according to the respective application. Expansions of a WinCC station for control tasks are also possible with minimal engineering effort.

| WinCC editors | Task or configurable runtime functionality |
|---|---|
| WinCC Explorer | Central project management for the quick access to all project data and central settings |
| WinCC Graphics Designer | Graphics system for user-defined visualization and operation via pixel-graphic objects |
| WinCC Configuration Studio | Alarm Logging<br>Signaling system for detecting and archiving events with display and control options based on DIN 19235; freely selectable message classes, message display and logging<br>WinCC Tag Logging<br>Process archiving for the acquisition, compression and storage of measured values, e.g. presentation in trend and table format as well as further processing<br>WinCC User Administrator<br>For managing users and authorizations |
| WinCC Report Designer | Reporting and logging system for time and event-controlled documentation of messages, operator inputs and current process data in the form of user reports or project documentation in an arbitrary layout |
| WinCC Global Script | Processing functions with limitless functionality by means of the use of VBScript and ANSI-C |

### *Interfaces*

| | Task or configurable runtime functionality |
|---|---|
| Communication channels | Communication with lower-level controls (SIMATIC protocols, PROFIBUS DP and OPC server included in scope of supply) |
| Standard interfaces | Facilitate the open integration of other Windows applications via WinCC, WinCC OLE DB, ActiveX, OLE, OPC etc. |
| Programming interfaces | For the individual access to data and functions of WinCC and for the integration in user programs with VBA, VB Script, C-API (ODK), C-Script (ANSI-C) |

## Integration

### *Integration in company-wide solutions (IT and business integration)*

WinCC is based on Microsoft technology, which ensures openness and integration capability. ActiveX and .net controls facilitate technology-specific and industry-specific expansions. Cross-manufacturer communication is also possible since WinCC can be used as an OPC client and server in addition to accessing current process values and supporting standards such as OPC HDA (Historical Data Access), OPC Alarm & Events, OPC XML Data Access, and OPC UA.

Just as important: Visual Basic for Applications (VBA) is available for user-specific expansions in engineering, and Visual Basic Scripting (VBS) as an easy-to-learn, open, runtime language. If desired, professional application developers can also use ANSI-C. The Open Development Kit (ODK) simplifies access to the API programming interfaces.

WinCC integrates a powerful and scalable archiving feature using database technology This provides the user with a variety of options: from high-performance archiving of current process data, to long-term archiving with high data compression, through to a connection to the central information hub in the form of a company-wide Process Historian. Versatile clients and tools for evaluation, the open interfaces, and special options (Connectivity Pack, Connectivity Station, IndustrialDataBridge) provide the basis for effective IT and business integration.

WinCC offers various security mechanisms, such as encrypted communication, to ensure secure operation of the plant. If external networks are accessed, for example, suitable protective measures (incl. IT security measures, such as network segmentation) should still also be taken.

You can find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

### *Integration in automation solutions*

WinCC is an open process visualization system and provides the option to connect the most diverse control systems.

### Approved communication software

Use communication software with the listed product versions. Corresponding SIMATIC NET upgrades are available for upgrading older versions.

### Number of connectable controllers

For the number of controllers which can be connected via Industrial Ethernet CP 1613, the following applies to a message frame length of 512 bytes:

| Type of connection | Number of nodes |
|---|---|
| SIMATIC S5 Ethernet Layer 4 + TCP/IP | Up to 60 |
| SIMATIC S7 Protocol Suite | Up to 64 |
| SIMATIC 505 Ethernet Layer 4 + TCP/IP | Up to 60 |
| SIMATIC S7-1200/1500 Channel | Up to 128 |

Via PROFIBUS, a maximum of 8 controllers can be connected with CP 5612, and a maximum of 44 controllers with CP 5613. Industrial Ethernet is recommended when 10 or more controllers are used.

### Mixed operation with different controllers

With their multi-protocol stack, the CP 1613 and CP 5613 communication processors enable the parallel operation of two protocols, such as for the mixed operation of different controllers, via a single bus cable.

WinCC supports the operation of two similar interface boards only in connection with the channels SIMATIC S5 Ethernet Layer 4 (2 x CP 1613), SIMATIC S7 Protocol Suite (2 x CP 1613, 2 x CP 5613) as well as PROFIBUS DP (4 x CP 5613; max. 122 slaves for each CP 5613). In addition to communication via Industrial Ethernet CP 1613 or PROFIBUS CP 5613, one CP 5612/5622 can be used in each case for communication with SIMATIC S7 via MPI.

### Client-server communication

Communication between the clients and the server is via TCP/IP protocol. Setting up a separate PC LAN is recommended. For small projects with a correspondingly low incidence of message frames, SIMATIC NET Industrial Ethernet communication can be used for both process communication (WinCC/server ↔ PLC) and PC-PC communication (WinCC/client ↔ WinCC/server).

### Channel DLL PROFIBUS DP

In accordance with the PROFIBUS standard, DP/slaves are always permanently assigned to a DP master; i.e. a second WinCC station (DP/master) cannot access the same controllers (DP/slaves). This means that redundant operation of two WinCC stations is not possible using the PROFIBUS DP connection.

**Integration** (continued)

***Connection to controllers from other manufacturers:***

If a native driver is not available, OPC or OPC UA is available for connection to third-party controllers.

Current notes and information about OPC servers from various suppliers can be found at:

http://www.opcfoundation.org

WinCC supports the standards:

- OPC Data Access 2.05a
- OPC Data Access 3.00
- OPC UA 1.02
- OPC UA HA 1.20
- OPC UA Alarms and Conditions 1.20
- OPC Historical Alarms and Events 1.10
- OPC XML Data Access 1.01 (Connectivity Pack/ Connectivity Station)
- OPC HDA 1.20 (Connectivity Pack/Connectivity Station)
- OPC A&E 1.10 (Connectivity Pack/Connectivity Station)
- OPC UA Client Data Access
- OPC UA Server Data Access, HDA, Alarm & Condition (Connectivity Pack/Connectivity Station)

***Connection overview***

| Protocol | Description |
|---|---|
| **SIMATIC S7** | |
| SIMATIC S7 Protocol Suite | Channel DLL for S7 functions via MPI, PROFIBUS or Ethernet Layer 4 + TCP/IP |
| **SIMATIC S5** | |
| SIMATIC S5 Ethernet Layer 4 | Channel DLL for S5 Layer 4 communication + TCP/IP |
| SIMATIC S5 Programmer Port AS511 | Channel DLL and driver for serial communication with S5 using AS511 protocol to programmers port |
| SIMATIC S5 Serial 3964R | Channel DLL and driver for serial communication with S5 using RK512 protocol |
| SIMATIC S5 PROFIBUS-FDL | Channel DLL for S5-FDL |
| **SIMATIC 505** | |
| SIMATIC 505 Serial | Channel DLL and driver for serial communication with 505 using NITP/TBP protocol to SIMATIC 535/545/555/565/575 |
| SIMATIC 505 Ethernet Layer 4 | Channel DLL for 505 Layer 4 communication |
| SIMATIC 505 TCP/IP | Channel DLL for 505 TCP/IP communication |
| **SIMATIC S7-1200, S7-1500** | |
| SIMATIC S7-1200, S7-1500 Channel | Channel DLL for S7-1200 and S7-1500 communication |
| **Third-party controllers** | |
| Allen Bradley Ethernet IP | Channel DLL and drivers for communication with Allen Bradley controllers via Ethernet TCP/IP using Ethernet IP protocol |
| Modbus TCP/IP | Channel DLL and drivers for communication with Modicon controllers via Ethernet TCP/IP using Modbus TCP/IP protocol |
| Mitsubishi MC TCP/IP | Channel DLL and drivers for communication with Mitsubishi controllers via Ethernet TCP/IP using Mitsubishi MC TCP/IP protocol |
| **Cross-manufacturer** | |
| OPC client for DA, XML DA | Channel DLL for OPC communication; WinCC can acquire data from OPC server applications |
| OPC server for DA, XML DA, A&C | Channel DLL for OPC communication; WinCC can acquire data from OPC server applications |
| OPC server for DA, XML DA, A&E, HDA | Server applications for OPC communication; WinCC provides process data to OPC clients |
| OPC UA server for DA, HDA, A&C | Server applications for OPC UA communication |
| PROFIBUS DP | Channel DLL for PROFIBUS DP |
| SIMOTION | Channel DLL for SIMOTION |

Application note:

Parallel usage of the OPC client channel allows, for example, connection to an SNMP OPC server for visualization of the data contained there. The SNMP OPC server enables monitoring of any network components (such as switches) that support the SNMP protocol. You can find more information under SIMATIC NET Communications Systems/SNMP OPC Server.

## **Integration** (continued)

### *PG/PC communication components for SIMATIC (for WinCC V7.5 SP1)*

| Industrial Ethernet | SIMATIC S5 Ethernet Layer 4 | SIMATIC S5 TCP/IP | SIMATIC S7 Protocol Suite | SIMATIC 505 Ethernet Layer 4 | SIMATIC 505 TCP/IP 1) | Article No. |
|---|---|---|---|---|---|---|
| **WinCC – channel DLL** | | | | | | |
| **SIMATIC S5 Ethernet Layer 4**<br>Channel DLL for S5 Layer 4 communication + TCP/IP | ● | ● | | | | Included in the basic package |
| **SIMATIC S7 Protocol Suite**<br>Channel DLL for S7 functions | | | ● | | | Included in the basic package |
| **SIMATIC 505 Ethernet Layer 4**<br>Channel DLL for 505 Layer 4 communication | | | | ● | | Included in the basic package |
| **SIMATIC 505 TCP/IP** 1)<br>Channel DLL for 505 TCP/IP communication | | | | | ● | Included in the basic package |
| **Communication components for extension of the OS/OP** | | | | | | |
| **CP 1612 A2**<br>PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 or SOFTNET-S7 Lean communication software must be ordered separately) | | ● | ● | | ● | **6GK1161-2AA01** |
| **SOFTNET-IE S7**<br>Communication software for S7 functions (max. 64 connections)<br>Version 16 2)3) | | ● | ● | | | **6GK1704-1CW16-0AA0** |
| **SOFTNET-IE S7 Lean**<br>Communication software for S7 functions (max. 8 connections)<br>Version 16 2)3) | | ● | ● | | | **6GK1704-1LW16-0AA0** |
| **CP 1623**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required) | ● | ● | ● | ● | ● | **6GK1162-3AA00** |
| **CP 1628**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (HARDNET-IE S7 / S7-1613 communication software required) | ● | ● | ● | ● | ● | **6GK1162-8AA00** |
| **HARDNET-IE S7 / S7-1613**<br>Communication software for S7 functions, OPC, PG/OP communication<br>Version 16 2)3) | ● | ● | ● | ● | | **6GK1716-1CB16-0AA0** |

● System interface possible

1) Via any interface board with NDIS 3.0 interface; no separate communication software required

2) See ordering data for SIMATIC NET upgrade packages

3) SIMATIC NET Version V15 + V16 is supplied together with WinCC V7.5 SP1

4) SOFTNET-S7 Lean included in scope of supply of WinCC V7.5 SP1

## Integration (continued)

### *Communications components for PG/PC for SIMATIC (for WinCC V7.4 SP1)*

| Industrial Ethernet | SIMATIC S5 Ethernet Layer 4 | SIMATIC S5 TCP/IP | SIMATIC S7 Protocol Suite | SIMATIC 505 Ethernet Layer 4 | SIMATIC 505 TCP/IP [1] | Article No. |
|---|---|---|---|---|---|---|
| WinCC – channel DLL | | | | | | |
| **SIMATIC S5 Ethernet Layer 4**<br>Channel DLL for S5 Layer 4 communication + TCP/IP | ● | ● | | | | Included in the basic package |
| **SIMATIC S7 Protocol Suite**<br>Channel DLL for S7 functions | | | ● | | | Included in the basic package |
| **SIMATIC 505 Ethernet Layer 4**<br>Channel DLL for 505 Layer 4 communication | | | | ● | | Included in the basic package |
| **SIMATIC 505 TCP/IP** [1]<br>Channel DLL for 505 TCP/IP communication | | | | | ● | Included in the basic package |
| Communication components for extension of the OS/OP | | | | | | |
| **CP 1612 A2**<br>PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 or SOFTNET-S7 Lean communication software must be ordered separately) | | ● | ● | | ● | **6GK1161-2AA01** |
| **SOFTNET-IE S7**<br>Communication software for S7 functions (max. 64 connections)<br>• Version 14 SP1 [2][3]<br>For Windows 7 SP1 Prof./Ult. (32/64-bit)<br>Windows 8.1 PRO (64-bit)<br>Windows 10 Server 2008 R2 SP1<br>Server 2012 R2 (64-bit) | | ● | ● | | | **6GK1704-1CW14-0AA0** |
| **SOFTNET-IE S7 Lean**<br>Communication software for S7 functions (max. 8 connections)<br>• Version 14 SP1 [2][3]<br>For Windows 7 SP1 Prof./Ult. (32/64-bit)<br>Windows 8.1 PRO (64-bit)<br>Windows 10 Server 2008 R2 SP1<br>Server 2012 R2 (64-bit) | | ● | ● | | | **6GK1704-1LW14-0AA0** |
| **CP 1623**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required) | ● | ● | ● | ● | ● | **6GK1162-3AA00** |
| **CP 1628**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (HARDNET-IE S7 / S7-1613 communication software required) | ● | ● | ● | ● | ● | **6GK1162-8AA00** |
| **HARDNET-IE S7 / S7-1613**<br>communication software for S7 functions, OPC, PG/OP communication<br>• Version 13 SP2 [2][3]<br>for Windows 7 SP1 (32/64-bit),<br>Windows 8.1 (32/64-bit),<br>Windows 2008 R2 SP1 Server,<br>Server 2012 R2 (64-bit), and<br>Windows 10 (64-bit) | ● | ● | ● | ● | | **6GK1716-1CB13-0AA0** |

● System interface possible

[1] Via any interface board with NDIS 3.0 interface; no separate communication software required

[2] See ordering data for SIMATIC NET upgrade packages

[3] SIMATIC NET Version V12 SP2 is supplied together with WinCC V7.4 SP1

[4] SOFTNET-S7 Lean included in scope of supply of WinCC V7.4 SP1

## **Integration** (continued)

### *PG/PC communication components for SIMATIC (for WinCC V7.5 SP1)*

| PROFIBUS | SIMATIC S5 PROFIBUS FDL | SIMATIC S7 Protocol Suite | PROFIBUS DP | PROFIBUS FMS | Article No. |
|---|---|---|---|---|---|
| **WinCC – channel DLL** | | | | | |
| **SIMATIC S5 PROFIBUS FDL**<br>Channel DLL for S5-FDL | • | | | | Included in the basic package |
| **SIMATIC S7 Protocol Suite**<br>Channel DLL for S7 functions | | • | | | Included in the basic package |
| **PROFIBUS DP**<br>Channel DLL for PROFIBUS DP | | | • | | Included in the basic package |
| **Communication components for extension of the OS/OP** | | | | | |
| **CP 5612** [2)]<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package) | | • | | | **6GK1561-2AA00** |
| **CP 5622** [2)]<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package) | | • | | | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter for connecting a PG/PC to PROFIBUS or MPI (communication software included in WinCC basic package) | | • | | | **6GK1571-1AA00** |
| **CP 5613 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (S7-5613, DP-5613 or FMS-5613 communication software required) | • | • | • | • | **6GK1561-3AA02** |
| **CP 5614 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communication software must be ordered separately) | • | • | • | • | **6GK1561-4AA02** |
| **CP 5623**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (**HARDNET PB S7** or **HARDNET PB DP** communication software required) | • | • | • | • | **6GK1562-3AA00** |
| **HARDNET PB S7**<br>Communication software for S7 functions + FDL | • | • | | | **6GK1713-5CB16-0AA0** |
| **HARDNET PB DP**<br>Communication software for DP master + FDL | • | | • | | **6GK1713-5DB16-0AA0** |

- System interface possible

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[1)] See ordering data for SIMATIC NET upgrade package

[2)] SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.4 SP1

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## **Integration** (continued)

### ***Communication components for PG/PC for SIMATIC (for WinCC V7.4 SP1)***

| PROFIBUS | SIMATIC S5 PROFIBUS FDL | SIMATIC S7 Protocol Suite | PROFIBUS DP | PROFIBUS FMS | Article No. |
|---|---|---|---|---|---|
| **WinCC – channel DLL** | | | | | |
| **SIMATIC S5 PROFIBUS FDL**<br>Channel DLL for S5-FDL | • | | | | Included in the basic package |
| **SIMATIC S7 Protocol Suite**<br>Channel DLL for S7 functions | | • | | | Included in the basic package |
| **PROFIBUS DP**<br>Channel DLL for PROFIBUS DP | | | • | | Included in the basic package |
| **Communication components for extension of the OS/OP** | | | | | |
| **CP 5612** 2)<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package) | | • | | | **6GK1561-2AA00** |
| **CP 5622** 2)<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package) | | • | | | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter for connecting a PG/PC to PROFIBUS or MPI (communication software included in WinCC basic package) | | • | | | **6GK1571-1AA00** |
| **CP 5613 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (S7-5613, DP-5613 or FMS-5613 communication software required) | • | • | • | • | **6GK1561-3AA02** |
| **CP 5614 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communication software must be ordered separately) | • | • | • | • | **6GK1561-4AA02** |
| **CP 5623**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (**HARDNET PB S7** or **HARDNET PB DP** communication software required) | • | • | • | • | **6GK1562-3AA00** |
| **HARDNET PB S7**<br>Communication software for S7 functions + FDL<br>• Version 8.2 SP1 1)2) For Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) | • | • | | | **6GK1713-5CB08-2AA0** |
| **HARDNET PB DP**<br>Communication software for DP master + FDL<br>• Version 8.2. SP1 1)2) For Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) | • | | • | | **6GK1713-5DB08-2AA0** |

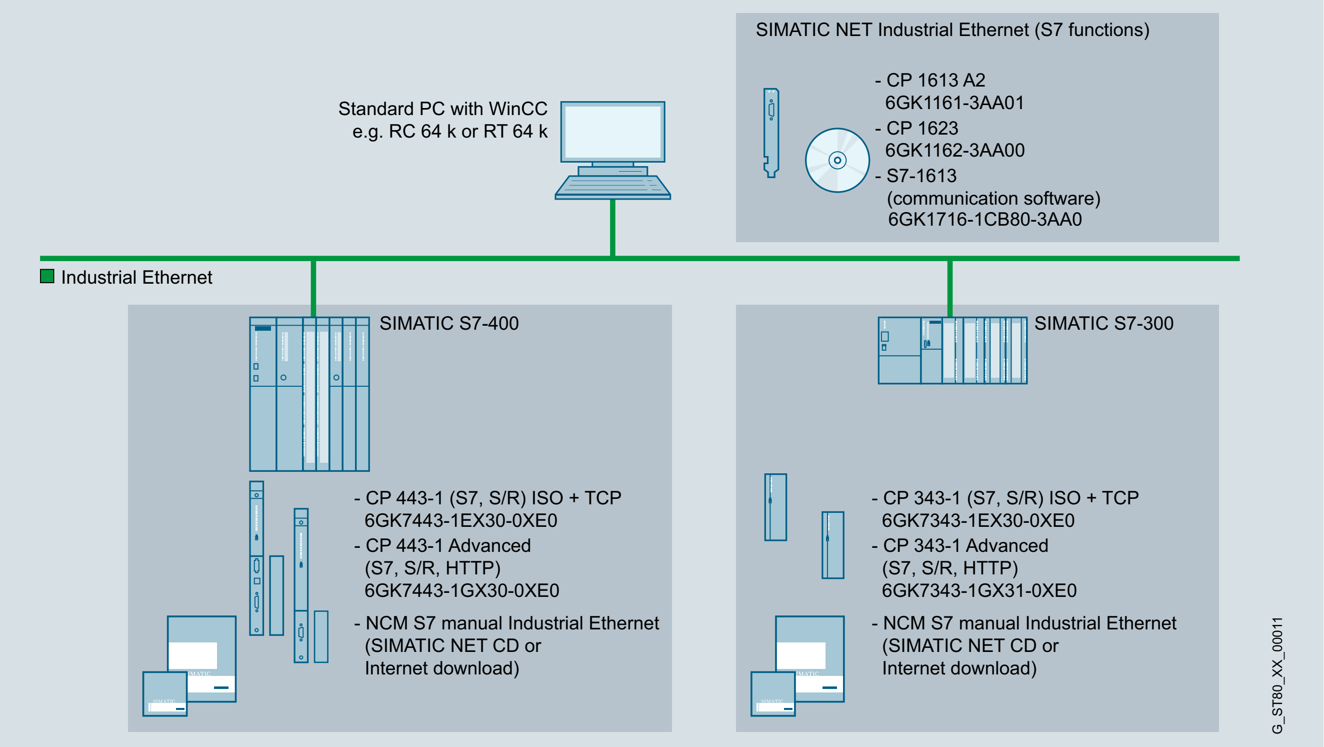
• System interface possible

1) See ordering data for SIMATIC NET upgrade package

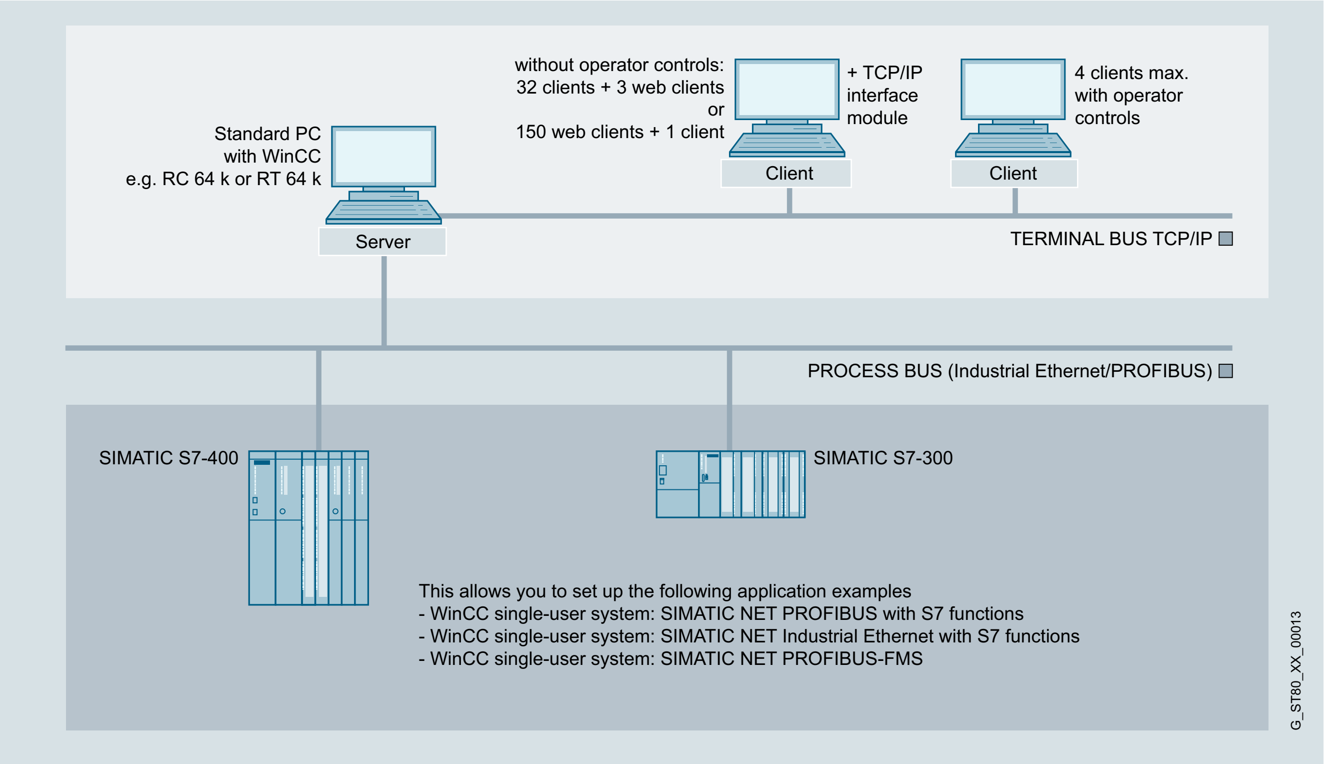
2) SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.4 SP1

## **Integration** (continued)

### ***Communication examples***


SIMATIC NET Industrial Ethernet (S7 functions)
- CP 1613 A2
6GK1161-3AA01
- CP 1623
6GK1162-3AA00
- S7-1613
(communication software)
6GK1716-1CB80-3AA0
Standard PC with WinCC
e.g. RC 64 k or RT 64 k
🟩 Industrial Ethernet
SIMATIC S7-400
- CP 443-1 (S7, S/R) ISO + TCP
6GK7443-1EX30-0XE0
- CP 443-1 Advanced
(S7, S/R, HTTP)
6GK7443-1GX30-0XE0
- NCM S7 manual Industrial Ethernet
(SIMATIC NET CD or
Internet download)
SIMATIC S7-300
- CP 343-1 (S7, S/R) ISO + TCP
6GK7343-1EX30-0XE0
- CP 343-1 Advanced
(S7, S/R, HTTP)
6GK7343-1GX31-0XE0
- NCM S7 manual Industrial Ethernet
(SIMATIC NET CD or
Internet download)
G_ST80_XX_00011

WinCC single-user system: Industrial Ethernet with S7 communication


without operator controls:
32 clients + 3 web clients
or
150 web clients + 1 client
+ TCP/IP
interface
module
4 clients max.
with operator
controls
Standard PC
with WinCC
e.g. RC 64 k or RT 64 k
Client
Client
Server
TERMINAL BUS TCP/IP
PROCESS BUS (Industrial Ethernet/PROFIBUS)
SIMATIC S7-400
SIMATIC S7-300
This allows you to set up the following application examples
- WinCC single-user system: SIMATIC NET PROFIBUS with S7 functions
- WinCC single-user system: SIMATIC NET Industrial Ethernet with S7 functions
- WinCC single-user system: SIMATIC NET PROFIBUS-FMS
G_ST80_XX_00013

WinCC: Multi-user system with operable server

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## Technical specifications

| **Type** | **SIMATIC WinCC V7.5 SP1** |
|---|---|
| **PC hardware requirements** | |
| **Processor type** | |
| • Minimum | Single-user station/server: Dual-core; 2.5 GHz |
| | Client: Dual-core; 2.5 GHz |
| • Recommended | Single-user station/server: Multi-core; 3.5 GHz |
| | Client: Multi-core; 3 GHz [2] |
| **Work memory RAM** | |
| • Minimum | Windows 10 (64-bit)<br>• Single-user station/server: 4 GB<br>• Client: 2 GB |
| | Windows Server 2012 R2,<br>Windows Server 2016,<br>Windows Server 2019<br>Server: 4 GB |
| • Recommended | Windows 10 (64-bit)<br>• Single-user station/server: 4 GB<br>• Client: 4 GB |
| | Windows Server 2012 R2,<br>Windows Server 2016,<br>Windows Server 2019<br>Server: 8 GB |
| **Graphics resolution** | |
| • Minimum | 800 x 600 |
| • Recommended | 1 920 x 1 080 |
| **Hard disk** | |
| • Minimum | Single-user station/server: 80 GB |
| | Client: 20 GB |
| | WebClient/DataMonitor Client: 5 GB |
| • Recommended | Single-user station/server: 160 GB |
| | Client: 40 GB |
| | WebClient/DataMonitor Client: 10 GB |
| **DVD-ROM/USB interface** | For software installation and license transfer |

| **Type** | **SIMATIC WinCC V7.5** |
|---|---|
| **Functionality/quantity structure** | |
| Number of messages | 150 000 |
| • Message text (number of characters) | 10 x 256 |
| • Message archive | System-limited [1] |
| • Process values per message | 10 |
| • Constant load of messages, max. | Server/single-user station: 10/s |
| • Message burst, max. | Server/single-user station:<br>2 000/10 s every 5 min |
| Archive | |
| • Archive data points | Max. 80 000 per server [2] |
| • Archive types | Short-term archive with and without long-term archiving |
| • Data storage format | Microsoft SQL Server 2016 SP2 |
| • Measured values per second | Server/single-user station: up to 30 000/s [4] |
| User archive | |
| • Total archives | No limit |
| • Fields per user archive | 500 (maximum number of 1 000 000 fields) |
| • Data records per user archive | 10 000 |
| • User archive views | No limit |
| Graphics system | |
| • Number of screens | System-limited [1] |
| • Number of objects per screen | System-limited [1] |
| • Number of controllable fields per screen | System-limited [1] |
| PowerTags | 256 K [3] |
| Trends | |
| • Trend views per image | 25 |
| • Trends per trend view | 80 |
| User administration | |
| • User groups | 128 |
| • Number of users | 128 |
| • Authorization groups | 999 |
| Configuration languages | 5 European (en, de, fr, it, es),<br>4 Asian (zh-CN, zh-TW, ko, ja) |
| Protocols | |
| • Message sequence reports (simultaneously) | 1 per server/single-user station |
| • Message archive reports (simultaneously) | 3 |
| • User reports | System-limited [1] |
| • Report lines per group | 66 |
| • Tags per report | 300 [5] |
| Multi-user system | |
| • Server | 18 |
| • Uni Client (without its own project) | Max. 64 |
| • Multi-Client (with its own project) | Max. 50 |

[1] Dependent on available storage space

[2] Dependent on number of licensed archive tags (ArchiveTags)

[3] Dependent on the number of licensed PowerTags

[4] Dependent on system performance, especially of hard disk (SSD/RAID recommended)

[5] Number of variables per report depends on process communication performance

| **Ordering data** | **Article No.** |
|---|---|
| ***SIMATIC WinCC system software*** | |
| ***V7.5 SP1*** | |
| **Runtime packages on DVD** | |
| Incl. 512 archive tags each;<br>language/script versions:<br>en, de, fr, it, es;<br>with license for | |
| • WinCC RT Client | **6AV6381-2CA07-5AX0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-5AX0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-5AX0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-5AX0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-5AX0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-5AX0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-5AX0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-5AX0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-5AX0** |
| As download | |
| • WinCC RT Client | **6AV6381-2CA07-5AH0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-5AH0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-5AH0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-5AH0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-5AH0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-5AH0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-5AH0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-5AH0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-5AH0** |
| **Complete packages on DVD** | |
| Language versions:<br>en, de, fr, it, es;<br>with license for | |
| • WinCC RC Client | **6AV6381-2CB07-5AX0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-5AX0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-5AX0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-5AX0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-5AX0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-5AX0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-5AX0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-5AX0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-5AX0** |
| As download | |
| • WinCC RC Client | **6AV6381-2CB07-5AH0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-5AH0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-5AH0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-5AH0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-5AH0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-5AH0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-5AH0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-5AH0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-5AH0** |

| | **Article No.** |
|---|---|
| ***V7.5 SP1 ASIA*** | |
| **Runtime packages on DVD** | |
| Language/script versions:<br>en, zh-CN, zh-TW, ko, ja;<br>with license for | |
| • WinCC RT Client | **6AV6381-2CA07-5AV0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-5AV0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-5AV0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-5AV0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-5AV0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-5AV0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-5AV0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-5AV0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-5AV0** |
| **Complete packages on DVD** | |
| Language versions:<br>en, zh-CN, zh-TW, ko, ja;<br>with license for | |
| • WinCC RC Client | **6AV6381-2CB07-5AV0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-5AV0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-5AV0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-5AV0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-5AV0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-5AV0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-5AV0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-5AV0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-5AV0** |
| ***V7.5 SP1 powerpacks*** | |
| **For upgrading from:** | |
| **Runtime packages** | |
| • 128 to 512 PowerTags | **6AV6371-2BD07-5AX0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG07-5AX0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM07-5AX0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN07-5AX0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP07-5AX0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ07-5AX0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR07-5AX0** |
| As download | |
| • 128 to 512 PowerTags | **6AV6371-2BD07-5AJ0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG07-5AJ0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM07-5AJ0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN07-5AJ0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP07-5AJ0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ07-5AJ0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR07-5AJ0** |
| **Complete packages** | |
| • 128 to 512 PowerTags | **6AV6371-2BD17-5AX0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG17-5AX0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM17-5AX0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN17-5AX0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP17-5AX0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ17-5AX0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR17-5AX0** |
| As download | |
| • 128 to 512 PowerTags | **6AV6371-2BD17-5AJ0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG17-5AJ0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM17-5AJ0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN17-5AJ0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP17-5AJ0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ17-5AJ0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR17-5AJ0** |

## Ordering data

| | Article No. |
|---|---|
| *V7.5 SP1 archive* | |
| • 1 500 archive tags (countable) | **6AV6371-1DQ17-5AX0** |
| • 5 000 archive tags (countable) | **6AV6371-1DQ17-5BX0** |
| • 10 000 archive tags (countable) | **6AV6371-1DQ17-5CX0** |
| • 30 000 archive tags (countable) | **6AV6371-1DQ17-5EX0** |
| As download | |
| • 1 500 archive tags (countable) | **6AV6371-1HQ17-5AX0** |
| • 5 000 archive tags (countable) | **6AV6371-1HQ17-5BX0** |
| • 10 000 archive tags (countable) | **6AV6371-1HQ17-5CX0** |
| • 30 000 archive tags (countable) | **6AV6371-1HQ17-5EX0** |
| ***SIMATIC WinCC software packages*** | |
| **SIMATIC WinCC V7.5 SP1 runtime** | |
| • WinCC RT Client | **6AV6382-2AA07-5AX0** |
| • 128 PowerTags | **6AV6382-2CA07-5AX0** |
| • 512 PowerTags | **6AV6382-2DA07-5AX0** |
| • 2 048 PowerTags | **6AV6382-2EA07-5AX0** |
| • 8 192 PowerTags | **6AV6382-2HA07-5AX0** |
| • 65 536 PowerTags | **6AV6382-2FA07-5AX0** |
| **SIMATIC WinCC V7.5 SP1 runtime ASIA** | |
| • WinCC RT Client | **6AV6382-2AA07-5AV0** |
| • 128 PowerTags | **6AV6382-2CA07-5AV0** |
| • 512 PowerTags | **6AV6382-2DA07-5AV0** |
| • 2 048 PowerTags | **6AV6382-2EA07-5AV0** |
| • 8 192 PowerTags | **6AV6382-2HA07-5AV0** |
| • 65 536 PowerTags | **6AV6382-2FA07-5AV0** |
| ***SIMATIC WinCC Upgrades/ Software Update Service*** | |
| **SIMATIC WinCC V7.5 SP1 upgrade** [1] | |
| **For upgrading the RT version** | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2AA07-5AX3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2AA07-5AX4** |
| • From V7.2/7.3 ASIA to V7.5 SP1 ASIA [2] | **6AV6381-2AA07-5AV3** |
| • From V7.4 ASIA to V7.5 SP1 ASIA [2] | **6AV6381-2AA07-5AV4** |
| As download | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2AA07-5AK3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2AA07-5AK4** |
| **For upgrading the RC version** | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2AB07-5AX3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2AB07-5AX4** |
| • From V7.2/7.3 ASIA to V7.5 SP1 ASIA [2] | **6AV6381-2AB07-5AV3** |
| • From V7.4 ASIA to V7.5 SP1 ASIA [2] | **6AV6381-2AB07-5AV4** |
| As download | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2AB07-5AK3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2AB07-5AK4** |
| **For upgrading the Client RT version** | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2CA07-5AX3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2CA07-5AX4** |
| • From V7.2/7.3 ASIA to V7.5 SP1 ASIA | **6AV6381-2CA07-5AV3** |
| • From V7.5 ASIA to V7.5 SP1 ASIA | **6AV6381-2CA07-5AV4** |
| As download | |
| • From V7.2/7.3 to V7.5 SP1 | **6AV6381-2CA07-5AK3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2CA07-5AK4** |
| **For upgrading the Client RC version** | |
| • From V7.2/7.3 to V7.4 SP1 | **6AV6381-2CB07-5AX3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2CB07-5AX4** |
| • From V7.2/7.3 ASIA to V7.5 SP1 ASIA | **6AV6381-2CB07-5AV3** |
| • From V7.4 ASIA to V7.5 SP1 ASIA | **6AV6381-2CB07-5AV4** |
| As download | |
| • From V7.2/7.3 to V7.4 SP1 | **6AV6381-2CB07-4AK3** |
| • From V7.4 to V7.5 SP1 | **6AV6381-2CB07-5AK4** |
| **SIMATIC WinCC Software Update Service (SUS)** [3] [4] [5] | |
| **SIMATIC WinCC V7 Update** | |
| Software Update Service for WinCC basic software and options: | |
| • 1 license | **6AV6381-1AA00-0AX5** |
| • 3 licenses | **6AV6381-1AA00-0BX5** |
| • 10 licenses | **6AV6381-1AA00-0CX5** |
| As download | |
| • 1 license | **6AV6381-1KA00-0AX5** |
| • 3 licenses | **6AV6381-1KA00-0BX5** |
| • 10 licenses | **6AV6381-1KA00-0CX5** |

[1] According to licensing provisions, 1 upgrade package must be ordered for each WinCC station

[2] Upgrading from V7.X RT/RC ASIA to V7.5 ASIA is carried out using the "respective non-Asia package"

[3] The Software Update Service is valid for 1 year. The contract is automatically extended by 1 more year unless canceled 3 months prior to expiration. According to licensing provisions, 1 Software Update Service must be ordered for each WinCC station.

[4] Requires the current software version

[5] SUS is available as download

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## Ordering data

| | Article No. |
|---|---|
| *SIMATIC WinCC system software* | |
| *V7.4 SP1* | |
| **Runtime packages on DVD** | |
| Incl. 512 archive tags each;<br>language/script versions:<br>en, de, fr, it, es;<br>with license for | |
| • WinCC RT Client | **6AV6381-2CA07-4AX0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-4AX0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-4AX0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-4AX0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-4AX0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-4AX0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-4AX0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-4AX0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-4AX0** |
| As download | |
| • WinCC RT Client | **6AV6381-2CA07-4AH0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-4AH0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-4AH0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-4AH0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-4AH0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-4AH0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-4AH0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-4AH0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-4AH0** |
| **Complete packages on DVD** | |
| Language versions:<br>en, de, fr, it, es;<br>with license for | |
| • WinCC RC Client | **6AV6381-2CB07-4AX0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-4AX0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-4AX0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-4AX0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-4AX0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-4AX0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-4AX0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-4AX0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-4AX0** |
| As download | |
| • WinCC RC Client | **6AV6381-2CB07-4AH0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-4AH0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-4AH0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-4AH0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-4AH0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-4AH0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-4AH0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-4AH0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-4AH0** |

| | Article No. |
|---|---|
| *V7.4 SP1 ASIA* | |
| **Runtime packages on DVD** | |
| Incl. 512 archive tags each;<br>language/script versions:<br>en, zh-CN, zh-TW, ko, ja;<br>with license for | |
| • WinCC RT Client | **6AV6381-2CA07-4AV0** |
| • 128 PowerTags (RT 128) | **6AV6381-2BC07-4AV0** |
| • 512 PowerTags (RT 512) | **6AV6381-2BD07-4AV0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6381-2BE07-4AV0** |
| • 8 192 PowerTags (RT 8 192) | **6AV6381-2BH07-4AV0** |
| • 65 536 PowerTags (RT 65 536) | **6AV6381-2BF07-4AV0** |
| • 102 400 PowerTags (RT 102 400) | **6AV6381-2BJ07-4AV0** |
| • 153 600 PowerTags (RT 153 600) | **6AV6381-2BK07-4AV0** |
| • 262 144 PowerTags (RT 262 144) | **6AV6381-2BL07-4AV0** |
| **Complete packages on DVD** | |
| Language versions:<br>en, zh-CN, zh-TW, ko, ja;<br>with license for | |
| • WinCC RC Client | **6AV6381-2CB07-4AV0** |
| • 128 PowerTags (RC 128) | **6AV6381-2BM07-4AV0** |
| • 512 PowerTags (RC 512) | **6AV6381-2BN07-4AV0** |
| • 2 048 PowerTags (RC 2 048) | **6AV6381-2BP07-4AV0** |
| • 8 192 PowerTags (RC 8 192) | **6AV6381-2BS07-4AV0** |
| • 65 536 PowerTags (RC 65 536) | **6AV6381-2BQ07-4AV0** |
| • 102 400 PowerTags (RC 102 400) | **6AV6381-2BT07-4AV0** |
| • 153 600 PowerTags (RC 153 600) | **6AV6381-2BU07-4AV0** |
| • 262 144 PowerTags (RC 262 144) | **6AV6381-2BV07-4AV0** |
| *V7.4 SP1 Powerpacks* | |
| **For upgrading from:** | |
| **Runtime packages** | |
| • 128 to 512 PowerTags | **6AV6371-2BD07-4AX0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG07-4AX0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM07-4AX0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN07-4AX0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP07-4AX0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ07-4AX0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR07-4AX0** |
| As download | |
| • 128 to 512 PowerTags | **6AV6371-2BD07-4AJ0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG07-4AJ0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM07-4AJ0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN07-4AJ0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP07-4AJ0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ07-4AJ0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR07-4AJ0** |
| **Complete packages** | |
| • 128 to 512 PowerTags | **6AV6371-2BD17-4AX0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG17-4AX0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM17-4AX0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN17-4AX0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP17-4AX0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ17-4AX0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR17-4AX0** |
| As download | |
| • 128 to 512 PowerTags | **6AV6371-2BD17-4AJ0** |
| • 512 to 2 048 PowerTags | **6AV6371-2BG17-4AJ0** |
| • 2 048 to 8 192 PowerTags | **6AV6371-2BM17-4AJ0** |
| • 8 192 to 65 536 PowerTags | **6AV6371-2BN17-4AJ0** |
| • 65 536 to 102 400 PowerTags | **6AV6371-2BP17-4AJ0** |
| • 102 400 to 153 600 PowerTags | **6AV6371-2BQ17-4AJ0** |
| • 153 600 to 262 144 PowerTags | **6AV6371-2BR17-4AJ0** |

| Ordering data | Article No. |
|---|---|
| *V7.4 SP1 archives* | |
| • 1 500 archive tags (countable) | **6AV6371-1DQ17-4AX0** |
| • 5 000 archive tags (countable) | **6AV6371-1DQ17-4BX0** |
| • 10 000 archive tags (countable) | **6AV6371-1DQ17-4CX0** |
| • 30 000 archive tags (countable) | **6AV6371-1DQ17-4EX0** |
| As download | |
| • 1 500 archive tags (countable) | **6AV6371-1HQ17-4AX0** |
| • 5 000 archive tags (countable) | **6AV6371-1HQ17-4BX0** |
| • 10 000 archive tags (countable) | **6AV6371-1HQ17-4CX0** |
| • 30 000 archive tags (countable) | **6AV6371-1HQ17-4EX0** |
| *SIMATIC WinCC Upgrades/ Software Update Service* | |
| *SIMATIC WinCC V7.4 SP1 Upgrade* [1] | |
| **For upgrading the RT version** | |
| • From V7.X to V7.4 SP1 | **6AV6381-2AA07-4AX3** |
| • From V7.X ASIA to V7.4 SP1 ASIA [2] | **6AV6381-2AA07-4AV3** |
| As download | |
| • From V7.X to V7.4 SP1 | **6AV6381-2AA07-4AK3** |
| **For upgrading the RC version** | |
| • From V7.X to V7.4 SP1 | **6AV6381-2AB07-4AX3** |
| • From V7.X ASIA to V7.4 SP1 ASIA [2] | **6AV6381-2AB07-4AV3** |
| As download | |
| • From V7.X to V7.4 SP1 | **6AV6381-2AB07-4AK3** |
| **For upgrading the Client RT version** | |
| • From V7.X to V7.4 SP1 | **6AV6381-2CA07-4AX3** |
| • From V7.X ASIA to V7.4 SP1 ASIA | **6AV6381-2CA07-4AV3** |
| As download | |
| • From V7.X to V7.4 SP1 | **6AV6381-2CA07-4AK3** |
| **For upgrading the Client RC version** | |
| • From V7.X to V7.4 SP1 | **6AV6381-2CB07-4AX3** |
| • From V7.X ASIA to V7.4 SP1 ASIA | **6AV6381-2CB07-4AK3** |
| As download | |
| • From V7.X to V7.4 SP1 | **6AV6381-2CB07-4AV3** |
| **SIMATIC WinCC Software Update Service (SUS)** [3,4,5] | |
| **SIMATIC WinCC V7 Update** | |
| Software Update Service for WinCC basic software and options: | |
| • 1 license | **6AV6381-1AA00-0AX5** |
| • 3 licenses | **6AV6381-1AA00-0BX5** |
| • 10 licenses | **6AV6381-1AA00-0CX5** |
| As download | |
| • 1 license | **6AV6381-1KA00-0AX5** |
| • 3 licenses | **6AV6381-1KA00-0BX5** |
| • 10 licenses | **6AV6381-1KA00-0CX5** |

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[1] According to licensing provisions, 1 upgrade package must be ordered for each WinCC station

[2] Upgrading from V7.X RT/RC ASIA is carried out using the "respective non-ASIA package"

[3] The Software Update Service is valid for 1 year. The contract is automatically extended by 1 more year unless canceled 3 months prior to expiration. According to licensing provisions, 1 Software Update Service must be ordered for each WinCC station.

[4] Requires the current software version

[5] SUS is available as download

| | Article No. |
|---|---|
| *SIMATIC WinCC V7.5 SP1 communication* | |
| *Communication via Industrial Ethernet / PROFIBUS* | |
| **CP 1612 A2**<br>PCI card (32-bit) for connection of a PG/PC to Industrial Ethernet (10/100/1 000 Mbps) with RJ45 connection via SOFTNET S7 and SOFTNET PG. | **6GK1161-2AA01** |
| **SOFTNET-IE S7 Version 15**<br>Software for S7- and S5-compatible communication incl. OPC server, PG/OP communication and NCM PC; up to 64 connections; single license for one installation of runtime software, software and electronic manual on CD-ROM; license key on USB flash drive, Class A.<br>For CP 1612 A2 English/German | |
| • Single license for 1 installation | **6GK1704-1CW15-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1704-1CW00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1704-1CW00-3AE1** |
| **SOFTNET-IE S7 Lean Version 15 (license included in scope of supply of WinCC V7.4 SP1)**<br>Software for S7 and S5-compatible communication including OPC server, PG/OP communication and NCM PC; up to 8 connections; single license for one installation of runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A<br>For CP 1612 A2, English/German | |
| • Single license for 1 installation | **6GK1704-1LW15-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1704-1LW00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1704-1LW00-3AE1** |
| **CP 1623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1162-3AA00** |
| **CP 1628**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1162-8AA00** |
| **HARDNET-IE S7 V15**<br>Software for S7- and S5-compatible communication incl. OPC server, PG/OP communication and NCM PC, single license for one installation of runtime software, software and electronic manual on CD-ROM,license key on USB flash drive, Class A for CP 1613 A2, CP 1623, CP 1628; English/German | |
| • Single license for 1 installation | **6GK1716-1CB15-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1716-1CB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1716-1CB00-3AE1** |

## Ordering data

| | Article No. |
|---|---|
| *Communication via PROFIBUS* | |
| **CP 5612**<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC basic package) | **6GK1561-2AA00** |
| **CP 5622**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC basic package) | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in WinCC basic package) | **6GK1571-1AA00** |
| **CP 5613 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-3AA02** |
| **CP 5614 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-4AA02** |
| **CP 5623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1562-3AA00** |
| **HARDNET PB S7**<br>Software for S7 communication incl. PG/OP communication, FDL, OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A for CP 5613 A3, CP 5614 A3, CP 5623 English/German | |
| • Single license for 1 installation | **6GK1713-5CB15-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5CB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1713-5CB00-3AE1** |
| **HARDNET PB DP**<br>Software for DP protocol incl. PG/OP communication, FDL, DP OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5613 A3, CP 5614 A3, CP 5623; English/German | |
| • Single license for 1 installation | **6GK1713-5DB15-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5DB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1713-5DB00-3AE1** |

| | Article No. |
|---|---|
| *SIMATIC WinCC V7.4 SP1 communication* | |
| *Communication via Industrial Ethernet/PROFIBUS* | |
| **CP 1612 A2**<br>PCI card (32-bit) for connection of a PG/PC to Industrial Ethernet (10/100/1 000 Mbps) with RJ45 connection via SOFTNET S7 and SOFTNET PG.<br>Windows 8.1 and Windows 2012 Server are not supported. | **6GK1161-2AA01** |
| **SOFTNET-IE S7 Version 14 SP1**<br>SOFTNET-IE S7 V14 software for S7, S5-comp. communication, OPC; PG/OP communication, configuration software, up to 64 conn.; floating license; runtime software, software and electr. manual; on DVD; license key on USB flash drive; Class A; 2 languages (en, de); for 32/64-bit: Windows 7 SP1 Prof./Ultimate, 64-bit: Windows 8.1Pro; Windows 10 Server 2008 R2 SP1, 2012 R2CP 1612 (no Win 8.1, Win 10 Server 2012, R2) | |
| • Single license for 1 installation | **6GK1704-1CW14-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1704-1CW00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1704-1CW00-3AE1** |
| **SOFTNET-IE S7 Lean Version 14 SP1 (license included in scope of supply of WinCC V7.4 SP1)**<br>SIMATIC NET SOFTNET-IE S7 LEAN V14; SW f. S7, S5-comp. comm., OPC PG/OP comm., config. SW, up to 8 conn. floating license; runtime software, SW and electr. manual on DVD; license key on USB flash drive; Class A; 2 languages (en, de); for 32/64-bit: Win 7 SP1 Prof/Ult, 64-bit: Win 8.1 PRO; Windows 10 Server 2008 R2 SP1, 2012 R2; CP 1612 (no Win 8.1, Win 10, Server 2012, R2) | |
| • Single license for 1 installation | **6GK1704-1LW14-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1704-1LW00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1704-1LW00-3AE1** |
| **CP 1623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1162-3AA00** |
| **CP 1628**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1162-8AA00** |

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| **Ordering data** | **Article No.** |
|---|---|
| **HARDNET IE S7 V13 SP2**<br>Software for S7-compatible and S5-compatible communication incl. OPC server, PG/OP communication and NCM PC, single license for one installation of runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A for CP 1613 A2, CP 1623, CP 1628; English/German | |
| • Single license for 1 installation | **6GK1716-1CB13-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1716-1CB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1716-1CB00-3AE1** |
| *Communication via PROFIBUS* | |
| **CP 5612**<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC basic package) | **6GK1561-2AA00** |
| **CP 5622**<br>PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC basic package) | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in WinCC basic package) | **6GK1571-1AA00** |
| **CP 5613 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-3AA02** |
| **CP 5614 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-4AA02** |
| **CP 5623**<br>PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately) | **6GK1562-3AA00** |
| **HARDNET PB S7 V8.2 SP1**<br>Software for S7 communication incl. PG/OP communication, FDL, OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A for CP 5613 A3, CP 5614 A3, CP 5623 English/German | |
| • Single license for 1 installation | **6GK1713-5CB08-2AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5CB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1713-5CB00-3AE1** |
| **HARDNET PB S7 V13 SP2**<br>Software for S7 communication incl. PG/OP communication, FDL, OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A for CP 5613 A3, CP 5614 A3, CP 5623 English/German | |
| • Single license for 1 installation | **6GK1713-5CB13-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5CB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1713-5CB00-3AE1** |
| **HARDNET PB DP V13 SP2**<br>Software for DP protocol incl. PG/OP communication, FDL, DP OPC server runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5613 A3, CP 5614 A3, CP 5623; English/German | |
| • Single license for 1 installation | **6GK1713-5DB13-0AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5DB00-3AE0** |
| • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005 | **6GK1713-5DB00-3AE1** |
| **FMS 5613 V7.1 SP6 (Edition 2008 + SP6)**<br>Software for FMS protocol incl. PG/OP communication, FDL, OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5613 A2, CP 5614 A2, CP 5623; English/German | |
| • Single license for 1 installation | **6GK1713-5FB71-3AA0** |
| • Upgrade package for SIMATIC NET Edition 2006 or higher | **6GK1713-5FB00-3AE0** |

## More information

### *WinCC language versions*

SIMATIC WinCC is also offered in simplified Chinese, traditional Chinese, Korean and Japanese especially for Asian markets. These WinCC versions are intended for machine manufacturers, plant constructors and exporters who supply the regions of China, Taiwan, Korea and Japan.

WinCC ASIA includes all familiar WinCC functions and offers in addition the configuration user interface in the respective national language and English. The online help is available in simplified Chinese, traditional Chinese, Korean, Japanese and English. A Chinese, Korean, Japanese or multilingual Windows operating system is required for operation.

The runtime licenses are language-neutral. The English handling program (Automation License Manager – ALM) is executable under the Chinese, Korean and Japanese Windows versions.

In order to use the Asian languages in WinCC, an Asia hardware dongle is required.

Additional information is available on the Internet at:

http://www.siemens.com/wincc-v7

### *IPC packages*

There are attractive packages available with SIMATIC Rack PCs (IPC347, IPC547, IPC647, IPC847), SIMATIC Box PCs (IPC227, IPC427, IPC627, IPC827) and SIMATIC Panel PCs (IPC277, IPC477, IPC677) for a completely matched software and hardware package. These IPCs can be configured in different ways for use as single station, server or client.

http://www.siemens.com/scada-ipc

Downloads:

In most cases, the products can also be obtained as software downloads.

You can find more information on the Software Update Service, license forms, Online Software Delivery and handling your SW licenses with the Automation License Manager here:

http://www.siemens.com/simatic-licenses

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## Overview

The universal WinCC basic software is the basis for modular expansions. These functional expansions can be obtained in the form of WinCC options and as WinCC Premium add-ons.

WinCC options are created by WinCC Development and are Siemens Industry Automation products. You can obtain support from our Advisory Services and via the central hotline.

### *Options for scalable plant configurations*

- WinCC/Server
  For configuring a powerful client/server system
- WinCC/Redundancy
  For increasing system availability through redundancy
- WinCC Web Navigator
  For operator control and monitoring of plants via the Internet, in-house intranet or LAN
- WinCC WebUX
  For operator control and monitoring of plants, independent of platforms and browsers, via the Internet, in-house intranet or LAN
- SIMATIC Process Historian
  Central, scalable long-term archive for the whole plant
- SIMATIC TeleControl
  For connecting outlying stations (remote terminal units = RTUs) via telecontrol protocols in a WinCC SCADA system

### *Options for greater efficiency in operations management*

- WinCC/User Archives
  For managing data records in user archives
- WinCC/DataMonitor
  For displaying and evaluating current process states and historical data on office PCs with standard tools
- WinCC/Performance Monitor
  For analysis and optimization of production on the basis of individual performance indicators
- WinCC/SES (Sequence Execution System)
  Scalable step sequence control for sequence-based processes
- WinCC/Audit
  - Change management
  - Generation of audit trails for engineering and runtime
- WinCC/Calendar Scheduler
  Calendar-based planning of events
- WinCC/ChangeControl
  - Change and version management
  - Generation of audit trails for engineering
- WinCC/Event Notifier
  For sending of notifications triggered by specific events in the WinCC message system
- SIMATIC Information Server
  Web-based, integrated reporting from production to management, based on archived data

### *Options for openness and individual system expansions*

- WinCC/Connectivity Pack
  Access to WinCC logs via OPC HDA, OPC A&E, OPC XML Server, OPC UA Server/Client and WinCC OLE DB/OLE DB
- WinCC/Connectivity Station
  Gateway to WinCC server data via OPC HDA, OPC A&E, OPC XML server, OPC UA Server/Client, and WinCC OLE DB/OLE DB from independent computers
- WinCC IndustrialDataBridge
  Configurable connection to databases and IT systems
- WinCC/ODK (Open Development Kit)
  For the use of open programming interfaces and the generation of customer-specific WinCC ActiveX objects

## More information

### *SIMATIC WinCC Options*

http://www.siemens.com/simatic-wincc-options

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## Overview

### *SIMATIC TeleControl*

SIMATIC TeleControl for WinCC supports connection to outlying stations (Remote Terminal Units = RTUs) via telecontrol protocols.

- SIMATIC TeleControl V7.4 has been released for use with WinCC V7.4.
- For compatibility with WinCC 7.4 SP1, use TeleControl V7.4 update 1
- SIMATIC TeleControl V7.4 supports the combination with WinCC as a Windows service

Licenses

- SIMATIC TeleControl for WinCC consists of an engineering and a runtime component
- The engineering software is supplied with a floating license. The floating license allows installation of the software on any number of computers. This means one user per license can use the software independently of the computer used or a specific workstation.
- The runtime software is supplied as a single license for one server and allows a specific number of stations to be connected depending on the license.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Benefits

SIMATIC TeleControl for WinCC V7.4 can not only integrate newly configured RTUs, but it can also integrate units which already exist in outlying areas by means of DNP3 or IEC 870-5-101/104 drivers. For communication with the outstations, SIMATIC TeleControl for WinCC V7.4 uses the SINAUT ST7 and DNP3 protocols (both via serial and TCP/IP communication connections) as well as IEC 870-5-101 (serial) and IEC 870-5-104 (Ethernet TCP/IP).

The serial RTU link is possible via the following components, which can be connected directly via WinCC (single station or server):

- SINAUT TIM communication modules (SINAUT ST7 telecontrol protocol)
- TCP/IP serial converter (telecontrol protocols DNP3, IEC 870-5-101)

Equipment from MOXA or Lantronix, for example, can be used as TCP/IP serial converters.

By means of Ethernet TCP/IP, the RTUs can be connected directly or via TCP/IP WAN routers to the SIMATIC WinCC system bus (SINAUT ST7, DNP3, IEC 870-5-104 telecontrol protocols). When using the SINAUT ST7 telecontrol protocol, the SINAUT TIM communication module can be used in addition to the TCP/IP WAN router or as an alternative.

## Application

Telecontrol communication over the wide area network is largely determined by the communication infrastructure which already exists. Various transmission media such as dedicated line, analog or digital telephone networks, wireless networks (GSM or private), DSL or GPRS can also be combined with each other.

### *SINAUT ST7 telecontrol protocol*

Detailed information for implementing telecontrol applications with the SINAUT ST 7 telecontrol protocol via the Industry Mall.

### *IEC 60870-5-101/104 telecontrol protocols*

More detailed information for implementing telecontrol applications with the IEC 60870-5-101/104 telecontrol protocols via the Industry Mall.

### *DNP3 telecontrol protocol*

SIMATIC TeleControl for WinCC V7.4 also supports the DNP3 telecontrol protocol. Widely distributed outstations (RTUs) can be controlled and monitored with the DNP3 telecontrol protocol via serial or Ethernet TCP/IP communication links by means of the telecontrol center in SIMATIC WinCC.

The control center integrated with SIMATIC TeleControl into the SCADA system is the master during telecontrol communication. The slaves are represented by the remote stations. SIMATIC S7-1200, SIMATIC S7-1500, SIMATIC Distributed Controllers ET 200SP, SIMATIC S7-300/S7-300F and S7-400/S7-400F/S7-400H/S7-400FH controllers as well as RTU3000C and third-party RTUs can be used as remote stations.

Further hardware and software components round off the range of products:

- TIM communication modules
- TCP/IP converters – serial and MD modem modules
- Mobile radio components (GSM/GPRS)
- TCP/IP routers and switches
- SCALANCE S security modules
- Dedicated line accessories
- Cables
- Engineering package for configuration of DNP3 data objects, stations, networks and connections as well as for diagnostics

In order to implement telecontrol networks, basic topologies including point-to-point, multi-point, star and ring can be configured using classic or TCP/IP-based media. These can be combined flexibly depending on the existing infrastructure.

Classic WAN media:

- Dedicated line via modem, e.g. SINAUT MD2
- Private radio networks
- Analog telephone network
- Digital ISDN network
- GSM, UMTS, LTE mobile network

TCP/IP-based WAN media:

- Ethernet networks, e.g. SCALANCE X with fiber-optic cables
- Industrial Wireless LAN with SCALANCE W
- Public networks and the Internet using DSL and/or GPRS

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## Function

Special characteristics of DNP3 communication

- Change-driven data transmission
  - Change-driven transmission of process data between RTU and control center
  - Signaling of RTU, control center or connection failure
  - Automatic data updating for all communication partners involved following troubleshooting and following the startup of the RTU or control center
- Chronological processing of process data
  - Time tagging of all data frames at the place of origin allows process data to be archived by the process control system in the correct chronological order
  - The time of the DNP3 stations in the WAN can be synchronized via SIMATIC WinCC (including summertime/ wintertime switchover)
- Local data storage
  - The TIM communication module can temporarily store (for several hours or even days) message frames should the connection or the communication partner fail
  - Intermediate storage of message frames of lower priority in the case of priority-controlled data transmission (with dial-up networks or quantity-dependent data transmission costs)

Operating modes

The DNP3 telecontrol protocol supports the following operating modes:

- Polling
- Polling with time slot procedure
- Multi-master polling with time slot procedure
- Spontaneous mode in dial-up networks
- Spontaneous mode in the TCP/IP-based WAN

## Integration

Integration of SIMATIC WinCC/TeleControl for WinCC V7.4 into the WinCC SCADA system offers particular advantages for the sectors water/wastewater, as well as oil and gas, especially in the case of the following types of plant:

- Freshwater treatment and distribution
- Wastewater treatment plants
- Oil and gas pipelines and water pipes
- Oil and gas drilling fields and the associated treatment plants

In these types of plant, remote outstations such as pumping stations, valve stations or automated stations for wellheads must be integrated.

Through the support of communication protocols for RTUs such as SINAUT ST7, SIMATIC WinCC/TeleControl for WinCC V7.4 supports the following advanced communication concepts:

- Reduction in the transferred data volume by means of event-controlled communication mechanisms for alarm and measured value information.
- Time synchronization of RTUs and correct time stamping of all data in the RTU.
- Tolerance of lower bandwidth, high latency or lack of reliability of communication lines
- Prevention of data loss due to communications failure through data backup in the RTU
- Support of communication media with serial interface (dedicated lines, dial-up connections over analog telephone lines and ISDN lines), various radio devices (standard, spread spectrum modulation), microwave and GSM
- Support for TCP/IP-based WANs (Wide Area Networks) such as DSL, GPRS or Ethernet radio networks
- Support for redundant communication connections
- Expanded communication diagnostics functions for RTU communication links
- Remote programming of RTUs
- Support for different communication topologies – Point-to-point, multidrop (multistation mode) and hierarchic network structures
- High quality server redundancy scheme without data loss in the case of server failure

Through the support of communication protocols for RTUs such as IEC 60870-5 and DNP3, SIMATIC WinCC/TeleControl for WinCC V7.4 supports the following advanced communication concepts:

- Reduction in the transferred data volume by means of event-controlled communication mechanisms for alarm and measured value information.
- Time synchronization of RTUs and correct time stamping of all data in the RTU.
- Tolerance of lower bandwidth, high latency or lack of reliability of communication lines
- Prevention of data loss due to communications failure through data backup in the RTU (not all non-Siemens RTUs support this)
- Support of communication media with serial interface (dedicated lines, dial-up connections over analog telephone lines and ISDN lines), various radio devices (standard, spread spectrum modulation), microwave and GSM
- Support for TCP/IP-based WANs (Wide Area Networks) such as DSL, GPRS or Ethernet radio networks
- Support for redundant communication connections
- Expanded communication diagnostics functions for RTU communication links
- Remote programming of RTUs
- Support for different communication topologies – Point-to-point, multidrop (multistation mode) and hierarchic network structures
- High quality server redundancy scheme without data loss in the case of server failure

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**Integration** (continued)

***Outstations/remote terminal units***

SIMATIC WinCC/TeleControl for WinCC V7.4 supports the following preferred outstations for local distributed automation:

- Controller integrated into ET 200S (IEC 870-5-101/104 telecontrol protocols); for cost-sensitive applications, up to approx. 30 I/O signals or approx. 200 data points
- Controller integrated into RTU3030C (DNP3, IEC 60870-5-104 telecontrol protocols); for very compact and energy-saving applications, up to approx. 16 I/O signals or approx. 150 data points
- S7-1200/S7-1200F controller (DNP3, IEC 60870-5-104 telecontrol protocols); up to 150 I/O signals or approx. 2 000 data points
- S7-1500 controller (IEC 60870-5-101/104 telecontrol protocols); up to 250 I/O signals or approx. 4 000 data points
- S7-300/S7-300F controller (SINAUT ST7, DNP3, IEC 60870-5-101/104 telecontrol protocols); for extremely flexible configuration, up to 100 I/O signals or approx. 2 000 data points
- S7-400/S7-400F controller (SINAUT ST7, DNP3, IEC 60870-5-101/104 telecontrol protocols); up to 500 I/O signals or approx. 5 000 data points
- Redundant S7-400H/S7-400FH controller (DNP3 and IEC 60870-5-101/104 telecontrol protocols); up to 500 I/O signals or approx. 5 000 data points
- Third-party station with the IEC 60870-5-101/104 and DNP3 telecontrol protocols (depending on type of station)
- ET 200SP / ET 200SP F Distributed Controllers (telecontrol protocols DNP3, IEC 60870-5-104); extremely flexible configuration options; number of I/O signals / data points depend of the CPU type

The following table provides an overview of the current options for connecting to these outstations:

**Spectrum of outstations and integration versions**

| **Telecontrol protocol** | | **SINAUT ST 7** | | **DNP3** | | **IEC 60870-5-101** | **IEC 60870-5-104** |
|---|---|---|---|---|---|---|---|
| Type of communication | | Serial | Ethernet TCP/IP | Serial | Ethernet TCP/IP | Serial | Ethernet TCP/IP |
| Interface | | TIM 4R-IE | TCP/IP WAN router or/and TIM 4R-IE | TCP/IP serial converter | TCP/IP WAN router | TCP/IP serial converter | TCP/IP WAN router |
| RTU/ interface | ET 200S with integr. CPU (corresponds to S7-314) | - | - | - | - | IM 151-7 CPU or IM 151-8 PN/DP CPU as well as 1 SI module + SIPLUS RIC library | IM 151-8 PN/DP CPU + SIPLUS RIC library |
| | S7-1200/S7-1200F | - | CP 1243-8 IRC | - | CP 1243-1 | - | CP 1243 – 1 IEC |
| | ET 200SP with integr. CPU CPU1510SP(F)-1PN CPU1512SP(F)-1PN | - | CP 1542SP-1 IRC | - | CP 1542SP-1 IRC | - | CP 1542SP-1 IRC |
| | S7-1500 | TIM 1531 IRC | TIM 1531 IRC | - | - | CM PtP + SIPLUS RIC Library | SIPLUS RIC Library |
| | RTU3000C | - | UMTS modem integrated or external WAN router | - | UMTS modem integrated or external WAN router | - | UMTS modem integrated or external WAN router |
| | S7-300/S7-300F | TIM 3V-IE | TIM 3V-IE | TIM 3V-IE DNP3 | TIM 3V-IE DNP3 | CP 341 + SIPLUS RIC library | CP 343 + IEC on S7 or integr. PN interface + SIPLUS RIC Library |
| | S7-400/S7-400F | TIM 4R-IE | TIM 4R-IE | TIM 4R-IE DNP3 | TIM 4R-IE DNP3 | CP 441 + SIPLUS RIC library | CP 443 + SIPLUS RIC library or integrated PN interface + SIPLUS RIC library |
| | S7-400H/S7-400FH | - | - | TIM 4R-IE DNP3 | TIM 4R-IE DNP3 | ET 200M + 2 x CP 341 + SIPLUS RIC library | CP 443 + SIPLUS RIC library |
| | Third-party station | - | - | Depends on type of station | | Depends on type of station | |
| Dial-up lines | | • | - | • | - | - | - |
| Dedicated line and radio networks | | • | • | • | • | • | • |
| Master/slave | | • | • | • | • | • | • |
| Peer-to-peer | | • | • | - | - | • | • |
| Mesh networks | | • | • | • | • | • | • |
| Time tagging in RTU | | • | • | • | • | • | • |
| RTU time synchronization | | • | • | • | • | • | • |
| Data buffering in RTU | | • | • | • | • | • | • |
| Routing with SIMATIC PDM | | • | • | - | - | - | • |
| International standard | | - | - | • | • | • | • |

| Ordering data | Article No. |
|---|---|
| *SIMATIC TeleControl for WinCC* | |
| **SIMATIC TeleControl 7.4 for WinCC Basic Engineering**<br>Software package with SIMATIC Telecontrol for WinCC 7.4 engineering software, floating license for 1 user; runs with Windows 7 Ultimate and Enterprise 32/64-bit, Windows 10 LTSB 2015 (64-bit), Windows Server 2008 R2 Standard 64-bit or Windows Server 2012 R2 Standard 64-bit, electronic documentation on CD/DVD, two languages (English, German)<br>Type of delivery:<br>License key memory stick, certificate of license including terms and conditions, SIMATIC WinCC Data Medium Package V7.4 and CD "WinCC TeleControl Option V7.4" | **6DL5000-7AA47-0XA5** |
| **SIMATIC TeleControl V7.4 for WinCC Server Runtime**<br>Software package with SIMATIC Telecontrol for WinCC 7.4 engineering software, single license for 1 user; runs with Windows 7 Ultimate and Enterprise 32/64-bit, Windows 10 LTSB 2015 (64-bit), Windows Server 2008 R2 Standard 64-bit or Windows Server 2012 R2 Standard 64-bit, electronic documentation on CD/DVD, two languages (English, German)<br>Type of delivery:<br>License key memory stick, certificate of license including terms and conditions, SIMATIC WinCC Data Medium Package V7.4 and CD "WinCC TeleControl Option V7.4" | |
| • 6 stations | **6DL5002-7AA47-0XA0** |
| • 12 stations | **6DL5002-7AB47-0XA0** |
| • 256 stations | **6DL5002-7AE47-0XA0** |
| • unlimited | **6DL5002-7AF47-0XA0** |

| | Article No. |
|---|---|
| *Upgrades* | |
| **SIMATIC TeleControl for WinCC, upgrade V7.0 to V7.4**<br>Upgrade package; single license for 1 installation, E-SW and documentation on DVD; license key on USB flash drive, Class A; two languages (English, German).<br>Executable under Windows 7 Ult/ Server 2008 R2/Server 2012 R2 | **6DL5002-7AA47-0XE0** |
| *Driver software for telecontrol protocols* | |
| **TeleControl SINAUT driver**<br>Runtime license for a WinCC stand-alone system or WinCC Server, single license for 1 installation.<br>Requirement:<br>SIMATIC TeleControl 7.4 software for WinCC Server Runtime (6, 12, 256 stations)<br>Type of delivery:<br>License key memory stick, certificate of license including terms and conditions | **6DL5101-8AX00-0XB0** |
| **TeleControl DNP3 driver**<br>Runtime license for a WinCC stand-alone system or WinCC Server, single license for 1 installation.<br>Requirement:<br>SIMATIC TeleControl 7.4 software for WinCC Server Runtime (6, 12, 256 stations)<br>Type of delivery:<br>License key memory stick, certificate of license including terms and conditions | **6DL5101-8EX00-0XB0** |
| **TeleControl IEC 870-5-101/-104 driver**<br>Runtime license for one WinCC Single Station or one WinCC Server, single license for 1 installation<br>Requirement:<br>SIMATIC TeleControl 7.4 software for WinCC Server Runtime (6, 12, 256 stations)<br>Type of delivery:<br>License key memory stick, certificate of license including terms and conditions | **6DL5101-8CX00-0XB0** |

For an overview of the complete performance range on the Internet, visit:

Service & Support:

Germany:

https://support.industry.siemens.com/cs/?lc=de-DE

International:

https://support.industry.siemens.com/cs/?lc=en-DE

Technical Support (Hotline):

Germany:

https://support.industry.siemens.com/My/ww/de/requests

International:

https://support.industry.siemens.com/My/ww/en/requests

More information on telecontrol (RTUs):

Germany:

http://www.siemens.de/telecontrol

International:

http://www.siemens.com/telecontrol

## Overview

***WinCC/Audit & WinCC/ChangeControl***

- **WinCC/ChangeControl** is used to **trace engineering changes** in a tamper-proof long-term audit trail database, called the audit trail for short. All engineering changes are automatically recorded in the audit trail. This provides a traceable record of every change that has been made, as well as enabling the causes to be deduced and the system downtimes to be minimized.
  To begin tracing at a defined project status, a project version definition is provided that contains all data and files of a WinCC project version. The project version definition naturally provides the ability to reactivate earlier project versions. Document management is also provided, which manages and archives intermediate statuses for system graphics, reports or user files and stores change information of the user. The audit viewer with helpful filter functions enables the audit trail to be quickly and easily evaluated, exported or even printed out.
- **WinCC/Audit** includes the full functionality of **WinCC/ChangeControl** and is also used for **tracing all operations**.
  All operations are automatically recorded in the audit trail at RT.
- The WinCC/Audit or WinCC/ChangeControl options and SIMATIC Logon support users in the validation of their plants and meet the requirements according to FDA CFR 21 Part 11.

Licenses

WinCC Audit complete licenses include the runtime and configuration licenses (RC).
Licensing applies to one engineering station (configuration) and one operating station (runtime) for which an audit trail is to be generated.
An RC license also always includes a runtime (RT) license.
Only one RT license is required for each additional operating station with audit trail.

## Benefits

- Quick and easy traceability configuration
- Gap-free and automated recording of engineering changes and operator actions in an audit trail
- Reduction in plant downtimes thanks to fast analysis of the gap-free recorded audit trail information
- Logging of defined WinCC project status with all database information and files of the application
- Gap-free documentation of the project version definition procedures with version number, user and comments
- Complete tracing support by WinCC single and multi-station systems, single and multi-project solutions, Client/Server architecture
- Extensive reduction in engineering outlay in order to meet the requirements of FDA 21 CFR Part11 & EU 178/2002
- Compliance with the requirements of the Food and Drug Administration (FDA) for the food, beverages and tobacco industries

## Design

WinCC/ChangeControl and WinCC/Audit consist of five components:

- The audit editor for configuration the audit trail content
- The project version definition for logging WinCC projects
- Document management for automatic archiving and versioning of WinCC plant mimics, scripts, reports, and project-specific documents, and the recording of the associated change information
- The audit viewer for visualizing, exporting and printing WinCC and WinCC flexible audit trails. The viewer is available as an executable program under Windows, as well as OCX with WinCC Runtime.
- The audit trail, which tracks all changes in respect of both engineering and plant operation in a separate SQL database. The audit trail can be set up as a central audit trail for a number of projects or even just for a single project.

WinCC/ChangeControl and WinCC/Audit support both single-user and multi-user systems, client/server architectures and even the WinCC redundancy system. No redundant audit trail is created however.

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## Function

### *WinCC/ChangeControl*

WinCC/ChangeControl is a functional subset of WinCC/Audit. WinCC/ChangeControl is for tracing engineering changes in the engineering phase or in online operation. All change data is recorded in an audit trail.

There are two types of engineering changes:

- those that change the WinCC database or are executed through the WinCC Explorer, such as e.g. changes to tag management or creating a user group,

and those

- limited to changing files, the so-called document management.

The document management manages system images, scripts and log layouts and customer-specific documents and stores respective intermediate versions as backups. All of these documents or files are subject to a change process, i.e. documents can be booked out for processing, booked in for finalization and intermediate versions can be retrieved from backup storage with a rollback function.

The project version definition as a component of WinCC/ChangeControl archives WinCC projects and creates reproducible project statuses or defined start-time points for starting tracing. An audit trail is also provided with information on who has created which project version or which version has been reproduced or deleted.

Configuring the audit trail, the project version definition and the document management is simple, quick and comfortable.

The audit trail data is visualized from WinCC, as well as from WinCC flexible via the audit viewer, an executable program under Windows. The data can also be evaluated with the audit viewer OCX in Runtime by WinCC however. Users select the desired view of the audit trail information via filters or selection criteria and can export the data to an Excel file or print it on a printer. Audit trail information is tamper-proof and can thus not be modified or deleted. An export function can be used to swap out the audit trail to an XML file or to archive it.

### *WinCC/Audit*

WinCC/Audit has all of the functionality of WinCC/ChangeControl and is also used for tracing user operations in RT operation. Tracing can be used for determining who, when and what conditions the machine has undergone. In addition to recording operator activities, the audit trail also records the starting and modifying of recipes or user logs. In addition, the user can perform activities of an individual nature at specific objects or events, such as pressing a function button, moving sliders and other actions, while using a so-called audit entry function to record these activities in the audit trail.

A WinCC/ChangeControl RC license or a WinCC/Audit RC license is required for configuring the audit trail. One RT license is required for each station (client/server) to be monitored. One RC license always includes one RT license.

## Ordering data

| Ordering data | Article No. |
|---|---|
| *WinCC/ChangeControl* | |
| **For the configuration of the audit trail incl. RT** | |
| • WinCC V7.5 SP1 | **6AV6371-1DV27-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1DV27-4AX0** |
| As download | |
| • WinCC V7.5 SP1 | **6AV6371-1HV27-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1HV27-4AX0** |
| *WinCC/Audit* | |
| **WinCC/Audit RC** | |
| For the configuration of the audit trail incl. RT | |
| • WinCC V7.5 SP1 | **6AV6371-1DV17-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1DV17-4AX0** |
| As download | |
| • WinCC V7.5 SP1 | **6AV6371-1HV17-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1HV17-4AX0** |
| **WinCC/Audit RT** | |
| Creation of audit trails in RT | |
| • WinCC V7.5 SP1 | **6AV6371-1DV07-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1DV07-4AX0** |
| As download | |
| • WinCC V7.5 SP1 | **6AV6371-1HV07-5AX0** |
| • WinCC V7.4 SP1 | **6AV6371-1HV07-4AX0** |
| *Upgrades* | |
| **V7.4 to V7.5 SP1** | |
| • For WinCC/Audit RT | **6AV6371-1DV07-5BX4** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1DV17-5BX4** |
| As download | |
| • WinCC/Audit RT | **6AV6371-1KV07-5BX4** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1KV17-5BX4** |
| **V7.2/7.3 to V7.5 SP1** | |
| • For WinCC/Audit RT | **6AV6371-1DV07-5BX3** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1DV17-5BX3** |
| As download | |
| • WinCC/Audit RT | **6AV6371-1KV07-5BX3** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1KV17-5BX3** |
| **V7.x to V7.4 SP1** | |
| • For WinCC/Audit RT | **6AV6371-1DV07-4BX3** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1DV17-4BX3** |
| As download | |
| • WinCC/Audit RT | **6AV6371-1KV07-4BX3** |
| • For WinCC/Audit RC or WinCC/ChangeControl | **6AV6371-1KV17-4BX3** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-audit

Information on the declarations of conformity for SIMATIC WinCC can be found at:

https://new.siemens.com/global/en/markets/pharma-industry/good-manufacturing-practice.html

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# WinCC/Calendar Scheduler

## Overview

### *WinCC/Calendar Scheduler*

- Option for SIMATIC WinCC for managing events in a calendar.
- Setting WinCC variables or starting global scripts at defined times.

Licenses

- WinCC/Calendar Scheduler comprises engineering and runtime software, with licensing either on the WinCC server or single-user system
- A common "Upgrade for WinCC Calendar options" software package is used to upgrade to a new version.

## Benefits

- Simple operation, configuration and planning of events thanks to handling in the style of Microsoft Office Calendar
- Simple configuration of the actions by parameterization (execution of WinCC scripts or writing of WinCC tags at certain times)
- Configuration of recurring events taking account of configurable public holidays, vacation periods, and maintenance periods
- Secure operation of the plant taking account of different authentication levels
- Clear representation of events at runtime by means of Calendar Runtime Control
- Flexible use in all typical WinCC plant configurations client/server, redundant systems, WebNavigator

## Function

With the WinCC Calendar Scheduler, events and their associated actions can be configured in a user-friendly and clear way in an editor in WinCC Explorer.

The events are represented in a calendar. The period represented can be freely selected. Recurring events can be defined as serial events with any desired exceptions.

The events are displayed in a .Net control. The Calendar Scheduler is easy and intuitive to operate and supports drag & drop during configuration and runtime.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC/Calendar Scheduler** | |
| • WinCC V7.5 SP1 | **6AV6372-1DC07-5AX0** |
| • WinCC V7.4 [1] | **6AV6372-1DC07-4AX0** |
| As download | |
| • WinCC V7.5 SP1 | **6AV6372-1HC07-5AX0** |
| • WinCC V7.4 [1] | **6AV6372-1HC07-4AX0** |
| **Upgrade** | |
| • V7.4 -> V7.5 SP1 | **6AV6372-1DC07-5AX4** |
| • V7.2/7.3 -> V7.5 SP1 | **6AV6372-1DC07-5AX3** |
| • V7.x -> V7.4 [1] | **6AV6372-1DC07-4AX3** |
| As download | |
| • V7.4 -> V7.5 SP1 | **6AV6372-1KC07-5AX4** |
| • V7.2/7.3 -> V7.5 SP1 | **6AV6372-1KC07-5AX3** |
| • V7.x->V7.4 [1] | **6AV6372-1KC07-4AX3** |

[1] Also compatible with WinCC V7.4 SP1, except Windows Server 2016.

## More information

You can find more information at:

http://www.siemens.com/wincc-calendar-options

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## Overview

### *WinCC/Connectivity Pack & WinCC Connectivity Station*

Cross-vendor communication in the automation sector has always been of primary importance for WinCC. This is even more true for the release of preprocessed production data for higher-level information systems (e.g. MES = Management Execution System, ERP = Enterprise Resource Planning or Office packages = MS Excel, MS Access, etc.). WinCC features integrated OPC Data Access and OPC XML DA servers for access to all online values in the system and makes open interfaces available for access to historical WinCC data.

- The Connectivity Pack includes OPC XML DA 1.00, OPC HDA 1.20 (Historical Data Access), OPC A&E 1.10 (Alarm & Events) as well as a WinCC OLE DB interface, which also gives remote computers without installed WinCC access to WinCC archive and alarm data.
- The function of the OPC servers (XML DA, HDA and A&E) and the OPC UA servers (DA, HDA, AC) is assured by the WinCC/Connectivity Pack. In order to access data in the database via WinCC OLE DB/OLE DB, you will also need a license for the WinCC/Connectivity Pack.

Licensing

- A Connectivity Pack license is required for each WinCC system to be accessed.
- When using the Connectivity Station it is not necessary to install additional Connectivity Pack licenses on the WinCC systems being accessed.
- The "WinCC Connectivity Station" license is required in order to utilize the OPC interfaces of the Connectivity Station on a computer without the WinCC software.
- For sole use of the OPC interfaces of a WinCC installation, only the Connectivity Pack license is required.

The following table shows the rules:

| | **New: WinCC-independent installation at Connectivity Station** | **Conventional installation: OPC with WinCC** |
|---|---|---|
| **OPC DA** | "WinCC Connectivity Station" license | No license required |
| **OPC HDA** | "WinCC Connectivity Station" license | "WinCC Connectivity Pack" license |
| **OPC A&E** | "WinCC Connectivity Station" license | "WinCC Connectivity Pack" license |
| **OPC UA DA** | | "WinCC OPC UA HDA / AC Connectivity Pack" license |

The Connectivity Station is planned over NCM PC Manager or SIMATIC Manager. In versions 7.0 and higher, the Connectivity Station does not run as a service.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Benefits

- Access to variables, historical WinCC data, alarm data and user archives from any computer
- Options for analyzing and evaluating process data with specialist tools or user-defined applications (e.g., via VisualBasic)

## Function

As an OPC HDA server, WinCC makes historical data from the WinCC archive system available to other applications. An OPC HDA client (e.g. a reporting tool) can define the time interval for the required data by entering a start and end time. OPC HDA servers also support the generation of a variety of aggregate functions on the server itself (e.g. standard deviation, variance, mean values, integral values, etc.), thereby helping to relieve the load on the network, as only preprocessed data are transmitted.

OPC A&E servers are used to forward WinCC messages (along with all associated process values) to any client at production or enterprise control level. Filter mechanisms and subscriptions ensure that only selected modified data are transmitted. Acknowledgement is of course also supported.

The WinCC OPC XML DA server makes cross-platform communication between Windows and non-Windows systems possible, even via the Internet. This enables read and write WinCC online values (external and internal WinCC variables) to be exchanged with non-Siemens systems.

WinCC OLE DB makes standardized and user-friendly access to WinCC archive data possible (MS SQL Server). In exactly the same way as access via the OPC HDA and OPC A&E interfaces, access via the WinCC OLE DB Provider makes all WinCC archive data available along with the associated process values and message/user texts. The WinCC OLE DB Provider also supports analysis functions such as minimum, maximum, message hit list, etc.

The WinCC Connectivity Station was designed as a stand-alone gateway to WinCC server data. It supports access to WinCC server data over the OPC channels described as well as those for process values (not alarms) over OLE DB. Access to WinCC data is transparent, i.e. independent of which server of a redundant pair is active or whether data have already been transferred to the central archive server.

## Function (continued)

### *Connectivity Station*

If no visualization is required at a station, any Windows computer with access to WinCC via OPC and OLE DB can be configured via the Connectivity Station. This permits access to WinCC stations with server packages from a central computer without WinCC installation. The WinCC stations can be accessed via the following interfaces:

- OPC interfaces of the Connectivity Station
- OLE DB interface of the Connectivity Pack

The two access variants are autonomous access options with different ranges of functions.

OPC interfaces of the Connectivity Station

The Connectivity Station provides interfaces via which you can access the following using an OPC client.

- OPC DA server: tags, e.g. process values
- OPC HDA server: archived process values
- OPC A&E server: alarms

## Ordering data

| Ordering data | Article No. |
|---|---|
| ***WinCC/Connectivity Pack & WinCC/Connectivity Station*** | |
| **V7.5 SP1 for WinCC V7.5 SP1** | |
| **Basic packages** | |
| • WinCC/Connectivity Pack V7.5 SP1 [1] | **6AV6371-1DR07-5AX0** |
| • WinCC/Connectivity Station V7.5 SP1 [1] | **6AV6371-1DR17-5AX0** |
| As download | |
| • WinCC/Connectivity Pack V7.5 SP1 | **6AV6371-1HR07-5AX0** |
| • WinCC/Connectivity Station V7.5 SP1 | **6AV6371-1HR17-5AX0** |
| **V7.4 SP1 for WinCC V7.4 SP1** | |
| **Basic packages** | |
| • WinCC/Connectivity Pack V7.4 SP1 [1] | **6AV6371-1DR07-4AX0** |
| • WinCC/Connectivity Station V7.4 SP1 [1] | **6AV6371-1DR17-4AX0** |
| As download | |
| • WinCC/Connectivity Pack V7.4 SP1 | **6AV6371-1HR07-4AX0** |
| • WinCC/Connectivity Station V7.4 SP1 | **6AV6371-1HR17-4AX0** |

[1] Upgrades are included in the WinCC basic software upgrades

## More information

You can find more information at:

http://www.siemens.com/wincc-connectivity-pack

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## Overview

***WinCC/Event Notifier***

- Option for SIMATIC WinCC for notifying selected persons by email in specified time slots
- Notification depends on events occurring in the WinCC Message System
- Escalation levels, i.e. Group 2 is only notified when nobody "on site" or from Group 1 has reacted within a specified time
- Final notification of all persons previously notified in connection with the specific event about the reaction that has taken place

### Licenses

- WinCC/Event Notifier comprises engineering and runtime software, with licensing either on the WinCC server or single-user system
- A common "Upgrade for WinCC Event Notifier options" software package is used to upgrade to a new version

## Benefits

- Simple operation, configuration and planning of notifications thanks to handling like the Microsoft Office Calendar
- Easy configuration of the notifications including support of the WinCC Runtime languages by connecting to the WinCC Message System
- Configuration of recurring events taking account of configurable public holidays, vacation periods, and maintenance periods
- Secure operation of the plant taking account of different authentication levels
- Clear display and intuitive operation at runtime by means of Calendar Control
- Flexible use in all typical WinCC plant configurations single station, client/server, redundant systems, WebNavigator

## Function

The WinCC Event Notifier enables the following to be configured in a clear and user-friendly manner via the Calendar Options Editor in the WinCC Explorer:

- The e-mail service for sending and receiving messages
- The messages by selecting configured messages in the WinCC Message System as well the setup and contents of the message by selecting the message blocks
- Contacts by selecting predefined persons from the WinCC user administration.

In a calendar it is then possible to select the persons to be notified within the opened time slot from the existing contacts. If several persons or groups of persons are set up for the same time slot, escalation levels can be implemented by assigning different escalation times (= dead time before notification). The period represented by the calendar can be freely selected. Recurring events can be defined as serial events with any desired exceptions.

The calendar can also be integrated as .Net Control in WinCC screens; the appearance of the calendar controls at runtime is configurable. Via the calendar control, you can create time slots during runtime with contacts who should be notified upon occurrence of the configured events in the WinCC Message System. In addition, the calendar control allows the creation of new contacts by means of selection from the WinCC user management.

The Event Notifier is easy and intuitive to operate and supports drag & drop during configuration and runtime.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC/Event Notifier** | |
| • For WinCC 7.5 SP1 | **6AV6372-1DD07-5AX0** |
| • For WinCC V7.4 [1] | **6AV6372-1DD07-4AX0** |
| As download | |
| • For WinCC V7.5 SP1 | **6AV6372-1HD07-5AX0** |
| • For WinCC V7.4 [1] | **6AV6372-1HD07-4AX0** |
| **Upgrade** | |
| • From V7.4 -> 7.5 SP1 | **6AV6372-1DC07-5AX4** |
| As download | |
| • From V7.4 -> 7.5 SP1 | **6AV6372-1KC07-5AX4** |

[1] Also compatible with WinCC V7.4 SP1, except Windows Server 2016.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-calendar-options

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## WinCC/Open Development Kit (ODK)

### Overview

***WinCC/ODK (Open Development Kit)***

- WinCC option for utilization of the exposed programming interfaces that can be used to access data and functions of the WinCC configuration and WinCC runtime system
- The interfaces are designed as "C-Application Programming Interface" (C-API)
- As of WinCC version 7.2, the Open Development Kit includes the previous WinCC/IndustrialX option

Licenses

The scope of supply of WinCC/ODK includes many examples and comprehensive documentation.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here: http://www.siemens.com/simatic-licenses

### Benefits

- Individual system expansions via an open standard programming language
- Access to data and functions of the WinCC configuration and runtime system
- Development of your own applications and add-ons for the WinCC basic system

### Function

API functions are configuration and runtime functions, such as:

- MSRTCreateMsg: Creates a message
- DMGetValue: Determines the value of a tag
- PDLRTSetProp: Sets the object properties in a display

They can be used as follows:

- Within WinCC, e.g. in global scripts or within the scope of C actions in the Graphics Designer
- In Windows applications in the C programming language (the current version of Microsoft Visual C++ is required as a developer's environment for WinCC)

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC/ODK**<br>Open Development Kit, Option for SIMATIC WinCC | |
| • V7.4 [1] | **6AV6371-1CC07-4AX0** |
| • V7.3 SE | **6AV6371-1CC07-3AX0** |
| As download | |
| • V7.4 [1] | **6AV6371-1GC07-4AX0** |
| • V7.3 SE | **6AV6371-1GC07-3AX0** |

[1] Also compatible with WinCC V7.4 SP1

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-odk

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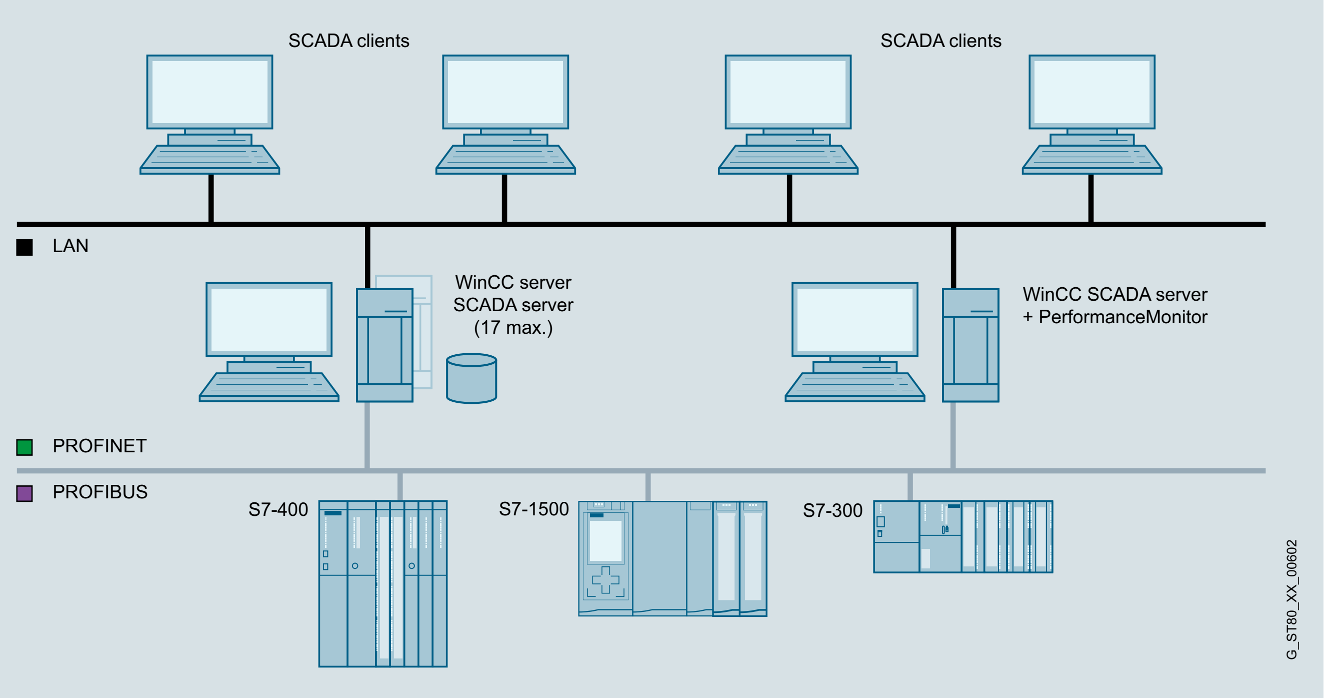
## Overview



WinCC/PerformanceMonitor

### *WinCC/PerformanceMonitor – Analysis and optimization of production on the basis of individual performance indicators*

The WinCC/PerformanceMonitor facilitates flexible calculation and powerful analysis of plant-specific key performance indicators (KPIs). The indicators provide the basis for deriving optimization potential, thus enabling productivity enhancement.

They relate to individual machine groups, plant sections or production lines. The elements to be monitored are designated as equipment. Indicators are calculated based on operands which are derived from already configured WinCC tags. By combining them with associated values, more accurate production correlations can be highlighted, such as quality/supplier dependencies. The calculation formulas used are quick and simple to create in WinCC.

Analysis of the indicators and their operands can be carried out in the WinCC system at any time. Indicators, along with their associated values if required, can be clearly displayed in bar graphs, allowing easy comparison.

In addition, the input values of each performance indicator can be shown via an integrated analysis function (drill-down). The Gantt chart illustrates the chronological sequence of the operands.

The table display lists the archived values, allowing subsequent correction if required. Performance indicators calculated online, either cyclically or triggered by a tag, can be written to WinCC tags for further processing in WinCC, and display in WinCC images, for example.

## Overview (continued)

The PerformanceMonitor can be combined with the Web Navigator for distribution on the Internet, and with the Information Server for reporting purposes. Integration into WinCC ensures fast configuration and complete transparency across all machine and plant data as a basis for optimizing plant productivity.

- The WinCC/PerformanceMonitor can be installed on a WinCC stand-alone system, WinCC server or WinCC client project (WinCC RT Client license), and consists of an engineering client as well as a runtime user interface.
- The WinCC/PerformanceMonitor provides ActiveX control elements for embedding in WinCC images.
  - PerformanceControl: Bar graphs for displaying performance indicators in relation to context values, showing the operands for cause analysis in each case.
  - Gantt chart: Chronological sequence of time-based operands
  - TableControl: Tabular listing of operands with post correction option.
- With the help of the integrated configuration environment, operands are calculated (based on tags) which can be used to calculate key statistics at the set evaluation time.
- For analysis via intranet or Internet, the controls of the WinCC/PerformanceMonitor are available when using the WinCC/WebNavigator.
- The SIMATIC Information Server can be used for generating plant-specific, Web-based reports (predefined and expandable).

Licensing

- The basic package comprises a configuration environment, runtime controls (bars, Gantt, tables) and a license for archiving 30 values.
- The logged values (operands, context) form the basis of the analysis. If more values are to be archived, the number of (additive) archive values can be increased in steps of 30, 100, 300 or 1 000 (countable tags).

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Benefits

### *Management and quality assurance*

Complete transparency throughout the machine park as the basis for optimizing plant productivity.

- Recording of downtimes, localizing causes and reasons for failure times, and monitoring of equipment efficiency.
- Decision making based on performance indicators.
- Global availability of information server reports means they can be used by different user groups.
- Recognition of production correlations by combining associated values with indicators such as material used.

Servicing and maintenance

Support through cyclic and process-event triggered calculation of characteristics:

- Standardization of new plants by defining controller-based status information for key figure calculation
- Individual, targeted analysis using plant-specific performance indicators.
- Weak-point analysis in production processes and recording of undesirable process activities.
- Cause analysis by examining "drill down to operands" calculation basis.
- Identification of the events that lead to cost-intensive failures.

Line management and plant operator

The operator is always kept up-to-date by graphical display of the characteristics.

- Later modification of archived input values.
- Continuous information at the operator interface thanks to integration in the WinCC user interface.
- Alarm messaging of limit violations and trend recording through cyclic calculation of characteristics.
- Integration into the WinCC system means it is not necessary to train operating personnel
- Quick detection of weaknesses in the process using cyclic calculation of characteristics.

## Benefits (continued)

WinCC Engineering

- Quick configuration of WinCC operator displays with WinCC and web-based reports from the Information Server.
- Minimal networking overhead by using the WinCC infrastructure in the local network as well as for the Internet.
- Short familiarization times and simple configuration using familiar tools for user interfaces and reports (WinCC, SIMATIC Information Server)
- Minimal configuration overhead due to the type-instance concept
- Minimal administrative overhead by using the WinCC infrastructure in the local network as well as for the Internet.

***Highlights***

Creation of performance indicators by the WinCC engineer with subsequent utilization by all user groups in the manufacturing company on WinCC stations or Internet clients.

## Application

All user groups benefit from the PerformanceMonitor, from the application engineer to management-level evaluators. The engineer can use the application environment integrated in WinCC to derive individual formulas for calculating performance indicators.

Management uses Web-based reporting without the need for installation on standard computers. For maintenance, the web client of the WebNavigator can be used for analysis with the bar (for performance), progression (Gantt) and table controls. Performance indicators can be displayed on local user interfaces using standard WinCC resources to keep machine operators up to date.

The service engineer can analyze the plant from his/her workstation using the WinCC Client, the Webclient of the WinCC/WebNavigator, for example. At the management level, it is possible to access Web-based reports without the need for installation on standard computers.

## Function

- Structuring of the production plant in equipment units constituting central elements for evaluation
- Use of structured tags in order to facilitate implementation of machine status models
- WinCC tags are compressed to an operand using formulas
- Calculated operands are stored in the archive
- Archived operands are used as input values for calculating performance indicators
- Bar graphs for analyzing performance indicators and root cause determination (drill down)
  Indicator input values (operands) can be displayed if required.
- Tabular presentation of all operands (input values)
- Progression diagrams (Gantt charts) of time-based operands
- Cyclic or event-triggered calculation results are written to WinCC tags
- WinCC Runtime, alarm logging and trend logging can utilize cyclically-calculated values
- Database information and evaluations can be displayed at every WinCC station
- Information server reports can be displayed on independent PC workstations

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## WinCC/PerformanceMonitor

### Ordering data

| | Article No. |
|---|---|
| ***WinCC/PerformanceMonitor*** | |
| **WinCC/PerformanceMonitor Basic Package** | |
| including 30 PerformanceMonitor archive tags | |
| • WinCC/PerformanceMonitor V7.5 SP1 | **6AV6372-2DG07-5AA0** |
| • WinCC/PerformanceMonitor V7.4 SP1 | **6AV6372-2DG07-4AA0** |
| As download | |
| • WinCC/PerformanceMonitor V7.5 SP1 | **6AV6372-2HG07-5AA0** |
| • WinCC/PerformanceMonitor V7.4 SP1 for WinCC V7.4 SP1 | **6AV6372-2HG07-4AA0** |
| **Option for WinCC/PerformanceMonitor V7.4 SP1 and V7.5 SP1 Basic Package** | |
| • 30 additive PerformanceMonitor archive tags | **6AV6372-2CG20-0BA0** |
| • 100 additive PerformanceMonitor archive tags | **6AV6372-2CG20-0CA0** |
| • 300 additive PerformanceMonitor archive tags | **6AV6372-2CG20-0DA0** |
| • 1 000 additive PerformanceMonitor archive tags | **6AV6372-2CG20-0EA0** |
| As download | |
| • 30 additive PerformanceMonitor archive tags | **6AV6372-2JG20-0BA0** |
| • 100 additive PerformanceMonitor archive tags | **6AV6372-2JG20-0CA0** |
| • 300 additive PerformanceMonitor archive tags | **6AV6372-2JG20-0DA0** |
| • 1 000 additive PerformanceMonitor archive tags | **6AV6372-2JG20-0EA0** |
| ***WinCC/PerformanceMonitor Upgrade*** | |
| **V7.4 to V7.5 SP1** | |
| • Standard software | **6AV6372-2DG07-5AX4** |
| • as download | **6AV6372-2KG07-5AX4** |
| **V7.2/7.3 to V7.5 SP1** | |
| • Standard software | **6AV6372-2DG07-5AX3** |
| • as download | **6AV6372-2KG07-5AX3** |
| **V7.x to V7.4 SP1** | |
| • Standard software | **6AV6372-2DG07-4AX3** |
| • as download | **6AV6372-2KG07-4AX3** |

### More information

You can find more information at:

http://www.siemens.com/wincc-performancemonitor

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## Overview

***WinCC/Redundancy***

- Option for SIMATIC WinCC, supporting the parallel operation of two interfaced WinCC single-user systems or process data servers for mutual monitoring
- If one of the two server PCs or one of the two WinCC stations fails, the second one will take over control of the entire system. Once the failed server or station is restored to operation, the process value archives are copied to the restored partner.

Licenses

The WinCC/Redundancy option includes licenses for both redundant servers. A Redundancy license is required on each of the two servers in addition to other necessary licenses.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here: http://www.siemens.com/simatic-licenses

## Benefits

- Increased system availability with continuous data integrity
- Automatic changeover of client in the event of failure of a server or failure of the communication to a server
- Continuous operator control and visualization thanks to automatic client changeover to the intact server
- Automatic updating of all archives in the background after rectification of the fault

## Function

Normally, two WinCC stations or process data servers run in parallel. Each station has its own process connection and its own data archives. WinCC/Redundancy ensures automatic matching of system and user archive data.

If one of the two server computers or WinCC stations fails, the second will take over the archiving of messages and process data, thereby ensuring seamless data integrity. In client/server mode, the clients are automatically switched from the failed server to the redundant partner. This ensures continuous plant visualization and operation on every operator station.

When the failed partner resumes operation, all process values, messages and data archived during the fail period are automatically matched with the partner. This process runs in the background and does not affect plant continuity. Once this is complete, two equivalent servers/stations will be available again.

Communication with the SIMATIC S7 PLC can also be configured with redundancy (an H Series SIMATIC S7 is required) by plugging in two communication modules and configuring two communication paths (S7-REDCONNECT software package). The use of failsafe H Series SIMATIC S7 PLCs can, if required, further increase availability at control level.

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC WinCC/Redundancy V7.5 SP1** | |
| • Runtime software, single license for 2 installations | **6AV6371-1CF07-5AX0** |
| • As download, Runtime software, single license for 2 installations | **6AV6371-1HF07-5AX0** |
| **SIMATIC WinCC/Redundancy V7.4 SP1** | |
| • Runtime software, single license for 2 installations | **6AV6371-1CF07-4AX0** |
| • As download, Runtime software, single license for 2 installations | **6AV6371-1HF07-4AX0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-redundancy

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## Overview

***SIMATIC WinCC/Server***

- Option for SIMATIC WinCC, which permits the configuration of a powerful client/server system.
- A maximum of 3 clients can be connected to non-server operating systems.
- A number of coordinated HMI stations can be operated in a single group with networked automation systems
- Client/server solution:
  - Client without its own project ("UNI-Client"): One (redundant) server can supply up to 64 clients with process and archive data, messages, images and reports. The clients act as display and operating stations for the project on the server.
  - Client with its own project ("MULTI-Client"): One client can simultaneously access up to 18 (redundant) servers. These servers make the data and images available. This data can be collectively processed and displayed in the client project in order, for example, to implement a system overview across several servers. In this case, one server can supply data to as many as 50 clients.
- Requirement: Network connection (TCP/IP) between the server PC and the connected clients

Licenses

The following licenses are required for configuring a multi-user system:

- WinCC Server license on the server in addition to a WinCC RT license (a server license is required for each server)
- One WinCC RT Client license on each client.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Benefits

- Plant-wide scalability from the single-user system to the client/server solution
- Significantly higher quantity framework, relieving the individual servers and better performance due to distributing the complete application or tasks over several servers
- Low-cost configuration on the client is possible (the minimum RC license is sufficient)

## Application

In a complex plant, WinCC can also be configured as a distributed system according to requirements:

- Functional distribution (e.g. message servers, archive servers, etc.) or
- Distribution according to the physical plant structure (e.g. body-in-white, paintshop, etc.)

## Function

Each client can access more than one server at a time. Clients can also be used for configuration on the server.

A configuration of WinCC clients as a central Web server - as a distributed system if required - with an overview of all server projects in the system is also possible.

For WinCC clients, only the smallest runtime license WinCC RT client is required. In order to also facilitate configuration on WinCC clients, the smallest complete license WinCC RC client is required. Remote configuration is possible if WinCC clients without their own project (Uniclients) on the server project are configured. This makes it possible to configure inexpensive operator and configuration stations in a network.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC/Server V7.5 SP1** | |
| • Runtime software, single license | **6AV6371-1CA07-5AX0** |
| • as download, runtime software, single license | **6AV6371-1HA07-5AX0** |
| **SIMATIC WinCC/Server V7.4 SP1** | |
| • Runtime software, single license | **6AV6371-1CA07-4AX0** |
| • as download, runtime software, single license | **6AV6371-1HA07-4AX0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-server

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## Overview

### *WinCC/SES*

The WinCC/SES (Sequence Execution System) is designed for the sequential control of recipe and sequence-based processes in production. WinCC/SES is especially suitable for production plants in which dosing, mixing and material transport are important process actions.

Sequence controls can be structured with a high degree of flexibility, with the production steps being defined in a clear configuration interface and freely combined to form individual process sequences. In addition both the step sequences and the parameters can be modified online during production runs.

WinCC/SES helps the user to fine tune their production processes by allowing them to easily combine automatic sequences with manual interventions. This means that operators can react quickly and intervene in the running process, for example when quality of the raw materials fluctuates or if a different sequence among the production steps becomes necessary to facilitate more versatile production paths.

WinCC/SES also offers a high level of system availability and rapid response times since the program sequence takes place directly on the automation controller instead of on the PC.

Licenses

In addition to the basic SIMATIC WinCC V7.4 software, WinCC/SES V7.4 also requires STEP 7 version 5.5 SP4 to be installed. The basic pack allows the sequential control of two plant sections. Extension Units can be used to increase the number of plant sections by 5 in each case (countable licenses).

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Benefits

- Combination of automatic step sequence with manual fine adjustment of the production sequences (e.g. if behavior of natural raw materials fluctuates)
- Due to the pre-assembled SES visualization control and the SES function blocks, a high degree of engineering efficiency is achieved, because the plant engineer or configurator saves both engineering and testing and commissioning time as a result.
- SES allows flexible paths through the production and is thus an enabler for even utilization of the individual production plants
- Increased quality due to efficient operations management
- SES fulfils the real-time requirement because the steps run in the PLC
- High availability due to the execution of the step sequencer in the PLC.
- Low training costs due to uniform procedures for all step sequencers
- Minimal engineering outlay due to standardization

## Application

WinCC/SES is used in production facilities in which dosing, mixing and material transport play an important role.
In such facilities, raw materials stored in tanks, silos or containers must be combined in the right process sequence with reaction containers and processing machines. This is done over several processing steps until the end product.

In WinCC/SES, the plant operator defines the production steps of his production units, specifies the production parameters such as the setpoints, and defines the corresponding production sequences in the form of step sequencers, which may comprise numerous single steps.

The SES operator control provides live visualization of the steps, including intuitive operation. After the start of production, all of the steps and production parameters such as the setpoints and actual values, as well as the current status of the production sequence are displayed in the form of an overview in the SES operator control.
During operation, the operator can thus quickly and easily readjust production sequences by manually intervening in the automatic step sequence online and, if necessary, by jumping to another step or changing the step sequence.
This is required, for example, if the quality of natural raw materials fluctuates or if a different order of individual production steps is generally needed for flexible paths through production.

High system availability and fast response times are characteristic of WinCC/SES, because all of the step sequencers do not run on the PC. Instead, they are executed directly on the PLCs. As a result, the user gets a real-time behavior, on the one hand, due to the processing on the PLCs and, on the other hand, this also increases the protection against failures, because a batch continues to be produced without changes if the PC/SCADA fails.

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC/SES Sequence Execution System**<br>Software option package for the sequential control of recipe and sequence-based processes in production, functional enhancement for SIMATIC WinCC; electronic documentation in English, German | |
| **V7.5 SP1 1) 2)** | |
| • Basic Package (incl. 2 units) For configuration of the Sequence Execution System | **6AV6372-2DJ07-5AA0** |
| • Extension 5 units (countable) For increasing the number of units 2) | **6AV6372-2BJ07-5BA0** |
| As download | |
| • Basic Package (incl. 2 units) | **6AV6372-2HJ07-5AA0** |
| • Extension 5 units (countable) | **6AV6372-2JJ07-5BA0** |
| **Upgrades** | |
| • Basic Package Upgrade from 7.4 to 7.5 SP1 1) | **6AV6372-2DJ17-5AA1** |
| • Extension 5 units Upgrade from 7.4 to 7.5 SP1 1) | **6AV6372-2BJ17-5BA1** |
| • Basic Package Upgrade from 7.2/3 to 7.5 SP1 1) | **6AV6372-2DJ17-5AA0** |
| • Extension 5 units Upgrade from 7.2/3 to 7.5 SP1 1) | **6AV6372-2BJ17-5BA0** |
| As download | |
| • Basic Package Upgrade from 7.4 to 7.5 SP1 1) | **6AV6372-2HJ17-5AA1** |
| • Extension 5 units Upgrade from 7.4 to 7.5 SP1 1) | **6AV6372-2JJ17-5BA1** |
| • Basic Package Upgrade from 7.2/3 to 7.5 SP1 1) | **6AV6372-2HJ17-5AA0** |
| • Extension 5 units Upgrade from 7.2/3 to 7.5 SP1 1) | **6AV6372-2JJ17-5BA0** |
| **V7.4 1) 2)** | |
| • Basic package (incl. 2 units) For configuration of the Sequence Execution System | **6AV6372-2DJ07-4AA0** |
| • Extension 5 units For increasing the number of units 2) | **6AV6372-2BJ07-4BA0** |
| As download | |
| • Basic Package (incl. 2 units) | **6AV6372-2HJ07-4AA0** |
| • Extension 5 units | **6AV6372-2JJ07-4BA0** |
| **Upgrades** | |
| • Basic Package Upgrade 7.4 1) | **6AV6372-2DJ17-4AA0** |
| • Extension 5 units Upgrade 7.4 1) | **6AV6372-2BJ17-4BA0** |
| As download | |
| • Basic Package Upgrade 7.4 1) | **6AV6372-2HJ17-4AA0** |
| • Extension 5 units Upgrade 7.4 1) | **6AV6372-2JJ17-4BA0** |

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1) Also compatible with WinCC V7.4 SP1

2) Additionally requires STEP7 V5.5. Based on SIMATIC S7-300 from S7-315 or higher, redundancy, WebNavigator is not supported.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-ses

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## Overview

***WinCC/User Archives***

- Option for SIMATIC WinCC for managing data sets in user archives that contain related data.
- WinCC and its automation partners (e.g. a SIMATIC S7 controller) write these data sets and exchange them if required.

The WinCC/User Archives option can also be used in the context of the WinCC/WebNavigator (see also WinCC/WebNavigator option).

Licenses

A license is only required for the server (or single-user system).

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here: http://www.siemens.com/simatic-licenses

## Benefits

- Storing and managing of any user data in data sets
- Flexible display using ActiveX controls
- Simple linking of data set fields to the process via direct tag linking
- Import/export functions for further processing with other tools (e.g. MS Excel)

## Function

- Input of parameter sets (e.g. operating parameters of a machine) in WinCC, storage of the sets in the user archive, and forwarding to the automation level
- Continuous acquisition of production parameters by the automation system and forwarding of the parameters to WinCC at the end of the shift
- Acquisition of batch data
- Specification of production parameters
- Management of warehousing data

WinCC user archives are created and assigned data in a user-friendly way using a dedicated editor. Special ActiveX controls are used for displaying data from the user archives at runtime.

Data sets and fields from user archives are linked to the process via direct tag linking.

Import and export functions support read-in/out of data via external applications (e.g. MS Excel). Freely selectable filter criteria allow clear representation of data sets.

WinCC provides functions for free organization of the data storage in the user archives that affect archives, data sets and fields. Archives can thus be generated, opened, closed, or reset, and data sets or field contents can be read, written or overwritten.

Sequence archives can accommodate batch data, shift production data, or also product quality data, and meet legal obligations for verification thanks to gap-free recording.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC/User Archives** | |
| • Option for SIMATIC WinCC V7.5, Runtime software, single license | **6AV6371-1CB07-5AX0** |
| • Option for SIMATIC WinCC V7.4, Runtime software, single license | **6AV6371-1CB07-4AX0** |
| As download | |
| • Option for SIMATIC WinCC V7.5, Runtime software, single license | **6AV6371-1HB07-5AX0** |
| • Option for SIMATIC WinCC V7.4, Runtime software, single license | **6AV6371-1HB07-4AX0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-user-archives

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## Overview

### *SIMATIC WinCC OA*

The SCADA System SIMATIC WinCC Open Architecture addresses applications with a high demand for customer-specific adaptations, large and/or complex applications, as well as projects that demand special system requirements and functions.

SIMATIC WinCC OA stands for:

- Object orientation supports efficient engineering and flexible plant expansion
- Up to 2 048 servers for distributed systems
- Scalable – from small, single-user systems to networked, redundant high-end systems with more than 10 million tags
- Can be used on any platform, and is available for Windows, Linux, iOS and Android
- Hot-standby redundancy and disaster recovery system assure maximum fail-safety and availability
- Platform for customized solutions
- Extensive driver and interfacing options: S7, S7 PLUS, OPC, OPC UA, Modbus, Rockwell EtherNet/IP, IEC 61850, IEC 60870-5-101/104, DNP3, XML, TCP/IP
- FDA compliant (FDA 21 CFR Part 11)

Apart from the software, SIMATIC WinCC OA also offers a large spectrum of services and preconfigured additional functionalities, such as:

- Single server: products required for operation of a single-user system
- Server: server basic package and expansions to incorporate tags (I/Os)
- User interfaces: all available user interface licenses and engineering licenses for one server
- Driver: a wide range of additional connection options for one server
- Add-ons: functional expansions within a WinCC OA server and additional functions based on the server
- Runtime packages: special offers for SIMATIC WinCC OA servers, purchased together with a SIEMENS PC platform
- Development packages: special offers for development environments and expansions
- Solution frameworks: pre-defined projects with pre-implemented functions such as extended maintenance applications, tree views of a plant or simulation options with SIMATIC WinCC OA
- Trading goods: commodities for SIMATIC WinCC OA

#### SIMATIC WinCC OA IOT Suite

The product spectrum of SIMATIC WinCC OA is extended towards IoT with the SIMATIC WinCC OA IOT Suite.
This is based on the standard product SIMATIC WinCC OA and comprises two components:

- IOT Box and IOT OPA

#### SIMATIC WinCC OA Services

SIMATIC WinCC OA offers a multitude of support such as consulting, solution portfolio or special implementations (e.g. driver extensions or creation of new ones), as well as hotline support.

A large number of training courses is also offered for the multitude of WinCC OA possibilities. This offer is rounded out with travel expenses flat rates to ensure the use of our employees on-site.

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## Overview

***SIMATIC WinCC Open Architecture***

SIMATIC WinCC Open Architecture is a SCADA system for visualizing and operating processes, production flows, machines and plants in all industrial sectors.

SIMATIC WinCC OA is built consistently on object-oriented structures. Due to this consistent and well-considered use of object-oriented structures, from process images to the database, the engineering costs improve for SIMATIC WinCC OA customers.

Distributed systems enable the connection of up to 2 048 autonomous SIMATIC WinCC Open Architecture systems via a single network. Each subsystem can be configured either as single station or multiple station system, each of which may be redundant or non-redundant.

Current version: ***SIMATIC WinCC Open Architecture V3.17***

Runs on:

- Windows 10 Enterprise (64-bit)
- Windows 2016 Server (64-bit)
- Windows 2019 Server (64-bit)
- Red Hat Enterprise Linux 8.x (64-bit)
- Linux CentOS 8.x (64-bit)
  - SLES 15 (64-bit)
- VMware Workstation (supports all systems mentioned above)
- VMWare ESXi Version 6.5 & 6.7 (supports all systems mentioned above)
- vSphere HA Cluster ESXi 6.7 Update 3

ITC Thin Client V 3.0

SIEMENS Industrial OS 2.0

Note:

Native 64-bit support.

## Benefits

Efficient engineering and flexible plant expansion

- Object orientation
- Unlimited number of data points
- Mass engineering
- Multi-language with UTF-8 support

Object-oriented data model

- Mapping of setpoint and measured values for a physical plant object onto a structured data point
- Data point comprises a tree structure with data point elements
- The individual process values are mapped onto the data point elements
- Any number of data points can be instanced from one defined data point structure (data point type), e.g. 20 pumps of the same type.
- Data point types can be embedded in other data point types, which enables more complex plant objects to be generated (e.g. one pump station comprises 2 pumps).
- Graphical plant symbols can be linked with a data point type. They only need to be drawn once, but can be used for all instances of the linked type.
- Savings in engineering outlay.

Freely scalable

- From a small single-user system up to a networked, redundant high-end system
- Distributed systems of up to 2 048 servers

Platform-independent

- Available for Windows, Linux, iOS and Android

Native 64-bit support

- More system memory is usable due to native 64-bit support
- Means larger data quantity structures per server can be processed

Maximum reliability and availability

- Hot standby redundancy
- Disaster Recovery System (2x2 redundancy)
- FDA compliant (FDA 21 CFR Part 11)
  - IEC 61508 SIL 3 certified
  - Certifications for PROFIsafe and PROFINET
  - Certifications according to 62443 4-1 and IEC 62443 4-2

## **Benefits** (continued)

Quick and easy implementation of new processes

- Platform for customized solutions
  - Graphical user interfaces and wizards facilitate the creation of visualization interfaces
  - Installation of existing object libraries and rapid adaptation to customer requirements
  - Easy creation of new processes via NodeRED connection
- Swift adaptation of plant control and visualization to current market requirements
- Company-internal programming and in-house developments enable independence and protection of intellectual property
- Structure of standardized solutions permits continuous use
- Support of brand labeling
- Individual brand names for OEM developments
- Remote operator stations and mobile operability
  - Desktop UI
  - Mobile UI
  - ULC UX
  - Operator app for iOS

Openness thanks to comprehensive driver and interface options:

- TCP/IP: SIMATIC S7, SIMATIC S7 PLUS, MQTT, PROFINET/PROFIsafe, TLS Gateway, Modbus, Ethernet/IP, SNMP, BACnet
- OPC UA: DA, AC, HA (client & server)
- OPC: DA, AE, HDA (client & server)
- Telecontrol drivers: SSI, IEC 60870-5-101, -104, DNP3, SINAUT, IEC 61850/61400, RK512
- API
- Cerberus

Seamless traceability of system states by means of high-performance archiving:

- Data archiving in value archives (internal database format)
- Data archiving in external databases:
  - Use of Oracle databases
  - Open databases that support time series (e.g. InfluxDB)
  - Databases with SQL-like query mechanisms
  - Use of archived data for reports and trends
  - Storage of archived data locally or centrally – optionally both

Expandable by means of add-ons and solution frameworks:

- Add-on for integration of video management systems (VIDEO)
- Add-on for increasing availability (redundancy in hot standby, disaster recovery system, etc.)
- Add-on for clarity in distributed systems (Plant Model overview, CMS, GIS Viewer, etc.)
- Add-on for efficient maintenance management (AMS, Maintenance, Scheduler etc.)
- Add-on for efficient building automation technology (BacNet)

## Application

The SCADA System SIMATIC WinCC Open Architecture addresses applications with a high demand for customer-specific adaptations, large and/or complex applications, as well as projects that demand special system requirements and functions.

SIMATIC WinCC Open Architecture demonstrates its high performance in networked and redundant high-end control systems in particular. Integrated, high-performance communication is guaranteed from the field level to the control station, from the machine to the company headquarters. In every situation, high availability, reliable information, fast interaction, and user friendliness are guaranteed. Applications can also be changed without interrupting the process. Profitability, efficiency and safety are therefore always in equilibrium.
SIMATIC WinCC Open Architecture displays its reliability in a wide range of business-critical applications.

With SIMATIC WinCC Open Architecture, ideas can be quickly and easily converted into new applications.
SIMATIC WinCC Open Architecture is open for independent in-house developments and also enables own product branding.

Thanks to its special system properties,
SIMATIC WinCC Open Architecture meets the highest demands especially in the case of traffic solutions, building management systems and supply systems (power, telecommunication networks, water, oil and gas, etc.).

## Design

SIMATIC WinCC Open Architecture is available as a single-user runtime license, multi-user runtime license, web client license, and parameterization and development license.
With SIMATIC WinCC Open Architecture, one of the factors for determining the required license is the number of inputs and outputs (I/O), also known as tags, to be processed.

An "I/O / tag" refers to a data point element (DPE) whose content is exchanged either by means of drivers (e.g. S7 driver communicates with a PLC) or with other software systems. Internal data point elements, i.e. DPEs without communication to the outside, are not counted for licensing.
The licenses are available either with an unlimited number of I/Os or with limitations of 500 to 250,000 I/Os.

The multi-user runtime license allows working simultaneously from different PCs, with the licensing taking place via the server. The active clients are then counted. Clients that can be installed natively as well as web-based user interfaces in common browsers allow visualization and operation of plant screens via an encrypted HTTP connection between the server and the respective client. The parameterization and development licenses extend a runtime license with the option of configuration and parameterization. They each require a server license.

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## Function

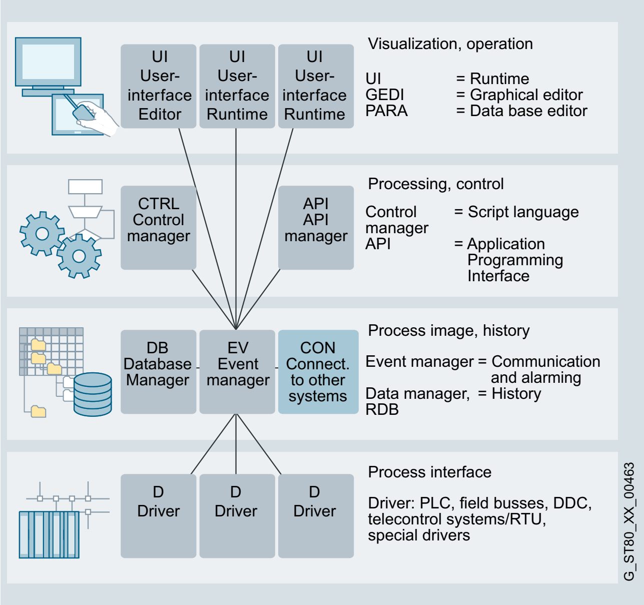
SIMATIC WinCC Open Architecture is a very modular SCADA system. The required functionalities are realized by specific, functional entities created for various tasks.

In SIMATIC WinCC Open Architecture, these units are called "Managers" – they are also independent processes in software terms.

| WinCC OA Manager | Task |
|---|---|
| **Event Manager (EV)** | The Event Manager (EV) is the processing center in WinCC OA.<br>This unit provides a constantly updated image of all process tags in the memory. Every other functional unit (Manager) that wants to access the data receives it from the process image of the Event Manager and does not have to communicate directly with a controller. Conversely, a command from an operator station is initially set only as a value change in the process image of the Event Manager. The associated driver then forwards it to the corresponding target device (e.g. PLC) automatically.<br>The Event Manager is a kind of central data distributor, in effect the communication center for WinCC OA. Furthermore, this Manager also carries out the alarm handling and can execute various arithmetic functions autonomously. |
| **Driver Manager (D)** | The lowest level in a WinCC OA system is represented by the process connections, referred to in WinCC OA as drivers (D). These are special programs that handle the communication with the control and field level. Since numerous different forms of communication are possible with the PLCs or telecontrol nodes, there are different drivers that can be selected. In very simple terms, the driver is a unit for converting a particular protocol into the internal communication form of WinCC OA. The driver reads the current states, measured values or counter values from the field and in the opposite direction it forwards commands and setpoints to the lower-level controllers (= the term "controller" should be used here and below to represent all possible devices of the basic automation (PLC, DDC, telecontrol system, etc.)). |
| **Data Manager (DB)** | The Data Manager (DB) represents the link to the database. On one hand, it involves the parameterization data of an application that is to be stored in such a database. On the other hand, it involves the historical recording of changes in values or alarms. If a user wishes to query historical data at a later date, then the Data Manager completes this request and not the database itself. |

| WinCC OA Manager | Task |
|---|---|
| **Control Manager (CTRL)** | WinCC OA has numerous options for implementing your own algorithms and processing. The two most important are the internal language Control (CTRL) and the general application programming interface (API).<br>Control is an extremely powerful scripting language. The processing is interpretative, so that no compilation is required. The syntax is almost identical with ANSI-C, with some modifications for simplification.<br>This is a fully developed, procedural high-level language with multi-threading (= quasi-parallel processing of individual programs; the system itself carries out the processing check).<br>The language offers a comprehensive function library for tasks of the control and visualization technology. Control can be used as a stand-alone process (Control Manager), for animation and user interface design or for standardized, data object-oriented processing functions.<br>The API (WinCC OA API) represents the most powerful form of functional expansion. It is configured as a C++ class library and allows the software developer to implement individual functions as an independent, additional manager (forecast system, simulation, tools, proprietary databases, etc.). |
| **User Interface Manager (UI)** | The interface to the user is created by the User Interface Manager (UI). This is a graphical editor (GEDI), a database editor (PARA) or the general user interface of the application (Vision module).<br>The user interface serves to display values, issue commands or track alarms in the alarm list.<br>Trends and reports are also usually part of the UI.<br>From a programming viewpoint, the user interaction in WinCC OA is completely isolated from the background processing – it is merely a view of the data of the current process image or the history. |

## **Function** (continued)


UI User-interface Editor
UI User-interface Runtime
UI User-interface Runtime
Visualization, operation
UI = Runtime
GEDI = Graphical editor
PARA = Data base editor
CTRL Control manager
API API manager
Processing, control
Control manager = Script language
API = Application Programming Interface
DB Database Manager
EV Event manager
CON Connect. to other systems
Process image, history
Event manager = Communication and alarming
Data manager, RDB = History
D Driver
D Driver
D Driver
Process interface
Driver: PLC, field busses, DDC, telecontrol systems/RTU, special drivers
G_ST80_XX_00463

A WinCC OA system consists of function-specific units, the managers.

More managers are available for special tasks such as redundancy, management for distributed systems, web server, reporting, simulation, COM etc.

The powerful configuration functions contribute to reducing the engineering and training requirements and lead to increased flexibility and operational reliability.

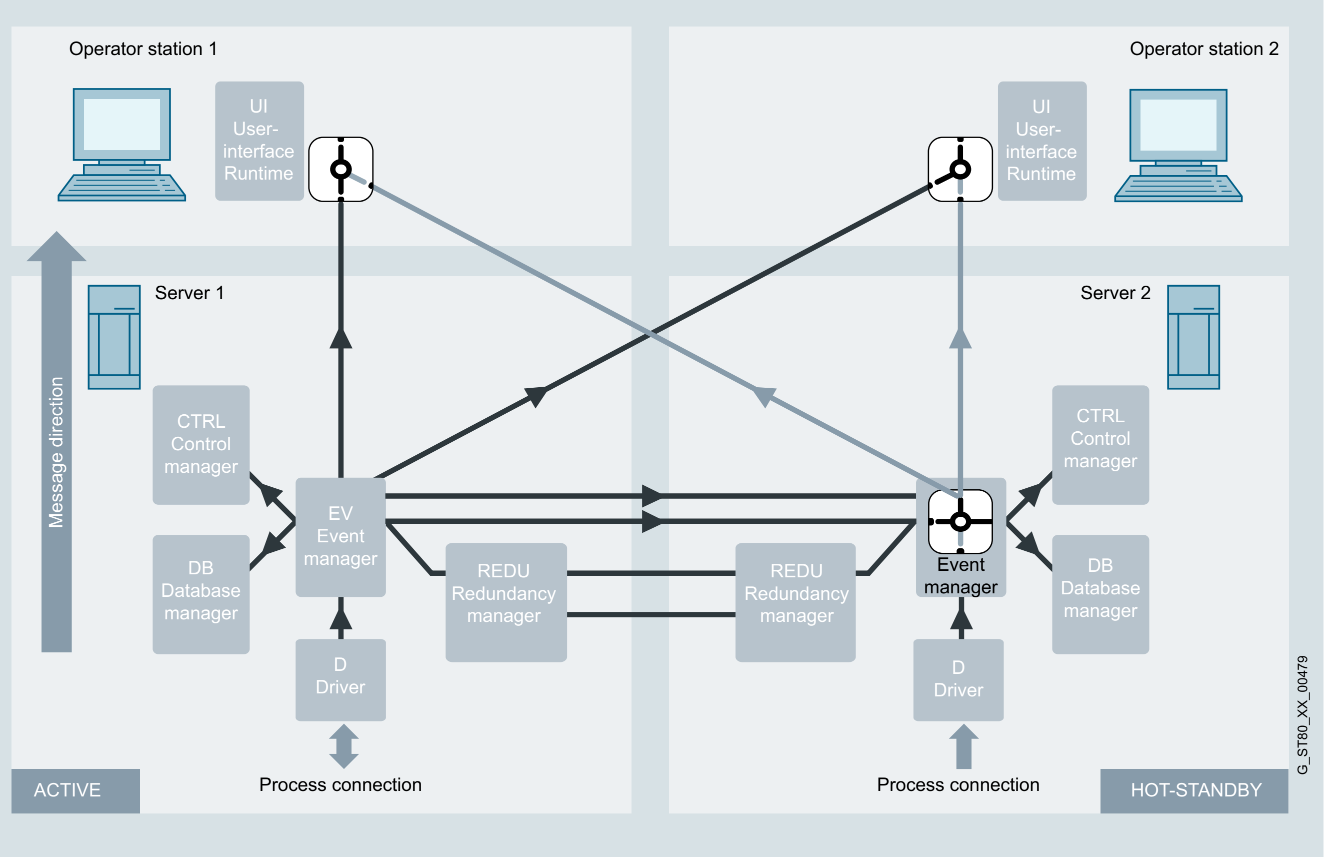
| Additional functions | Task |
|---|---|
| **Access to external databases** | The database interfaces offer the possibility of access to external databases.<br>Under Windows, the link is established via the ADO Standard. ADO (ActiveX Data Objects) is an interface developed by Microsoft for vendor-independent access to data sources of all types, primarily databases. The data source for ADO is an OLE DB Provider, although ODBC-compatible databases can also be addressed via an internal wrapper.<br>In Linux, the Qt library is used as an interface to relational databases. Access in this case is either direct via the native DB-API or via ODBC.<br>Additional interfaces such as RDB to Oracle or the new archiving interface to open databases such as InfluxDB support the connection of external, also freely available (open source) databases for optimal archiving and protection of the stored data. |
| **API (Application Programming Interface)** | The API offers a series of functions that enable WinCC OA to be extended with special managers. A manager is a program that communicates with the system via a protocol defined by WinCC OA. |
| **COM (Component Object Model)** | This is a specification for the development of modular software components that can be used by each COM-compatible application.<br>COM components can easily be integrated into such applications and can even be removed from an application during runtime. COM components can be programmed in a host of different languages, although C++ is usually used for this purpose. The specifications OLE, ActiveX and DirectX are based on the COM technology. |
| **Control expansion** | Expansion that allows C++ functions to be added to the programming language. Realization via API |

## **Function** (continued)

| Additional functions | Task |
|---|---|
| **Panel topology/ summation signal** | Generation of panel hierarchies/topologies in existing or new projects and automatic creation of summation signals of the alarm data points that are located in the Panels of the topology. |
| **Encryption of Panels and CTRL scripts/ libraries** | Allows your Panels or scripts to be encrypted, thereby protecting your knowledge and work. |
| **Script Wizard** | Easy-to-use tool that simplifies the creation of animated, graphical plant symbols, which saves time during engineering. It offers a large number of animation types and functional elements. |
| **Simple Symbols** | Basic package of plant symbols, which were created with the Script Wizard and can be mapped directly to data point elements. These can be adapted quickly and easily to the specific requirements of the customer. |
| **Easy Faceplates** | Simple parameter assignment of predefined pop-up windows that display details of the associated plant symbol. Without any additional drawing outlay, several standard functions per object can be activated for the detail view (alarm display, trend display, measured value table, setpoint value table, address table, notes). |
| **Drag and Draw** | Several representative graphical objects can be defined and configured for each plant object in the data model (data point type). These are pre-configured and need only be moved to the panel via drag-and-drop when the plant pictures are drawn. This saves valuable time during engineering. |
| **NodeRED interface** | With a new communication interface, WinCC OA supports the integration of NodeRED via a secure web socket server. The graphical editor can be used for easier process mapping and creation on a graphical interface. Pre-defined process chains can be created and modified as easily as on the drawing board. WinCC OA offers its own communication node package, and its own processes created using Node.js can also be integrated. |

| Additional functions | Task |
|---|---|
| **Multilingual capability** | Thanks to the UTF-8 format as the standard for written languages it's possible to use almost all fonts and characters in projects. You can choose from 72 language options. User rights enable the definition of a standard language. In addition it is easy to change the display language during operation. Dictionaries can be made with a special tool or according to individual requirements. |
| **Server-side authentication** | The verification of logon data on the server side enables connection of third-party systems including the customer's own solutions for user authentication. |
| **Distributed systems** | Permits the coupling of two or more autonomous WinCC OA systems via a network. Each subsystem of a distributed system can be configured either as a single station or multiple station system, each of which may be redundant or non-redundant. A sub-system in this context means a server on which an Event Manager is running, whereby in case of redundancy both redundantly operating servers are considered as one system. All process data is mapped to local data points and each system can process data from other systems. |
| **Redundancy (see figure below)** | The failure safety in a redundant system is implemented by means of hot standby. Hot standby is a hardware-independent solution for high availability. This is a safety concept that consists of two interconnected server systems. Both servers are constantly in operation and are subject to the same functional loading (but only one server is ever active; the second synchronizes the data with the primary unit during runtime). On the failure of one unit, an "on-the-fly changeover" takes place and the previously passive server assumes the leading role. This guarantees access to data or functions at all times. |

**Function** (continued)


Operator station 1
UI
User-interface
Runtime
Operator station 2
UI
User-interface
Runtime
Server 1
Message direction
CTRL
Control
manager
DB
Database
manager
EV
Event
manager
REDU
Redundancy
manager
D
Driver
Process connection
ACTIVE
Server 2
CTRL
Control
manager
DB
Database
manager
Event
manager
REDU
Redundancy
manager
D
Driver
Process connection
HOT-STANDBY
G_ST80_XX_00479

The figure shows a detailed representation of the two computers: Server 1 and Server 2. Server 1 is in management mode (active) and Server 2 is in hot standby mode (passive).

In the case of redundant operation, the UIs of both operator stations are connected to both Event Managers, however only the data of the active system is displayed on both UIs.

The Event Manager of the passive system is restricted exclusively to communication with the Event Manager of the active system for synchronization of the process data (it sends no data to the connected UIs or it discards messages from the drivers – this can be seen in the figure with the switches on the UIs or on the passive Event Manager).

## Integration

### *Integration in automation solutions*

SIMATIC WinCC Open Architecture is an open SCADA system with comprehensive drivers and flexible options for connection to other external systems.

Depending on the communications protocol and the bus hardware used, specific drivers are used in each case:

- Serial protocols: RK512, 3964R, etc.
- Ethernet: Industrial Ethernet (S7, S7 PLUS), Modbus TCP (OpenModbus), Ethernet IP (AB), etc.
- Telecontrol systems: SINAUT, SSI (Ethernet), IEC 61850/61400, IEC 60870-5-101, IEC 60870-5-104, etc.
- Vendor-independent interfaces: OPC UA, etc.
- Cloud connections: SIEMENS MindSphere Connector, MQTT

In SIMATIC WinCC Open Architecture, several drivers can be operated in parallel. These can be of the same type or also of different types. It is possible in a SIMATIC WinCC Open Architecture system, for example, to establish connections via the S7 protocol to a SIMATIC controller, via IEC 60870-5-104 to a telecontrol system, and via OPC DA to any OPC server at the same time.

### *Connection overview*

| Protocol | Description |
|---|---|
| **S7 TCP/IP** | TCP/IP driver for Siemens Industrial Ethernet |
| **S7 PLUS** | Drivers for S7 1200 and 1500;<br>Supports alarm messages, online browsing, TIA importer for versions V13, V14 and V15 |
| **OPC Client (Data Access)** | • Compatibility with specifications DA 1.0 and 2.05a<br>• Connection to inproc, local or remote server<br>• Connection with up to 20 servers at the same time<br>• Monitoring of the connection to the server and automatic reconnection if the connection is interrupted.<br>• Address browsing if supported by the server.<br>• Benefits of the CALL-R functionality for CALL-R servers (simplified parameter assignment) |
| **OPC Server (Data Access)** | • Corresponds to Data Access 2.05a specification (reading/writing of online values).<br>• Is to be started as a manager just like other drivers.<br>• The provided DPEs (server -> client) can be easily and quickly defined via data point groups.<br>• DPEs can be declared as readable (read-only access is permitted; Group OPCRead) or as writable items (Group OPCWrite).<br>• Clients can browse the WinCC OA OPC Server hierarchically. |
| **OPC Alarms & Events** | OPC Alarms & Events (abbreviated to OPC A&E) is, in addition to Data Access, a further standard for performing central alarm management on a cross-vendor basis. OPC A&E is used to ensure the link to other control systems and the display of alarms/events in a hierarchical system. |
| **OPC Historical Data Access** | OPC Historical Data Access (OPC HDA) is used to exchange archived process data. This is in contrast to the OPC Data Access (OPC DA) specification that deals with real-time data. |
| **OPC UA (Unified Architecture)** | WinCC OA supports the OPC UA Data Access (DA), Alarms & Conditions (AC) and Historical Access (HA) standards. |
| **Modbus TCP** | Modbus/TCP is based on the serial Modbus protocol, which was adapted for TCP/IP.<br>The Modbus/TCP driver can be used simultaneously for Modbus/TCP or UNICOS. |

## **Integration** (continued)

| Protocol | Description |
|---|---|
| **Ethernet/IP** | Ethernet/IP is used for communication with several PLC generations and families from Rockwell Automation / Allen Bradley. The protocol is part of the application layer and is based on the standard TCP/IP network protocol. |
| **Serial: RK512/3964R** | Is used for interfacing a PLC via the 3964R/RK512 protocol |
| **Cerberus** | Cerberus is a fire, intrusion and gas alarm system. The Cerberus driver guarantees communication to and from the central fire alarm systems and building security facilities in the event of a fire, gas or intruder alarm. |
| **SSI** | Is used for the interfacing of SAT telecontrol systems. The data is exchanged via the LAN (Ethernet, IEEE 802.3); the frame formats used are the SSI formats defined by SAT. The SK 1703 telecontrol components with a suitable communication card (KE/ET) are supported. |
| **IEC 60870-5-101, -104** | IEC drivers are standardized telecontrol drivers that can process proprietary frames. IEC stands for International Electrotechnical Commission, the international standardization committee for electrical engineering.<br>• IEC 60870-5-104 for data exchange via TCP/IP<br>• IEC 60870-5-101 for serial connection |
| **IEC 61850/61400** | IEC 61850 and IEC 61400 Client defines an architecture for satisfying the requirements of electrical station automation. It defines a data model and the communication services for interaction with and between the elements of a substation, such as power supply units, circuit breakers, protective devices etc. A description language and a system configuration language (SCL) have been defined for technical purposes. |

| Protocol | Description |
|---|---|
| **DNP3** | The DNP3 (Distributed Network Protocol 3) driver is an open, rugged and modern protocol which exhibits characteristics and strengths similar to the IEC driver. The transfer of any number of frames with different data types takes place between the WinCC OA system (Master) and the remote stations (Slave). |
| **SINAUT** | SINAUT (SIemens Network AUTomation) is a communication protocol for automated monitoring and control of remote process stations on the basis of SIMATIC S7. Communication takes place via TCP/IP. |
| **SNMP Manager & Agent** | SNMP (Simple Network Management Protocol) is a protocol for monitoring network elements (servers, workstations, routers, switches, hubs, etc.) and their functions.<br>• SNMP Manager supports SNMP V1, V2, and V3<br>• SNMP Agent supports SNMP V1 and V2 |
| **BACnet over IP – driver** | BACnet (Building Automation and Control Networks) is a standardized protocol for building automation and has been set by the ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers) as a guideline to provide a uniform and cross-company standard for data communication within and between building automation systems.<br>The BACnet Standard 2004 is supported in accordance with the PIC list (see product documentation) |
| **S-Bus** | The WinCC OA S-Bus driver is used to link SAIA PCD control devices to WinCC OA projects. Client mode of the SAIA S-Bus driver is used. Communication takes place over UDP; the serial version of the protocol is not supported. |

**Further drivers on request or via C++ API**

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## Technical specifications

| Type | SIMATIC WinCC Open Architecture V3.17 |
|---|---|
| **Operating system** | • Windows 10 Enterprise (64-bit)<br>• Windows 2016 Server (64-bit)<br>• Windows 2019 Server (64-bit)<br>• RedHat Enterprise<br>• Linux 8.x (64-bit)<br>• Linux CentOS 8.x (64-bit)<br>• SLES 15 (64-bit)<br>• VMware Workstation (supports all systems mentioned above)<br>• VMware ESXi Version 6.5 & 6.7 (supports all systems mentioned above)<br>• vSphere HA Cluster ESXi 6.7 Update 3<br>ITC V3<br>Siemens Industrial OS V 2.0 |
| **Mobile operating system** | • Android 6 and higher<br>• iOS 12.3 and higher |
| **Supported browsers** | • Firefox: 67 or higher<br>• Chrome: 74 or higher<br>• Internet Explorer: 11 or higher<br>• Microsoft EDGE: 41 or higher |
| **Supported Oracle versions** | • Oracle client version:<br>• 12.2.0.2<br>• Oracle server version:<br>• 19c |

| Type | SIMATIC WinCC Open Architecture V3.17 |
|---|---|
| *PC hardware requirements* [1] | |
| **Processor type** | Intel Pentium or equivalent |
| Minimum | Intel Pentium IV 1.6 GHz (or better) [2][3] |
| Recommended | • Client: Intel Pentium IV/Core2/i3, 2 GHz [2][3]<br>• Server: Intel Core i3 CPU Dual, 3 GHz [2]<br>• Server large system[4]: Intel(R) Core(TM) i5/i7 CPU Dual / Quad, 3 GHz [2][3] |
| **Work memory RAM** | |
| Minimum | 2 GB [2] |
| Recommended | • Client: 2 GB [2][3]<br>• Server: 8 GB [2][3]<br>• Server large system: 16 GB [2] |
| **Hard disk (available memory for installation)** | |
| Minimum | HD with 800 MB available [2] |
| Recommended | Server large system with local logging: SCSI LVD Controller, WIDE SCSI / LVD HDD or comparable storage system with at least 500 MB of available space [2] |
| **Screen and graphics card (TrueColor)** | |
| Minimum | 1024 x 768 [2] |
| Recommended | 1280 x 1024 [2] |
| **Mouse and keyboard** | Mouse, keyboard |
| **DVD drive** | Possible for software installation, also via web installation or USB flash drive |
| **Local power user rights** | • For installation<br>• For operation |

[1] For actual use in plants, the hardware requirements are largely dependent on the project size and the dynamic response of the process variables. Use the most rugged, high-quality hardware possible with corresponding functionalities such as redundant power supply units or RAID hard disks. WinCC OA supports dual and multi-processor mode and benefits significantly from the fact that each WinCC OA Manager can be assigned to one processor core as a system process. At the same time, however, it is important that the individual cores offer the highest possible performance (high clocking), since load-critical core processes such as the event manager run on exactly one core (for this reason, multi-core machines with many low-clocked cores are unsuitable for WinCC OA). As for RAM, CPU and HDD, the usual rule applies: more is better

[2] System requirements generally only refer to WinCC OA Version 3.16 under the supported versions of the Windows and Linux operating systems.

[3] A precondition for the minimum requirement is that the operating system used does not have any greater requirements itself

[4] With a large system it is essential that the system permits not only the highest data point numbers but also a high dynamic response.

## Technical specifications (continued)

WinCC OA is ideally suited for use in very large distributed systems.

The optimum design of such systems demands corresponding system knowledge of WinCC OA.

Due to the event-oriented processing, individual design parameters can be increased or reduced as necessary in actual applications.

| Type | SIMATIC WinCC Open Architecture |
|---|---|
| **Functionality/quantity structure** | |
| Messages (quantity) | 150,000 [2)] |
| Message text (number of characters) | System-limited [1)] |
| Message archive | System-limited [1)] |
| Process values per message | 1 process value + up to 32 alarm associated values per message |
| Constant load of messages, max. | 500/s [2)] |
| Message burst, max. | 15,000/10 s every 5 min [2)] |
| **Archives** | |
| Archive data points | Max. 250,000 per server [2)] |
| Archive types | < 20 parallel archives, different retention period for each archive |
| Data storage format | Oracle or file system |
| Measured values per second, max. | Server/single-user station: 7,000/s [2)] [3)] |
| **User archive** | |
| Archives | System-limited [1)] |
| Type | SIMATIC WinCC Open Architecture |
| Table size | System-limited by ORACLE database |
| **Graphics system** | |
| Number of screens | System-limited [1)] |
| Number of objects per screen | System-limited [1)] |
| Number of controllable fields per screen | System-limited [1)] |
| Process tags | < 750,000 per server [2)] |
| **User administration** | |
| User accounts | < 4096 |
| Configuration languages | 3 (en, de, ru) |
| Runtime languages | 40 (of which 8 Asian) |
| **Multiple station system** | |
| Server | < 2048 [2)] [4)] |
| Number of clients | < 244 per server [2)] [5)] |

[1)] Dependent on the available storage space

[2)] Dependent on the system configuration and the system load (due to the event-oriented architecture, the system load is essentially determined by the change rates of the values to be processed)

[3)] By means of high-performance hardware configuration (one archiving cluster and approx. 120 distributed systems that archive parallel values in the cluster): 200,000 archived value changes per second

[4)] Physical limit: <2048, in practice systems have already been implemented with up to 550 distributed systems

[5)] Physical limit: < 244 clients per server, recommended: Max. 100 clients per server

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## Overview

A WinCC OA Single Station or Single Operator Station is a compact WinCC OA server configuration which, in contrast to a regular WinCC OA server license, cannot be extended by additional I/Os or add-ons. Includes alarm messaging, extended trend, historical recording and SSL encryption.

## Benefits

- Common configuration of frequently used services for small solutions
- Easy to order due to bundled product
- Simple basis for standardization through configuration options directly at the station
- Flexible use by offering open, widely used standards such as OPC and OPC UA

## Application

For small, compact solutions, the single station configuration offers a quick ordering option without special requirements. Based on customer experience, this bundle was created to provide an optimal, yet open basis for simple, small solutions.

This bundle is not intended to be the basis for small stations in a system network, as there are no plans to expand for distributed systems or redundancy.
A restriction to certain hardware types is not planned for this bundle. For certain hardware types, "Runtime packages" have therefore been put together, which offer further advantages when using Siemens hardware.

## Design

### Tags

The WinCC OA single station contains a maximum of 500 tags with the **Bit** and **Integer** data point types. In contrast to Server Basic licenses, Single Station licenses **cannot** be expanded with additional tag packages.

### UIs

The Single Station license includes a Desktop UI license and a license for one WinCC OA OPERATOR device.
More information on this can be found in the <User Interfaces> section

### Drivers

A single station license contains technical licenses for S7 and S7 Plus (8 connections) drivers, as well as one OPC and one OPC UA client each. More information on drivers can be found in the <Drivers> section

### Add-ons

Single stations include an OPC server and a WinCC OA web server**.** More information on options can be found in the <Add-ons> section

### WinCC OA Para Single Station

The single station can additionally be extended by a development and parameter assignment license.
The WinCC OA Para Single Station license contains a graphical editor including symbol catalogs, a script development environment and a test framework.
An existing WinCC OA Single Station license is required for the purchase. When the Para Single Station license is procured, the UI contained in the single station package can be used either for parameterization or for operator control and display functions, but not for both at the same time. This special PARA license can only be ordered in conjunction with the single station package.

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## WinCC OA Single Station

### Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Single Station**<br>License for single operator station with max. 500 tags (bit, integer) | |
| • Single Station | **6AV6355-1AA31-7AA0** |
| • Single Station UPG | **6AV6355-1CA31-7AA0** |
| • Single Station SUS | **6AV6355-1DA31-7AA0** |
| • Single Station SMS | **6AV6355-1FA31-7AA0** |
| **WinCC OA – Para Single Station**<br>Development and parameter assignment license for WinCC OA single station | |
| • Para Single Station | **6AV6355-1AA31-7AA1** |
| • Para Single Station UPG | **6AV6355-1CA31-7AA1** |
| • Para Single Station SUS | **6AV6355-1DA31-7AA1** |
| • Para Single Station SMS | **6AV6355-1FA31-7AA1** |

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## Overview

***WinCC OA Server***

WinCC OA server licenses consist of two components – ***Server Basic*** and ***Tag packages***.

The Server Basic license does **not** include external data connection (tags). These must be purchased for proper operation.

In contrast to previous versions, the new structure of the server licensing allows the distribution of tag packages. This possibility enables additive ordering of several tag packages on one server or separate ordering and moving of tag packages to different servers by the customer.

## Benefits

- Individual adaptation to the needs of the project and the customer through different tag packages
- Customer-oriented options for moving packages as required
- Possibility to let the project grow with the requirements and to quickly expand it
- A basic set of common drivers already included in the basic package
- Expansion of server packages from single workstations to multi-server architectures

## Application

Server packages are the basis of every WinCC OA project. Tags correspond to the previously communicated logic of the definition of I/Os where external communication is evaluated.

Starting from the server package, it must also be considered how the "service" contract and the "redundancy" of the systems are defined. More information about the maintenance agreement can be found under "Support".

The flexibility of the newly available tag packages as an assignment option for different servers facilitates planning of the overall project as well as customer-oriented design based on need and changes of the packages. This method makes it possible, for example, for customers to order new tag packages and assign them to servers in the project.

Due to the different sizes of the packages, there is also the possibility to implement solutions ranging from single stations to several 100 servers in a network.

The technical licenses included in the basic package can be viewed in detail in the license tool CodeMeter WebAdmin; accordingly, the included features do not need to be ordered separately. These technical licenses are part of the bundle and therefore not individually transferable to other containers. There are special overall solutions for specific devices – these "Runtime packages" include more services. These cannot be moved and extensions are not possible with these packages. Issuance of these special packages is always combined with the purchase of specific SIEMENS hardware. This is in addition to the license purchase – i.e. as an additional item in an order.

For small, standardized single station solutions, a (non-expandable) bundle product "Single Station" is also available, which offers advantages for our customers both in terms of price and simplified ordering.

## Design

**Server Basic** includes alarm messaging, extended trend, historical recording and SSL encryption. Additional services are available as follows:

UIs

The WinCC OA Server Basic license includes **one** WinCC OA OPERATOR license; no UIs are included and must be ordered separately. More information on this can be found in the <User Interfaces> section.

Drivers

A Server Basic license contains technical licenses for S7 and S7 Plus (8 connections) drivers, as well as one OPC and one OPC UA client each. More information on drivers can be found in the <Drivers> section.

Add-ons

WinCC OA Server Basic includes a web server. More information on options can be found in the <Add-ons> section

Options required in addition can also be licensed, if the basic license allows it.

Tag packages (tags)

Tag packages are extensions of WinCC OA servers by a defined number of I/Os. WinCC OA defines an I/O as a data point element (DPE), the content of which is exchanged either via drivers (e.g. S7 driver communicates with a PLC), with other WinCC OA servers (distributed systems) or with other software systems. Internal data point elements, i.e. DPEs without communication to the outside, are not counted for the licensing.

For a redundant server configuration, both WinCC OA server licenses must be extended to the same number of tags. A tag extension can only be ordered within the same WinCC OA version. The packages on a server are counted cumulatively and can be expanded at a later point in time.

A single Tag Package cannot be split between several servers due to the license.

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## WinCC OA Server

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Server Basic**<br>License for WinCC OA server without external data connection and UIs. | |
| • Server Basic | 6AV6355-1AA31-7BA0 |
| • Server Basic UPG | 6AV6355-1CA31-7BA0 |
| • Server Basic SUS | 6AV6355-1DA31-7BA0 |
| • Server Basic SMS | 6AV6355-1FA31-7BA0 |
| **WinCC OA – Tags**<br>Extension of a WinCC OA server license by a fixed number of tags. | |
| • 1k Tags | 6AV6355-1AA31-7BB0 |
| • 1k Tags UPG | 6AV6355-1CA31-7BB0 |
| • 1k Tags SUS | 6AV6355-1DA31-7BB0 |
| • 1k Tags SMS | 6AV6355-1FA31-7BB0 |
| • 3k Tags | 6AV6355-1AA31-7BB1 |
| • 3k Tags UPG | 6AV6355-1CA31-7BB1 |
| • 3k Tags SUS | 6AV6355-1DA31-7BB1 |
| • 3k Tags SMS | 6AV6355-1FA31-7BB1 |
| • 5k Tags | 6AV6355-1AA31-7BB2 |
| • 5k Tags UPG | 6AV6355-1CA31-7BB2 |
| • 5k Tags SUS | 6AV6355-1DA31-7BB2 |
| • 5k Tags SMS | 6AV6355-1FA31-7BB2 |
| • 10k Tags | 6AV6355-1AA31-7BB3 |
| • 10k Tags UPG | 6AV6355-1CA31-7BB3 |
| • 10k Tags SUS | 6AV6355-1DA31-7BB3 |
| • 10k Tags SMS | 6AV6355-1FA31-7BB3 |
| • 15k Tags | 6AV6355-1AA31-7BB4 |
| • 15k Tags UPG | 6AV6355-1CA31-7BB4 |
| • 15k Tags SUS | 6AV6355-1DA31-7BB4 |
| • 15k Tags SMS | 6AV6355-1FA31-7BB4 |
| • 25k Tags | 6AV6355-1AA31-7BB5 |
| • 25k Tags UPG | 6AV6355-1CA31-7BB5 |
| • 25k Tags SUS | 6AV6355-1DA31-7BB5 |
| • 25k Tags SMS | 6AV6355-1FA31-7BB5 |
| • 50k Tags | 6AV6355-1AA31-7BB6 |
| • 50k Tags UPG | 6AV6355-1CA31-7BB6 |
| • 50k Tags SUS | 6AV6355-1DA31-7BB6 |
| • 50k Tags SMS | 6AV6355-1FA31-7BB6 |
| • 75k Tags | 6AV6355-1AA31-7BB7 |
| • 75k Tags UPG | 6AV6355-1CA31-7BB7 |
| • 75k Tags SUS | 6AV6355-1DA31-7BB7 |
| • 75k Tags SMS | 6AV6355-1FA31-7BB7 |
| • 100k Tags | 6AV6355-1AA31-7BB8 |
| • 100k Tags UPG | 6AV6355-1CA31-7BB8 |
| • 100k Tags SUS | 6AV6355-1DA31-7BB8 |
| • 100k Tags SMS | 6AV6355-1FA31-7BB8 |
| • 150k Tags | 6AV6355-1AA31-7BC0 |
| • 150k Tags UPG | 6AV6355-1CA31-7BC0 |
| • 150k Tags SUS | 6AV6355-1DA31-7BC0 |
| • 150k Tags SMS | 6AV6355-1FA31-7BC0 |
| • 200k Tags | 6AV6355-1AA31-7BC1 |
| • 200k Tags UPG | 6AV6355-1CA31-7BC1 |
| • 200k Tags SUS | 6AV6355-1DA31-7BC1 |
| • 200k Tags SMS | 6AV6355-1FA31-7BC1 |
| • 250k Tags | 6AV6355-1AA31-7BC2 |
| • 250k Tags UPG | 6AV6355-1CA31-7BC2 |
| • 250k Tags SUS | 6AV6355-1DA31-7BC2 |
| • 250k Tags SMS | 6AV6355-1FA31-7BC2 |
| • Unlimited Tags | 6AV6355-1AA31-7BC3 |
| • Unlimited Tags UPG | 6AV6355-1CA31-7BC3 |
| • Unlimited Tags SUS | 6AV6355-1DA31-7BC3 |
| • Unlimited Tags SMS | 6AV6355-1FA31-7BC3 |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

### *WinCC OA User Interfaces*

User interfaces (UIs) form the interface between software and user.

WinCC Open Architecture offers a variety of such interfaces: On the one hand for creating panel files, logic operations, libraries and much more in the form of a graphical editor (GEDI), for data point configurations and value management on the other hand (PARA).

The internal, general module (Vision) offers a simple possibility for user interfaces at operator stations (operator stations, workstation stations). The user interface serves to display values, issue commands or track alarms in the alarm list. Trends and reports are also usually part of the UI. From a programming viewpoint, the user interaction in WinCC OA is completely isolated from the background processing – it is merely a view of the data of the current process image or the history.

UIs on a server are counted cumulatively and can be expanded at a later point in time by purchasing additional UI licenses.

UI packages cannot be split between several servers due to license restrictions.

## Benefits

The editor tools offer possibilities for self-administration that can be quickly realized:

- Simple creation and adoption of existing elements of a user interface
- Graphical project administration, integration of existing libraries and configuration of different view variants (Content Management System, Standard-based, Shop View, language switching in runtime and much more)
- Simple parameter assignment and instantiation of data points (DP) and DP groups
- Basic license for bulk recordings and multi-user configuration.

The various client versions for operating stations offer decisive added value:

- Native clients for operator stations with extended possibilities
- Operation independent of operating system and identical look and feel of the user interfaces
- App download via Google Play or App Store
- Integration of security mechanisms (encryption, user notes, Audit Trails, authentication, user management, device releases) in remote units
- Web clients (ULC UX) as an alternative without mandatory installation on the terminals

## Application

User interfaces provide the optimal interface between human and machine through visual support. There is a wide range of reasons for their use.

Thanks to the extensive set of different connection options and the possibility of using modern layout tools as well as state-of-the-art extensions and the embedding of 3rd party components, WinCC OA offers the perfect basis for the most modern monitoring and control solutions, ranging from mobile phone apps to monitor walls in centralized control rooms. Thanks to the secure connection via the Internet, nothing stands in the way of opening important displays via a standard web browser.

Active user interfaces are licensed at the same time for a solution. It may make sense to plan specific measures to increase performance above a certain scale – depending on the number, content, value quantity, rate of change and role of the operator stations.

## Design

### Desktop UI

Operator station license for extending an existing WinCC OA server license. Simultaneous connections from active desktop UIs are counted. Packages are counted cumulatively.

### UltraLightClient User eXperience (ULC UX)

Licenses for UltraLightClient User eXperience web clients to extend an existing WinCC OA server license. Simultaneous connections from active ULC UX clients are counted. Supports a subset of the Desktop UI functionality. Packages are counted cumulatively. Available in standard or REDU version.

### Mobile UI

License for WinCC OA Mobile App for iOS or Android, to extend an existing WinCC OA server license. The supported Android and iOS versions can be found in the respective App Store. Simultaneous connections from active mobile apps are counted. Packages are counted cumulatively. Available in standard or REDU version.

### Operator App

License for connecting an Operator app (for iOS) to a WinCC OA server. SSL secured connection. Measured values and alarms can be queried, commands and acknowledgments can be sent. Configuration is performed in WinCC OA via a wizard. Each device must be assigned a license on the server. The Operator app can be obtained free of charge from the App Store.

### Para

Development and parameter assignment license for WinCC OA server with graphical editor (incl. symbol catalogs), script development environment and test framework. Requires WinCC OA Server Basic license. The parameterization package does not occupy an existing UI license in the server configuration. Parameterization during runtime is possible.

Available in standard, REDU or remote version.

### REDU

Desktop UI, ULC UX, Mobile UI and Para have a REDU option in addition to the standard version. When creating a redundant system, the REDU option (x2) must be obtained for the desired UIs. More detailed information can be found under "Redundancy" in the "Add-ons" section.

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – Desktop UI**<br>Operator station licenses for extending a WinCC OA server. | |
| • 1 Desktop UI | **6AV6355-1AA31-7CA0** |
| • 1 Desktop UI UPG | **6AV6355-1CA31-7CA0** |
| • 1 Desktop UI SUS | **6AV6355-1DA31-7CA0** |
| • 1 Desktop UI SMS | **6AV6355-1FA31-7CA0** |
| • 10 Desktop UI | **6AV6355-1AA31-7CA1** |
| • 10 Desktop UI UPG | **6AV6355-1CA31-7CA1** |
| • 10 Desktop UI SUS | **6AV6355-1DA31-7CA1** |
| • 10 Desktop UI SMS | **6AV6355-1FA31-7CA1** |
| • 25 Desktop UI | **6AV6355-1AA31-7CA2** |
| • 25 Desktop UI UPG | **6AV6355-1CA31-7CA2** |
| • 25 Desktop UI SUS | **6AV6355-1DA31-7CA2** |
| • 25 Desktop UI SMS | **6AV6355-1FA31-7CA2** |
| • 50 Desktop UI | **6AV6355-1AA31-7CA3** |
| • 50 Desktop UI UPG | **6AV6355-1CA31-7CA3** |
| • 50 Desktop UI SUS | **6AV6355-1DA31-7CA3** |
| • 50 Desktop UI SMS | **6AV6355-1FA31-7CA3** |
| • 100 Desktop UI | **6AV6355-1AA31-7CA4** |
| • 100 Desktop UI UPG | **6AV6355-1CA31-7CA4** |
| • 100 Desktop UI SUS | **6AV6355-1DA31-7CA4** |
| • 100 Desktop UI SMS | **6AV6355-1FA31-7CA4** |
| **WinCC OA – Desktop UI REDU**<br>Operator station licenses for extending a WinCC OA REDU server. | |
| • 1 Desktop UI REDU | **6AV6355-1AA31-7CB0** |
| • 1 Desktop UI REDU UPG | **6AV6355-1CA31-7CB0** |
| • 1 Desktop UI REDU SUS | **6AV6355-1DA31-7CB0** |
| • 1 Desktop UI REDU SMS | **6AV6355-1FA31-7CB0** |
| • 10 Desktop UI REDU | **6AV6355-1AA31-7CB1** |
| • 10 Desktop UI REDU UPG | **6AV6355-1CA31-7CB1** |
| • 10 Desktop UI REDU SUS | **6AV6355-1DA31-7CB1** |
| • 10 Desktop UI REDU SMS | **6AV6355-1FA31-7CB1** |
| • 25 Desktop UI REDU | **6AV6355-1AA31-7CB2** |
| • 25 Desktop UI REDU UPG | **6AV6355-1CA31-7CB2** |
| • 25 Desktop UI REDU SUS | **6AV6355-1DA31-7CB2** |
| • 25 Desktop UI REDU SMS | **6AV6355-1FA31-7CB2** |
| • 50 Desktop UI REDU | **6AV6355-1AA31-7CB3** |
| • 50 Desktop UI REDU UPG | **6AV6355-1CA31-7CB3** |
| • 50 Desktop UI REDU SUS | **6AV6355-1DA31-7CB3** |
| • 50 Desktop UI REDU SMS | **6AV6355-1FA31-7CB3** |
| • 100 Desktop UI REDU | **6AV6355-1AA31-7CB4** |
| • 100 Desktop UI REDU UPG | **6AV6355-1CA31-7CB4** |
| • 100 Desktop UI REDU SUS | **6AV6355-1DA31-7CB4** |
| • 100 Desktop UI REDU SMS | **6AV6355-1FA31-7CB4** |

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## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – ULC UX** | |
| Licenses for UltraLightClient User eXperience web clients. | |
| • 1 ULC UX | **6AV6355-1AA31-7CC0** |
| • 1 ULC UX UPG | **6AV6355-1CA31-7CC0** |
| • 1 ULC UX SUS | **6AV6355-1DA31-7CC0** |
| • 1 ULC UX SMS | **6AV6355-1FA31-7CC0** |
| • 10 ULC UX | **6AV6355-1AA31-7CC1** |
| • 10 ULC UX UPG | **6AV6355-1CA31-7CC1** |
| • 10 ULC UX SUS | **6AV6355-1DA31-7CC1** |
| • 10 ULC UX SMS | **6AV6355-1FA31-7CC1** |
| • 25 ULC UX | **6AV6355-1AA31-7CC2** |
| • 25 ULC UX UPG | **6AV6355-1CA31-7CC2** |
| • 25 ULC UX SUS | **6AV6355-1DA31-7CC2** |
| • 25 ULC UX SMS | **6AV6355-1FA31-7CC2** |
| • 50 ULC UX | **6AV6355-1AA31-7CC3** |
| • 50 ULC UX UPG | **6AV6355-1CA31-7CC3** |
| • 50 ULC UX SUS | **6AV6355-1DA31-7CC3** |
| • 50 ULC UX SMS | **6AV6355-1FA31-7CC3** |
| • 100 ULC UX | **6AV6355-1AA31-7CC4** |
| • 100 ULC UX UPG | **6AV6355-1CA31-7CC4** |
| • 100 ULC UX SUS | **6AV6355-1DA31-7CC4** |
| • 100 ULC UX SMS | **6AV6355-1FA31-7CC4** |
| **WinCC OA – ULC UX REDU** | |
| Licenses for UltraLightClient User eXperience web clients for REDU Server. | |
| • 1 ULC UX REDU | **6AV6355-1AA31-7CD0** |
| • 1 ULC UX REDU UPG | **6AV6355-1CA31-7CD0** |
| • 1 ULC UX REDU SUS | **6AV6355-1DA31-7CD0** |
| • 1 ULC UX REDU SMS | **6AV6355-1FA31-7CD0** |
| • 10 ULC UX REDU | **6AV6355-1AA31-7CD1** |
| • 10 ULC UX REDU UPG | **6AV6355-1CA31-7CD1** |
| • 10 ULC UX REDU SUS | **6AV6355-1DA31-7CD1** |
| • 10 ULC UX REDU SMS | **6AV6355-1FA31-7CD1** |
| • 25 ULC UX REDU | **6AV6355-1AA31-7CD2** |
| • 25 ULC UX REDU UPG | **6AV6355-1CA31-7CD2** |
| • 25 ULC UX REDU SUS | **6AV6355-1DA31-7CD2** |
| • 25 ULC UX REDU SMS | **6AV6355-1FA31-7CD2** |
| • 50 ULC UX REDU | **6AV6355-1AA31-7CD3** |
| • 50 ULC UX REDU UPG | **6AV6355-1CA31-7CD3** |
| • 50 ULC UX REDU SUS | **6AV6355-1DA31-7CD3** |
| • 50 ULC UX REDU SMS | **6AV6355-1FA31-7CD3** |
| • 100 ULC UX REDU | **6AV6355-1AA31-7CD4** |
| • 100 ULC UX REDU UPG | **6AV6355-1CA31-7CD4** |
| • 100 ULC UX REDU SUS | **6AV6355-1DA31-7CD4** |
| • 100 ULC UX REDU SMS | **6AV6355-1FA31-7CD4** |

| | Article No. |
|---|---|
| **WinCC OA – Mobile** | |
| Licenses for WinCC OA Mobile App for iOS or Android. | |
| • 1 Mobile | **6AV6355-1AA31-7CE0** |
| • 1 Mobile UPG | **6AV6355-1CA31-7CE0** |
| • 1 Mobile SUS | **6AV6355-1DA31-7CE0** |
| • 1 Mobile SMS | **6AV6355-1FA31-7CE0** |
| • 10 Mobiles | **6AV6355-1AA31-7CE1** |
| • 10 Mobiles UPG | **6AV6355-1CA31-7CE1** |
| • 10 Mobiles SUS | **6AV6355-1DA31-7CE1** |
| • 10 Mobiles SMS | **6AV6355-1FA31-7CE1** |
| • 25 Mobiles | **6AV6355-1AA31-7CE2** |
| • 25 Mobiles UPG | **6AV6355-1CA31-7CE2** |
| • 25 Mobiles SUS | **6AV6355-1DA31-7CE2** |
| • 25 Mobiles SMS | **6AV6355-1FA31-7CE2** |
| • 50 Mobiles | **6AV6355-1AA31-7CE3** |
| • 50 Mobiles UPG | **6AV6355-1CA31-7CE3** |
| • 50 Mobiles SUS | **6AV6355-1DA31-7CE3** |
| • 50 Mobiles SMS | **6AV6355-1FA31-7CE3** |
| • 100 Mobiles | **6AV6355-1AA31-7CE4** |
| • 100 Mobiles UPG | **6AV6355-1CA31-7CE4** |
| • 100 Mobiles SUS | **6AV6355-1DA31-7CE4** |
| • 100 Mobiles SMS | **6AV6355-1FA31-7CE4** |
| **WinCC OA – Mobile REDU** | |
| Licenses for WinCC OA Mobile App for iOS or Android for REDU Server. | |
| • 1 Mobile REDU | **6AV6355-1AA31-7CF0** |
| • 1 Mobile REDU UPG | **6AV6355-1CA31-7CF0** |
| • 1 Mobile REDU SUS | **6AV6355-1DA31-7CF0** |
| • 1 Mobile REDU SMS | **6AV6355-1FA31-7CF0** |
| • 10 Mobiles REDU | **6AV6355-1AA31-7CF1** |
| • 10 Mobiles REDU UPG | **6AV6355-1CA31-7CF1** |
| • 10 Mobiles REDU SUS | **6AV6355-1DA31-7CF1** |
| • 10 Mobiles REDU SMS | **6AV6355-1FA31-7CF1** |
| • 25 Mobiles REDU | **6AV6355-1AA31-7CF2** |
| • 25 Mobiles REDU UPG | **6AV6355-1CA31-7CF2** |
| • 25 Mobiles REDU SUS | **6AV6355-1DA31-7CF2** |
| • 25 Mobiles REDU SMS | **6AV6355-1FA31-7CF2** |
| • 50 Mobiles REDU | **6AV6355-1AA31-7CF3** |
| • 50 Mobiles REDU UPG | **6AV6355-1CA31-7CF3** |
| • 50 Mobiles REDU SUS | **6AV6355-1DA31-7CF3** |
| • 50 Mobiles REDU SMS | **6AV6355-1FA31-7CF3** |
| • 100 Mobiles REDU | **6AV6355-1AA31-7CF4** |
| • 100 Mobiles REDU UPG | **6AV6355-1CA31-7CF4** |
| • 100 Mobiles REDU SUS | **6AV6355-1DA31-7CF4** |
| • 100 Mobiles REDU SMS | **6AV6355-1FA31-7CF4** |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Operator** | |
| License for connecting an operator app to a WinCC OA server. | |
| • 1 Device | **6AV6355-1AA31-7CG0** |
| • 1 Device UPG | **6AV6355-1CA31-7CG0** |
| • 1 Device SUS | **6AV6355-1DA31-7CG0** |
| • 1 Device SMS | **6AV6355-1FA31-7CG0** |
| • 3 Devices | **6AV6355-1AA31-7CG1** |
| • 3 Devices UPG | **6AV6355-1CA31-7CG1** |
| • 3 Devices SUS | **6AV6355-1DA31-7CG1** |
| • 3 Devices SMS | **6AV6355-1FA31-7CG1** |
| • 10 Devices | **6AV6355-1AA31-7CG2** |
| • 10 Devices UPG | **6AV6355-1CA31-7CG2** |
| • 10 Devices SUS | **6AV6355-1DA31-7CG2** |
| • 10 Devices SMS | **6AV6355-1FA31-7CG2** |
| • 25 Devices | **6AV6355-1AA31-7CG3** |
| • 25 Devices UPG | **6AV6355-1CA31-7CG3** |
| • 25 Devices SUS | **6AV6355-1DA31-7CG3** |
| • 25 Devices SMS | **6AV6355-1FA31-7CG3** |
| • 50 Devices | **6AV6355-1AA31-7CG4** |
| • 50 Devices UPG | **6AV6355-1CA31-7CG4** |
| • 50 Devices SUS | **6AV6355-1DA31-7CG4** |
| • 50 Devices SMS | **6AV6355-1FA31-7CG4** |
| **WinCC OA – Para Standard** | |
| Development and parameter assignment license for WinCC OA server. | |
| • Para Standard | **6AV6355-1AA31-7CH0** |
| • Para Standard UPG | **6AV6355-1CA31-7CH0** |
| • Para Standard SUS | **6AV6355-1DA31-7CH0** |
| • Para Standard SMS | **6AV6355-1FA31-7CH0** |
| **WinCC OA – Para Standard REDU** | |
| Development and parameter assignment license for WinCC OA REDU server. | |
| • Para Standard REDU | **6AV6355-1AA31-7CH1** |
| • Para Standard REDU UPG | **6AV6355-1CA31-7CH1** |
| • Para Standard REDU SUS | **6AV6355-1DA31-7CH1** |
| • Para Standard REDU SMS | **6AV6355-1FA31-7CH1** |
| **WinCC OA – Para Remote** | |
| Remote development and parameter assignment license for WinCC OA server. | |
| • Para Remote | **6AV6355-1AA31-7CH2** |
| • Para Remote UPG | **6AV6355-1CA31-7CH2** |
| • Para Remote SUS | **6AV6355-1DA31-7CH2** |
| • Para Remote SMS | **6AV6355-1FA31-7CH2** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

### *WinCC OA Drivers*

In WinCC OA, drivers handle communication with the control and field level.

Since numerous and very different forms of communication are possible with the PLCs or telecontrol nodes, there are several different drivers that can be selected.

The PLC used or the associated communication bus determines which WinCC OA driver is to be used.

The driver reads current states, measured or counted values from the field and, in the other direction, directs commands and setpoints to the lower-level controllers.

## Benefits

- Simple connection of devices with various protocols
- Open system with possibilities for flexible expansion
- Different devices can be addressed in a project
- Platform-independent support of different control systems
- Everything in one system, from serial ports to cloud connectivity

## Application

Due to the high number of drivers, WinCC OA is suitable for complex projects and especially for retrofitting existing systems.

In addition to proven Siemens standards and generally used open standards such as OPC UA or MQTT, special industry standards such as IEC 61400 and IEC 104 are also supported.

## Function

Several different drivers can run simultaneously on one server in WinCC OA. Data transmission can be event-based or polled in scan cycles.

Pre-processing of data is included:

- Scaling/conversion in both directions
- Type transformations
- Smoothing (value, time, noise reduction, etc.)
- Optimized reading:
  "Poll on use mechanisms"
- With certain drivers, different polling groups and corresponding time-shifted polling times can be desynchronized (Sync on sec) for better load distribution on the managers.

Time stamping can be obtained from the I/O.
Resolution up to 1 ms for value storage.
Regular retrieval and processing of values is based on driver-specific time periods.

| Protocol | Description |
|---|---|
| **S7** | Includes drivers for unlimited connection of S7-3xx and S7-4xx controllers. S7-12xx and S7-15xx controllers can be connected for a limited time (8, 64 or 512 connections). Connection of Open Controller, PLC-Sim, symbolic addressing, all protection levels and browsing of TIA Portal projects and online browsing of S7-1xxx controllers. |
| **PROFINET** | Driver for connecting automation devices that support this fieldbus. Requires a compatible PROFINET network adapter (e.g. CP1616) and enables consistent communication from the PLC to the SCADA system without protocol break. |
| **PROFIsafe** | Supports the safety-related PROFIsafe protocol. Requires a compatible PROFINET network adapter (e.g. CP1616). This license also includes the operation of PROFINET. |
| **DNP3** | The DNP3 (Distributed Network Protocol 3) driver is an open, rugged and modern protocol with characteristics and strengths similar to the IEC driver. The transfer of any number of frames with different data types takes place between the WinCC OA system (Master) and the remote stations (Slave).<br>Available in packages of 100 or 1000 device connections. |
| **IEC 60870 101, 104** | IEC drivers are standardized telecontrol drivers that can process proprietary frames. IEC stands for International Electrotechnical Commission, the international standardization committee for electrical engineering.<br>• IEC 60870-5-104 for data exchange via TCP/IP<br>• IEC 60870-5-101 for serial connection |

## **Function** (continued)

| | |
|---|---|
| **IEC 61850/61400** | IEC 61850 and IEC 61400 clients define an architecture that covers special needs in substation automation. As a driver for medium and high voltage technology, it defines a data model and the communication services for interaction with and between the elements of a substation, such as power supply units, circuit breakers, protective devices etc. A description language and a system configuration language (SCL) have been defined for technical purposes.<br>Consists of the IEC 61850 driver (client – according to IEC 61850 Standard Part 7 & Part 8 Edition 2 & IEC 61400-25) and the IEC 61850/61400 browser. |
| **SAIA S-Bus** | The SAIA S-Bus driver is a serial driver that natively supports the SAIA S-Bus for connecting SAIA PCD control devices to WinCC OA projects. |
| **TLS** | The TLS standard (Technische Lieferbedingungen für Streckenstationen – Technical Delivery Conditions for Remote Stations) defines the use and setup of traffic control systems in Austria. The WinCC OA TLS gateway is designed for communication with TLS-compliant devices. The gateway takes over the complete communication by providing the corresponding values according to the TLS standard or by reacting to their reception. The TLS gateway obtains its parameters via configuration files that define the operating mode and TLS terminals. |
| **SSI** | The SSI (Synchronous Serial Interface) driver is used to connect SAT telecontrol systems. The data is exchanged via the LAN (Ethernet, IEEE 802.3); the frame formats used are the SSI formats defined by SAT. The SK 1703 telecontrol components with a suitable communication card (KE/ET) are supported. |
| **Modbus** | Modbus TCP is based on the serial Modbus protocol (as part of IEC 61158), which was adapted for TCP/IP. The Modbus TCP driver can also be used for Modbus TCP or UNICOS. |
| **RK512** | Serial driver for coupling via the RK512 protocol to the internal memory area of a SIEMENS S5 controller. |
| **SINAUT** | SINAUT (**SI**emens **N**etwork **AUT**omation) is a communication protocol for automated monitoring and control of remote process stations on the basis of SIMATIC S7. Communication takes place via TCP/IP.<br>Available in packages of 50 or 250 device connections. |

| | |
|---|---|
| **SNMP** | SNMP (Simple Network Management Protocol) is a protocol for monitoring network elements (servers, workstations, routers, switches, hubs, etc.) and their functions. It supports SNMP V1, V2 and V3. |
| **Cerberus** | Cerberus/ DMS7000 is a fire, intrusion and gas alarm system from Siemens. The Cerberus driver guarantees communication to and from the central fire alarm systems and building security facilities in the event of a fire, gas or intruder alarm.<br>Communication is realized via C-Bus (Cer-Ban) using the serial interface RS232 (MK 7022).<br>This option is not available for Linux. |
| **EIP (Ethernet/IP)** | Ethernet/IP is used for communication with several PLC generations and families from Rockwell Automation / Allen Bradley. The protocol is part of the application layer and is based on the standard TCP/IP network protocol. |
| **Omron FINS** | Driver for connection to Omron external control. |
| **OPC UA Client** | OPC UA Client allows access to process data and alarms from an OPC UA server, according to the OPC Foundation standard. |
| **OPC Client** | OPC (OLE for Process Control) is the use of OLE/COM technology for process control systems. The WinCC OA OPC Client (DA, HDA & A&E) allows access to process data and alarms of an OPC server, according to the specifications of the OPC Foundation. |
| **MQTT** | MQTT (Message Queuing Telemetry Transport) is a message protocol based on TCP/IP and is intended for communication in networks with limited bandwidth. An MQTT communication network consists of at least one server (broker) and several clients. A client can either publish data or subscribe to data. Communication is therefore based on the publish/subscribe principle.<br>The MQTT license allows the coupling of a WinCC OA server with a MQTT broker for simplified data exchange with other smart devices (sensors or actuators) or for simple cloud connection (AWS, Azure, etc.).<br>**The MQTT Broker is not included in the license!** |
| **Customer Interfaces** | On request, additional interfaces can be provided against specification and corresponding product planning or developed by the customer. A corresponding interface must be taken into account and ordered for the license configuration. |

Further drivers on request or via C++ API

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## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – Driver S7** | |
| Unlimited connection of S7-3xx and S7-4xx, Limited connection of S7-12xx and S7-15xx (options for max. 8, 64, 512) | |
| • Driver S7 | **6AV6355-1AA31-7DA0** |
| • Driver S7 UPG | **6AV6355-1CA31-7DA0** |
| • Driver S7 SUS | **6AV6355-1DA31-7DA0** |
| • Driver S7 SMS | **6AV6355-1FA31-7DA0** |
| • Driver S7 64 | **6AV6355-1AA31-7DA1** |
| • Driver S7 64 UPG | **6AV6355-1CA31-7DA1** |
| • Driver S7 64 SUS | **6AV6355-1DA31-7DA1** |
| • Driver S7 64 SMS | **6AV6355-1FA31-7DA1** |
| • Driver S7 512 | **6AV6355-1AA31-7DA2** |
| • Driver S7 512 UPG | **6AV6355-1CA31-7DA2** |
| • Driver S7 512 SUS | **6AV6355-1DA31-7DA2** |
| • Driver S7 512 SMS | **6AV6355-1FA31-7DA2** |
| **WinCC OA – Driver PROFINET** | |
| Connection of PROFINET-compatible devices. Required PROFINET network adapter | |
| • Driver PROFINET | **6AV6355-1AA31-7DA4** |
| • Driver PROFINET UPG | **6AV6355-1CA31-7DA4** |
| • Driver PROFINET SUS | **6AV6355-1DA31-7DA4** |
| • Driver PROFINET SMS | **6AV6355-1FA31-7DA4** |
| **WinCC OA – Driver PROFIsafe** | |
| Safety-related PROFIsafe protocol. Required PROFINET network adapter. Includes operation of PROFINET. | |
| • Driver PROFIsafe | **6AV6355-1AA31-7DA5** |
| • Driver PROFIsafe UPG | **6AV6355-1CA31-7DA5** |
| • Driver PROFIsafe SUS | **6AV6355-1DA31-7DA5** |
| • Driver PROFIsafe SMS | **6AV6355-1FA31-7DA5** |
| **WinCC OA – BACnet** | |
| Use of BACnet drivers, diagnostics, BACnet engineering environment (BACnet object library (incl. faceplates), BACnet browser, EDE tool, EDE file interface) | |
| • BACnet | **6AV6355-1AA31-7EB0** |
| • BACnet UPG | **6AV6355-1CA31-7EB0** |
| • BACnet SUS | **6AV6355-1DA31-7EB0** |
| • BACnet SMS | **6AV6355-1FA31-7EB0** |
| **WinCC OA – Driver DNP3** | |
| Connection of WinCC OA server with devices via DNP3 protocol. (Options for max. 100, 1 000) | |
| • Driver DNP3 100 | **6AV6355-1AA31-7DB0** |
| • Driver DNP3 100 UPG | **6AV6355-1CA31-7DB0** |
| • Driver DNP3 100 SUS | **6AV6355-1DA31-7DB0** |
| • Driver DNP3 100 SMS | **6AV6355-1FA31-7DB0** |
| • Driver DNP3 1000 | **6AV6355-1AA31-7DB1** |
| • Driver DNP3 1000 UPG | **6AV6355-1CA31-7DB1** |
| • Driver DNP3 1000 SUS | **6AV6355-1DA31-7DB1** |
| • Driver DNP3 1000 SMS | **6AV6355-1FA31-7DB1** |
| **WinCC OA – Driver IEC 101** | |
| Serial driver according to IEC 60870-5-101 | |
| • Driver IEC 101 | **6AV6355-1AA31-7DC0** |
| • Driver IEC 101 UPG | **6AV6355-1CA31-7DC0** |
| • Driver IEC 101 SUS | **6AV6355-1DA31-7DC0** |
| • Driver IEC 101 SMS | **6AV6355-1FA31-7DC0** |
| **WinCC OA – Driver IEC 104** | |
| TCP/IP drivers according to IEC 60870-5-104 | |
| • Driver IEC 104 | **6AV6355-1AA31-7DC1** |
| • Driver IEC 104 UPG | **6AV6355-1CA31-7DC1** |
| • Driver IEC 104 SUS | **6AV6355-1DA31-7DC1** |
| • Driver IEC 104 SMS | **6AV6355-1FA31-7DC1** |
| **WinCC OA – Driver IEC 61850/61400** | |
| Medium- and high-voltage technology drivers according to IEC 61850. Consists of IEC 61850 driver and IEC 61850/61400 browser | |
| • Driver IEC 61850/61400 | **6AV6355-1AA31-7DC2** |
| • Driver IEC 61850/61400 UPG | **6AV6355-1CA31-7DC2** |
| • Driver IEC 61850/61400 SUS | **6AV6355-1DA31-7DC2** |
| • Driver IEC 61850/61400 SMS | **6AV6355-1FA31-7DC2** |
| **WinCC OA – Driver SAIA S-Bus** | |
| Serial driver for native SAIA S-bus support | |
| • Driver SAIA S-Bus | **6AV6355-1AA31-7DC3** |
| • Driver SAIA S-Bus UPG | **6AV6355-1CA31-7DC3** |
| • Driver SAIA S-Bus SUS | **6AV6355-1DA31-7DC3** |
| • Driver SAIA S-Bus SMS | **6AV6355-1FA31-7DC3** |
| **WinCC OA – Driver TLS** | |
| TLS gateway for setting up traffic control systems in Austria. | |
| • Driver TLS | **6AV6355-1AA31-7DC4** |
| • Driver TLS UPG | **6AV6355-1CA31-7DC4** |
| • Driver TLS SUS | **6AV6355-1DA31-7DC4** |
| • Driver TLS SMS | **6AV6355-1FA31-7DC4** |
| **WinCC OA – Driver SSI** | |
| Synchronous Serial Interface, driver for Ethernet communication via satellite telecontrol components. | |
| • Driver SSI | **6AV6355-1AA31-7DC5** |
| • Driver SSI UPG | **6AV6355-1CA31-7DC5** |
| • Driver SSI SUS | **6AV6355-1DA31-7DC5** |
| • Driver SSI SMS | **6AV6355-1FA31-7DC5** |
| **WinCC OA – Driver Modbus** | |
| Driver for the Modbus TCP standard (as part of IEC 61158) | |
| • Driver Modbus | **6AV6355-1AA31-7DD0** |
| • Driver Modbus UPG | **6AV6355-1CA31-7DD0** |
| • Driver Modbus SUS | **6AV6355-1DA31-7DD0** |
| • Driver Modbus SMS | **6AV6355-1FA31-7DD0** |
| **WinCC OA – Driver RK512** | |
| Serial driver for connecting to internal memory of SIEMENS S5 via RK512 protocol | |
| • Driver RK512 | **6AV6355-1AA31-7DE0** |
| • Driver RK512 UPG | **6AV6355-1CA31-7DE0** |
| • Driver RK512 SUS | **6AV6355-1DA31-7DE0** |
| • Driver RK512 SMS | **6AV6355-1FA31-7DE0** |
| **WinCC OA – Driver SINAUT** | |
| SIemens Network AUTomation for connection via SINAUT protocol. (Options for max. 50, 250) | |
| • Driver SINAUT 50 | **6AV6355-1AA31-7DF0** |
| • Driver SINAUT 50 UPG | **6AV6355-1CA31-7DF0** |
| • Driver SINAUT 50 SUS | **6AV6355-1DA31-7DF0** |
| • Driver SINAUT 50 SMS | **6AV6355-1FA31-7DF0** |
| • Driver SINAUT 250 | **6AV6355-1AA31-7DF1** |
| • Driver SINAUT 250 UPG | **6AV6355-1CA31-7DF1** |
| • Driver SINAUT 250 SUS | **6AV6355-1DA31-7DF1** |
| • Driver SINAUT 250 SMS | **6AV6355-1FA31-7DF1** |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Driver SNMP**<br>Simple Network Management Protocol driver for network monitoring. Supports SNMP up to version V3 | |
| • Driver SNMP | **6AV6355-1AA31-7DG0** |
| • Driver SNMP UPG | **6AV6355-1CA31-7DG0** |
| • Driver SNMP SUS | **6AV6355-1DA31-7DG0** |
| • Driver SNMP SMS | **6AV6355-1FA31-7DG0** |
| **WinCC OA – Driver Cerberus**<br>For coupling with Siemens fire alarm system DMS7000/Cerberus. | |
| • Driver Cerberus | **6AV6355-1AA31-7DH0** |
| • Driver Cerberus UPG | **6AV6355-1CA31-7DH0** |
| • Driver Cerberus SUS | **6AV6355-1DA31-7DH0** |
| • Driver Cerberus SMS | **6AV6355-1FA31-7DH0** |
| **WinCC OA – Driver EIP**<br>Ethernet/IP driver for the connection of external controllers (e.g. Allen Bradley, etc.) | |
| • Driver EIP | **6AV6355-1AA31-7DJ0** |
| • Driver EIP UPG | **6AV6355-1CA31-7DJ0** |
| • Driver EIP SUS | **6AV6355-1DA31-7DJ0** |
| • Driver EIP SMS | **6AV6355-1FA31-7DJ0** |
| **WinCC OA – Driver Omron FINS**<br>Omron FINS driver for connection to Omron controllers | |
| • Driver Omron FINS | **6AV6355-1AA31-7DJ1** |
| • Driver Omron FINS UPG | **6AV6355-1CA31-7DJ1** |
| • Driver Omron FINS SUS | **6AV6355-1DA31-7DJ1** |
| • Driver Omron FINS SMS | **6AV6355-1FA31-7DJ1** |

| | Article No. |
|---|---|
| **WinCC OA – Driver OPC UA Client**<br>Allows access to process data and alarms of an OPC UA server (DA, HDA, A&C, etc.) | |
| • Driver OPC UA Client | **6AV6355-1AA31-7DK0** |
| • Driver OPC UA Client UPG | **6AV6355-1CA31-7DK0** |
| • Driver OPC UA Client SUS | **6AV6355-1DA31-7DK0** |
| • Driver OPC UA Client SMS | **6AV6355-1FA31-7DK0** |
| **WinCC OA – Driver OPC Client**<br>Allows access to process data and alarms of an OPC server (DA, HDA & A&E) | |
| • Driver OPC Client | **6AV6355-1AA31-7DK1** |
| • Driver OPC Client UPG | **6AV6355-1CA31-7DK1** |
| • Driver OPC Client SUS | **6AV6355-1DA31-7DK1** |
| • Driver OPC Client SMS | **6AV6355-1FA31-7DK1** |
| **WinCC OA – Driver MQTT Client**<br>Coupling of WinCC OA server with an MQTT Broker (not included) | |
| • Driver MQTT Client | **6AV6355-1AA31-7DK2** |
| • Driver MQTT Client UPG | **6AV6355-1CA31-7DK2** |
| • Driver MQTT Client SUS | **6AV6355-1DA31-7DK2** |
| • Driver MQTT Client SMS | **6AV6355-1FA31-7DK2** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## Overview

The WinCC Open Architecture basic software forms the core for many modular extensions.

These functional extensions are available in the form of WinCC Open Architecture add-ons.

- RDB, DB Logger, CommCenter, Custom Component, Dist System, Redundancy, Disaster Recovery System (DRS), Secure Map, Maintenance, OPC UA Server, MindSphere, Modbus Server, OPC Server, Recipe, Report, Scheduler, Web Server
- SmartSCADA
  - SmartSCADA Toolbox
  - SmartSCADA KPI extension
  - SmartSCADAAnalytics
- Video
  - Video Light
  - Video Basic
  - Video Display
  - Video Sources

## Benefits

- Extensive range of additional services
- Add-ons based on customer requests: Optimally integrated through cooperation and years of experience
- Maintenance of the integrated product components is guaranteed with the product maintenance (according to maintenance contract conditions)
- Extensions to increase stability and security in the overall solution

## Function

| Add-on | Task |
|---|---|
| **RDB** | Relational database add-on for connecting an Oracle database to a WinCC OA server. Oracle licenses are not included in this license, but must be ordered separately. Requires one license per server. |
| **DB Logger** | Database Logger add-on allows the export of freely selectable data from WinCC OA to an external database. The DB Logger offers parallel options for data outsourcing to allow data to be analyzed by various evaluation tools. It does not replace the RDB or the Value Archive |
| **CommCenter** | Modern alarm management / remote alarm messaging and communication with current standards via various media. The Communication Center creates synergies by using the various interfaces for remote alarm messaging via the control system. Remote alarm messaging takes place via SMS and e-mail.<br>Price per WinCC OA server. Packaging according to the number of alarms (25, 250, 2500, unlimited). Packages are counted cumulatively and can be expanded at a later point in time. Notice: These packages **cannot** be split between servers! |
| **Custom Component** | The Custom Component option extends a WinCC OA server license by integrating a customer-specific manager, driver, script or graphic extension. One license is required for each customer-specific component.<br>In redundant systems, a license in the REDU version must be purchased for each server. |
| **Dist System** | Permits the coupling of two or more autonomous WinCC OA systems via a network. Each subsystem of a distributed system can be configured either as a single station or multiple station system, each of which may be redundant or non-redundant.<br>Up to 2048 servers can be connected. See special calculation rule for the I/O number of servers. |

## Function (continued)

| | |
|---|---|
| **Redundancy** | The failure safety in a redundant system is implemented by means of hot standby. Hot standby is a hardware independent solution for high availability with bumpless switchover. This is a safety concept that consists of two interconnected server systems. Both servers are constantly in operation and are subject to the same functional loading (but only one server is ever active; the second synchronizes the data with the primary unit during runtime). On the failure of one unit, an "on-the-fly changeover" takes place and the previously passive server assumes the leading role. This guarantees access to data or functions at all times.<br>Both servers in a redundant system require a WinCC OA Redundancy license. Use of the license options designated by REDU is also possible only in redundant systems. License options for which there is no REDU version must be purchased twice for a redundant system. |
| **Disaster Recovery System (DRS)** | Also known as 2x2 redundancy. Enables the operation of a remote Backup Control Center, whereby the WinCC OA redundancy concept is extended by a second hot standby system. This ensures that the functionality of the system is maintained on another system, even in the event of a complete failure or shutdown during, for example, maintenance of the first hot standby system.<br>Use of a central Oracle database and one WinCC OA RDB option per server are prerequisites for operating a DRS. Example configurations can be viewed in the online help. Each server in this constellation requires a separate WinCC OA DRS license. |
| **Secure** | Expansion of a WinCC OA server with extended protection via Kerberos-based authentication. It allows each WinCC OA component to verify the identity of another component. WinCC OA servers can verify the identity of the clients and clients can verify the identity of the servers. Kerberos also ensures that messages are not modified during transmission (Capture Replay attacks are prevented) and makes it possible to encrypt messages. |

| | |
|---|---|
| **Map** | Add-on for displaying state-of-the-art cartographic information in WinCC OA. Both Open Street Map as well as your own map material can be displayed. One license per UI is required. The maps can be used in WinCC OA Desktop UI and Ultralight UX. Map material is not included in the license. Can also be operated offline. WinCC OA objects can be displayed within the map material.<br>The map license also authorizes the use of the GIS Viewer. |
| **Maintenance** | Add-on for basic maintenance management for recording operating hours, switching cycles, message handling and notepad function. One license for each WinCC OA server is required for the application. |
| **OPC UA Server** | This OPC Foundation-compliant server for WinCC OA allows OPC UA clients to query data. Supported standard: 'OPC UA Server 1.03' (mandatory functions). |
| **MindSphere** | The MindSphere Connector enables native connection of a WinCC OA server to MindSphere. The connection is guided by a wizard and the transmission and reading of data can be freely configured via scripting. This requires the operation of a valid MindSphere Tenant. |
| **Modbus Server** | Modbus/TCP server allows Modbus/TC clients to query data from a WinCC OA system and display it within the Modbus data model. |
| **OPC Server** | OPC Foundation-compliant (legacy) server for WinCC OA allows OPC clients to request data. Supported profiles: DA, HDA and A&E. Supported standard: "OPC 1.20" (mandatory functions).<br>Not available under Linux. |
| **Recipe** | WinCC OA recipes allow setpoints or commands for certain data point elements to be sent simultaneously. Based on "recipe types", which define the quantity of the assigned data point elements, recipes are created that send their values to the data point elements upon activation.<br>Add-on for creating recipe types and instances, transfer of current process values as recipe, activation/download to data points, import and export (MS Excel). License required for each server. |

## **Function** (continued)

| | |
|---|---|
| **Report** | Web-based reporting is implemented using the standardized Simple Object Access Protocol (SOAP) reporting interface. Third-party reporting tools can thus be used without additional workload. The BIRT templates that are also provided, as well as the predefined reporting data, further simplify the reporting.<br>• Web-capable reporting interface (SOAP):<br>- ECLIPSE BIRT (large number of reporting templates for ECLIPSE BIRT are also supplied)<br>- Crystal Reports<br>- SIMATIC Information Server<br>- Microsoft Excel<br>• Online values, history<br>• Support of compressed data, SQL, alarms<br>• Diagnostic tools<br>• Audit Trail<br>Reporting Clients can be purchased in the scale 1, 2, 5 or 10. Packages are counted cumulatively and can be expanded at a later point in time. Notice: These packages **cannot** be split between servers!<br>In redundant systems, a license in the REDU version must be purchased for each server. |
| **Scheduler** | Permits the creation, parameterization and management of time programs that allow the time and event-driven triggering of specific actions.<br>Daily, weekly and monthly programs as well as individual non-periodic events can be created, taking into account holidays, priority assignment and override functions. One license for each WinCC OA server is required for the application. |
| **Web Server** | This option enables administration of different connections between WinCC OA servers and WinCC OA ULC UX clients. Load balancing can be activated starting with a count of >1. Multilevel architectures such as access to DMZ can be realized with remote web servers. |

### ***SmartSCADA***

The WinCC OA feature SmartSCADA is a tool for root cause analysis and plant optimization and can be used to support decision-making.
This makes it easy to identify areas with potential for increasing efficiency and achieving increases in system performance and availability. Wizards for key performance indicators (KPI), data mining and classification as well as an interface to statistics tool "R" make it easy to functionally integrate statistics into WinCC OA projects and perform all calculations directly in the SCADA system without programming. By training statistical models, system data can be examined and the models can be used in the system at runtime.

SmartSCADA license needs to be purchased twice for redundant servers.

| Add-on | Task |
|---|---|
| **SmartSCADAToolbox** | SmartSCADA Toolbox enables creation of key performance indicator definitions and key performance indicator instances in the easy-to-use formula editor or freely in CONTROL. The devices are connected by means of a context-based search in the system model or in data points. The performance indicators can be calculated manually, event-driven or cyclically. Online engineering takes place in its own wizard (no PARA license included). It includes 20 KPI instances. |
| **SmartSCADA KPI Extension** | SmartSCADA KPI Extension for SmartSCADA Toolbox, extends the toolbox by another 100 KPI instances. |
| **SmartSCADA Analytics** | SmartSCADA Analytics is a time-limited license for wizard-guided data analysis of historical data and teaching of statistical models for plant classification. Numerous evaluation tools are available through the integration of the "R" statistics toolbox. No PARA license included. Learned models can be calculated without this license. License expires after one year. |

## **Function** (continued)

### *Video*

Enables the integration of a video management system in WinCC OA. Through the combination of SCADA and video monitoring in one system, the costs for separate video interfaces and the additional expense of maintenance and operation can be saved, and the period of training for operating personnel can also be reduced.

| Add-on | Task |
|---|---|
| **Video Light** | The Video Light package allows the connection of 4 cameras/sources and an external video display. This package cannot be expanded. |
| **Video Basic** | The Video Basic package enables the native (via ONVIF) connection of cameras/sources to a WinCC OA system. All streams, recordings and playbacks are included. Video sources are counted per IP address and must be purchased separately. Linux and virtual machines are only supported to a limited extent. |
| **Video Display** | Expands the Video Basic system with an external display. A Video Display license is included in the basic package. |
| **Video Sources** | Expands the basic video system by a defined number of sources/ cameras.<br>Includes all streaming, recording and playback functions. Video sources are counted per IP address.<br>Video Sources can be purchased in the packages of 1, 10, 25, 50, 100, 250 or 500, packages are counted cumulatively and can be expanded at a later point in time. Notice: These packages **cannot** be split between servers!<br>In redundant systems, a license in the REDU version must be purchased for each server. |

## **Ordering data**

| | **Article No.** |
|---|---|
| **WinCC OA – RDB**<br>For connecting the Oracle database to WinCC OA server (Oracle licenses not included). | |
| • RDB | **6AV6355-1AA31-7EA0** |
| • RDB UPG | **6AV6355-1CA31-7EA0** |
| • RDB SUS | **6AV6355-1DA31-7EA0** |
| • RDB SMS | **6AV6355-1FA31-7EA0** |
| **WinCC OA – DB Logger**<br>Allows export of data from WinCC OA to external databases. | |
| • DB Logger | **6AV6355-1AA31-7EA1** |
| • DB Logger UPG | **6AV6355-1CA31-7EA1** |
| • DB Logger SUS | **6AV6355-1DA31-7EA1** |
| • DB Logger SMS | **6AV6355-1FA31-7EA1** |
| **WinCC OA – CommCenter 1**<br>Remote alarming basic package 25 alarms. Output as SMS or e-mail possible. | |
| • CommCenter 1 | **6AV6355-1AA31-7EC0** |
| • CommCenter 1 UPG | **6AV6355-1CA31-7EC0** |
| • CommCenter 1 SUS | **6AV6355-1DA31-7EC0** |
| • CommCenter 1 SMS | **6AV6355-1FA31-7EC0** |
| **WinCC OA – CommCenter 2**<br>Remote alarming basic package 250 alarms. Output as SMS or e-mail possible. | |
| • CommCenter 2 | **6AV6355-1AA31-7EC1** |
| • CommCenter 2 UPG | **6AV6355-1CA31-7EC1** |
| • CommCenter 2 SUS | **6AV6355-1DA31-7EC1** |
| • CommCenter 2 SMS | **6AV6355-1FA31-7EC1** |
| **WinCC OA – CommCenter 3**<br>Remote alarming basic package 2500 alarms. Output as SMS or e-mail possible. | |
| • CommCenter 3 | **6AV6355-1AA31-7EC2** |
| • CommCenter 3 UPG | **6AV6355-1CA31-7EC2** |
| • CommCenter 3 SUS | **6AV6355-1DA31-7EC2** |
| • CommCenter 3 SMS | **6AV6355-1FA31-7EC2** |

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## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – CommCenter 4** | |
| Remote alarming basic package unlimited alarms. Output as SMS or e-mail possible. | |
| • CommCenter 4 | **6AV6355-1AA31-7EC3** |
| • CommCenter 4 UPG | **6AV6355-1CA31-7EC3** |
| • CommCenter 4 SUS | **6AV6355-1DA31-7EC3** |
| • CommCenter 4 SMS | **6AV6355-1FA31-7EC3** |
| **WinCC OA – Custom Comp** | |
| Integration of a customer-specific manager, driver, script or graphic extension. | |
| • Custom Comp | **6AV6355-1AA31-7ED2** |
| • Custom Comp UPG | **6AV6355-1CA31-7ED2** |
| • Custom Comp SUS | **6AV6355-1DA31-7ED2** |
| • Custom Comp SMS | **6AV6355-1FA31-7ED2** |
| **WinCC OA – Custom Comp REDU** | |
| Integration of a customer-specific manager, driver, script or graphic extension for REDU system. | |
| • Custom Comp REDU | **6AV6355-1AA31-7ED3** |
| • Custom Comp REDU UPG | **6AV6355-1CA31-7ED3** |
| • Custom Comp REDU SUS | **6AV6355-1DA31-7ED3** |
| • Custom Comp REDU SMS | **6AV6355-1FA31-7ED3** |
| **WinCC OA – Dist System** | |
| Extends a WinCC OA server with the Multiserver option (up to 2048 servers). | |
| • Dist System | **6AV6355-1AA31-7EE0** |
| • Dist System UPG | **6AV6355-1CA31-7EE0** |
| • Dist System SUS | **6AV6355-1DA31-7EE0** |
| • Dist System SMS | **6AV6355-1FA31-7EE0** |
| **WinCC OA – Redundancy** | |
| High availability with bumpless switchover. Both servers need a license in REDU systems. | |
| • Redundancy | **6AV6355-1AA31-7EF0** |
| • Redundancy UPG | **6AV6355-1CA31-7EF0** |
| • Redundancy SUS | **6AV6355-1DA31-7EF0** |
| • Redundancy SMS | **6AV6355-1FA31-7EF0** |
| **WinCC OA – DRS** | |
| Disaster Recovery System, remote Backup Control Center. 2 redundant systems (4 servers in total). | |
| • DRS | **6AV6355-1AA31-7EF1** |
| • DRS UPG | **6AV6355-1CA31-7EF1** |
| • DRS SUS | **6AV6355-1DA31-7EF1** |
| • DRS SMS | **6AV6355-1FA31-7EF1** |
| **WinCC OA – Secure** | |
| Extended protection with Kerberos. Increases IT security level by using ticket-based authentication. | |
| • Secure | **6AV6355-1AA31-7EG0** |
| • Secure UPG | **6AV6355-1CA31-7EG0** |
| • Secure SUS | **6AV6355-1DA31-7EG0** |
| • Secure SMS | **6AV6355-1FA31-7EG0** |

| | Article No. |
|---|---|
| **WinCC OA – Map** | |
| Display of maps in WinCC OA. Open Street Map as well as own map material are supported. | |
| • Map | **6AV6355-1AA31-7EH5** |
| • Map UPG | **6AV6355-1CA31-7EH5** |
| • Map SUS | **6AV6355-1DA31-7EH5** |
| • Map SMS | **6AV6355-1FA31-7EH5** |
| **WinCC OA – Maintenance** | |
| Simple maintenance management. Operating hours, switching cycles, message handling and notepad function. | |
| • Maintenance | **6AV6355-1AA31-7EJ0** |
| • Maintenance UPG | **6AV6355-1CA31-7EJ0** |
| • Maintenance SUS | **6AV6355-1DA31-7EJ0** |
| • Maintenance SMS | **6AV6355-1FA31-7EJ0** |
| **WinCC OA – OPC UA Server** | |
| OPC Foundation-compliant server for WinCC OA server allows OPC UA clients to query data. | |
| • OPC UA Server | **6AV6355-1AA31-7EK0** |
| • OPC UA Server UPG | **6AV6355-1CA31-7EK0** |
| • OPC UA Server SUS | **6AV6355-1DA31-7EK0** |
| • OPC UA Server SMS | **6AV6355-1FA31-7EK0** |
| **WinCC OA – MindSphere** | |
| Enables connection of WinCC OA server to MindSphere. Requires operation of a valid MindSphere Tenant. | |
| • MindSphere | **6AV6355-1AA31-7EK1** |
| • MindSphere UPG | **6AV6355-1CA31-7EK1** |
| • MindSphere SUS | **6AV6355-1DA31-7EK1** |
| • MindSphere SMS | **6AV6355-1FA31-7EK1** |
| **WinCC OA – Modbus Server** | |
| Enables data of a WinCC OA system to be queried by Modbus/TCP clients. | |
| • Modbus Server | **6AV6355-1AA31-7EK2** |
| • Modbus Server UPG | **6AV6355-1CA31-7EK2** |
| • Modbus Server SUS | **6AV6355-1DA31-7EK2** |
| • Modbus Server SMS | **6AV6355-1FA31-7EK2** |
| **WinCC OA – OPC Server** | |
| The OPC Foundation-compliant (legacy) server for WinCC OA allows OPC clients to query data. | |
| • OPC Server | **6AV6355-1AA31-7EK3** |
| • OPC Server UPG | **6AV6355-1CA31-7EK3** |
| • OPC Server SUS | **6AV6355-1DA31-7EK3** |
| • OPC Server SMS | **6AV6355-1FA31-7EK3** |
| **WinCC OA – Recipe** | |
| Creation of any recipe types and instances, transfer of the current process values as recipe. | |
| • Recipe | **6AV6355-1AA31-7EL0** |
| • Recipe UPG | **6AV6355-1CA31-7EL0** |
| • Recipe SUS | **6AV6355-1DA31-7EL0** |
| • Recipe SMS | **6AV6355-1FA31-7EL0** |

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| Ordering data | Article No. |
|---|---|
| **WinCC OA – Report**<br>Defined number of reporting clients for evaluation of WinCC OA data using a third-party tool. | |
| • 1 Reporting Client | **6AV6355-1AA31-7EM0** |
| • 1 Reporting Client UPG | **6AV6355-1CA31-7EM0** |
| • 1 Reporting Client SUS | **6AV6355-1DA31-7EM0** |
| • 1 Reporting Client SMS | **6AV6355-1FA31-7EM0** |
| • 2 Reporting Clients | **6AV6355-1AA31-7EM1** |
| • 2 Reporting Clients UPG | **6AV6355-1CA31-7EM1** |
| • 2 Reporting Clients SUS | **6AV6355-1DA31-7EM1** |
| • 2 Reporting Clients SMS | **6AV6355-1FA31-7EM1** |
| • 5 Reporting Clients | **6AV6355-1AA31-7EM2** |
| • 5 Reporting Clients UPG | **6AV6355-1CA31-7EM2** |
| • 5 Reporting Clients SUS | **6AV6355-1DA31-7EM2** |
| • 5 Reporting Clients SMS | **6AV6355-1FA31-7EM2** |
| • 10 Reporting Clients | **6AV6355-1AA31-7EM3** |
| • 10 Reporting Clients UPG | **6AV6355-1CA31-7EM3** |
| • 10 Reporting Clients SUS | **6AV6355-1DA31-7EM3** |
| • 10 Reporting Clients SMS | **6AV6355-1FA31-7EM3** |
| **WinCC OA – Report REDU**<br>Defined number of reporting clients for evaluation of WinCC OA data using a third-party tool for REDU systems. | |
| • 1 Reporting Client REDU | **6AV6355-1AA31-7EM5** |
| • 1 Reporting Client REDU UPG | **6AV6355-1CA31-7EM5** |
| • 1 Reporting Client REDU SUS | **6AV6355-1DA31-7EM5** |
| • 1 Reporting Client REDU SMS | **6AV6355-1FA31-7EM5** |
| • 2 Reporting Clients REDU | **6AV6355-1AA31-7EM6** |
| • 2 Reporting Clients REDU UPG | **6AV6355-1CA31-7EM6** |
| • 2 Reporting Clients REDU SUS | **6AV6355-1DA31-7EM6** |
| • 2 Reporting Clients REDU SMS | **6AV6355-1FA31-7EM6** |
| • 5 Reporting Clients REDU | **6AV6355-1AA31-7EM7** |
| • 5 Reporting Clients REDU UPG | **6AV6355-1CA31-7EM7** |
| • 5 Reporting Clients REDU SUS | **6AV6355-1DA31-7EM7** |
| • 5 Reporting Clients REDU SMS | **6AV6355-1FA31-7EM7** |
| • 10 Reporting Clients REDU | **6AV6355-1AA31-7EM8** |
| • 10 Reporting Clients REDU UPG | **6AV6355-1CA31-7EM8** |
| • 10 Reporting Clients REDU SUS | **6AV6355-1DA31-7EM8** |
| • 10 Reporting Clients REDU SMS | **6AV6355-1FA31-7EM8** |
| **WinCC OA – Scheduler**<br>Scheduling of daily, weekly and monthly programs, non-periodic events, priority assignment, override function. | |
| • Scheduler | **6AV6355-1AA31-7EN0** |
| • Scheduler UPG | **6AV6355-1CA31-7EN0** |
| • Scheduler SUS | **6AV6355-1DA31-7EN0** |
| • Scheduler SMS | **6AV6355-1FA31-7EN0** |

| | Article No. |
|---|---|
| **WinCC OA – SmartSCADA Toolbox**<br>Allows creation of key figure definitions and instances via formula editor or CONTROL. Contains 20 KPI instances. | |
| • SmartSCADA Toolbox | **6AV6355-1AA31-7EP0** |
| • SmartSCADA Toolbox UPG | **6AV6355-1CA31-7EP0** |
| • SmartSCADA Toolbox SUS | **6AV6355-1DA31-7EP0** |
| • SmartSCADA Toolbox SMS | **6AV6355-1FA31-7EP0** |
| **WinCC OA – SmartSCADA KPI Exp.**<br>Extends Toolbox by 100 KPI instances | |
| • SmartSCADA KPI Exp. | **6AV6355-1AA31-7EP1** |
| • SmartSCADA KPI Exp. UPG | **6AV6355-1CA31-7EP1** |
| • SmartSCADA KPI Exp. SUS | **6AV6355-1DA31-7EP1** |
| • SmartSCADA KPI Exp. SMS | **6AV6355-1FA31-7EP1** |
| **WinCC OA – SmartSCADA Analytics**<br>Time-limited license (1 year) for data analysis and learning of statistical models.<br>Contains statistical toolbox "R". | |
| • SmartSCADA Analytics | **6AV6355-1AA31-7EP2** |
| • SmartSCADA Analytics UPG | **6AV6355-1CA31-7EP2** |
| • SmartSCADA Analytics SUS | **6AV6355-1DA31-7EP2** |
| • SmartSCADA Analytics SMS | **6AV6355-1FA31-7EP2** |
| **WinCC OA – Video Light**<br>Allows connection of 4 cameras/ sources and an external video display. Cannot be expanded. | |
| • Video Light | **6AV6355-1AA31-7EQ0** |
| • Video Light UPG | **6AV6355-1CA31-7EQ0** |
| • Video Light SUS | **6AV6355-1DA31-7EQ0** |
| • Video Light SMS | **6AV6355-1FA31-7EQ0** |
| **WinCC OA – Video Basic**<br>Enables native connection (ONVIF) of cameras/sources to a WinCC OA system. Includes all streaming, recording and playback functions. | |
| • Video Basic | **6AV6355-1AA31-7EQ1** |
| • Video Basic UPG | **6AV6355-1CA31-7EQ1** |
| • Video Basic SUS | **6AV6355-1DA31-7EQ1** |
| • Video Basic SMS | **6AV6355-1FA31-7EQ1** |
| **WinCC OA – Video Display**<br>Extends the Video Basic system with an external display.<br>A Video Display license is included in the basic package. | |
| • Video Display | **6AV6355-1AA31-7EQ2** |
| • Video Display UPG | **6AV6355-1CA31-7EQ2** |
| • Video Display SUS | **6AV6355-1DA31-7EQ2** |
| • Video Display SMS | **6AV6355-1FA31-7EQ2** |

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## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – Video** | |
| Extends Video Basic by a defined number of sources/cameras. | |
| • 1 Extension | **6AV6355-1AA31-7ER0** |
| • 1 Extension UPG | **6AV6355-1CA31-7ER0** |
| • 1 Extension SUS | **6AV6355-1DA31-7ER0** |
| • 1 Extension SMS | **6AV6355-1FA31-7ER0** |
| • 10 Extensions | **6AV6355-1AA31-7ER1** |
| • 10 Extensions UPG | **6AV6355-1CA31-7ER1** |
| • 10 Extensions SUS | **6AV6355-1DA31-7ER1** |
| • 10 Extensions SMS | **6AV6355-1FA31-7ER1** |
| • 25 Extensions | **6AV6355-1AA31-7ER2** |
| • 25 Extensions UPG | **6AV6355-1CA31-7ER2** |
| • 25 Extensions SUS | **6AV6355-1DA31-7ER2** |
| • 25 Extensions SMS | **6AV6355-1FA31-7ER2** |
| • 50 Extensions | **6AV6355-1AA31-7ER3** |
| • 50 Extensions UPG | **6AV6355-1CA31-7ER3** |
| • 50 Extensions SUS | **6AV6355-1DA31-7ER3** |
| • 50 Extensions SMS | **6AV6355-1FA31-7ER3** |
| • 100 Extensions | **6AV6355-1AA31-7ER4** |
| • 100 Extensions UPG | **6AV6355-1CA31-7ER4** |
| • 100 Extensions SUS | **6AV6355-1DA31-7ER4** |
| • 100 Extensions SMS | **6AV6355-1FA31-7ER4** |
| • 250 Extensions | **6AV6355-1AA31-7ER5** |
| • 250 Extensions UPG | **6AV6355-1CA31-7ER5** |
| • 250 Extensions SUS | **6AV6355-1DA31-7ER5** |
| • 250 Extensions SMS | **6AV6355-1FA31-7ER5** |
| • 500 Extensions | **6AV6355-1AA31-7ER6** |
| • 500 Extensions UPG | **6AV6355-1CA31-7ER6** |
| • 500 Extensions SUS | **6AV6355-1DA31-7ER6** |
| • 500 Extensions SMS | **6AV6355-1FA31-7ER6** |
| **WinCC OA – Video REDU** | |
| Extends Video Basic in a REDU system by a defined number of sources/cameras. | |
| • 1 Extension REDU | **6AV6355-1AA31-7ES0** |
| • 1 Extension REDU UPG | **6AV6355-1CA31-7ES0** |
| • 1 Extension REDU SUS | **6AV6355-1DA31-7ES0** |
| • 1 Extension REDU SMS | **6AV6355-1FA31-7ES0** |
| • 10 Extensions REDU | **6AV6355-1AA31-7ES1** |
| • 10 Extensions REDU UPG | **6AV6355-1CA31-7ES1** |
| • 10 Extensions REDU SUS | **6AV6355-1DA31-7ES1** |
| • 10 Extensions REDU SMS | **6AV6355-1FA31-7ES1** |
| • 25 Extensions REDU | **6AV6355-1AA31-7ES2** |
| • 25 Extensions REDU UPG | **6AV6355-1CA31-7ES2** |
| • 25 Extensions REDU SUS | **6AV6355-1DA31-7ES2** |
| • 25 Extensions REDU SMS | **6AV6355-1FA31-7ES2** |
| • 50 Extensions REDU | **6AV6355-1AA31-7ES3** |
| • 50 Extensions REDU UPG | **6AV6355-1CA31-7ES3** |
| • 50 Extensions REDU SUS | **6AV6355-1DA31-7ES3** |
| • 50 Extensions REDU SMS | **6AV6355-1FA31-7ES3** |
| • 100 Extensions REDU | **6AV6355-1AA31-7ES4** |
| • 100 Extensions REDU UPG | **6AV6355-1CA31-7ES4** |
| • 100 Extensions REDU SUS | **6AV6355-1DA31-7ES4** |
| • 100 Extensions REDU SMS | **6AV6355-1FA31-7ES4** |
| • 250 Extensions REDU | **6AV6355-1AA31-7ES5** |
| • 250 Extensions REDU UPG | **6AV6355-1CA31-7ES5** |
| • 250 Extensions REDU SUS | **6AV6355-1DA31-7ES5** |
| • 250 Extensions REDU SMS | **6AV6355-1FA31-7ES5** |
| • 500 Extensions REDU | **6AV6355-1AA31-7ES6** |
| • 500 Extensions REDU UPG | **6AV6355-1CA31-7ES6** |
| • 500 Extensions REDU SUS | **6AV6355-1DA31-7ES6** |
| • 500 Extensions REDU SMS | **6AV6355-1FA31-7ES6** |

| | Article No. |
|---|---|
| **WinCC OA – Web Server** | |
| Enables management of connections between WinCC OA servers and WinCC OA ULC UX clients. | |
| • Web Server | **6AV6355-1AA31-7ET0** |
| • Web Server UPG | **6AV6355-1CA31-7ET0** |
| • Web Server SUS | **6AV6355-1DA31-7ET0** |
| • Web Server SMS | **6AV6355-1FA31-7ET0** |

You can find more information on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## WinCC OA Runtime Packages

### Overview

WinCC OA Runtime packages are compact WinCC OA functional units designed for SIMATIC IPC hardware. They are sophisticated solutions which are offered as a bundle with corresponding Nanobox PCs, perfect for fast deployment.

The licenses allow the use of WinCC OA on SIMATIC IPCs of the 127, 227, and 277 series. These packages cannot be extended with further WinCC OA options. These packages can only be ordered in combination with the corresponding additional hardware item.

### Benefits

- Quick to order
- Proven package concept based on numerous customer requests
- Common protocols are immediately available – without extra charge
- Lower licensing costs through product bundles

### Application

In the course of the joint product lines of the SIMATIC family, an optimized ordering process was made possible for the Nanoboxes. When hardware and license are ordered at the same time, a combination package has been put together which includes as a product bundle common product extensions for small but flexible and open solutions and can therefore be used without major product configuration.

Since these are special bundled products, expansion with additional services is not possible. A support extension cannot be used in this case either.

The application is suitable for single station solutions as well as for standardized extensions in an architecture network as a remote unit or subsystem.

### Design

Tags

IPC Packages are offered with different tag packages. The staggering allows 128, 512, 2048 or 4096 tags. In contrast to Server Basic licenses, Runtime Package licenses **cannot** be expanded with additional tag packages. The tags purchased here also cannot be moved to other servers. A whole range of common options is provided by ordering a package.

UIs

A UI license (Desktop UI) is includes in the package. More information on this can be found in the <User Interfaces> section

Drivers

A Runtime package license includes technical licenses for S7 and S7 Plus (8 connections) drivers, as well as one OPC and one OPC UA client. More information on drivers can be found in the <Drivers> section

Add-ons

Runtime packages include a Dist option, an RDB option and a web server. More information on options can be found in the <Add-ons> section

#### *Hardware*

The following versions of SIMATIC Nanobox PCs are supported by WinCC OA:

#### *SIMATIC IPC227E /277E*

| Hardware components | Specification |
|---|---|
| OS | Windows 10 Enterprise 2016 LTSB, 64-bit |
| Processor | Intel Celeron (N2807 / N2930) |
| RAM | 2/4/8 GB |
| Hard disk | SSD / HDD |
| Graphics | Intel HD Graphics / DisplayPort |
| Network adapter | 2x 10/100/1000 Mbps, RJ45 |

#### *SIMATIC IPC127E*

| Hardware components | Specification |
|---|---|
| OS | Windows 10 Enterprise 2016 LTSB, 64-bit |
| Processor | Intel Atom (E3930 / E3940) |
| RAM | 2/4 GB |
| Hard disk | SSD |
| Graphics | Intel HD Graphics / DisplayPort |
| Network adapter | 2/3x Ethernet RJ45 |

### Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – IPC Package** | |
| • 128 Tags | **6AV6355-1AA31-7FA0** |
| • 512 Tags | **6AV6355-1AA31-7FA1** |
| • 2048 Tags | **6AV6355-1AA31-7FA2** |
| • 4096 Tags | **6AV6355-1AA31-7FA3** |

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## Overview

WinCC OA Inhouse licenses are time-limited developer licenses recommended for certified partners which include almost all license options (except Video, BACnet and SmartSCADA – these must be ordered separately).

They include a number of hotline support hours and are valid for 1 year. Exact information about the number of hours is listed for the individual developer options. Two development licenses are required to create a redundant system. Video, BACnet and SmartSCADA extensions can also be purchased separately.

WinCC OA Inhouse Development Licenses can be upgraded to new WinCC OA versions during the contract period.

Developer licenses are valid for one year and are automatically extended if ***they are not canceled with 3 months' notice***.

## Benefits

Flexible development possibilities for new solutions through open configurability of contents and interfaces

- Annual renewal and included software upgrades at no additional cost
- Included telephone support

## Application

These licenses are designed for developments by partners.

Innovative additional services such as video or Smart SCADA can also be used with the appropriate extensions.

## Design

Inhouse DEV PARA

Expansion for the Inhouse DEV Package by a full PARA license. With graphical editor (incl. symbol catalogs), script development environment and test framework.

Inhouse DEV BACnet

Expansion of the WinCC OA Inhouse DEV package by the complete BACnet development environment including EDE tool, EDE file interface, BACnet object library, BACnet driver and BACnet browser.

Inhouse DEV Video

Expansion of WinCC OA Inhouse DEV package by a complete developer video package with unlimited video sources (cameras).

Inhouse DEV SmartSCADA

Expansion of the WinCC OA Inhouse DEV package by a complete developer package for SmartSCADA for use of the KPI framework with unlimited KPI instances.
Notice: Analytics model is not included and is not sold as a developer license. The standard Analytics Toolbox package can be added for an additional charge.

Inhouse DEV Value Package

Full development license for certified partners, includes 1 WinCC OA Server license (functionally unlimited), 10 UIs with all options (excluding Video, BACnet and SmartSCADA), including 10 hours hotline support.
A second Inhouse development license is also required to create a redundant system. Available only once per year and partner.

Inhouse DEV Value Package Extension

License expansion for certified partners, valid for one year, expands the Value Package license by the following options: Video, BACNet and the developer package for SmartSCADA for use of the KPI framework with unlimited KPI instances.
Notice: Analytics model is not included.
The standard Analytics Toolbox package can be purchased separately. Available only once per year and partner.

API Interface

Application programming interface. The API offers a series of functions that enable WinCC OA to be extended with special managers. A manager is a program that communicates with the system via a protocol defined by WinCC OA. The license allows the development of own drivers using C++. One license is required for each WinCC OA Para Standard. For first-time orders, participation in a WinCC OA WS - Developer Workshop is strongly recommended.

## WinCC OA Development Packages

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Inhouse DEV Package**<br>1 WinCC OA Server license (functionally unlimited) with almost all options (except Video, BACnet, SmartSCADA), 10 hotline hours, automatically extended after one year | |
| • 1 Inhouse DEV Package | **6AV6355-1EA31-7GA0** |
| • 2 Inhouse DEV Packages | **6AV6355-1EA31-7GC0** |
| • 5 Inhouse DEV Packages | **6AV6355-1EA31-7GC1** |
| • 10 Inhouse DEV Packages | **6AV6355-1EA31-7GC2** |
| **WinCC OA – Inhouse DEV PARA**<br>Extends WinCC OA Inhouse DEV Package by additional PARA licenses.<br>Automatically extended after 1 year. | |
| • 1 Inhouse DEV PARA | **6AV6355-1EA31-7GA7** |
| • 2 Inhouse DEV PARA | **6AV6355-1EA31-7GC5** |
| • 5 Inhouse DEV PARA | **6AV6355-1EA31-7GC6** |
| • 10 Inhouse DEV PARA | **6AV6355-1EA31-7GC7** |
| **WinCC OA – Inhouse DEV BACnet**<br>BACnet development environment including EDE tool, EDE file interface, BACnet object library, BACnet driver, BACnet browser, automatically extended after 1 year. | **6AV6355-1EA31-7GA2** |
| **WinCC OA – Inhouse DEV Video**<br>Developer video package, unlimited sources/cameras, automatically extended after 1 year. | **6AV6355-1EA31-7GA3** |
| **WinCC OA – Inhouse DEV SmartSCADA**<br>SmartSCADA developer package, KPI framework with unlimited KPI instances, automatically extended after 1 year. | **6AV6355-1EA31-7GA4** |
| **WinCC OA – Inhouse DEV Renewal**<br>Extends an existing WinCC OA - Inhouse DEV package for another year | **6AV6355-1EA31-7GB0** |
| **WinCC OA – Inhouse DEV BACnet Renewal**<br>Extends an existing WinCC OA – Inhouse DEV BACnet Package by one year. | **6AV6355-1EA31-7GB2** |
| **WinCC OA – Inhouse DEV Video Renewal**<br>Extends an existing WinCC OA – Inhouse DEV Video Package by one year. | **6AV6355-1EA31-7GB3** |
| **WinCC OA - Inhouse DEV SmartSCADA Renewal**<br>Extends an existing WinCC OA – Inhouse DEV SmartSCADA Package by one year. | **6AV6355-1EA31-7GB4** |
| **WinCC OA Inhouse DEV Value Package**<br>Full developer license, available once per year and partner, automatically extended after 1 year. | **6AV6355-1EA31-7GA5** |
| **WinCC OA - Inhouse DEV Value Package Ex**<br>Value Package license expanded by the Video, BACNet, SmartSCADA options, automatically extended after 1 year. | **6AV6355-1EA31-7GA6** |
| **WinCC OA – API Interface**<br>Application programming interfaces for the development of own drivers (C++). | **6AV6355-1AA31-7GD0** |

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## Overview

Solution Frameworks are license packages for the implementation of specific applications at the customer. Each package contains a set of consulting hours.

## Design

### Topology Package

The Topology package is an application framework for topological coloring of network representations. A qualitative statement is made as to which parts (nodes, line sections etc.) of a network are directly connected to specific feeders.
This package includes one day of consulting services (WinCC OA Consulting 8h) for project-specific integration.

### APM Package

The Advanced Playback Manager software offers the possibility to play back the system status of a real-time system in a test simulation system. Snapshot (time), playback (time range) and training sequence are included functions. The APM package does not include simulation of the process or the connected PLCs.

This package includes one day of consulting services (WinCC OA Consulting 8h) for project integration.

A WinCC OA RDB license (ORACLE connection) is required for the application.

### AMS Packages

The Advanced Maintenance Suite (AMS) package includes the application with a maximum number of alarm/event DPs to assigned checklists, AMS Reports and AMS Importers.
All I/O DPs that are linked to a list and trigger work orders are counted. AMS Reports also requires a license for Crystal Reports 2016 (RT V13.0). One day consulting service (WinCC OA Consulting 8h) is included.

AMS Reports and Importer are not available for Linux distributions.

AMS packages are available in different sizes (see table below). An existing WinCC OA server is required for the application. The package does not include further support.

| AMS Package | Qty. alarm/ event DP | License validity | Expandable |
|---|---|---|---|
| Starter | 20 | 90 days | No |
| Entry | 20 | Unlimited | No |
| Small | 100 | Unlimited | No |
| Medium | 1 000 | Unlimited | No |
| Large | 5 000 | Unlimited | Yes, via WinCC OA AMS Package Expansion |
| Unlimited | Unlimited | Unlimited | No |

The WinCC OA AMS package expansion includes an upgrade for Advanced Maintenance Station packages by 1 000 I/O each. It is only applicable to the WinCC OA AMS Package Large.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Topology Package**<br>Application framework for topological coloring of network representations + consulting. | |
| • Topology Package | **6AV6355-1AA31-7HA0** |
| • Topology Package UPG | **6AV6355-1CA31-7HA0** |
| • Topology Package SUS | **6AV6355-1DA31-7HA0** |
| • Topology Package SMS | **6AV6355-1FA31-7HA0** |
| **WinCC OA – APM Package**<br>Playback of real-time system status in test simulation system + consulting. | |
| • APM Package | **6AV6355-1AA31-7HB0** |
| • APM Package UPG | **6AV6355-1CA31-7HB0** |
| • APM Package SUS | **6AV6355-1DA31-7HB0** |
| • APM Package SMS | **6AV6355-1FA31-7HB0** |

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – AMS Package Starter**<br>90-day trial license for Advanced Maintenance Suite + consulting. | **6AV6355-1AA31-7HC0** |
| **WinCC OA – AMS Package Entry**<br>Advanced Maintenance Suite with max. 20 alarm/event DP + consulting. | |
| • AMS Package Entry | **6AV6355-1AA31-7HC1** |
| • AMS Package Entry UPG | **6AV6355-1CA31-7HC1** |
| • AMS Package Entry SUS | **6AV6355-1DA31-7HC1** |
| • AMS Package Entry SMS | **6AV6355-1FA31-7HC1** |
| **WinCC OA – AMS Package Small**<br>Advanced Maintenance Suite with max. 100 alarm/event DP + consulting. | |
| • AMS Package Small | **6AV6355-1AA31-7HC2** |
| • AMS Package Small UPG | **6AV6355-1CA31-7HC2** |
| • AMS Package Small SUS | **6AV6355-1DA31-7HC2** |
| • AMS Package Small SMS | **6AV6355-1FA31-7HC2** |
| **WinCC OA – AMS Package Medium**<br>Advanced Maintenance Suite with max. 1 000 alarm/event DP + consulting. | |
| • AMS Package Medium | **6AV6355-1AA31-7HC3** |
| • AMS Package Medium UPG | **6AV6355-1CA31-7HC3** |
| • AMS Package Medium SUS | **6AV6355-1DA31-7HC3** |
| • AMS Package Medium SMS | **6AV6355-1FA31-7HC3** |
| **WinCC OA – AMS Package Large**<br>Advanced Maintenance Suite with max. 5 000 alarm/event DP + consulting. | |
| • AMS Package Large | **6AV6355-1AA31-7HC4** |
| • AMS Package Large UPG | **6AV6355-1CA31-7HC4** |
| • AMS Package Large SUS | **6AV6355-1DA31-7HC4** |
| • AMS Package Large SMS | **6AV6355-1FA31-7HC4** |
| **WinCC OA – AMS Package Unlimited**<br>Advanced Maintenance Suite with unlimited alarm/event DP + consulting. | |
| • AMS Package Unlimited | **6AV6355-1AA31-7HC5** |
| • AMS Package Unlimited UPG | **6AV6355-1CA31-7HC5** |
| • AMS Package Unlimited SUS | **6AV6355-1DA31-7HC5** |
| • AMS Package Unlimited SMS | **6AV6355-1FA31-7HC5** |
| **WinCC OA – AMS Package Expansion**<br>Upgrade for Advanced Maintenance Suite Package Large by 1 000 alarm/event DP. | |
| • AMS Package Expansion | **6AV6355-1AA31-7HC6** |
| • AMS Package Expansion UPG | **6AV6355-1CA31-7HC6** |
| • AMS Package Expansion SUS | **6AV6355-1DA31-7HC6** |
| • AMS Package Expansion SMS | **6AV6355-1FA31-7HC6** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

### *SIMATIC WinCC OA IOT Suite*

SIMATIC WinCC OA IOT Suite is an IoT system consisting of an IOT Box on the machine for visualizing and analyzing processes, production sequences, machines and production lines in real time and the IOT OPA as a maintenance service provider for all connected IOT Boxes, specially developed for the food and beverage industries.

The IOT Box is based on the SCADA system SIMATIC WinCC Open Architecture V3.16, which has been on the market for many years. A highly simplified user interface enables the machine operator without special previous knowledge and in a playful way to gain deeper insights into the process sequences and to generate a new level of transparency and analysis options for optimizing the processes of a machine by entering non-machine information.

Current version:

- SIMATIC IOT Suite V1.00

## Benefits

The advantages result from the intelligent combination of direct, local function and central administration unit, coupled with the greatest possible ease of operation. This ensures a high level of acceptance by the user and the greatest possible central flexibility in maintenance and expandability.

## Function

### *SIMATIC WinCC OA IOT Suite*

The advantages result from the intelligent combination of direct, local function and central administration unit, coupled with the greatest possible ease of operation.
This ensures a high level of acceptance by the user and the greatest possible central flexibility in maintenance and expandability.

Runs on:

- SIEMENS Industrial OS V1.3

On the hardware platforms:

- SIMATIC IPC 2xx series (e.g. Nanobox)

SIMATIC WinCC OA IOT Box

The IOT Box is a self-contained visualization system based on IPCs, Industrial OS and SIMATIC WinCC OA, which can be commissioned by the customer (maintenance or electrician) within a few hours.

The currently available functionalities (apps) for connectivity, visualization or OEE (Overall Equipment Efficiency) are easy to configure and enable machine operators themselves to find the required insights for process optimization or to collect data and/or to exchange the data within the company using publish/subscribe mechanisms. A large number of apps are already available in the basic IOT Box.

SIMATIC WinCC OA IOT OPA

The IOT OPA is the central core of the IOT Suite and deals exclusively with the management, administration and maintenance of the connected IOT Boxes.

It is possible to operate this web-based service both within a plant and in a cloud. An Internet connection is desirable, but not mandatory.

Via the IOT OPA, new devices of the IOT Suite are integrated into the system or devices that are no longer needed are removed. It provides connected systems with the latest updates and app extensions.

With an existing Internet connection to its central cloud storage, it can automatically download the latest apps and make them available to the system. This is also possible without an Internet connection, but requires the manual acquisition of this data.

A status model of the IOT Box and the apps enables control of the specific data that can or may be distributed to specific IOT Boxes. An IOT OPA can also remotely update, functionally extend or reduce IOT Boxes within the administration. The initial installation of an IOT Box is also made possible by the IOT OPA, because all required applications and the system software are stored in its memory.

Runs on:

- Debian Linux xxx

On the hardware platforms:

- All common PC platforms and virtualized environments

## More information

Important:

All offered order numbers include only the SW licenses for operating an IOT Box and/or an IOT OPA.
Hardware and operating systems are not included and must be purchased separately.

More information about hardware can be found under:

https://mall.industry.siemens.com/mall/en/WW/Catalog/Products/5101001?tree=CatalogTree

And about the operating system under:

https://mall.industry.siemens.com/mall/en/WW/Catalog/Products/10355854?tree=CatalogTree

The IOT OPA can be understood as a maintenance contract of an IOT Box in the conventional sense. The maintenance of the box and the purchase of the latest apps and updates is ensured by commissioning the IOT OPA.

However, the IOT Boxes can also be operated without the IOT OPA, in which case they only lose the infrastructural services such as automated maintenance and expandability, as well as the backup of a box at a central location.

You can find more information on the Internet at:

http://www.siemens.com/wincc-oa-iot-suite

## Overview

### *WinCC IoT Box*

The IOT Box is a self-contained visualization system based on IPCs, Industrial OS and SIMATIC WinCC OA, which can be commissioned by the customer (maintenance or electrician) within a few hours. The currently available functionalities (apps) for connectivity, visualization or OEE (Overall Equipment Efficiency), are easy to configure and enable machine operators themselves to find the required insights for process optimization or to collect data and/or to exchange the data within the company using publish/subscribe mechanisms. A large number of apps are already available in the basic IOT Box.

## Benefits

- Pre-processing of data in real time
- Standardization and bundling of communication
- Automatic updates through connection to central storage (IOT-OPA)
- Extensions can be easily created by SIMATIC WinCC OA partners, for example
- Modular separation of connection management, display and formula creation increase the field of application

All required configurations can be made directly at the box or remotely via WinCC OA Desktop UI or Web UI

## Function

| Available apps | Task |
|---|---|
| **S7 App** | With the S7 app, nothing stands in the way of a connection to the conventional control systems from SIEMENS. Currently, the S7-300/-400 series, the S7-1200/1500 series as well as the S5 are supported. You only need to know the (IP) address of the controller and the type of controller to establish a connection. Data points of the selected controller can be imported using the I/O address or, if available, a CSV file |
| **OPC UA Client App** | The OPC UA Client app enables you to query any data of an OPC UA server and transfer it to the data management of the IOT Box.<br>A simple network scan finds all OPC UA servers located in the subnet and offers them for selection. After selecting a server, its data management is automatically queried and displayed. Here, too, the data and their updating can be transferred to the IOT Box by simple selection. |
| **Subscribe App** | The Subscribe app is used by the IOT Box to request and retrieve data from another IOT Box, if it has been published on the source device. In general, no data is exchanged between the devices without explicit permission. This is an internal system communication with the highest security standards. |
| **Publish App** | You can use the Publish app to publish recorded, calculated or mapped data of an IOT Box to other IOT Boxes. In general, no data is exchanged between the devices without explicit permission. This is an internal system communication with the highest security standards. |
| **Data Mapping App** | The Data Mapping app enables you to map or convert collected data into importable structures. This serves to standardize data communication within a company. Pre-defined standard formats, such as OMAC, are already available. Others can be easily defined and imported via XML files. You can also define your own data structures within the app and link their data management. |

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## Function (continued)

| | |
|---|---|
| **Rules App** | Intelligent pre-processing of data is an essential part of data concentration. However, advanced logic can also be created and applied in the Rules app.<br>A logical and arithmetic rule-based editor enables the creation of rules, which can also be instantiated at a later point in time.<br>The basis is formed by a powerful scripting engine (CTRL), which executes any input of CRTL scripts. This means that not only logical or arithmetical logic operations can be realized. |
| **OEE App** | The OEE app is the heart of the IOT Box, as the first of many value-added applications to follow. Using input data from the Mapping app, this app calculates the efficiency of machines. A time reference can be introduced using a shift calendar and with the help of reasons for malfunctions (pre-defined or defined by the operator), information originating beyond the machine itself can also be included in an analysis. The user thus gains a new depth of analysis and optimization potential. |
| **Dashboard App** | The OEE app and the Dashboard app are used to display collected or calculated values. All available data can be displayed in specially structured display formats here. Using a tag browser, the data is simply dragged and dropped into the display areas, where a wide variety of display formats can be selected. The arrangement of the display elements is also freely selectable. The user is thus able to create and save required displays independently. Different images can also be created using several index tabs to allow quick access to all desired display formats and depths at runtime. |
| **Update Center App** | The Update Center manages the apps and system software on the IOT Box. Via a connection to a central IOT OPA, the latest app extensions can be easily downloaded and installed without any user interaction. The app provides information about the latest available versions and updates and also allows the user to extend or reduce functionality/apps on the IOT Box. In the system environment, user administration can be used to specify whether this should be done locally by the user or centrally by IT. |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA IOT - IOT-Box-SW**<br>Licenses for running the IOT box SW on SIMATIC Nanobox (IPC2XX) and Industrial Linux | |
| • 1x IOT-Box-SW | **6AV6356-1AA31-7AA0** |
| • 10x IOT-Box-SW | **6AV6356-1AA31-7AA1** |
| • 20x IOT-Box-SW | **6AV6356-1AA31-7AA2** |

## More information

You can find more information on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## WinCC OA IOT OPA

### Overview

IOT OPA is the central core of the IOT Suite and deals exclusively with the management, administration and maintenance of the connected IOT Boxes.
It is possible to operate this web-based service both within a plant and in a cloud.

An Internet connection is desirable, but not mandatory.

Via the IOT OPA, new devices of the IOT Suite are integrated into the system or devices that are no longer needed are removed. It provides the connected systems with the latest updates and app extensions. With an existing Internet connection to its central cloud storage, it can automatically download the latest apps and make them available to the system. This is also possible without an Internet connection, but requires the manual acquisition of this data.

A status model of the IOT Box and the apps enables control of the specific data that can or may be distributed to specific IOT Boxes. An IOT OPA can also remotely update, functionally extend or reduce IOT Boxes within the administration. The initial installation of an IOT Box is also made possible by the IOT OPA, because all required applications and the system software are stored in its memory.

Runs on:

- Debian Linux xxx
- On the hardware platforms:
  All common PC platforms and virtualized environments

OPA licenses are limited in time with a validity of 1 year from purchase. The validity of the license is automatically extended upon expiration, if not canceled 3 months before the end of the year.

### Benefits

- Automatic distribution of apps and updates, including OS updates
- Simple and safe replacement of devices
- Centrally stores and manages apps and updates in the system
- Manages different statuses/versions of apps, updates and devices

### Function

| Functions | Task |
|---|---|
| **Dashboard** | The dashboard displays the current status of the IOT OPA as well as the installed version of the IOT OPA. |
| **Applications** | You can find all available apps under Applications, including their version and status in the OPA store. From here, apps can be distributed to devices or their status can be changed. |
| **Devices** | The Device view shows all connected IOT Boxes, including their status information. You can add new IOT Boxes and change their status here. |
| **Device configuration** | The Device Configuration view displays detailed information about the connected IOT Box. This includes information about installed software (firmware, operating system, apps, etc.) as well as an update history, its name and local location. |
| **Backup and restore** | From this display, you can upload configurations of a selected IOT Box to the IOT OPA or restore them to the IOT Box. |
| **Files** | File storage within the IOT OPA and the IOT Box can be used for data exchange, e.g. when an app persistently saves data on the IOT Box which should be collected at a central access point. |
| **Settings** | In the properties of the IOT OPA, settings can be made for uploading templates, whether this should be done automatically or manually, the download of apps or updates to the IOT Boxes, the logging preferences as well as the timeout for automatic logoff from the IOT OPA. Here you can also find settings for synchronizing the IOT OPA with its central storage area (IOT repository) on the Internet, so that you can obtain the latest updates and apps from it. |
| **Log** | This view shows the processes that have been executed on the IOT OPA. This allows the state of the IOT Box or actions performed with a connected IOT Box to be traced. |

### Ordering data

| | Article No. |
|---|---|
| **WinCC OA IOT - OPA**<br>Time-limited license (1 year). Secure administration of up to 10 WinCC OA IOT box devices including updates | **6AV6356-1BA31-7BA0** |
| **WinCC OA IOT – OPA Expansion**<br>Time-limited license (1 year). Extension for secure administration of up to 10 additional IOT boxes | **6AV6356-1BA31-7BA01** |

You can find more information on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

***SIMATIC WinCC OA Services***

SIMATIC WinCC Open Architecture is a SCADA system for visualizing and operating processes, production flows, machines and plants in all industrial sectors.

This high degree of flexibility requires comprehensive support for our customers and especially our partners. WinCC OA staff are happy to provide support for a wide range of challenges.

Services are offered in the following categories:

- Support: Support for errors within the scope of maintenance and update contracts
- Consulting: Consulting and configuration activities
- Solution: Development activities based on precise, technical specifications
- Training: Defined training and hands-on training
- Travel costs: For consulting or training on site
- Update and maintenance costs: Entitlement to upgrade the software and for support services
- Trade goods: Third-party goods sold through WinCC OA

Note:

These are services of the product supplier.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

or under

http://www.etm.at

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## Overview

### *WinCC OA Support*

The purchase entitles the customer to use the WinCC OA Support Hotline. Hotline hours are valid within 12 months from the date of purchase. Software updates without Software Maintenance Service (SMS) are not included.

Hotline support can only be purchased with a valid SMS contract and is always ordered for a specific project. Corresponding response times must be agreed separately.
Telephone availability is always from Monday - Friday from 09:00 - 17:00 CET (based on Austrian working days).

A support agreement is concluded for 12 months; the corresponding hour pool is also available for this time and must then be agreed upon again accordingly. Any unused hours expire at the end of the contract. The support hours are for general product information and product-related support.

"Consulting" services must be ordered in addition for project-related, specific information.

## Benefits

- Competent advice on product questions from the product supplier
- Solution-oriented fault diagnostics
- Correction of the error based on best practice experience
- Possibility of future adoption through product maintenance of WinCC OA patches

## Application

Support is offered for product-related questions and reproducible malfunctions. Corresponding times of reproduction of errors are deducted from the purchased hour pool.
A subsequent correction is included without any effect on the hour pool. The method of error correction is the responsibility of the product supplier. Both workarounds and actual software adaptations are possible in the course of a future product patch. Details are to be clarified in the implementation phase.

Beyond the legal warranty, no special rights for either software or new features are available with the purchase of the licenses. A pool can be booked accordingly for product-related support. Consulting hours must be ordered for project-related consulting activities.

Specific services can be ordered to receive future product development and telephone support. These update and maintenance packages are also required to use telephone support hours. Additional telephone support hours are purchased with the support package.

Specific services can be ordered to receive future product development and telephone support. These update and maintenance packages are also required to use telephone support hours. Additional telephone support hours are purchased with the support package.

Maintenance and Update Service:

A brief overview of the maintenance possibilities for a WinCC OA project:

Three different versions of services are offered, which include entitlement for future software updates – this does not necessarily require additional, included product support.

One-time Upgrade (UPG):

This package allows a one-time upgrade to a current version. No additional support is included in this license. It simply serves as a pre-configured way to switch to a new version. To use this version, a previous version is required, which is a maximum of 4 versions in the past.

Software Update Service (SUS):

This package allows continuous access to new patch and product versions. This version does not allow any further support services from the product supplier.

Software Maintenance Service (SMS):

Maintenance Service provides product updates as well as telephone support.

The number of hotline hours included in the SUS contract depends on the size of the ordered tag package.

The graduation looks as follows:

- 25k Tags - includes 10 hours
- 25k to 100k Tags - includes 15 hours
- 100k Tags - includes 20 hours

All other SMS MLFB refer to the tag package in terms of hotline hours.

It is also possible to purchase additional hotline hours, but only if there is already a valid SMS contract.

All packages are valid in this form for 12 months and must be renewed thereafter.

The following applies to orders: If a version of the support service has been selected, this must be additionally specified for the entire order. A similar support option must be added for each item in the order.

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Hotline Support**<br>Use of the hotline support to the extent of the hours ordered. | |
| • 10 h | **6AV6355-2AA31-7BC1** |
| • 15 h | **6AV6355-2AA31-7BC2** |
| • 20 h | **6AV6355-2AA31-7BC3** |
| **WinCC OA replacement license issue**<br>Flat fee for issuing a replacement license. | **6AV6355-2AA31-7BC4** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## WinCC OA Consulting

### Overview

Consulting refers to pure consulting activities with optional configuration support within the scope of the agreements as well as within the scope of special products ("Solution Frameworks"), which are to be adapted to individual customer requirements according to existing routines.

Consulting is a service provided by WinCC OA. This is calculated at an hourly rate. It is based on 8 hours per working day during normal working hours, defined according to Austrian working days, Monday to Friday from 9 am to 5 pm CET. Exceeding this time and activities outside normal working hours will be invoiced proportionately with increased costs.

In the course of ordering a project, it is also possible to order a pool of hours of consulting services. Corresponding working hours are then removed from the pool.

The hourly rate refers to project-related, location-independent work – it does not require travel to the customer or to a location. If travel is desired, it must be ordered as <Travel Costs>.

Travel costs include the expenses for both time and travel.

"Training" as well as development of adapted product components ("Solutions") can be ordered separately.

Likewise, any telephone support within the scope of a maintenance contract is not linked to this contingent, but must be ordered separately (for details, see: "UPG", "SUS", "SMS"). Additional ordering of "Support" services is also possible, but is not automatically included in the consulting services.

### Benefits

Consulting services help to put the finishing touches to your solution. With years of experience and the corresponding expert knowledge, we are available to provide advice and support for development of new, creative projects as well as advice on data security and optimization potential.

This cooperation can save valuable time and therefore money – faster implementation is possible. Faster go-to-market enables decisive advantages for your offer to the end customer.

### Application

- Sector-independent
- Consulting for complex project requirements
- Consulting for new partners with little practice based on WinCC OA
- Configurations for specific solutions
- Individual packages for customer-specific topics

### Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA - Consulting** | |
| Includes staggered number of hours of consulting services | |
| • Consulting 1h | **6AV6355-3AA31-7BA0** |
| • Consulting 8h | **6AV6355-3AA31-7BA1** |
| • Consulting 25h | **6AV6355-3AA31-7BA4** |
| • Consulting 50h | **6AV6355-3AA31-7BA2** |
| • Consulting 100h | **6AV6355-3AA31-7BA3** |

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

Solution is a customer-specific software development based on precise technical specifications. How this development is positioned in the product, effects on maintenance responsibility and handover to the customer must be clarified in the course of planning.

Solutions are a service provided by WinCC OA. This is calculated at an hourly rate. It is based on 8 hours per working day during normal working hours, defined according to Austrian working days, Monday to Friday from 9 am to 5 pm CET. Exceeding this time and activities outside normal working hours will be invoiced proportionately with increased costs.

The hourly rate refers to project-related, location-independent work – it does not require travel to the customer or to a location. Training, as well as pure consulting and configuration activities, can be ordered separately.

In the course of project implementation, it makes sense to make use of the various services that are available as part of the support services.

## Application

Whether or not and to what extent solution services are useful for a solution must be clarified in the project phase.

In any case, an appropriate concept must be available and the exact technical specifications must be clarified. Since these are very special customer applications, the hourly contingent must be determined in advance.

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – Solution Custom**<br>Customer-specific, individually offered software development according to specification. | **6AV6355-3CA31-7BB1** |
| **WinCC OA – Solution 1 hour**<br>1 hour hourly rate for software development according to specification. | **6AV6355-3CA31-7BB0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## WinCC OA Trainings

### Overview

Training for handling WinCC OA and various WinCC OA features in detail. Training is conducted by certified WinCC OA trainers. Price per participant. Contact information must be provided to make an appointment.

Lunch is included in the price for training held at ETM in Eisenstadt. If possible, participants should bring their own notebooks to the training (64-bit operating system). ETM reserves the right to postpone training courses to the next possible date if the minimum number of registrations is not reached.

Current requirements as well as additional detailed information regarding minimum hardware and software requirements can be accessed at any time via the following link:

http://www.etm.at/download/doc_winccoabas_EN.pdf

***All mandatory ECC examinations (including late registrations or changes of training participants) must be performed by the SIEMENS unit responsible for the order (if AWV category 1).***

### Benefits

- Proven product knowledge of WinCC Open Architecture
- In-depth knowledge of specific areas of expertise such as security, architecture
- Development opportunities through partner program and ongoing support
- Exchange of project experience of other WinCC OA partners
- Certifications prove corresponding knowledge of the employees

### Application

Valuable starting points for using the software are offered for employees. As knowledge progresses, there are always opportunities to accumulate further knowledge and expand on it. Topics that are particularly in demand are also covered by our own training courses.

The standard training courses are all part of a certification and training strategy from which both partners and customers benefit and which is put together and recommended in cooperation with WinCC OA employees and years of experience.

Some partner contracts also include obligations for each partner to participate in certain training courses. Depending on the milestones achieved, various models are available for in-depth cooperation. These development paths must be agreed with the Sales department.

In the course of consulting activities in special cases, there is, of course, the possibility of organizing individual training and workshops tailored to the customer. In this case, this is to be clarified with "Consulting"

### Design

#### *WinCC OA Update Training*

This one-day course led by a trainer gives experienced WinCC OA specialists an insight into the latest features and functions of the current WinCC OA version. This course is obligatory for "Certified Engineer" or "Certified Consultant" in order to maintain the certification status already achieved.

Minimum of 5 registrations.

#### *WinCC OA SmartSCADA Add-on-Training*

The two-day training course, led by a lecturer, offers experienced participants the opportunity to acquire the knowledge and skills required to use the WinCC OA SmartSCADA assistants (KPIs, data mining and classification) included in the scope of delivery of the SmartSCADA add-on. A demo project with data for analysis serves as a training basis including exercises for participants.

Minimum of 2 registrations.

Training is limited to a maximum of 8 participants.

#### *WinCC OA Object-oriented programming*

Two-day training for object-oriented programming and Panels in WinCC OA.

Minimum of 2 registrations.

#### *WinCC OA Video Training*

One-day training to learn the Video option of WinCC OA.

#### *WinCC OA BACnet Training*

One-and-a-half-day training to learn the BACNet option. The topics covered are development environment, library, drivers and similar.

#### *WinCC OA AMS Training*

Three-day training to learn the Advanced Maintenance Suite. Topics covered include the use of AMS, detection and tracking, reporting, etc.

#### *WinCC OA Basic Training*

This trainer-led course provides the participants with the necessary knowledge within five days to successfully design and create a WinCC OA application. This course is aimed at employees who want to gain initial experience in WinCC OA.

Course participants need computer skills (MS Windows, keyboard and mouse) as well as knowledge of PLCs and networks. Basic knowledge in programming is advantageous. Participants should bring along a suitable laptop on which a WinCC OA training version will be installed for practice purposes.

Minimum of 3 registrations.

Training is limited to a maximum of 10 participants.

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## **Design** (continued)

### ***WinCC OA Extended Engineer Training***

In this three-day course, participants will gain a deeper insight into the internal mechanisms and details of WinCC OA. Topics include debugging, performance, communication between the individual managers and "Do's and Don'ts" in scripting. To get the maximum benefits from these topics, a current customer project is used as a basis for discussion and the mechanisms are shown and discussed. Additional topics (e.g. add-ons of WinCC OA or special functions) can be selected and have to be agreed with the trainer in advance. We recommend attending the Engineer Workshop only after initial project experiences – at the earliest 3 months after WinCC OA Basic Training.

Minimum of 2 registrations.Training is limited to a maximum of 8 participants.

### **WinCC OA Safety Engineer Training**

In this two-day, trainer-led workshop, experienced participants will gain the specialist knowledge and the skills required to set up safety-relevant WinCC OA projects. The specified framework and operating conditions are discussed in detail and the resulting effects on the customer project are discussed.
Minimum of 2 registrations.

### **WinCC OA Developer Training**

The goal of this three-day, trainer-led training is to acquire the basic knowledge required for development with WinCC OA. The topics of this course are the basics of CTRL scripting, API toolkit, and similar.

### **WinCC OA Extended Developer Training**

This trainer-led course provides experienced participants with the knowledge and skills necessary to use the WinCC OA API Toolkit in three days. In this course, participants will learn how to create special CTRL extensions (DLLs), managers and/or simple drivers.
Minimum of 2 registrations.
Training is limited to a maximum of 6 participants.

### **WinCC OA Security Training**

In this three-day, trainer-led workshop, experienced participants will gain the knowledge and skills required to use WinCC OA as a process control system in a secure network environment as described in the WinCC OA Security Guideline. This course offers participants an introduction to the security mechanisms available in WinCC OA.
Minimum of 2 registrations.
Training is limited to a maximum of 8 participants.

### **WinCC OA Consultant Training**

Over three days in this course, participants will gain the knowledge and skills required to create complex and large WinCC OA projects. Data structures, graphical references and system architectures of large, distributed and redundant systems are built, among other things. Troubleshooting and error analysis are further topics of this course. Here, too, further topics (e.g. add-ons of WinCC OA or special functions) can be agreed with the trainer in advance.
Minimum of 2 registrations.
Training is limited to a maximum of 8 participants.

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## WinCC OA Trainings

### Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA – Training Update**<br>Training for new functionalities in WinCC OA.<br>Duration: 1 day. | **6AV6355-3BA31-7BD0** |
| **WinCC OA – Training SmartSCADA**<br>Training for the use and handling of WinCC OA add-on SmartSCADA.<br>Duration: 2 days. | **6AV6355-3BA31-7BD1** |
| **WinCC OA Object-oriented programming**<br>Training for object-oriented programming and Panels.<br>Duration: 2 days | **6AV6355-3BA31-7BD2** |
| **WinCC OA – Training Video**<br>One-day training to learn the Video option of WinCC OA.<br>Duration: 1 day. | **6AV6355-3BA31-7BD3** |
| **WinCC OA – Training BACnet**<br>Training to learn the BACNet option.<br>Duration: 1.5 days. | **6AV6355-3BA31-7BD4** |
| **WinCC OA – Training AMS**<br>Training to learn the Advanced Maintenance Suite.<br>Duration: 3 days. | **6AV6355-3BA31-7BD5** |
| **WinCC OA – Training Basic**<br>Training for getting started with WinCC OA.<br>Duration: 5 days. | **6AV6355-3BA31-7BE0** |
| **WinCC OA – Training Extended Engineering**<br>Training for future engineers of WinCC OA.<br>Duration: 3 days | **6AV6355-3BA31-7BE1** |
| **WinCC OA – Training Safety Engineer**<br>Training for future SAFETY engineers of WinCC OA.<br>Duration: 2 days | **6AV6355-3BA31-7BE2** |
| **WinCC OA – Training Developer**<br>Training to obtain basic knowledge for development with WinCC OA.<br>Duration: 3 days. | **6AV6355-3BA31-7BE3** |
| **WinCC OA – Training Extended Developer**<br>Training for detailed knowledge of the WinCC OA API.<br>Duration: 3 days. | **6AV6355-3BA31-7BE4** |
| **WinCC OA – Training Security**<br>Training to learn security mechanisms in WinCC OA.<br>Duration: 3 days. | **6AV6355-3BA31-7BE5** |
| **WinCC OA – Training Consultant**<br>Training for creating complex systems with WinCC OA.<br>Duration: 3 days. | **6AV6355-3BA31-7BE6** |

### More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## Overview

Services for "Consulting" and "Training" are charged at an hourly rate. The hourly rate refers to project-related, location-independent work – it does not require travel to the customer or to a location.

Travel costs are to be agreed upon additionally and include cost for both time and travel for WinCC OA employees involved. A definite commitment for a trip must be agreed separately.

Depending on the distance and the agreed means of transport, flat-rate travel costs for arrival and departure or freely configurable contingents – also for longer stays and customizations – are offered.

## Benefits

- Better interaction within the team through getting to know one another in person
- Reduction of travel costs on the customer side
- More precise assessment of the situation and the project through on-site cooperation
- Better planning of project costs through greater transparency
- Adapted travel packages for easier travel planning

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – Travel Costs**<br>Fixed price for travel allowance, including travel time and costs. | |
| • TC up to 100 km | **6AV6355-3DA31-7BF0** |
| • TC up to 300 km | **6AV6355-3DA31-7BF1** |
| • TC up to 500 km | **6AV6355-3DA31-7BF2** |
| **WinCC OA – Travel costs flight EU**<br>Fixed price for travel allowance for a flight within the EU. | **6AV6355-3DA31-7BF3** |
| **WinCC OA – Travel costs journey time**<br>Hourly rate for travel time | **6AV6355-3DA31-7BG0** |
| **WinCC OA – Travel costs rental car**<br>Fixed price travel allowance for a rental car per day | **6AV6355-3DA31-7BG1** |
| **WinCC OA – Travel costs overnight accom.**<br>Fixed price travel allowance for one overnight stay | **6AV6355-3DA31-7BG2** |
| **WinCC OA – Travel costs meals**<br>Fixed price for meals for one day | **6AV6355-3DA31-7BG3** |

## More information

You can find more information on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## WinCC OA Merchandise

### Overview

Merchandise includes WinCC OA components that are purchased and distributed under the name ***WinCC OA***. These include third-party products such as licenses for Oracle DB, as well as hardware dongles, data storage media and certificates.

More information about licenses and shipping under "More information".

### Design

#### *Oracle Licenses*

General

The WinCC OA basic package includes the HDB database (flat file DB). Alternatively, historical data can be archived in Oracle. The ***WinCC OA RDB*** add-on is required for this purpose. In terms of hardware, separate computers must be provided for Oracle databases.

In the event that Oracle makes changes to the price list, availability or licensing conditions in the meantime, WinCC OA reserves the right to adjust all Oracle prices and licensing conditions stated in this offer accordingly.

This reservation for a right to adjustment is valid from the time the offer is made until an Oracle license agreement with the end customer is legally valid.

WinCC OA does not provide Oracle support if the Oracle licenses are not obtained via WinCC OA. WinCC OA support services end at the RDB-Oracle interface. WinCC OA does not provide any services for Oracle installation or for setting up the WinCC OA RDB Manager.

#### *ASFU*

As an option, Oracle licenses can be obtained as so-called ASFU (Application Specific Full Use) licenses. However, the use of an ASFU license is subject to certain technical requirements. These are listed in the attached ***Oracle License Agreement***. The obligations of this agreement must be passed on by WinCC OA to the complete supply chain and must therefore be signed by the end customer. Only an agreement signed by the end customer allows use as ASFU license.

WinCC OA cannot supply the ASFU license until the ASFU Oracle agreement signed by the end customer is available.

If, in exceptional cases, it is necessary for WinCC OA to deliver the ASFU license before a signed ASFU Oracle agreement is available, this must be communicated in writing.

If the ASFU Oracle agreement signed by the end customer is not submitted within 60 days after delivery of the ASFU license via WinCC OA, 40% of the Oracle list price will be charged and the license will be upgraded to an Oracle FU license.

To process the delivery of the Oracle license, we need the following information with the order:

- End user name (company name)
- End user address, city, country
- End user contact, e-mail address
- Signed ASFU Oracle agreement

Note that Oracle Software Update License & Support is mandatory for the first year and is provided by WinCC OA. Oracle Software Update License & Support can be ordered directly for the subsequent years.

#### *Full Use*

As an option, Oracle licenses can be purchased as so-called FU (Full Use) licenses. Here, the end customer receives an email directly from Oracle with the download link. The contract (OLSA) between end customer and Oracle is confirmed by 1-click. However, the use of an FU license is subject to certain technical requirements.

To process the delivery of the Oracle license, we need the following information with the order:

- End user name (company name)
- End user address, city, country
- End user contact, e-mail address

Note that Oracle Software Update License & Support is mandatory for the first year and is provided by Oracle based on the CSI number of the license. For subsequent years, Oracle Software Update License & Support can be ordered directly from Oracle by the end customer.

#### *Hardware*

#### *Hardware dongles*

WinCC OA offers USB hardware dongles for operation with a license bound to the dongle. Dongles can also be used to temporarily replace hardware-bound licenses of operator stations or servers.

Dongles can be purchased in three different versions. The ***Standard*** and ***Micro*** versions are compatible with the ***CodeMeter*** licensing procedure introduced in WinCC OA V3.17. The ***WIBU*** version must be selected to operate WinCC OA V3.16 and lower with a hardware dongle.

#### *Data storage medium*

WinCC OA installation software is available on DVD.

#### *Certificates*

WinCC OA issues certificates for training graduates. Participation in WinCC OA training conducted by a "Train-the-Trainer" certified trainer is a prerequisite.

#### *Express delivery*

A flat fee is charged for express delivery of WinCC OA merchandise (WinCC OA on data storage medium, WinCC OA dongle etc.).

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## Ordering data

| | Article No. |
|---|---|
| **WinCC OA – ORACLE SE2 ASFU**<br>Oracle Standard Edition 2 Processor license ASFU including first year maintenance | **6AV6355-4AA31-7AA0** |
| **WinCC OA – ORACLE SE2 ASFU SUS**<br>One year maintenance for Oracle Standard Edition 2 processor license ASFU | **6AV6355-4AA31-7AA1** |
| **WinCC OA – ORACLE SE2 FU (full use)**<br>Oracle Standard Edition 2 Processor license SE2 full use including first year maintenance | **6AV6355-4AA31-7AA2** |
| **WinCC OA – ORACLE SE2 FU SUS**<br>One year maintenance for Oracle Standard Edition 2 processor license full use. | **6AV6355-4AA31-7AA3** |

| | Article No. |
|---|---|
| **WinCC OA Dongle**<br>USB hardware dongle for dongle-bound licenses. | |
| • WinCC OA – Dongle Standard | **6AV6355-4BA00-0AB0** |
| • WinCC OA – Dongle Standard Micro | **6AV6355-4BA00-0AB1** |
| • WinCC OA – Dongle WIBU (for WinCC OA V3.16 or lower) | **6AV6355-4BA00-0AB2** |
| **WinCC OA – On data storage medium**<br>WinCC OA Software DVD – current version on data storage medium | **6AV6355-4BA31-7AB3** |
| **WinCC OA – Certificates**<br>Issue and send a certificate for participants of WinCC OA training course. | **6AV6355-4BA31-7AB4** |
| **WinCC OA – Express Delivery**<br>Flat fee for express delivery of WinCC OA merchandise. | **6AV6355-4BA31-7AB5** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Overview

***SIMATIC WinCC Open Architecture V3.16***

SIMATIC WinCC Open Architecture is a SCADA system for visualizing and operating processes, production flows, machines and plants in all industrial sectors.

SIMATIC WinCC OA is built consistently on object-oriented structures. Due to this consistent and well-considered use of object-oriented structures, from process images to the database, the engineering costs improve for SIMATIC WinCC OA customers.

Distributed systems enable the connection of up to 2 048 autonomous SIMATIC WinCC Open Architecture systems via a single network. Each subsystem can be configured either as single-user or multi-user system, each of which may be redundant or non-redundant.

Current version: ***SIMATIC WinCC Open Architecture V3.16***

Runs on:

- Windows 10 (64-bit)
- Windows 7 Ultimate/Enterprise/Professional SP1 (64-bit)
- Windows 7 Ultimate SP1 (64-bit)
- Windows Server 2016 (64-bit)
- Windows Server 2012 R2 (64-bit)
- Red Hat Enterprise Linux 7.4 (64-bit)
- OpenSuse Leap 42.3 (64-bit)
- CentOS 7.4
  - SLES 12.1 (64-bit)
- VMWare ESXi version 6
- VMware Cluster (HA)

Note:

Native 64-bit support.

## Benefits

- Efficient engineering and flexible plant expansion
  - Object orientation
  - Unlimited number of data points
  - Mass engineering
  - Multilingual with UTF-8 support
- Object-oriented data model
  - Mapping of setpoint values and measured values for a physical plant object onto a structured data point
  - Data point comprises a tree structure with data point elements
  - The individual process values are mapped onto the data point elements
  - Any number of data points can be instanced from one defined data point structure (data point type), e.g. 20 pumps of the same type.
  - Data point types can be embedded in other data point types, which enables more complex plant objects to be generated (e.g. one pump station comprises 2 pumps).
  - Graphical plant symbols can be linked with a data point type. They only need to be drawn once, but can be used for all instances of the linked type.
  - Savings in engineering outlay.
- Freely scalable
  - From a small single-user system up to a networked, redundant high-end system
  - Distributed systems of up to 2 048 servers
- Platform-independent
  - Available for Windows, Linux, iOS and Android
- Native 64-bit support
  - More system memory is usable, due to native 64-bit support
  - This means that larger data quantity structures per server can be processed
- Maximum fail-safety and availability
  - Hot standby redundancy
  - Disaster recovery system
  - FDA compliant (FDA 21 CFR Part 11)
  - Quick and easy implementation of new processes
- Platform for customized solutions
  - Swift adaptation of the control and visualization of the plant to current market requirements
  - Company-internal programming and in-house developments enable independence and protection of intellectual property
  - Structure of standardized solutions permits continuous use
  - Support of brand-labeling
  - Individual brand names for OEM developments
- Openness thanks to comprehensive driver and interface options:
  - SIMATIC S7 TCP/IP, Modbus TCP/IP, Ethernet/IP, SNMP, BACnet, OPC DA Client & Server, OPC A&E Client & Server, OPC UA Client & Server (DA, AC, HA), SSI driver, IEC 60870-5-101, -104, DNP3, SINAUT, IEC 61850/61400, RK512, TLS, Teleperm M, API, Cerberus

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## **Benefits** (continued)

- Seamless traceability of system states by means of high-performance archiving:
  - Data archiving in value archives (internal database format)
  - Data archiving in an Oracle database
- Expandable by means of add-ons and solution frameworks:
  - Add-on for integration of video management systems (VIDEO)
  - Add-ons for increasing availability (Redundancy in Hot Standby, Disaster Recovery System, etc.)
  - Add-on for clarity in distributed systems (Plant Model overview, CMS, GIS Viewer, etc.)
  - Add-ons for efficient maintenance management (Maintenance Suite, Scheduler, etc.)
  - Add-ons for mobile operability (Desktop UI, Mobile UI, ULC UX, Operator App for iOS etc.)
  - Add-ons for efficient building automation technology (BacNet, etc.)

## Application

The SCADA system SIMATIC WinCC Open Architecture addresses applications with high demand for customer-specific adaptations, large and/or complex applications, as well as projects that demand special system requirements and functions.

SIMATIC WinCC Open Architecture demonstrates its high performance in networked and redundant high-end control systems in particular. Integrated, high-performance communication is guaranteed from the field level to the control station, from the machine to the company headquarters. In every situation, high availability, reliable information, fast interaction, and user friendliness are guaranteed. Applications can also be changed without interrupting the process. Profitability, efficiency and safety are therefore always in equilibrium.
SIMATIC WinCC Open Architecture displays its reliability in a wide range of business-critical applications.

With SIMATIC WinCC Open Architecture, ideas can be quickly and easily converted into new applications.
SIMATIC WinCC Open Architecture is open for independent in-house developments and also enables own product branding.

Thanks to its special system properties,
SIMATIC WinCC Open Architecture meets the highest demands especially in the case of traffic solutions, building management systems and supply systems (power, water, oil and gas, etc.).

## Design

SIMATIC WinCC Open Architecture is available as a single-user runtime license, multi-user runtime license, Web Client license, and parameterization and development license.
With SIMATIC WinCC Open Architecture the required license is determined, among other things, according to the number of inputs and outputs (I/O).

An "I/O" refers to a data point element (DPE) whose content is exchanged either by means of drivers (e.g. S7 driver communicates with a PLC) or with other software systems. Internal data point elements, i.e. DPEs without communication to the outside, are not counted for licensing. The licenses are available either with an unlimited number of I/Os or with limitations of 500 to 250 000 I/Os.

The multi-user runtime license allows working simultaneously from different PCs, with the licensing taking place via the server. The active clients are then counted. The web client and the ultralight client enable the visualization and operation of process pictures over an exclusively HTTP connection between the server and the respective web client. The parameterization and development licenses extend a runtime license with the option of configuration and parameterization. They each require a server license.

## Function

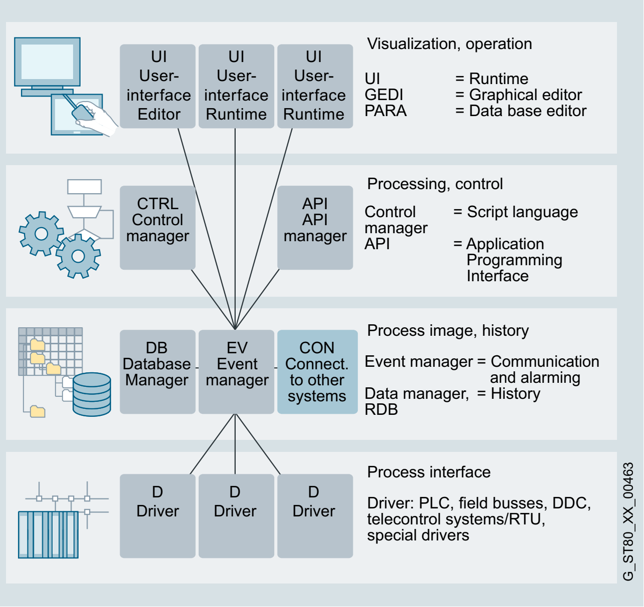
SIMATIC WinCC Open Architecture is a very modular SCADA system. The required functionalities are realized by specific, functional entities created for various tasks.

In SIMATIC WinCC Open Architecture these units are called "Managers" – they are also independent processes in software terms.

| WinCC OA Manager | Task |
|---|---|
| **Event Manager (EV)** | The Event Manager (EV) is the processing center in WinCC OA. This unit provides a constantly updated image of all PowerTags in the memory. Each other functional unit (Manager) that wants to access the data receives it from the process image of the Event Manager and does not have to communicate directly with a controller. Conversely, a command from an operator station is initially set only as a value change in the process image of the Event Manager. The associated driver then forwards it to the corresponding target device (e.g. PLC) automatically. The Event Manager is a kind of central data distributor, in effect the communication center for WinCC OA. Furthermore, this Manager also carries out the alarm handling and can execute various arithmetic functions autonomously. |
| **Driver Manager (D)** | The lowest level in a WinCC OA System is represented by the process connections, referred to in WinCC OA as drivers (D). These are special programs that handle the communication with the control and field level. Since numerous different forms of communication are possible with the PLCs or telecontrol nodes, there are different drivers that can be selected. In very simple terms, the driver is a unit for converting a particular protocol into the internal communication form of WinCC OA.<br>The driver reads the current states, measurement or counter values from the field and in the opposite direction it forwards commands and setpoints to the lower-level controllers (= the term "control" should be used here and below to represent all possible devices of the basic automation (PLC, DDC, telecontrol system, etc.)). |
| **Data Manager (DB)** | The Data Manager (DB) represents the link to database. On one hand, it involves the parameterization data of an application that is to be stored in such a database. On the other hand, it involves the historical recording of changes in values or alarms. If a user wishes to query historical data at a later date, then the Data Manager completes this request and not the database itself. |

| WinCC OA Manager | Task |
|---|---|
| **Control Manager (CTRL)** | WinCC OA has numerous options for implementing your own algorithms and processing. The two most important are the internal language control (CTRL) and the general application programming interface (API). Control is an extremely powerful scripting language. The processing is interpretative, so that no compilation is required. The syntax is almost identical with ANSI-C, with some modifications for simplification. This is a fully developed, procedural high-level language with multi-threading (= quasi-parallel processing of individual programs; the system itself carries out the processing check). The language offers a comprehensive function library for tasks of the control and visualization technology. Control can be used as a stand-alone process (Control Manager), for animation and user interface design or for standardized, data object-oriented processing functions.<br>The API (WinCC OA API) represents the most powerful form of functional expansion. It is configured as a C++ class library and allows the software developer to implement individual functions as an independent, additional manager (forecast system, simulation, tools, proprietary databases, etc.). |
| **User Interface Manager (UI)** | The interface to the user is created by the User Interface Manager (UI). This comprises a graphics editor (GEDI), a database editor (PARA) or the general user interface of the application (Vision module).<br>The User Interface serves to display values, issue commands or track alarms in the alarm list. Trends and reports are also usually part of the UI. From a programming viewpoint, the user interaction in WinCC OA is completely isolated from the background processing – this is merely a view of the data of the current process image or the history. |

## **Function** (continued)


UI
User-interface Editor
UI
User-interface Runtime
UI
User-interface Runtime
Visualization, operation
UI = Runtime
GEDI = Graphical editor
PARA = Data base editor
CTRL
Control manager
API
API manager
Processing, control
Control manager = Script language
API = Application Programming Interface
DB
Database Manager
EV
Event manager
CON
Connect. to other systems
Process image, history
Event manager = Communication and alarming
Data manager, RDB = History
D
Driver
D
Driver
D
Driver
Process interface
Driver: PLC, field busses, DDC, telecontrol systems/RTU, special drivers
G_ST80_XX_00463

A WinCC OA System consists of function-specific units, the managers.

More managers are available for special tasks such as redundancy, management for distributed systems, web server, reporting, simulation, COM etc.

The powerful configuration functions contribute to a reduction of engineering and training overheads and lead to increased flexibility and operational reliability.

| Special functions | Task |
|---|---|
| **Access to external databases** | The database interfaces offer the possibility of access to external databases.<br>Under Windows, the link is established via the ADO Standard. ADO (ActiveX Data Objects) is an interface developed by Microsoft for vendor-independent access to data sources of all types, primarily databases. The data source for ADO is an OLE DB Provider, although ODBC-compatible databases can also be addressed via an internal wrapper.<br>In Linux, the Qt library is used as an interface to relational databases. Access in this case is either direct via the native DB-API or via ODBC. |
| **Application Programming Interface (API)** | The API offers a series of functions that enable WinCC OA to be extended with special managers. A manager is a program that communicates with the system via a protocol defined by WinCC OA. |
| **COM (Component Object Model)** | This is a specification for the development of modular software components that can be used by each COM-compatible application.<br>COM components can easily be integrated into such applications and can even be removed from an application during runtime.<br>COM components can be programmed in a host of different languages, even though C++ is usually used for this purpose. The specifications OLE, ActiveX and DirectX are based on the COM technology. |
| **Control expansion** | Expansion that allows C++ functions to be added to the programming language. |
| **Panel topology/ summation signal** | Generation of panel hierarchies/topologies in existing or new projects and automatic creation of summation signals of the alarm data points that are located in the panels of the topology. |
| **Redundancy (see figure below)** | The failure safety in a redundant system is implemented by means of hot standby. Hot standby is a hardware-independent solution for high availability. This is a safety concept that consists of two interconnected server systems. Both servers are constantly in operation and are subject to the same functional loading (but only one server is ever active; the second compares the data with the primary unit at runtime). On the failure of one unit, an "on-the-fly changeover" takes place and the previously passive server assumes the leading role. This guarantees access to data or functions at all times. |
| **Encryption of panels and CTRL scripts/ libraries** | Allows your panels or scripts to be encrypted, thereby protecting your knowledge and work. |
| **Script Wizard** | Easy-to-use tool that simplifies the creation of animated, graphical plant symbols, which saves time during engineering. |
| **Simple Symbols** | Basic package of plant symbols that have been created using the script wizard. These can be adapted quickly and easily to the specific requirements of the customer. |
| **Easy Faceplates** | Simple parameter assignment of predefined pop-up windows that display details of the associated plant symbol. Without any additional drawing outlay, several standard functions per object can be activated for the detail view (alarm display, trend display, measured value table, setpoint value table, address table, notes). |
| **Drag and Draw** | Several representative graphical objects can be defined and configured for each plant object in the data model (data point type). These are pre-configured and need only be moved to the panel via drag-and-drop when the plant pictures are drawn. This saves valuable time during engineering. |
| **Multilingual capability** | Thanks to the UTF-8 format as the standard for written languages it's possible to use almost all fonts and characters in projects. Up to 40 languages can be used in any one project. User rights enable the definition of a standard language. In addition it is easy to change the display language during operation. Dictionaries can be made with a special tool or according to individual requirements. |
| **Server-side authentication** | Enables the connection of third-party systems including customized solutions for user authentication. |
| **Distributed systems (see the diagram below)** | Permits the coupling of two or more autonomous WinCC OA systems via a network. Each sub-system of a distributed system can be configured either as a single-user or multi-user system, each of which may be redundant or non-redundant. A sub-system in this context means a server on which an Event Manager is running, whereby in case of redundancy both redundantly operating servers are considered as one system. |

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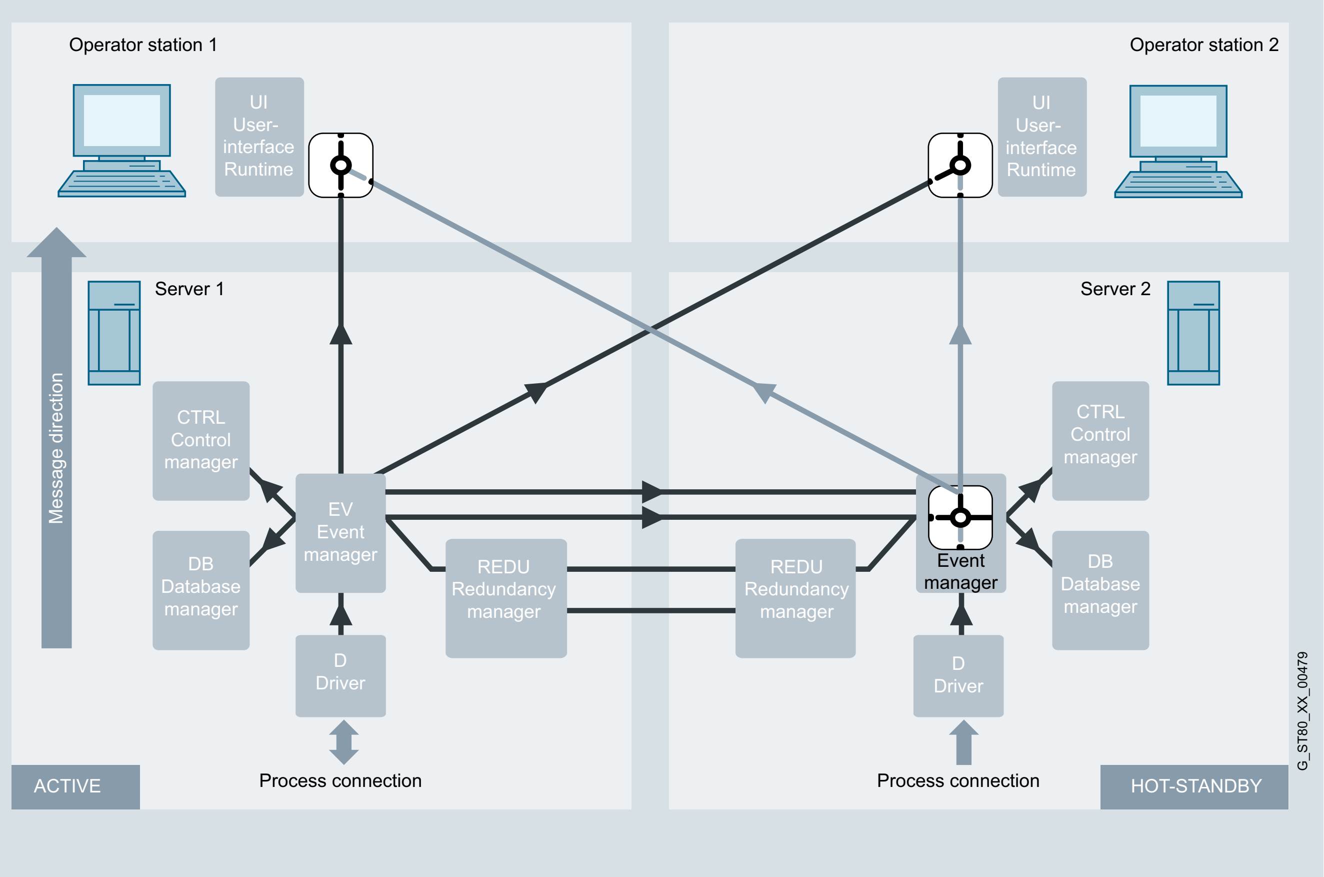
## **Function** (continued)


Operator station 1
UI User-interface Runtime
Operator station 2
UI User-interface Runtime
Server 1
Message direction
CTRL Control manager
DB Database manager
EV Event manager
REDU Redundancy manager
D Driver
Process connection
ACTIVE
Server 2
CTRL Control manager
DB Database manager
Event manager
REDU Redundancy manager
D Driver
Process connection
HOT-STANDBY
G_ST80_XX_00479

The diagram shows a detailed representation of the two computers: Server 1 and Server 2. Server 1 is in management mode (active) and Server 2 is in hot standby mode (passive). In the case of redundant operation, the UIs of both operator stations are connected to both Event Managers, however only the data of the active system is displayed on both UIs.
The Event Manager of the passive system is restricted exclusively to communication with the Event Manager of the active system for comparison of the process data (it sends no data to the connected UIs or it discards messages from the drivers – this can be seen in the figure with the switches on the UIs or on the passive Event Manager).

### *Integration in automation solutions*

SIMATIC WinCC Open Architecture is an open SCADA system with comprehensive drivers and flexible options for connection to other external systems.

Depending on the communications protocol and the bus physics used, specific drivers are used in each case:

- Serial protocols: RK512, 3964R, etc.
- Ethernet: Industrial Ethernet (S7, S7 PLUS), Modbus TCP (OpenModbus), Ethernet IP (AB), etc.
- Telecontrol systems: SINAUT, SSI (Ethernet), IEC 61850/61400, IEC 60870-5-101, IEC 60870-5-104, etc.
- Vendor-independent interfaces: OPC UA, etc.

In SIMATIC WinCC Open Architecture, several drivers can be operated in parallel. These can be of the same type or also of different types.
It is possible in a SIMATIC WinCC Open Architecture system, for example, to establish connections via the S7 protocol to a SIMATIC controller, via IEC 60870-5-104 to a telecontrol system, and via OPC DA to any OPC server at the same time.

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## **Function** (continued)

### *Connection overview*

| Protocol | Description |
|---|---|
| **S7 TCP/IP** | TCP/IP driver for Siemens Industrial Ethernet |
| **S7 Plus** | Drivers for S7 1200 and 1500<br>Supports alarm messages, online browsing, TIA importer for versions V13, V14 and V15 |
| **OPC Client (Data Access)** | • Compatibility with specifications DA 1.0 and 2.05a<br>• Connection to inproc, local or remote server<br>• Connection with up to 20 servers at the same time<br>• Monitoring of the connection to the server and automatic reconnection if the connection is interrupted.<br>• Address browsing if supported by the server.<br>• Benefits of the CALL-R functionality for CALL-R servers (simplified parameter assignment) |
| **OPC Server (Data Access)** | • Corresponds to Data Access 2.05a specification (reading/writing of online values).<br>• Is to be started as a manager just like other drivers.<br>• The provided DPEs (server -> client) can be easily and quickly defined via data point groups.<br>• DPEs can be declared as readable (read-only access is permitted; Group OPCRead) or as writable items (Group OPCWrite).<br>• Clients can browse the WinCC OA OPC Server hierarchically. |
| **OPC Alarms & Events** | OPC Alarms & Events (abbreviated to OPC A&E) is, in addition to Data Access, a further standard for performing central alarm management on a cross-vendor basis. OPC A&E is used to ensure the link to other control systems and the display of alarms/events in a hierarchical system. |
| **OPC Historical Data Access** | OPC Historical Data Access (OPC HDA) is used to exchange archived process data. This is in contrast to the OPC Data Access (OPC DA) specification that deals with real-time data. |
| **OPC UA (Unified Architecture)** | WinCC OA client supports the OPC UA Data Access (DA), Alarms & Conditions (AC) and Historical Access (HA) standards. |
| **Modbus TCP** | Modbus/TCP is based on the serial Modbus protocol, which was adapted for TCP/IP. The Modbus/TCP driver can be used simultaneously for Modbus/TCP or UNICOS. |
| **Ethernet/IP** | Ethernet/IP is used for communication with several PLC generations and families from Rockwell Automation / Allen Bradley. The protocol is part of the application layer and is based on the standard TCP/IP network protocol. |
| **Serial: RK512/3964R** | Is used for interfacing a PLC via the 3964R/RK512 protocol |
| **Cerberus** | Cerberus is a fire, intrusion and gas alarm system. The Cerberus driver guarantees communication to and from the central fire alarm systems and building security facilities in the event of a fire, gas or intruder alarm. |

| Protocol | Description |
|---|---|
| **SSI** | Is used for the interfacing of SAT telecontrol systems. The data is exchanged via the LAN (Ethernet, IEEE 802.3); the frame formats used are the SSI formats defined by SAT. The SK 1703 telecontrol components with a suitable communication card (KE/ET) are supported. |
| **IEC 60870-5-101, -104** | IEC drivers are standardized telecontrol drivers that can process proprietary frames. IEC stands for International Electrotechnical Commission, the international standardization committee for electrical engineering.<br>• IEC 60870-5-104 for data exchange via TCP/IP<br>• IEC 60870-5-101 for serial connection |
| **IEC 61850/61400** | IEC 61850 Client and IEC 61400 Client defines an architecture for satisfying the requirements of electrical substation automation. It defines a data model and the communication services for interaction with and between the elements of a substation, such as power supply units, circuit-breakers, protective devices etc. A description language and a system configuration language (SCL) have been defined for technical purposes. |
| **DNP3** | The DNP3 (Distributed Network Protocol 3) driver is an open, rugged and modern protocol which exhibits characteristics and strengths similar to the IEC driver. The transfer of any number of frames with different data types takes place between the WinCC OA system (Master) and the remote stations (Slave). |
| **SINAUT** | SINAUT (SIemens Network AUTomation) is a communication protocol for automated monitoring and control of remote process stations on the basis of SIMATIC S7. Communication takes place via TCP/IP. |
| **SNMP Manager & Agent** | SNMP (Simple Network Management Protocol) is a protocol for monitoring network elements (servers, workstations, routers, switches, hubs, etc.) and their functions.<br>• SNMP Manager supports SNMP V1, V2, and V3<br>• SNMP Agent supports SNMP V1 and V2 |
| **BACnet over IP – driver** | BACnet (Building Automation and Control Networks) is a standardized protocol for building automation and has been set by the ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers) as a guideline to provide a uniform and cross-company standard for data communication within and between building automation systems.<br>The BACnet Standard 2004 is supported in accordance with the PIC list (see product documentation) |
| **S-bus** | The WinCC OA S-bus driver is used to link SAIA PCD control devices to WinCC OA projects. Client mode of the SAIA S-bus driver is used. Communication is carried out using the UDP; the serial version of the protocol is not supported. |

**Further drivers on request or via C++ API**

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## Technical specifications

| **Type** | **SIMATIC WinCC Open Architecture V3.16** |
|---|---|
| **Operating system** | • Windows 10 (64-bit)<br>• Windows 7 Ultimate/Enterprise/ Professional SP1 (64-bit)<br>• Windows 7 Ultimate SP1 (64-bit)<br>• Windows Server 2016 (64-bit)<br>• Windows Server 2012 R2 (64-bit)<br>• Red Hat Enterprise Linux 7.4 (64-bit)<br>• SLES 12.1 (64-bit)<br>• VMWare ESXi version 6<br>• VMware Cluster (HA)<br>• OpenSuse Leap 42 (64-bit)<br>• CentOS 7.4<br>• SLES 12.1 (64-bit)<br>• VMWare ESXi version 6<br>• VMware Cluster (HA) |
| **Mobile operating system** | • Android 4.4 and higher<br>• iOS 11.0 and higher |
| **PC hardware requirements** 1) | |
| **Processor type** | Intel Pentium or equivalent |
| Minimum | Intel Pentium IV 1.6 GHz (or better) 2)3) |
| Recommended | • Client: Intel Pentium IV/Core2/i3, 2 GHz 2)3)<br>• Server: Intel Core i3 CPU Dual, 3 GHz 2)<br>• Server large system4): Intel(R) Core(TM) i5/i7 CPU Dual / Quad, 3 GHz 2)3) |
| **Work memory RAM** | |
| Minimum | 2 GB 2) |
| Recommended | • Client: 2 GB 2)3)<br>• Server: 8 GB 2)3)<br>• Server large system: 16 GB 2) |
| **Hard disk (available memory for installation)** | |
| Minimum | HD with 800 MB available 2) |
| Recommended | Server large system with local logging: SCSI LVD Controller, WIDE SCSI / LVD HDD or comparable storage system with at least 500 MB of available space 2) |
| **Screen and graphics card (TrueColor)** | |
| Minimum | 1024 x 768 2) |
| Recommended | 1280 x 1024 2) |
| **Mouse and keyboard** | Mouse, keyboard |
| **DVD drive** | Possible for software installation, also via web installation or USB flash drive |
| **Local power user rights** | • For installation<br>• For operation |

1) For actual use in plants, the hardware requirements are largely dependent on the project size and the dynamic response of the process variables. Whenever possible, use rugged, high-quality hardware with corresponding functionalities such as redundant power supply units or RAID hard disks. WinCC OA supports dual and multi-processor mode and benefits significantly from the fact that each WinCC OA Manager can be assigned to one processor core as a system process. At the same time, however, it is important that the individual cores offer the highest possible performance (high clocking), since load-critical core processes such as the event manager run on exactly one core (for this reason, multi-core machines with low-clocked cores are unsuitable for WinCC OA). As for RAM, CPU and HDD, the usual rule applies: more is better

2) System requirements generally only refer to WinCC OA Version 3.16 under the supported versions of the Windows and Linux operating systems.

3) A precondition for the minimum requirement is that the operating system used does not have any greater requirements itself

4) With a large system it is essential that the system permits not only the highest data point numbers but also a high dynamic response.

WinCC OA is ideally suited for use in very large distributed systems.

The optimum design of such systems demands corresponding system knowledge of WinCC OA. Due to the event-oriented processing, individual design parameters can be increased or reduced as necessary in actual applications.

| **Type** | **SIMATIC WinCC Open Architecture** |
|---|---|
| **Functionality/quantity structure** | |
| Number of messages | 150 000 2) |
| Message text (number of characters) | System-limited 1) |
| Message archive | System-limited 1) |
| Process values per message | 1 process value + up to 32 alarm associated values per message |
| Constant load of messages, max. | 500/s 2) |
| Message burst, max. | 15 000/10 s every 5 min 2) |
| **Archives** | |
| Archive data points | Max. 250 000 per server 2) |
| Archive types | < 20 parallel logs, different retention period for each log |
| Data storage format | Oracle or file system |
| Measured values per second, max. | Server/single-user station: 7 000/s 2) 3) |
| **User archive** | |
| Archive | System-limited 1) |
| Type | SIMATIC WinCC Open Architecture |
| Table size | System-limited by ORACLE database |
| **Graphics system** | |
| Number of screens | System-limited 1) |
| Number of objects per screen | System-limited 1) |
| Number of controllable fields per screen | System-limited 1) |
| PowerTags | < 750 000 per server 2) |
| **User administration** | |
| User accounts | < 4096 |
| Configuration languages | 3 (en, de, ru) |
| Runtime languages | 40 (of which 8 Asian) |
| **Multi-user system** | |
| Server | < 2 048 2) 4) |
| Number of clients | < 244 per server 2) 5) |

1) Dependent on the available storage space

2) Dependent on the system configuration and the system load (due to the event-oriented architecture, the system load is essentially determined by the change rates of the values to be processed)

3) By means of high-performance hardware configuration (one archiving cluster and approx. 120 distributed systems that archive parallel values in the cluster): 200 000 archived value changes per second

4) Physical limit: <2 048, in practice systems have already been implemented with up to 550 distributed systems

5) Physical limit: < 244 clients per server, recommended: max. 100 clients per server

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC OA core components**<br>**WinCC OA Server**<br>Language/script versions: en, de, ru; with license for: | |
| **WinCC OA single-user station 500 I/O**<br>License for single operator station with up to 500 I/O (bit, integer), alerting, extended trend, historical recording, S7 and S7 Plus (8 connections) drivers, SSL encryption, OPC client, OPC server, OPC UA client, WinCC OA Web server and one WinCC OA OPERATOR 1 Device License.<br>Cannot be expanded with multiple operator stations or add-ons. | **6AV6351-1HA31-6AA0** |
| **WinCC OA Server I/O**<br>License for server (without operator station licenses), alerting, extended trend, historical recordings, S7 and S7 Plus (8 connections) drivers, SSL encryption, OPC client, OPC server, OPC UA client, WinCC OA Web server and one WinCC OA OPERATOR 1 Device License. | |
| • **1 000 I/O**<br>With a max. of 1 000 I/O of any type | **6AV6351-1HB31-6AA0** |
| • **3 000 I/O**<br>With a max. of 3 000 I/O of any type | **6AV6351-1HC31-6AA0** |
| • **5 000 I/O**<br>With a max. of 5 000 I/O of any type | **6AV6351-1HD31-6AA0** |
| • **10 000 I/O**<br>With a max. of 10 000 I/O of any type | **6AV6351-1HE31-6AA0** |
| • **15 000 I/O**<br>With a max. of 15 000 I/O of any type | **6AV6351-1HF31-6AA0** |
| • **25 000 I/O**<br>With a max. of 25 000 I/O of any type | **6AV6351-1HG31-6AA0** |
| • **50 000 I/O**<br>With a max. of 50 000 I/O of any type | **6AV6351-1HH31-6AA0** |
| • **75 000 I/O**<br>With a max. of 75 000 I/O of any type | **6AV6351-1HJ31-6AA0** |
| • **100 000 I/O**<br>With a max. of 100 000 I/O of any type | **6AV6351-1HK31-6AA0** |
| • **150 000 I/O**<br>With a max. of 150 000 I/O of any type | **6AV6351-1HL31-6AA0** |
| • **200 000 I/O**<br>With a max. of 200 000 I/O of any type | **6AV6351-1HM31-6AA0** |
| • **250 000 I/O**<br>With a max. of 250 000 I/O of any type | **6AV6351-1HN31-6AA0** |
| • With unlimited I/O | **6AV6351-1HP31-6AA0** |
| **WinCC OA dongle**<br>Hardware dongle for USB port for operation with a hardware-independent license attached to the dongle, which can also extend the hardware-linked license of the operator station or server on a temporary basis. | **6AV6351-1AH31-6AA0** |
| **WinCC OA on data medium**<br>WinCC OA Software DVD – current version on disk | **6AV6351-1AX31-6AA0** |

| | Article No. |
|---|---|
| **WinCC OA for Nanobox**<br>Runtime License for SIMATIC Nanobox (Win 7 Ultimate SP1 64-bit) with max. 128 I/O, including one operator station, distributed systems option, S7 and S7 Plus (8 connections) drivers, SSL encryption, OPC client, OPC server, OPC UA client, RDB option, WinCC OA Web server as well as a choice of one other driver.<br>This package cannot be expanded with other WinCC OA options.<br>The use of this license is exclusively restricted to the approved Nanoboxes (restrictions on the hardware side can be viewed in the online help). | |
| • 128 I/O | **6AV6351-1KA31-6AA0** |
| • 512 I/O | **6AV6351-1KB31-6AA0** |
| • 2 048 | **6AV6351-1KC31-6AA0** |
| • 4 096 I/O | **6AV6351-1KE31-6AA0** |
| **WinCC OA Desktop UI**<br>Operator station license with all server operator station functionalities.<br>Only the number of simultaneously active Desktop UIs is counted | |
| • 1 Operator station license | **6AV6351-1CP31-6AA0** |
| • 10 Operator station licenses | **6AV6351-1CQ31-6AA0** |
| • 25 Operator station licenses | **6AV6351-1CR31-6AA0** |
| • 50 Operator station licenses | **6AV6351-1CS31-6AA0** |
| • 100 Operator station licenses | **6AV6351-1CT31-6AA0** |
| **WinCC OA Ultralight UX**<br>The Ultralight UX enables an operator station to be implemented in a web browser without installation of a plug-in. The Ultralight UX can run on PCs and laptops. Only the number of simultaneously active Ultralight UX Clients is counted.<br>Please note Ultralight UX Client restrictions according to the online help. | |
| • License for 1 client | **6AV6351-1JK31-6AA0** |
| • License for 10 clients | **6AV6351-1JL31-6AA0** |
| • License for 25 clients | **6AV6351-1JM31-6AA0** |
| • License for 50 clients | **6AV6351-1JN31-6AA0** |
| • License for 100 clients | **6AV6351-1JP31-6AA0** |
| **WinCC OA Mobile UI**<br>The Mobile UI enables an operator station to be implemented on a mobile device. Installation takes place via an app available in the iTunes App Store or in Google Play Store. Only the number of simultaneously active Mobile UIs is counted. You can find the supported Android and iOS devices and restrictions in the online help. | |
| • License for 1 mobile UI | **6AV6351-1JQ31-6AA0** |
| • License for 10 mobile UIs | **6AV6351-1JR31-6AA0** |
| • License for 25 mobile UIs | **6AV6351-1JS31-6AA0** |
| • License for 50 mobile UIs | **6AV6351-1JT31-6AA0** |
| • License for 100 mobile UIs | **6AV6351-1JU31-6AA0** |

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| Ordering data | Article No. |
|---|---|
| **WinCC OA OPERATOR mobile app**<br>Permits operation and visualization of a WinCC OA installation via iPhone and iPad. Over a secured SSL connection, measured values and alarms can be retrieved, as well as commands and acknowledgements sent. Navigation takes place in list form or map-supported. The configuration is carried out in an intuitive wizard. Each device must be assigned its own, fixed license. | |
| • License for 1 device | **6AV6352-1DK31-6AA0** |
| • License for 3 devices | **6AV6352-1DL31-6AA0** |
| • License for 10 devices | **6AV6352-1DM31-6AA0** |
| • License for 25 devices | **6AV6352-1DN31-6AA0** |
| • License for 50 devices | **6AV6352-1DP31-6AA0** |
| ***WinCC OA parameter assignment and development license***<br>Client, parameterization and development license for single operator station, graphic editor with symbol catalog, user-friendly script development language, alerting, extended trend, and historical recording. | |
| **WinCC OA Para for single-user station**<br>Requires a corresponding single-user station license. | **6AV6351-1EA31-6AA0** |
| **WinCC OA Para**<br>Requires corresponding server license. | **6AV6351-1EP31-6AA0** |
| **WinCC OA Para Remote**<br>Client, parameterization and development license for remote access to server. | **6AV6351-1EQ31-6AA0** |
| **WinCC OA API interface gen.**<br>Application programming interface for the integration of customer-specific managers or drivers. One license is required for each development workstation. We strongly recommend the participation in a Certified WinCC OA Developer Workshop when ordering this product for the first time. | **6AV6351-1EK31-6AA0** |
| **WinCC OA Custom Driver**<br>Extends a WinCC OA server license with the option of communication with a customer-specific driver. One license is required for each customer-specific driver. | **6AV6351-1EL31-6AA0** |
| **WinCC OA Custom Manager**<br>Extends a WinCC OA server license with the option of communicating with a customer-specific manager. One license is required for each customer-specific manager | **6AV6351-1EM31-6AA0** |

| | Article No. |
|---|---|
| ***WinCC OA redundancy***<br>In the case of redundant servers, two server licenses and two WinCC OA redundancy options are required for each redundant server pair. | |
| **WinCC OA redundancy**<br>Extends a WinCC OA Server with the option of bumpless switchover to a hot standby server. | **6AV6351-1FP31-6AA0** |
| ***WinCC OA distributed systems***<br>Enables the connection of several autonomous WinCC OA systems. Each server requires one server license and one distributed systems option. In the case of redundant servers, 2 licenses are required for the redundant server pair. | |
| **WinCC OA distributed systems**<br>Extends a WinCC OA Server to include the Multiserver option. | **6AV6351-1GP31-6AA0** |
| ***WinCC OA Disaster Recovery System*** | |
| **WinCC OA Disaster Recovery Center**<br>Allows configuration of a remote backup control center. A disaster recovery center comprises two distributed systems. Both systems must be redundant. Requires Oracle databases and RDB. Refer to the online help for example configurations. Each server in the Disaster Recovery System requires one WinCC OA Disaster Recovery Center option. | **6AV6352-1AA31-6AA0** |

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## Ordering data

| | Article No. |
|---|---|
| ***SIMATIC WinCC Open Architecture V3.16 Communication*** | |
| **WinCC OA TLS Gateway**<br>Gateway acc. to TLS regulations via TCP/IP | **6AV6352-1CN31-6AA0** |
| **WinCC OA Teleperm M**<br>Driver for Teleperm M Bus C275 (requires an Ako-Tec Bridge) | **6AV6352-1BB31-6AA0** |
| **WinCC OA S7 Plus TCP/IP**<br>S7 Plus driver for the new S7-1200, S7-1500 controllers, open controllers and PLC Sim, supports symbolic addressing, all protection levels and browsing of TIA Portal projects | |
| • 8 connections | **6AV6352-1CP31-6AA0** |
| • 64 connections | **6AV6352-1CQ31-6AA0** |
| • 512 connections | **6AV6352-1CR31-6AA0** |
| **WinCC OA S7 TCP/IP driver**<br>TCP/IP driver for Siemens Industrial Ethernet. | **6AV6352-1BC31-6AA0** |
| **WinCC OA Modbus TCP/IP driver**<br>Driver for Modbus TCP/IP | **6AV6352-1BD31-6AA0** |
| **WinCC OA Modbus TCP/IP server**<br>The WinCC OA Modbus/TCP server allows Modbus/TC clients to query and represent data from a WinCC OA system within the Modbus data model. | **6AV6352-1CS31-6AA0** |
| **WinCC OA Ethernet/IP**<br>Driver for Allen Bradley - Rockwell EtherNet/IP | **6AV6352-1CK31-6AA0** |
| **WinCC OA SAIA S-bus**<br>Driver for SAIA controllers (SAIA S-bus) | **6AV6352-1BW31-6AA0** |
| **WinCC OA SSI driver**<br>Driver for SAT telecontrol components | **6AV6352-1BF31-6AA0** |
| **WinCC OA SNMP**<br>Driver SNMP – network monitoring (V2&V3) | **6AV6352-1BG31-6AA0** |
| **WinCC OA BACnet Driver + Diagnostics**<br>Extends a WinCC OA Server to include a license for using the WinCC OA BACnet online engineering environment consisting of WinCC OA BACnet driver, WinCC OA BACnet object library including faceplates, and WinCC OA BACnet browser (max. 5 000 objects per server). | **6AV6352-1DA31-6AA0** |
| **WinCC OA IEC 104**<br>Driver IEC 60870-5-104 | **6AV6352-1BH31-6AA0** |
| **WinCC OA IEC 101**<br>Driver IEC 60870-5-101 | **6AV6352-1BJ31-6AA0** |

| | Article No. |
|---|---|
| **WinCC OA IEC 61850/61400**<br>Expands a WinCC OA Server with a license for using the IEC 61850 protocol comprising the IEC 61850 driver (client in accordance with IEC 61850 Standard Part 7 & Part 8 Edition 2 & IEC 61400-25) and the IEC 61850 browser. | **6AV6352-1BV31-6AA0** |
| **WinCC OA DNP3**<br>Driver DNP3 for connecting DNP3 devices | |
| • 10 DNP3 devices | **6AV6352-1BK31-6AA0** |
| • 25 DNP3 devices | **6AV6352-1BL31-6AA0** |
| • 50 DNP3 devices | **6AV6352-1BM31-6AA0** |
| • 250 DNP3 devices | **6AV6352-1BN31-6AA0** |
| • Unlimited | **6AV6352-1BP31-6AA0** |
| **WinCC OA SINAUT**<br>SINAUT driver for connecting controllers | |
| • For connecting a maximum of 10 controllers | **6AV6352-1BQ31-6AA0** |
| • SINAUT driver for connecting up to 25 controllers | **6AV6352-1BR31-6AA0** |
| • SINAUT driver for connecting up to 50 controllers | **6AV6352-1BS31-6AA0** |
| • SINAUT driver for connecting up to 250 controllers | **6AV6352-1BT31-6AA0** |
| • SINAUT driver – unlimited license | **6AV6352-1BU31-6AA0** |
| **WinCC OA RK512**<br>Driver for connection via 3964R / RK512 protocol | **6AV6352-1CA31-6AA0** |
| **WinCC OA Cerberus**<br>Driver for connection with the Siemens DMS7000 / Cerberus fire alarm system. Communication is implemented via the C-Bus (Cer-Ban) using the serial interface RS 232 (MK 7022). | **6AV6352-1CH31-6AA0** |
| **WinCC OA OPC HDA server**<br>The WinCC OA OPC Historical Data Access (HDA) Server provides archived process data from a WinCC OA project. (Status version: "OPC HDA 1.20" (mandatory functions)) | **6AV6352-1CL31-6AA0** |
| **WinCC OA OPC HDA client**<br>The WinCC OA OPC Historical Data Access (HDA) Client allows access to the process data provided by any OPC HDA Servers (Version: "OPC HDA 1.20" (mandatory functions)) | **6AV6352-1CM31-6AA0** |
| **WinCC OA OPC UA Server**<br>The WinCC OA OPC UA server allows OPC UA clients to query the data of a WinCC OA system. Version: "OPC UA Server 1.03" (mandatory functions). | **6AV6352-1CJ31-6AA0** |

More information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

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## SIMATIC WinCC OA V3.16 add-ons

### Overview

SIMATIC WinCC Open Architecture is a SCADA system for visualizing and operating processes, production flows, machines and plants in all industrial sectors.

SIMATIC WinCC OA is built consistently on object-oriented structures. Due to this consistent and well-considered use of object-oriented structures, from process images to the database, the engineering costs improve for SIMATIC WinCC OA customers.

Distributed systems enable the connection of up to 2 048 autonomous SIMATIC WinCC Open Architecture systems via a single network. Each subsystem can be configured either as single-user or multi-user system, each of which may be redundant or non-redundant.

Current version: ***SIMATIC WinCC Open Architecture V3.16***
Runs under:

- Windows 10 (64-bit)
- Windows 7 Ultimate/Enterprise/Professional SP1 (64-bit)
- Windows 7 Ultimate SP1 (64-bit)
- Windows Server 2016 R2 (64-bit)
- Windows Server 2012 R2 (64-bit)
- Red Hat Enterprise Linux 7.4 (64-bit)
- OpenSuse Leap 42.3 (64-bit)
- CentOS 7.4
  - SLES 12.1 (64-bit)
- VMWare ESXi version 6
- VMware Cluster (HA)

Note:

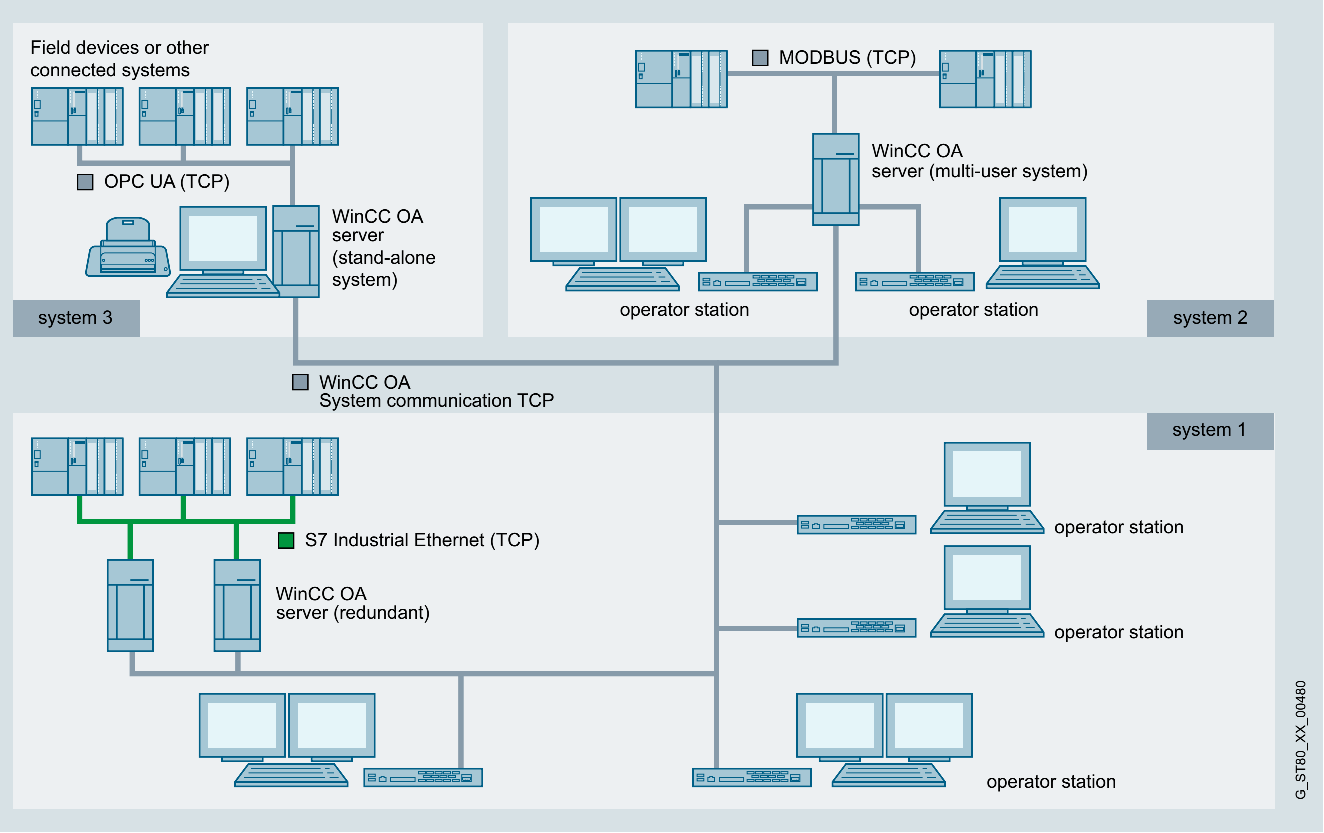
Native 64-bit support.

### Function

***SIMATIC WinCC Open Architecture add-ons***

The universal WinCC Open Architecture basic software is the basis for modular expansions.

These functional expansions are available in the form of WinCC Open Architecture add-ons.


Field devices or other connected systems
OPC UA (TCP)
WinCC OA server (stand-alone system)
system 3
MODBUS (TCP)
WinCC OA server (multi-user system)
operator station
operator station
system 2
WinCC OA System communication TCP
system 1
S7 Industrial Ethernet (TCP)
WinCC OA server (redundant)
operator station
operator station
operator station
G_ST80_XX_00480

Distributed systems with WinCC OA

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## **Function** (continued)

| Add-ons | Task |
|---|---|
| **BACnet** | BACnet provides an integrated BACnet-compliant online/offline engineering solution for building automation technology, including object library. Designed for heating, ventilation and air conditioning, lighting control and safety systems. |
| **S7 AdvancedLib object library** | The S7 AdvancedLib (AdvS7) is an industry-independent object library that permits the use and visualization of objects from the process control system (e.g.: drives, valves, regulators, motors, etc.) in a project with WinCC OA and S7. In addition to the WinCC OA and AdvS7 license, the use of S7 AdvancedLib requires the use of the relevant library on the SIMATIC side. |
| **Maintenance package** | Includes the following functions: Operating hours counter, operating cycle counter and maintenance log. |
| **Scheduler** | Permits the creation, parameterization and management of time programs that allow the time and event-driven triggering of specific actions. |
| **Recipes** | WinCC OA recipes allow setpoints or commands for certain data point elements to be sent simultaneously. Based on "recipe types", which define the quantity of the assigned data point elements, recipes are created that send their values to the data point elements upon activation. |
| **GIS Viewer** | With the help of this viewer, standardized cards of a geo-information system (GIS) can be fully integrated in WinCC OA. Furthermore, it is possible to display all WinCC OA objects in the cards. |
| **Reporting** | Web-based reporting is implemented using the standardized Simple Object Access Protocol (SOAP) reporting interface. Reporting tools from third-party suppliers can thus be used with no additional effort. The BIRT templates that are also provided, as well as the predefined reporting data, further simplify the reporting.<br>• Web-capable reporting interface (SOAP):<br>- ECLIPSE BIRT (large number of reporting templates for ECLIPSE BIRT are also supplied)<br>- Crystal Reports<br>- SIMATIC Information Server<br>- Microsoft Excel<br>• Online values, history<br>• Support of compressed data, SQL, alarms<br>• Diagnostic tools<br>• Audit trail |
| **Excel report** | Powerful report generator directly in Microsoft Excel. Templates can be created easily and directly in Excel. If a report has to be created over a defined period of time, the system accesses the template and automatically completes it with data from the WinCC OA process database. Reports can also be created, printed and saved on a time-controlled basis, without any need for user access.<br>The Excel Report fully supports compression structures (AC - archive compression) of WinCC OA. |
| **Communication Center** | Stands for modern alarm management/remote alerting and communication using the latest standards and various media. The Communication Center creates synergies by using the various interfaces for remote alerting via the control system. Text message and email media are covered with the Communication Center. |

| Add-ons | Task |
|---|---|
| **VIDEO (see figure below)** | Enables the integration of a video management system in WinCC OA. Through the combination of SCADA and video monitoring in one system, the costs for separate video interfaces and the additional expense of maintenance and operation can be saved, and the period of training for operating personnel can also be reduced. |
| **HTTP server** | For displaying WinCC OA data via Intranet and Web. |
| **Authentication via Kerberos** | A WinCC OA system can be exposed to a variety of attacks. An unauthorized WinCC OA system could set up a connection to the distribution manager or hackers could try to manipulate WinCC OA messages. Secure authentication has been developed to prevent such attacks. The authentication based on Kerberos enables each WinCC OA component to verify the identity of another component. WinCC OA servers can verify the identity of the clients and clients can verify the identity of the servers. In addition, Kerberos ensures that messages are not modified during their transmission (capture-replay attacks are prevented). Furthermore, it is also possible to send messages in encrypted form. |
| **WinCC OA Mobile UI** | The mobile UI is a native UI for Android and iOS. The app can be downloaded from the appropriate app store. Use requires configuration of a web server. Only the number of simultaneously active mobile UIs is counted. Supported Android and iOS devices are listed in the online help. |
| **WinCC-OA Desktop UI** | An additional operator station license with all server operator station functionalities. Only the number of simultaneously active Desktop UIs is counted. Use requires installation on the server and configuration of a web server. Engineering in the Desktop UI is not possible. |
| **Ultralight UX Client** | A "thin client" that is suitable for plant access via a PC workstation and a browser. Access is possible via a standard Web browser without the need for any additional installations. Only the number of simultaneously active Ultralight UXs is counted. Supports a subset of the standard client functionality. Please note the Ultralight UX Client restrictions in the online help. |
| **WinCC OA OPERATOR** | Permits operation and visualization of a WinCC OA installation via iPhone and iPad. Process data, plant availability, and plant status can all be displayed. Location filtering provides a rapid overview of all spatially distributed systems including summation alarms. |
| **Disaster Recovery System (see figure below)** | This system expands the simple redundancy to include a second redundant system, to which the system can switch over in the event of a fault (e.g. fire or explosion in the building of the primary system). By means of this additional local redundancy, the highest level of system stability is obtained. |

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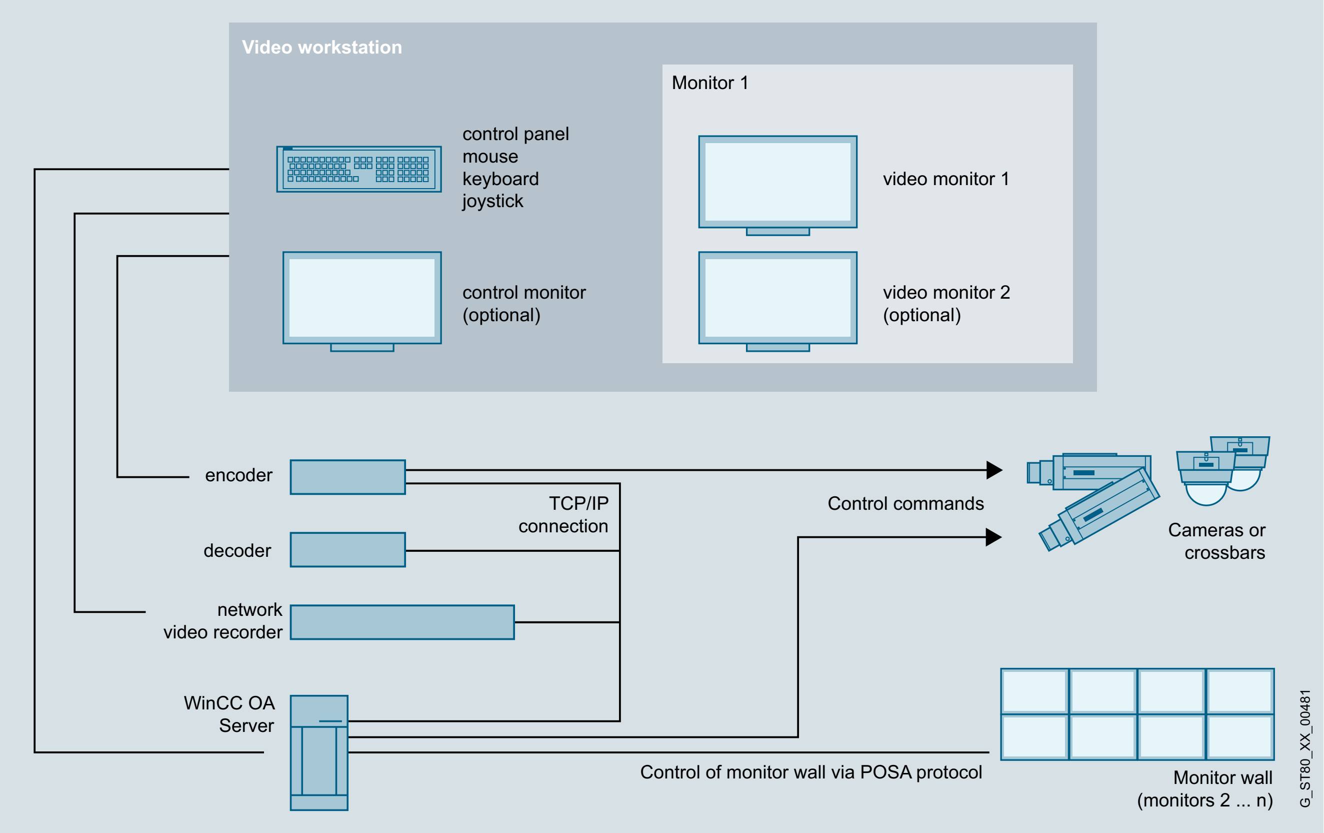
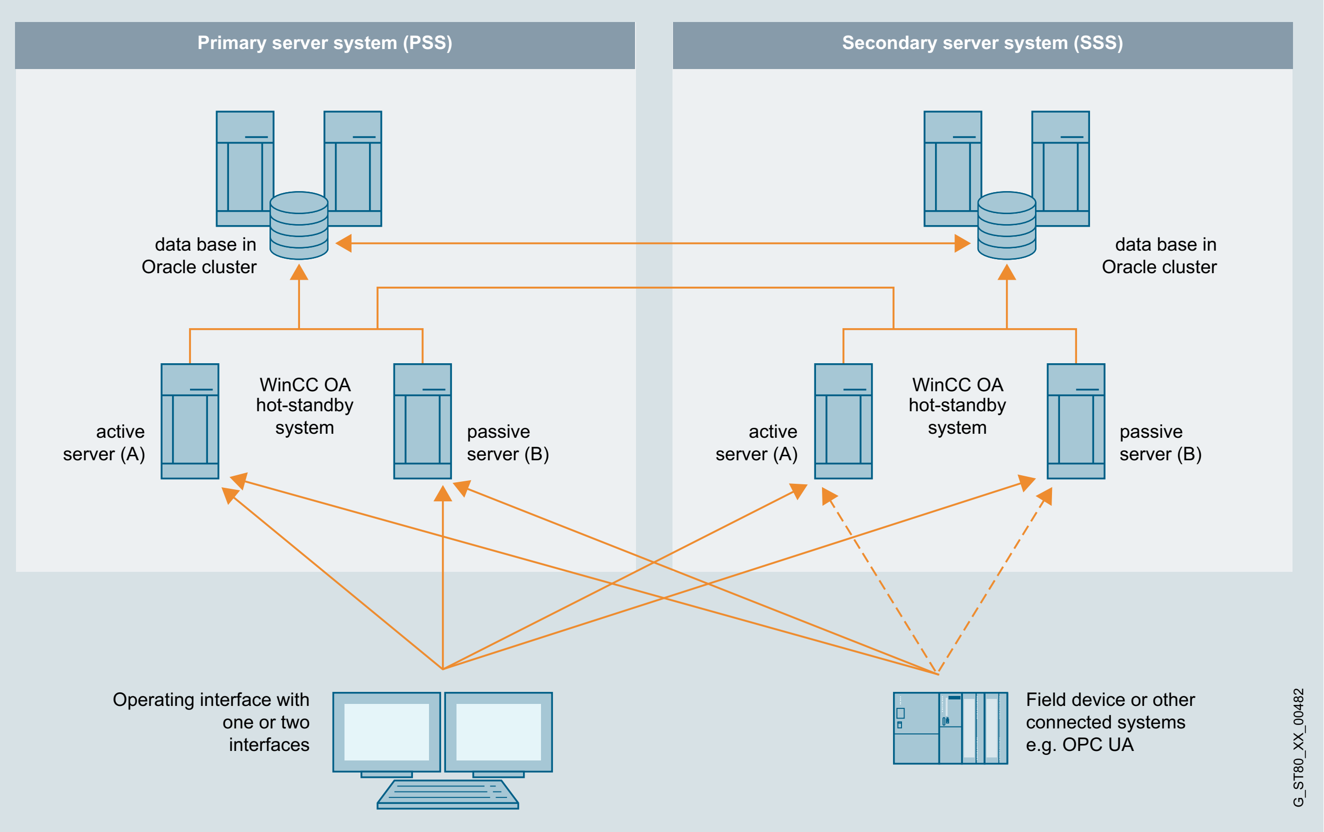
## **Function** (continued)


Video workstation
Monitor 1
control panel
mouse
keyboard
joystick
video monitor 1
control monitor
(optional)
video monitor 2
(optional)
encoder
TCP/IP
connection
Control commands
Cameras or
crossbars
decoder
network
video recorder
WinCC OA
Server
Control of monitor wall via POSA protocol
Monitor wall
(monitors 2 ... n)
G_ST80_XX_00481

Network topology Video


Primary server system (PSS)
Secondary server system (SSS)
data base in
Oracle cluster
data base in
Oracle cluster
active
server (A)
WinCC OA
hot-standby
system
passive
server (B)
active
server (A)
WinCC OA
hot-standby
system
passive
server (B)
Operating interface with
one or two
interfaces
Field device or other
connected systems
e.g. OPC UA
G_ST80_XX_00482

Disaster Recovery System architecture with WinCC OA

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA SmartSCADA 3.16 KPI Toolbox**<br>Allows performance indicator definitions and performance indicator instances to be created either in the user-friendly formula editor or freely in the CONTROL. The devices are connected by means of a context-based search in the system model or in data points. The performance indicators can be calculated manually, event-driven or cyclically. Online engineering takes place in its own Wizard (no PARA license included). It includes 20 KPI instances. | **6AV6352-1PA31-6AA0** |
| **WinCC OA SmartSCADA 3.16 KPI Expansion 100**<br>Performance indicator toolbox expanded to include another 100 KPI instances. | **6AV6352-1PB31-6AA0** |
| **WinCC OA SmartSCADA 3.16 Analysis Toolbox, 1 year subscription**<br>Wizards enable the data analysis of historical data and the learning of a statistical mode for system classification. The integration of the "R" CONTROL statistics toolbox makes a large variety of statistical evaluations available. Online engineering takes place in its own Wizard (no PARA license included). The license can only be issued for a limited period (subscription model). The time limitation applies to this feature only, and not to the complete WinCC OA license. | **6AV6352-1PC31-6AA0** |
| **WinCC OA BACnet driver + diagnostics**<br>Extends a WinCC OA Server to include a license for using the WinCC OA BACnet online engineering environment consisting of WinCC OA BACnet driver, WinCC OA BACnet object library including faceplates, and WinCC OA BACnet browser (max. 5 000 objects per server). | **6AV6352-1DA31-6AA0** |
| **WinCC OA BACnet Engineering**<br>Extends a WinCC OA Server to include a license for using the WinCC OA BACnet engineering environment consisting of WinCC OA BACnet browser, WinCC OA EDE-Tool + EDE file interface (requires the WinCC OA engineering license) (max. 5 000 objects per server). | **6AV6352-1DB31-6AA0** |
| **WinCC OA GIS**<br>GIS viewer for displaying ESRI Shapes Files. A license is required for Pro UI. Can be used in a WinCC OA Desktop UI and WinCC OA Ultralight UX. Maps are not included. Dynamization performed using Ctrl scripting. | **6AV6352-1DC31-6AA0** |

| | Article No. |
|---|---|
| **WinCC OA S7 AdvancedLib**<br>Runtime license for using the object library WinCC OA S7 AdvancedLib, coordinated with the SIMATIC object library also supplied, which is free of charge until revoked. License required for each server. The PLC section of this library is the intellectual property of Siemens AG - a software sublicense contract to this effect must be signed and returned before the SIMATIC object library can be obtained. | **6AV6352-1DD31-6AA0** |
| **WinCC OA Maintenance**<br>Maintenance management for recording operating hours, switching cycles, alarm handling and notepad function. License required for each server. | **6AV6352-1DE31-6AA0** |
| **WinCC OA Scheduler**<br>Daily, weekly and monthly program, as well as individual non-periodic events with consideration of public holidays, assignment of priority and override function. License required for each server. | **6AV6352-1DF31-6AA0** |
| **WinCC OA Recipe**<br>Creation of any recipe types and recipes, acceptance of current process values as recipe, activation/download to data points, import and export (Microsoft Excel). License required for each server. | **6AV6352-1DG31-6AA0** |
| **WinCC OA RDB**<br>RDB Oracle connection for WinCC OA Server. Oracle licenses are not included. License required for each server. (RDB for CentOS and OpenSuse are not supported). | **6AV6352-1DH31-6AA0** |
| **WinCC OA DB Logger**<br>The WinCC OA DB Logger permits the export of freely selectable data from WinCC OA to an external database. See the online help for further information. | **6AV6352-1DJ31-6AA0** |

## SIMATIC WinCC OA V3.16 add-ons

| Ordering data | Article No. |
|---|---|
| *Solution Frameworks*<br>The Solution Frameworks are only available in combination with consulting and additional testing overhead, and not as standard products. | |
| **WinCC OA PMS**<br>Application framework for the implementation of production management systems.<br>The framework offers functions for recording and evaluating production and batch-related quality data. The framework also offers functions for fine production planning and machine assignment. A system administration according to ANSI S95 can be implemented at little cost. This item is not available as a sole product, only in combination with consulting and additional testing overhead. | **6AV6352-1EA31-6AA0** |
| **WinCC OA topology package**<br>The topology package is an application framework enabling the topological coloring of network views. A qualitative statement is made regarding which parts (nodes, line section, etc.) of a network are directly connected to which infeed units in a connection established by switching elements. This item is not available as a sole product, only in combination with consulting and additional testing overhead. | **6AV6352-1EB31-6AA0** |
| **WinCC OA ACAS**<br>WinCC OA Advanced Command Authority Suite framework for managing and visualizing authority settings. The license includes the management panel and panel expansions for alarm, horn and acknowledgement functions.<br>This item is not available as a sole product, only in combination with consulting and additional testing overhead. | **6AV6352-1EC31-6AA0** |
| **WinCC OA APM**<br>The WinCC OA Framework APM – Advanced Playback Manager – allows you to play back the system status of the real-time system in a test/simulation system.<br>The APM offers the following functions: Snapshot (moment in time), playback (time range), training sequence. Please note that the APM package does not include any simulation of the process or of the associated open loop control. Since APM is a framework, we urgently recommend that you use our Consulting Service for project-specific integration. | **6AV6352-1ED31-6AA0** |

| | Article No. |
|---|---|
| **Reporting**<br>Expands a WinCC OA Server to include a reporting interface for active connections (clients) for the evaluation of WinCC OA data by means of a third-party tool such as BIRT, Crystal Reports or MS Excel. (In WinCC OA Version 3.16, the existing Excel Report is still supported and is automatically supplied along with the WinCC OA Reporting option.)<br>Licenses for third-party tools are not supplied. | |
| • 1 client | **6AV6352-1FE31-6AA0** |
| • 2 clients | **6AV6352-1FF31-6AA0** |
| • 5 clients | **6AV6352-1FG31-6AA0** |
| • 10 clients | **6AV6352-1FH31-6AA0** |
| *Communication Center*<br>Remote alarm messaging via text message and email. Basic package for alarms. Output as text message or e-mail is possible. Price per WinCC OA Server. | |
| **WinCC OA CommCenter 1**<br>Basic package for 25 alarms. | **6AV6352-1GA31-6AA0** |
| **WinCC OA CommCenter 2**<br>Basic package for 250 alarms. | **6AV6352-1GB31-6AA0** |
| **WinCC OA CommCenter 3**<br>Basic package for 2 500 alarms. | **6AV6352-1GC31-6AA0** |
| **WinCC OA CommCenter 4**<br>Basic package for unlimited alarms. | **6AV6352-1GD31-6AA0** |
| *Video management*<br>Permits the display of video streams in the client UI, as well as the control of video equipment (swivel cameras, recorders, …). More detailed information and details of supported hardware can be obtained from the online help. Streams are parallel, actively displayed external or displayed recorded video signals. Necessary WinCC OA Server licenses do not require additional I/Os. Two licenses are required for one redundant WinCC OA server pair. | |
| **WinCC OA Video Light**<br>Permits connection of 16 video inputs (cameras) and simultaneous display of 4 video outputs (streams). This package cannot be expanded. | **6AV6352-1JA31-6AA0** |
| **WinCC OA Video Basic**<br>The Video Basic package facilitates operation of the WinCC OA Video add-on. It includes numerous features required for video functions. Does not contain any cameras; these must be purchased separately. | **6AV6352-1JB31-6AA0** |

## Ordering data

| | Article No. |
|---|---|
| **WinCC OA Video - Video sources**<br>With this expansion license, additional cameras are integrated into the system in addition to the basic package. | **6AV6352-1JH31-6AA0** |
| • WinCC OA Video – 1 video source | **6AV6352-1JJ31-6AA0** |
| • WinCC OA Video – 25 video sources | **6AV6352-1JK31-6AA0** |
| • WinCC OA Video – 50 video sources | **6AV6352-1JL31-6AA0** |
| • WinCC OA Video – 100 video sources | **6AV6352-1JM31-6AA0** |
| • WinCC OA Video – 250 video sources | **6AV6352-1JN31-6AA0** |
| • WinCC OA Video – 500 video sources | **6AV6352-1JP31-6AA0** |
| **WinCC OA Video Display**<br>Expands the video basic system with a second external display (one is already included in the basic package). | **6AV6352-1JQ31-6AA0** |
| **WinCC OA Web Server**<br>Allows the management of different connections and resources between the WinCC OA Server and the WinCC OA UIs as well as Ultralight UX Clients. The Load Balancing feature can be activated with a number greater than 1. This feature distributes the load of multiple clients evenly across the different Web servers, thus allowing it to be scaled. With remote Web servers, multilevel architectures such as access to DMZs (demilitarized zones) can be implemented. (1 Web server is already included in the WinCC OA Server) | **6AV6351-1JV31-6AA0** |
| ***Kerberos*** | |
| **WinCC OA Secure**<br>Extends a WinCC OA Server to include protection by Kerberos. Each WinCC OA Server requires a separate WinCC OA Secure license. | **6AV6352-1LA31-6AA0** |
| ***AMS (Advanced Maintenance Suite)***<br>For the effective planning, administration, implementation and monitoring of maintenance work and faults. The processes are evaluated by means of statistics and reports are communicated.<br>**AMS is always only available in combination with consulting and additional testing overhead.** | |
| **AMS Starter Package 20A/E**<br>This fully functional trial license valid for 90 days includes the AMS application as well as up to 20 A/E = 20 checklists assigned to alarm/event DP. 1)2)3) | **6AV6352-1MA31-6AA0** |
| **AMS Entry 20 A/E**<br>The license includes the AMS application as well as up to 20 A/E = 20 checklists assigned to alarm/event DP. 1)2)3) | **6AV6352-1MB31-6AA0** |
| **AMS Small 100 A/E**<br>The license includes the AMS application as well as up to 100 A/E = 100 checklists assigned to alarm/event DP. 1)2)3) | **6AV6352-1MC31-6AA0** |
| **AMS Medium 1 000 A/E**<br>The license includes the AMS application as well as up to 1 000 A/E = 1 000 checklists assigned to alarm/event DP. 1)2)3) | **6AV6352-1MD31-6AA0** |
| **AMS Large 5 000 A/E**<br>The license includes the AMS application as well as up to 5 000 A/E = 5 000 checklists assigned to alarm/event DP. 1)2)3) | **6AV6352-1ME31-6AA0** |
| **AMS Upgrade Large**<br>The license contains an upgrade of the AMS Large 5 000 A/E license with 1 000 A/E = 1 000 checklists assigned to alarm/event DP. | **6AV6352-1MF31-6AA0** |
| **AMS UL A/E**<br>The license includes the AMS application as well as an unlimited number of alarm/event DP checklist assignments. 1)2)3) | **6AV6352-1MG31-6AA0** |
| **AMS Client 2 UI**<br>Operating station license for simultaneous use of no more than 2 parallel client sessions. The client license can be installed on more than one PC – only the number of simultaneously active clients is counted. | **6AV6352-1MH31-6AA0** |
| **AMS Client 5 UI**<br>Operating station license for simultaneous use of no more than 5 parallel client sessions. The client license can be installed on more than one PC – only the number of simultaneously active clients is counted. | **6AV6352-1MJ31-6AA0** |
| **AMS Client 10 UI**<br>Operating station license for simultaneous use of no more than 10 parallel client sessions. The client license can be installed on more than one PC – only the number of simultaneously active clients is counted. | **6AV6352-1MK31-6AA0** |

1) The basic price also includes the AMS Reports packages.

2) AMS importer as well as 1 day of consulting for initial conceptualization by ETM consultants (excluding travel expenses) and 5 hours of telephone support within 3 months after delivery.

3) AMS Reports and AMS Importer, and 1 day of consulting for initial conceptualization by ETM consultants (excluding travel expenses). This license does not include any support and cannot be expanded or extended.

Additional information is available on the Internet at:

http://www.siemens.com/wincc-open-architecture

## Introduction

### Overview

Whether for a single operator station, multiple operator stations or complex solutions, whether for small or large plants – SIMATIC SCADA systems will grow with your plant. Since they are scalable over the entire life cycle, existing plants can be expanded at any time.

To enable maximum integration, some SCADA options are also available for all products and in some cases all versions. This creates security of investment.

| | WinCC RT Professional | WinCC V7 | WinCC Open Architecture |
|---|---|---|---|
| **SIMATIC Information Server** | x (cross-version) | x (cross-version) | x |
| **SIMATIC Process Historian** | x (cross-version) | x (cross-version) | -- [1] |
| **WinCC IndustrialDataBridge** | x | x | -- |
| **WinCC WebUX** | x | x | -- |

[1] Note: SIMATIC Process Historian cannot be used with WinCC OA.

### More information

Additional information is available at:

http://www.siemens.com/scada-options

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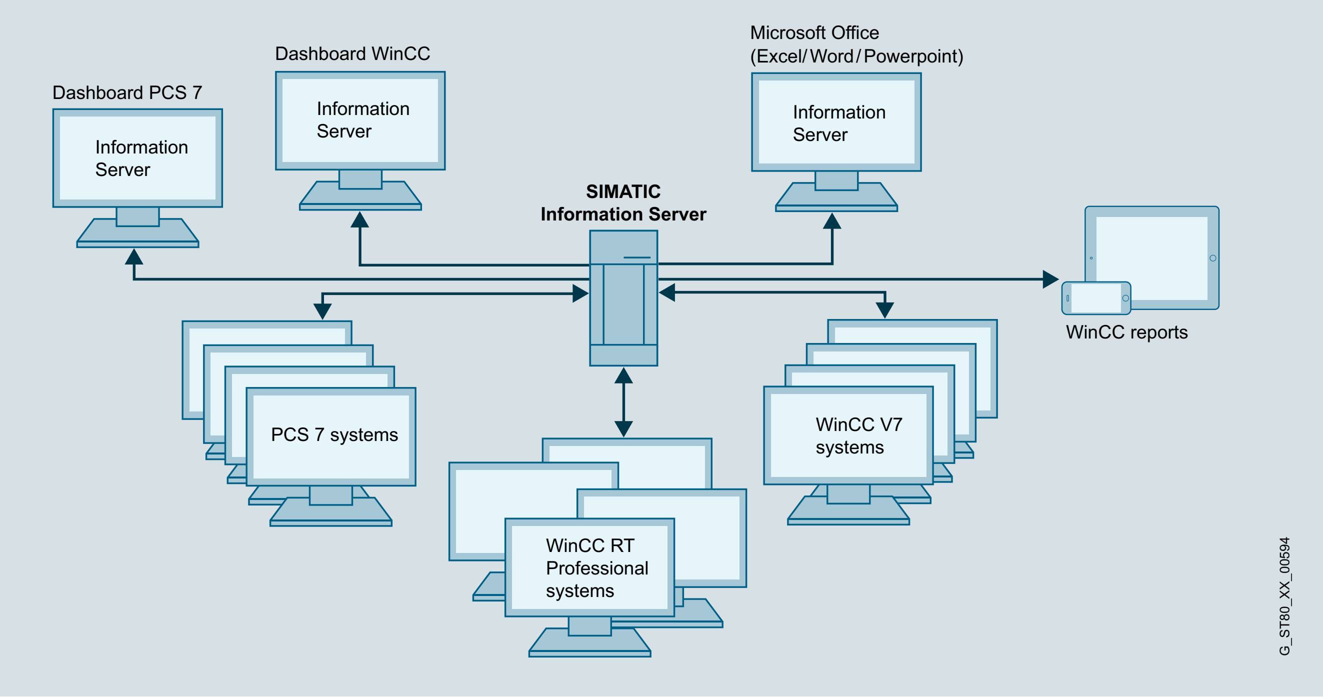
## Overview


Dashboard PCS 7
Information Server
Dashboard WinCC
Information Server
Microsoft Office (Excel/Word/Powerpoint)
Information Server
SIMATIC Information Server
WinCC reports
PCS 7 systems
WinCC V7 systems
WinCC RT Professional systems
G_ST80_XX_00594

***Information Server 2014 SP3***

Information Server 2014 SP3 is an open, web-based reporting system for interactive areas.
Reports can be used in Internet Explorer, Excel, Word or PowerPoint, as well as for Adobe Reader (PDF).
The SIMATIC Information Server has access to archived process values and messages, and can be used either directly in conjunction with WinCC / WinCC/RT Professional / PCS7 OS as well as with Process Historian 2014 SP3.

- Access to archived process values and messages from WinCC V7, WinCC RT Professional and WinCC/PerformanceMonitor according to compatibility specifications
- Process Historian 2014 SP3
- Open reporting system with report templates in RDL or Excel format
- Through add-ins for Microsoft Office environments, direct access to the archived data of the Process Historian or WinCC can be easily established.
- Reports can be integrated directly in Word and Excel, thus greatly simplifying work steps.
- Process values can be displayed in tabular or graphic form depending on various filter functions
- Support of subscriptions for a cyclical or event-driven report generation, including sending of emails
- Web-based parameter assignment of the report templates
- Use of the standard tools MS Excel, MS Word and MS PowerPoint for individual report templates
- Reporting system based on MS Reporting Services for more complex individual report templates
- Can be used for HTML5-enabled tablet PCs larger than 10.5"
- Automatic cyclic and event-based reporting (PDF, Excel, Word, PowerPoint)
- Central storage and automatic transmission of reports created by email
- Data security thanks to access protection, user administration, SSL encryption and SMTP authentication

Licenses

- Basic Packages include the program software as well as three client access licenses and a data source license. This gives access to one data source for up to three clients.
- The number of simultaneous client access operations can be incremented at any time using Information Server client access licenses.
- Additional data sources can be integrated at any time using additive data source licenses.

## SIMATIC Information Server

### Benefits

- Central, web-based reporting system as an interface for all corporate areas up to the management level.
- Easy handling thanks to the use of standard tools such as MS Word, Excel and PowerPoint
- Provision of freely configurable reports via Web-based dashboards
- Import of data from any number of WinCC, WinCC RT Professional and PCS7 applications
- Transparent access to WinCC tag and alarm archive and to the data of the SIMATIC Process Historian

### Highlights

- Set of frequently used report templates for process values, messages and batches
- Open reporting system for creating any number of new report templates
- Storage of configured (parameterized) report templates for faster access
- Export of reports in common document formats
- Support of subscriptions for cyclic report generation including e-mail service
- Creation and storage of application-specific dashboards
- Role management for Windows users; supports workgroups and Active Directory; user rights can be assigned for specific projects
- Generation of reports and inserting as graphics in Microsoft Office Word documents
- Creation of Microsoft Excel, Word and PowerPoint reports for historical process values and messages as well as storage of the Excel report templates on the Information Server
- Support of subscriptions for Excel report templates
- Mobile access to reports via HTML5-enabled browser, also from tablets > 10.5”

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC Information Server 2014 SP3 "Basic Package"**<br>• Information Server<br>• Information Server - Client access (3)<br>• Information Server - Data source access (1) | **6AV6361-2AA01-4AA0** |
| As download<br>• Information Server<br>• Information Server - Client access (3)<br>• Information Server - Data source access (1) | **6AV6361-2AA01-4AH0** |
| **SIMATIC Information Server**<br>Client and data source license, version-independent | |
| • 1 Client access | **6AV6361-2BD00-0AD0** |
| • 3 Client access | **6AV6361-2BE00-0AD0** |
| • 5 Client access | **6AV6361-2BF00-0AD0** |
| • 10 Client access | **6AV6361-2BG00-0AD0** |
| • 1 Data source access | **6AV6361-2CD00-0AD0** |
| • 3 Data source access | **6AV6361-2CE00-0AD0** |
| As download | |
| • 1 Client access | **6AV6361-2BD00-0AJ0** |
| • 3 Client access | **6AV6361-2BE00-0AJ0** |
| • 5 Client access | **6AV6361-2BF00-0AJ0** |
| • 10 Client access | **6AV6361-2BG00-0AJ0** |
| • 1 Data source access | **6AV6361-2CD00-0AJ0** |
| • 3 Data source access | **6AV6361-2CE00-0AJ0** |
| **Upgrade** | |
| **Upgrade Information Server 2013 to Information Server 2014 SP3** | **6AV6361-2AA01-4AE0** |
| As download | |
| **Upgrade Information Server 2013 to Information Server 2014 SP3** | **6AV6361-2AA01-4AK0** |

### More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-information-server

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager:
http://www.siemens.com/simatic-licenses

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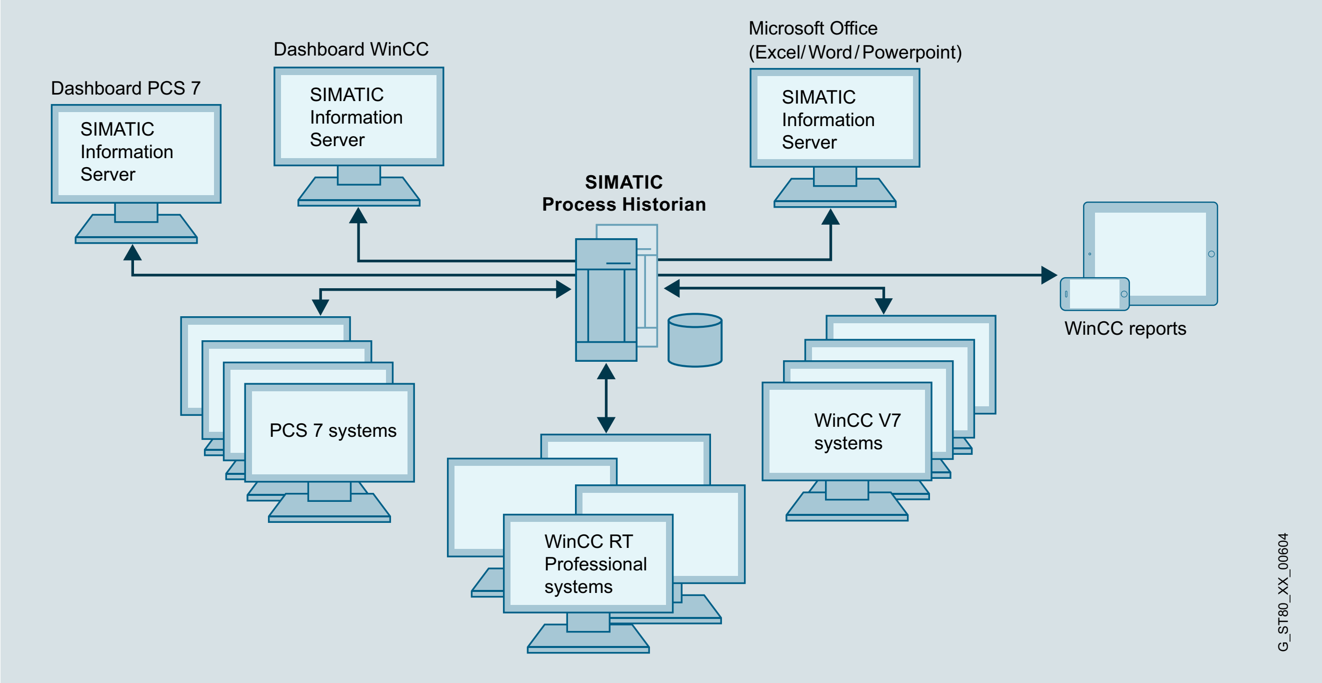
## Overview


Dashboard PCS 7
SIMATIC Information Server
Dashboard WinCC
SIMATIC Information Server
Microsoft Office (Excel/Word/Powerpoint)
SIMATIC Information Server
SIMATIC Process Historian
WinCC reports
PCS 7 systems
WinCC V7 systems
WinCC RT Professional systems
G_ST80_XX_00604

### *SIMATIC Process Historian*

The Process Historian is a high-performance, long-term archiving server solution that stores WinCC process values and messages in a central database. The system offers full scalability for performance and scope:
It records and stores data from one or more WinCC, WinCC RT Professional and PCS 7 projects.
The number of connected single stations, servers, or redundant server pairs is unrestricted. SIMATIC Process Historian is designed for use throughout your plant, and is positioned below the corporate management level (ERP, MES).

The SIMATIC Information Server is used as a reporting system for the Process Historian. It accesses the central database of the Process Historian and visualizes the data in clear, user-friendly displays on WinCC stations or office PCs. The central Process Historian database provides access to real-time data throughout the plant.
This data is the key to sustainable plant optimization measures. Since the archive system can be fully integrated, no additional engineering is required. SIMATIC Process Historian uses the integrated relational database, SQL Server from Microsoft®. No complex reconfiguration is needed because the archive system is integrated into WinCC. Selected WinCC process values or messages are archived long-term on a time or event-driven basis.

The Process Historian is used for the long-term archiving of process values and messages.

SIMATIC Process Historian 2014 SP3

- Central, plant-wide long-term archive as corporate information hub
- Real-time archiving of process values and messages from WinCC V7, WinCC RT Professional and WinCC/PerformanceMonitor according to compatibility specifications
- High performance with very large data volumes
- Data access via OPC UA server
- Migration support for data migration from WinCC/Storage plus, CAS Storage plus and WinCC segments.
- High availability thanks to redundancy concept with observer/witness server for increasing data security
- High degree of security due to integrated, complete backup and restore of all segments (disaster recovery)
- Enhanced data security through store and forward mechanism
- Scalable without breaks in production
- Maximum data transparency
- High degree of security thanks to integrated backup system
- Simple and fast management and diagnostics with the Process Historian Management "Dashboard"
- Batch functionality in accordance with PCS 7 specifications

## Benefits

- Fully integrated archiving solution for large volumes of data
- Central, plant-wide long-term archive as corporate information hub
- Process data and messages from any number of subordinate WinCC systems can be archived
- Plant expansions can be implemented without interrupting the production process
- High availability in redundant mode
- High degree of security due to integrated backup system
- Database for analyses with the aim of optimizing the plant and thereby raising productivity

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC Process Historian 2014 SP3** | |
| • Single License | **6AV6361-1AA01-4AA0** |
| • Single License (Redundancy Complete)<br>2 x Process Historian Server<br>2 x Process Historian Server Redundancy | **6AV6361-1BA01-4AA0** |
| • Single License Redundancy | **6AV6361-1CA00-0AD0** |
| As download | |
| • Single License | **6AV6361-1AA01-4AH0** |
| • Single License (Redundancy Complete)<br>2 x Process Historian Server<br>2 x Process Historian Server Redundancy | **6AV6361-1BA01-4AH0** |
| • Single License Redundancy | **6AV6361-1CA00-0AJ0** |
| **Process Historian OPC UA Server** | |
| • Standard scope of supply | **6AV6361-1HA01-4AB0** |
| • As download | **6AV6361-1HA01-4AJ0** |
| **Upgrades** | |
| **Upgrade of CAS (Central Archive Server)** | |
| Upgrade of CAS V7.0 SP3 or Process Historian 2013 to Process Historian 2014 SP3 | |
| • Standard scope of supply | **6AV6361-1AA01-4AE0** |
| • As download | **6AV6361-1AA01-4AK0** |
| CAS V6.x | |
| • Upgrade from CAS V6.2 to V7.0 SP3 | **6AV6371-1DQ17-0XX3** |
| • Upgrade from CAS V6.2 ASIA to V7.0 SP3 ASIA | **6AV6371-1DQ17-0XV3** |

More information is available at:

http://www.siemens.com/simatic-process-historian

Licenses

- The Basic Package includes the runtime software and the single license for one installation.
- The SIMATIC Process Historian supports archiving of any amount of data.
  The archive data is licensed at the data source, for example, in WinCC systems (archive tags for WinCC V7 or logging tags of WinCC Logging for WinCC Professional RT).
- The redundancy package is required for the redundant Process Historian; existing Basic Package installations can be converted with the redundancy option.
- The OPC UA interface needs a separate license.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here: http://www.siemens.com/simatic-licenses

## Overview

***WinCC IndustrialDataBridge***

- The WinCC IndustrialDataBridge option uses standard interfaces in order to connect the automation world with the world of IT and to ensure a two-way information flow.
- Using the SIMATIC WinCC IndustrialDataBridge, communication links between different data sources and data destinations can be created by means of simple configuration/ programming.
  The IndustrialDataBridge can either be integrated into WinCC or used as a stand-alone application (not in conjunction with WinCC).
- Its use is very flexible, due to the support of different database formats and standard interfaces. On top of this, it offers easy configuration instead of programming, which permits fast and secure deployment.
- Data sources for WinCC IndustrialDataBridge can include WinCC Runtime Professional (V13 SP1 or higher).

Licenses

- WinCC/IDB basic license for 100 tags (connections between data points corresponds to one day)
- Depending on the amount of data, the number of IDB tags can be increased through additive PowerPacks
- The licenses are additive for the number of connections as of version 7.4 (countable).

## Benefits

- Connection of the automation level to the IT world
- Integration of systems from different manufacturers via numerous standard interfaces (including OPC, OPC UA, OLE DB, Office formats)
- Cost-effective and secure due to simple configuration by means of standard software without programming
- High-performance data exchange between several systems at the same time

### Highlights

- No programming knowledge required
- Efficient due to transmission of individual data or block transfer (">", "<", "inside where…")
- Unicode support
- Support of Asian languages (Simplified Chinese, Japanese)
- Web Navigator; support of the WinCC IndustrialDataBridge controls in WinCC images
- WinCC IndustrialDataBridge runs as a system service, as an application in connection with WinCC Runtime Professional, or as a version-independent, standalone application

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC IndustrialDataBridge 7.5 for WinCC**<br>For data exchange with databases and OPC servers; language versions: English, German, Simplified Chinese, Japanese | |
| • Basic package | **6AV6362-4AA07-5AA0** |
| • With 300 tags (countable) | **6AV6362-4AD00-0BB0** |
| • With 1 000 tags (countable) | **6AV6362-4AF00-0BB0** |
| • With 3 000 tags (countable) | **6AV6362-4AH00-0BB0** |
| As download | |
| • Basic package | **6AV6362-4AA07-5AH0** |
| • With 300 tags (countable) | **6AV6362-4AD00-0AH0** |
| • With 1 000 tags (countable) | **6AV6362-4AF00-0AH0** |
| • With 3 000 tags (countable) | **6AV6362-4AH00-0AH0** |
| **SIMATIC WinCC IndustrialDataBridge 7.4 SP1 for WinCC**<br>For data exchange with databases and OPC servers; language versions: English, German, Simplified Chinese, Japanese | |
| • Basic package | **6AV6362-4AA07-4AA0** |
| • With 300 tags (countable) | **6AV6362-4AD00-0BB0** |
| • With 1 000 tags (countable) | **6AV6362-4AF00-0BB0** |
| • With 3 000 tags (countable) | **6AV6362-4AH00-0BB0** |
| As download | |
| • Basic package | **6AV6362-4AA07-4AH0** |
| • With 300 tags (countable) | **6AV6362-4AD00-0AH0** |
| • With 1 000 tags (countable) | **6AV6362-4AF00-0AH0** |
| • With 3 000 tags (countable) | **6AV6362-4AH00-0AH0** |
| **SIMATIC WinCC IndustrialDataBridge upgrade** | |
| • From V7.4 to V7.5 | **6AV6362-4AA07-5AE1** |
| • From V7.2/7.3 to V7.5 | **6AV6362-4AA07-5AE0** |
| • From V7.x to V7.4 SP1 | **6AV6362-4AA07-4AE0** |
| • From V7.x to V7.3 | **6AV6371-1DX07-3XX3** |
| As download | |
| • From V7.4 to V7.5 | **6AV6362-4AA07-5AK1** |
| • From V7.2/7.3 to V7.5 | **6AV6362-4AA07-5AK0** |
| • From V7.x to V7.4 SP1 | **6AV6362-4AA07-4AK0** |
| • From V7.x to V7.3 | **6AV6371-1KX07-3XX3** |

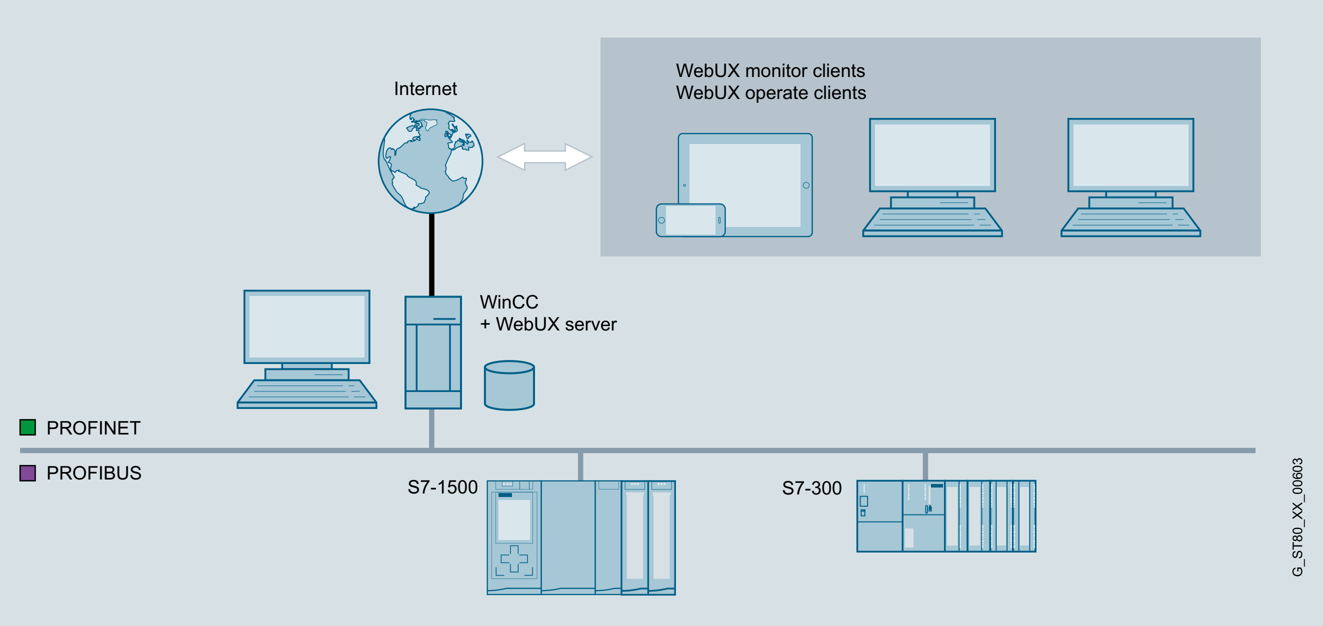
## More information

Additional information is available on the Internet at:

http://www.siemens.com/idb

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

## Overview



***WinCC WebUX***

The WinCC WebUX option permits mobile, platform and browser-independent operator control and monitoring via the Internet or the in-house intranet or LAN.

WinCC WebUX is delivered with the WinCC system. Following installation, the WinCC Runtime system operates as WinCC WebUX server.

The images for the WinCC WebUX are created using the graphic editor. The WinCC picture is stored in the corresponding format in the project through the "web-capable" picture property. Using the service platform IIS (Internet Information Server), the files are made available for the Internet.

No installation on the client is required for using the WebUX. WinCC WebUX can be used independent of the industrial sector, for example in service for the acknowledgment of alarm messages, in quality assurance for monitoring important production data, or in management for obtaining a quick overview of key production figures.

The WebUX server itself does not require a basic license. Clients that are simultaneously logged into the server are licensed. Regarding licensing, it is differentiated between Monitor Clients (read only) and Operate Clients (reading and writing of values). WinCC WebUX can be used immediately due to a free Monitor Client that is included in the WinCC package.

Licenses

- A (server-based) license is required to use the WebUX server. This is a graduated license based on the number of simultaneous web access operations and can be incremented at any time.
- We distinguish between Monitor and Operate Clients for licensing purposes.
- Flexible number of clients thanks to additive (countable) licenses (floating client)
- The WinCC/WebUX and WinCC/WebNavigator licenses can be combined, if necessary.
- The WinCC server version and version of the mobile clients do not have to be the same
- One free Monitor Client in the WinCC system

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

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## Benefits

WinCC Engineering

- Fast configuration using the graphic editor
- No expensive training in web technologies is required due to the use of WinCC standard tools
- Can be used without complex additional configuration on the client

Maintenance, servicing and IT

- No WinCC-specific installation on the clients required
- No WinCC-specific maintenance at the data terminal equipment required
- The WinCC WebUX server version and version of the mobile clients do not have to be the same
- Standard user authorizations on the client suffice

Line management and plant operator

- Mobile operator control and monitoring using commercially available mobile devices
- Uniform look and feel both on the mobile devices and on the WinCC station
- Secure communication via HTTPS and SSL certificates
- No entry costs, since a Monitor client is included in the WinCC package
- Flexible licensing due to additive Floating Client licenses
- Secured plant data as a basis for decision-making

Highlights

- Can be used on HTML5-capable and SVG-capable data terminal equipment without installation on the client

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SIMATIC WinCC WebUX* | |
| **Monitor clients:** | |
| • 1 client (countable) | **6AV6362-2AB00-0BB0** |
| • 3 clients (countable) | **6AV6362-2AD00-0BB0** |
| • 10 clients (countable) | **6AV6362-2AF00-0BB0** |
| • 30 clients (countable) | **6AV6362-2AJ00-0BB0** |
| • 100 clients (countable) | **6AV6362-2AM00-0BB0** |
| As download | |
| • 1 client (countable) | **6AV6362-2AB00-0AH0** |
| • 3 clients (countable) | **6AV6362-2AD00-0AH0** |
| • 10 clients (countable) | **6AV6362-2AF00-0AH0** |
| • 30 clients (countable) | **6AV6362-2AJ00-0AH0** |
| • 100 clients (countable) | **6AV6362-2AM00-0AH0** |
| **Operate clients** | |
| • 1 client (countable) | **6AV6362-2BB00-0BB0** |
| • 3 clients (countable) | **6AV6362-2BD00-0BB0** |
| • 10 clients (countable) | **6AV6362-2BF00-0BB0** |
| • 30 clients (countable) | **6AV6362-2BJ00-0BB0** |
| • 100 clients (countable) | **6AV6362-2BM00-0BB0** |
| As download | |
| • 1 client (countable) | **6AV6362-2BB00-0AH0** |
| • 3 clients (countable) | **6AV6362-2BD00-0AH0** |
| • 10 clients (countable) | **6AV6362-2BF00-0AH0** |
| • 30 clients (countable) | **6AV6362-2BJ00-0AH0** |
| • 100 clients (countable) | **6AV6362-2BM00-0AH0** |

Note:

The licenses are cumulative, i.e. one 10-client license and one 30-client license permit access by 40 clients.

Operate licenses can be used as Monitor licenses as of V14/V7.4.

Licenses from V7.3 can continue to be used in V7.4 without upgrading.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/wincc-webux

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here: http://www.siemens.com/simatic-licenses

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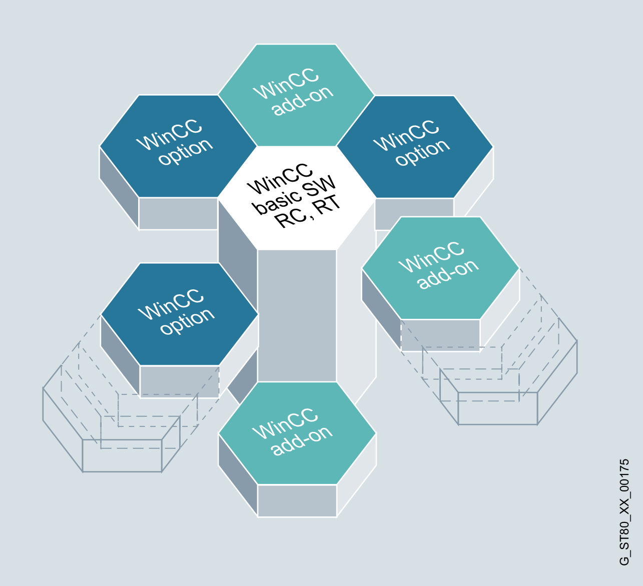
## WinCC Add-ons and partner management

### Overview



***WinCC Premium Add-on – Solutions for all sectors and technologies***

The basic system is designed to be independent of any specific technology or industrial sector, to be modular and flexibly expandable and to permit not only simple single-user applications in machine construction, but also complex multi-user solutions or even distributed systems with several servers and clients in plant engineering.
WinCC Premium Add-ons are supplementary products that have been created by competent partners working in the specific sectors and technologies and represent interesting expansions for WinCC.

***WinCC Premium Add-ons*** are not DF (Siemens) products, but the products of partners who are committed to complying with certain quality features and boundary conditions.
The Premium Add-ons are checked, for example, in the Siemens Test Center for their compatibility with the basic WinCC system and supported in the first instance by the central Hotline. As they are important application- and sector-specific add-on products for SIMATIC WinCC, they are marketed jointly by Siemens and the respective add-on suppliers.

The WinCC Premium Add-on products can be found on the Internet (see More information) and in the "Online WinCC Premium Add-on Catalog".

Premium Add-ons for Connectivity:

- ***PM OPEN IMPORT system software***
  enables the WinCC flexible archives to be automatically read into the WinCC system.
- ***PM OPEN EXPORT system software***
  offers a flexible, low-cost solution for exporting current process data and archive data from WinCC into freely structurable text files.
- ***PM-OPEN MINDCONNECT***
  allows transparent access to production reports created by PM-QUALITY and/or PM-ANALYZE via the MindSphere app.
- ***TOP Server***
  is a proven OPC data integration platform with a large number of OPC device drivers.
- ***TOP Server UCON***
  enables separate OPC device drivers to be created by Point-Click configuration.

Premium Add-on for process management:

- ***PM ANALYZE***
  is used for locating sources of error or weak spots in plants by analyzing messages and process values**.**
- ***PM CONTROL system software***
  is a cross-industry recipe system for user-friendly creation and management of recipes with integrated order control.
- ***PM QUALITY system software***
  is a modular and sector-independent archive system for order-related or batch-related acquisition of process and production data.
- ***PM MES Interface***
  Configurable bi-directional interface between WinCC in combination with PM CONTROL/PM QUALITY and MES systems for cost-effective implementation of vertical integration solutions without programming workload.

Premium Add-on for sector products:

- ***ACRON 7 for WinCC***
  is used for long-term archiving and logging of process data for small to medium-sized plants, specifically in the water supply and treatment industry.
- ***Sm@rtlib function library***
  provides function blocks for S7-300/400 as well as faceplates and icons for WinCC and WinCC flexible from the areas of process industry, HVAC, pharmaceuticals and energy.

## Overview (continued)

Premium Add-on for configuration tools:

- ***DCC TranslationEditor***
  for the efficient, secure translation of multilingual visualizations with in-built features for quality assurance.

Premium Add-on for diagnostics and maintenance:

- ***ACC Alarm Management System***
  enables messages to be passed from the visualization system to mobile radio call receivers, such as cell phones or pagers, etc.
- ***PM MAINT system software***
  is a sector and technology-neutral maintenance system for use in preventive maintenance.

### *Competent partners*

With SIMATIC WinCC, you not only get excellent products to suit your requirements, but we will also support you with selecting a partner for your automation solution. In our global network of Siemens Automation Solution Providers you will always find competent partners in your neighborhood.

In addition, Siemens-internal WinCC Competence Centers and WinCC Specialists support external system integrators with WinCC customer and industry-specific implementation of efficient solutions.

### *WinCC Competence Centers*

Mannheim: Process management

- Sector-independent solutions and products in the fields of production, environment, maintenance and diagnostics
- Connectivity tools, system integration, connection to SAP R/3
- Support of FDA validation and WinCC ODK

Stuttgart: Production technology

- Solutions for maintenance management
- Alarm management

Plano, Texas (USA)

Migration of FactoryLink to SIMATIC WinCC

- Support for customers with migration projects
- Optimization of automated migration tools
- Support for FactoryLink customers with CSS contracts

## More information

### *WinCC Competence Centers*

Additional information is available on the Internet at:
http://www.siemens.com/process-management

### *Siemens Solution Partners Automation*

Additional information is available on the Internet at:
http://www.siemens.com/automation/solutionpartner

### *WinCC Specialists*

Additional information is available on the Internet at:
http://www.siemens.com/wincc-specialists

### *WinCC Premium Add-ons*

Additional information is available on the Internet at:
http://www.siemens.com/wincc-addons

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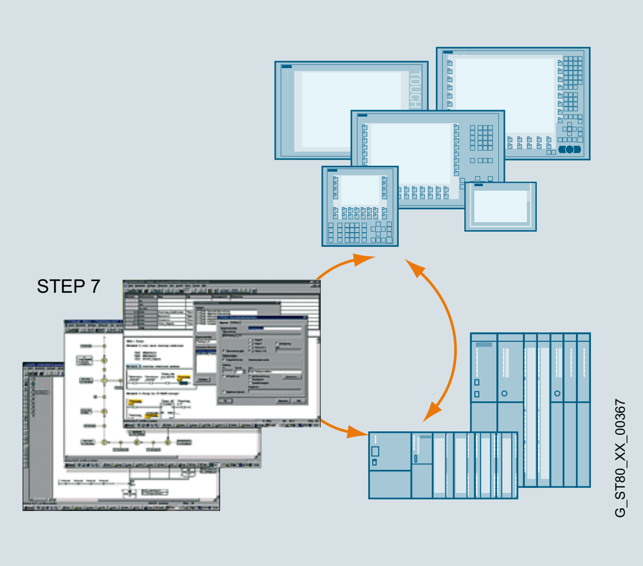
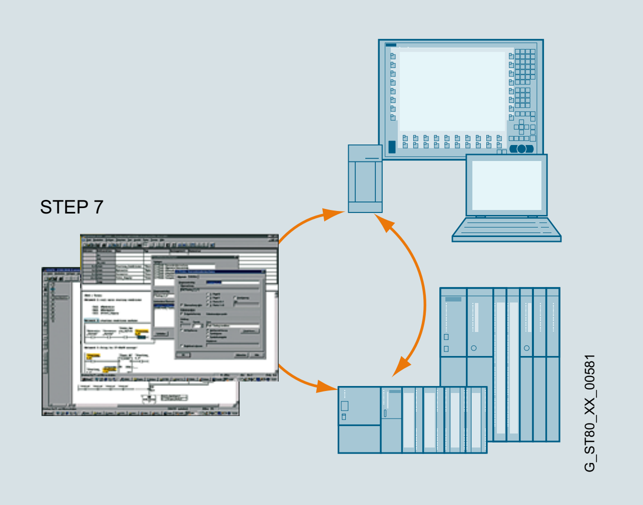
## SIMATIC ProAgent

### Overview



Process fault diagnostics with ProAgent for WinCC flexible/ProAgent and with the STEP 7 engineering tools



- Process fault diagnostics software for quick and precise diagnostics of faults/errors in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components:
optimum interaction of STEP 7 engineering tools and SIMATIC HMI
- Standardized user interface

Licensing

Runtime software, one license is required for each piece of target hardware.

You can find more information on the Software Update Service, license types, online software delivery and handling your SW licenses with the Automation License Manager here:
http://www.siemens.com/simatic-licenses

### Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- ProAgent:
  - Provides optimum support for plant and machine personnel in respect of troubleshooting and fault rectification
  - Increases plant availability
  - Reduces downtimes
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time
- No special operator know-how is required thanks to clearly comprehensible indication of the cause of error

### Application

Increased productivity is being achieved more and more by cutting costs. In this context, the focus is increasingly on maintenance. The emphasis here is on rectifying faults as quickly and efficiently as possible. Ideally, the operating personnel should also perform part of the maintenance tasks. The operating personnel are on-site, they are familiar with the procedures and can intervene quickly. This saves time and reduces costs. It is precisely here that ProAgent can assist operating personnel in identifying faults quickly, in particular in the automotive and machine tool industries.

In the event of a process fault, process fault diagnostics with SIMATIC ProAgent will provide information about the location and cause of that fault and support personnel with troubleshooting.

The ProAgent solution has been optimized specifically for use with SIMATIC S7-300/S7-400 and SIMATIC WinAC. It can be used in combination with the S7-PDIAG, S7-GRAPH and S7-HiGraph[1] STEP 7 engineering tools. The ProAgent option package features standard displays that are updated with process-specific data during runtime.

[1] Process diagnostics with S7-HiGraph in combination with TP/OP/MP 270/277, MP 370/377, and C7636 and PC RT systems.

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## Function

- Context-sensitive diagnostics initiation due to process error message
- Output of operands with symbols and comment
- Switching is possible between LAD, STL and signal list
- Supporting fault rectification with direct process access when using the motion display
- Output of the faulty operands directly in the message including address, symbol and comment[1)]
- Consistency test in RT:
  Inconsistent diagnostic units are marked with icons.
  This permits quick locating of faults regarding configured data in the commissioning phase.
- Direct, unit-related entry point in the diagnostic display from user displays by using ProAgent functions
- Unit or message-related entry to STEP 7 (LAD/STL/FBD editor, S7-GRAPH, HW CONFIG (upon system error messages)), supported fully automatically [2)]
- Unit or message-related entry to STEP 7, supported fully automatically[3)]
- Graphic display of step sequences (overview display)[4)]

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[1)] In combination with TP/OP/MP 270/277, MP 370/377, C7 636, WinCC/ProAgent as of V6.0, and WinCC flexible/ProAgent

[2)] WinCC/ProAgent as of V5.5 and as of WinCC flexible 2007/ProAgent on PC RT

[3)] Only WinCC/ProAgent as of V5.5

[4)] As of WinCC flexible 2007/ProAgent, WinCC/ProAgent as of V5.6 in combination with S7-GRAPH as of V5.1 (OCX is delivered as of S7-GRAPH 5.1)

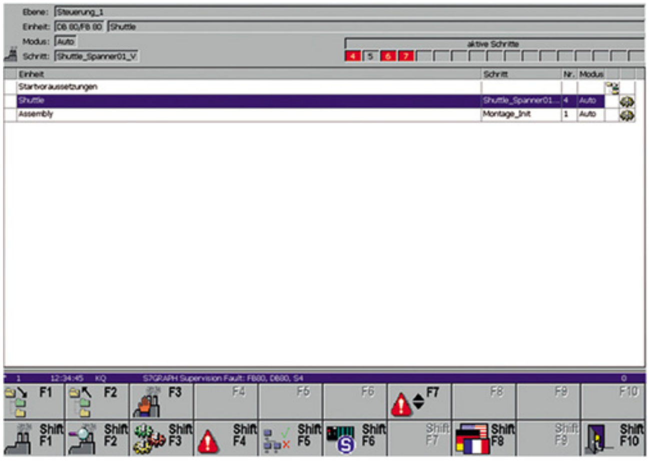
### *Standardized user interface with standard displays*

- Message display
- Unit overview
- Diagnostics detail display
- Motion display
- Sequencer operating display

The displayed image contents are related to the previously selected units or messages. This means that the proper. context-sensitive diagnostics display can be called up based on a message or a selected technological unit.

### *Message display*

All of the existing process messages are shown in the message display. Context-sensitive branching to other diagnostic displays is also possible with a selected message.
The operating personnel can also take the message directly from the erroneous operands and react immediately without having to perform any other operations on the HMI device.
WinCC flexible permits this function on the Windows CE-based devices TP/OP/MP 270/277, MP 370/377, and on PC Runtime systems. The function is available as of version 6.0 for WinCC/ProAgent.



Ebene: Steuerung_1
Einheit: DB 80/FB 80 Shuttle
Modus: Auto
Schritt: Shuttle_Spanner01_V

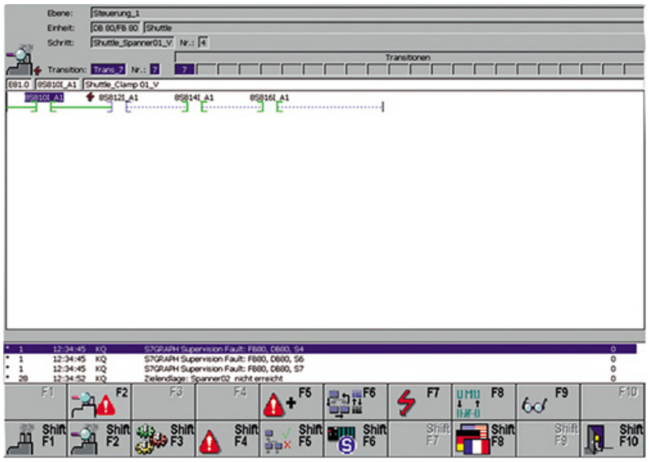
| Einheit | Schritt | Nr. | Modus |
|---|---|---|---|
| Startvoraussetzungen | | | |
| Shuttle | Shuttle_Spanner01... | 4 | Auto |
| Assembly | Montage_Init | 1 | Auto |

```
1   12:34:45   KQ   S7GRAPH Supervision Fault: FB80, DB80, S4   0
```

### *Unit overview*

The unit overview displays all technological units and the respective sub-units (system/machine components) in table form. In this display, the user is able to recognize, for example, which operating mode or which status the respective unit is in. The operating mode can be changed by the user if required.

Faulty units are marked with attributes.



Ebene: Steuerung_1
Einheit: DB 80/FB 80 Shuttle
Schritt: Shuttle_Spanner01_V Nr.: 4
Transition: Trans_7 Nr.: 7
E81.0 0S810I_A1 Shuttle_Clamp 01_V

```
* 1    12:34:45   KQ   S7GRAPH Supervision Fault: FB80, DB80, S4   0
* 1    12:34:45   KQ   S7GRAPH Supervision Fault: FB80, DB80, S6   0
* 1    12:34:45   KQ   S7GRAPH Supervision Fault: FB80, DB80, S7   0
* 28   12:34:52   KQ   Zielendlage: Spanner02 nicht erreicht       0
```

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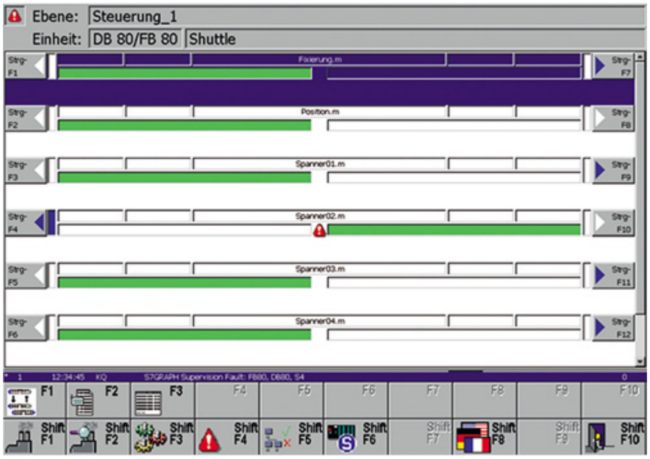
**Function** (continued)

### Diagnostics detail display

The diagnostics detail display shows the faulty operands at the time of origination of a process error. As an option, current status information can also be displayed. The diagnostics results are either displayed in a ladder diagram (LAD), statement list (STL), or in a clearly arranged signal list overview.

The output of the operands depends on the display format with symbols and comments from the S7 symbol table. Only the operands that cause the fault are displayed and marked with a highlighted attribute. Switching to a display that calls up the current status of all operands in the controller is also possible.



Ebene: Steuerung_1
Einheit: DB 80/FB 80 Shuttle

1 12:34:45 KQ S7GRAPH Supervision Fault: FB80, DB80, S4 0

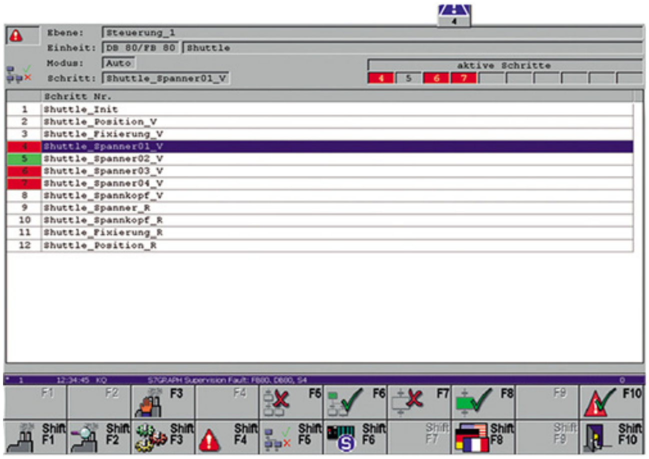
Fixierung.m
Position.m
Spanner01.m
Spanner02.m
Spanner03.m
Spanner04.m
Strg-F1
Strg-F2
Strg-F3
Strg-F4
Strg-F5
Strg-F6
Strg-F7
Strg-F8
Strg-F9
Strg-F10
Strg-F11
Strg-F12
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
Shift F1
Shift F2
Shift F3
Shift F4
Shift F5
Shift F6
Shift F7
Shift F8
Shift F9
Shift F10

### Motion display

The motion display is used for supported fault rectification. Every motion line contains a comment line that describes the motion (e.g. x-axis), two actions for implementing the motion, response concerning the actuation of a motion and information on the respectively achieved end positions (max. 16).

The motion itself is controlled with softkeys on the side of SIMATIC Panels and Multi Panels.

For time-critical motions, the actuation can be done directly through inputs of the controller (depending on the capabilities of the target hardware: 24 V direct keys, DP direct keys via PROFIBUS).



Ebene: Steuerung_1
Einheit: DB 80/FB 80 Shuttle
Modus: Auto
Schritt: Shuttle_Spanner01_V

aktive Schritte: 4 5 6 7

| | Schritt Nr. |
|---|---|
| 1 | Shuttle_Init |
| 2 | Shuttle_Position_V |
| 3 | Shuttle_Fixierung_V |
| 4 | Shuttle_Spanner01_V |
| 5 | Shuttle_Spanner02_V |
| 6 | Shuttle_Spanner03_V |
| 7 | Shuttle_Spanner04_V |
| 8 | Shuttle_Spannkopf_V |
| 9 | Shuttle_Spanner_R |
| 10 | Shuttle_Spannkopf_R |
| 11 | Shuttle_Fixierung_R |
| 12 | Shuttle_Position_R |

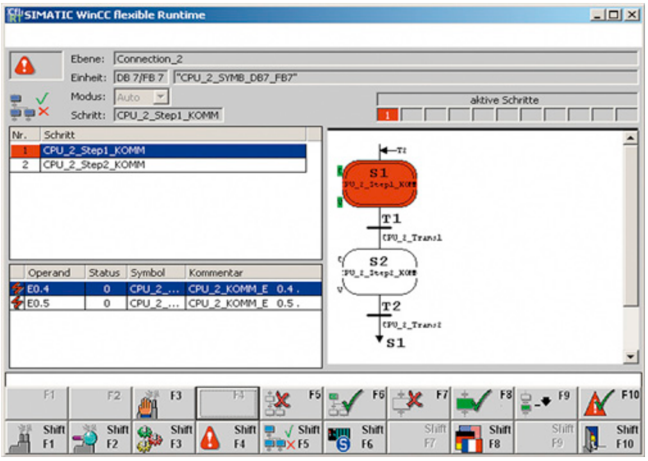
1 12:34:45 KQ S7GRAPH Supervision Fault: FB80, DB80, S4 0

4
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
Shift F1
Shift F2
Shift F3
Shift F4
Shift F5
Shift F6
Shift F7
Shift F8
Shift F9
Shift F10

### Sequencer operating display

The sequencer operating display supports sequencer control. This makes functions such as initializing and acknowledging sequencers, activating/deactivating individual steps and operating mode settings possible analog to the status/control in S7-GRAPH.

The steps are output to a list with step number/name. Attributes for identifying an active/faulty step give the operating personnel an overview of the current status of the step sequence.



SIMATIC WinCC flexible Runtime

Ebene: Connection_2
Einheit: DB 7/FB 7 "CPU_2_SYMB_DB7_FB7"
Modus: Auto
Schritt: CPU_2_Step1_KOMM

aktive Schritte: 1

| Nr. | Schritt |
|---|---|
| 1 | CPU_2_Step1_KOMM |
| 2 | CPU_2_Step2_KOMM |

| Operand | Status | Symbol | Kommentar |
|---|---|---|---|
| E0.4 | 0 | CPU_2_... | CPU_2_KOMM_E 0.4 . |
| E0.5 | 0 | CPU_2_... | CPU_2_KOMM_E 0.5 . |

T2
S1
CPU_2_Step1_KOMM
T1
CPU_2_Trans1
S2
CPU_2_Step2_KOMM
T2
CPU_2_Trans2
S1
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
Shift F1
Shift F2
Shift F3
Shift F4
Shift F5
Shift F6
Shift F7
Shift F8
Shift F9
Shift F10

### Sequencer diagnostic display

WinCC flexible/ProAgent and WinCC/ProAgent[1] also offer capabilities for graphic monitoring and sequencer diagnostics.

This gives the user the ability to monitor active/faulty steps as well as the fault cause, e.g. faulty transition conditions, simultaneously on the HMI device.

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[1] WinCC/ProAgent as of V5.6 in combination with S7-GRAPH as of V5.1 (OCX is delivered as of S7-GRAPH 5.1)

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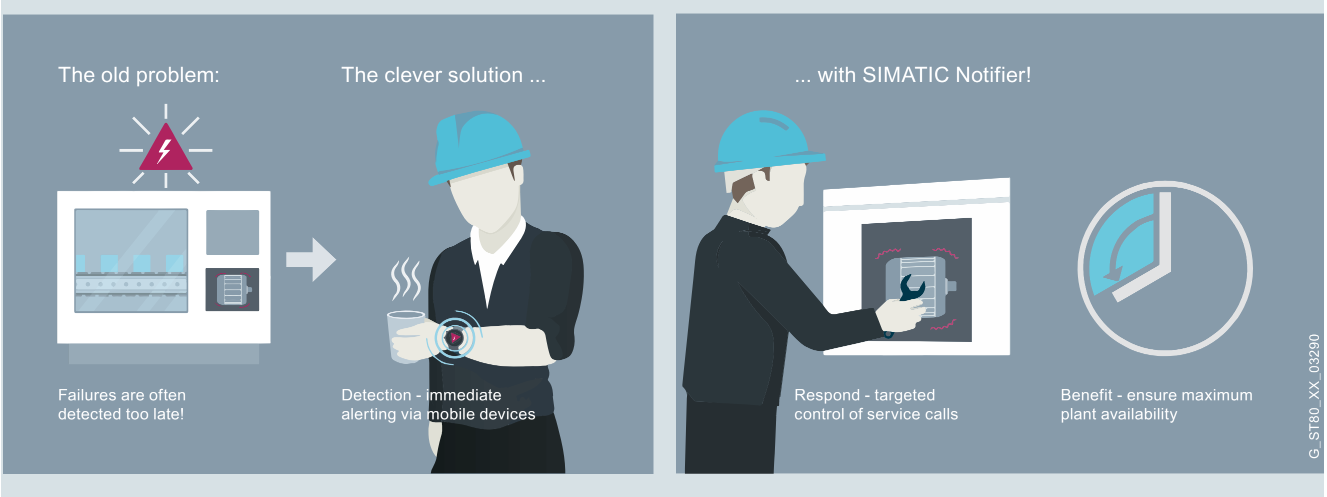
| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC WinCC/ProAgent**<br>Software option package for process diagnosis based on S7 GRAPH V5 and higher and S7 PDIAG V5 and higher; functional enhancement for SIMATIC WinCC; electronic documentation in English, French and German; functions and standard screens for use on a PC (resolution 1024 x 768 pixels) and Panel PC 577/677/877 15" (resolution 1024 x 768 pixels) in English, French and German, runtime license (single license)<br>WinCC version: | |
| • V7.5[1] | **6AV6371-1DG07-5AX0** |
| • V7.4[1] | **6AV6371-1DG07-4AX0** |
| As download | |
| • V7.5[1] | **6AV6371-1HG07-5AX0** |
| • V7.4[1] | **6AV6371-1HG07-4AX0** |
| **Upgrade** | |
| • V7.4 to V7.5[1] | **6AV6371-1DG07-5AX4** |
| • V7.2/3 to V7.5[1] | **6AV6371-1DG07-5AX3** |
| • V7.x to V7.4[1] | **6AV6371-1DG07-4AX3** |
| As download | |
| • V7.4 to V7.5[1] | **6AV6371-1KG07-5AX4** |
| • V7.2/3 to V7.5[1] | **6AV6371-1KG07-5AX3** |
| • V7.x to V7.4[1] | **6AV6371-1KG07-4AX3** |
| **SIMATIC WinCC flexible/ProAgent**<br>Software option package for process diagnostics based on S7 PDIAG V5.1 and higher, S7 GRAPH V5.2 + SP3 and higher; S7 HiGRAPH V5.3 and higher. Functional enhancement for SIMATIC WinCC flexible; electronic documentation in English, French, German, Italian, and Spanish | |
| • **WinCC flexible/ProAgent for SIMATIC Panels**<br>Runtime license (single license) executable on TP/OP/MP 270/277, Mobile Panel 277, and MP 370/377 | **6AV6618-7DB01-3AB0** |
| • **WinCC flexible /ProAgent for WinCC flexible Runtime**<br>Runtime license (single license) | **6AV6618-7DD01-3AB0** |

[1] Not multi-station-capable

## SIMATIC Notifier

### Overview


The old problem:
Failures are often detected too late!
The clever solution ...
Detection - immediate alerting via mobile devices
... with SIMATIC Notifier!
Respond - targeted control of service calls
Benefit - ensure maximum plant availability
G_ST80_XX_03290

SIMATIC Notifier

***SIMATIC Notifier: Detect. React. Benefit.***

SIMATIC Notifier is used to provide targeted notifications to employees on their smart devices. The web-based configuration is performed on the Notifier Server in advance for groups or each individual device.

The SIMATIC Notifier Client app receives the notifications. S7, S7 Classic or OPC UA communication is required for integration into a system/machine.

Licenses:

- SIMATIC Notifier Server
- SIMATIC Notifier Client License (unlimited expansion options, depending on the number of linked smart devices)

***Benefits***

- Detection and localization of plant or machine faults
- Direct notification on smartwatches, smartphones and tablets
- Increased productivity by avoiding downtimes
- Increased freedom of movement and ability to reach employees via wireless LAN communication

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## Application

- Plants and machines with operator intervention
- Long production lines, individual machines or total systems
- Simple retrofit/integration
- Fast and user-friendly configuration
- Licensing based on number of connected smart devices (smartwatch, smartphone or tablet)

## Function

- Notifications on smart devices
- User and role management
- Different notification categories: Alert, warning and information
- Customizable notification texts and triggering conditions
- "Take over" feature for team applications

## Technical specifications

| | SIMATIC Notifier |
|---|---|
| **Machine integration** | S7 Classic, S7+, OPC UA |
| **Max. number of controllers/ machines** | 30x S7 or 30x OPC UA or 30x mixed configurations [1] |
| **Max. number of variables per second per machine** | 50 [1] |
| **Max. number of variables per second per Notifier Server** | 1500 [1] |
| **Max. number of connected smart devices per Notifier Server** | 50 [1] |
| **Minimum requirements for smartwatch OS** | Android Wear 2 |
| **Minimum requirements for a Windows PC** | Windows 7 or 10 (64-bit), 4 GB RAM; Internet Explorer or Google Chrome |
| **Availability** | In countries as per OSD country list (Online Software Delivery) |

[1] Depending on the performance of the Windows PC used

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC Notifier Server 1.0 for Win7 or Win10 (64-bit)**<br>SIMATIC Notifier Server license key, download + SIMATIC Notifier Server software, download. Including a SIMATIC Notifier Client license. Email address required for delivery. | **6AV2170-0AA10-0AA0** |
| **SIMATIC Notifier Client license**<br>Freely expandable Client license, download. Email address required for delivery. | **6AV2170-0AA20-0AA0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-notifier

## Overview

### *SIMATIC WinCC flexible ES engineering software*

- Family of configuration systems with WinCC flexible/Compact/ Standard/Advanced for SIMATIC operator panels, the HMI part of SIMATIC C7 as well as for the WinCC flexible Runtime PC-based visualization software
- Runs on Windows 7 Professional, Ultimate, Enterprise / Windows 10 Professional, Enterprise
- Can be expanded by the option "WinCC flexible/ ChangeControl" for version management and change logging

### *SIMATIC WinCC flexible Runtime visualization software*

- Modular PC-based HMI solution for single-user systems directly at the machine (further development of ProTool/Pro RT)
- Runs on Windows 7 Professional, Ultimate, Enterprise / Windows 10 Professional, Enterprise
- Basic package for visualization, reporting and logging; can be expanded by implementing option packages
- Flexible expansion possible with VB scripts and customized ActiveX controls created with OPP (Open Platform Program)
- Can be integrated into automation solutions based on TCP/IP networks
- Expanded service concepts with remote operation, diagnostics and administration over the intranet and Internet in combination with email communication

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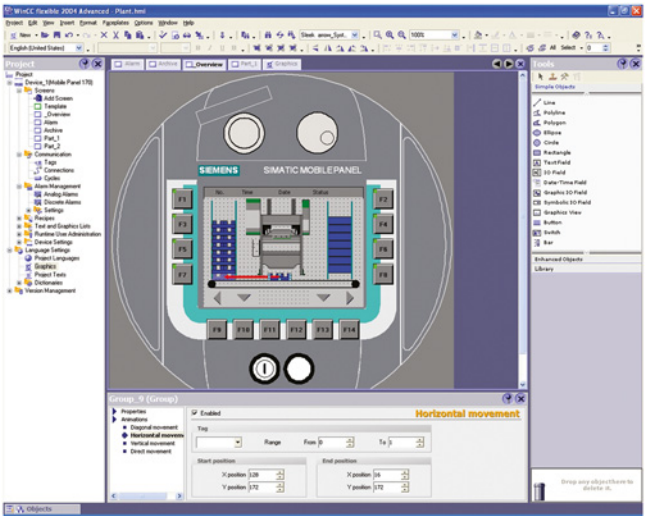
## Overview



- Uniform family of engineering tools for configuring SIMATIC HMI operator panels, the operator controls of SIMATIC C7 units, SINUMERIK Panel PCs as well as the PC-based visualization software WinCC flexible Runtime.
- Runs on Windows 7 Professional, Ultimate, Enterprise / Windows 10 Professional, Enterprise
- Current version:
  - SIMATIC WinCC flexible 2008 SP5 Micro
  - SIMATIC WinCC flexible 2008 SP5 Compact
  - SIMATIC WinCC flexible 2008 SP5 Standard
  - SIMATIC WinCC flexible 2008 SP5 Advanced

## Application

SIMATIC WinCC flexible Compact/Standard/Advanced are engineering tools for configuring SIMATIC HMI operator panels, the operator controls of SIMATIC C7 units, SINUMERIK Panel PCs as well as the PC-based WinCC flexible Runtime visualization system.

Depending on the selected product, various target systems can be configured:

### *WinCC flexible Compact*

In addition to the target systems that are configured using WinCC flexible Micro:

- Basic Panels: KTP400 Basic, KTP600 Basic, KTP1000 Basic, TP1500 Basic
- Mobile Panels: Mobile Panel 170, Mobile Panel 177
- 70 series Panels: OP 73, OP 77A, OP 77B
- 170 series Panels: TP 170A, TP 177A, TP 170B, TP 177B, OP 170B, OP 177B
- 170 series Multi Panels: MP 177
- C7 devices: C7-635 (Touch/Key)

### *WinCC flexible Standard*

In addition to the target systems that are configured using WinCC flexible Compact:

- Mobile Panels: Mobile Panel 277
- 270 series Panels: TP 270, TP 277, OP 270, OP 277
- 270 series Multi Panels: MP 270B, MP 277
- 370 series Multi Panels: MP 370, MP 377
- C7 devices: C7-636 (Touch/Key)

### *WinCC flexible Advanced*

In addition to the target systems that are configured using WinCC flexible Standard:

- Standard PC
- SIMATIC Panel PC: IPC277E, IPC277D, IPC477E, IPC477D, IPC677D
  SIMATIC Box PC: IPC227E, IPC227D, IPC427E, IPC427D, IPC627D, IPC827D
  SIMATIC Rack PC: IPC347E, IPC547G, IPC647D, IPC847D
- SINUMERIK Panel PC: HT8, OP08T, OP010, OP012, TP012, OP015, TP015, OP015A

For configuring panels released after the start of delivery of WinCC flexible 2008, an HSP (Hardware Support Package) is required that can be downloaded free of charge via the following link:
http://www.siemens.com/wincc-flexible-hsp

## Technical specifications

| System requirements (minimum requirements) | WinCC flexible Engineering Software |
|---|---|
| **Operating system** | • Windows 7 Professional SP1, Ultimate/Enterprise SP1 (32-bit and 64-bit)<br>• Windows 10 Professional, Enterprise, LTSB Enterprise (64-bit) |
| **Processor** | Pentium 4 (or comparable) processor running at 1.6 GHz or faster |
| **Resolution** | 1024 x 768 or higher |
| **Main memory (RAM)** | ≥ 1 GB,<br>≥ 512 MB for WinCC flexible Micro |
| **Hard disk (free memory space)** [1] | ≥ 2 GB [2]<br>≥ 1.2 GB for WinCC flexible Micro [3] |
| **DVD drive** | for software installation |

[1] In addition to WinCC flexible, Windows also requires free hard drive space; e.g. space should be reserved for the swap file. The following formula has proven itself in the past: The size of the swap file = 3 x the size of available RAM. For further information, refer to your Windows documentation

[2] When installing one language. An additional 200 MB are required for each further language. In the case of different partitions for system and configuration: System partition approx. 700 MB, project partition approx. 1.3 GB.

[3] When installing one language. An additional 80 MB are required for each further language. In the case of different partitions for system and configuration: System partition approx. 600 MB, project partition approx. 600 MB.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC flexible 2008 Compact incl. SP5** | |
| • Software and documentation on DVD, floating license, license key on USB flash drive | **6AV6611-0AA51-3CA5** |
| • As download [3], software and license key download, floating license, email address required for delivery | **6AV6611-0AA51-3CH5** |
| **WinCC flexible 2008 Standard incl. SP5** | |
| • Software and documentation on DVD, floating license, license key on USB flash drive | **6AV6612-0AA51-3CA5** |
| • As download [3], software and license key download, floating license, email address required for delivery | **6AV6612-0AA51-3CH5** |
| **WinCC flexible 2008 Advanced incl. SP5** | |
| • Software and documentation on DVD, floating license, license key on USB flash drive | **6AV6613-0AA51-3CA5** |
| • As download [3], software and license key download, floating license, email address required for delivery | **6AV6613-0AA51-3CH5** |
| **WinCC flexible /ChangeControl for WinCC flexible 2008 Compact/ Standard/Advanced** [1] [2] | |
| • Software and documentation on DVD, floating license, license key on USB flash drive | **6AV6613-6AA01-3AB5** |
| • as download [3], software and license key download, floating license, email address required for delivery | **6AV6613-6AA01-3AH5** |
| *Powerpacks* | |
| **SIMATIC WinCC flexible Power Packs** | |
| Floating license, license key only on USB flash drive | |
| • WinCC flexible 2008 Standard to 2008 Advanced | **6AV6613-2CD01-3AD5** |
| • WinCC flexible 2008 Compact to 2008 Advanced | **6AV6613-2BD01-3AD5** |
| • WinCC flexible 2008 Compact to 2008 Standard | **6AV6612-2BC01-3AD5** |
| as download [3], floating license, license key download only, email address required for delivery | |
| • WinCC flexible 2008 Standard to 2008 Advanced | **6AV6613-2CD01-3AJ5** |
| • WinCC flexible 2008 Compact to 2008 Advanced | **6AV6613-2BD01-3AJ5** |
| • WinCC flexible 2008 Compact to 2008 Standard | **6AV6612-2BC01-3AJ5** |

| | Article No. |
|---|---|
| *Updates* | |
| **WinCC flexible 2008 Compact/ Standard/Advanced Update 2008, 2008 SP1, SP2, SP3 -> SP5** | **6AV6613-0AA51-3CU8** |
| *Upgrades* | |
| **SIMATIC WinCC flexible 2004/ 2005/2007 to SIMATIC WinCC flexible 2008 incl. SP5** | |
| • Upgrade to WinCC flexible 2008 Compact, incl. ChangeControl option [1] | **6AV6611-0AA51-3CE5** |
| • Upgrade to WinCC flexible 2008 Standard, incl. ChangeControl option [1] | **6AV6612-0AA51-3CE5** |
| • Upgrade to WinCC flexible 2008 Advanced, incl. ChangeControl option [1] | **6AV6613-0AA51-3CE5** |
| as download [3],<br>Email address required for delivery | |
| • Upgrade to WinCC flexible 2008 Compact, incl. ChangeControl option [1] | **6AV6611-0AA51-3CK5** |
| • Upgrade to WinCC flexible 2008 Standard, incl. ChangeControl option [1] | **6AV6612-0AA51-3CK5** |
| • Upgrade to WinCC flexible 2008 Advanced, incl. ChangeControl option [1] | **6AV6613-0AA51-3CK5** |

[1] A separate license for WinCC flexible /ChangeControl must be purchased for each engineering station

[2] The ChangeControl option has not been released for integrated operation with STEP 7

[3] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

Additional information is available on the Internet at:

http://www.siemens.com/wincc-flexible

Note:

Do you require a specific modification or extension to the products described here? You will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible under "Customized Products".

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## Overview

PC-based visualization software for single-user systems directly at the machine.

- Runs on Windows 7 Professional, Ultimate, Enterprise and Windows 10 Professional, Enterprise
- Current version: SIMATIC WinCC flexible 2008 SP5 Runtime

SIMATIC WinCC flexible Runtime is configured with the SIMATIC WinCC flexible Advanced configuration software.

## Application

SIMATIC WinCC flexible Runtime is the high-performance visualization software for simple visualization tasks at machine level. It can be used as a single-user solution for all automation applications in factory automation, process automation and building services automation.

SIMATIC WinCC flexible Runtime can be used in combination with the following operator panels:

- SIMATIC Panel PCs
  - PC IL 70/77
  - Microbox 420
  - Panel PCs 477/477B/477C
  - Panel PCs 577/577B/577C
  - Panel PCs 670/677/677B/677C
  - Panel PCs 870/877
- SINUMERIK Panel PCs
  - HT8; OP08T
  - OP010, OP012, OP015
  - TP012, TP015, OP015A
- Standard PCs with resolutions (W x H in pixels) of:
  - 4:3 format: 640 x 480, 800 x 600, 1 024 x 768, 1 280 x 1 024, 1 600 x 1 200
  - Widescreen format: 800 x 480, 1 280 x 800, 1 366 x 768, 1 440 x 900, 1 680 x 1 050, 1 920 x 1 080, 1 920 x 1 200, 1 980 x 1 080

## Design

SIMATIC WinCC flexible Runtime is available as a software package with 128, 512, 2048 or 4096 PowerTags. The term PowerTags is used exclusively to identify process variables and range pointers that have a process link to the controller. Variables without process link, constant limit values of variables, and messages (up to 4000 bit-triggered messages) are also available for additional system performance.

The range of functions of WinCC flexible Runtime includes the centralized HMI components for visualizing and reporting, and it can be expanded to suit requirements and costs by using optional packages.

SIMATIC WinCC flexible Runtime is configured with the SIMATIC WinCC flexible Advanced configuration software.

## Function

| System requirements | WinCC flexible Runtime |
|---|---|
| **Operating system** | • Windows 7 Professional / Ultimate / Enterprise (32-bit and 64-bit)<br>• Windows 7 Embedded Standard, Standard with SP1 (32-bit) [1]<br>• Windows 10 Professional, Enterprise, LTSB Enterprise<br>• Windows 10 IoT LTSB Enterprise [1] |
| **Processor** [4] | |
| • Minimum | Windows 7: 1 GHz |
| • Recommended | Windows 7: ≥ 1 GHz |
| **Graphics** | |
| • Minimum | SVGA |
| • Resolution | 640 x 480 to 1600 x 1200 or<br>800 x 480 to 1980 x 1080 |
| **RAM** [2] | |
| • Minimum | Windows 7: 1 GB |
| • Recommended | Windows 7: ≥ 1 GB |
| **Hard disk (free memory space)** [3] | ≥ 250 MB |

[1] Only on approved systems such as SIMATIC IPCs. For more detailed information, please contact your Siemens contact person

[2] RAM requirements are determined primarily by the size of the graphics used.

[3] Without taking archives into account.
In addition to the space needed by WinCC flexible, Windows also requires space on the hard disk; e.g. for the swap file. The following formula has proven itself in the past: The size of the swap file = 3 x the size of the RAM. For further information, refer to your Windows documentation

[4] More powerful systems (Pentium 4 and higher) may be required in order to use options

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## Integration

SIMATIC WinCC flexible Runtime supports linking to:

| Protocol | PC interfaces |
|---|---|
| **SIMATIC S5 via AS511 (TTY)** | |
| S5-90U | COM1/COM2 [13] |
| S5-90U | |
| S5-100U (CPU 100, 102, 103) | |
| S5-115U (CPU 941, 942, 943, 944, 945) | |
| S5-135U (CPU 928A, 928B) | |
| S5-155U (CPU 946/947, 948) | |
| **SIMATIC S5 via PROFIBUS DP** [1] | |
| S5-95U/L2-DP master | CP 5512 [2] |
| S5-115U (CPU 941, 942, 943, 944, 945) | |
| S5-135U (CPU 928A, 928B) | |
| S5-155U (CPU 946/947, 948) | |
| **SIMATIC S7 via PPI** | |
| S7-200 | CP 5612<br>CP 5621 [1]<br>CP 5622<br>CP 5613 A3<br>CP 5614 A3<br>CP 5623<br>CP 5624<br>CP 5711<br>PC/PPI adapter [3] |
| **SIMATIC S7 via MPI** | |
| S7-200 (except CPU 212) [4] | CP 5612<br>CP 5621 [1]<br>CP 5622<br>CP 5613 A3<br>CP 5614 A3<br>CP 5623<br>CP 5624<br>CP 5711<br>PC adapter USB A2 [6]<br>Teleservice V6.1 |
| S7-300 | |
| S7-400 | |
| WinAC Basis (V3.0 and higher) | |
| WinAC RTX | |
| **SIMATIC S7 via PROFIBUS DP** [5] | |
| S7-215 [4] | CP 5612<br>CP 5621 [1]<br>CP 5622<br>CP 5613 A3<br>CP 5614 A3<br>CP 5623<br>CP 5624<br>CP 5711 |
| S7-300 CPUs with integral PROFIBUS-SS | |
| S7-300 with CP 342-5 | |
| S7-400 CPUs with integral PROFIBUS-SS | |
| S7-400 with CP 443-5 or IM 467 | |
| WinAC Basis (V3.0 and higher) | |
| WinAC RTX | |
| **SIMATIC S7 via Ethernet (TCP/IP)** | |
| S7-200 with CP 243-1 | CP 1612 A2 [7]<br>CP 1613 A2 |
| S7-300 CPUs with integral Ethernet interface | |
| S7-300 with CP 343-1 | |
| S7-400 CPUs with integral Ethernet interface | |
| S7-400 with CP 443-1 | |
| WinAC Basis (V3.0 and higher) | |
| WinAC RTX | |
| **SIMATIC S7 via integrated interface** | |
| WinAC Basis (V2.0 and higher) | Internal system interface |
| WinAC RTX | |
| **SIMATIC 505 NITP** | |
| SIMATIC 500/505 RS 232/RS 422 | COM1/COM2 |
| **SIMATIC 505 via PROFIBUS DP** | |
| SIMATIC 545/555 with CP 5434 | CP 5612 [2]<br>CP 5622 [2] |
| **SIMOTION** [8] | |
| **SINUMERIK** [9] | |
| **Third-party controllers** | |
| Allen Bradley (DF1/DH485) | COM1/COM2 |
| Allen Bradley (Ethernet) | CP 1612 A2 [7] |
| GE Fanuc (SNP/SNPX) | COM1/COM2 |
| LG GLOFA GM | COM1/COM2 |
| Mitsubishi (FX/MP4) | COM1/COM2 |
| Modicon (Modbus) | COM1/COM2 |
| Modicon (Modbus TCP/IP) | CP 1612 A2 [7] |
| OMRON (Link/Multilink) | COM1/COM2 |
| **OPC** [10] [12] | |
| Data Access V2.05a (client + server) | CP 1612 A2 [7] |
| Data Access XML V1.00 (client) | |
| **HTTP communication for data exchange between SIMATIC HMI (client + server)** [11] [12] | CP 1612 A2 [7] |

[1] WinCC flexible Runtime is passive (DP slave); the function block required for the link is included in the scope of supply of WinCC flexible

[2] For Microbox 427 and Panel PC 477/577/677 via internal MPI/DP interface

[3] Only point-to-point to S7-200; no configuration download, operating systems: Windows XP; article number: 6ES7901-3CB30-0AX0

[4] Constraint with regard to baud rate for S7-200; see Catalog ST 70

[5] WinCC flexible RT is active; communication with S7 functions

[6] Only point-to-point to S7-300/-400; no configuration download, operating systems: Windows XP or higher; article number: 6GK1571-0BA00-0AA0 (USB)

[7] For Microbox 427 and Panel PC 477/577/677/877 via internal Ethernet interface

[8] For further information, see Catalog PM 21

[9] "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60

[10] OPC client is included in scope of supply, the "WinCC flexible/OPC Server for WinCC flexible Runtime" license is required for the OPC Server option

[11] "WinCC flexible/Sm@rtAccess for WinCC flexible Runtime" license required

[12] OPC and HTTP communication are additive, i.e. can be used in conjunction with the PLC links listed above

[13] Via PC cable with integrated level converter RS 232/TTY; article number: 6ES5734-1BD20

For information about SIMATIC Panels that support OPC/http communication, see the overview under "System interfaces".

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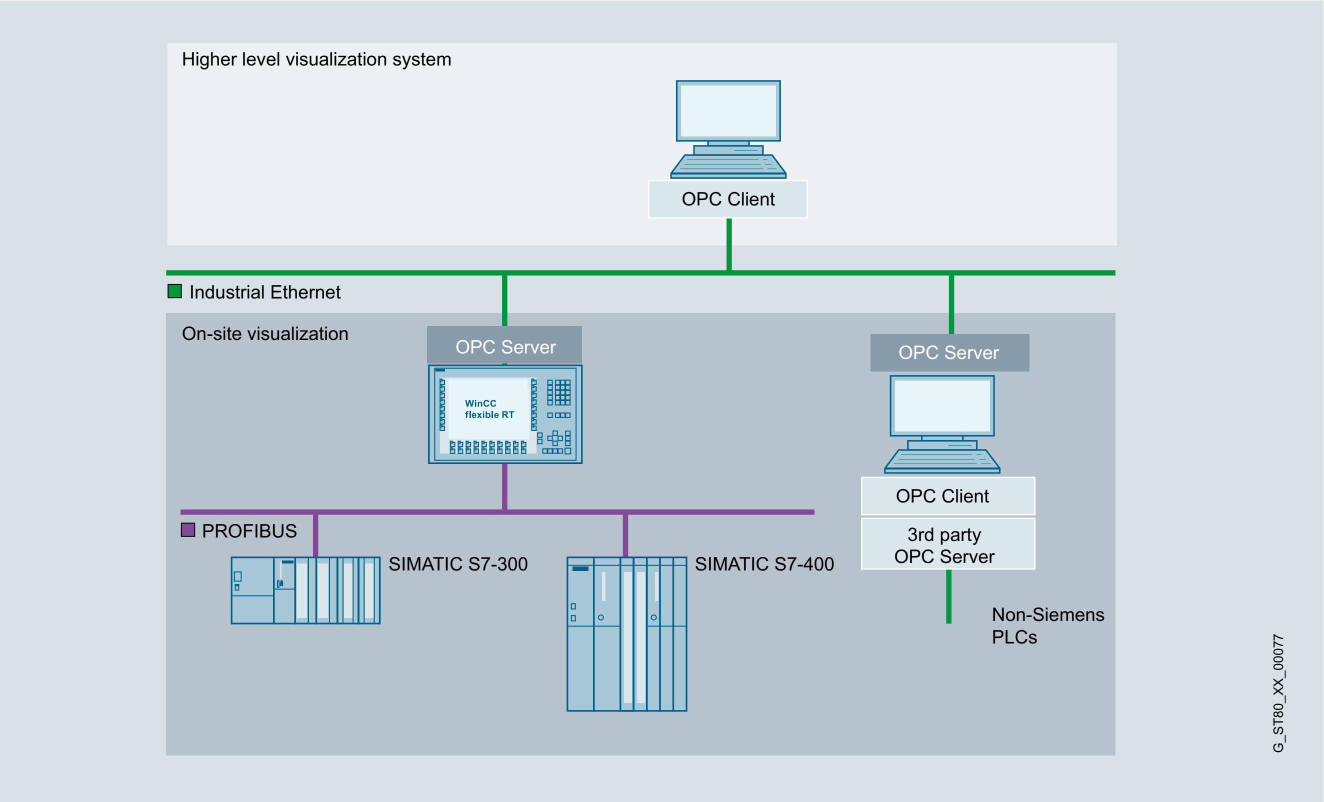
## **Integration** (continued)

### *Application note*

In parallel with each and every PLC link, WinCC flexible Runtime supports the use of the OPC Client channel; this enables, for example, connection to an SNMP OPC Server for the purpose of visualizing the data stored there.

The SNMP OPC Server provides a means of monitoring network components of any type (e.g. switches) which support the SNMP protocol. For further information, see Catalog IK PI.

Note:
For further information, see "Operator Control and Monitoring Devices/ System interfaces"


Higher level visualization system
OPC Client
Industrial Ethernet
On-site visualization
OPC Server
WinCC flexible RT
OPC Server
OPC Client
3rd party OPC Server
PROFIBUS
SIMATIC S7-300
SIMATIC S7-400
Non-Siemens PLCs
G_ST80_XX_00077

SIMATIC WinCC flexible Runtime application example

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## Technical specifications

| Type | SIMATIC WinCC flexible Runtime |
|---|---|
| | The specifications are maximum values |
| **Displays** | 500 |
| • Fields per screen | 400 |
| • Variables per screen | 400 |
| • Static text | 30,000 |
| • Graphics objects | 2,000 |
| • Complex objects per display (e.g. bars) | 40 |
| • Trends | 800 |
| • Graphics lists [1] | 500 |
| • Text lists [1] | 500 |
| • Number of entries in symbol tables | 3,500 |
| **Variables** | 4,096 [3] |
| **Messages bit-triggered / analog** | 4,000 / 500 |
| • Message text (number of characters) | 80 |
| • Number of process values per message | 8 |
| • Size of message buffer | 1,024 |
| • Pending message events | 500 |
| **Archives** [4] | 100 |
| • Archivable data | Process data, messages |
| • Max. number of entries per archive (incl. all archive segments) | 500,000 |
| • Archive types | Short-term archive, sequence archive (max. 400 per archive) |
| • Data storage format | CSV (**C**omma **S**eparated **V**ariable), RDB (**R**untime **D**ata **B**ase), interface to MS SQL database |
| **Recipes** [4] | 1,000 |
| • Elements per recipe | 2,000 [3] |
| • Data records per recipe | 5,000 [2] |
| **Password protection** | |
| • User rights | 32 |
| • Number of user groups | 50 |
| **Visual Basic scripts** | 200 |
| **Online languages, max.** | 16 |
| **Communication** | |
| SIMATIC S7 MPI interface/ PROFIBUS DP interface | |
| • Number of connectable stations, max. | Depending on the scope of the configuration (communication) from the point of view of WinCC flexible Runtime, as many as 8 connections are possible |
| SIMATIC S7 PPI interface | |
| • Number of connectable stations, max. | 1 from viewpoint of WinCC flexible Runtime |
| SIMATIC S5 PROFIBUS DP interface | |
| • Number of connectable stations, max. | 1 from viewpoint of WinCC flexible Runtime |
| Multi-protocol operation | Yes, OPC Client or SIMATIC HMI HTTP protocol are additive, i.e. can be used in conjunction with other PLC links |

[1] Together only 500 text and graphics lists

[2] Dependent on memory medium used

[3] Dependent on number of licensed PowerTags

[4] Option for SIMATIC WinCC flexible Runtime. For further information, refer to "WinCC flexible options".

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC WinCC flexible 2008 Runtime**<br>for PC systems; software and documentation on DVD, including software of the options for PC systems [1] ; | |
| Single license, license key on USB flash drive for: | |
| • 128 PowerTags (RT 128) | **6AV6613-1BA51-3CA0** |
| • 512 PowerTags (RT 512) | **6AV6613-1DA51-3CA0** |
| • 2 048 PowerTags (RT 2 048) | **6AV6613-1FA51-3CA0** |
| • 4 096 PowerTags (RT 4 096) | **6AV6613-1GA51-3CA0** |
| as download [2]<br>Single license, software and license key download, email address required for delivery. | |
| • 128 PowerTags | **6AV6613-1BA51-3CH0** |
| • 512 PowerTags | **6AV6613-1DA51-3CH0** |
| • 2 048 PowerTags | **6AV6613-1FA51-3CH0** |
| • 4 096 PowerTags | **6AV6613-1GA51-3CH0** |
| ***Powerpacks*** | |
| **SIMATIC WinCC flexible 2008 Runtime**<br>Single license, license key only on USB flash drive for PowerTags from | |
| • 128 to 512 PowerTags | **6AV6613-4BD01-3AD0** |
| • 128 to 2 048 PowerTags | **6AV6613-4BF01-3AD0** |
| • 128 to 4 096 PowerTags | **6AV6613-4BG01-3AD0** |
| • 512 to 2 048 PowerTags | **6AV6613-4DF01-3AD0** |
| • 512 to 4 096 PowerTags | **6AV6613-4DG01-3AD0** |
| • 2 048 to 4 096 PowerTags | **6AV6613-4FG01-3AD0** |
| as download [2]<br>Single license, license key download only, email address required for delivery. | |
| • 128 to 512 PowerTags | **6AV6613-4BD01-3AJ0** |
| • 128 to 2 048 PowerTags | **6AV6613-4BF01-3AJ0** |
| • 128 to 4 096 PowerTags | **6AV6613-4BG01-3AJ0** |
| • 512 to 2 048 PowerTags | **6AV6613-4DF01-3AJ0** |
| • 512 to 4 096 PowerTags | **6AV6613-4DG01-3AJ0** |
| • 2 048 to 4 096 PowerTags | **6AV6613-4FG01-3AJ0** |
| ***Updates*** | |
| **SIMATIC WinCC flexible 2008 Runtime Update 2008, 2008 SP1, SP2, SP3 -> SP5** | **6AV6613-1XA51-3CU8** |

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Upgrades* | |
| **SIMATIC WinCC flexible 2004/2005/2007 Runtime to SIMATIC WinCC flexible 2008 Runtime** | |
| Upgrade to SIMATIC WinCC flexible Runtime 2008 PowerTags including runtime options for:<br>WinCC flexible /Archives;<br>WinCC flexible /Recipes;<br>WinCC flexible /Audit;<br>WinCC flexible /Sm@rtAccess;<br>WinCC flexible /OPC-Server;<br>WinCC flexible /ProAgent | |
| • Software and documentation on DVD, single license, license key on USB flash drive | **6AV6613-1XA51-3CE0** |
| • as download 2), software and license key download, single license, email address required for delivery | **6AV6613-1XA51-3CK0** |
| **Upgrade of the SIMATIC WinCC flexible Panel options:** | |
| WinCC flexible /Audit for SIMATIC Panel;<br>WinCC flexible /Sm@rtAccess for SIMATIC Panel;<br>WinCC flexible /Sm@rtService for SIMATIC Panel;<br>WinCC flexible /OPC-Server for SIMATIC Multi Panel;<br>WinCC flexible /ProAgent for SIMATIC Multi Panel | |
| • only license key on USB flash drive, single license | **6AV6618-7XX01-3AF0** |
| • as download 2), only license key download, single license, email address required for delivery | **6AV6618-7XX01-3AK0** |

| | Article No. |
|---|---|
| *Communication via Industrial Ethernet* | |
| **SIMATIC NET HARDNET-IE S7 V12** | |
| Software for S7 communication and open communication; OPC, PG/OP communication, configuring software; up to 120 connections; Single License for 1 installation of runtime software, software and electronic manual on DVD | |
| • Single license for 1 installation | **6GK1716-1CB12-0AA0** |
| • Software Update Service for one year, with automatic extension; requirement: Current software version | **6GK1716-1CB00-3AL0** |
| • Upgrade S7-1613 from V6.4 to S7-1613 V8.0 SP1 | **6GK1716-1CB00-3AE0** |
| • Upgrade S7-1613 from V6.0, V6.1, V6.2 or V6.3 to S7-1613 V8.0 SP1 | **6GK1716-1CB00-3AE1** |

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1) Runtime licenses for WinCC flexible Runtime options must be purchased separately for each target system.

2) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## Ordering data

| | Article No. |
|---|---|
| *Communication via PROFIBUS* | |
| **CP 5613 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-3AA02** |
| **CP 5614 A3**<br>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately) | **6GK1561-4AA02** |
| **SIMATIC NET PB S7-5613 V8.0 SP1**<br>Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; Runtime software, software and electronic manual on USB flash drive, license key on diskette, Class A, for 32-bit Windows 7 Professional/Ultimate for up to 4 CP 5613 A2, CP5614 A2, CP 5603 / CP 5623 / CP 5624; | |
| • Software Update Service for one year, with automatic extension; requirement: current software version | **6GK1713-5CB00-3AL0** |
| • Upgrade S7-5613 from V6.4 to S7-5613 V8.0 SP1 | **6GK1713-5CB00-3AE0** |
| • Upgrade S7-5613 from V6.0, V6.1, V6.2 or V6.3 to S7-5613 V8.0 SP1 | **6GK1713-5CB00-3AE1** |

| | Article No. |
|---|---|
| **CP 5612**<br>PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC flexible basic package) | **6GK1561-2AA00** |
| **CP 5622**<br>PCI Express X1 card (32-bit) for connection of PG/PC to PROFIBUS or MPI (communications software included in WinCC flexible basic package) | **6GK1562-2AA00** |
| **CP 5711**<br>USB adapter (USB V2.0) for connecting a PG/notebook to PROFIBUS or MPI (communications software included in WinCC basic package) | **6GK1571-1AA00** |
| **SIMATIC S7, MPI cable**<br>For linking SIMATIC S7 and PG via MPI | **6ES7901-0BF00-0AA0** |

Additional information is available on the Internet at:

http://www.siemens.com/wincc-flexible

## Overview

### *Option for SIMATIC WinCC flexible Engineering*

SIMATIC WinCC flexible /ChangeControl

WinCC flexible /ChangeControl enables consistent backup of configuration data.

The history of changes can be verified down to the last detail for applications requiring interruption-free proof for the complete life cycle of a product.

### *Options for SIMATIC Panels/Multi Panels and SIMATIC WinCC flexible Runtime*

SIMATIC WinCC flexible /Archives

Archiving of alarms and process values

SIMATIC WinCC flexible /Recipes

Generation and management of data records for machine or production data

SIMATIC WinCC flexible /Audit

Recording of operator actions in an Audit Trail

- Audit supports users in meeting special quality requirements, e.g.
  - Production plant requiring validation according to 21 CFR Part 11 (Food Drug Administration law)
  - In respect of traceability according to EU 175/2002 (EU directive)

SIMATIC Logon for WinCC flexible

Option for connecting PCs with SIMATIC WinCC flexible Runtime and SIMATIC Panels to central user administration.

SIMATIC WinCC flexible /Sm@rtAccess

- Flexible solution for access to HMI systems and process data from any location
- Communication between different SIMATIC HMI systems

SIMATIC WinCC flexible /Sm@rtService

- Remote maintenance and servicing of machines and plants via Internet/intranet
- Flexible solution for remote access to machines and plant

SIMATIC WinCC flexible /OPC server

- Incorporation of automation components from different vendors into a single automation concept
- Communication for data exchange between HMI systems and/or higher-level control system

SIMATIC WinCC flexible /ProAgent

- Precise and rapid process fault diagnostics in plant and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration overhead for diagnostics functionality

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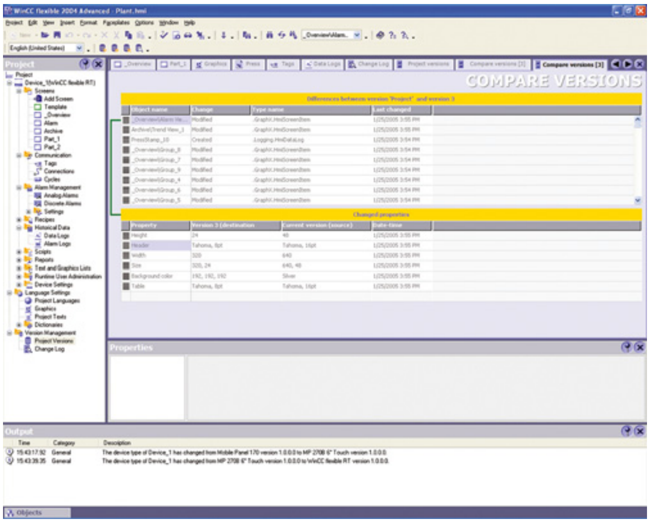
# WinCC flexible /ChangeControl

## Overview


WinCC flexible 2004 Advanced - Plant.hmi
Project
Properties
Output
Objects
COMPARE VERSIONS
Differences between version 'Project' and version 3
Changed properties
Compare versions [3]

- Options for the versioning of configuration data and for tracing configuration changes (e.g. as verification in regulated sectors)
- For the engineering tool SIMATIC WinCC flexible Compact/Standard/Advanced
- One license is required for each configuration computer

## Benefits

- Consistent backup of configuration data
  - Delivered versions, approved reference states or development stages are managed in a database.
  - Changes to project data can be integrated without problem into the version management using new versions. A rollback is possible at any time.
- Tracing of configuration changes
  - The history of changes can be verified down to the last detail for applications requiring interruption-free proof for the complete life cycle of a product.

## Ordering data

| | Article No. |
|---|---|
| **WinCC flexible /ChangeControl for WinCC flexible 2008 Compact/ Standard/Advanced** [1] | |
| • Floating license, license key only on USB flash drive | **6AV6613-6AA01-3AB5** |
| as download [2] | |
| • Floating license, only license key download; Email address required for delivery | **6AV6613-6AA01-3AH5** |

[1] The ChangeControl option has not been released for integrated operation with STEP 7.

[2] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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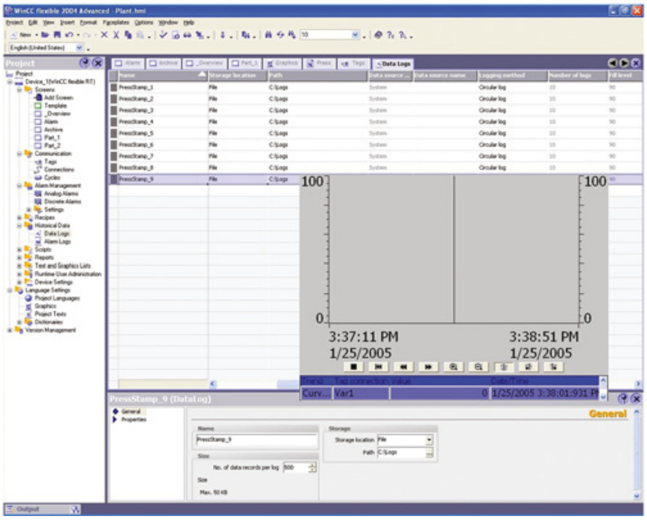
## Overview



- Option for SIMATIC WinCC flexible Runtime for archiving process values and messages
- Archiving of process values and messages supports the acquisition and processing of process data from an industrial plant or machine. Evaluation of the archived process data provides information about the operating states of the plant or machine
- One license is required per operator station (no license is required for SIMATIC Panels/Multi Panels)

## Technical specifications

| Type | WinCC flexible /Archives |
|---|---|
| | The specifications are maximum values |
| **Execution platform** | SIMATIC WinCC flexible Runtime |
| **Archives** | 100 |
| • Archivable data | Process values, messages |
| • Cyclical trigger for archiving process values (variables) | 1 s |
| • Max. number of entries per archive (incl. sequence archive) | 500,000 [1] |
| • Archive types | • Circulating archive<br>• Sequence archive (max. 400 per archive) |
| • Data storage format | CSV (**C**omma **S**eparated **V**ariable), RDB (**R**untime **D**ata **B**ase) and interface to Microsoft SQL database (database not included in scope of delivery) |

[1] Dependent on memory medium used

## Ordering data

| | Article No. |
|---|---|
| **WinCC flexible /Archives for WinCC flexible 2008 Runtime [1]** | |
| • Single license, license key only on USB flash drive | **6AV6618-7ED01-3AB0** |
| • Single license, license key download only [2]; Email address required for delivery | **6AV6618-7ED01-3AH0** |
| **WinCC flexible / Archives+Recipes for WinCC flexible 2008 Runtime [1]** | |
| • Single license, license key only on USB flash drive | **6AV6618-7GD01-3AB0** |
| • Single license, license key download only [2]; Email address required for delivery | **6AV6618-7GD01-3AH0** |

[1] One license is required for each operator station. A license is not required for the engineering system for configuring the Runtime option.

[2] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

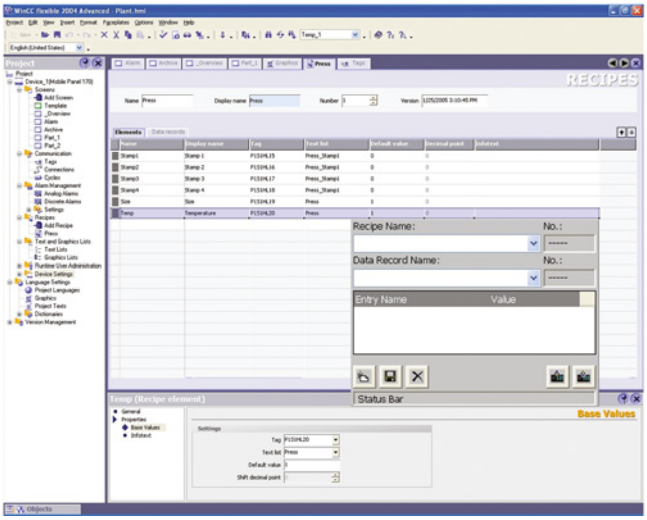
## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

## WinCC flexible /Recipes

### Overview



- Option for SIMATIC WinCC flexible Runtime for managing data records in recipes that contain related machine or production data
- The data in a data set can be transferred, for example, from the control unit to the PLC to switch production to a different product variant
- One license is required per operator station (no license is required for SIMATIC Panels/Multi Panels)

### Technical specifications

| Type | WinCC flexible /Recipes |
|---|---|
| | The specifications are maximum values |
| **Execution platform** | SIMATIC WinCC flexible Runtime |
| **Recipes** | |
| • Entries per recipe | 1000 |
| • Data records per recipe | 2000 [1] |
| • User data length in bytes per data record | 5000 [2] |
| | 8000 KB [2] |

[1] Dependent on number of licensed PowerTags

[2] Dependent on memory medium used

### Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC flexible /Recipes for WinCC flexible 2008 Runtime [1]** | |
| • Single license, license key only on USB flash drive | **6AV6618-7FD01-3AB0** |
| • Single license, license key download only as download [2]; E-mail address required for the delivery | **6AV6618-7FD01-3AH0** |
| **WinCC flexible / Archives+Recipes for WinCC flexible 2008 Runtime [1]** | |
| • Single license, license key only on USB flash drive | **6AV6618-7GD01-3AB0** |
| • Single license, license key download only as download [2]; E-mail address required for the delivery | **6AV6618-7GD01-3AH0** |

[1] One license is required for each operator station. A license is not required for the engineering system for configuring the Runtime option.

[2] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

### More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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## Overview

***WinCC flexible /Audit***

- Option for SIMATIC WinCC flexible Runtime as well as SIMATIC Panels for recording operations in an audit trail, and electronic signature
- The audit trail features a safety mechanism that indicates subsequent manipulation.
- An easy-to-use configuration option included as standard in WinCC flexible enables you to set:
  - The operator actions to be recorded in the audit trail during runtime
  - The important operator actions requiring electronic signature/comments during runtime
- The audit option combined with the WinCC flexible ES ChangeControl option supports the user with plant validation
- Available for the following SIMATIC HMI systems: TP/OP 270, TP/OP 277, MP 270B, MP 277, MP 370, MP 377, WinCC flexible Runtime
- A license is required for every operator station (panel or PC)

## Ordering data

| | Article No. |
|---|---|
| **WinCC flexible /Audit for SIMATIC Panels** [1] | |
| • Single license, license key only on USB flash drive | **6AV6618-7HB01-3AB0** |
| • Single license, license key download only as download [2]; E-mail address required for the delivery | **6AV6618-7HB01-3AH0** |
| **WinCC flexible /Audit for WinCC flexible Runtime 2008** [1] | |
| • Single license, license key only on USB flash drive | **6AV6618-7HD01-3AB0** |
| • Single license, license key download only as download [2]; E-mail address required for the delivery | **6AV6618-7HD01-3AH0** |

[1] One license is required for each operator console. A license is not required for the engineering system for configuring the runtime option.

[2] Current information and availability regarding the new delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

## Technical specifications

| | **WinCC flexible /Audit** |
|---|---|
| Archive for Audit Trail use on the Panel | • Plug-in flash memory card on the panel<br>• In the higher-level PC (memory medium) connected to the panel via Ethernet |
| Archive for Audit Trail use of WinCC flexible Runtime | On the PC (storage medium) |
| **Execution platform** | |
| SIMATIC Panels | Mobile Panel 277, TP/OP 270, TP/OP 277 |
| SIMATIC Multi Panels | MP 270B, MP 277, MP 370, MP 377 |
| PCs | SIMATIC WinCC flexible Runtime |

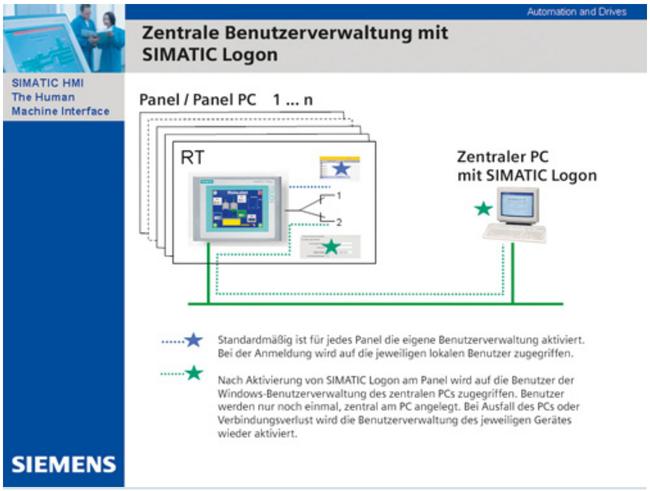
## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

## SIMATIC Logon for WinCC flexible

### Overview



**Zentrale Benutzerverwaltung mit SIMATIC Logon**

Standardmäßig ist für jedes Panel die eigene Benutzerverwaltung aktiviert. Bei der Anmeldung wird auf die jeweiligen lokalen Benutzer zugegriffen.

Nach Aktivierung von SIMATIC Logon am Panel wird auf die Benutzer der Windows-Benutzerverwaltung des zentralen PCs zugegriffen. Benutzer werden nur noch einmal, zentral am PC angelegt. Bei Ausfall des PCs oder Verbindungsverlust wird die Benutzerverwaltung des jeweiligen Gerätes wieder aktiviert.

- Option for connecting PCs with SIMATIC WinCC flexible Runtime and SIMATIC Panels to central user administration SIMATIC Logon.
- Creates user administration on a central computer to which one or more WinCC flexible stations can be connected over Ethernet.
- SIMATIC Logon for WinCC flexible supports the user in combination with the /Audit and /ChangeControl options in meeting requirements in accordance with FDA 21 CFR Part 11 and EU178.

### Design

SIMATIC Logon and SIMATIC Logon Remote Access are installed on a central station.

The following WinCC flexible stations are connected to the central station via Ethernet network:

- PCs with WinCC flexible Runtime
- SIMATIC Panels from the 177 series or higher (panels with Ethernet interface)

***Licensing***

The following licenses are required:

- SIMATIC Logon basic license
- SIMATIC Logon Remote Access license (3-pack license 10-pack license); more than one SIMATIC Logon Remote Access license can be installed.

The number of connectable stations depends on the SIMATIC Logon Remote Access licenses used. This number is the total of the connections provided by the individual licenses. As an example: Two installed licenses for 10 enable the connection of 20 stations to the central station.

### Technical specifications

| | **SIMATIC Logon for WinCC flexible** |
|---|---|
| **Execution platform** | |
| SIMATIC Panels | Mobile Panel 177 PN;<br>Mobile Panel 277,<br>TP/OP 177B PN/DP, TP/OP 277 |
| SIMATIC Multi Panels | MP 177, MP 277, MP 377 |
| PCs | WinCC flexible Runtime |

### Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC Logon V1.5**<br>Basic license;<br>for panels or WinCC flexible Runtime stations,<br>the corresponding number of additional SIMATIC Logon Remote Access licenses is required. | **6ES7658-7BX51-0YA0** |
| **SIMATIC Logon Upgrade to V1.5** | **6ES7658-7BX51-0YE0** |
| **SIMATIC Logon Remote Access for WinCC flexible (3 clients)**<br>Remote access for 3 WinCC flexible 2008 clients;<br>single license for 3 remote access clients;<br>type of delivery:<br>CD, license key disk, Certificate of License, Terms and Conditions<br>The number of licensed clients is determined based on the amount of installed SIMATIC Logon remote access licenses. | **6ES7658-7BA00-2YB0** |
| **SIMATIC Logon Remote Access for WinCC flexible (10 clients)**<br>Remote access for 10 WinCC flexible 2008 clients;<br>single license for 10 remote access clients;<br>type of delivery:<br>CD, license key disk, Certificate of License, Terms and Conditions<br>The number of licensed clients is determined based on the amount of installed SIMATIC Logon remote access licenses. | **6ES7658-7BB00-2YB0** |

### More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products",where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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## Overview

- Option for SIMATIC WinCC flexible Runtime plus SIMATIC Panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - Mobile Panel 177 PN, Mobile Panel 277
  - TP 177B PN/DP, OP 177B PN/DP
  - TP 270, TP 277, OP 270, OP 277
  - MP 177, MP 270B, MP 277, MP 370, MP 377
  - WinCC flexible Runtime
- Communication between HMI systems is established on the basis of Ethernet networks, or via the intranet/Internet:
  - Read and write access to tags;
  - One SIMATIC HMI system can be remotely controlled or monitored from another one;
- Licensing:
  The license "WinCC flexible /Sm@rtAccess for Panel" or "WinCC flexible /Sm@rtAccess for WinCC flexible Runtime" must be installed on both the server and client HMI device.

Note:

If the operator stations are accessed using the Sm@rtAccess option, suitable protective measures (including IT security such as network segmentation) should be taken in order to ensure safe operation of the system.

You will find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

## Technical specifications

| **Type** | **WinCC flexible /Sm@rtAccess** |
|---|---|
| | The specifications are maximum values |
| **Execution platform** | |
| • SIMATIC Panels | Mobile Panel 177 PN, Mobile Panel 277, TP/OP 177B PN/DP, TP/OP 270, TP/OP 277 |
| • SIMATIC Multi Panels | MP 177, MP 270B, MP 277, MP 370, MP 377 |
| • PCs | WinCC flexible Runtime |
| **Sm@rtAccess SIMATIC HMI HTTP protocol** | |
| Number of connections for one client | |
| • Mobile Panel 177 PN, TP/OP 177 B PN/DP, MP 177 as HTTP server | 4 |
| • Mobile Panel 277, TP/OP 270, TP/OP 277, MP 270B, MP 277, MP 370, MP 377 as HTTP server | 8 |
| • for WinCC flexible Runtime | 16 |
| **Sm@rtAccess Sm@rtClient concept** | |
| Number of Sm@rtClients that can connect to a Sm@rtServer at the same time[1] [2] | |
| • Mobile Panel 177 PN, TP/OP 177B PN/DP, MP 177 as Sm@rtServer | 2 clients |
| • Mobile Panel 277, TP/OP 270, TP/OP 277, MP 270B, MP 277 as Sm@rtServer | 3 clients for 6" devices<br>2 clients for 8" and 10" devices |
| • MP 370, MP 377 as Sm@rtServer | 3 clients for 12" devices<br>2 clients for 15" devices<br>1 client for 19" devices |
| • for WinCC flexible Runtime as Sm@rtServer | 5 clients |
| Number of Sm@rtClient displays per screen | |
| • for Panels/Multi Panels | 1 |
| • for WinCC flexible Runtime | 2 |

[1] Including 1 Service Client

[2] The Sm@rtServer and the WinCC flexible/Pro Agent option cannot be used simultaneously on OP/TP/MP 270/370. Parallel operation of the runtime options ProAgent, Sm@rtAccess and Sm@rtService is possible in the context of the MP 277 8" and 10" devices, Mobile Panel 277 as well as the MP 377. Limitation: a maximum of 2 clients can be connected simultaneously to a Sm@rtServer.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC flexible /Sm@rtAccess for SIMATIC Panel** [1] | |
| • Single license, license key only on USB flash drive as download | **6AV6618-7AB01-3AB0** |
| • Single license, license key download only [2]<br>E-mail address required for the delivery | **6AV6618-7AB01-3AH0** |
| **WinCC flexible /Sm@rtAccess for WinCC flexible 2008 Runtime** [1] | |
| • Single license, license key only on USB flash drive as download | **6AV6618-7AD01-3AB0** |
| • Single license, license key download only [2]<br>E-mail address required for the delivery | **6AV6618-7AD01-3AH0** |

[1] The license must be installed on the server and on the client HMI device. Server applications are the options Sm@rtServer, HTTP server and SOAP server. Client applications are the screen object Sm@rtClient display, and the utilization of the communication driver HTTP protocol. A license is not required for the engineering system for configuring the runtime option.

[2] Current information and availability regarding the new delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

## Overview

- Option for SIMATIC WinCC flexible Runtime and SIMATIC Panels for remote maintenance and servicing of machines/plants via the Internet/intranet
- Available for the following SIMATIC HMI systems:
  - Mobile Panel 177 PN, Mobile Panel 277
  - TP 177B PN/DP, OP 177B PN/DP
  - TP 270, TP 277, OP 270, OP 277
  - MP 177, MP 270B, MP 277, MP 370, MP 377
  - WinCC flexible Runtime
- Licensing
  The "WinCC flexible /Sm@rtService for Panel" license or "WinCC flexible /Sm@rtService for WinCC flexible Runtime" license must be installed on the operator panels that use one of the following options/functions: Sm@rtServer, HTML pages (mini-Web server), e-mail.

Note:

If the operator stations are accessed using the Sm@rtService option, suitable protective measures (including IT security such as network segmentation) should be taken in order to ensure safe operation of the system.

You will find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

## Application

- Remote maintenance and servicing of machines and plants via Internet/Intranet
- Calling of system information, control of target systems, and updating of data sets via Internet/Intranet
- Automatic sending of emails to experts for fast elimination of faults

## Technical specifications

| Type | WinCC flexible /Sm@rtService |
|---|---|
| **Execution platform** | |
| • SIMATIC Panels | Mobile Panel 177 PN, Mobile Panel 277, TP 177B PN/DP, OP 177B PN/DP, TP/OP 270, TP/OP 277 |
| • SIMATIC Multi Panels | MP 177, MP 270B, MP 277, MP 370, MP 377 |
| • PCs | SIMATIC WinCC flexible Runtime |
| **Sm@rtService** 1) | |
| Remote access via | Internet Explorer V6.0 SP1 and higher |
| HTML pages | |
| • for Panels/Multi Panels | HTML V1.1 (no support for ActiveX, Java, ASP) |
| • for WinCC flexible Runtime | HTML V1.1 |
| Sending emails | • via SMTP server<br>• Subject, message texts with 250 characters of text per email; date/time of message, message no. |

1) The Sm@rtServer and the WinCC flexible/ProAgent option cannot be used simultaneously on OP/TP/MP 270/370. Parallel operation of the runtime options ProAgent, Sm@rtAccess and Sm@rtService is possible in the context of the MP 277 8" and 10" devices, Mobile Panel 277 as well as the MP 377. Limitation: a maximum of 2 clients can be connected with a Sm@rtServer.

## Ordering data

| | Article No. |
|---|---|
| **WinCC flexible /Sm@rtService for SIMATIC Panels** 1) | |
| • Single license, license key only on USB flash drive | **6AV6618-7BB01-3AB0** |
| • Single license, license key download only 2); E-mail address required for the delivery | **6AV6618-7BB01-3AH0** |
| **WinCC flexible /Sm@rtService for WinCC flexible Runtime 2008** 1) | |
| • Single license, license key only on USB flash drive | **6AV6618-7BB01-3AB0** |
| • Single license, license key download only 2); E-mail address required for the delivery | **6AV6618-7BD01-3AH0** |

1) The "WinCC flexible /Sm@rtService for Panel" license or "WinCC flexible /Sm@rtService for WinCC flexible Runtime" license must be installed on the operator panels that use one of the following options: Sm@rtServer, HTML pages, e-mail. The remote service PC and engineering system do not require a license for configuration of the Runtime option.

2) Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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# WinCC flexible /OPC-Server

## Overview

- Option for SIMATIC WinCC flexible Runtime as well as Multi Panels for communication with applications from different manufacturers (e.g. MES, ERP, or applications in the office sector)
- Available for the following SIMATIC HMI systems:
  - Mobile Panel 277, MP 270B, MP 277, MP 370, MP 377 (use of OPC on XML basis)
  - WinCC flexible Runtime (use of OPC based on DCOM)
- One license is required for each operator station.

## Application

### *OPC Foundation*

http://www.opcfoundation.org

## Technical specifications

| Type | WinCC flexible /OPC-Server |
|---|---|
| | The specifications are maximum values |
| **Execution platform** | |
| • SIMATIC Panels | Mobile Panel 277 |
| • SIMATIC Multi Panels | MP 270B, MP 277, MP 370, MP 377 |
| • PCs | SIMATIC WinCC flexible Runtime |
| **OPC-Server** | |
| • XML server for Multi Panels | Supports the OPC XML Data Access specification V1.0 [1] |
| • DCOM server for WinCC flexible Runtime | Supports the OPC Data Access specification V1.0a and V2.0 |
| • Number of connections that an OPC server can accommodate | 8 |

[1] Data access via XML has a functional scope that is similar to OPC Data Access. A software adapter is required that must be installed on the OPC client PC to enable DCOM-based OPC clients to access the OPC XML server without any modification. The software adapter is supplied with WinCC flexible Engineering and Runtime.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC flexible /OPC-Server for SIMATIC Multi Panels** [1] | |
| • Single license, license key only on USB flash drive | **6AV6618-7CC01-3AB0** |
| • Single license, license key download only [2]; E-mail address required for the delivery | **6AV6618-7CC01-3AH0** |
| **WinCC flexible /OPC-Server for WinCC flexible Runtime 2008** [1] | |
| • Single license, license key only on USB flash drive | **6AV6618-7CC01-3AB0** |
| • Single license, license key download only [2]; E-mail address required for the delivery | **6AV6618-7CC01-3AH0** |

[1] One license is required for each operator station. A license is not required for the engineering system for configuring the Runtime option.

[2] Current information and availability regarding the new delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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## Overview

- Targeted and rapid process diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time

Note:

For more information, see "Process Diagnostics Software SIMATIC ProAgent".

## Ordering data

| Ordering data | Article No. |
|---|---|
| **WinCC flexible /ProAgent for SIMATIC Panels** [1]<br>executable on Mobile Panel 277, TP/OP/MP 270/277 and MP 370/377 | |
| • single license, only license key on USB flash drive | **6AV6618-7DB01-3AB0** |
| • single license, only license key download [2]; email address required for delivery | **6AV6618-7DB01-3AH0** |
| **WinCC flexible /ProAgent for WinCC flexible Runtime 2008** [1] | |
| • single license, only license key on USB flash drive | **6AV6618-7DD01-3AB0** |
| • single license, only license key download [2]; email address required for delivery | **6AV6618-7DD01-3AH0** |

[1] One license is required for each operator station. A license is not required for the engineering system for configuring the Runtime option.

[2] Current information and availability regarding the new type of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

## More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

## Notes

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# PC-based Automation

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*For power supply and communication, see next page.*

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# PC-based Automation

# 4

**4/265 SITOP power supply**
4/265 SITOP PSU6200
4/265 1-phase, 24 V DC
4/265 3-phase, 24 V DC
4/267 DC UPS with capacitors
4/267 SITOP UPS500S, SITOP UPS501S
4/268 DC UPS with battery modules
4/268 SITOP UPS1600 DC UPS modules
4/269 SITOP UPS1100 battery modules

**4/270 Communication**
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4/270 CP 1604
4/271 CP 1616
4/272 CP 1612 A2
4/273 CP 1623
4/274 CP 1625
4/275 CP 1626
4/276 CP 1628
4/277 HARDNET-IE S7-REDCONNECT
4/278 SOFTNET for Industrial Ethernet
4/279 SOFTNET PN IO
4/281 OPC server for Industrial Ethernet
4/282 S7 OPC Redundancy for Industrial Ethernet
4/283 SNMP OPC server
4/284 SINEMA server
4/285 PROFIBUS
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4/286 CP 5613 A3
4/287 CP 5614 A3
4/288 CP 5623
4/289 CP 5624
4/290 CP 5612
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4/292 CP 5711
4/293 SOFTNET for PROFIBUS
4/294 S7 OPC Redundancy for PROFIBUS
4/295 PC adapter USB A2

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## Overview

### *SIMATIC Industrial PC*

Our reliable and innovative SIMATIC industrial PCs are the optimal PC hardware platform for PC-based Automation from Siemens.

Rack PC

Rack PCs are flexible, high-availability industrial PC systems for powerful yet compact applications using 19" technology.

Box PC

SIMATIC Box PCs provide mechanical engineers, plant engineers and control cabinet makers with particularly rugged industrial PC systems for use in powerful yet compact applications.

Panel PC

SIMATIC Panel PCs are suitable thanks to their high industrial compatibility for use in control cabinets, consoles and control panels, as well as directly on the machine. Typical areas of application can be found in both factory and process automation.

Tablet PC

The SIMATIC Industrial Tablet PC taps new application areas within the scope of Industrie 4.0. Designed for industrial use, the SIMATIC ITP1000 delivers convincing results with its many functions for day-to-day working. Typical applications are in maintenance/service, production and measuring and testing.

Industrial monitors and Thin Clients

Flexible operator input concepts can be implemented via Flat Panel monitors or Thin Clients. These are industry-standard LCD monitors with high-contrast displays that can be located at quite some distance from the PC, or low-cost, rugged Thin Clients that offer HMI functionality over the network in larger plants spread over wide areas.

### *Devices for special requirements*

Fully enclosed IP65 devices

The fully enclosed SIMATIC PRO devices are ideal for industrial applications in harsh environments due to their extremely rugged design. They are, for example, specially designed for mounting on a support arm/pedestal.

http://www.siemens.com/ip65-hmi-devices

Devices with stainless steel fronts

SIMATIC offers industry-specific versions for smooth use in accordance with regulations by modifying its standard devices. For the food and beverages industry, for example, we supply devices with stainless steel fronts, and for industries facing particularly harsh ambient conditions we offer fully enclosed, dust and splash proof devices in a rugged aluminum enclosure with high IP65 degree of protection.

Panels and Panel PCs with touch screens and stainless steel fronts are designed for machine-level operator control and monitoring in the food and beverages industry.

http://www.siemens.com/inox-hmi-devices

Devices for hazardous areas

Intrinsically safe SIMATIC Panel PCs and Thin Clients specially designed for hazardous areas.

http://www.siemens.com/simatic-hmi-ex

IPC software

A graded concept is available for effective early detection of potential failures and minimization of actual downtimes. It consists of hardware and software expansion options specially developed for SIMATIC IPCs, which can be used to increase availability on a system-specific basis, depending on safety requirements.
The following components are available:

- SIMATIC IPC Image & Partition Creator
- SIMATIC IPC DiagMonitor
- SIMATIC IPC Remote Manager
- SIMATIC IPC FirmwareManager
- SIMATIC Industrial OS

Embedded bundles and starter systems with industrial PCs

Embedded industrial PCs are available at attractive prices as ready-to-use SIMATIC embedded bundles complete with a Windows Embedded operating system and pre-installed and pre-configured SIMATIC visualization and control software.

The starter systems are based on the Windows 10 operating system and also contain pre-installed and pre-configured SIMATIC visualization and control software. They are efficient, cost-effective, ready-to-run overall packages that enable clearly faster commissioning.

http://www.siemens.com/simatic-embedded-bundles

Software packages for SIMATIC IPCs

Software packages are offered for all available SIMATIC IPCs that, when ordered, produce genuine price advantages. All you have to do is: Select your SIMATIC IPC, configure it, and order it together with the SIMATIC WinCC RT Advanced, WinCC RT Professional and WinCC V7 software and also the SIMATIC WinAC RTX (F) Software Controller.

http://www.siemens.com/simatic-ipc-packages

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## Benefits

### *Reduction in standstill times thanks to high system availability*

- Assured 24-hour operation as a result of high-quality parts and components (high MTBF, speed-controlled fans)
- Efficient self-diagnostics for avoidance of potential failures (front status LEDs, SIMATIC IPC DiagMonitor diagnostics software for condition monitoring, local and remote)
- Minimum downtimes thanks to mirror disk systems and preventive data backup with SIMATIC IPC Image & Partition Creator and SIMATIC IPC BIOS Manager
- "Restore USB flash drive" or "Restore CD/DVD" for restoration of the delivery state
- Installed and activated Microsoft operating systems for time savings during installation

### *High degree of investment security for long-term automation concepts*

- Availability of 3-6 years (at least 1.5 years for Rack IPC547)
- 5-year repair and spare parts service (3 years for Rack IPC547) after expiration of the active marketing period
- Long-term concepts are implementable and reduce future engineering costs
- System-tested SIMATIC software (WinCC, WinAC, etc.) and connection options for distributed I/Os via an optional PROFIBUS or PROFINET interface on board link the industrial PCs with Totally Integrated Automation
- Certificates for worldwide marketing (cULus), the CE mark for use in industrial areas and in domestic, business and commercial environments
- Compatibility in hardware and software due to unchanged mechanical dimensions over generations or the use of existing user software on all devices of the same generation, for example
- Worldwide service and support (e.g. 24-hour SIMATIC Hotline)

## Application

SIMATIC IPCs are the ideal platform for PC-based Automation and are used both in the production and process industry, as well as in industry-oriented sectors such as traffic engineering, building management, warehouse systems.

Typical applications include:

- Instrumentation and control tasks (e.g. with SIMATIC Software Controller, also fail-safe)
- Operator control and monitoring (e.g. with SIMATIC WinCC flexible, WinCC RT Advanced, or WinCC)
- Data acquisition
- Image processing
- Communication, gateways

## More information

### *Notes on the scope of delivery*

Microsoft operating systems are pre-installed in an OEM version.

The scope of supply also includes:

- Recovery CD for simple reinstallation of the operating system (not for IPC547G, IPC647D and IPC847D)
- Restore USB flash drive or restore DVD (only for IPC547G, IPC647D and IPC847D) for fast and very easy restoration of the PC delivery status
- "SIMATIC IPC Documentation and Drivers" on USB flash drive or DVD (only for IPC547G, IPC647D and IPC847D)
- Compact Operating Instructions (German/English/French/Spanish/Italian/Chinese)
- Electronic manual on "IPC Documentation and Drivers" data storage medium

Additional information is available on the Internet at:

http://www.siemens.com/simatic-ipc

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## Overview

Rack PCs are flexible, high-availability industrial PC systems for powerful yet compact applications using 19" technology. Four device classes are available for different requirements:

**SIMATIC IPC347** – high performance at an optimized price

**SIMATIC IPC547** – latest technology and maximum performance

**SIMATIC IPC647** – maximum compactness combined with maximum industrial functionality

**SIMATIC IPC847** – maximum expandability and industrial functionality

**SIMATIC IPC1047** – maximum performance and expandability

Shared industrial functionality of the IPC series 547, 647 and 847

- Maximum system performance for complex automation tasks and computationally intensive PC tasks in the industrial environment through use of Intel Core processors
- Designed for 24-hour continuous operation
- Monitoring and diagnostics functions (e.g. temperature, fan, watchdog)
- RAID1 configuration (mirrored drives), optionally in hot swap removable drive bays
- Hard disks with capacities up to 2 TB for large volumes of data
- SSD (solid-state drive) SATA, also as RAID1 configuration, optional
- Redundant AC power supply, optional
- Compact dimensions for installation in control cabinets only 500 mm deep
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Lockable front door
- Service-friendly equipment design due to prepared telescopic rail mounting
- Service-friendly device design due, for example, to the replacement of filters/fans from the front without the need for tools, or opening of the enclosure with just one screw.
- Universal implementation as an industrial workstation or server
- Operating system pre-installed and activated for fast startup
- Fast restoration of the delivery status of the HDD thanks to restore DVD or USB flash drive
- High flexibility and expandability of components
- PCI and PCI Express expansion slots
- Independent industrial product design

***SIMATIC IPC347E – high performance at an optimized price***

- Intel Pentium and Intel Core i processors, 4th Generation
- Lockable front flap
- Uninterrupted duty at 40 °C ambient temperature without power loss
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- PCI and PCI Express expansion slots
- 7 configurations available ex stock at short notice
- Availability approx. 3 years
- Guaranteed spare parts availability for at least 3 years

## **Overview** (continued)

### *SIMATIC IPC547G – latest technology and maximum performance at an attractive price*

- Intel Core i processors 6th Generation and Xeon
- Maximum processor performance in maximum configuration without loss of power (throttling) at ambient temperatures of up to 40 °C
- Optional RAID5 configuration (striping with parity) in hot swap removable drive bay
- RAID1 and RAID5 configurations with additional hot spare hard disk, optional
- Hard disks with capacities up to 2 TB for large volumes of data
- Low noise output thanks to controlled fans
- Status and alarm LEDs at the front for signaling critical system states
- Availability approx. 3 years
- Guaranteed spare parts availability for at least 3 years

### *SIMATIC IPC647E – maximum compactness combined with maximum industrial functionality*

- Maximum compactness due to 4 free PCI/PCI Express slots for installing long expansion cards
- High thermal stability up to 50 °C ambient temperature, even at maximum processor performance
- High vibration/shock resistance thanks to special hard disk holders
- Intel Core i processors 8th Generation and Xeon
- ECC memory, optional
- SSD (solid-state drive) M.2 NVMe
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or the status display for Ethernet
- High component/design continuity
- Motherboard developed and manufactured by Siemens
- Availability for at least 5 years
- Guaranteed spare parts availability for at least 5 years

### *SIMATIC IPC847E – maximum expandability and industrial functionality*

- Maximum expandability due to 11 free PCI/PCI Express slots for installing long expansion cards
- High thermal stability up to 50 °C ambient temperature, even at maximum processor performance
- High vibration/shock resistance thanks to special hard disk holders
- Intel Core i processors 8th Generation and Xeon
- Optional RAID5 configuration (striping with parity) in hot swap removable drive bay
- RAID1 and RAID5 configurations with additional hot spare hard disk or SSD SATA optional
- ECC memory, optional
- SSD (solid-state drive) M.2 NVMe
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or the status display for Ethernet
- High component/design continuity
- Motherboard developed and manufactured by Siemens
- Availability for at least 5 years
- Guaranteed spare parts availability for at least 5 years

### *SIMATIC IPC1047 – maximum performance and expandability*

- Maximum computing capacity due to two Intel® Xeon® CPUs
- Maximum graphic capacity

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## Technical specifications

| Rack PC | SIMATIC IPC347E | SIMATIC IPC547G | SIMATIC IPC647E | SIMATIC IPC847E |
|---|---|---|---|---|
| **Design** | | | | |
| 19" rack | 4 U | 4 U | 2 U | 4 U |
| Housing depth | 463 mm | 447 mm or 357 mm | 444 mm | 444 mm |
| Prepared for telescopic rails | • | • | • | • |
| Horizontal/vertical installation | • / - | • / • | • / - | • / • |
| 19" mounting bracket can be removed from outside | • | • | • | • |
| Tower kit (optional) | - | • | - | • |
| **General features** | | | | |
| Processor | • Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz)<br>• Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz) | • Intel Xeon E3-1275 v5 1) (4C/8T, 3.6 (4.0) GHz)<br>• Intel Core i7-6700 (4C/8T, 3.4 (4.0) GHz)<br>• Intel Core i5-6500 (4C/4T, 3.2 (3.6) GHz)<br>• Intel Pentium G4400 (2C/2T, 3.3 GHz) | • Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz)<br>• Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz)<br>• Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz)<br>• Intel Core i3-8100 (4C/4T, 3.6 GHz) | • Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz)<br>• Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz)<br>• Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz)<br>• Intel Core i3-8100 (4C/4T, 3.6 GHz) |
| Main memory | • 2/4/8 GB, expandable up to 16 GB | • 4 GB, expandable up to 64 GB 1) | • 4 GB, expandable up to 64 GB, optional ECC | • 4 GB, expandable up to 64 GB, optional ECC |
| Slots for expansions (all lengths up to 312 mm) | 7 slots:<br>• 1 x PCI Express x16 (16 lanes)<br>• 1 x PCI Express x8 (2 lanes)<br>• 1 x PCI x1 (1 lane)<br>• 4 x PCI | 7 slots:<br>• 1 x PCI Express x16 (16 lanes)<br>• 1 x PCI Express x16 (4 lanes) 1)<br>• 1 x PCI Express x8 (1 lane)<br>• 1 x PCI Express x4 (4 lanes) 1)<br>• 1 x PCI Express x4 (1 lane)<br>• 2 x PCI<br>or 7 slots:<br>• 1 x PCI Express x16 (16 lanes)<br>• 1 x PCI Express x16 (1 lane)<br>• 1 x PCI Express x8 (1 lane)<br>• 2 x PCI Express x4 (1 lane)<br>• 2 x PCI | 2 slots:<br>• 1x PCI-Express (x16) (16 lanes)<br>• 1x PCI-Express (x16) (4 lanes)<br>or 4 slots:<br>• 2x PCI<br>• 2x PCI-Express (x16) (8 lanes)<br>or 4 slots:<br>• 2x PCI-Express (x16) (8 lanes)<br>• 1x PCI-Express (x16) (4 lanes)<br>• 1x PCI-Express (x16) (1 lane) | 9 slots:<br>• 7x PCI<br>• 2x PCI-Express (x16) (8 lanes)<br>or 11 slots:<br>• 3x PCI<br>• 1x PCI-Express (x16) (8 lanes)<br>• 5x PCI-Express (x16) (4 lanes)<br>• 2x PCI-Express (x4) (4 lanes)<br>or 11 slots:<br>• 3x PCI<br>• 1x PCI-Express (x16) (16 lanes)<br>• 3x PCI-Express (x16) (4 lanes)<br>• 2x PCI-Express (x16) (1 lane)<br>• 2x PCI-Express (x4) (4 lanes) |
| Onboard graphics | • 1 x DVI-D<br>• 1 x VGA | • 1 x or 2 x 1) DisplayPort (VGA/DVI-D via DP adapter cable, optional)<br>• 1 x DVI-D | • 2 x DisplayPort (VGA/DVI-D via DP adapter cable, optional)<br>• 1 x DVI-D | • 2 x DisplayPort (VGA/DVI-D via DP adapter cable, optional)<br>• 1 x DVI-D |
| Graphics card (optional) | - | Graphics card NVIDIA NVS 315 PCIe x16, dual head (2x DVI-D/VGA via adapter) | Graphics card NVIDIA Quadro P400 PCIe x16, triple head (3x mini DisplayPort, DisplayPort/ DVI-D/VGA via adapter) | Graphics card NVIDIA Quadro P400 PCIe x16, triple head (3x mini DisplayPort, DisplayPort/ DVI-D/VGA via adapter) |
| **Operating system** | | | | |
| None | • | • | • | • |
| Preinstalled and activated, supplied on restore medium | • Windows 7 Ultimate, multi-language (64-bit) | • Windows 7 Ultimate, multi-language (32-bit/64-bit)<br>• Windows 10 Enterprise 2016, LTSB, multi-language (64-bit)<br>• Windows 10 Enterprise 2015, LTSB, multi-language (64-bit)<br>• Windows Server 2008 R2 incl. 5 clients, multi-language (64-bit)<br>• Windows Server 2012 R2 incl. 5 clients, multi-language (64-bit)<br>• Windows Server 2016 incl. 5 clients, multi-language (64-bit) | • Windows 10 Enterprise 2016, LTSB, multi-language, (64-bit)<br>• Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) | • Windows 10 Enterprise 2016, LTSB, multi-language, (64-bit)<br>• Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Project-specific on request | - | • Linux 3)<br>• Other | - | - |

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## **Technical specifications** (continued)

| Rack PC | SIMATIC IPC347E | SIMATIC IPC547G | SIMATIC IPC647E | SIMATIC IPC847E |
|---|---|---|---|---|
| **Interfaces** | | | | |
| Ethernet | 2 x Realtek 10/100/1 000 Mbps (RJ45) | 2 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable) | 3 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable) | 3 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable) |
| USB 3.0 / 3.1 Gen.1 (high current) | 2 x type A on the rear | 6 x [1] or 4 x type A,<br>2 of which at front | 2 x type A on the front | 2 x type A on the front |
| USB 3.1 Gen. 2 (high current) | | | 4x type A,<br>2x type C on the rear;<br>1x type A internal, e.g. for software dongle with optional interlocking; | |
| USB 2.0 (high current) | 5 x type A, of which 2 x on the front<br>1 x type A internal,<br>2 x type A on the rear | 4 x type A on the rear,<br>1 x internal[1] e.g. for software dongle with optional lock | - | - |
| VGA | • | • optionally via DP adapter cable | | |
| DVI | • | • | • | • |
| DisplayPort | - | • | • | • |
| COM port (serial) | - | COM1, COM2 (optional) | COM1, COM2 (optional) | COM1, COM2 (optional) |
| LPT port (parallel) | - | LPT1 (optional) | - | - |
| PS/2 | • | • | - | - |
| Audio | • | • | • | • |
| **Drives** | | | | |
| SATA hard disks | | | | |
| • Internal installation | • | • | • | • |
| • Installation at the front in the removable drive bay | - | • | • | • |
| • Internal installation in drive cage (shock and vibration-damped) | - | • | • | • |
| RAID1/5 configuration with onboard RAID with SATA hard disks | - | • [1] / • [1] | • / - | • / • |
| RAID configuration with additional hot spare hard disk | - | • [1] | - | • |
| SSD (solid-state drive) SATA | • | • | • | • |
| RAID1 configuration with solid-state drive, SATA | - | • [1] | • | • |
| SSD (solid-state drive), M.2 NVMe | - | - | • | • |
| **Optical drives** | | | | |
| DVD±R/RW | - | • (Slim) | - | - |
| **Power supply** | | | | |
| Standard AC | • | • (with fan monitoring) | • (with fan monitoring) | • (with fan monitoring) |
| Redundant AC (optional) | - | • | • (with module monitoring) | • (with module monitoring) |
| **Ambient conditions** [4] | | | | |
| Vibration/ shock load during operation | - / - | 0.2 g/1 g | 0.5 g/5 g | 0.5 g/5 g |
| Ambient temperature during operation | With maximum configuration: 5 ... 40 °C | With maximum configuration: 0 ... 40 °C | With maximum configuration: 0 ... +50 °C | With maximum configuration: 0 ... +50 °C |

• Available

- Not available

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[1] Only with mainboard with C236 chipset

[2] Limitation regarding ambient temperature.

[3] Suitable for specific Linux versions in accordance with the specifications in the Siemens manufacturer's declaration "Suitable for Linux" (Linux is a trademark owned by Linus Torvald); see also: http://support.automation.siemens.com/WW/view/en/10805661/134200

[4] Restrictions when using DVD±R/RW, SAS HDDs, SATA Enterprise HDDs and hard disks in removable drive bay

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

***SIMATIC IPC347E***

The SIMATIC IPC347E is an industrial PC in 19" rack design (4U).

It offers:

- Optimized price
- High performance
- Intel Core i technology of the 4th Generation

## Technical specifications

| Article number | **6AG4012-1AA10-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CB31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CE31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) |
|---|---|---|---|---|---|---|---|
| **Installation type/mounting** | | | | | | | |
| Mounting | For horizontal rack mounting | | | | | | |
| Design | Rack PC, 19", 4U | | | | | | |
| Rack mounting | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Supply voltage** | | | | | | | |
| Type of supply voltage | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC |
| **Line frequency** | | | | | | | |
| • Rated value 50 Hz | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| • Rated value 60 Hz | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Processor** | | | | | | | |
| Processor type | Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache) | Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache) | Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache) | Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache) | Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache) | Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache) | Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache) |
| **Drives** | | | | | | | |
| Hard disk | 500 GB HDD | 500 GB HDD | 500 GB HDD | 500 GB HDD | 500 GB HDD | 1 TB HDD | |
| SSD | | | | | | | Yes; 256 GB |
| **Memory** | | | | | | | |
| Type of memory | DDR3-SDRAM | DDR3-SDRAM | DDR3-SDRAM | DDR3-SDRAM | DDR3-SDRAM | DDR3-SDRAM | DDR3-SDRAM |
| Main memory | 2 GB (pre-installed), support up to 16 GB | 4 GB (pre-installed), support up to 16 GB | 4 GB (pre-installed), support up to 16 GB | 4 GB (pre-installed), support up to 16 GB | 4 GB (pre-installed), support up to 16 GB | 8 GB (Pre-installed), support up to 16 GB | 8 GB (Pre-installed), support up to 16 GB |
| Capacity of main memory, max. | 2 Gbyte | 4 Gbyte | 4 Gbyte | 4 Gbyte | 4 Gbyte | | |
| **Hardware configuration** | | | | | | | |
| **Slots** | | | | | | | |
| • free slots | 4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes) | | | | | | |

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## **Technical specifications** (continued)

| Article number | **6AG4012-1AA10-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CB31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CE31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) |
|---|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | | |
| Interfaces/bus type | 2x Gbit Ethernet (RJ45), 1x DVI-D, 1x VGA, 4x USB 2.0 on rear, 2x USB 2.0 on front, 2x COM, 2x PS/2, Audio (Line In, Line Out, Micro) | | 2x Gbit Ethernet (RJ45) | 2x Gbit Ethernet (RJ45), 1x DVI-D, 1x VGA, 4x USB 2.0 on rear, 2x USB 2.0 on front, 2x COM, 2x PS/2, Audio (Line In, Line Out, Micro) | | | |
| Number of industrial Ethernet interfaces | 2 | 2 | 2 | 2 | 2 | | |
| USB port | 2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal | | | | | | |
| Connection for keyboard/mouse | 2x PS/2 | 2x PS/2 | 2x PS/2 | | 2x PS/2 | 2x PS/2 | 2x PS/2 |
| serial interface | 2x COM ports (RS 232, RS 422, RS 485) | | | | | | |
| Multimedia | | | | | | | |
| • Audio In/Out | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| • Microphone In | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Video interfaces** | | | | | | | |
| • Graphics interface | 1x VGA;<br>1x DVI-D | 1x VGA;<br>1x DVI-D | | 1x VGA;<br>1x DVI-D | 1x VGA;<br>1x DVI-D | 1x VGA;<br>1x DVI-D | 1x VGA;<br>1x DVI-D |
| **Industrial Ethernet** | | | | | | | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| - 1000 Mbps | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Integrated Functions** | | | | | | | |
| **Monitoring functions** | | | | | | | |
| • Status LEDs | POWER, HDD | POWER, HDD | POWER, HDD | POWER, HDD | POWER, HDD | POWER, HDD | POWER, HDD |
| **EMC** | | | | | | | |
| **Interference immunity against discharge of static electricity** | | | | | | | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2 | | | | | | |
| **Interference immunity against high-frequency electromagnetic fields** | | | | | | | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | | | | | | |
| **Interference immunity to cable-borne interference** | | | | | | | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric | | | | | | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge | ±2 kV acc. to IEC 61000-4-4, burst; length > 30 m;<br>±2 kV acc. to IEC 61000-4-5, surge; length > 30 m | | | | | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst | | | | | | |

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## Technical specifications (continued)

| Article number | **6AG4012-1AA10-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0XX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1AA21-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CB31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) | **6AG4012-1CE31-0BX0**<br>SIMATIC IPC347E (Rack PC, 19", 4U) |
|---|---|---|---|---|---|---|---|
| **Interference immunity against voltage surge** | | | | | | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | | | | | | |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | | | | | | |
| **Interference immunity to magnetic fields** | | | | | | | |
| • Interference immunity to magnetic fields at 50 Hz | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 | 30 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | | | | | | | |
| • Interference emission via line/AC current cables | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A | IEC 61000-6-4, CISPR 22, FCC Class A |
| **Compliance with line harmonic distortion limits** | | | | | | | |
| • Compliance with line harmonic distortion acc. to IEC 61000-3-2, IEC 61000-3-3 | Yes; EN 61000-3-2 Class D; EN 61000-3-3 | | | | | | |
| **Degree and class of protection** | | | | | | | |
| IP degree of protection | IP20 | IP20 | IP20 | IP20 | IP20 | | |
| IP (at the front) | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| FCC | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| EMC | CE, IEC 61000-6-4:2011, IEC 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 |
| **Ambient conditions** | | | | | | | |
| **Ambient temperature during operation** | | | | | | | |
| • Ambient temperature during operation | +5 °C to +40 °C | +5 °C to +40 °C | +5 °C to +40 °C | +5 °C to +40 °C | +5 °C to +40 °C | +5 °C to +40 °C | +5 °C to +40 °C |
| **Ambient temperature during storage/transportation** | | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | | | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30:<br>Operation: 5% to 80% at 25 °C (no condensation),<br>Storage: 5% to 95% at 25 °C (no condensation) | | | | | | |
| **Operating systems** | | | | | | | |
| pre-installed operating system | | | | Windows 7 Ultimate (Multi-Language) 64-bit | Yes | Windows 7 Ultimate (Multi-Language) 64-bit | Windows 7 Ultimate (Multi-Language) 64-bit |
| without operating system | Yes | Yes | Yes | | | | |
| **pre-installed operating system** | | | | | | | |
| • Windows 7 | | | | Yes; Ultimate 64 bit | Yes; Ultimate 64 bit | Yes; Ultimate 64 bit, SP1 | Yes; Ultimate 64 bit, SP1 |
| **Mechanics/material** | | | | | | | |
| Enclosure material (front) | | | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | | |
| **Dimensions** | | | | | | | |
| Width | 430 mm | 430 mm | 430 mm | 430 mm | 430 mm | 430 mm | 430 mm |
| Height | 177 mm | 177 mm | 177 mm | 177 mm | 177 mm | 177 mm | 177 mm |
| Depth | 463 mm | 463 mm | 463 mm | 463 mm | 463 mm | 463 mm | 463 mm |

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Configurations* | |
| **SIMATIC IPC347E** | |
| • **Configuration 1**<br>Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache); 500 GB HDD SATA, internal; 2 GB DDR3 SDRAM (1 x 2 GB); without operating system; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1AA10-0XX0** |
| • **Configuration 2**<br>Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1AA21-0XX0** |
| • **Configuration 3**<br>Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CA21-0XX0** |
| • **Configuration 4**<br>Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CA21-0BX0** |
| • **Configuration 5**<br>Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1AA21-0BX0** |
| • **Configuration 6**<br>Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB Cache); 1 TB HDD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CB31-0BX0** |
| • **Configuration 7**<br>Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB Cache); 256 GB SSD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply.<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CE31-0BX0** |
| • **Configuration 8**<br>Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 10 Enterprise LTSB 2016; 100/240 V AC industrial power supply;<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1AA21-0CX0** |
| • **Configuration 9**<br>Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB Cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 10 Enterprise LTSB 2016; 100/240 V AC industrial power supply;<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CA21-0CX0** |
| • **Configuration 10**<br>Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB Cache); 1 TB HDD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 10 Enterprise LTSB 2016; 100/240 V AC industrial power supply;<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CB31-0CX0** |
| • **Configuration 11**<br>Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB Cache); 256 GB SSD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 10 Enterprise LTSB 2016; 100/240 V AC industrial power supply;<br>Interfaces:<br>2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio | **6AG4012-1CE31-0CX0** |

Note:

Software packages with SIMATIC WinCC flexible, SIMATIC WinCC RT Advanced or Professional and SIMATIC WinCC can be ordered together with the SIMATIC IPC at favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

http://www.siemens.com/simatic-pc

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## Overview

***SIMATIC IPC547G***

The SIMATIC IPC547G is a rugged industrial PC in 19" rack design (4U).

It offers:

- Maximum performance
- Attractive price
- Intel Core i/Xeon technology, 6th Generation

## Technical specifications

| Article number | **6AG4104-4....-....**<br>SIMATIC IPC547G |
|---|---|
| **Installation type/mounting** | |
| Design | Rack PC, 19", 4U |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange)<br>50 / 60 Hz;<br>optional redundant 100/240 V AC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Xeon E3-1275 v5<br>(4C/8T, 3.6 (4.0) GHz, 8 MB Cache);<br>Core i7-6700<br>(4C/8T, 3.4 (4.0) GHz, 8 MB Cache);<br>Core i5-6500<br>(4C/4T, 3.2 (3.6) GHz, 6 MB Cache);<br>Pentium G4400<br>(2C/2T, 3.3 GHz, 3 MB Cache) |
| Chipset | Intel C236 / Intel H110 |
| **Graphic** | |
| Graphics controller | Onboard Intel HD graphics P530 / 530 /510 integrated in processor; graphics card PCIe (x16) (dual head: 2x VGA or 2x DVI-D) (optional) |
| **Drives** | |
| Optical drives | DVD±R/RW (SlimLine) |
| Hard disk | Internal installation: 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD), RAID1 (2x 1 TB HDD (Enterprise)); for front mounting in low-profile removable drive bay trays (hot-swap in RAID configuration): 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD), RAID1 (2x 1 TB HDD (Enterprise)), RAID1 (2x 2 TB HDD (Enterprise)), RAID1 (2x 2 TB HDD (Enterprise)) + 1x 2 TB HDD (Enterprise) as hot spare, RAID1 (2x 2 TB HDD (Enterprise)) + 1x 480 GB SSD, RAID5 (3x 2 TB HDD (Enterprise)), RAID5 (3x 2 TB HDD (Enterprise)) + 1x 2 TB HDD (Enterprise) as hot spare |
| SSD | Yes; 1x 240 GB, 1x 480 GB SSD, 2x 480 GB SSD, RAID1 (2x 480 GB SSD) |
| Slot for drives | Mounted internally in vibration/ shock-absorbing hard disk support, or mounted at the front in the low-profile removable drive bay (hot-swap in RAID configurations) |

## Technical specifications (continued)

| Article number | **6AG4104-4....-....**<br>SIMATIC IPC547G |
|---|---|
| **Memory** | |
| Main memory | 4 GB to 64 GB DDR4-2133 SDRAM |
| Capacity of main memory, max. | 64 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 7 spare slots for expansions (all long); mainboard with H110 chipset:<br>1x PCIe (x16) Gen 3,<br>1x PCIe (x16) (1 lane) Gen 2,<br>1x PCIe (x8) (1 lane) Gen 2,<br>1x PCIe (x4) (1 lane) Gen 2,<br>1x PCIe (x4) (1 lane) Gen 2, 2x PCI; mainboard with C236 chipset:<br>1x PCIe (x16) Gen 3,<br>1x PCIe (x16) (4 lanes) Gen 3,<br>1x PCIe (x8) (1 lane) Gen 3,<br>1x PCIe (x4) (4 lane) Gen 3,<br>1x PCIe (x4) (1 lane) Gen 3, 2x PCI |
| **Interfaces** | |
| Interfaces/bus type | Interfaces mainboard (H110 chipset): 2x Intel Gigabit Ethernet (RJ45, teaming-capable), 4x USB 3.0: 2x on rear, 2x on front, 4x USB 2.0: 4x on rear, 1x DisplayPort V1.2, 1x DVI-D, 2x PS/2, audio: Line in, line out, micro; interfaces mainboard (C236 chip set): 2x Intel Gigabit Ethernet (RJ45, teaming-capable), 6x USB 3.0: 4x on rear, 2x on front, 5x USB 2.0: 4x on rear, 1x internal e.g. for software dongle with optional interlock, 2x DisplayPort V1.2, 1x DVI-D, 1x COM1, 2x PS/2, audio: line in, line out, micro |
| USB port | Mainboard (H110 chipset): 4x USB 3.0: 2x on rear, 2x on front, 4x USB 2.0: 4x on rear; mainboard (C236 chipset): 6x USB 3.0: 4x on rear, 2x on front, 5x USB 2.0: 4x on rear, 1x internal e.g. for software dongle with optional interlock |
| Connection for keyboard/mouse | 2x PS/2 |
| serial interface | COM1: 1x RS 232,<br>COM2 (optional): 1x RS 232 |
| parallel interface | optional LPT1 |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB graphics memory (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

| Article number | **6AG4104-4....-....**<br>SIMATIC IPC547G |
|---|---|
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD, TEMP, FAN, HDD0 ALARM, HDD1 ALARM, HDD2 ALARM, HDD3 ALARM |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 30 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, FCC Class A,<br>EN 61000-6-4, CISPR 22,<br>EN 55022 Class B,<br>EN 61000-3-2 Class D,<br>EN 61000-3-3 |
| **Degree and class of protection** | |
| IP (at the front) | IP30 |
| IP (rear) | IP20 |

## Technical specifications (continued)

| Article number | **6AG4104-4....-....**<br>SIMATIC IPC547G |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) |
| CSA approval | Yes; Included in cULus |
| UL approval | Yes |
| cULus | Yes; UL 60950-1, file number E115352 |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to +40 °C in full configuration (no burner mode), at +5 °C to +35 °C without limitation |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6, 10 cycles; 20 to 58 Hz: 0.015 mm; 58 to 200 Hz: 2 m/s² (0.2 g) |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27; half-sine: 9.8 m/s² (1 g), 20 ms, 100 shocks per axis |

| Article number | **6AG4104-4....-....**<br>SIMATIC IPC547G |
|---|---|
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, multi-language (32-bit/64-bit),<br>Windows 10 Enterprise 2015 LTSB, multi-language (64-bit),<br>Windows 10 Enterprise 2016 LTSB, multi-language (64-bit),<br>Windows Server 2008 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2012 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **Dimensions** | |
| Width | 430 mm |
| Height | 177 mm; 4U |
| Depth | 446 mm; Device with short enclosure: 356 mm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC547G**<br>Rack PC, 19", 4 U<br>Interfaces:<br>2 x USB 3.0 at the front,<br>2 x Gbit Ethernet, 2 x PS/2, audio;<br>slots: 5 x PCI Express, 2 x PCI;<br>temperature and fan monitoring;<br>watchdog; card retainer | **6AG4104- 4 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Processors and mainboards | |
| • Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache); mainboard (chipset H110, 1 x DVI-D, 1 x DisplayPort V1.2, 2 x USB 3.0 & 4 x USB 2.0 at the rear) | **A** |
| • Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache); mainboard (chipset H110, 1 x DVI-D, 1 x DisplayPort V1.2, 2 x USB 3.0 & 4 x USB 2.0 at the rear) | **C** |
| • Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache); mainboard (chipset H110, 1 x DVI-D, 1 x DisplayPort V1.2, 2 x USB 3.0 & 4 x USB 2.0 at the rear) | **D** |
| • Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache); mainboard (chipset C236, 1 x DVI-D, 2 x DisplayPort V1.2, 4 x USB 3.0 & 4 x USB 2.0 at the rear, 1 x USB 2.0 internal, 1 x COM1; RAID onboard) | **E** |
| • Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache, iAMT); mainboard (chipset C236, 1 x DVI-D, 2 x DisplayPort V1.2, 4 x USB 3.0 & 4 x USB 2.0 at the rear, 1 x USB 2.0 internal, 1 x COM1; RAID onboard) | **G** |
| • Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache, iAMT); mainboard (chipset C236, 1 x DVI-D, 2 x DisplayPort V1.2, 4 x USB 3.0 & 4 x USB 2.0 at the rear, 1 x USB 2.0 internal, 1 x COM1; RAID onboard) | **H** |
| • Xeon E3-1275 v5 (4C/8T, 3.6 (4.0) GHz, 8 MB Cache, iAMT); mainboard (chipset C236, 1 x DVI-D, 2 x DisplayPort V1.2, 4 x USB 3.0 & 4 x USB 2.0 at the rear, 1 x USB 2.0 internal, 1 x COM1; RAID onboard) | **J** |

| | Article No. |
|---|---|
| **SIMATIC IPC547G** | **6AG4104- 4 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Drives (SATA) | |
| • 1 x 1 TB HDD, internal (0.2 g vibration, 1 g shock) | **A** |
| • 2 x 1 TB HDD, internal (0.2 g vibration, 1 g shock) | **B** |
| • 1 x 240 GB SSD, internal | **C** |
| • 1 x 480 GB SSD, internal | **D** |
| • 2 x 480 GB SSD, internal | **E** |
| • RAID1, 1 TB (2 x 1 TB HDD), internal (0.2 g vibration, 1 g shock) 1) | **F** |
| • RAID1, 1 TB (2 x 1 TB HDD [Enterprise]), internal (0.2 g vibration, 1 g shock) 1) | **G** |
| • 1 x 1 TB HDD in removable drive bay, on the front 2) | **H** |
| • 2 x 1 TB HDD in removable drive bay, on the front 2) | **J** |
| • 1 x 480 GB SSD in removable drive bay, on the front 2) | **K** |
| • 2 x 480 GB SSD in removable drive bay, on the front 2) | **L** |
| • RAID1, 480 GB (2 x 480 GB SSD) in removable drive bay, hot-swappable, on the front 1)2) | **M** |
| • RAID1, 1 TB (2 x 1 TB HDD) in removable drive bay, hot-swappable, on the front 1)2) | **N** |
| • RAID1, 1 TB (2 x 1 TB HDD [Enterprise]) in removable drive bay, hot-swappable, on the front 1)2) | **P** |
| • RAID1, 2 TB (2 x 2 TB HDD [Enterprise]) in removable drive bay, hot-swappable, on the front 1)2) | **Q** |
| • RAID1, 2 TB (2 x 2 TB HDD [Enterprise]) in removable drive bay, hot-swappable + 1 x 2 TB HDD [Enterprise] as hot spare in removable drive bay, on the front 1)2) | **R** |
| • RAID1, 2 TB (2 x 2 TB HDD [Enterprise]) in removable drive bay, hot-swappable + 1x 480 GB SSD in removable drive bay, on the front (operating system installed on SSD if configured) 1)2) | **S** |
| • RAID5, 4 TB (3 x 2 TB HDD [Enterprise]) in removable drive bay, hot-swappable, on the front 1)2) | **T** |
| • RAID5, 4 TB (3 x 2 TB HDD [Enterprise]) in removable drive bay, hot-swappable + 1 x 2 TB HDD [Enterprise] as hot spare in removable drive bay, on the front; (up to +35°C) 1)2) | **U** |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC547G** | **6AG4104-** **4 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration | |
| • 4 GB DDR3 SDRAM (1 x 4 GB), single channel | **0** |
| • 8 GB DDR3 SDRAM (2 x 4 GB), dual channel | **1** |
| • 16 GB DDR3 SDRAM (2 x 8 GB), dual channel | **2** |
| • 32 GB DDR3 SDRAM (2 x 16 GB), dual channel | **3** |
| • 64 GB DDR3 SDRAM (4 x 16 GB), dual channel [1] | **4** |
| Type of enclosure / power supplies and removable media | |
| • Enclosure (short), blue-chromated, 100/240 V AC industrial power supply, without removable media | **0** |
| • Enclosure, blue-chromated, 100/240 V AC industrial power supply, without removable media | **1** |
| • Enclosure, blue-chromated, 100/240 V AC industrial power supply, DVD±RW (slim) | **2** |
| • Enclosure, blue-chromated, 2 x 100/240 V AC redundant industrial power supply, without removable media | **3** |
| • Enclosure, blue-chromated, 2 x 100/240 V AC redundant industrial power supply, DVD±RW (slim) | **4** |
| • Painted enclosure, 100/240 V AC industrial power supply, without removable media | **5** |
| • Painted enclosure, 100/240 V AC industrial power supply, DVD±RW (slim) | **6** |
| • Painted enclosure, 2 x 100/240 V AC redundant industrial power supply, without removable media | **7** |
| • Painted enclosure, 2 x 100/240 V AC redundant industrial power supply, DVD±RW (slim) | **8** |
| Expansions (hardware) | |
| • Without expansions (hardware), onboard graphics | **0** |
| • Without expansions (hardware), onboard graphics; adapter cable DP to VGA for onboard graphics | **1** |
| • Without expansions (hardware), PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB | **2** |
| • Serial (COM2) + parallel (LPT); onboard graphics | **3** |
| • Serial (COM2) + parallel (LPT); onboard graphics; adapter cable DP to VGA for onboard graphics | **4** |
| • Serial (COM2) + parallel (LPT) + PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB | **5** |

| | Article No. |
|---|---|
| **SIMATIC IPC547G** | **6AG4104-** **4 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Operating systems (pre-installed and activated) | |
| • Windows 7 Ultimate, MUI (en, de, fr, it, es), 32-bit, SP1 | **A** |
| • Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1 | **B** |
| • Windows 10 Enterprise 2015 LTSB, Multi-language (En, De, Fr, It, Es), 64-bit | **C** |
| • Windows 10 Enterprise 2016 LTSB, Multi-language (En, De, Fr, It, Es), 64-bit (for Pentium / Core i5) | **D** |
| • Windows 10 Enterprise 2016 LTSB, Multi-language (En, De, Fr, It, Es), 64-bit (for Core i7 / Xeon) | **E** |
| • Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, Multi-language (En, De, Fr, It, Es) | **F** |
| • Windows Server 2012 R2 Standard Edition incl. 5 clients, 64-bit, MUI (En, De, Fr, It, Es) | **G** |
| • Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) | **H** |
| • Without operating system | **X** |
| Expansions (software) | |
| • SIMATIC IPC DiagMonitor software enclosed | **A** |
| • SIMATIC IPC Image & Partition Creator software included | **B** |
| • SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed | **C** |
| • Without expansions (software) | **X** |
| • Without expansions (software) / TPM 2.0 [3] (not for China or Russia) | **Y** |
| Country-specific versions | |
| • Without power supply cord | **0** |
| • Power supply cord for Europe | **1** |
| • Power supply cord for the USA | **2** |
| • Power supply cord for China | **3** |

---

[1] Only with mainboard with C236 chipset

[2] Not for use with short enclosure

[3] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

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## Ordering data

| | Article No. |
|---|---|
| *Preferred types (available at short notice from stock)* | |
| **SIMATIC IPC547G (Rack PC, 19", 4 U)** | **6AG4104-4AA05-3XX0** |
| **Configuration 1**<br>- Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache)<br>- Mainboard with chipset H110 1x 1 TB HDD, internal<br>- 4 GB DDR4 SDRAM (1x 4 GB)<br>- Painted enclosure<br>- 100/240 V AC industrial power supply<br>- Serial (COM2) + parallel (LPT)<br>- Without power supply cord | |
| **Configuration 2**<br>- Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache, iAMT)<br>- Mainboard with C236 chipset<br>- RAID1, 1 TB (2x 1 TB HDD) in removable tray, hot-swappable, on the front<br>- 8 GB DDR4 SDRAM (2 x 4 GB), dual channel<br>- Painted enclosure<br>- 100/240 V AC industrial power supply<br>- DVD +/-RW (slim)<br>- Serial (COM2) + parallel (LPT)<br>- Adapter cable DP to VGA for onboard graphics<br>- Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1<br>- Without power supply cord | **6AG4104-4GN16-4BX0** |
| **Configuration 3**<br>- Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache, iAMT)<br>- Mainboard with C236 chipset<br>- RAID1, 1 TB (2x 1 TB HDD Enterprise), in removable tray, hot-swappable, on the front<br>- 8 GB DDR4 SDRAM (2x 4 GB), dual channel<br>- Painted enclosure<br>- 2x 100/240V AC redundant industrial power supply<br>- DVD +/-RW (slim)<br>- Serial (COM2) + parallel (LPT)<br>- PCIe x16 graphics card (dual head: 2x VGA/2x DVI-D), 1 GB<br>- Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1<br>- Without power supply cord | **6AG4104-4HP18-5BX0** |

| | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansions** | |
| - 4 GB DDR4-2133 SDRAM | **6ES7648-2AL60-0PA0** |
| - 8 GB DDR4-2133 SDRAM | **6ES7648-2AL70-0PA0** |
| - 16 GB, DDR4-2133 SDRAM | **6ES7648-2AL80-0PA0** |
| **Removable drive bay**<br>for 3.5'' hard disk or 2.5'' solid-state drive, SATA (without hard disk drive/ solid-state drive) | **6ES7648-0EH00-1BA0** |
| **Tower Kit IPC547G**<br>To convert the computer into an industrial tower PC | |
| - Standard enclosure version | **6ES7648-1AA01-0XC0** |
| - Short enclosure version | **6ES7648-1AA01-0XE0** |
| **Adapter cable** | |
| - DisplayPort to DVI-D for onboard graphics | **6ES7648-3AF00-0XA0** |
| - DisplayPort to VGA for onboard graphics | **6ES7648-3AG00-0XA0** |
| **Retainer**<br>For mechanically interlocking the internal USB port | **6ES7648-1AA00-0XK0** |

Additional information is available on the Internet at:

http://www.siemens.com/ipc547g

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## Overview

### *SIMATIC IPC647E*

The SIMATIC IPC647E is a very rugged, high-performance industrial PC in 19" rack design (2 U) with excellent industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel® Core® i / Xeon technology 8th Generation

## Technical specifications

| Article number | **6AG4112-3....-....**<br>SIMATIC IPC647E (Rack PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | For horizontal installation; prepared for telescopic rails; 19" mounting bracket can be removed externally |
| Design | Rack PC, 19", 2U |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-x/-d technology) |
| Chipset | Intel C246 |
| **Graphic** | |
| Graphics controller | Onboard Intel UHD graphics P630/ 630 integrated in processor; graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional) |
| **Drives** | |
| Hard disk | 1x 1 TB 3.5 "SATA HDD, 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5 "SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5 "SATA HDD (Enterprise) |
| SSD | Yes; 1x 480 GB 2.5" SATA SSD, 1x 960 GB 2.5" SATA SSD, 2x 480 GB 2.5" SATA SSD, RAID1 2x 480 GB 2.5" SATA SSD; 1x 512 GB M.2 NVMe SSD, 1x 1 024 GB M.2 NVMe SSD |
| Slot for drives | Mounting internally in vibration/ shock-absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional |
| **Memory** | |
| Main memory | 4 GB to 64 GB DDR4 2666 SDRAM DIMM, ECC optional |
| Capacity of main memory, max. | 64 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2 slots: 1x PCI Express (x16) (16 lanes), 1x PCI Express (x16) (4 lanes) or 4 slots: 2x PCI, 2x PCI Express (x16) (8 lanes) or 4 slots: 2x PCI Express (x16) (8 lanes), 1x PCI Express (x16) (4 lanes), 1x PCI Express (x16) (1 lane); expansion modules up to 312 mm in length can be used |
| **Interfaces** | |
| Interfaces/bus type | 1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet |
| PROFIBUS/MPI | can be implemented with plug-in card |
| USB port | 4x USB 3.1 Gen. 2 Type A, 2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock, 2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed |
| Connection for keyboard/mouse | USB |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |

## Technical specifications (continued)

| Article number | **6AG4112-3....-....**<br>SIMATIC IPC647E (Rack PC) |
|---|---|
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional); graphics card PCIe (x16), Triple Head (3x mini DisplayPort, 2 GB graphics memory, 3x mini DisplayPort to DisplayPort adapter cable) (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Gigabit Ethernet (IE/PN), RJ45 |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD, ETHERNET 1, ETHERNET 2, ETHERNET 3, WATCHDOG, TEMP, FAN, HDD1 ALARM, HDD0 ALARM |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst, length < 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3 |

| Article number | **6AG4112-3....-....**<br>SIMATIC IPC647E (Rack PC) |
|---|---|
| **Degree and class of protection** | |
| IP (at the front) | IP41 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) |
| CSA approval | Yes; CAN/CSA-C22.2 No. 61010-2-201 Second Edition |
| UL approval | Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.) |
| cULus | Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.) |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3 |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to +50 °C with full configuration |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C; Max. 20 °C/h (no condensation) |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 $m/s^2$ (0.5 g) |
| **Shock testing** | |
| • Shock load during operation | Tested according to DIN IEC 60068-2-7: 50 $m/s^2$ (5 g), 30 ms, 100 shocks |
| **Operating systems** | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **Dimensions** | |
| Width | 430 mm |
| Height | 88 mm; 2U |
| Depth | 444 mm |

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## Ordering data

| | Article No. | |
|---|---|---|
| **SIMATIC IPC647E** | **6AG4112- 3 ■ ■■■ - ■■■■** | |
| Rack PC, 19", 2 U<br>Interfaces:<br>3x Gbit Ethernet (IE/PN), RJ45;<br>1x DVI-D;<br>2x DisplayPort; 1x COM1; audio;<br>4x USB 3.1, 2x USB 3.1 (type C) on the rear;<br>2x USB 3.0 on the front,<br>1x USB 3.1 internal.<br>1x M.2 slot internal;<br>Temperature and fan monitoring, watchdog, card retainer | | |
| Processor / main board | | |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d)<br>Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) | | **A** |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d).<br>Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) | | **B** |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d).<br>Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) | | **C** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT).<br>Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) | | **D** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT).<br>Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) | | **E** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT).<br>Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) | | **F** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT).<br>Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) | | **G** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) | | **H** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) | | **J** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) | | **K** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) | | **L** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) | | **M** |

| | Article No. | | |
|---|---|---|---|
| **SIMATIC IPC647E** | **6AG4112- 3 ■■■■ - ■■■■** | | |
| Drives | | | |
| • 1 TB HDD 3.5" SATA | | **A** | |
| • 2x 1 TB HDD 3.5" SATA | | **B** | |
| • RAID1, 2x 1 TB HDD 3.5" SATA | | **C** | |
| • RAID1, 2x 1 TB HDD [Enterprise] 3.5" SATA | | **D** | |
| • RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA | | **E** | |
| • 1 TB HDD 3.5" SATA + 480 GB SSD 2.5" SATA (for operating system if M.2 SSD not ordered) | | **P** | |
| • 480 GB SSD 2.5" SATA | | **Q** | |
| • 960 GB SSD 2.5" SATA | | **R** | |
| • 2x 480 GB SSD 2.5" SATA | | **S** | |
| • RAID1, 2x 480 GB SSD 2.5" SATA | | **T** | |
| • Without drives | | **X** | |
| Type of enclosure / power supplies | | | |
| • Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock); 100/240 V AC industrial power supply | | | **0** |
| • Enclosure with drive cage type A (for removable frames on the front); 100/240 V AC industrial power supply | | | **1** |
| • Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock); 2x 100/240 V AC redundant industrial power supply | | | **2** |
| • Enclosure with drive cage type A (for removable frames on the front); 2x 100/240 V AC redundant industrial power supply | | | **3** |
| • Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock) + COM2 port; 100/240 V AC industrial power supply | | | **4** |
| • Enclosure with drive cage type A (for removable frames on the front) + COM2 port; 100/240 V AC industrial power supply | | | **5** |
| • Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock) + COM2 port; 2x 100/240 V AC redundant industrial power supply | | | **6** |
| • Enclosure with drive cage type A (for removable frames on the front) + COM2 port; 2x 100/240 V AC redundant industrial power supply | | | **7** |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC647E** | **6AG4112- 3 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration | |
| • 4 GB DDR4 SDRAM (1x 4 GB), single channel | **0** |
| • 8 GB DDR4 SDRAM (2x 4 GB), dual channel | **1** |
| • 16 GB DDR4 SDRAM (2x 8 GB), dual channel | **2** |
| • 32 GB DDR4 SDRAM (2x 16 GB), dual channel | **3** |
| • 64 GB DDR4 SDRAM (4x 16 GB), dual channel | **4** |
| • 16 GB DDR4 SDRAM (2x 8 GB), ECC, dual channel (only with Core i3/Xeon) | **6** |
| • 32 GB DDR4 SDRAM (2x 16 GB), ECC, dual channel (only with Core i3/Xeon) | **7** |
| • 64 GB DDR4 SDRAM (4x 16 GB), ECC, dual channel (only with Core i3/Xeon) | **8** |
| Expansion hardware | |
| • Without expansions | **0** |
| • PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied) | **2** |
| • 512 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) | **4** |
| • 512 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) + PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied) | **5** |
| • 1 024 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) | **6** |
| Operating system (pre-installed and activated) | |
| • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit [for Core i3/i5] | **A** |
| • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit, for Core i7/Xeon | **B** |
| • Windows Server 2016 Standard Edition incl. 5 clients, 64-bit, MUI (en, de, fr, it, sp) | **H** |
| • Without operating system | **X** |
| Software / adapters / security expansions | |
| • SIMATIC IPC DiagMonitor software enclosed | **A** |
| • SIMATIC IPC Image & Partition Creator software included | **B** |
| • SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed | **C** |
| • Adapter cable DP to VGA for onboard graphics | **H** |
| • Adapter cable DP to DVI-D for onboard graphics | **J** |
| • Without expansions | **X** |
| • TPM[1] 2.0 (not for China) | **Y** |
| Cables, country-specific versions | |
| • Without power supply cord | **0** |
| • Power supply cord for Europe | **1** |
| • Power supply cord for USA | **2** |
| • Power supply cord for China | **3** |

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[1] TPM = Trusted Platform Module

| | Article No. |
|---|---|
| Accessories | |
| **Memory expansions** | |
| • 4 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL60-0QA0** |
| • 8 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL70-0QA0** |
| • 16 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL80-0QA0** |
| **Removable drive bay**<br>For 3.5'' hard disk or 2.5'' solid-state drive, SATA (without hard disk drive/ solid-state drive) | **6ES7648-0EH00-1BA0** |
| **Retainer**<br>For mechanically interlocking the internal USB port | **6ES7648-1AA00-0XK0** |
| **Adapter cable** | |
| • DisplayPort to DVI-D for onboard graphics | **6ES7648-3AF00-0XA0** |
| • DisplayPort to VGA for onboard graphics | **6ES7648-3AG00-0XA0** |
| • Mini-display port to VGA for graphics card | **6ES7648-3AL00-0XA0** |
| • Mini-display port to DVI-D for graphics card | **6ES7648-3AK00-0XA0** |
| • Mini-display port to DVI-D for graphics card (3 units per pack) | **6ES7648-3AK00-1XA0** |
| • Mini-display port to DisplayPort for graphics card | **6ES7648-3AJ00-0XA0** |
| • Mini-display port to DisplayPort for graphics card (3 units per pack) | **6ES7648-3AJ00-1XA0** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at: https://www.siemens.com/ipc-configurator

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

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RACK PC

### *SIMATIC IPC647D*

The SIMATIC IPC647D is a very rugged, high-performance industrial PC in 19" rack design (2 U) with excellent industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel® Core® i/Xeon technology 4th Generation

## Technical specifications

| Article number | **6AG4112-2....-....**<br>SIMATIC IPC647D (Rack PC) |
|---|---|
| **Installation type/mounting** | |
| Design | Rack PC, 19", 2U |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache);<br>Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache);<br>Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache) |
| Chipset | Intel DH82C226 PCH |
| **Graphic** | |
| Graphics controller | Onboard graphics controller Intel HD 4600 Graphics integrated into the processor / PCI-Express graphics card (Dual Head: 2x VGA or 2x DVI-D) in the PCIe (x16) slot (optional) |
| **Drives** | |
| Optical drives | DVD±R/RW (SlimLine) |
| Hard disk | 500 GB HDD, 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD, mirror disks);<br>RAID1 (2x 1 TB HDD SAS, mirror disks) with PCIe (x8) RAID controller incl. ZMCP module |
| SSD | Yes; 240 GB SSD; RAID1 (2x 240 GB SSD, mirror disks) |
| Slot for drives | Mounted internally on the fixed hard disk support, or mounted internally in vibration/shock-absorbing hard disk support, or mounted at the front in the low-profile removable drive bay (hot-swap in RAID configurations) |
| **Memory** | |
| Main memory | 2 GB to 32 GB DDR3-1600 DIMM, ECC optional |

## Technical specifications (continued)

| Article number | **6AG4112-2....-....**<br>SIMATIC IPC647D (Rack PC) |
|---|---|
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCIe mech. (x16) (4 lanes) or 4x PCIe mech. (x16) (4 lanes / 8 lanes depending on slot) or 2x PCI, 2x PCIe mech. (x16) (8 lanes); all modules to a length of 312 mm can be used |
| **Interfaces** | |
| Interfaces/bus type | 1x COM1, 1x COM2 (optional), 1x LPT (optional), 2x DisplayPort, 1x DVI-I, 2x PS/2, audio (Microphone In, Line Out), 7x USB, 2x Gigabit Ethernet, PROFIBUS or PROFINET optional |
| USB port | 2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal |
| Connection for keyboard/mouse | 2x PS/2 |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 |
| parallel interface | optional LPT1 |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort and 1x DVI-I onboard; 1x VGA via DVI-VGA adapter cable (optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB graphics memory (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF PROFINET, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM |
| • Fan | Yes |
| • Monitoring function via network | Optional |

| Article number | **6AG4112-2....-....**<br>SIMATIC IPC647D (Rack PC) |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-3 |
| **Degree and class of protection** | |
| IP (at the front) | IP41 |
| IP (rear) | IP20 |

## **Technical specifications** (continued)

| Article number | **6AG4112-2....-....**<br>SIMATIC IPC647D (Rack PC) |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) |
| CSA approval | Yes; Included in cULus |
| UL approval | Yes |
| cULus | Yes; UL 60950-1, file number E115352 |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes; Only with SSD |
| • American Bureau of Shipping (ABS) | Yes; Only with SSD |
| • Bureau Veritas (BV) | Yes; Only with SSD |
| • Det Norske Veritas (DNV) | Yes; Only with SSD |
| • Lloyds Register of Shipping (LRS) | Yes; Only with SSD |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 ... 50 °C no ODD operation, no HDD operation in swap frame, no hardware RAID controller; 0 ... 45 °C no ODD operation, no hardware RAID controller, power loss of expansion cards in total < 55 W; 0 ... 40 °C no hardware RAID controller, power loss of the expansion cards in total < 55 W; 0 ... 35 °C no restrictions |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | tested to IEC 60068-78, DIN IEC 68-2-30: 5 % to 80 % at 25 °C (no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s$^2$ (0.5 g) |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s$^2$ (5 g), 30 ms, 100 shocks per axis |

| Article number | **6AG4112-2....-....**<br>SIMATIC IPC647D (Rack PC) |
|---|---|
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, multi-language (32-bit/64-bit),<br>Windows 10 Enterprise 2015 LTSB, multi-language (64-bit),<br>Windows 10 Enterprise 2016 LTSB, multi-language (64-bit),<br>Windows Server 2008 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2012 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **Dimensions** | |
| Width | 430 mm |
| Height | 88 mm; 2U |
| Depth | 444 mm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC647D** | **6AG4112- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Interfaces:<br>RACK PC, 19", 2 U<br>Interfaces: 2 x GBIT LAN (RJ45); 1 x DVI-I; 2 x DisplayPort; 1 x COM; 2 x PS/2; audio; 2 x USB 3.0, 2 x USB 2.0 at rear; 1 x USB 3.0, 1 x USB 2.0 at front, 1 x USB 3.0 internal; temperature and fan monitoring, watchdog, card retainer | |
| Processor / main board | |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); mainboard without fieldbus | **D** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB, VT-x); mainboard with PROFIBUS/MPI (CP 5622-compatible) | **E** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **F** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache, TB, VT-d, AMT); mainboard without fieldbus | **G** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/ MPI (CP 5622-compatible) | **H** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **J** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, TB, VT-d, AMT); mainboard without fieldbus | **K** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/ MPI (CP 5622-compatible) | **L** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **M** |

| | Article No. |
|---|---|
| **SIMATIC IPC647D** | **6AG4112- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Hard disks/SSD | |
| • 500 GB HDD SATA, internal (0.5 g vibration, 5 g shock) | **A** |
| • 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock) | **B** |
| • 2 x 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock) | **C** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks), internal (0.5 g vibration, 5 g shock) | **D** |
| • 500 GB HDD SATA in removable drive bay; front | **H** |
| • 1 TB HDD SATA in removable drive bay; front | **K** |
| • 2 x 1 TB HDD SATA in removable drive bay; on the front | **M** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks) in removable drive bay, hot-swappable, front | **P** |
| • 240 GB SSD SATA, internal | **S** |
| • 240 GB SSD SATA in removable drive bay; front | **T** |
| • RAID1, 1 TB (2 x 1 TB HDD SAS, mirror disks) in removable drive bay, hot-swappable, on the front; PCIe x8 RAID controller including ZCMP module (2 slots occupied) | **U** |
| • RAID1, 240 GB (2 x 240 GB SSD SATA, mirror disks), in removable drive bay, hot swap, at the front | **W** |
| Memory configuration | |
| • 2 GB DDR3 SDRAM (1 x 2 GB), single channel | **1** |
| • 4 GB DDR3 SDRAM (2 x 2 GB), dual channel | **2** |
| • 8 GB DDR3 SDRAM (2 x 4 GB), dual channel | **3** |
| • 16 GB DDR3 SDRAM (2 x 8 GB), dual channel | **4** |
| • 32 GB DDR3 SDRAM (4 x 8 GB), dual channel | **5** |
| • 8 GB DDR3 SDRAM, (2 x 4 GB), ECC, dual channel | **6** |
| • 16 GB DDR3 SDRAM, (2 x 8 GB), ECC, dual channel | **7** |
| • 32 GB DDR3 SDRAM, (4 x 8 GB), ECC, dual channel | **8** |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC647D** | **6AG4112- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Bus module/removable data/SSD: | |
| • Bus module 2-slot: 2 x PCIe x16; without drives | **0** |
| • Bus module 4-slot: 2 x PCI, 2 x PCIe x16; without drives | **1** |
| • Bus module 4-slot: 4 x PCIe x16; without drives | **2** |
| • Bus module 2-slot: 2 x PCIe x16; DVD±RW (slim) | **3** |
| • Bus module 4-slot: 2 x PCI, 2x PCIe x16; DVD±RW (slim) | **4** |
| • Bus module 4-slot: 4 x PCIe x16; DVD±RW (slim) | **5** |
| • Bus module 2-slot: 2 x PCIe x16/ 1 x 240 GB SSD (for operating system), internal | **6** |
| • Bus module 4-slot: 2 x PCI, 2 x PCIe x16/1 x 240 GB SSD (for operating system), internal | **7** |
| • Bus module 4-slot: 4 x PCIe x16/ 1 x 240 GB SSD (for operating system), internal | **8** |
| Expansion hardware | |
| • Without expansions (hardware), onboard graphics; | **0** |
| • Without expansions (hardware), onboard graphics, DVI-I adapter cable, VGA-compliant for onboard graphics; | **1** |
| • Serial (COM2) + parallel (LPT, 1 slot reserved), onboard graphics; | **2** |
| • Serial (COM2) + parallel (LPT, 1 slot reserved), onboard graphics; DVI-I adapter cable, VGA-compliant for onboard graphics; | **3** |
| • Serial (COM2) + parallel (LPT, 1 slot reserved) + PCIe x16 Graphics Card (Dual-Head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied); | **4** |
| • PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied) | **5** |

| | Article No. |
|---|---|
| **SIMATIC IPC647D** | **6AG4112- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Operating system (pre-installed and activated) | |
| • Windows 7 Ultimate, 32-bit, SP1, MUI (en, de, fr, it, es) | **A** |
| • Windows 7 Ultimate, 64-bit, SP1, MUI (en, de, fr, it, es) | **B** |
| • Windows 10 Enterprise 2015, LTSB, multi-language (en, de, fr, it, es), 64-bit | **C** |
| • Windows 10 Enterprise 2016, LTSB, multi-language (en, de, fr, it, es), 64-bit (for Core i3/i5) | **D** |
| • Windows 10 Enterprise 2016, LTSB, multi-language (en, de, fr, it, es), 64-bit (for Xeon) | **E** |
| • Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es) | **F** |
| • Windows Server 2012 R2 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit | **G** |
| • Windows Server 2016 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit | **H** |
| • Without operating system | **X** |
| Expansions (software)/Security | |
| • SIMATIC IPC DiagMonitor software enclosed | **A** |
| • SIMATIC IPC Image Creator software included | **B** |
| • SIMATIC IPC DiagMonitor and Image Creator software enclosed | **C** |
| • Without software | **X** |
| • TPM 1.2 [1] (not for China and Russia) | **Y** |
| Power supply, with country-specific cable | |
| • 110/240 V AC industrial power supply with NAMUR; power cable for Europe | **0** |
| • 110/240 V AC industrial power supply with NAMUR; power cable for United Kingdom | **1** |
| • 110/240 V AC industrial power supply with NAMUR; power cable for Switzerland | **2** |
| • 110/240 V AC industrial power supply with NAMUR; power cable for the USA | **3** |
| • 110/240 V AC industrial power supply with NAMUR; power cable for Italy | **4** |
| • 110/240 V AC industrial power supply with NAMUR; power cable for China | **5** |
| • 2 x 110/240 V AC redundant power supply; without power cable | **6** |
| • 110/240 V AC industrial power supply with NAMUR; without power cable | **8** |

[1] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at:
https://www.siemens.com/ipc-configurator

## Ordering data

| | Article No. |
|---|---|
| **Accessories** | |
| **Memory expansions** | |
| • 2 GB DDR3 1600 DIMM | **6ES7648-2AJ50-0MA0** |
| • 4 GB DDR3 1600 DIMM | **6ES7648-2AJ60-0MA0** |
| • 8 GB DDR3 1600 DIMM | **6ES7648-2AJ70-0MA0** |
| • 8 GB DDR3 1600 DIMM, ECC | **6ES7648-2AJ70-1MA0** |
| **Hardware accessories** | |
| **Tray for low-profile removable drive bay**<br>For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive | **6ES7648-0EG01-1BA0** |
| **Filter mats**<br>for SIMATIC IPC647D (packing unit: 10 units) | **A5E02396171** |
| **Adapter cable** | |
| • Adapter cable DisplayPort to DVI-D for onboard graphics | **6ES7648-3AF00-0XA0** |
| • Adapter cable DisplayPort to VGA for onboard graphics | **6ES7648-3AG00-0XA0** |

| | Article No. |
|---|---|
| **Power cable, straight, 3 m long** | |
| • Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden | **6ES7900-0AA00-0XA0** |
| • United Kingdom | **6ES7900-0BA00-0XA0** |
| • Switzerland | **6ES7900-0CA00-0XA0** |
| • USA | **6ES7900-0DA00-0XA0** |
| • Italy | **6ES7900-0EA00-0XA0** |
| • China | **6ES7900-0FA00-0XA0** |
| **USB retainer**<br>For interlocking the internal USB port | **6ES7648-1AA00-0XK0** |
| **Expansion components** | See Expansion components |
| **Communication products** | See Expansion components |

Note:

Software Packages with SIMATIC WinCC flexible, WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at a price advantage. More information under "Embedded Bundles/Packages for industrial PCs".

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

SIEMENS
SIMATIC
RACK PC

***SIMATIC IPC847E***

SIMATIC IPC847E is a very robust, high-performance industrial PC in 19" rack design (4 U) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel® Core® i / Xeon technology 8th Generation

## Technical specifications

| | |
|---|---|
| Article number | **6AG4114-3....-....**<br>SIMATIC IPC847E (Rack PC) |
| **Installation type/mounting** | |
| Mounting | For horizontal and vertical installation; prepared for telescopic rails; 19" mounting bracket can be removed externally;<br>tower kit (optional) |
| Design | Rack PC, 19", 4U |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT);<br>Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT);<br>Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, Turbo Boost 2.0, VT-x/-d technology, iAMT);<br>Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-x/-d technology) |
| Chipset | Intel C246 |
| **Graphic** | |
| Graphics controller | Onboard Intel UHD graphics P630/630 integrated in processor;<br>graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional) |

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## **Technical specifications** (continued)

| Article number | **6AG4114-3....-....**<br>SIMATIC IPC847E (Rack PC) |
|---|---|
| **Drives** | |
| Hard disk | 1x 1 TB 3.5" SATA HDD,<br>2x 1 TB 3.5" SATA HDD,<br>RAID1 2x 1 TB 3.5" SATA HDD,<br>RAID1 2x 1 TB 3.5" SATA HDD [Enterprise],<br>RAID1 2x 2 TB 3.5" SATA HDD [Enterprise],<br>RAID1 2x 2 TB 3.5" SATA HDD [Enterprise] + 2 TB 3.5" SATA HDD [Enterprise] as hot spare,<br>RAID1 2x 2 TB 3.5" SATA HDD [Enterprise] + 480 GB 2.5" SATA SSD,<br>RAID5 3x 2 TB 3.5" SATA HDD [Enterprise],<br>RAID5 3x 2 TB 3.5" SATA HDD [Enterprise] + 2 TB 3.5" SATA HDD [Enterprise] as hot spare |
| SSD | Yes;<br>1x 480 GB 2.5" SATA SSD,<br>1x 960 GB 2.5" SATA SSD,<br>2x 480 GB 2.5" SATA SSD,<br>RAID1 2x 480 GB 2.5" SATA SSD;<br>1x 512 GB M.2 NVMe SSD,<br>1x 1 024 GB M.2 NVMe SSD |
| Slot for drives | Mounting internally in vibration/shock-absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional |
| **Memory** | |
| Main memory | 4 GB to 64 GB DDR4 2666 SDRAM DIMM, ECC optional |
| Capacity of main memory, max. | 64 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 9 slots: 7x PCI, 2x PCI Express (x16) (8 lanes) or<br>11 slots:<br>3x PCI, 1x PCI Express (x16) (8 lanes), 5x PCI Express (x16) (4 lanes), 2x PCI Express (x4) (4 lanes) or<br>11 slots:<br>3x PCI, 1x PCI Express (x16) (16 lanes), 3x PCI Express (x16) (4 lanes), 2x PCI Express (x16) (1 lane), 2x PCI Express (x4) (4 lanes); expansion modules up to a length of 312 mm can be used |

| Article number | **6AG4114-3....-....**<br>SIMATIC IPC847E (Rack PC) |
|---|---|
| **Interfaces** | |
| Interfaces/bus type | 1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet |
| PROFIBUS/MPI | can be implemented with plug-in card |
| USB port | 4x USB 3.1 Gen. 2 Type A,<br>2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock,<br>2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed |
| Connection for keyboard/mouse | USB |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional);<br>graphics card PCIe (x16), Triple Head (3x mini DisplayPort, 2 GB graphics memory, 3x mini DisplayPort to DisplayPort adapter cable) (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Gigabit Ethernet (IE/PN), RJ45 |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD, ETHERNET 1, ETHERNET 2, ETHERNET 3, WATCHDOG, TEMP, FAN, HDD3 ALARM, HDD2 ALARM, HDD1 ALARM, HDD0 ALARM |
| • Fan | Yes |
| • Monitoring function via network | Optional |

## Technical specifications (continued)

| Article number | **6AG4114-3....-....**<br>SIMATIC IPC847E (Rack PC) |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst, length < 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3 |
| **Degree and class of protection** | |
| IP (at the front) | IP41 |
| IP (rear) | IP20 |

| Article number | **6AG4114-3....-....**<br>SIMATIC IPC847E (Rack PC) |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) |
| CSA approval | Yes; CAN/CSA-C22.2 No. 61010-2-201 Second Edition |
| UL approval | Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.) |
| cULus | Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.) |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3 |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to +50 °C with full configuration |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C; Max. 20 °C/h (no condensation) |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 $m/s^2$ (0.5 g) |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 $m/s^2$ (5 g), 30 ms, 100 shocks per axis |
| **Operating systems** | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **Dimensions** | |
| Width | 430 mm |
| Height | 177 mm; 4U |
| Depth | 444 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC847E** | **6AG4114- 3 ■ ■■■ - ■■■■** |
| Rack PC, 19", 4 U<br>Interfaces:<br>3x Gbit Ethernet (IE/PN), RJ45;<br>1x DVI-D; 2x DisplayPort;<br>1x COM1; audio; 4x USB 3.1,<br>2x USB 3.1 (type C) on the rear;<br>2x USB 3.0 on the front,<br>1x USB 3.1 internal.<br>Temperature and fan monitoring, watchdog, card retainer | |
| Processors / Boards | |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d).<br>Board 9 slots: 7x PCI, 2x PCIe x16 (8 L) | **A** |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d).<br>Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L) | **B** |
| • Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d).<br>Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L) | **C** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT)<br>Board 9 slots: 7x PCI, 2x PCIe x16 (8 L) | **D** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L) | **E** |
| • Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L) | **F** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 9 slots: 7x PCI, 2x PCIe x16 (8 L) | **G** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L) | **H** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L) | **J** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 9 slots: 7x PCI, 2x PCIe x16 (8 L) | **K** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L) | **L** |
| • Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, TB, VT-d, AMT)<br>Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L) | **M** |

| | Article No. | | |
|---|---|---|---|
| **SIMATIC IPC847E** | **6AG4114- 3 ■ ■ ■ ■ - ■■■■** | | |
| Drives | | | |
| • 1 TB HDD 3.5" SATA | | **A** | |
| • 2x 1 TB HDD 3.5" SATA | | **B** | |
| • RAID1, 2x 1 TB HDD 3.5" SATA | | **C** | |
| • RAID1, 2x 1 TB HDD [Enterprise] 3.5" SATA | | **D** | |
| • RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA | | **E** | |
| • RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA + 2 TB HDD [Enterprise] 3.5" SATA as HotSpare | | **F** | |
| • RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA + 480 GB 2.5" SSD SATA (for operating system if M.2 SSD not ordered) | | **G** | |
| • RAID5, 3x 2 TB HDD [Enterprise] 3.5" SATA | | **H** | |
| • RAID5, 3x 2 TB HDD [Enterprise] 3.5" SATA + 2 TB HDD [Enterprise] 3.5" SATA as HotSpare | | **J** | |
| • 1 TB HDD 3.5" SATA + 480 GB SSD 2.5" SATA (for operating system if M.2 SSD not ordered) | | **P** | |
| • 480 GB SSD 2.5" SATA | | **Q** | |
| • 960 GB SSD 2.5" SATA | | **R** | |
| • 2x 480 GB SSD 2.5" SATA | | **S** | |
| • RAID1, 2x 480 GB SSD 2.5" SATA | | **T** | |
| • Without drives | | **X** | |
| Type of enclosure/power supplies | | | |
| • Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock); 100/240 V AC industrial power supply | | | **0** |
| • Enclosure with drive cage type A (for removable trays on the front); 100/240 V AC industrial power supply | | | **1** |
| • Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock); 2x 100/240 V AC redundant industrial power supply | | | **2** |
| • Enclosure with drive cage type A (for removable trays on the front); 2x 100/240 V AC redundant industrial power supply | | | **3** |
| • Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock) + COM2 port; 100/240 V AC industrial power supply | | | **4** |
| • Enclosure with drive cage type A (for removable trays on the front) + COM2 port; 100/240 V AC industrial power supply | | | **5** |
| • Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock) + COM2 port; 2x 100/240 V AC redundant industrial power supply | | | **6** |
| • Enclosure with drive cage Type A (for removable trays on the front) + COM2 port; 2x 100/240 V AC redundant industrial power supply | | | **7** |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC847E** | **6AG4114- 3 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration | |
| • 4 GB DDR4 SDRAM (1x 4 GB), single channel | **0** |
| • 8 GB DDR4 SDRAM (2x 4 GB), dual channel | **1** |
| • 16 GB DDR4 SDRAM (2x 8 GB), dual channel | **2** |
| • 32 GB DDR4 SDRAM (2x 16 GB), dual channel | **3** |
| • 64 GB DDR4 SDRAM (4x 16 GB), dual channel | **4** |
| • 16 GB DDR4 SDRAM (2x 8 GB), ECC, dual channel (only with Core i3/Xeon) | **6** |
| • 32 GB DDR4 SDRAM (2x 16 GB), ECC, dual channel (only with Core i3/Xeon) | **7** |
| • 64 GB DDR4 SDRAM (4x 16 GB), ECC, dual channel (only with Core i3/Xeon) | **8** |
| Expansion hardware | |
| • Without expansion | **0** |
| • PCIe x4 adapter card for M.2 NVMe module without SSD (1 slot occupied) | **1** |
| • PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied) | **2** |
| • PCIe x4 adapter card for M.2 NVMe module without SSD (1 slot occupied) + PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied) | **3** |
| • 512 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system) | **4** |
| • 512 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system) + PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied) | **5** |
| • 1 024 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system) | **6** |
| Operating system (pre-installed and activated) | |
| • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, es), 64-bit (for Core i3/i5) | **A** |
| • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, es), 64-bit (for Core i7/Xeon) | **B** |
| • Windows Server 2016 Standard Edition incl. 5 clients, 64-bit, MUI (en, de, fr, it, es) | **H** |
| • Without operating system | **X** |
| Software / adapters / security expansions | |
| • SIMATIC IPC DiagMonitor software enclosed | **A** |
| • SIMATIC IPC Image & Partition Creator software included | **B** |
| • SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed | **C** |
| • Adapter cable DP to VGA for onboard graphics | **H** |
| • Adapter cable DP to DVI-D for onboard graphics | **J** |
| • Without expansions | **X** |
| • TPM [1] 2.0 (not for China) | **Y** |

| | Article No. |
|---|---|
| **SIMATIC IPC847E** | **6AG4114- 3 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Cables, country-specific versions | |
| • Without power supply cord | **0** |
| • Power supply cord for Europe | **1** |
| • Power supply cord for USA | **2** |
| • Power supply cord for China | **3** |

*Accessories*

| | |
|---|---|
| **Memory expansions** | |
| • 4 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL60-0QA0** |
| • 8 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL70-0QA0** |
| • 16 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL80-0QA0** |
| **Removable tray**<br>For 3.5'' hard disk or 2.5'' solid-state drive, SATA (without hard disk drive/ solid-state drive) | **6ES7648-0EH00-1BA0** |
| **Tower Kit**<br>To convert the computer into an industrial tower PC | **6ES7648-1AA01-0XC0** |
| **Retainer**<br>For mechanically interlocking the internal USB port | **6ES7648-1AA00-0XK0** |
| **Adapter cable** | |
| • DisplayPort to DVI-D for onboard graphics | **6ES7648-3AF00-0XA0** |
| • DisplayPort to VGA for onboard graphics | **6ES7648-3AG00-0XA0** |
| • Mini-DisplayPort to VGA for graphics card | **6ES7648-3AL00-0XA0** |
| • Mini-DisplayPort to DVI-D for graphics card | **6ES7648-3AK00-0XA0** |
| • Mini-DisplayPort to DVI-D for graphics card (3 units per pack) | **6ES7648-3AK00-1XA0** |
| • Mini-DisplayPort to DisplayPort for graphics card | **6ES7648-3AJ00-0XA0** |
| • Mini-DisplayPort to DisplayPort for graphics card (3 units per pack) | **6ES7648-3AJ00-1XA0** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at: https://www.siemens.com/ipc-configurator

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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[1] TPM = Trusted Platform Module

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## Overview

SIEMENS
SIMATIC RACK PC

***SIMATIC IPC847D***

The SIMATIC IPC847D is an extremely robust, high-performance industrial PC in 19" rack design (4 U) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel® Core® i / Xeon technology 4th Generation

## Technical specifications

| | |
|---|---|
| Article number | **6AG4114-2....-....**<br>SIMATIC IPC847D (Rack PC) |
| **Installation type/mounting** | |
| Design | Rack PC, 19", 4U |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC; optional 100/240 V AC with UPS functionality incl. maintenance-free lead-tin battery |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache); Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache) |
| Chipset | Intel DH82C226 PCH |
| **Graphic** | |
| Graphics controller | Onboard graphics controller Intel HD 4600 Graphics integrated into the processor / PCI-Express graphics card (Dual Head: 2x VGA or 2x DVI-D) in the PCIe (x16) slot (optional) |
| **Drives** | |
| Optical drives | DVD±R/RW (SlimLine) |
| Hard disk | 500 GB HDD, 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD, mirror disks), RAID1 (2x 1 TB HDD, mirror disks) + 1x 1 TB HDD as hot spare, RAID5 (3x 1 TB HDD, striping with parity), RAID5 (3x 1 TB HDD, striping with parity) + 1x 1 TB HDD as hot spare; RAID1 (2x 1 TB HDD SAS, mirror disks), RAID5 (3x 1 TB HDD SAS, striping with parity), RAID5 (3x 1 TB HDD SAS, striping with parity) + 1x 1 TB HDD SAS as hot spare incl. PCIe (x8) RAID SAS controller incl. ZMCP module |
| SSD | Yes; 240 GB SSD; RAID1 (2x 240 GB SSD, mirror disks) |
| Slot for drives | Mounted internally on the fixed hard disk support, or mounted internally in vibration/shock-absorbing hard disk support, or mounted at the front in the low-profile removable drive bay (hot-swap in RAID configurations) |

## **Technical specifications** (continued)

| Article number | **6AG4114-2....-....**<br>SIMATIC IPC847D (Rack PC) |
|---|---|
| **Memory** | |
| Main memory | 2 GB to 32 GB DDR3-1600 DIMM, ECC optional |
| Capacity of main memory, max. | 32 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 11 slots: 7x PCI, 3x PCIe (x4) (1 lane), 1x PCIe (x16) or 3x PCI, 5x PCIe mech. (x16) (4x 4 lanes, 1x 8 lanes), 3x PCIe (x4); all modules to a length of 312 mm can be used |
| **Interfaces** | |
| Interfaces/bus type | 1x COM1, 1x COM2 (optional), 1x LPT (optional), 2x DisplayPort, 1x DVI-I, 2x PS/2, audio (Microphone In, Line Out), 7x USB, 2x Gigabit Ethernet, PROFIBUS or PROFINET optional |
| USB port | 2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal |
| Connection for keyboard/mouse | 2x PS/2 |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 |
| parallel interface | optional LPT1 |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort and 1x DVI-I onboard; 1x VGA via DVI-VGA adapter cable (optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB graphics memory (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, ETHERNET 1, ETHERNET 2, PN \| MPI / DP, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM, HDD2 ALARM, HDD \| HDD3 ALARM |
| • Fan | Yes |
| • Monitoring function via network | Optional |

| Article number | **6AG4114-2....-....**<br>SIMATIC IPC847D (Rack PC) |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-3 |
| **Degree and class of protection** | |
| IP (at the front) | IP41 |
| IP (rear) | IP20 |

## Technical specifications (continued)

| Article number | **6AG4114-2....-....**<br>SIMATIC IPC847D (Rack PC) |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) |
| CSA approval | Yes; Included in cULus |
| UL approval | Yes |
| cULus | Yes; UL 60950-1, file number E115352 |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to +45 °C, no burner operation, 0 °C to +50 °C, no operation of optical drive, power dissipation of the expansion cards in total < 30 W, maximum 3 removable drive bays, 0 °C to +40 °C with AC UPS, 0 °C to +35 °C with hardware RAID controller |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s$^2$ (5 g), 30 ms, 100 shocks per axis |

| Article number | **6AG4114-2....-....**<br>SIMATIC IPC847D (Rack PC) |
|---|---|
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, multi-language (32-bit/64-bit),<br>Windows 10 Enterprise 2015 LTSB, multi-language (64-bit),<br>Windows 10 Enterprise 2016 LTSB, multi-language (64-bit),<br>Windows Server 2008 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2012 R2 Standard Edition incl. 5 clients, multi-language (64-bit);<br>Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **Dimensions** | |
| Width | 430 mm |
| Height | 177 mm; 4U |
| Depth | 444 mm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC847D** | **6AG4114- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Interfaces:<br>RACK PC, 19", 4 U<br>Interfaces: 2 x GBIT LAN (RJ45); 1 x DVI-I; 2 x DisplayPort; 1 x COM; 2 x PS/2; audio; 2 x USB 3.0, 2 x USB 2.0 at rear; 1 x USB 3.0, 1 x USB 2.0 at front, 1 x USB 3.0 internal; temperature and fan monitoring, watchdog, card retainer | |
| Processor / main board | |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); mainboard without fieldbus | **D** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); mainboard with PROFIBUS/MPI (CP 5622-compatible) | **E** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **F** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-d, AMT); mainboard without fieldbus | **G** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB Cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible) | **H** |
| • Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **J** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, TB, VT-d, AMT); mainboard without fieldbus | **K** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible) | **L** |
| • Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **M** |
| • Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-d, AMT); mainboard without fieldbus | **N** |
| • Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible) | **P** |
| • Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible) | **Q** |

| | Article No. |
|---|---|
| **SIMATIC IPC847D** | **6AG4114- 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Drives | |
| • 500 GB HDD SATA, internal (0.3 g vibration, 3 g shock) | **A** |
| • 500 GB HDD SATA, internal (0.5 g vibration, 5 g shock) | **B** |
| • 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock) | **C** |
| • 2 x 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock) | **D** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks), internal (0.5 g vibration, 5 g shock) | **E** |
| • 500 GB HDD SATA in removable drive bay; front | **F** |
| • 1 TB HDD SATA in removable drive bay; front | **G** |
| • 2 x 1 TB HDD SAT in removable drive bay; front | **H** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks) in removable drive bay, hot-swappable, front; | **J** |
| • RAID5, 2 TB (3 x 1 TB HDD, SATA, striping with parity) in removable drive bay, hot-swappable, front | **K** |
| • RAID5, 2 TB (3 x 1 TB HDD, SATA, striping with parity) in removable drive bay, hot-swappable + 1 TB SATA HDD as hot spare in removable drive bay, on the front | **L** |
| • 240 GB SSD SATA, internal | **M** |
| • 240 GB SSD SATA in removable drive bay; front | **N** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks), internal (0.5 g vibration, 5 g shock) + 240 GB SSD SATA (for operating system) in removable drive bay | **P** |
| • RAID1, 1 TB (2 x 1 TB HDD, SATA, mirror disks) in removable drive bay, hot swap + 1 TB HDD SATA as hot spare in removable drive bay, front; | **Q** |
| • RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks) + 240 GB SSD SATA (for operating system) in removable drive bay, hot-swap; front | **R** |
| • RAID1, 1 TB (2 x 1 TB HDD SAS, mirror disks) in removable drive bay, hot-swappable, on the front; PCIe x8 RAID controller incl. ZCMP module (2 slots occupied) | **S** |
| • RAID1, 1 TB (2 x 1 TB HDD SAS, mirror disks) in removable drive bay; PCIe x8 RAID controller including ZCMP module (2 slots occupied) + 240 GB SATA HDD (for operating system) in removable drive bay, on the front | **T** |
| • RAID5, 2 TB (3 x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swappable, on the front; PCIe x8 RAID controller including ZCMP module (2 slots occupied) | **U** |
| • RAID5, 2 TB (3 x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swappable; PCIe x8 RAID controller including ZCMP module (2 slots occupied) + 1 TB SATA HDD as hot-spare in removable drive bay, on the front | **V** |
| • RAID1, 240 GB (2 x 240 GB SSD SATA, mirror disks), in removable drive bay, hot swap, at the front | **W** |

## Ordering data

| SIMATIC IPC847D | Article No. 6AG4114- 2 ■ ■ ■ ■ - ■ ■ ■ ■ |
|---|---|
| Memory configuration | |
| - 2 GB DDR3 SDRAM (1 x 2 GB), single channel | 1 |
| - 4 GB DDR3 SDRAM (2 x 2 GB), dual channel | 2 |
| - 8 GB DDR3 SDRAM (2 x 4 GB), dual channel | 3 |
| - 16 GB DDR3 SDRAM (2 x 8 GB), dual channel | 4 |
| - 32 GB DDR3 SDRAM (4 x 8 GB), dual channel | 5 |
| - 8 GB DDR3 SDRAM, (2 x 4 GB), ECC, dual channel | 6 |
| - 16 GB DDR3 SDRAM, (2 x 8 GB), ECC, dual channel | 7 |
| - 32 GB DDR3 SDRAM, (4 x 8 GB), ECC, dual channel | 8 |
| Bus module / removable data | |
| - Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; without removable data storage media | 0 |
| - Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; without removable data storage media | 1 |
| - Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; DVD±RW (slim) | 2 |
| - Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; DVD±RW (slim) | 3 |
| Expansion hardware | |
| - Without expansions (hardware), onboard graphics | 0 |
| - Without expansions (hardware), onboard graphics, DVI-I to VGA adapter cable for onboard graphics; | 1 |
| - Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics | 2 |
| - Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics, DVI-I to VGA adapter cable for onboard graphics | 3 |
| - Serial (COM2) + parallel (LPT, 1 slot reserved) + PCIe x16 Graphics Card (Dual-Head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied) | 4 |

| SIMATIC IPC847D | Article No. 6AG4114- 2 ■ ■ ■ ■ - ■ ■ ■ ■ |
|---|---|
| Operating system (pre-installed and activated) | |
| - Windows 7 Ultimate, 32-bit, SP1, MUI (en, de, fr, it, es) | A |
| - Windows 7 Ultimate, 64-bit, SP1, MUI (en, de, fr, it, es) | B |
| - Windows 10 Enterprise 2015, LTSB, 64-bit, MUI (en, de, fr, it, es) | C |
| - Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Core i3/i5) | D |
| - Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Xeon) | E |
| - Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es) | F |
| - Windows Server 2012 R2 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit | G |
| - Windows Server 2016 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit language | H |
| - Without operating system | X |
| Expansions (software)/Security | |
| - SIMATIC IPC DiagMonitor software enclosed | A |
| - SIMATIC IPC Image Creator software included | B |
| - SIMATIC IPC DiagMonitor and Image Creator software enclosed | C |
| - Without software (software) | X |
| - TPM 1.2 [1] (not for China and Russia) | Y |
| Power supply, with country-specific cable | |
| - 110/240 V AC industrial power supply with NAMUR; power cable for Europe | 0 |
| - 110/240 V AC industrial power supply with NAMUR; power cable for United Kingdom | 1 |
| - 110/240 V AC industrial power supply with NAMUR; power cable for Switzerland | 2 |
| - 110/240 V AC industrial power supply with NAMUR; power cable for the USA | 3 |
| - 110/240 V AC industrial power supply with NAMUR; power cable for Italy | 4 |
| - 110/240 V AC industrial power supply with NAMUR; power cable for China | 5 |
| - 2 x 110/240 V AC redundant power supply; without power cable | 6 |
| - 110/240 V AC industrial UPS including maintenance-free lead-tin battery; without power cable | 7 |
| - 110/240 V AC industrial power supply with NAMUR; without power cable | 8 |

[1] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at:
https://www.siemens.com/ipc-configurator

## Ordering data

| Ordering data | Article No. |
|---|---|
| Accessories | |
| **Memory expansions** | |
| • 2 GB DDR3 1600 DIMM | **6ES7648-2AJ50-0MA0** |
| • 4 GB DDR3 1600 DIMM | **6ES7648-2AJ60-0MA0** |
| • 8 GB DDR3 1600 DIMM | **6ES7648-2AJ70-0MA0** |
| • 8 GB DDR3 1600 DIMM, ECC | **6ES7648-2AJ70-1MA0** |
| Hardware accessories | |
| **Tray for low-profile removable drive bay**<br>For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive | **6ES7648-0EG01-1BA0** |
| **Filter mats**<br>for SIMATIC IPC847D (packing unit: 10 units) | **A5E01064980** |
| **Adapter cable** | |
| • DisplayPort to DVI-D for onboard graphics | **6ES7648-3AF00-0XA0** |
| • DisplayPort to VGA for onboard graphics | **6ES7648-3AG00-0XA0** |
| **Power cable, straight, 3 m long** | |
| • Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden | **6ES7900-0AA00-0XA0** |
| • United Kingdom | **6ES7900-0BA00-0XA0** |
| • Switzerland | **6ES7900-0CA00-0XA0** |
| • USA | **6ES7900-0DA00-0XA0** |
| • Italy | **6ES7900-0EA00-0XA0** |
| • China | **6ES7900-0FA00-0XA0** |
| **Tower Kit**<br>for converting the computer into an industrial tower PC | **6ES7648-1AA00-0XD0** |
| **USB retainer**<br>For interlocking the internal USB port | **6ES7648-1AA00-0XK0** |
| **Expansion components** | See Expansion components |
| **Communication products** | See Expansion components |

Note:

Software Packages with SIMATIC WinCC flexible, WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at a price advantage. More information under "Embedded Bundles/Packages for industrial PCs".

The fixing screws of the telescopic rails must not project more than 5 mm into the enclosure.

The enclosure is prepared for the following telescopic rails:

- Rittal: Type 3659.180 for 600 mm cabinet / Type RP 3659.190 for 800 mm cabinet
- Schroff: Type 20110-072

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## SIMATIC IPC1047

### Overview

***SIMATIC IPC1047***

SIMATIC IPC1047 is an industrial PC for maximum computing and graphic capacity requirements with expansive expandability in 19" installation design (4 U).

It offers:

- Maximum CPU performance due to two Intel® Xeon® CPUs
- Maximum GPU performance with up to two NVIDIA® Quadro® P5000 graphics cards
- High degree of expandability thanks to 6 PCIe slots
- Product design for industrial environment

### Technical specifications

| Article number | **6BK1800-1HA01-0AA0**<br>SIMATIC IPC1047 - CPU (Rack PC) | **6BK1800-1HA02-0AA0**<br>SIMATIC IPC1047 - GPU (Rack PC) | **6BK1800-1HA03-0AA0**<br>SIMATIC IPC1047 - Virtualize (Rack PC) |
|---|---|---|---|
| **Installation type/mounting** | | | |
| Mounting | For horizontal rack mounting | For horizontal rack mounting | For horizontal rack mounting |
| Design | Rack PC, 19", 4U | Rack PC, 19", 4U | Rack PC, 19", 4U |
| Rack mounting | Yes | Yes | Yes |
| **Supply voltage** | | | |
| Type of supply voltage | 100/240V AC (autorange) 50/60 Hz | 100/240V AC (autorange) 50/60 Hz | AC redundant 100/240 V (autorange) 50 Hz/60 Hz |
| **Line frequency** | | | |
| • Rated value 50 Hz | Yes | Yes | Yes |
| • Rated value 60 Hz | Yes | Yes | Yes |
| **Mains buffering** | | | |
| • Mains/voltage failure stored energy time | 20 ms | 20 ms | 20 ms |
| **Processor** | | | |
| Processor type | Xeon E5-2620 v4 (8C/16T, 2.1 (3.0) GHz, 20 MB Cache) | Xeon E5-2620 v4 (8C/16T, 2.1 (3.0) GHz, 20 MB Cache) | Xeon E5-2658 v4 (14C/28T, 2.3 (2.8) GHz, 35 MB Cache) |
| Chipset | Intel PCH C612 | Intel PCH C612 | Intel PCH C612 |
| **Graphic** | | | |
| Graphics controller | Onboard VGA / 2D controller 1 920 × 1 200 @ 60 Hz 32 bpp | NVIDIA Quadro P5000, 2 560 cores, 16 GB DDR5 | Onboard VGA / 2D controller 1 920 × 1 200 @ 60 Hz 32 bpp |
| **Drives** | | | |
| Hard disk | 1x 480 GB SSD | 1x 480 GB SSD | 1x 480 GB SSD, 4x 1.9 TB SSD |
| SSD | Yes | Yes | Yes |
| **Memory** | | | |
| Type of memory | DDR4-SDRAM DIMM | DDR4-SDRAM DIMM | DDR4-SDRAM DIMM |
| Main memory | 32 GB, 2 400 MHz | 32 GB, 2 400 MHz | 128 GB, 2 400 MHz |
| Capacity of main memory, max. | 2 Tbyte | 2 Tbyte | 2 Tbyte |
| **Hardware configuration** | | | |
| **Slots** | | | |
| • free slots | 6 slots: 3x PCIe (x16), 3x PCIe (x8) | 6 slots: 3x PCIe (x16), 3x PCIe (x8) | 6 slots: 3x PCIe (x16), 3x PCIe (x8) |
| • Number of PCI slots | 6 | 6 | 6 |
| **Interfaces** | | | |
| USB port | 4x USB 3.0: 2x on rear, 2x on front;<br>2x USB 2.0: 2x on rear | 4x USB 3.0: 2x on rear, 2x on front;<br>2x USB 2.0: 2x on rear | 4x USB 3.0: 2x on rear, 2x on front;<br>2x USB 2.0: 2x on rear |
| **Integrated Functions** | | | |
| **Monitoring functions** | | | |
| • Temperature monitoring | Yes | Yes | Yes |
| • Status LEDs | POWER, HDD, FAN Fail | POWER, HDD, FAN Fail | POWER, HDD, FAN Fail |
| • Fan | Yes | Yes | Yes |
| • Monitoring function via network | Yes (per IPMI) | Yes (per IPMI) | Yes (per IPMI) |

## Technical specifications (continued)

| Article number | **6BK1800-1HA01-0AA0**<br>SIMATIC IPC1047 - CPU (Rack PC) | **6BK1800-1HA02-0AA0**<br>SIMATIC IPC1047 - GPU (Rack PC) | **6BK1800-1HA03-0AA0**<br>SIMATIC IPC1047 - Virtualize (Rack PC) |
|---|---|---|---|
| **EMC** | | | |
| **Interference immunity against discharge of static electricity** | | | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2 | | |
| **Interference immunity against high-frequency electromagnetic fields** | | | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | | |
| **Interference immunity to cable-borne interference** | | | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric | | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge | | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst | ±1 kV acc. to IEC 61000-4-4, Burst | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | | |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | | |
| **Interference immunity to magnetic fields** | | | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | | | |
| • Interference emission via line/AC current cables | EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-3 | | |
| **Degree and class of protection** | | | |
| IP (at the front) | IP30 | IP30 | IP30 |
| IP (rear) | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005) | | |
| CSA approval | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FCC | Yes | Yes | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 | | |
| Dust protection | With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered | | |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • Ambient temperature during operation | 0 °C to +50 °C in basic configuration;<br>0 °C to +40 °C in maximum configuration | 0 to +40 °C | 0 to +40 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) | | |
| **Vibrations** | | | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6, 10 cycles; 20 to 58 Hz: 0.015 mm; 58 to 200 Hz: 2 m/s² (0.2 g) | | |
| **Shock testing** | | | |
| • Shock load during operation | Tested according to IEC 60068-2-27; half-sine: 9.8 m/s² (1 g), 20 ms, 100 shocks per axis | | |
| **Operating systems** | | | |
| pre-installed operating system | Windows 7 Professional x64 bit | Windows 7 Professional x64 bit | Windows Server 2012 R2 |
| **pre-installed operating system** | | | |
| • Windows 7 | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width | 430 mm | 430 mm | 430 mm |
| Height | 176.6 mm; 4U | 176.6 mm; 4U | 176.6 mm; 4U |
| Depth | 572 mm | 572 mm | 572 mm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC1047** | **6BK1800 - 1 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Rack PC, 19", 4 U; 572 mm;<br>2x 1 GB LAN (RJ45);<br>COM1; IPMI; 6 PCIe slots<br>(3x PCIe x8 + 3x PCIe x16) | |
| Processor | |
| • 2x Xeon E56-2609v4, 1.7 GHz, 8C | A |
| • 2x Xeon E56-2620v4, 2.1 GHz, 8C | B |
| • 2x Xeon E56-2640v4, 2.4 GHz, 10C | D |
| • 2x Xeon E56-2643v4, 3.4 GHz, 6C | E |
| • 2x Xeon E56-2658v4, 2.3 GHz, 14C | F |
| Drives/ mass storage | |
| • 1x SSD 480 GB 2.5" SATA (without HW RAID) | A |
| • 1x SSD 960 GB 2.5" SATA (without HW RAID) | B |
| • 1x SSD 1.9 TB 2.5" SATA (without HW RAID) | C |
| • 1x SSD 480 GB (operating system) + 4x SSD 1.9 TB 2.5" SATA (HW-RAID 5 + hot spare - internal) | D |
| • 1x SSD 1.9 TB 2.5" (OS) + 2x SSD 1.9 TB 2.5" SATA (HW-RAID 1) | E |
| • 1x SSD 1.9 TB 2.5" (OS) + 3x SSD 1.9 TB 2.5" SATA (HW-RAID 5) | F |
| • 1x HDD 2 TB 3.5" SATA (without HW RAID) | G |
| • 4x HDD 2 TB 3.5" SATA (without HW RAID) | H |
| • 1x HDD 4 TB 3.5" SATA (without HW RAID) | J |
| • 4x HDD 4 TB 3.5" SATA (without HW RAID) | K |
| • 1x SSD 480 GB 2.5" + 1x HDD 2 TB 3.5" SATA (without HW RAID) | L |
| • 1x SSD 480 GB 2.5" + 1x HDD 2 TB 3.5" SATA (without HW RAID) | M |
| • No drives | Y |
| Memory configuration | |
| • 32 GB 2 400 MHz DDR4 | 0 |
| • 64 GB 2 400 MHz DDR4 | 1 |
| • 128 GB 2 400 MHz DDR4 | 2 |
| • 192 GB 2 400 MHz DDR4 | 3 |
| • 256 GB 2 400 MHz DDR4 | 4 |
| • 384 GB 2 400 MHz DDR4 | 5 |
| • 512 GB 2 400 MHz DDR4 | 6 |

| | Article No. |
|---|---|
| **SIMATIC IPC1047** | **6BK1800 - 1 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Graphics cards | |
| • Without graphics card (onboard VGA) | 0 |
| • 1x Nvidia Quadro P400 (1x PCIe x16 occupied) | 1 |
| • 1x Nvidia Quadro P1000 (1x PCIe x16 occupied) | 2 |
| • 1x Nvidia Quadro P4000 (1x PCIe x16 occupied) - only with 860 W power supply | 3 |
| • 1x Nvidia Quadro P5000 (1x PCIe x16 + 1x PCIe x8 occupied) - only with 860 W power supply | 4 |
| Further plug-in cards | |
| • Without plug-in cards | 0 |
| • Adaptec RAID ASR8405 (4-port) - only with drive var. D, E, F | 1 |
| • Adaptec RAID ASR8805 (8-port) - only with drive var. D, E, F | 2 |
| • Intel I350-T2 (2x 1 GB LAN) | 4 |
| • Intel I350-T4 (4x 1 GB LAN) | 5 |
| • Intel X540-T2 (2x 10 GB LAN) | 6 |
| Operating system (pre-installed and activated) | |
| • Without operating system | A |
| • Windows 10 Enterprise LTSB 2016 only with installed HDDs/ SSDs | B |
| • Windows Server 2016, basic license 16 C (only license + driver) for CPU E5-2609/ 2620/ 2643 | C |
| • Windows Server 2016, basic license 16 C + additional license 4 C (only license + driver) for CPU E5-2640 | D |
| • Windows Server 2016, basic license 24 C + additional license 4 C (only license + driver) for CPU E5-2658 | E |
| Power supply | |
| • 860 W without power supply cable | A |
| • 860 W power supply cable for Europe | B |
| • 860 W power supply cable US | C |
| • 860 W power supply cable China | D |
| • 700 W, redundant, without power supply cable | E |
| • 700 W, redundant, power supply cable for Europe | F |
| • 700 W power supply cable US | G |
| • 700 W power supply cable China | H |
| Enclosure variant | |
| • Holder for 4x 3.5" or 8x 2.5" SSD/HDD internal drives | 0 |
| • Holder for 4x 3.5" or 4x 2.5" SSD/HDD removable drive bay | 1 |

## Ordering data

| | Article No. |
|---|---|
| *Preferred versions* | |
| **SIMATIC IPC1047 CPU**<br>• 2x Intel Xeon E5-2620v4; 32 GB DDR4 ECC SDRAM;<br>• 1x system-SSD 480 GB; 2x Gbit Ethernet, IPMI, RJ45<br>• 1x VGA, 1x COM 1, TPM1.2<br>• 2x USB 3.0, 2x USB rear; 2x USB 3.0 front<br>• WIN 7 Professional x64bit<br>• ATX power supply 860 W; temp. and fan monitoring<br>• SW RAID onboard | **6BK1800-1HA01-0AA0** |
| **SIMATIC IPC1047 GPU**<br>• 2x Intel Xeon E5-2620v4; 32 GB DDR4 ECC SDRAM;<br>• 1x system-SSD 480 GB; 1x GPU NVIDIA P5000;<br>• 2x Gbit Ethernet, IPMI, RJ45; 1x VGA, 1x COM 1, TPM1.2;<br>• 2x USB 3.0, 2x USB rear; 2x USB 3.0 front<br>• WIN 7 Professional x64bit<br>• ATX power supply 860 W; temp. and fan monitoring<br>• SW RAID onboard | **6BK1800-1HA02-0AA0** |
| **SIMATIC IPC1047 Virtualize**<br>• 2x Intel Xeon E5-2658v4; 128 GB DDR4 ECC SDRAM<br>• 1x system-SSD 480 GB; 4x DATA-SSD 1.9TB<br>• 2x Gbit Ethernet, IPMI, RJ45; 1x VGA, 1x COM 1, TPM1.2;<br>• 2x USB 3.0, 2x USB rear; 2x USB 3.0 front<br>• Windows Server 2012 R2<br>• 700 W redundant power supply; temp. and fan monitoring<br>• HW RAID controller | **6BK1800-1HA03-0AA0** |

Note:

For customer-specific configurations, please contact your Siemens sales specialist.

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

***SIMATIC Box PCs***

SIMATIC Box PCs provide mechanical engineers, plant engineers and control cabinet makers with particularly rugged industrial PC systems for use in powerful yet compact applications.

The following device classes are available for various requirements:

- ***SIMATIC IPC127E***:
  The ultra-compact, flexible, rugged industrial PC and IoT gateway in one
- ***SIMATIC IPC227 (Nanobox PC)***:
  The Box PC with optimized performance in compact design – maintenance-free and rugged
- ***SIMATIC IPC427 (Microbox PC)***:
  The powerful embedded IPC – maintenance-free with versatile configuration
- ***SIMATIC IPC627/IPC827 (Box PC)***:
  The high-end IPC – with maximum performance, functional scope, and expansion capability

Shared industrial functionality:

- Extreme compactness
- Certification for global marketing
- System-tested with SIMATIC components
- High vibration/shock load during operation
- Wide operational temperature range
- Robust data storage with CompactFlash/CFast or solid-state drive (SSD)
- Varied mounting possibilities for flexibility with installation
- Designed for 24-hour continuous operation
- Integrated parameterizable monitoring functions (temperature, fan, watchdog)
- High service friendliness
- Operating system pre-installed and activated for fast startup
- Motherboard developed and manufactured by Siemens
- Availability for 3 to 6 years
- Repairs and spare parts service for 5 years
- High component/design continuity
- Long-term availability of PC components from the Intel embedded line

***SIMATIC IPC127 (Nanobox PC): Ultra-compact IoT gateway for data collection, pre-processing, and forwarding of data***

- High-performance gateway:
  IoT gateway for the acquisition/collection/processing/transmission of data / integration of machinery in Cloud/Edge solutions
- For retrofitting and new systems:
  Networking/retrofitting of digitizing tasks in brownfield and greenfield systems due to ultra-compact design
- Optimized price/performance ratio; ideal for high quantities

***SIMATIC IPC227 (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged***

- Maximum compactness with approx. 1 liter enclosure volume with integrated industrial power supply for minimum space requirements in the control cabinet
- Maximum flexibility thanks to several mounting options and interfaces on one side suitable for every installation situation
- Optimum variety of interfaces due to a large number of integrated interfaces such as a selectable serial connection and 2 x teaming-capable Gigabit-Ethernet
- Maximum industrial functionality due to closed enclosure for optimum dust protection and non-volatile retentive memory
- Further device options for optimum adaptation to the application with additional PCIe slot

***SIMATIC IPC427 (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration***

- Fan-free operation
- High performance with maximum compactness and ruggedness for direct installation in the machine
- Optimized for embedded applications
- Flexibility expandable using one or two PCIe I/O cards (optional)
- Flexible installation options including DIN rail/wall/front upright mounting, even outside control cabinets
- NVRAM for retentive data storage (optional)

***SIMATIC IPC627/IPC827 (Box PC): The high-end IPC – with maximum performance, functional scope, and expansion capability***

- Maximum system performance for complex measuring, control and visualization tasks
- High flexibility with expansion slots and integral interfaces
- Flexible, space-saving installation with mounting brackets or portrait assembly kits
- Rugged design for direct installation in the machine
- RAID1 controller onboard
- Maximum processor performance up to an ambient temperature of 55 °C
- High system availability
- Battery-backed SRAM as memory for WinAC data
- 4 signaling LEDs

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## Technical specifications

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **General information** | | | | | | | |
| Product type designation | | | | IPC427E | | | |
| **Installation type/mounting** | | | | | | | |
| Mounting | DIN rail, wall mounting, portrait mounting | DIN rail, wall mounting, portrait mounting | Standard mounting rail, wall mounting (horizontal and vertical) | DIN rail, wall mounting, portrait mounting | Wall mounting, portrait mounting, desktop mounting | Wall mounting, portrait mounting | Wall mounting, portrait mounting |
| Design | Box PC, built-in unit | Box PC, built-in unit | Box PC, built-in unit | Box PC, built-in unit | Box PC, built-in unit | Box PC, built-in unit | Box PC, built-in unit |
| **Supply voltage** | | | | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC | 24 V DC | 100/240V AC (autorange) 50/ 60 Hz | 100/240 V AC (autorange);<br>24 V DC | 100/240 V AC (autorange);<br>24 V DC |
| **Line frequency** | | | | | | | |
| • Rated value 50 Hz | | | | | Yes | Yes | Yes |
| • Rated value 60 Hz | | | | | Yes | Yes | Yes |
| **Mains buffering** | | | | | | | |
| • Mains/voltage failure stored energy time | 5 ms | 20 ms | 10 ms | 20 ms | | 20 ms | 20 ms |
| **Processor** | | | | | | | |
| Processor type | Intel Atom E3930 / E3940 | Intel Celeron N2807 / N2930, Intel Atom E3845 | Intel Celeron N3160 | Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache);<br>Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache);<br>Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT);<br>Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT) | Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache);<br>Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache);<br>Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache) | Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d);<br>Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d);<br>Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) | Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache);<br>Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache);<br>Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT) |
| Chipset | SoC | SoC | SoC | Intel C236 / Intel H110 | Intel H110 | Intel C246 | Intel DH82C226 PCH |
| **Graphic** | | | | | | | |
| Graphics controller | Integrated | Integrated | Integrated | Intel HD graphics controller | Onboard Intel HD graphics 530/510 integrated in processor | Intel UHD Graphics 630 (Core i); Intel UHD Graphics 610 (Celeron) | Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron) |

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## **Technical specifications** (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **Drives** | | | | | | | |
| Optical drives | | | | possible as external drive via USB | | | DVD±R±RW combi-drive, optional |
| Hard disk | | 2.5" SATA ≥ 320 GB | 500 GB HDD | 2.5" SATA ≥ 320 GB | 1 TB HDD | 2.5" SATA ≥ 320 GB | 3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay |
| SSD | Yes; 32 / 64 / 128 GB | Yes; 128 / 240 / 480 GB | Yes; 256 GB SSD | Yes; 128 / 240 / 480 GB | Yes; Optional | Yes; SSD M.2 NVMe 512 GB; SSD 2.5" SATA 480 / 960 GB; RAID1 2x SSD 2.5" SATA 480 / 960 GB in removable drive bay | Yes; ≥ 240 GB optional |
| **Memory** | | | | | | | |
| Type of memory | DDR4 onboard | DDR3L SO-DIMM | DDR3L | DDR4-2400 SO-DIMM | DDR4-2133 SO-DIMM | DDR4-2666 DIMM | DDR3-1600 DIMM |
| Main memory | 2 / 4 GB RAM | 2 / 4 / 8 GB | 4 GB, 8 GB | 4 / 8 / 16 Gbyte, ECC optional | 4 / 8 / 16 GB, supports up to 32 GB | 4 / 8 / 16 / 32 / 64 GB | 2 / 4 / 8 / 16 GB; ECC optional |
| Capacity of main memory, max. | 4 Gbyte | 8 Gbyte | 8 Gbyte | 16 Gbyte | 32 Gbyte | 64 Gbyte | 16 Gbyte |
| **Data areas and their retentivity** | | | | | | | |
| Retentive data area (incl. timers, counters, flags), max. | | 512 kbyte; 128 KB can be stored in the buffer time; optional | | 512 kbyte; 128 KB can be stored in the buffer time; optional | | 512 kbyte; 128 KB can be stored in the buffer time | 2 Mbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | | | | | | | |
| **Slots** | | | | | | | |
| • free slots | | 1x PCIe (x1) (optional) | 1x mPCIe (half-size),<br>1x mSATA (full-size) | 2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer | 1x PCIe (x16), optional 1x PCIe (x1), 2x PCI additionally | 2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); 3x PCI & 2x PCIe (x16, x4); 5x PCIe (1x16, 2x4, 2x1); with card retainer | 3x PCI,<br>1x PCIe (x4),<br>1x PCIe (x16); with card retainer |
| • Number of PCI slots | | | | | 2; Optional | 5; Optional | 3 |
| • Number of PCI slots | | 1; Optional | | 2; Optional | 2; Optional | 5; Optional | 2 |
| • Number of compact flash slots | | 1; CFast | | 1; CFast | | | |

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## Technical specifications (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | | |
| PROFIBUS/MPI | | | | | | | Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622 |
| Number of industrial Ethernet interfaces | 3; Ethernet (2x RJ45, optional 3x RJ45) | 2; 2x Ethernet (RJ45) | 2; 2x Ethernet (RJ45) | 3; Ethernet (2x RJ45, optional 3x RJ45) | 3; 3x Gigabit Ethernet (IE/PN), RJ45 optional;<br>2x Gigabit Ethernet (IE/PN), RJ45 basic configuration | 3; 3x Ethernet (RJ45) | 2; 2x RJ45 (independent) |
| Number of PROFINET interfaces | | | | | 3; 2 ports base configuration,<br>3 ports optional | | 3; Optional |
| USB port | 2x USB 3.0 / 4x USB 3.0 | 1x USB 3.0 / 3x USB 2.0 | 4x USB 2.0,<br>2x USB 3.0 (high current) | 4x USB 3.0 | 4x USB 3.0,<br>1x USB 2.0 internal,<br>2x USB 2.0 optional | 6x USB 3.1 Gen. 2 (2x type C) | 4x USB 3.0 |
| Connection for keyboard/ mouse | USB / USB | USB / USB | USB / USB | USB / USB | USB / USB | USB / USB | USB / USB |
| serial interface | | Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS | 6x COM (4x RS 232, 2x RS 232 / 422 / 485 switchable) | Without / 2x COM (RS 232 / 485 / 422; switchable) | 2x RS 232 / 485 / 422 combined,<br>2x RS 232 optional | 1x COM | 1x COM1 (RS 232),<br>optional: 1x COM2 (RS 232) |
| parallel interface | | | | | | | optional LPT1 |
| Multimedia | | | | | | | |
| • Audio In/Out | | | | | Yes | | |
| • Microphone In | | | | | Yes | | |
| **Video interfaces** | | | | | | | |
| • Graphics interface | 1x DisplayPort | 1x DisplayPort | 1x DisplayPort,<br>1x VGA | 2x DisplayPort | 1x DisplayPort,<br>1x VGA | 2x DisplayPort;<br>1x DVI-D | 1x DisplayPort and 1x DVI-I;<br>1x VGA via adapter cable (optional) |
| **Industrial Ethernet** | | | | | | | |
| • Industrial Ethernet interface | | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 3x Ethernet (RJ45) | 2x Ethernet (RJ45),<br>1x Ethernet (RJ45) additional option | 3x Ethernet (RJ45) | Onboard, 2x 10 / 100 / 1000 Mbit, RJ45 |
| - 100 Mbps | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| - 1000 Mbps | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Protocols** | | | | | | | |
| **Protocols (Ethernet)** | | | | | | | |
| • TCP/IP | Yes | | Yes | | | | |
| **Interrupts/diagnostics/status information** | | | | | | | |
| Bus diagnostics | | | | Yes | | | Yes |
| **Integrated Functions** | | | | | | | |
| **Monitoring functions** | | | | | | | |
| • Temperature monitoring | Yes | Yes | Yes | Yes | | Yes | Yes |
| • Watchdog | Yes | Yes | Yes | Yes | | Yes | Yes |
| • Status LEDs | 1x power, 3x user | 1x power, 3x user | POWER, HDD | 1x power, 3x user | POWER, HDD | 1x power, 3x user | Yes |
| • Fan | No | No | No | No | | Yes | Yes |
| • Monitoring function via network | Optional | Optional | | Optional | | Optional | Optional |

## Technical specifications (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **EMC** | | | | | | | |
| **Interference immunity against discharge of static electricity** | | | | | | | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2 | | ±6 kV contact; ±8 kV air (to IEC 1000-4-2; ESD) | ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2 | | | |
| **Interference immunity against high-frequency electromagnetic fields** | | | | | | | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 MHz to 2 GHz, 80 % AM acc. to IEC 61000-4-3; 3 V/m, 2 GHz to 2.7 GHz, 80 % AM acc. to IEC 61000-4-3; 10 V, 10 kHz to 80 MHz, 80 % AM acc. to IEC 61000-4-6 | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | 10 V/m for 80 ... 1 000 MHz, 80 % AM according to IEC 61000-4-3; 3 V/m for 1.4 ... 6 GHz, 80 % AM according to IEC 61000-4-3 | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | | | | | | | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4; burst); ±0,5 kV (according to IEC 61000-4-5; surge pulse/line to line); ±1 kV (according to IEC 61000-4-5; surge pulse/line to ground) | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV (according to IEC 61000-4-4, burst); ±1 kV (according to IEC 61000-4-5, surge pulse/line to line); ±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric | | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | | ±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | | ±1 kV acc. to IEC 61000-4-4, Burst | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | |
| **Interference immunity against voltage surge** | | | | | | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric | | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | | | | | | | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 |

## **Technical specifications** (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **Emission of conducted and non-conducted interference** | | | | | | | |
| • Interference emission via line/AC current cables | EN 61000-6-4:2007 +A1:2011 (industrial environments), EN 61000-6-3: 2007 +A1:2011 (residential environments), CISPR 22 Class B, FCC Class A | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | | | | | | | |
| IP degree of protection | IP40 | IP40 | IP40 | IP20 | | IP20 | |
| IP (at the front) | | | | | IP20 | | IP20 |
| IP (rear) | | | | | IP20 | | IP20 |
| **Standards, approvals, certificates** | | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| CSA approval | | | | | Yes;<br>No. 61010-1-12,<br>No. 61010-2-201 | | |
| UL approval | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| • UL 508 | | Yes | | Yes | | | Yes |
| cULus | | Yes | Yes | Yes | Yes;<br>UL 61010-1,<br>UL 61010-2-201 | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| KC approval | | Yes | | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | | Yes | Yes | Yes | Yes | |
| FCC | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| EMC | CE, EN 61000-6-4:2007, EN 61000-6-2:2005 | CE, EN 61000-6-4:2007, EN 61000-6-2:2005 | | CE, EN 55022A, EN 61000-6-4, EN 61000-6-2 | | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| Dust protection | Protection against foreign bodies > 1 mm | Protection against foreign bodies > 1 mm | Protection against foreign bodies > 1 mm | | | | |
| **Use in hazardous areas** | | | | | | | |
| • ATEX Zone 2 | | Yes; Optional | | Yes; Optional | | | |
| • IECEx Zone 2 | | Yes; Optional | | Yes; Optional | | | |
| • cULus Class I Zone 2, Division 2 | | Yes; Optional | | Yes; Optional | | | |
| **Marine approval** | | | | | | | |
| • Germanischer Lloyd (GL) | | Yes | | Yes | | | Yes |
| • American Bureau of Shipping (ABS) | | Yes | | Yes | | Yes | Yes |
| • Bureau Veritas (BV) | | Yes | | Yes | | | Yes |
| • Det Norske Veritas (DNV) | | Yes | | Yes | | Yes | Yes |
| • Korean Register of Shipping (KRS) | | Yes | | Yes | | | |
| • Lloyds Register of Shipping (LRS) | | Yes | | Yes | | | Yes |
| • Nippon Kaiji Kyokai (Class NK) | | Yes | | Yes | | Yes | Yes |
| • Chinese Classification Society (CCS) | | Yes | | | | | |

## Technical specifications (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **Ambient conditions** | | | | | | | |
| **Ambient temperature during operation** | | | | | | | |
| • Ambient temperature during operation | 0 °C to 55 °C | 0 °C up to 60 °C (-20 °C as option) | 0 °C to 50 °C | 0 °C to 55 °C | 0 to +45°C | +5 °C up to 55 °C | +5 °C up to 55 °C |
| **Ambient temperature during storage/transportation** | | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -40 °C | -20 °C | -20 °C | -20 °C |
| • max. | 70 °C | 60 °C | 60 °C | 70 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | | | | |
| • Relative humidity | 5 ... 85 % at 30 °C, no condensation | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) | | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) | 8 ... 85 % at 30 °C, no condensation | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) | |
| **Vibrations** | | | | | | | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | | | | | Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 200 Hz: 4.9 m/s$^2$ | | |
| **Shock testing** | | | | | | | |
| • Shock load during operation | | | | | Tested in accordance with IEC 60068-2-27: With SSD: 150 m/s$^2$, 11 ms; with HDD: 9.8 m/s$^2$, 20 ms | | |
| **Operating systems** | | | | | | | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI | Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit | Windows 7 Ultimate (Multi-Language), 64 bit; Windows 10 Enterprise 2016 LTSB, 64 bit | Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10 | Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit; Windows 10 Enterprise 2016 LTSB | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI | Windows 7 Ultimate, 32-bit/ 64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| Additional info on operating system | | | | | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) | | |
| without operating system | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes | Yes; Optional | Yes |

## Technical specifications (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) | **6AG4022-0A...-....**<br>SIMATIC IPC327E | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|---|---|---|---|---|---|
| **pre-installed operating system** | | | | | | | |
| • Windows 7 | | Yes; Ultimate 32 bit or 64 bit | Yes; Ultimate 64 bit | Yes; Ultimate 32 bit or 64 bit | Yes; Ultimate 32 bit or 64 bit | | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 | | | | | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | | |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI | Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| **Software** | | | | | | | |
| SIMATIC Software | | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle | | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle | | | |
| **Dimensions** | | | | | | | |
| Width | 85 mm | 191 mm | 254 mm | 262 mm | 260 mm | 314 mm | 312 mm |
| Height | 85 mm | 100 mm | 140 mm | 139.7 mm | 135 mm | 93 mm; For variant 5x PCI(e): 155 mm | 155 mm; With DVD drive: 179 mm |
| Depth | 41 mm | 60 mm | 75 mm | 55.5 mm | 225 mm | 301 mm; incl. mounting rail | 301 mm; incl. mounting rail |

More information is available on the Internet at:
http://www.siemens.com/simatic-pc

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## SIMATIC IPC127E

### Overview

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***SIMATIC IPC127E:***
***Ultra-compact IoT gateway for data collection, pre-processing, and forwarding of data***

Thanks to the ultra-compact enclosure, which has a volume of just 0.3 liters, the SIMATIC IPC127E can be easily – even subsequently – integrated into the control cabinet or directly on the machine with minimal space requirements.

The enclosed all-metal enclosure enables the new industrial PC to be used flexibly and maintenance-free even under harsh conditions.
Thus the SIMATIC IPC127E makes it possible to reliably record / collect / process / transfer data directly in the production environment and can be flexibly used as an IoT gateway between the cloud or the corporate IT level and production.

Thanks to pre-configured versions, the right product is available to users in a very short time.

### Technical specifications

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E |
|---|---|
| **Installation type/mounting** | |
| Mounting | DIN rail, wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 5 ms |
| **Processor** | |
| Processor type | Intel Atom E3930 / E3940 |
| Chipset | SoC |
| **Graphic** | |
| Graphics controller | Integrated |
| **Drives** | |
| SSD | Yes; 32 / 64 / 128 GB |
| **Memory** | |
| Type of memory | DDR4 onboard |
| Main memory | 2 / 4 GB RAM |
| Capacity of main memory, max. | 4 Gbyte |

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E |
|---|---|
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; Ethernet (2x RJ45, optional 3x RJ45) |
| USB port | 2x USB 3.0 / 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Protocols** | |
| **Protocols (Ethernet)** | |
| • TCP/IP | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | 1x power, 3x user |
| • Fan | No |
| • Monitoring function via network | Optional |

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## Technical specifications (continued)

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 MHz to 2 GHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 GHz to 2.7 GHz, 80 % AM acc. to IEC 61000-4-3;<br>10 V, 10 kHz to 80 MHz, 80 % AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4; burst);<br>±0,5 kV (according to IEC 61000-4-5; surge pulse/line to line);<br>±1 kV (according to IEC 61000-4-5; surge pulse/line to ground) |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-4:2007 +A1:2011 (industrial environments),<br>EN 61000-6-3:2007 +A1:2011 (residential environments),<br>CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP degree of protection | IP40 |

| Article number | **6AG4021-0A.1.-..A0**<br>SIMATIC IPC127E |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| RCM (formerly C-TICK) | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-4:2007,<br>EN 61000-6-2:2005 |
| Dust protection | Protection against foreign bodies > 1 mm |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 70 °C |
| **Relative humidity** | |
| • Relative humidity | 5 ... 85 % at 30 °C, no condensation |
| **Operating systems** | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| **Dimensions** | |
| Width | 85 mm |
| Height | 85 mm |
| Depth | 41 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC127E** | **6AG4021 - 0 A ■ 1 ■ - ■ ■ A 0** |
| Processor / RAM / TPM | |
| • Atom E3930 (2C/2T) / 2 GB RAM | **A** |
| • Atom E3940 (4C/4T) / 4 GB RAM | **B** |
| • Atom E3930 (2C/2T) / 2 GB RAM / TPM (not for China) | **C** |
| • Atom E3940 (4C/4T) / 4 GB RAM / TPM (not for China) | **D** |
| Box type | |
| • Basic version; 2x Ethernet RJ45, 2x USB 3.0 | **1** |
| • Extended version; 3x Ethernet RJ45, 4x USB 3.0 | **2** |

| | Article No. |
|---|---|
| **SIMATIC IPC127E** | **6AG4021 - 0 A ■ 1 ■ - ■ ■ A 0** |
| Operating system | |
| • Without | **0** |
| • Windows 10 Enterprise LTSB 2016, 64-bit, MUI (En, De, Es, Fr, It) | **1** |
| • Windows 10 Enterprise LTSC 2019, 64-bit, MUI (En, De, Fr, It, Es) | **2** |
| Drives | |
| • 32 GB SSD | **A** |
| • 64 GB SSD | **B** |
| • 128 GB SSD | **C** |

| **Preferred variants** | |
|---|---|
| **Configuration 1**<br>• Processor / RAM: 2 core / 2 GB RAM<br>• Box type: Base<br>• Operating system: Without<br>• Drive: 32 GB SSD | **6AG4021-0AA11-0AA0** |
| **Configuration 2**<br>• Processor / RAM: 2 core / 2 GB RAM<br>• Box type: Extended<br>• Operating system: Without<br>• Drive: 64 GB SSD | **6AG4021-0AA12-0BA0** |
| **Configuration 3**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Base<br>• Operating system: Without<br>• Drive: 64 GB SSD | **6AG4021-0AB11-0BA0** |
| **Configuration 4**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Extended<br>• Operating system: Without<br>• Drive: 128 GB SSD | **6AG4021-0AB12-0CA0** |
| **Configuration 5**<br>• Processor / RAM: 2 core / 2 GB RAM<br>• Box type: Base<br>• Operating system: Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>• Drive: 64 GB SSD | **6AG4021-0AA11-1BA0** |
| **Configuration 6**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Base<br>• Operating system: Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>• Drive: 64 GB SSD | **6AG4021-0AB11-1BA0** |
| **Configuration 7**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Base<br>• Operating system: Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>• Drive: 128 GB SSD | **6AG4021-0AB11-1CA0** |
| **Configuration 8**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Extended<br>• Operating system: Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>• Drive: 64 GB SSD | **6AG4021-0AB12-1BA0** |
| **Configuration 9**<br>• Processor / RAM: 4 core / 4 GB RAM<br>• Box type: Extended<br>• Operating system: Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>• Drive: 128 GB SSD | **6AG4021-0AB12-1CA0** |

Note:

All configurations of the SIMATIC IPC127E do not include any mounting accessories. They must be ordered separately.

| *Mounting accessories* | |
|---|---|
| **DIN rail** | **6AG4021-0AA20-0AA1** |
| **Wall-mount** | **6AG4021-0AA20-0AA2** |
| **Book-mount Base** | **6AG4021-0AA20-0AA3** |
| **Book-mount Extended** | **6AG4021-0AA20-0AA4** |
| **Book-mount DIN-Rail** | **6AG4021-0AA20-0AA5** |

Additional information is available on the Internet at:

http://www.siemens.com/simatic-ipc

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## Overview

SIEMENS
SIMATIC NANOBOX PC

***SIMATIC IPC227E (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged***

The SIMATIC IPC227E Nanobox PC is an extremely compact and flexible embedded industrial PC.

Thanks to its closed, dust-protected all-metal enclosure, the IPC227E offers maximum industrial functionality for flexible use under harsh conditions—while remaining maintenance-free.

Modern interfaces and the option for expansion via a PCIe slot mean this Box PC can be easily integrated into the automation system. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here in an ultra-compact design.

## Technical specifications

| Article number | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | DIN rail, wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Intel Celeron N2807 / N2930, Intel Atom E3845 |
| Chipset | SoC |
| **Graphic** | |
| Graphics controller | Integrated |
| **Drives** | |
| Hard disk | 2.5" SATA ≥ 320 GB |
| SSD | Yes; 128 / 240 / 480 GB |
| **Memory** | |
| Type of memory | DDR3L SO-DIMM |
| Main memory | 2 / 4 / 8 GB |
| Capacity of main memory, max. | 8 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x PCIe (x1) (optional) |
| • Number of PCI slots | 1; Optional |
| • Number of compact flash slots | 1; CFast |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2; 2x Ethernet (RJ45) |
| USB port | 1x USB 3.0 / 3x USB 2.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | 1x power, 3x user |
| • Fan | No |
| • Monitoring function via network | Optional |

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## **Technical specifications** (continued)

| Article number | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP degree of protection | IP40 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-4:2007, EN 61000-6-2:2005 |
| Dust protection | Protection against foreign bodies > 1 mm |

| Article number | **6ES7647-8B...-....**<br>SIMATIC IPC227E (Nanobox PC) |
|---|---|
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes; Optional |
| • IECEx Zone 2 | Yes; Optional |
| • cULus Class I Zone 2, Division 2 | Yes; Optional |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Korean Register of Shipping (KRS) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| • Chinese Classification Society (CCS) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C up to 60 °C (-20 °C as option) |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Software** | |
| SIMATIC Software | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle |
| **Dimensions** | |
| Width | 191 mm |
| Height | 100 mm |
| Depth | 60 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC227E** | **6ES7647- 8 B■■■ - ■■■■** |
| Processor | |
| • Celeron N2807 (2C/2T) | **A** |
| • Celeron N2930 (4C/4T) | **B** |
| • Celeron N2807 (2C/2T)/TPM (not for China) | **C** |
| • Celeron N2930 (4C/4T)/TPM (not for China) | **D** |
| • Celeron E3845 ET (4C/4T) / TPM (not for China) | **E** |
| Work memory/NVRAM | |
| • 2 GB | **1** |
| • 4 GB | **2** |
| • 8 GB | **3** |
| • 2 GB/NVRAM | **4** |
| • 4 GB/NVRAM | **5** |
| • 8 GB/NVRAM | **6** |
| • 4 GB RAM ET / NVRAM | **7** |
| Device version/interface | |
| • Basis without COM | **1** |
| • Basis with COM1/2 | **2** |
| • PCIe without COM | **3** |
| • PCIe with COM1/2 | **4** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 E SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 E SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 P SP1, English, 32-bit | **3** |
| • Windows Embedded Standard 7 P SP1, English, 64-bit | **4** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **5** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **6** |
| • Windows 10 IoT Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) | **7** |

| | Article No. |
|---|---|
| **SIMATIC IPC227E** | **6ES7647- 8 B■■■ - ■■■■** |
| Mass storage | |
| • None | **A** |
| • 128 GB SSD | **E** |
| • 240 GB SSD | **C** |
| • 480 GB SSD | **D** |
| • 60 GB SSD ET | **H** |
| • 4 GB CFast | **K** |
| • 8 GB CFast | **L** |
| • 16 GB CFast | **M** |
| • 30 GB CFast | **N** |
| • 320 GB HDD | **R** |
| Software | |
| • Without SIMATIC software | **A** |
| • CPU 1507S | **B** |
| • WinCC RT Advanced V14, 128 PT (V15 license package) | **D** |
| • WinCC RT Advanced V14, 512 PT (V15 license package) | **E** |
| • WinCC RT Advanced V14, 2 048 PT (V15 license package) | **F** |
| • WinCC RT Advanced V14, 4 096 PT (V15 license package) | **G** |
| • CPU 1507S/WinCC RT Advanced V14, 128 PT (V15 license package) | **J** |
| • CPU 1507S/WinCC RT Advanced V14, 512 PT (V15 license package) | **K** |
| • CPU 1507S/WinCC RT Advanced V14, 2 048 PT (V15 license package) | **L** |
| • CPU 1507S/WinCC RT Advanced V14, 4 096 PT (V15 license package) | **M** |
| • Starter system, with CPU1507S and WinCC RT Advanced, without licenses | **S** |
| • Industrial Edge | **V** |
| Mounting accessories | |
| • Standard mounting rail | **1** |
| • Wall mounting | **2** |
| • Portrait mounting | **3** |
| • DIN rail mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **4** |
| • Wall mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **5** |
| • Portrait mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **6** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

Additional information is available on the Internet at:

http://www.siemens.com/simatic-ipc

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## Overview

SIEMENS
SIMATIC BOX PC

***SIMATIC IPC327E***

Based on Intel Celeron process technology, the SIMATIC IPC327E Box PC represents a new IPC platform which has been specifically developed for cost-optimized, PC-based applications in industrial and industry-oriented environments.

It is above all distinguished by a large number of interfaces for easy connection to existing and new systems, fast availability from stock as well as a fanless industrial design.

## Technical specifications

| Article number | **6AG4022-0A...-....**<br>SIMATIC IPC327E |
|---|---|
| **Installation type/mounting** | |
| Mounting | Standard mounting rail, wall mounting (horizontal and vertical) |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 10 ms |
| **Processor** | |
| Processor type | Intel Celeron N3160 |
| Chipset | SoC |
| **Graphic** | |
| Graphics controller | Integrated |
| **Drives** | |
| Hard disk | 500 GB HDD |
| SSD | Yes; 256 GB SSD |
| **Memory** | |
| Type of memory | DDR3L |
| Main memory | 4 GB, 8 GB |
| Capacity of main memory, max. | 8 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x mPCIe (half-size),<br>1x mSATA (full-size) |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2; 2x Ethernet (RJ45) |
| USB port | 4x USB 2.0,<br>2x USB 3.0 (high current) |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 6x COM (4x RS 232, 2x RS 232 / 422 / 485 switchable) |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort, 1x VGA |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Protocols** | |
| **Protocols (Ethernet)** | |
| • TCP/IP | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD |
| • Fan | No |

## **Technical specifications** (continued)

| Article number | **6AG4022-0A...-....**<br>SIMATIC IPC327E |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact;<br>±8 kV air (to IEC 1000-4-2; ESD) |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 1 000 MHz,<br>80 % AM according to IEC 61000-4-3;<br>3 V/m for 1.4 ... 6 GHz,<br>80 % AM according to IEC 61000-4-3 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4, burst);<br>±1 kV (according to IEC 61000-4-5, surge pulse/line to line);<br>±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Degree and class of protection** | |
| IP degree of protection | IP40 |

| Article number | **6AG4022-0A...-....**<br>SIMATIC IPC327E |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| Dust protection | Protection against foreign bodies > 1 mm |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 50 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation:<br>5 % to 85 % at 30 °C<br>(no condensation),<br>storage / transport: 5 % to 95 %<br>at 25 / 55 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language), 64 bit;<br>Windows 10 Enterprise 2016 LTSB, 64 bit |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Dimensions** | |
| Width | 254 mm |
| Height | 140 mm |
| Depth | 75 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC327E**<br>1 x display port graphic<br>1 x VGA port graphic<br>2x 10/100/1 000 Mbps Ethernet RJ45<br>2 x USB 3.0; 4 x USB 2.0;<br>6 x serial ports (COM) | **6AG4022 - 0 A■■■ - ■■■■** |
| Processor | |
| • Celeron N3160 (4C/4T) | **A** |
| Work memory | |
| • 4 GB RAM | **2** |
| • 8 GB RAM | **3** |
| Expansions/interfaces | |
| • 1x mPCIe / 1x mSata | **1** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Ultimate SP1, 64-bit MUI (en, de, fr, it, es) | **1** |
| Drives | |
| • Without | **A** |
| • 500 GB HDD | **B** |
| • 256 GB SSD | **C** |
| Power supply | |
| • 24 V DC | **A** |
| Mounting accessories | |
| • Installation, VESA installation | **1** |

| | Article No. |
|---|---|
| ***Preferred variants (available ex stock)*** | |
| ***SIMATIC IPC327E*** | |
| **Configuration 1**<br>Intel Celeron Quad Core N3160 (1.6 GHz)<br>500 GB HDD SATA, internal<br>4 GB RAM (1 x 4 GB)<br>Without operating system<br>24 V DC; interfaces:<br>2 x Gbit Ethernet (RJ45),<br>6 x USB 2.0; 2 x USB 3.0; 6 x serial,<br>1 x Display Port, 1 x VGA, audio | **6AG4022-0AA21-0BA1** |
| **Configuration 2**<br>Intel Celeron Quad Core N3160 (1.6 GHz)<br>500 GB HDD SATA, internal<br>4 GB RAM (1 x 4 GB)<br>Windows 7 Ultimate 64-bit<br>24 V DC<br>Interfaces: 2 x Gbit Ethernet (RJ45),<br>6 x USB 2.0; 2 x USB 3.0; 6 x serial,<br>1 x display port, 1 x VGA, audio | **6AG4022-0AA21-1BA1** |
| **Configuration 3**<br>Intel Celeron Quad Core N3160 (1.6 GHz)<br>256 GB SSD, internal<br>4 GB RAM (1 x 4 GB)<br>Without operating system<br>24 V DC<br>Interfaces: 2 x Gbit Ethernet (RJ45),<br>6 x USB 2.0; 2 x USB 3.0; 6 x serial,<br>1 x display port, 1 x VGA, audio | **6AG4022-0AA21-0CA1** |
| **Configuration 4**<br>Intel Celeron Quad Core N3160 (1.6 GHz)<br>256 GB SSD, internal<br>4 GB RAM (1 x 4 GB)<br>Windows 7 Ultimate 64-bit<br>24 V DC<br>Interfaces: 2 x Gbit Ethernet (RJ45),<br>6 x USB 2.0; 2 x USB 3.0; 6 x serial,<br>1 x display port, 1 x VGA, audio | **6AG4022-0AA21-1CA1** |
| **Configuration 5**<br>Intel Celeron Quad Core N3160 (1.6 GHz)<br>256 GB SSD, internal<br>4 GB RAM (1 x 4 GB)<br>Windows 10 Enterprise 2016 LTSB, 64-bit, MUI<br>24 V DC<br>Interfaces: 2 x Gbit Ethernet (RJ45),<br>6 x USB 2.0; 2 x USB 3.0; 6 x serial,<br>1 x display port, 1 x VGA, audio | **6AG4022-0AA21-2CA1** |

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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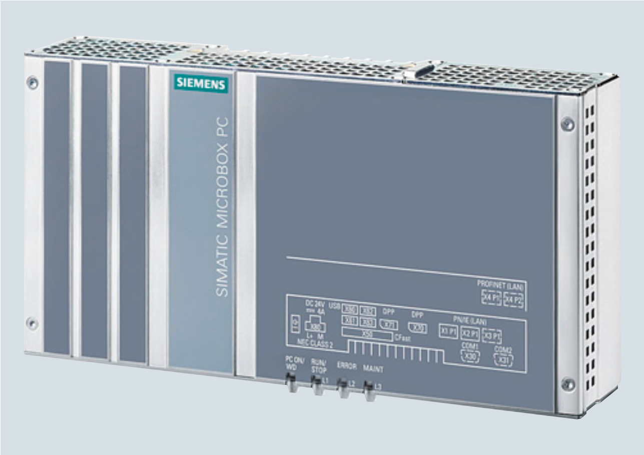
## Overview



***SIMATIC IPC427E (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration***

Ready-to-run, complete solution:

- Ultra-compact
- Maintenance-free
- Intel Core i technology of the 6th Generation

## Technical specifications

| Article number | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) |
|---|---|
| **General information** | |
| Product type designation | IPC427E |
| **Installation type/mounting** | |
| Mounting | DIN rail, wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G3902<br>(2C/2T, 1.6 GHz, 2 MB Cache);<br>Core i3-6102E<br>(2C/4T, 1.9 GHz, 3 MB Cache);<br>Core i5-6442EQ<br>(4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT);<br>Xeon E3-1505L v5<br>(4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT) |
| Chipset | Intel C236 / Intel H110 |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller |
| **Drives** | |
| Optical drives | possible as external drive via USB |
| Hard disk | 2.5" SATA ≥ 320 GB |
| SSD | Yes; 128 / 240 / 480 GB |
| **Memory** | |
| Type of memory | DDR4-2400 SO-DIMM |
| Main memory | 4 / 8 / 16 Gbyte, ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer |
| • Number of PCI slots | 2; Optional |
| • Number of compact flash slots | 1; CFast |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; Ethernet (2x RJ45, optional 3x RJ45) |
| USB port | 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | Without / 2x COM (RS 232 / 485 / 422; switchable) |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

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## **Technical specifications** (continued)

| Article number | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) |
|---|---|
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | 1x power, 3x user |
| • Fan | No |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |

| Article number | **6AG4141-.....-....**<br>SIMATIC IPC427E (MicroBOX PC) |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| EMC | CE, EN 55022A, EN 61000-6-4, EN 61000-6-2 |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes; Optional |
| • IECEx Zone 2 | Yes; Optional |
| • cULus Class I Zone 2, Division 2 | Yes; Optional |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Korean Register of Shipping (KRS) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -40 °C |
| • max. | 70 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10 |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Software** | |
| SIMATIC Software | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle |
| **Dimensions** | |
| Width | 262 mm |
| Height | 139.7 mm |
| Depth | 55.5 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC427E (Box PC)** [1] | **6AG4141-■■■■■-■■■■** |
| Processor and fieldbus | |
| • Celeron G3902E; 2 x Gigabit Ethernet (IE/PN) | **0** |
| • Celeron G3902E; 3 x Gigabit Ethernet (IE/PN) | **1** |
| • Core i3-6102E; 3 x Gigabit Ethernet (IE/PN) | **3** |
| • Core i5-6442EQ; 3 x Gigabit Ethernet (IE/PN) | **5** |
| • Xeon E3-1505L; 3 x Gigabit Ethernet (IE/PN) | **7** |
| Mounting accessories/ATEX | |
| • DIN rail mounting | **B** |
| • Wall mounting | **C** |
| • Portrait mounting | **D** |
| • DIN rail mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **F** |
| • Wall mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **G** |
| • Portrait mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **H** |
| Work memory/NVRAM/ECC | |
| • 4 GB | **A** |
| • 8 GB | **B** |
| • 16 GB | **C** |
| • 8 GB with ECC | **D** |
| • 16 GB with ECC | **E** |
| • 4 GB and NVRAM | **F** |
| • 8 GB and NVRAM | **G** |
| • 16 GB and NVRAM | **H** |
| • 8 GB with ECC and NVRAM | **J** |
| • 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| • No RS 232/RS 485, without PCIe | **0** |
| • No RS 232/RS 485 and one PCIe | **1** |
| • No RS 232/RS 485 and two PCIe | **2** |
| • Two RS 232/RS 485, without PCIe | **3** |
| • Two RS 232/RS 485 and one PCIe | **4** |
| • Two RS 232/RS 485 and two PCIe | **5** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 SP1, English, 64-bit, multi-touch | **3** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **4** |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Celeron, Core i3 and Core i5 processors | **7** |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Xeon processors | **8** |

| | Article No. |
|---|---|
| **SIMATIC IPC427E (Box PC)** [1] | **6AG4141-■■■■■-■■■■** |
| Mass storage, externally accessible | |
| • Without external mass storage | **0** |
| • CFast 2 GB without operating system | **1** |
| • CFast 4 GB without operating system | **2** |
| • CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | **3** |
| • CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | **4** |
| • CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | **5** |
| Mass storage, internal | |
| • Without internal mass storage | **A** |
| • 128 GB solid-state drive SATA | **D** |
| • 240 GB solid-state drive SATA | **F** |
| • 480 GB solid-state drive SATA | **G** |
| • 320 GB HDD | **J** |
| SIMATIC Software (bundles/starter system) | |
| • Without SIMATIC software | **A** |
| • CPU 1507S | **B** |
| • WinCC RT Advanced V15 | |
| - 128 PT | **C** |
| - 512 PT | **D** |
| - 2 048 PT | **E** |
| - 4 096 PT | **F** |
| - 8 192 PT | **G** |
| CPU 1507S / WinCC RT Advanced V15 | |
| - 128 PT | **H** |
| - 512 PT | **J** |
| - 2 048 PT | **K** |
| - 4 096 PT | **L** |
| - 8 192 PT | **M** |
| • IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | **S** |
| Power supply | |
| • 24 V DC industrial power supply | **0** |
| • 24 V DC and TPM [2] (not for China or Russia) | **8** |

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[1] For an up-to-date overview, see the SIMATIC PC Online Configurator: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

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## Overview

### *SIMATIC IPC427D (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration*

Ready-to-run, complete solution:

- Ultra-compact
- Maintenance-free
- Intel Core i-technology of the 3rd Generation

## Technical specifications

| Article number | **6AG4140-.....-...0**<br>SIMATIC IPC427D (Microbox PC) | **6AG4140-.....-...8**<br>SIMATIC IPC427D (Microbox PC) with TPM |
|---|---|---|
| **Installation type/mounting** | | |
| Mounting | DIN rail, wall mounting, portrait mounting | |
| Design | Box PC, built-in unit | |
| **Supply voltage** | | |
| Type of supply voltage | 24 V DC | 24 V DC |
| **Processor** | | |
| Processor type | Celeron 827E (1C/1T, 1.40 GHz, 1.5 MB Cache);<br>Core i3-3217UE (2C/4T, 1.60 GHz, 3 MB Cache);<br>Core i7-3517UE (2C/4T, 1.70 (2.80) GHz, 4 MB Cache, iAMT) | |
| **Graphic** | | |
| Graphics controller | Intel HD Graphics,<br>Intel HD Graphics 4000 | |
| **Drives** | | |
| Hard disk | 2.5" SATA ≥ 320 GB | |
| SSD | Yes; 1x 240 GB SSD, 1x 480 GB SSD | |
| **Memory** | | |
| Type of memory | DDR3 SO-DIMM | DDR3 SO-DIMM |
| Main memory | 2 / 4 / 8 GB; ECC optional | |
| Capacity of main memory, max. | 8 Gbyte | 8 Gbyte |
| **Data areas and their retentivity** | | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional | |
| **Hardware configuration** | | |
| **Slots** | | |
| • free slots | 2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer | 2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer |
| • Number of PCI slots | 2; Optional | 2; Optional |
| • Number of compact flash slots | 2; CFast | 2; CFast |

## Technical specifications (continued)

| Article number | **6AG4140-.....-...0**<br>SIMATIC IPC427D (Microbox PC) | **6AG4140-.....-...8**<br>SIMATIC IPC427D (Microbox PC) with TPM |
|---|---|---|
| **Interfaces** | | |
| Number of PROFINET interfaces | 1; 3 ports (incl. switch) | |
| USB port | 4x USB 3.0 | 4x USB 3.0 |
| Connection for keyboard/ mouse | USB / USB | USB / USB |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 | |
| **Video interfaces** | | |
| • Graphics interface | 1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional) | |
| **Industrial Ethernet** | | |
| • Industrial Ethernet interface | Onboard, 2x 10/100/1 000 Mbit, RJ45, no plug-in card necessary | |
| - 100 Mbps | Yes | Yes |
| - 1000 Mbps | Yes | Yes |
| **Interrupts/diagnostics/status information** | | |
| Bus diagnostics | Yes | Yes |
| **Integrated Functions** | | |
| **Monitoring functions** | | |
| • Temperature monitoring | Yes | Yes |
| • Watchdog | Yes | Yes |
| • Status LEDs | Yes | Yes |
| • Fan | No | No |
| • Monitoring function via network | Optional | Optional |
| **EMC** | | |
| **Interference immunity against discharge of static electricity** | | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 | |
| **Interference immunity against high-frequency electromagnetic fields** | | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | |

| Article number | **6AG4140-.....-...0**<br>SIMATIC IPC427D (Microbox PC) | **6AG4140-.....-...8**<br>SIMATIC IPC427D (Microbox PC) with TPM |
|---|---|---|
| **Interference immunity to cable-borne interference** | | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | |
| **Interference immunity against voltage surge** | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | |
| **Interference immunity to magnetic fields** | | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 | |
| **Emission of conducted and non-conducted interference** | | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | |
| **Degree and class of protection** | | |
| IP (at the front) | IP20 | IP20 |
| IP (rear) | IP20 | IP20 |

## **Technical specifications** (continued)

| Article number | **6AG4140-.....-...0**<br>SIMATIC IPC427D (Microbox PC) | **6AG4140-.....-...8**<br>SIMATIC IPC427D (Microbox PC) with TPM |
|---|---|---|
| **Standards, approvals, certificates** | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | |
| UL approval | Yes | Yes |
| • UL 508 | Yes | Yes |
| cULus | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes |
| KC approval | Yes | Yes |
| FCC | Yes | Yes |
| EMC | CE, EN 55022A, EN 61000-6-4, EN 61000-6-2 | |
| **Use in hazardous areas** | | |
| • ATEX Zone 2 | Yes; Optional | Yes; Optional |
| • IECEx Zone 2 | Yes; Optional | Yes; Optional |
| • cULus Class I Zone 2, Division 2 | Yes; Optional | Yes; Optional |
| **Marine approval** | | |
| • Germanischer Lloyd (GL) | Yes | Yes |
| • American Bureau of Shipping (ABS) | Yes | Yes |
| • Bureau Veritas (BV) | Yes | Yes |
| • Det Norske Veritas (DNV) | Yes | Yes |
| • Korean Register of Shipping (KRS) | Yes | Yes |
| • Lloyds Register of Shipping (LRS) | Yes | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes |

| Article number | **6AG4140-.....-...0**<br>SIMATIC IPC427D (Microbox PC) | **6AG4140-.....-...8**<br>SIMATIC IPC427D (Microbox PC) with TPM |
|---|---|---|
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • Ambient temperature during operation | 0 °C up to 55 °C | 0 °C up to 55 °C |
| **Ambient temperature during storage/transportation** | | |
| • min. | -40 °C | -40 °C |
| • max. | 70 °C | 70 °C |
| **Relative humidity** | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) | |
| **Operating systems** | | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit | |
| without operating system | Yes; Optional | Yes; Optional |
| **pre-installed operating system** | | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit | |
| **Dimensions** | | |
| Width | 262 mm | 262 mm |
| Height | 139.7 mm | 139.7 mm |
| Depth | 50.5 mm | 50.5 mm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC427D (Box PC)** [1][2] | **6AG4140-■■■■■-■■■■** |
| Processor and fieldbus | |
| - Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **0** |
| - Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **1** |
| - Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN); CAN interface | **2** |
| - Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **3** |
| - Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **4** |
| - Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **5** |
| - Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN) (optional ECC only here) | **6** |
| - Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **7** |
| - Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **8** |
| Mounting accessories: | |
| - Without mounting accessories | **A** |
| - Standard DIN rail mounting | **B** |
| - Wall mounting | **D** |
| - Portrait mounting | **E** |
| - Standard DIN rail mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **M** |
| - Wall mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **N** |
| - Portrait mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **P** |
| Work memory/NVRAM/ECC: | |
| - 1 GB | **A** |
| - 2 GB | **B** |
| - 4 GB | **C** |
| - 8 GB | **D** |
| - 4 GB with ECC (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) | **G** |
| - 8 GB with ECC (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) | **H** |
| - 1 GB and NVRAM | **J** |
| - 2 GB and NVRAM | **K** |
| - 4 GB and NVRAM | **L** |
| - 8 GB and NVRAM | **M** |
| - 4 GB with ECC and NVRAM (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) | **N** |
| - 8 GB with ECC and NVRAM (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) | **P** |

| | Article No. |
|---|---|
| **SIMATIC IPC427D (Box PC)** [1][2] | **6AG4140-■■■■■-■■■■** |
| Expansions/interfaces: | |
| - One RS 232, without PCIe | **0** |
| - One RS 232 and one PCIe | **1** |
| - One RS 232 and two PCIe | **2** |
| - Second RS 232, without PCIe | **3** |
| - Second RS 232 and one PCIe | **4** |
| - Second RS 232 and second PCIe | **5** |
| Operating system: | |
| - Without operating system | **0** |
| - Windows Embedded Standard 7 Professional, 32-bit, MUI | **3** |
| - Windows Embedded Standard 7 SP1, English, 32-bit | **4** |
| - Windows Embedded Standard 7 SP1, English, 64-bit | **5** |
| - Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **6** |
| - Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **7** |
| Mass storage, externally accessible: | |
| - Without external mass storage | **0** |
| - CFast 2 GB<br>Without operating system | **1** |
| - CFast 4 GB<br>(only optionally with operating system if no internal mass storage) | **2** |
| - CFast 8 GB<br>(only optionally with operating system if no internal mass storage) | **3** |
| - CFast 16 GB<br>(only optionally with operating system if no internal mass storage) | **4** |
| Internal mass storage: | |
| - Without internal mass storage | **A** |
| - CFast 2 GB, without software | **B** |
| - CFast 4 GB, without software | **C** |
| - CFast 8 GB, without software | **D** |
| - CFast 16 GB, without software | **E** |
| - 320 GB HDD | **K** |
| - 240 GB solid-state drive (standard) | **P** |
| - 480 GB solid-state drive (standard) | **R** |
| SIMATIC software preinstalled: | |
| - Without SIMATIC software | **A** |
| Power supplies: | |
| - 24 V DC industrial power supply | **0** |
| - 24 V DC and TPM [4]<br>(not for China or Russia) | **8** |

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[1] Built to order versions with a delivery time of max. 15 working days and with identified repair, if not preferred type.

[2] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

[3] Only with "work memory and NVRAM".

[4] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

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## SIMATIC IPC527G

### Overview

SIMATIC IPC

***SIMATIC IPC527G***

The SIMATIC IPC527G box PC is a new product in the SIMATIC Industrial PC portfolio, which is characterized by high performance and flexibility at an extremely attractive price.

Powerful processors (Intel Core i Desktop CPUs), numerous interfaces, and the support of existing systems make the SIMATIC IPC527G a robust and low-cost platform for a wide range of industrial applications.

### Technical specifications

| Article number | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | Wall mounting, portrait mounting, desktop mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240V AC (autorange)<br>50/60 Hz |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Processor** | |
| Processor type | Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache);<br>Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache);<br>Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache) |
| Chipset | Intel H110 |
| **Graphic** | |
| Graphics controller | Onboard Intel HD graphics 530/510 integrated in processor |
| **Drives** | |
| Hard disk | 1 TB HDD |
| SSD | Yes; Optional |
| **Memory** | |
| Type of memory | DDR4-2133 SO-DIMM |
| Main memory | 4 / 8 / 16 GB, supports up to 32 GB |
| Capacity of main memory, max. | 32 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x PCIe (x16), optional 1x PCIe (x1), 2x PCI additionally |
| • Number of PCI slots | 2; Optional |
| • Number of PCI slots | 2; Optional |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; 3x Gigabit Ethernet (IE/PN), RJ45 optional; 2x Gigabit Ethernet (IE/PN), RJ45 basic configuration |
| Number of PROFINET interfaces | 3; 2 ports base configuration, 3 ports optional |
| USB port | 4x USB 3.0, 1x USB 2.0 internal,<br>2x USB 2.0 optional |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 2x RS 232 / 485 / 422 combined,<br>2x RS 232 optional |
| Multimedia | |
| • Audio In/Out | Yes |
| • Microphone In | Yes |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort, 1x VGA |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45), 1x Ethernet (RJ45) additional option |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

## **Technical specifications** (continued)

| Article number | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) |
|---|---|
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Status LEDs | POWER, HDD |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Degree and class of protection** | |
| IP (at the front) | IP20 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| CSA approval | Yes; No. 61010-1-12, No. 61010-2-201 |
| UL approval | Yes |
| cULus | Yes; UL 61010-1, UL 61010-2-201 |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |

| Article number | **6AG4025-0...0-...0**<br>SIMATIC IPC527G (Box PC) |
|---|---|
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 to +45°C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | 8 ... 85 % at 30 °C, no condensation |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to DIN IEC 60068-2-6:<br>10 Hz to 58 Hz: 0.0375 mm,<br>58 Hz to 200 Hz: 4.9 m/s² |
| **Shock testing** | |
| • Shock load during operation | Tested in accordance with IEC 60068-2-27: With SSD: 150 m/s², 11 ms; with HDD: 9.8 m/s², 20 ms |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit;<br>Windows 10 Enterprise 2016 LTSB |
| Additional info on operating system | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian) |
| without operating system | Yes |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Dimensions** | |
| Width | 260 mm |
| Height | 135 mm |
| Depth | 225 mm |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC527G** | **6AG4025- 0 ■ ■ ■ 0 - ■ ■ ■ 0** |
| All-metal enclosure for high electromagnetic compatibility and mechanical ruggedness, flexible installation: Desktop, wall, portrait and tower mounting, opening of the enclosure cover for expansion and replacement of PC components (e.g. PC cards or HDD) without a tool, dust protection through overpressure ventilation, front LEDs: POWER, HDD | |
| Processor | |
| • Pentium G4400 ((2C/2T) 3.3 GHz, 3 MB Cache) | **A** |
| • Core i5-6500 ((4C/4T) 3.2 (3.6) GHz, 6 MB Cache) | **C** |
| • Core i7-6700 ((4C/4T) 3.4 (4.0) GHz, 8 MB Cache) | **D** |
| Drives | |
| • 1 TB HDD | **B** |
| • 128 GB SSD | **D** |
| • 256 GB SSD | **E** |
| • 512 GB SSD | **F** |
| • Without drive, prepared for 1 x 2.5" SATA | **L** |
| Work memory | |
| • 4 GB DDR4 RAM | **1** |
| • 8 GB DDR4 RAM | **2** |
| • 16 GB DDR4 RAM | **3** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Ultimate SP1, 32-bit MUI (en, de, fr, es, it) | **1** |
| • Windows Ultimate SP1, 64-bit MUI (en, de, fr, es, it) | **2** |
| • Windows 10 Enterprise LTSB 2016, 64-bit MUI (en, de, fr, es, it) for Pentium, Core i5 | **3** |
| • Windows 10 Enterprise LTSB 2016, 64-bit MUI (en, de, fr, es, it) for Pentium, Core i7 | **4** |
| Expansion | |
| • 1x PCIe x16 | **A** |
| • 1x PCIe x16; 1x PCIe x1; 2x PCI | **B** |
| Specific expansions: | |
| • Without | **A** |
| • 2x RS 232, 2x USB2.0 additionally | **B** |
| • 1 x Gbit LAN additionally (1 PCIe slot occupied) | **C** |
| • 1 x Gbit LAN (1x PCIe slot occupied) and 2x RS 232; 2x USB2.0 additionally | **D** |

| | Article No. |
|---|---|
| *Preferred variants* | |
| **SIMATIC IPC527G** | |
| All-metal enclosure for high electromagnetic compatibility and mechanical ruggedness, flexible installation: Desktop, wall, portrait and tower mounting, opening of the enclosure cover for expansion and replacement of PC components (e.g. PC cards or HDD) without a tool, dust protection through overpressure ventilation, front LEDs: POWER, HDD;<br>slots: 1 x PCIe x16, 1 x PCIe x1, 2 x PCI<br>Interfaces: 4 x USB 3.0, 3 x USB 2.0 (2 x front, 1 x internal), 2 x Gbit Ethernet, 2x RS 232/485/422 selectable, 2x RS 232, 1x 8-bit DIO, 1x DP, 1x VGA, audio | |
| • Intel Pentium G4400, 4 GB RAM, 1 TB HDD mass storage | **6AG4025-0AB10-0BB0** |
| • Intel Core i5-6500, 8 GB RAM, 1 TB HDD mass storage | **6AG4025-0CB20-0BB0** |
| • Intel Core i5-6500, 8 GB RAM, 1 TB HDD mass storage, Windows 7 Ultimate | **6AG4025-0CB20-2BB0** |
| • Intel Core i5-6500, 8 GB RAM, 128 GB SSD mass storage | **6AG4025-0CD20-0BB0** |
| • Intel Core i5-6500, 8 GB RAM, 128 GB SSD mass storage, Windows 7 Ultimate | **6AG4025-0CD20-2BB0** |
| • Intel Core i5-6500, 8 GB RAM, 256 GB SSD mass storage, Windows 7 Ultimate | **6AG4025-0CE20-2BB0** |
| • Intel Core i5-6500, 8 GB RAM, 256 GB SSD mass storage, Windows 10 Enterprise LTSB 2016 | **6AG4025-0CE20-3BB0** |
| • Intel Core i7-6700, 8 GB RAM, 512 GB SSD mass storage, Windows 7 Ultimate | **6AG4025-0DF20-2BB0** |
| • Intel Core i7-6700, 8 GB RAM, 512 GB SSD mass storage, Windows 10 Enterprise LTSB 2016 | **6AG4025-0DF20-4BB0** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

SIMATIC IPC
SIEMENS

***SIMATIC IPC627E (Box PC): The high-end IPC with maximum performance, functional scope, and expansion capability***

It offers:

- Maximum performance in the smallest space
- Intel Core i technology
- Removable hard disks (RAID1)

## Technical specifications

| Article number | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | Wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange); 24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d);<br>Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d);<br>Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) |
| Chipset | Intel C246 |
| **Graphic** | |
| Graphics controller | Intel UHD Graphics 630 (Core i);<br>Intel UHD Graphics 610 (Celeron) |
| **Drives** | |
| Hard disk | 2.5" SATA ≥ 320 GB |
| SSD | Yes; SSD M.2 NVMe 512 GB; SSD 2.5" SATA 480 / 960 GB; RAID1 2x SSD 2.5" SATA 480 / 960 GB in removable drive bay |
| **Memory** | |
| Type of memory | DDR4-2666 DIMM |
| Main memory | 4 / 8 / 16 / 32 / 64 GB |
| Capacity of main memory, max. | 64 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCI; optional:<br>1x PCI & 1x PCIe (x16);<br>2x PCIe (x4, x16);<br>3x PCI & 2x PCIe (x16, x4);<br>5x PCIe (1x16, 2x4, 2x1);<br>with card retainer |
| • Number of PCI slots | 5; Optional |
| • Number of PCI slots | 5; Optional |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; 3x Ethernet (RJ45) |
| USB port | 6x USB 3.1 Gen. 2 (2x type C) |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort; 1x DVI-D |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

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## **Technical specifications** (continued)

| Article number | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) |
|---|---|
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | 1x power, 3x user |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |

| Article number | **6AG4131-3....-....**<br>SIMATIC IPC627E (Box PC) |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| **Marine approval** | |
| • American Bureau of Shipping (ABS) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | +5 °C up to 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30:<br>Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| **Dimensions** | |
| Width | 314 mm |
| Height | 93 mm; For variant 5x PCI(e): 155 mm |
| Depth | 301 mm; incl. mounting rail |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC627E (Box PC)** [1] | **6AG4131- 3 ■ ■ ■ ■ - ■ ■ ■ ■** |
| UHD graphics onboard; 2x DP; 1x DVI-D; 3x Gigabit Ethernet (IE/PN) RJ45; 6x USB 3.1 Gen. 2; 1x serial (COM1); RAID controller onboard; watchdog, temperature/fan monitoring | |
| Processor: | |
| • Intel Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d) | **A** |
| • Intel Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d); NVRAM | **B** |
| • Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d) | **C** |
| • Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d); NVRAM | **D** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) | **G** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT); NVRAM | **H** |
| Drives: | |
| • HDD 2.5" SATA 320 GB internal | **A** |
| • SSD 2.5" SATA 480 GB internal | **C** |
| • SSD 2.5" SATA 960 GB internal | **D** |
| • RAID1 2x SSD 2.5" SATA 480 GB internal | **E** |
| • RAID1 2x SSD 2.5" SATA 480 GB in removable drive bay | **G** |
| • RAID1 2x SSD 2.5" SATA 960 GB in removable drive bay | **H** |
| • M.2 SSD NVMe 512 GB | **J** |
| • M.2 SSD NVMe 512 GB; HDD 2.5" SATA 320 GB internal | **K** |
| • M.2 SSD NVMe 512 GB; SSD 2.5" SATA 480 GB internal | **L** |
| • M.2 SSD NVMe 512 GB; SSD 2.5" SATA 960 GB internal | **M** |
| • M.2 SSD NVMe 512 GB; RAID1 2x SSD 2.5" SATA 480 GB in removable drive bay | **Q** |
| • M.2 SSD NVMe 512 GB; 2 removable drive bays without media | **S** |

| | Article No. |
|---|---|
| **SIMATIC IPC627E (Box PC)** [1] | **6AG4131- 3 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration: | |
| • 4 GB DDR4-2666 (1x 4 GB) | **0** |
| • 8 GB DDR4-2666 (2x 4 GB) | **1** |
| • 16 GB DDR4-2666 (2x 8 GB) | **2** |
| • 32 GB DDR4-2666 (2x 16 GB) | **3** |
| • 64 GB DDR4-2666 (4x 16 GB) | **4** |
| Power supply: | |
| • 24 V DC industrial power supply | **0** |
| • 110/230 V AC industrial power supply with NAMUR; without power cable | **1** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord Europe | **2** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord USA | **3** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord China | **4** |
| Operating system: | |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es); for Celeron and i3 | **0** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es), for Core i7 | **1** |
| • Windows 10 Enterprise 2019 LTSC, 64-bit, MUI (En, De, Fr, It, Es); for Celeron and i3 | **2** |
| • Windows 10 Enterprise 2019 LTS, 64-bit, MUI (En, De, Fr, It, Es), for Core i7 | **3** |
| • Without operating system | **8** |
| Expansion (SW): | |
| • Without expansion | **A** |
| • SIMATIC IPC DiagMonitor included | **B** |
| • SIMATIC IPC Image & Partition Creator included | **C** |
| • SIMATIC IPC DiagMonitor, Image & Partition Creator included | **D** |
| • TPM [2] (not for China or Russia) | **X** |
| Expansion (HW): | |
| • Without expansion (HW) | **A** |
| • 2 x USB in addition (1 slot occupied) | **B** |
| • Device without CMOS battery (CR2450N) | **C** |
| 2nd expansion (HW): | |
| • 2 x PCI | **0** |
| • 1 x PCIe (x16); 1 x PCI | **1** |
| • 1 x PCIe (x16); 1 x PCIe (x4) | **2** |
| • 3 x PCI, 2 x PCIe (x16, x4) | **3** |
| • 5x PCIe (1x 16, 2x 4, 2x 1) | **4** |
| • 2 x PCI; enclosure painted | **5** |
| • 1 x PCIe (x16), 1 x PCI; enclosure painted | **6** |
| • 2 x PCIe (x16, x4); enclosure painted | **7** |

[1] For an up-to-date overview, see the SIMATIC PC Online Configurator at: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansion** | |
| • 4 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL60-0QA0** |
| • 8 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL70-0QA0** |
| • 16 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL80-0QA0** |
| **Assembly kit for portrait mounting** | |
| • Upward or downward interface outlet (2-slot design) | **6ES7648-1AA10-2YA0** |
| • Interface outlet on front (2-slot design) | **6ES7648-1AA10-2YB0** |
| • Upward or downward interface outlet (5-slot design) | **6ES7648-1AA30-2YA0** |
| • Interface outlet on front (5-slot design) | **6ES7648-1AA30-2YB0** |
| **SIMATIC PC power cable** | |
| For Box PC and Panel PC, 230 V AC, angled, 3 m | |
| • For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6ES7900-1AA00-0XA0** |
| • For United Kingdom | **6ES7900-1BA00-0XA0** |
| • For Switzerland | **6ES7900-1CA00-0XA0** |
| • For the USA | **6ES7900-1DA00-0XA0** |
| • For Italy | **6ES7900-1EA00-0XA0** |
| • For China | **6ES7900-1FA00-0XA0** |

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

***SIMATIC IPC627D (Box PC): The high-end IPC – with maximum performance, functional scope, and expansion capability***

It offers:

- Maximum performance in the smallest space
- Intel Xeon technology
- Removable hard disks (RAID1)

## Technical specifications

| Article number | **6AG4131-2....-....**<br>SIMATIC IPC627D (Box PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | Wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange); 24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT) |
| Chipset | Intel DH82C226 PCH |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron) |
| **Drives** | |
| Optical drives | DVD±R±RW combi-drive, optional |
| Hard disk | 3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay |
| SSD | Yes; ≥ 240 GB optional |
| **Memory** | |
| Type of memory | DDR3-1600 DIMM |
| Main memory | 2 / 4 / 8 / 16 GB; ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 2 Mbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer |
| • Number of PCI slots | 2; Optional |
| • Number of PCI slots | 2; Optional |
| **Interfaces** | |
| PROFIBUS/MPI | Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622 |
| Number of industrial Ethernet interfaces | 2; 2x RJ45 (independent) |
| Number of PROFINET interfaces | 3; Optional |
| USB port | 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM1 (RS 232), optional: 1x COM2 (RS 232) |
| parallel interface | optional LPT1 |

## Technical specifications (continued)

| Article number | **6AG4131-2....-....**<br>SIMATIC IPC627D (Box PC) |
|---|---|
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort and 1x DVI-I;<br>1x VGA via adapter cable (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | Onboard, 2x 10 / 100 / 1000 Mbit, RJ45 |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | Yes |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |

| Article number | **6AG4131-2....-....**<br>SIMATIC IPC627D (Box PC) |
|---|---|
| **Degree and class of protection** | |
| IP (at the front) | IP20 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | +5 °C up to 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation),<br>Storage: 5% to 95% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, 32-bit/64-bit, MUI;<br>Windows Embedded Standard 7 P, 32-bit, MUI;<br>Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| without operating system | Yes |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| **Dimensions** | |
| Width | 312 mm |
| Height | 81 mm; with DVD drive: 105 mm |
| Depth | 301 mm; incl. mounting rail |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC627D** [1]<br>HD graphics onboard (Xeon, i3: HD4600);<br>2 x Gigabit Ethernet (IE/PN) RJ45;<br>4 x USB V3.0; 1x serial (COM1);<br>RAID controller onboard;<br>watchdog, temp./fan monitoring; | **6AG4131- 2■■■■-■■■■■** |
| Processor: | |
| • Intel Celeron G1820TE (2C, 2.2 GHz, 2 MB Cache) | **A** |
| • Intel Celeron G1820TE (2C, 2.2 GHz, 2 MB Cache), PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM | **B** |
| • Intel Celeron G1820TE (2C, 2.2 GHz, 2 MB Cache), PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM | **C** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); | **D** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM; | **E** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM; | **F** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); | **G** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM; | **H** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM; | **J** |
| Drives | |
| • 500 GB HDD SATA | **A** |
| • 500 GB HDD SATA; DVD+/-RW | **B** |
| • 1 TB HDD SATA | **D** |
| • 1 TB HDD SATA; DVD+/-RW | **E** |
| • RAID1 2 x 320 GB SATA (2.5") | **G** |
| • RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW | **H** |
| • Exchangeable SSD RAID1 2x 240 GB solid-state drive | **J** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5") | **K** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5"); solid-state drive, 240 GB | **L** |
| • Solid-state drive, 240 GB | **M** |
| • Solid-state drive, 240 GB; 320 GB HDD SATA (2.5") | **N** |
| • Solid-state drive, 240 GB; 320 GB HDD SATA (2.5"); DVD+/-RW | **P** |
| • Solid-state drive, 240 GB; DVD+/-RW | **S** |
| • Without drives; prepared for 2x 2.5" HDD | **X** |

| | Article No. |
|---|---|
| **SIMATIC IPC627D** [1] | **6AG4131- 2■■■■-■■■■■** |
| Memory configuration | |
| • 2 GB DDR3 1600 DIMM | **1** |
| • 4 GB DDR3 1600 DIMM | **2** |
| • 8 GB DDR3 1600 DIMM | **3** |
| • 16 GB DDR3 1600 DIMM | **4** |
| • 8 GB DDR3 1600 DIMM; ECC | **5** |
| • 16 GB DDR3 1600 DIMM; ECC | **6** |
| Expansion 1 (HW) | |
| • 2 x PCI; | **0** |
| • 1 x PCIe (x16); 1 x PCI | **1** |
| • 1 x PCIe (x16); 1 x PCIe (x4) | **2** |
| Expansion 2 (HW) | |
| • Without expansion (HW) | **0** |
| • 2 x USB in addition (1 slot occupied) | **1** |
| • COM2; LPT (1 slot occupied) | **2** |
| • 2 x USB in addition; COM2; LPT (2 slots occupied) | **3** |
| Operating system | |
| • Windows 7 Ultimate, 32-bit SP1, MUI (en, de, fr, it, es) | **A** |
| • Windows 7 Ultimate, 64-bit SP1, MUI (en, de, fr, it, es) | **B** |
| • Windows 10 Enterprise 2015 LTSB, 64-bit, MUI (en, de, fr, it, es) | **C** |
| • Windows Embedded Standard 7 P, 32-bit, SP1, MUI (en, de, fr, it, es) with SSD 240 GB option (without RAID) | **D** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es), for Celeron and i3 processors | **E** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) for Xeon processors | **F** |
| • Without | **X** |
| Expansion (SW) | |
| • SIMATIC IPC DiagMonitor included | **A** |
| • SIMATIC IPC Image & Partition Creator included | **B** |
| • SIMATIC IPC DiagMonitor, Image & Partition Creator included | **C** |
| • Without | **X** |
| • TPM [2] (not for China or Russia) | **Y** |
| Country-specific version / power supply | |
| • 110/230 V AC industrial power supply with NAMUR; power cable for Europe | **0** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for UK | **1** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for CH | **2** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for the USA | **3** |
| • 110/230 V AC industrial power supply NAMUR; power cable for Italy | **4** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for China | **5** |
| • 24 V DC industrial power supply | **6** |
| • 110/230 V AC industrial power supply with NAMUR; without power cable | **8** |

[1] For an up-to-date overview, see the SIMATIC PC Online Configurator at: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansion** | |
| • 2 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ50-0MA0** |
| • 4 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ60-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ70-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM, ECC | **6ES7648-2AJ70-1MA0** |
| **Assembly kit for portrait mounting** | |
| • Upward or downward interface outlet | **6ES7648-1AA10-1YA0** |
| • Interface outlet to the front | **6ES7648-1AA10-1YB0** |
| **SIMATIC PC graphics adapter cable**<br>DVI-I acc. to VGA, 250 mm long | **6ES7648-3AB00-0XA0** |
| **SIMATIC PC power cable**<br>For Box PC and Panel PC, 230 V AC, angled, 3 m | |
| • For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6ES7900-1AA00-0XA0** |
| • For United Kingdom | **6ES7900-1BA00-0XA0** |
| • For Switzerland | **6ES7900-1CA00-0XA0** |
| • For the USA | **6ES7900-1DA00-0XA0** |
| • For Italy | **6ES7900-1EA00-0XA0** |
| • For China | **6ES7900-1FA00-0XA0** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

***SIMATIC IPC827D (Box PC): The high-end IPC – with maximum performance, functional scope, and expansion capability***

It offers:

- Maximum performance and high expandability
- with Intel Xeon technology
- Removable hard disks (RAID1)

## Technical specifications

| Article number | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|
| **Installation type/mounting** | |
| Mounting | Wall mounting, portrait mounting |
| Design | Box PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange); 24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT) |
| Chipset | Intel DH82C226 PCH |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron) |
| **Drives** | |
| Optical drives | DVD±R±RW combi-drive, optional |
| Hard disk | 3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay |
| SSD | Yes; ≥ 240 GB optional |
| **Memory** | |
| Type of memory | DDR3-1600 DIMM |
| Main memory | 2 / 4 / 8 / 16 GB; ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 2 Mbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 3x PCI, 1x PCIe (x4), 1x PCIe (x16); with card retainer |
| • Number of PCI slots | 3 |
| • Number of PCI slots | 2 |

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## **Technical specifications** (continued)

| Article number | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|
| **Interfaces** | |
| PROFIBUS/MPI | Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622 |
| Number of industrial Ethernet interfaces | 2; 2x RJ45 (independent) |
| Number of PROFINET interfaces | 3; Optional |
| USB port | 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM1 (RS 232), optional:<br>1x COM2 (RS 232) |
| parallel interface | optional LPT1 |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort and 1x DVI-I;<br>1x VGA via adapter cable (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | Onboard, 2x 10 / 100 / 1000 Mbit, RJ45 |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | Yes |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |

| Article number | **6AG4132-2....-....**<br>SIMATIC IPC827D (Box PC) |
|---|---|
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP (at the front) | IP20 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | +5 °C up to 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30:<br>Operation: 5% to 80% at 25 °C (no condensation),<br>Storage: 5% to 95% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, 32-bit/64-bit, MUI;<br>Windows Embedded Standard 7 P, 32-bit, MUI;<br>Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| without operating system | Yes |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| **Dimensions** | |
| Width | 312 mm |
| Height | 155 mm; With DVD drive: 179 mm |
| Depth | 301 mm; incl. mounting rail |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC827D** 1) | **6AG4132 - 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| HD graphics onboard (Xeon, i3: HD4600);<br>2 x Gigabit Ethernet (IE/PN) RJ45;<br>4 x USB V3.0;<br>1 x serial (COM1);<br>RAID controller onboard;<br>watchdog, temp./fan monitoring; | |
| Processor: | |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache) | **A** |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); PROFIBUS/MPI (CP 5622-compatible); 2 MB battery-backed SRAM | **B** |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB battery-backed SRAM | **C** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x) | **D** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFIBUS/MPI (CP 5622-compatible); 2 MB battery-backed SRAM | **E** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB battery-backed SRAM | **F** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT) | **G** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFIBUS/MPI (CP 5622-compatible); 2 MB battery-backed SRAM | **H** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB battery-backed SRAM | **J** |
| Drives | |
| • 500 GB HDD SATA | **A** |
| • 500 GB HDD SATA; DVD+/-RW | **B** |
| • 1 TB HDD SATA | **D** |
| • 1 TB HDD SATA; DVD+/-RW | **E** |
| • RAID1 2 x 320 GB SATA (2.5") | **G** |
| • RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW | **H** |
| • Exchangeable SSD RAID1 2x 240 GB solid-state drive | **J** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5") | **K** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5"); solid-state drive, 240 GB | **L** |
| • Solid-state drive, 240 GB | **M** |
| • Solid-state drive, 240 GB; 320 GB HDD SATA (2.5") | **N** |
| • Solid-state drive, 240 GB; 320 GB HDD SATA (2.5"); DVD+/-RW | **P** |
| • Solid-state drive, 240 GB; DVD+/-RW | **S** |

| | Article No. |
|---|---|
| **SIMATIC IPC827D** 1) | **6AG4132 - 2 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration | |
| • 2 GB DDR3 1600 DIMM | **1** |
| • 4 GB DDR3 1600 DIMM | **2** |
| • 8 GB DDR3 1600 DIMM | **3** |
| • 16 GB DDR3 1600 DIMM | **4** |
| • 8 GB DDR3 1600 DIMM; ECC | **5** |
| • 16 GB DDR3 1600 DIMM; ECC | **6** |
| Expansions (HW) | |
| • 1 x PCIe (x16); 1 x PCIe (x4); 3 x PCI | **0** |
| Expansion 2 (HW) | |
| • Without expansion (HW) | **0** |
| • 2 x USB in addition (1 slot occupied) | **1** |
| • COM2; LPT (1 slot occupied) | **2** |
| • 2 x USB in addition; COM2; LPT (2 slots occupied) | **3** |
| Operating system | |
| • Windows 7 Ultimate, 32-bit SP1, MUI (en, de, fr, it, es) | **A** |
| • Windows 7 Ultimate, 64-bit SP1, MUI (en, de, fr, it, es) | **B** |
| • Windows 10 Enterprise 2015 LTSB, 64-bit, MUI (en, de, fr, it, es) | **C** |
| • Windows Embedded Standard 7 P, 32-bit, SP1, MUI (en, de, fr, it, es) with SSD 240 GB option (without RAID) | **D** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es), for Celeron and i3 processors | **E** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) for Xeon processors | **F** |
| • Without | **X** |
| Expansion (SW) | |
| • SIMATIC IPC DiagMonitor included | **A** |
| • SIMATIC IPC Image & Partition Creator included | **B** |
| • SIMATIC IPC DiagMonitor, Image & Partition Creator included | **C** |
| • Without | **X** |
| • TPM 2) (not for China or Russia) | **Y** |
| Country-specific version / power supply | |
| • 110/230 V AC industrial power supply with NAMUR; power cable for Europe | **0** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for UK | **1** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for CH | **2** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for the USA | **3** |
| • 110/230 V AC industrial power supply NAMUR; power cable for Italy | **4** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for China | **5** |
| • 24 V DC industrial power supply | **6** |
| • 110/230 V AC industrial power supply with NAMUR; without power cable | **8** |

1) For an up-to-date overview, see the SIMATIC PC Online Configurator at: http://www.siemens.com/ipc-configurator

2) TPM = Trusted Platform Module

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansion** | |
| • 2 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ50-0MA0** |
| • 4 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ60-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ70-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM, ECC | **6ES7648-2AJ70-1MA0** |
| **Assembly kit for portrait mounting** | |
| • Upward or downward interface outlet | **6ES7648-1AA30-1YA0** |
| • Interface outlet to the front | **6ES7648-1AA30-1YB0** |
| **SIMATIC PC graphics adapter cable**<br>DVI-I acc. to VGA, 250 mm long | **6ES7648-3AB00-0XA0** |
| **SIMATIC PC power cable**<br>For Box PC and Panel PC, 230 V AC, angled, 3 m | |
| • For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6ES7900-1AA00-0XA0** |
| • For United Kingdom | **6ES7900-1BA00-0XA0** |
| • For Switzerland | **6ES7900-1CA00-0XA0** |
| • For the USA | **6ES7900-1DA00-0XA0** |
| • For Italy | **6ES7900-1EA00-0XA0** |
| • For China | **6ES7900-1FA00-0XA0** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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## Overview

SIMATIC Panel PCs are suitable thanks to their high industrial compatibility for use in control cabinets, consoles and control panels, as well as directly on the machine. Typical areas of application can be found in both factory and process automation.

There is a broad range of robust, high-performance SIMATIC Panel PCs available for different requirements.

### *Shared industrial functionality*

- High-quality components and modules with a high MTBF (mean time between failure), which also ensure 24-hour operation in the extended temperature range
- High swing/shock capacity of the devices through special hard-disk suspensions, locked connectors and card retainers
- Rugged housing model with high electromagnetic compatibility (EMC) and integrated industrial power supplies (also in accordance with NAMUR)
- Service-friendly device design
- Bright, brilliant displays in different sizes from 7" to 22"
- Rugged fronts protected from dust, humidity and chemical substances (front-side IP65 degree of protection)

### *SIMATIC IPC277: The Panel PC with optimized performance – maintenance-free and compact with displays from 7"*

- High degree of flexibility for selecting rugged widescreen fronts from 7" to 19" for a more freely configurable display area
- High resolution, large viewing angle, and up to 100% dimmable backlighting for a brilliant display with optimized power consumption
- Absolutely maintenance-free due to the use of CompactFlash/ CFast or SSD as mass storage and fanless operation up to 50 °C ambient temperature
- Maximum industrial functionality due to non-volatile retentive memory (option)
- Ready-to-use embedded bundles with visualization and/or control software

### *SIMATIC IPC377: the industrial Basic Panel PC at an appealing price*

- Low-cost platform for visualization in the industrial and industry-oriented field
- Flexible installation in the control cabinet or via VESA, as well as simple connection of I/O devices due to a large number of interfaces
- Fanless industrial design
- Available directly ex stock

### *SIMATIC IPC477: The powerful embedded Panel PC – maintenance-free with versatile configuration*

- Compact design
- High performance with highly compact design and ruggedness
- Flexible expansion using a PCIe I/O card (optional)
- No rotating parts (without fan and hard disk)
- High security due to use of the operating system
- Windows Embedded Standard 7
- Ready-to-use devices with optionally pre-installed software
- HMI: Innovative HMI software WinCC RT Advanced (inc. logging and recipes)
- Software Controller: with real-time capable software PLC
- Retentive memory onboard (NV-RAM, can be used with software controller)
- Available as PRO version (all-round IP65 degree of protection) with multi-touch

### *SIMATIC IPC677: The high-end Panel PC – with maximum performance, functional scope and expansion capability*

- Rugged, expandable industrial PC with choice of front panels
- Rugged design for industrial use
- Complete PC openness
- Optional PROFIBUS or PROFINET onboard
- All processors with Dual-Core

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## Technical specifications

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E | **6AV7230-0....-....**<br>SIMATIC IPC377E | **6AV7241-.....-....**<br>SIMATIC IPC 477E | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IPC277E | IPC377E | | |
| **Installation type/mounting** | | | | |
| Mounting | | Panel mount and VESA, horizontal and vertical | | |
| Design | Panel PC, built-in unit | Panel PC, built-in unit | Panel PC, built-in unit | Panel PC, built-in unit |
| maximum permissible installation angle +/- | 45° | | | |
| **Supply voltage** | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 100/240 V AC (autorange) 50/60 Hz; optional 24 V DC | 100/240 V AC (autorange); 24 V DC |
| **Line frequency** | | | | |
| • Rated value 50 Hz | | | Yes | Yes |
| • Rated value 60 Hz | | | Yes | Yes |
| **Mains buffering** | | | | |
| • Mains/voltage failure stored energy time | 20 ms | 10 ms | 20 ms | 10 ms |
| **Processor** | | | | |
| Processor type | Intel Celeron N2807 / N2930 | Intel Celeron N3160 | Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache); Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache); Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT); Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT) | Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d); Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d); Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) |
| Chipset | SoC | | Intel C236 / Intel H110 | Intel C246 |
| **Graphic** | | | | |
| Graphics controller | Integrated | | Intel HD graphics controller | Intel UHD Graphics 630 (Core i); Intel UHD Graphics 610 (Celeron) |
| **Drives** | | | | |
| Hard disk | | 500 GB HDD | 2.5" SATA ≥ 320 GB | 2.5" SATA ≥ 320 GB |
| SSD | Yes; 128 / 240 / 480 GB | Yes; 256 GB SSD | Yes; 128 / 240 / 480 GB | Yes; SSD M.2 NVMe 512 GB; SSD 2.5" SATA 480 / 960 GB; RAID1 2x SSD 2.5" SATA 480 / 960 GB in removable drive bay |
| **Memory** | | | | |
| Type of memory | DDR3L SO-DIMM | DDR3L | DDR4-2400 SO-DIMM | DDR4-2666 DIMM |
| Main memory | 2 / 4 / 8 GB | 4 GB, 8 GB | 4 / 8 / 16 Gbyte, ECC optional | 4 / 8 / 16 / 32 / 64 GB |
| Capacity of main memory, max. | 8 Gbyte | 8 Gbyte | 16 Gbyte | 64 Gbyte |
| **Data areas and their retentivity** | | | | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional | | 512 kbyte; 128 KB can be stored in the buffer time; optional | 512 kbyte; 128 KB can be stored in the buffer time |

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## **Technical specifications** (continued)

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E | **6AV7230-0....-....**<br>SIMATIC IPC377E | **6AV7241-.....-....**<br>SIMATIC IPC 477E | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|---|---|---|
| **Hardware configuration** | | | | |
| **Slots** | | | | |
| • free slots | | 1x mPCIe (half-size),<br>1x mSATA (full-size) | 1x PCIe (slot with card retainer),<br>1x slot for CFAST card | 2x PCI; optional:<br>1x PCI & 1x PCIe (x16);<br>2x PCIe (x4, x16);<br>with card retainer |
| • Number of PCI slots | | | | 2; Optional |
| • Number of PCI slots | | | 1; Optional | 2; Optional |
| • Number of compact flash slots | 1; CFast | | 1; CFast | |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; 2x Ethernet (RJ45) | 2; 2x RJ45 (independent) | 3; 3x Ethernet (RJ45) | 3; 3x Ethernet (RJ45) |
| USB port | 1x USB 3.0 / 3x USB 2.0 (7" / 9": 2x USB 2.0) | 2x USB 2.0, 2x USB 3.0 (high current) | 4x USB 3.0 | 6x USB 3.1 Gen. 2 (2x type C) |
| Connection for keyboard/mouse | USB / USB | | USB / USB | USB / USB |
| serial interface | 1x COM (1x RS 232 / 422 / 485), selectable in the BIOS | | Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS | 1x COM |
| **Video interfaces** | | | | |
| • Graphics interface | 1x DisplayPort | 1x DisplayPort, 1x VGA | 2x DisplayPort | 2x DisplayPort; 1x DVI-D |
| **Industrial Ethernet** | | | | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) | 3x Ethernet (RJ45) | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes | Yes | Yes | Yes |
| - 1000 Mbps | Yes | Yes | Yes | Yes |
| **Protocols** | | | | |
| **Protocols (Ethernet)** | | | | |
| • TCP/IP | | Yes | | |
| **Interrupts/diagnostics/status information** | | | | |
| Bus diagnostics | | | Yes | |
| **Integrated Functions** | | | | |
| **Monitoring functions** | | | | |
| • Temperature monitoring | Yes | Yes | Yes | Yes |
| • Watchdog | Yes | Yes | Yes | Yes |
| • Status LEDs | No | POWER, HDD | | 1x power, 3x user |
| • Fan | No | No | No | Yes |
| • Monitoring function via network | Optional | | Optional | Optional |
| **EMC** | | | | |
| **Interference immunity against discharge of static electricity** | | | | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 | ±6 kV contact;<br>±8 kV air (to IEC 1000-4-2; ESD) | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | | | | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 MHz to 2 GHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 GHz to 2.7 GHz, 80 % AM acc. to IEC 61000-4-3;<br>10 V, 10 kHz to 80 MHz, 80 % AM acc. to IEC 61000-4-6 | 10 V/m for 80 ... 1 000 MHz, 80 % AM according to IEC 61000-4-3;<br>3 V/m for 1.4 ... 6 GHz, 80 % AM according to IEC 61000-4-3 | 10 V/m, 80 ... 2 000 MHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 ... 2.7 GHz;<br>10 V, 10 kHz ... 80 MHz acc. to IEC 61000-4-6 | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 |

## Technical specifications (continued)

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E | **6AV7230-0....-....**<br>SIMATIC IPC377E | **6AV7241-.....-....**<br>SIMATIC IPC 477E | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|---|---|---|
| **Interference immunity to cable-borne interference** | | | | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV (according to IEC 61000-4-4, burst);<br>±1 kV (according to IEC 61000-4-5, surge pulse/ line to line);<br>±2 kV (according to IEC 61000-4-5, surge pulse/ line to ground) | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | ±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | ±1 kV acc. to IEC 61000-4-4, Burst | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | | | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | | | | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | | | | |
| • Interference emission via line/AC current cables | Noise emission: EN 61000-6-4:2007 +A1:2011 (industrial environments), CISPR 22 Class B, FCC Class A | | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP40 | IP20 | IP20 |

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## **Technical specifications** (continued)

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E | **6AV7230-0....-....**<br>SIMATIC IPC377E | **6AV7241-.....-....**<br>SIMATIC IPC 477E | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|---|---|---|
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| CSA approval | | | Yes | |
| UL approval | Yes | Yes | Yes | Yes |
| • UL 508 | Yes | | Yes | |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | | Yes | Yes |
| EAC (formerly Gost-R) | | Yes | Yes | Yes |
| FCC | Yes | Yes | Yes | Yes |
| EMC | CE,<br>EN 61000-6-4:2007 +A1:2011,<br>EN 61000-6-2:2005 | | CE,<br>EN 61000-6-4;<br>CISPR 22:2004 Class A;<br>FCC Class A | CE,<br>EN 61000-6-3:2007 +A1:2011,<br>EN 61000-6-2:2005 |
| Dust protection | | Protection against foreign bodies > 1 mm | | |
| **Use in hazardous areas** | | | | |
| • ATEX Zone 2 | | | Yes; Optional, only with Multitouch | |
| • IECEx Zone 2 | | | Yes; Optional, only with Multitouch | |
| • cULus Class I Zone 2, Division 2 | | | Yes; Optional, only with Multitouch | |
| **Marine approval** | | | | |
| • Germanischer Lloyd (GL) | Yes; 7", 9", 12" single-touch | | Yes | |
| • American Bureau of Shipping (ABS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | Yes |
| • Bureau Veritas (BV) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | |
| • Det Norske Veritas (DNV) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | Yes |
| • Korean Register of Shipping (KRS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | |
| • Lloyds Register of Shipping (LRS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | |
| • Nippon Kaiji Kyokai (Class NK) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | Yes | Yes |
| • Chinese Classification Society (CCS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT | | | |

## Technical specifications (continued)

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E | **6AV7230-0....-....**<br>SIMATIC IPC377E | **6AV7241-.....-....**<br>SIMATIC IPC 477E | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • Ambient temperature during operation | 0 °C to 50 °C | 0 to +45°C | 0 °C to 45 °C | +5 °C to +45 °C with full configuration |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) | Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation) | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) |
| **Vibrations** | | | | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | | | IEC 60068-2-6; 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s$^2$ (with SSD or CFast); 10 Hz to 58 Hz: 0.0375 mm; 58 Hz to 200 Hz: 4.9 m/s$^2$ (hard disk) | |
| **Shock testing** | | | | |
| • Shock load during operation | | | IEC 60068-2-27; 150 m/s$^2$, 11 ms (without hard disk); 50 m/s$^2$, 30 ms (with hard disk) | |
| **Operating systems** | | | | |
| pre-installed operating system | Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit | Windows 7 Ultimate (Multi-Language), 64 bit; Windows 10 Enterprise 2016 LTSB, 64 bit | Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10 | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| without operating system | Yes | Yes | Yes; Optional | Yes; Optional |
| **pre-installed operating system** | | | | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit | | Yes; Ultimate 64 bit | |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| **Software** | | | | |
| SIMATIC Software | | | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle | |

Additional information is available on the Internet at:
http://www.siemens.com/simatic-panel-pc

Note:

Do you need a specific modification or extension to the products described here? Then refer to "Customized Automation". There you will find information about additional and generally available sector-specific products as well as options for customer-specific modification and adaptation.

Examples are:

- Specific front panels for SIMATIC Panel PC, e.g. honing oil-resistant or with lateral function/movement keys
- SIMATIC HMI Net Panel with 46" large-scale display

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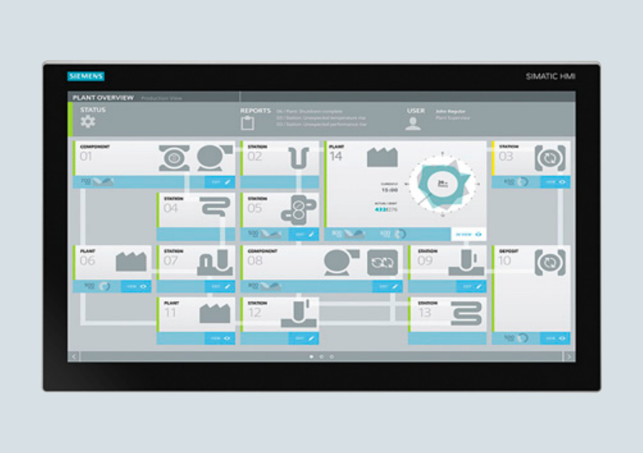
## Overview



***SIMATIC IPC277E: The Panel PC with optimized performance – maintenance-free and compact with displays from 7"***

The SIMATIC IPC277E Nanopanel PC is a flexible embedded industrial PC with rugged and durable displays.

Technologically it is based on the IPC227E Nanobox PC and thus offers maximum industrial functionality for flexible use even under harsh conditions – all without the need for maintenance.

The Panel PC is characterized by modern interfaces and a high degree of flexibility in the selection of the display. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here for visualization and control tasks.

## Technical specifications

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E |
|---|---|
| **General information** | |
| Product type designation | IPC277E |
| **Installation type/mounting** | |
| Design | Panel PC, built-in unit |
| maximum permissible installation angle +/- | 45° |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Intel Celeron N2807 / N2930 |
| Chipset | SoC |
| **Graphic** | |
| Graphics controller | Integrated |
| **Drives** | |
| SSD | Yes; 128 / 240 / 480 GB |
| **Memory** | |
| Type of memory | DDR3L SO-DIMM |
| Main memory | 2 / 4 / 8 GB |
| Capacity of main memory, max. | 8 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • Number of compact flash slots | 1; CFast |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2; 2x Ethernet (RJ45) |
| USB port | 1x USB 3.0 / 3x USB 2.0 (7" / 9": 2x USB 2.0) |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM (1x RS 232 / 422 / 485), selectable in the BIOS |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | No |
| • Fan | No |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 MHz to 2 GHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 GHz to 2.7 GHz, 80 % AM acc. to IEC 61000-4-3;<br>10 V, 10 kHz to 80 MHz, 80 % AM acc. to IEC 61000-4-6 |

## **Technical specifications** (continued)

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E |
|---|---|
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | Noise emission: EN 61000-6-4:2007 +A1:2011 (industrial environments), CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005 |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes; 7", 9", 12" single-touch |
| • American Bureau of Shipping (ABS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Bureau Veritas (BV) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Det Norske Veritas (DNV) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Korean Register of Shipping (KRS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Lloyds Register of Shipping (LRS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Nippon Kaiji Kyokai (Class NK) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |
| • Chinese Classification Society (CCS) | Yes; 7", 9", 12" ST; 12", 15", 19" MT |

| Article number | **6AV7882-0...0-...0**<br>SIMATIC IPC277E |
|---|---|
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 50 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit |
| without operating system | Yes |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC277E (Nanopanel PC)** | **6AV7882-0■■■0-■■■0** |
| Operating unit | |
| • 7" touch | **A** |
| • 9" touch | **B** |
| • 12" touch | **C** |
| • 15" touch front USB | **D** |
| • 19" touch front USB | **E** |
| • 12" multi-touch (with WES7-E only single-touch mode) | **H** |
| • 15" multi-touch (with WES7-E only single-touch mode) | **F** |
| • 19" multi-touch (with WES7-E only single-touch mode) | **G** |
| • 15" multi-touch (1 366 x 768; ATEX/IECEx/UL HazLoc; with WES7-E only single-touch mode) | **J** |
| • 19" multi-touch (1 366 x 768; ATEX/IECEx/UL HazLoc; with WES7-E only single-touch mode) | **K** |
| Processor | |
| • Celeron N2807 (2C/2T) | **A** |
| • Celeron N2930 (4C/4T) | **B** |
| • Celeron N2807 (2C/2T)/TPM | **C** |
| • Celeron N2930 (4C/4T)/TPM | **D** |
| Work memory/NVRAM | |
| • 2 GB | **1** |
| • 4 GB | **2** |
| • 8 GB | **3** |
| • 2 GB/NVRAM | **4** |
| • 4 GB/NVRAM | **5** |
| • 8 GB/NVRAM | **6** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 E SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 E SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 P SP1, English, 32-bit | **3** |
| • Windows Embedded Standard 7 P SP1, English, 64-bit | **4** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **5** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **6** |
| • Windows 10 IoT Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) | **7** |

| | Article No. |
|---|---|
| **SIMATIC IPC277E (Nanopanel PC)** | **6AV7882-0■■■0-■■■0** |
| Mass storage | |
| • None | **A** |
| • 128 GB SSD | **E** |
| • 240 GB SSD | **C** |
| • 480 GB SSD | **D** |
| • 4 GB CFast | **K** |
| • 8 GB CFast | **L** |
| • 16 GB CFast | **M** |
| • 30 GB CFast | **N** |
| Software | |
| • Without SIMATIC software | **A** |
| • CPU 1507S | **B** |
| • WinCC RT Advanced V14, 128 PT (V15 license package) | **D** |
| • WinCC RT Advanced V14, 512 PT (V15 license package) | **E** |
| • WinCC RT Advanced V14, 2 048 PT (V15 license package) | **F** |
| • WinCC RT Advanced V14, 4 096 PT (V15 license package) | **G** |
| • CPU 1507S/WinCC RT Advanced V14, 128 PT (V15 license package) | **J** |
| • CPU 1507S/WinCC RT Advanced V14, 512 PT (V15 license package) | **K** |
| • CPU 1507S/WinCC RT Advanced V14, 2 048 PT (V15 license package) | **L** |
| • CPU 1507S/WinCC RT Advanced V14, 4 096 PT (V15 license package) | **M** |
| • Starter system, with CPU1507S and WinCC RT Advanced, without licenses | **S** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

Additional information is available on the Internet at:

http://www.siemens.com/simatic-panel-pc

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## Overview

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### *SIMATIC IPC377E*

Based on Intel Celeron process technology, the SIMATIC IPC377E Panel PC represents a new IPC platform which has been specifically developed for cost-optimized, PC-based applications in industrial and industry-oriented environments.

The SIMATIC IPC377E Panel PC is characterized by industrial touch displays in the sizes 12", 15" and 19" as well as a variety of interfaces.

Fast availability from stock as well as the fanless industrial design complete the concept.

## Technical specifications

| Article number | **6AV7230-0....-....**<br>SIMATIC IPC377E |
|---|---|
| **General information** | |
| Product type designation | IPC377E |
| **Installation type/mounting** | |
| Mounting | Panel mount and VESA, horizontal and vertical |
| Design | Panel PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 10 ms |
| **Processor** | |
| Processor type | Intel Celeron N3160 |
| **Drives** | |
| Hard disk | 500 GB HDD |
| SSD | Yes; 256 GB SSD |
| **Memory** | |
| Type of memory | DDR3L |
| Main memory | 4 GB, 8 GB |
| Capacity of main memory, max. | 8 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x mPCIe (half-size),<br>1x mSATA (full-size) |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2; 2x RJ45 (independent) |
| USB port | 2x USB 2.0, 2x USB 3.0 (high current) |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort, 1x VGA |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Protocols** | |
| **Protocols (Ethernet)** | |
| • TCP/IP | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | POWER, HDD |
| • Fan | No |

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## **Technical specifications** (continued)

| Article number | **6AV7230-0....-....**<br>SIMATIC IPC377E |
|---|---|
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact; ±8 kV air (to IEC 1000-4-2; ESD) |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 1 000 MHz,<br>80 % AM according to IEC 61000-4-3;<br>3 V/m for 1.4 ... 6 GHz,<br>80 % AM according to IEC 61000-4-3 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4, burst);<br>±1 kV (according to IEC 61000-4-5, surge pulse/line to line);<br>±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst;<br>±2 kV acc. to IEC 61000-4-5, surge |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP40 |

| Article number | **6AV7230-0....-....**<br>SIMATIC IPC377E |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| Dust protection | Protection against foreign bodies > 1 mm |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 to +45°C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language), 64 bit; Windows 10 Enterprise 2016 LTSB, 64 bit |
| without operating system | Yes |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC377E** | **6AV7230 - 0 ■ ■ ■ ■ - ■ ■ ■ ■** |
| 1 x display port graphic<br>1 x VGA port graphic<br>2x 10/100/1 000 Mbps Ethernet RJ45<br>2 x USB 3.0; 2 x USB 2.0;<br>4 x serial ports (COM) | |
| Operating unit | |
| • 12" touch (1 280 x 800) | **C** |
| • 15" touch (1 366 x 768) | **D** |
| • 19" touch (1 366 x 768) | **E** |
| Processor | |
| • Celeron N3160 (4C/4T) | **A** |
| Work memory | |
| • 4 GB RAM | **2** |
| • 8 GB RAM | **3** |
| Expansions/interfaces | |
| • 1x mPCIe / 1x mSata | **0** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Ultimate SP1, 64-bit MUI (en, de, fr, es, it) | **1** |
| Drives | |
| • None | **A** |
| • 500 GB HDD | **B** |
| • 256 GB SSD | **C** |
| Power supply | |
| • 24 V DC | **A** |
| Mounting accessories | |
| • Installation, VESA installation | **0** |

| | Article No. |
|---|---|
| *Preferred variants (available directly ex stock)* | |
| **SIMATIC IPC377E** | |
| **12" Configuration 1**<br>12" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0CA20-0BA0** |
| **12" Configuration 2**<br>12" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultimate 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0CA20-1BA0** |
| **12" Configuration 3**<br>12" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0CA20-0CA0** |
| **12" Configuration 4**<br>12" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultim. 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0CA20-1CA0** |
| **12" Configuration 5**<br>12" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 10 Enterprise 2016 LTSB; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0CA20-2CA0** |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **15" Configuration 1**<br>15" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0DA20-0BA0** |
| **15" Configuration 2**<br>15" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultimate 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0DA20-1BA0** |
| **15" Configuration 3**<br>15" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0DA20-0CA0** |
| **15" Configuration 4**<br>15" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultim. 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0DA20-1CA0** |
| **15" Configuration 5**<br>15" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 10 Enterprise 2016 LTSB; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0DA20-2CA0** |

| | Article No. |
|---|---|
| **19" Configuration 1**<br>19" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0EA20-0BA0** |
| **19" Configuration 2**<br>19" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 500 GB HDD SATA, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultimate 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0EA20-1BA0** |
| **19" Configuration 3**<br>19" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); without operating system; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0EA20-0CA0** |
| **19" Configuration 4**<br>19" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultim. 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45), 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0EA20-1CA0** |
| **19" Configuration 5**<br>19" touch (analog resistive); Intel Celeron Quad Core N3160 (1.6 GHz); 256 GB SSD, internal; 4 GB RAM (1 x 4 GB); Windows 7 Ultim. 64-bit, SP1; 24 V DC; interfaces: 2 x Gbit Ethernet (RJ45) 2 x USB 2.0; 2 x USB 3.0; 4 x serial; 1 x Display Port, 1 x VGA, audio | **6AV7230-0EA20-2CA0** |

Note:

The SIMATIC IPC377E has a different front panel and is not directly installation-compatible with previous SIMATIC HMI devices.

Additional information is available on the Internet at:

http://www.siemens.com/simatic-panel-pc

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## SIMATIC IPC477E

### Overview

***SIMATIC IPC477E: The powerful embedded Panel PC – maintenance-free with versatile configuration***

- Embedded PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation
- Maintenance-free (no rotating components such as fan and hard disk)
- Rugged construction: The PC is resistant to even the harshest mechanical stress and extremely reliable in operation
- Compact design
- Battery-independent retentive memory onboard
- High degree of investment security
- Fast integration capability
- Built-in versions
  - 15" TFT touch
  - 19" TFT touch
  - 22" TFT touch
  - 15" TFT multi-touch
  - 19" TFT multi-touch
  - 22" TFT multi-touch
  - 24" TFT multi-touch

### Technical specifications

| Article number | **6AV7241-.....-....**<br>SIMATIC IPC 477E |
|---|---|
| **Installation type/mounting** | |
| Design | Panel PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange) 50/60 Hz; optional 24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache);<br>Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache);<br>Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT);<br>Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT) |
| Chipset | Intel C236 / Intel H110 |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller |
| **Drives** | |
| Hard disk | 2.5" SATA ≥ 320 GB |
| SSD | Yes; 128 / 240 / 480 GB |
| **Memory** | |
| Type of memory | DDR4-2400 SO-DIMM |
| Main memory | 4 / 8 / 16 Gbyte, ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x PCIe (slot with card retainer),<br>1x slot for CFAST card |
| • Number of PCI slots | 1; Optional |
| • Number of compact flash slots | 1; CFast |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; 3x Ethernet (RJ45) |
| USB port | 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

## Technical specifications (continued)

| Article number | **6AV7241-.....-....** |
|---|---|
| | SIMATIC IPC 477E |
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Fan | No |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 ... 2 000 MHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 ... 2.7 GHz;<br>10 V, 10 kHz ... 80 MHz acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |

| Article number | **6AV7241-.....-....** |
|---|---|
| | SIMATIC IPC 477E |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| CSA approval | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-4;<br>CISPR 22:2004 Class A; FCC Class A |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes; Optional, only with Multitouch |
| • IECEx Zone 2 | Yes; Optional, only with Multitouch |
| • cULus Class I Zone 2, Division 2 | Yes; Optional, only with Multitouch |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Bureau Veritas (BV) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Korean Register of Shipping (KRS) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 45 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30:<br>5% to 80% at 25 °C<br>(no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | IEC 60068-2-6; 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 $m/s^2$ (with SSD or CFast);<br>10 Hz to 58 Hz: 0.0375 mm; 58 Hz to 200 Hz: 4.9 $m/s^2$ (hard disk) |
| **Shock testing** | |
| • Shock load during operation | IEC 60068-2-27;<br>150 $m/s^2$, 11 ms (without hard disk);<br>50 $m/s^2$, 30 ms (with hard disk) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10 |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Software** | |
| SIMATIC Software | Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| Processor and fieldbus | |
| - Celeron G3902E; 3 x Gigabit Ethernet (IE/PN) | **1** |
| - Core i3-6102E; 3 x Gigabit Ethernet (IE/PN) | **3** |
| - Core i5-6442EQ; 3 x Gigabit Ethernet (IE/PN) | **5** |
| - Xeon E3-1505L; 3 x Gigabit Ethernet (IE/PN) | **7** |
| Operating unit | |
| - 15" single-touch (1 280 x 800) with front USB | **B** |
| - 19" single-touch (1 366 x 768) with front USB | **D** |
| - 22" single-touch (1 920 x 1 080) with front USB | **E** |
| - 15" multi-touch (1 366 x 768), single-touch mode only with WES7-E | **J** |
| - 19" multi-touch (1 366 x 768), single-touch mode only with WES7-E | **K** |
| - 22" multi-touch (1 920 x 1 080), single-touch mode only with WES7-E | **L** |
| - 24" multi-touch (1 920 x 1 080), single-touch mode only with WES7-E | **R** |
| Work memory/NVRAM | |
| - 4 GB | **A** |
| - 8 GB | **B** |
| - 16 GB | **C** |
| - 8 GB with ECC | **D** |
| - 16 GB with ECC | **E** |
| - 4 GB and NVRAM | **F** |
| - 8 GB and NVRAM | **G** |
| - 16 GB and NVRAM | **H** |
| - 8 GB with ECC and NVRAM | **J** |
| - 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| - No RS 232/RS 485, without PCIe | **0** |
| - No RS 232/RS 485 and one PCIe | **1** |
| - Second RS 232/RS 485, without PCIe | **3** |
| - Second RS 232/RS 485 and one PCIe | **4** |
| - No RS 232, without PCIe with ATEX/IECEx Cat 3G Zone 2 | **5** |
| - No RS 232 and one PCIe with ATEX/IECEx Cat 3G Zone 2 | **6** |
| - Two RS 232 without PCIe with ATEX/IECEx Cat 3G Zone 2 | **7** |
| - Two RS 232 and one PCIe with ATEX/IECEx Cat 3G Zone 2 | **8** |
| Operating system | |
| - Without operating system | **0** |
| - Windows Embedded Standard 7 SP1, English, 32-bit | **1** |
| - Windows Embedded Standard 7 SP1, English, 64-bit | **2** |
| - Windows Embedded Standard 7 P SP1, English, 64-bit, multi-touch | **3** |
| - Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **4** |
| - Windows 10 Enterprise 2016 LTSB (64-bit) for Celeron, Core i3 and Core i5 processors | **7** |
| - Windows 10 Enterprise 2016 LTSB (64-bit) for Xeon processors | **8** |

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| Mass storage, externally accessible | |
| - Without external mass storage | **0** |
| - CFAST 2 GB, without operating system | **1** |
| - CFast 4 GB, without operating system | **2** |
| - CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | **3** |
| - CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | **4** |
| - CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | **5** |
| Mass storage, internal | |
| - Without internal mass storage | **A** |
| - 128 GB solid-state drive SATA | **D** |
| - 240 GB solid-state drive SATA | **F** |
| - 480 GB solid-state drive SATA | **G** |
| - 320 GB HDD | **J** |
| SIMATIC software (bundles and starter systems) | |
| - Without SIMATIC software | **A** |
| - CPU 1507S | **B** |
| - WinCC RT Advanced V15 | |
|   - 128 PT | **C** |
|   - 512 PT | **D** |
|   - 2 048 PT | **E** |
|   - 4 096 PT | **F** |
|   - 8 192 PT | **G** |
| - CPU 1507S / WinCC RT Advanced V15 | |
|   - 128 PT | **H** |
|   - 512 PT | **J** |
|   - 2 048 PT | **K** |
|   - 4 096 PT | **L** |
|   - 8 192 PT | **M** |
| - IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | **S** |
| Power supply: | |
| - 24 V DC industrial power supply | **0** |
| - 110/230 V AC industrial power supply with NAMUR; European power cable | **1** |
| - 110/230 V AC industrial power supply with TPM [2] (not for China or Russia) NAMUR, European power cable | **7** |
| - 24 V DC industrial power supply and TPM [2] (not for China or Russia) | **8** |

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[1] For an up-to-date overview, see the SIMATIC PC Online Configurator: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

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## Overview

***SIMATIC IPC477D: The powerful embedded Panel PC – maintenance-free with versatile configuration***

- Embedded PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation
- Maintenance-free (no rotating components such as fan and hard disk)
- Rugged construction: The PC is resistant to even the harshest mechanical stress and is extremely reliable in operation
- Compact design
- Battery-independent retentive memory onboard
- High degree of investment security
- Fast integration capability

Now available as fully enclosed IPC477D PRO 15", 19" or 22" with degree of protection IP65.

The following front versions are available:

- Built-in versions
  - 12" TFT touch
  - 15" TFT touch
  - 15" TFT touch/key
  - 19" TFT touch
  - 22" TFT touch
  - 15" TFT multi-touch
  - 19" TFT multi-touch
  - 22" TFT multi-touch
  - 15" TFT multi-touch with marine approval
  - 19" TFT multi-touch with marine approval
  - 22" TFT multi-touch with marine approval

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## Technical specifications

| Article number | **6AV7240-.....-....**<br>SIMATIC IPC 477D | **6AV7240-.....-...8**<br>SIMATIC IPC 477D with TPM |
|---|---|---|
| **Installation type/mounting** | | |
| Design | Panel PC, built-in unit | Box PC, built-in unit |
| **Supply voltage** | | |
| Type of supply voltage | 100/240 V AC (autorange) 50/60 Hz; optional 24 V DC | 100/240 V AC (autorange) 50/60 Hz; optional 24 V DC |
| **Line frequency** | | |
| • Rated value 50 Hz | Yes | Yes |
| • Rated value 60 Hz | Yes | Yes |
| **Mains buffering** | | |
| • Mains/voltage failure stored energy time | 10 ms | |
| **Processor** | | |
| Processor type | Celeron 827E (1C/1T, 1.40 GHz, 1.5 MB Cache); Core i3-3217UE (2C/4T, 1.60 GHz, 3 MB Cache); Core i7-3517UE (2C/4T, 1.70 (2.80) GHz, 4 MB Cache, iAMT) | Intel Core i7-3517UE Intel Core i3-3217UE Intel Celeron 827E |
| **Graphic** | | |
| Graphics controller | Intel HD graphics controller | Intel HD graphics controller |
| **Drives** | | |
| Optical drives | Optional: DVD±R±RW combi drive; on rear, can be operated from side | Optional: DVD±R±RW combi drive; on rear, can be operated from side |
| Hard disk | 2.5" SATA hard disk, at least 320 GB | 2.5" SATA hard disk, at least 320 GB |
| SSD | Yes; 1x 240 GB SSD, 1x 480 GB SSD | Yes; 1x 240 GB SSD, 1x 480 GB SSD |
| **Memory** | | |
| Type of memory | DDR3-SDRAM | DDR3-SDRAM |
| Main memory | 2 / 4 / 8 GB; ECC optional | 2 / 4 / 8 GB |
| Capacity of main memory, max. | 8 Gbyte | 8 Gbyte |
| **Data areas and their retentivity** | | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional | 512 kbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | | |
| **Slots** | | |
| • free slots | 1x PCIe (slot with card retainer), 1x slot for CFAST card | 1x PCIe (slot with card retainer), 1x slot for CFAST card |
| • Number of PCI slots | 1; Optional | 1; Optional |
| • Number of compact flash slots | 2; CFast | 2; CFast |
| **Interfaces** | | |
| Number of PROFINET interfaces | 3; 3 ports (IRT, with switch, optional) | 3; 3 ports (IRT, with switch, optional) |
| USB port | 4x USB 3.0 high speed/high current | 4x USB 3.0 high speed/high current |
| Connection for keyboard/mouse | USB / USB | USB / USB |
| serial interface | COM1: 1x RS 232, COM2 (optional): 1x RS 232 | COM1: 1x RS 232, COM2 (optional): 1x RS 232 |
| **Video interfaces** | | |
| • Graphics interface | DVI VGA / DVI integrated | DVI VGA / DVI integrated |
| **Industrial Ethernet** | | |
| • Industrial Ethernet interface | | Onboard, 2x 10 / 100 / 1000 Mbit, RJ45 |
| **Interrupts/diagnostics/status information** | | |
| Bus diagnostics | Yes | |
| **Integrated Functions** | | |
| **Monitoring functions** | | |
| • Temperature monitoring | Yes | Yes |
| • Watchdog | Yes | Yes |
| • Status LEDs | Yes | Yes |
| • Fan | No | |
| • Monitoring function via network | Optional | Optional |

## Technical specifications (continued)

| Article number | **6AV7240-.....-....**<br>SIMATIC IPC 477D | **6AV7240-.....-...8**<br>SIMATIC IPC 477D with TPM |
|---|---|---|
| **EMC** | | |
| **Interference immunity against discharge of static electricity** | | |
| • Interference immunity against discharge of static electricity | ± 6 KV contact discharge at the front in accordance with IEC 61000-4-2;<br>±4 kV, housing contact discharge at the back in accordance with IEC 61000-4-2;<br>± 8 kV air discharge in accordance with IEC 61000-4-2 | |
| **Interference immunity against high-frequency electromagnetic fields** | | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz,<br>80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz,<br>80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 | |
| **Interference immunity to cable-borne interference** | | |
| • Interference immunity on supply cables | ±2 kV (to IEC 1000-4-4; 1995; burst);<br>±1 kV (to IEC 1000-4-5; 1995; surge symm);<br>±2 kV (to IEC 1000-4-5; 1995; surge asymm) | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-4, burst; length > 30 m;<br>±2 kV acc. to IEC 61000-4-5, surge; length > 30 m | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m | |
| **Interference immunity against voltage surge** | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | | |
| IP (at the front) | IP65 | IP65 |
| IP (rear) | IP20 | IP20 |
| **Standards, approvals, certificates** | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | Yes |
| UL approval | Yes | Yes |
| • UL 508 | Yes | Yes |
| cULus | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes |
| KC approval | Yes | Yes |
| FCC | Yes | Yes |
| EMC | CE, EN 61000-6-4; CISPR 22:2004 Class A; FCC Class A | CE, EN 61000-6-4; CISPR 22:2004 Class A; FCC Class A |
| **Use in hazardous areas** | | |
| • ATEX Zone 2 | Yes; Optional | Yes; Optional |
| • ATEX Zone 22 | Yes; Optional | Yes; Optional |
| • IECEx Zone 2 | Yes; Optional | Yes; Optional |
| • cULus Class I Zone 2, Division 2 | Yes | Yes |
| **Marine approval** | | |
| • Germanischer Lloyd (GL) | Yes | Yes |
| • American Bureau of Shipping (ABS) | Yes | Yes |
| • Bureau Veritas (BV) | Yes | Yes |
| • Det Norske Veritas (DNV) | Yes | Yes |
| • Korean Register of Shipping (KRS) | Yes | Yes |
| • Lloyds Register of Shipping (LRS) | Yes | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV7240-.....-....**<br>SIMATIC IPC 477D | **6AV7240-.....-...8**<br>SIMATIC IPC 477D with TPM |
|---|---|---|
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • Ambient temperature during operation | 0 °C to +45 °C with full configuration | 0 °C to +50 °C with full configuration |
| **Ambient temperature during storage/transportation** | | |
| • min. | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C |
| **Relative humidity** | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation) | Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation) |
| **Vibrations** | | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | IEC 60068-2-6; 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s² (with SSD or CFast); 10 Hz to 58 Hz: 0.0375 mm; 58 Hz to 200 Hz: 4.9 m/s² (hard disk) | IEC 60068-2-6; 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s² (with SSD or CFast); 10 Hz to 58 Hz: 0.0375 mm; 58 Hz to 200 Hz: 4.9 m/s² (hard disk) |
| **Shock testing** | | |
| • Shock load during operation | IEC 60068-2-27; 150 m/s², 11 ms (without hard disk); 50 m/s², 30 ms (with hard disk) | IEC 60068-2-27; 150 m/s², 11 ms (without hard disk); 50 m/s², 30 ms (with hard disk) |
| **Operating systems** | | |
| pre-installed operating system | Windows 7 Ultimate 32-bit / 64-bit, MUI;<br>Windows Embedded Standard 7 P, 32-bit, MUI | Windows 7 Ultimate 32-bit / 64-bit, MUI;<br>Windows Embedded Standard 7 P, 32-bit, MUI |
| without operating system | Yes; Optional | Yes |
| **pre-installed operating system** | | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit | Yes; Ultimate 32 bit or 64 bit |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC477D** [1] | **6AV7240-■■■■■-■■■■** |
| Processor and fieldbus: | |
| • Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **0** |
| • Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **1** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **3** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **4** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **5** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **6** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **7** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **8** |
| Operator control unit: | |
| • 12" touch (1 280 x 800) (caution, restrictions regarding options: HDD, PCI, AC, DVD) | **A** |
| • 15" touch (1 280 x 800) with front USB | **B** |
| • 15" touch/key (1 280 x 800) with front USB | **C** |
| • 19" touch (1 366 x 768) with front USB | **D** |
| • 22" touch (1 920 x 1 080) with front USB | **E** |
| • 15" multi-touch (1 366 x 768) without front USB | **H** |
| • 19" multi-touch (1 366 x 768) without front USB | **K** |
| • 22" multi-touch (1 920 x 1 080) without front USB | **L** |
| • 15" multi-touch (1 366 x 768) without front USB, with marine approval | **M** |
| • 19" multi-touch (1 366 x 768) without front USB, with marine approval | **N** |
| • 22" multi-touch (1 920 x 1 080) without front USB, with marine approval | **P** |
| Work memory/NVRAM | |
| • 2 GB | **B** |
| • 4 GB | **C** |
| • 8 GB | **D** |
| • 2 GB and NVRAM | **K** |
| • 4 GB and NVRAM | **L** |
| • 8 GB and NVRAM | **M** |

| | Article No. |
|---|---|
| **SIMATIC IPC477D** [1] | **6AV7240-■■■■■-■■■■** |
| Expansions/interfaces: | |
| • 1 x RS 232, without PCIe | **0** |
| • 1 x RS 232 and one PCIe | **1** |
| • Two RS 232, without PCIe | **3** |
| • Two RS 232 and one PCIe | **4** |
| Operating system: | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 Professional, 32-bit, MUI | **3** |
| • Windows Embedded Standard 7 SP1, English, 32-bit | **4** |
| • Windows Embedded Standard 7 SP1, English, 64-bit | **5** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **6** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **7** |
| Externally accessible mass storage (without operating system): | |
| • Without external mass storage | **0** |
| • CFAST 2 GB, without operating system | **1** |
| • CFAST 4 GB [2] | **2** |
| • CFAST 8 GB [2] | **3** |
| • CFAST 16 GB [2] | **4** |
| • DVD | **6** |
| Internal mass storage: | |
| • Without internal mass storage | **A** |
| • CFAST 2 GB | **B** |
| • CFAST 4 GB | **C** |
| • CFAST 8 GB | **D** |
| • CFAST 16 GB | **E** |
| • 320 GB HDD | **K** |
| • DVD | **L** |
| • SSD 240 GB standard without DVD | **P** |
| • SSD 480 GB standard without DVD | **R** |
| • HDD min. 320 GB with DVD | **Q** |
| SIMATIC software pre-installed (bundles): | |
| • Without SIMATIC software | **A** |
| Power supplies: | |
| • 24 V DC industrial power supply | **0** |
| • 110/230 V AC industrial power supply with NAMUR; wthout power cable | **1** |
| • 110/230 V AC industrial power supply with NAMUR; European power cable | **2** |
| • 110/230 V AC industrial power supply with NAMUR; US power cable | **3** |
| • 110/230 V AC industrial power supply with NAMUR; Chinese power cable | **4** |
| • 110/230 V AC industrial power supply with NAMUR; Italian power cable | **5** |
| • 110/230 V AC industrial power supply with NAMUR; Swiss power cable | **6** |
| • 110/230 V AC industrial power supply with NAMUR; UK power cable | **7** |
| • 24 V DC industrial power supply and TPM [4] (not for China or Russia) | **8** |

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[1] Built-to-order versions with a delivery time of max. 15 working days and with identified repair.

[2] Optional operating system/software only if no internal mass storage or HDD

[3] Only with work memory and NVRAM

[4] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

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## SIMATIC IPC677E

### Overview

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***SIMATIC IPC677E: The high-end Panel PC – with maximum performance, functional scope and expansion capability***

Industrial PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation.

Rugged construction: The IPC is resistant to even the harshest mechanical stress and extremely reliable in operation.

- Compact design
- High degree of investment security
- High degree of expandability

The following widescreen front variants are available:

- 19", 22" or 24" capacitive multi-touch color display

### Technical specifications

| Article number | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|
| **Installation type/mounting** | |
| Design | Panel PC, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange); 24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 10 ms |
| **Processor** | |
| Processor type | Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d);<br>Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d);<br>Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) |
| Chipset | Intel C246 |
| **Graphic** | |
| Graphics controller | Intel UHD Graphics 630 (Core i);<br>Intel UHD Graphics 610 (Celeron) |

| Article number | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|
| **Drives** | |
| Hard disk | 2.5" SATA ≥ 320 GB |
| SSD | Yes; SSD M.2 NVMe 512 GB; SSD 2.5" SATA 480 / 960 GB;<br>RAID1 2x SSD 2.5" SATA 480 / 960 GB in removable drive bay |
| **Memory** | |
| Type of memory | DDR4-2666 DIMM |
| Main memory | 4 / 8 / 16 / 32 / 64 GB |
| Capacity of main memory, max. | 64 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer |
| • Number of PCI slots | 2; Optional |
| • Number of PCI slots | 2; Optional |

## Technical specifications (continued)

| Article number | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; 3x Ethernet (RJ45) |
| USB port | 6x USB 3.1 Gen. 2 (2x type C) |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort; 1x DVI-D |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | 1x power, 3x user |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |

| Article number | **6AV7261-.....-....**<br>SIMATIC IPC677E (Panel PC) |
|---|---|
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005 |
| **Marine approval** | |
| • American Bureau of Shipping (ABS) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Nippon Kaiji Kyokai (Class NK) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | +5 °C to +45 °C with full configuration |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB or 2019 LTSC 64-bit, MUI |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC677E** [1] | **6AV7261 - ■ ■ ■ ■ ■ - ■ ■ ■ ■** |
| UHD graphics onboard; 2x DP; 1x DVI-D; 3x Gigabit Ethernet (IE/PN) RJ45; 6x USB 3.1 Gen. 2; 1x serial (COM1); RAID controller onboard; watchdog, temperature/fan monitoring | |
| Operating unit | |
| • 19" multi-touch (1 920 x 1 080) | **0** |
| • 22" multi-touch (1 920 x 1 080) | **1** |
| • 24" multi-touch (1 920 x 1 080) | **2** |
| Processor | |
| • Intel Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d); | **A** |
| • Intel Celeron G4900 (2C/2T, 3.1 GHz, 2 MB Cache; VT-d); NVRAM | **B** |
| • Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d) | **C** |
| • Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-d); NVRAM | **D** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT) | **G** |
| • Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, VT-d, AMT); NVRAM | **H** |
| Drives | |
| • HDD 2.5" SATA 320 GB internal | **A** |
| • SSD 2.5" SATA 480 GB internal | **B** |
| • SSD 2.5" SATA 960 GB internal | **D** |
| • RAID1 2x SSD 2.5" SATA 480 GB internal | **E** |
| • RAID1 2x SSD 2.5" SATA 480 GB in removable drive bay | **G** |
| • RAID1 2x SSD 2.5" SATA 960 GB in removable drive bay | **H** |
| • M.2 SSD NVMe 512 GB | **J** |
| • M.2 SSD NVMe 512 GB; HDD 2.5" SATA 320 GB internal | **K** |
| • M.2 SSD NVMe 512 GB; SSD 2.5" SATA 480 GB internal | **L** |
| • M.2 SSD NVMe 512 GB; SSD 2.5" SATA 960 GB internal | **M** |
| • M.2 SSD NVMe 512 GB; RAID1 2x SSD 2.5" SATA 480 GB in removable drive bay | **Q** |
| • M.2 SSD NVMe 512 GB; 2 removable drive bays without media | **S** |

| | Article No. |
|---|---|
| **SIMATIC IPC677E** [1] | **6AV7261 - ■ ■ ■ ■ ■ - ■ ■ ■ ■** |
| Memory configuration | |
| • 4 GB DDR4-2666 (1x 4 GB) | **0** |
| • 8 GB DDR4-2666 (2x 4 GB) | **1** |
| • 16 GB DDR4-2666 (2x 8 GB) | **2** |
| • 32 GB DDR4-2666 (2x 16 GB) | **3** |
| • 64 GB DDR4-2666 (4x 16 GB) | **4** |
| Power supply | |
| • 24 V DC industrial power supply | **0** |
| • 110/230 V AC industrial power supply with NAMUR; without power cable | **1** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord Europe | **2** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord USA | **3** |
| • 110/230 V AC industrial power supply unit with NAMUR; power supply cord China | **4** |
| Operating system | |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es); for Celeron and i3 | **0** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es), for Core i7 | **1** |
| • Windows 10 Enterprise 2019 LTSC, 64-bit, MUI (En, De, Fr, It, Es); for Celeron and i3 | **2** |
| • Windows 10 Enterprise 2019 LTSC, 64-bit, MUI (En, De, Fr, It, Es), for Core i7 | **3** |
| • Without operating system | **8** |
| Expansion (SW) | |
| • Without expansion | **A** |
| • SIMATIC IPC DiagMonitor included | **B** |
| • SIMATIC IPC Image & Partition Creator included | **C** |
| • SIMATIC IPC DiagMonitor, Image & Partition Creator included | **D** |
| • TPM [2] (not for China) | **X** |
| Expansion 1 (HW) | |
| • Without expansion (HW) | **A** |
| • 2x USB 2.0 (1 slot occupied) | **B** |
| • Device without CMOS battery (CR2450N) | **C** |
| Expansion 2 (HW) | |
| • 2 x PCI | **0** |
| • 1 x PCIe (x16); 1 x PCI | **1** |
| • 1 x PCIe (x16); 1 x PCIe (x4) | **2** |

[1] Production and delivery as per order

[2] TPM = Trusted Platform Module

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansion** | |
| • 4 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL60-0QA0** |
| • 8 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL70-0QA0** |
| • 16 GB DDR4 2666 SDRAM, DIMM | **6ES7648-2AL80-0QA0** |
| **Cable for non-heating apparatus for SIMATIC Box and Panel PC**<br>SIMATIC PC power cable, 230 V AC, angled, 3 m, for: | |
| • Germany | **6ES7900-1AA00-0XA0** |
| • United Kingdom | **6ES7900-1BA00-0XA0** |
| • Switzerland | **6ES7900-1CA00-0XA0** |
| • USA | **6ES7900-1DA00-0XA0** |
| • Italy | **6ES7900-1EA00-0XA0** |
| • China | **6ES7900-1FA00-0XA0** |
| **Touch pen** | See "SIMATIC HMI accessories -> Accessibility" |
| **Expansion components** | See Expansion components |
| **Communication components** | See Expansion components |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-panel-pc

Note:

Do you need a specific modification or extension to the products described here? Under "Customized products" you will find information about additional and generally available sector-specific products as well as options for customer-specific modification and adaptation

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## SIMATIC IPC677D

### Overview

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TOUCH

***SIMATIC IPC677D: The high-end Panel PC – with maximum performance, functional scope and expansion capability***

PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation.

Rugged construction: The PC is resistant to even the harshest mechanical stress and is extremely reliable in operation.

- Compact design
- High degree of investment protection
- Fast integration capability

The following widescreen front variants are available:

- 15", 19" or 22" resistive single-touch color display with front USB
- 15", 19" or 22" capacitive multi-touch color display

### Technical specifications

| Article number | **6AV7260-.....-....**<br>SIMATIC IPC677D |
|---|---|
| **General information** | |
| Product type designation | IPC677D |
| **Installation type/mounting** | |
| Design | Panel PC, built-in unit |
| maximum permissible installation angle +/- | 20° |
| **Supply voltage** | |
| Type of supply voltage | 100/240 V AC (autorange);<br>24 V DC |
| **Line frequency** | |
| • Rated value 50 Hz | Yes |
| • Rated value 60 Hz | Yes |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 10 ms |
| **Processor** | |
| Processor type | Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache);<br>Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache);<br>Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT) |
| Chipset | Intel DH82C226 PCH |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron) |

| Article number | **6AV7260-.....-....**<br>SIMATIC IPC677D |
|---|---|
| **Drives** | |
| Optical drives | DVD±R±RW combi-drive, optional |
| Hard disk | 3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay |
| SSD | Yes; ≥ 240 GB optional |
| **Memory** | |
| Type of memory | DDR3-1600 DIMM |
| Main memory | 2 / 4 / 8 / 16 GB; ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 2 Mbyte; 128 KB can be stored in the buffer time; optional |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer |
| • Number of PCI slots | 2 |
| • Number of PCI slots | 2 |

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## **Technical specifications** (continued)

| Article number | **6AV7260-.....-....**<br>SIMATIC IPC677D |
|---|---|
| **Interfaces** | |
| PROFIBUS/MPI | Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622 |
| Number of industrial Ethernet interfaces | 2; 2x RJ45 (independent) |
| Number of PROFINET interfaces | 3; Optional |
| USB port | 4x USB 3.0 |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 1x COM1 (RS 232), optional:<br>1x COM2 (RS 232) |
| parallel interface | optional LPT1 |
| **Video interfaces** | |
| • Graphics interface | 1x DisplayPort and 1x DVI-I;<br>1x VGA via adapter cable (optional) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | Onboard,<br>2x 10 / 100 / 1000 Mbit, RJ45 |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Status LEDs | Yes |
| • Fan | Yes |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |

| Article number | **6AV7260-.....-....**<br>SIMATIC IPC677D |
|---|---|
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| FCC | Yes |
| EMC | CE, EN 61000-6-4:2007,<br>EN 61000-6-2:2005 |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | +5 °C to +45 °C with full configuration |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation) |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate, 32-bit/64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |
| without operating system | Yes |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC677D** [1] | **6AV7260-■■■■■-■■■■** |
| HD graphics onboard;<br>2 x Gigabit Ethernet (IE/PN) RJ45;<br>4 x USB V3.0; 1x serial (COM1);<br>RAID controller onboard;<br>watchdog, temp./fan monitoring | |
| Operating unit | |
| • 15" touch (1 280 x 800) with front USB | **0** |
| • 19" touch (1 366 x 768) with front USB | **1** |
| • 22" touch (1 920 x 1 080) with front USB | **2** |
| • 15" multi-touch (1 366 x 768) | **3** |
| • 19" multi-touch (1 366 x 768) | **4** |
| • 22" multi-touch (1 920 x 1 080) | **5** |
| Processor | |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache) | **A** |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM | **B** |
| • Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM | **C** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x) | **D** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM | **E** |
| • Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache, VT-x); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM | **F** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT) | **G** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM | **H** |
| • Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, VT-d, AMT); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM | **J** |
| Drives | |
| • 500 GB HDD SATA | **A** |
| • 500 GB HDD SATA; DVD+/-RW | **B** |
| • 1 TB HDD SATA | **D** |
| • 1 TB HDD SATA; DVD+/-RW | **E** |
| • RAID1 2 x 320 GB SATA (2.5") | **G** |
| • RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW | **H** |
| • Exchangeable SSD RAID1 2x 240 GB SATA (2.5") | **J** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5") | **K** |
| • Exchangeable HDD RAID1 2 x 320 GB SATA (2.5"); solid-state drive 240 GB | **L** |
| • Solid-state drive 240 GB; | **M** |
| • Solid-state drive 240 GB; 320 GB HDD SATA (2.5") | **N** |
| • Solid-state drive 240 GB; 320 GB HDD SATA (2.5"); DVD+/-RW | **P** |

| | Article No. |
|---|---|
| **SIMATIC IPC677D** [1] | **6AV7260-■■■■■-■■■■** |
| Memory configuration | |
| • 2 GB DDR3 1600 DIMM | **1** |
| • 4 GB DDR3 1600 DIMM | **2** |
| • 8 GB DDR3 1600 DIMM | **3** |
| • 16 GB DDR3 1600 DIMM | **4** |
| • 8 GB DDR3 1600 DIMM; ECC | **5** |
| • 16 GB DDR3 1600 DIMM; ECC | **6** |
| Expansions (HW) | |
| • 2 x PCI | **0** |
| • 1 x PCIe (x16); 1 x PCI | **1** |
| • 1 x PCIe (x16); 1 x PCIe (x4) | **2** |
| Expansion 2 (HW) | |
| • Without expansion (HW) | **0** |
| • 2 x USB in addition (1 slot occupied) | **1** |
| • COM2; LPT (1 slot occupied) | **2** |
| • 2 x USB in addition; COM2; LPT (2 slots occupied) | **3** |
| Operating system | |
| • Windows 7 Ultimate 32-bit, SP1, MUI (en, de, fr, it, es) | **A** |
| • Windows 7 Ultimate 64-bit, SP1, MUI (en, de, fr, it, es) | **B** |
| • Windows 10 Enterprise 2015 LTSB, 64-bit, MUI (en, de, fr, it, es) | **C** |
| • Windows Embedded Standard 7 P, 32-bit, SP1, MUI (en, de, fr, it, es) with SSD 80 GB option | **D** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es), for Celeron and i3 processors | **E** |
| • Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) for Xeon processors | **F** |
| • None | **X** |
| Expansion (SW) | |
| • SIMATIC IPC DiagMonitor included | **A** |
| • SIMATIC IPC Image & Partition Creator included | **B** |
| • SIMATIC IPC DiagMonitor, Image & Partition Creator included | **C** |
| • Without | **X** |
| • TPM [2] (not for China or Russia) | **Y** |
| Country-specific version / power supply | |
| • 110/230 V AC industrial power supply with NAMUR; power cable for Europe | **0** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for UK | **1** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for CH | **2** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for the USA | **3** |
| • 110/230 V AC industrial power supply NAMUR; power cable for Italy | **4** |
| • 110/230 V AC industrial power supply with NAMUR; power cable for China | **5** |
| • 24 V DC industrial power supply | **6** |
| • 110/230 V AC industrial power supply with NAMUR; without power cable | **8** |

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[1] Production and delivery as per order

[2] TPM = Trusted Platform Module

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Accessories* | |
| **Memory expansion** | |
| • 2 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ50-0MA0** |
| • 4 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ60-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM | **6ES7648-2AJ70-0MA0** |
| • 8 GB DDR3 1600 SDRAM, DIMM, ECC | **6ES7648-2AJ70-1MA0** |
| **Non-heating apparatus cable for SIMATIC Box and Panel PC**<br>SIMATIC PC power cable, 230 V AC, angled, 3 m, for: | |
| • Germany | **6ES7900-1AA00-0XA0** |
| • United Kingdom | **6ES7900-1BA00-0XA0** |
| • Switzerland | **6ES7900-1CA00-0XA0** |
| • USA | **6ES7900-1DA00-0XA0** |
| • Italy | **6ES7900-1EA00-0XA0** |
| • China | **6ES7900-1FA00-0XA0** |
| **Touch pen** | See "SIMATIC HMI accessories -> Accessibility" |
| **Expansion components** | See Expansion components |
| **Communication components** | See Expansion components |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-panel-pc

Note:

Do you need a specific modification or option for the products described here? Under "Customized products", you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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## SIMATIC Industrial Tablet PC

### Overview

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F1
F3
F5
F2
F4
F6

***SIMATIC Industrial Tablet PC***

The SIMATIC Industrial Tablet PC takes the performance of SIMATIC industry PCs to the tablet format.

With a large number of functional expansions such as a 1D/2D bar code reader or user identification by RFID, it taps diverse possibilities of use.

***SIMATIC ITP1000: Industrial rugged PC***

- High-quality components and modules with a high MTBF (mean time between failure), which also ensure 24-hour operation in the extended temperature range up to +45 °C
- Rugged enclosure designs with high electromagnetic compatibility (EMC)
- Hardware available in the long term

Powerful and many functions on board

- High-performance Intel Core i5-6442EQ or Intel Celeron G3902E notebook CPU
- Many interfaces on board:
  LAN, SD card reader, USB ports, RS232, audio
- WLAN and Bluetooth integrated
- RFID, bar code reader (1D/2D) and camera for a highly diverse range of mobile applications
- Windows 7 Ultimate 64-bit / Windows 10 IoT Enterprise 2016 LTSB (64-bit)

### Technical specifications

| Article number | **6AV7880-.....-...2**<br>SIMATIC ITP1000 |
|---|---|
| **General information** | |
| Design of the programming device | Tablet PC |
| **Display** | |
| Design of display | 10" multi-touch |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 1 280 Pixel; 1 920 pixels |
| • Vertical image resolution | 800 Pixel |
| **General features** | |
| • Luminance | 250 cd/m²; 350 cd/m² |
| **Backlighting** | |
| • Type of backlighting | LED |
| **Control elements** | |
| **Keyboard fonts** | |
| • Design | Touch |
| **Touch operation** | |
| • Integrated touchpad | No |
| **Supply voltage** | |
| Design of the power supply | External wide-range power supply; 3-pole |
| permissible range, lower limit (AC) | 100 V; ±10 %, sinusoidal |
| permissible range, upper limit (AC) | 240 V; ±10 %, sinusoidal |
| **Line frequency** | |
| • permissible range, lower limit | 47 Hz |
| • permissible range, upper limit | 63 Hz |
| **Processor** | |
| Processor type | Celeron G3902<br>(2C/2T, 1.6 GHz, 2 MB Cache);<br>Intel Core i5-6442EQ<br>(6 MB Cache, up to 2.70 GHz, iAMT) |
| Hyper-threading | No |
| Turbo Boost Technology 2.0 | Yes |
| **Graphic** | |
| Graphics controller | Intel® HD graphics 530 |
| **Drives** | |
| SSD | Yes |
| • Memory capacity | 256 Gbyte |
| TPM Security Chip | Yes |
| **Memory** | |
| Type of memory | DDR4-SDRAM SO-DIMM |
| **Work memory** | |
| • integrated | 4 Gbyte; 8 GB or 16 GB |
| **Accumulator** | |
| Replaceable | Yes; Lithium-ion battery |
| Capacity | 5 900 mA·h |
| Battery runtime, min. | 6 h; According to MobileMark 2014 |

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## **Technical specifications** (continued)

| Article number | **6AV7880-.....-...2**<br>SIMATIC ITP1000 |
|---|---|
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1 |
| Number of RS 232 interfaces | 1 |
| Number of USB interfaces | 3; USB 3.0 |
| • Type A | 2 |
| • Type C | 1 |
| Bluetooth radio standard | Yes; V4.0 |
| Multimedia card/SD card slot | 2 in 1 (SDHC UHS-II, MMC) |
| Universal Audio Jack | Yes; Audio socket for 3.5 mm jack |
| **Video interfaces** | |
| • DisplayPort | Yes; DP 1.2 (Mini DisplayPort) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 1x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |
| • IAMT (Intel Active Management Technology) | Yes |
| **WLAN** | |
| • Type | IEEE 802.11 a/b/g/n and ac |
| **Wireless transmission** | |
| • Operating frequency (rated value) | 13.56 MHz |
| **Interrupts/diagnostics/status information** | |
| LED status display | Battery charge level, device status, access to drive, WLAN active, SD card, application LED |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 | Yes; ±4 kV contact discharge (to IEC 801-2/IEC 1000-4-2; ESD), ±8 kV air discharge (to IEC 801-2/ IEC 1000-4-2; ESD) |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4, burst);<br>±1 kV (according to IEC 61000-4-5, surge pulse/line to line);<br>±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) |
| • Interference immunity on signal cables | ±1 kV (according to IEC 61000-4-4, burst, length < 30 m);<br>±2 kV (according to IEC 61000-4-4, burst, length > 30 m);<br>±2 kV (according to IEC 61000-4-5, surge sym./line to ground, length > 30 m) |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| Conforms to MIL-STD-810G | Yes |
| DIN/ISO 9001 | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 5 °C; Max. 10 °C/h (no condensation) |
| • max. | 45 °C; Max. 10 °C/h (no condensation) |

| Article number | **6AV7880-.....-...2**<br>SIMATIC ITP1000 |
|---|---|
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C; Max. 20 °C/h (no condensation) |
| • max. | 60 °C; Max. 20 °C/h (no condensation) |
| **Relative humidity** | |
| • Operation, min. | 5 %; At 30 °C/h (no condensation); Tested according to IEC 60068-2-78, IEC 60068-2-30, IEC 60068-2-14 |
| • Operation, max. | 85 %; At 30 °C/h (no condensation); Tested according to IEC 60068-2-78, IEC 60068-2-30, IEC 60068-2-14 |
| **Vibrations** | |
| • Operation, tested according to IEC 60068-2-6 | Yes |
| **Shock testing** | |
| • tested according to IEC 60068-2-27 | Yes |
| **Operating systems** | |
| Local language of operating system | Multi-Language User Interface (MUI): 6 languages (English, German, French, Spanish, Italian, Chinese) |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 64 bit, SP1 |
| • Windows 10 | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |
| **Software** | |
| **Preinstalled** | |
| • STEP 7 Professional 2010 | No |
| • STEP 7 Professional (TIA Portal) | No |
| • STEP 7 | No |
| • WinCC flexible Advanced 2008 | No |
| • WinCC Advanced (TIA Portal) | No |
| • STEP 5 | No |
| **Mechanics/material** | |
| Material of housing | metal |
| • Magnesium alloy | Yes |
| Socket for Kensington lock | Yes |
| rubber corner guards | Yes |
| **Dimensions** | |
| Width | 330 mm |
| Height | 32 mm |
| Depth | 214 mm |
| **Weights** | |
| Weight, approx. | 1.6 kg; incl. rechargeable battery |
| **Scope of supply** | |
| Accumulator | Yes |
| Power supply | Yes |
| Recovery media | Yes; Restore & Recovery |
| **Other** | |
| free hotline | Yes |
| Note: | Made in Germany: development and production in Germany |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC ITP1000** | **6AV7880 - ■ ■ ■ ■ ■ - ■ ■ ■ 2** |
| Operating unit | |
| • 10" multi-touch (1 280 x 800) with 8 function keys | **0** |
| • 10" multi-touch (1 920 x 1 200) with 8 function keys | **2** |
| Extras | |
| • None | **A** |
| • Rear camera, 5 megapixels | **B** |
| • RFID reader | **C** |
| • Bar code reader (1D/2D) | **D** |
| • Camera and RFID | **E** |
| • Bar code reader and camera | **F** |
| • RFID and bar code reader | **G** |
| • Camera, RFID and bar code reader | **H** |
| Mass storage | |
| • 256 GB SSD | **A** |
| • 512 GB SSD | **B** |
| Operating system | |
| • None | **0** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **1** |
| • Windows10 IoT Enterprise 2016 LTSB, (64-bit) for Celeron i3 and i5 processors | **2** |
| CPU | |
| • Celeron G390 2E (2 MB Cache, 1.60 GHz) | **1** |
| • Core i5-6442EQ (6 MB Cache, up to 2.70 GHz) | **2** |
| RAM | |
| • 4 GB | **0** |
| • 8 GB | **1** |
| • 16 GB | **2** |
| Power supply | |
| • 110/230 V power supply unit, power cable for Europe | **A** |
| • 110/230 V power supply unit, power cable for UK | **B** |
| • 110/230 V power supply unit, power cable for CH | **C** |
| • 110/230 V power supply unit, power cable for the USA | **D** |
| • 110/230 V power supply unit, power cable for Italy | **E** |
| • 110/230 V power supply unit, power cable for China | **F** |
| Spare software (included) | |
| • None | **A** |
| Rechargeable battery | |
| • High-capacity lithium ion battery | **2** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## More information

You can find additional information on the Internet at:

http://www.siemens.com/itp1000

Accessories can be found under SIMATIC HMI accessories:

https://mall.industry.siemens.com/mall/ww/en/Catalog/Products/10144445?tree=CatalogTree

"Automation technology" -> "Operator control and monitoring systems SIMATIC HMI" -> "Accessories"

Note:

Do you require a specific modification or extension to the products described here? Then look up "Customized products", where you will find information about additional and generally available sector-specific products as well as options for customer-specific modifications and adaptations.

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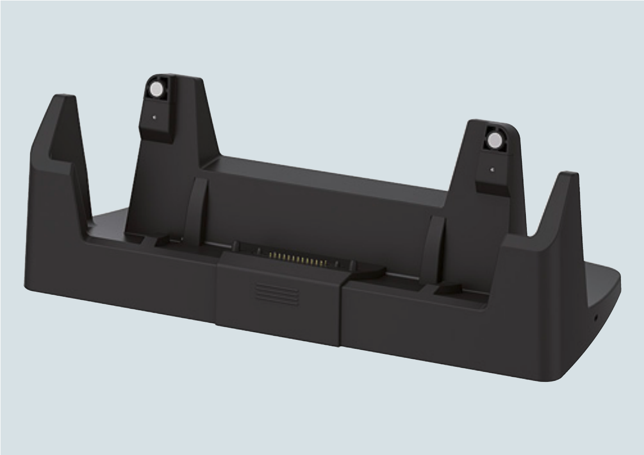
## Overview



### *Docking station*

A docking station is available for the SIMATIC Industrial Tablet PC. In addition to being able to charge the device, the docking station also features one Ethernet, one DisplayPort and two USB ports. With its external monitor, mouse and keyboard, the SIMATIC ITP1000 is upgraded into the equivalent of a full-scale office workplace.

The docking station is designed for users in industry. One-hand docking makes it quick and easy to insert and remove the SIMATIC ITP1000.

## Technical specifications

| Article number | **6AV7676-1AB00-0AA0**<br>ITP1000 Docking Station |
|---|---|
| **General information** | |
| Product type designation | Docking station for ITP1000 |
| **Connection type** | |
| • USB | Yes; USB 3.0 type A |
| **Supply voltage** | |
| Type of supply voltage | 100 - 240 V AC |
| Rated value (DC) | 19 V |
| **Interfaces** | |
| Interfaces/bus type | 1x Ethernet (RJ45) |
| Number of USB interfaces | 2 |
| HMI-side interface | 1x DisplayPort |
| **EMC** | |
| **Emission of radio interference acc. to EN 55 011** | |
| • Limit class A, for use in industrial areas | Yes |
| **Degree and class of protection** | |
| IP (all-round) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| **Ambient conditions** | |
| Suited for indoor use | Yes |
| Suited for outdoor use | No |
| **Mechanics/material** | |
| Material | |
| • Plastic | Yes |
| **Weights** | |
| Weight, approx. | 2.8 kg |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; Quantity |
| **Other** | |
| Target devices | SIMATIC ITP1000 |

## Ordering data

| | **Article No.** |
|---|---|
| ***System components for Tablet PC*** | |
| **Docking station for SIMATIC ITP1000** | **6AV7676-1AB00-0AA0** |

## More information

You can find additional information on the Internet at:

http://www.siemens.com/itp1000

You can find additional accessories at:

https://mall.industry.siemens.com/mall/ww/en/Catalog/Products/10144445?tree=CatalogTree

"Catalog" -> "Automation technology" -> "Operator control and monitoring systems SIMATIC HMI" -> "Accessories"

Note:

Do you require a specific modification or extension to the products described here? Then look up "Customized products", where you will find information about additional and generally available sector-specific products as well as options for customer-specific modifications and adaptations.

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## Overview

SIEMENS
SIMATIC HMI

***SIMATIC IFP Basic***

With the SIMATIC IFP Basic product series, the range of industrial touch monitors in the SIMATIC IFP product family has been extended by cost-effective versions.

SIMATIC IFP Basic devices feature touch operation and are available in 4 display sizes: 12", 15", 19" and 22".

## Technical specifications

| Article number | **6AV7862-2BC00-0AA0**<br>SIMATIC IFP1200 Basic | **6AV7862-2BD00-0AA0**<br>SIMATIC IFP1500 Basic | **6AV7862-2BE00-0AA0**<br>SIMATIC IFP1900 Basic | **6AV7862-2BF00-0AA0**<br>SIMATIC IFP2200 Basic |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP1200 Basic | IFP1500 Basic | IFP1900 Basic | IFP2200 Basic |
| Short designation | Basic Flat Panel 12" Touch | Basic Flat Panel 15" Touch | Basic Flat Panel 19" Touch | Basic Flat Panel 22" Touch |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | |
| Screen diagonal | 12.1 in | 15.6 in | 18.5 in | 21.5 in |
| On Screen Display (OSD) configuration | No | No | No | No |
| Number of colors | 16 000 000; 16 million | 16 000 000; 16 million | 16 000 000; 16 million | 16 000 000; 16 million |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 280 Pixel | 1 366 Pixel | 1 366 Pixel | 1 920 Pixel |
| • Vertical image resolution | 800 Pixel | 768 Pixel | 768 Pixel | 1 080 Pixel |
| **General features** | | | | |
| • Detachable from computer unit | 5 m | 5 m | 5 m | 5 m |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h | 50 000 h | 50 000 h | 30 000 h |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Touch operation** | | | | |
| • Design as touch screen | Yes; Analog-resistive | Yes; Analog-resistive | Yes; Analog-resistive | Yes; Analog-resistive |
| **Installation type/mounting** | | | | |
| VESA mounting | Yes; VESA 100 x 100 integrated | Yes; VESA 100 x 100 integrated | Yes; VESA 100 x 100 integrated | Yes; VESA 100 x 100 integrated |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 45° | 45° | 45° | 45° |
| maximum permitted backward tilt angle from vertical | 45° | 45° | 45° | 45° |
| **Supply voltage** | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 20.4 V | 20.4 V | 20.4 V | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Power loss** | | | | |
| Power loss, typ. | 13 W | 17 W | 19 W | 24 W |
| Power loss, max. | 60 W | 60 W | 60 W | 60 W |

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## Technical specifications (continued)

| Article number | **6AV7862-2BC00-0AA0**<br>SIMATIC IFP1200 Basic | **6AV7862-2BD00-0AA0**<br>SIMATIC IFP1500 Basic | **6AV7862-2BE00-0AA0**<br>SIMATIC IFP1900 Basic | **6AV7862-2BF00-0AA0**<br>SIMATIC IFP2200 Basic |
|---|---|---|---|---|
| **Interfaces** | | | | |
| Number of USB interfaces | 2; USB 2.0 (downstream) | 2; USB 2.0 (downstream) | 2; USB 2.0 (downstream) | 2; USB 2.0 (downstream) |
| USB on the rear | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes | Yes | Yes | Yes |
| **Touch interfaces** | | | | |
| • USB | Yes; USB Type A | Yes; USB Type A | Yes; USB Type A | Yes; USB Type A |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; UL 61010-1, UL 61010-2-201 | Yes; UL 61010-1, UL 61010-2-201 | Yes; UL 61010-1, UL 61010-2-201 | Yes; UL 61010-1, UL 61010-2-201 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes | Yes |
| FCC | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C | 40 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 85 % | 85 % | 85 % | 85 % |
| **Vibrations** | | | | |
| • Vibration load in operation | 5 $m/s^2$ | 5 $m/s^2$ | 5 $m/s^2$ | 5 $m/s^2$ |
| • Vibration load during transport/ storage | 10 $m/s^2$ | 10 $m/s^2$ | 10 $m/s^2$ | 10 $m/s^2$ |
| **Shock testing** | | | | |
| • Shock load during operation | 150 $m/s^2$ | 150 $m/s^2$ | 150 $m/s^2$ | 150 $m/s^2$ |
| • shock acceleration during storage/ transport | 150 $m/s^2$ | 250 $m/s^2$ | 250 $m/s^2$ | 250 $m/s^2$ |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 320 mm | 406 mm | 473 mm | 540 mm |
| Height of housing front | 226 mm | 258 mm | 297 mm | 334 mm |
| Mounting cutout, width | 302 mm | 388 mm | 455 mm | 522 mm |
| Mounting cutout, height | 208 mm | 241 mm | 279 mm | 317 mm |
| **Weights** | | | | |
| Weight without packaging | 2.7 kg | 4.1 kg | 5.1 kg | 6.5 kg |

## Ordering data

| | Article No. |
|---|---|
| *SIMATIC IFP Basic* | |
| **SIMATIC IFP1200 Basic**<br>Flat Panel with 12" display (16:10); Touch, 1 280 x 800 pixels Standard up to 5 m; for 24 V DC; DisplayPort / VGA interface | **6AV7862-2BC00-0AA0** |
| **SIMATIC IFP1500 Basic**<br>Flat Panel with 15" display (16:9); Touch, 1 366 x 768 pixels Standard up to 5 m; for 24 V DC; DisplayPort / VGA interface | **6AV7862-2BD00-0AA0** |

| | Article No. |
|---|---|
| **SIMATIC IFP1900 Basic**<br>Flat Panel with 19" display (16:9); Touch, 1 366 x 768 pixels Standard up to 5 m; for 24 V DC; DisplayPort / VGA interface | **6AV7862-2BE00-0AA0** |
| **SIMATIC IFP2200 Basic**<br>Flat Panel with 22" display (16:9); Touch, 1 920 x 1080 pixels Standard up to 5 m; for 24 V DC; DisplayPort / VGA interface | **6AV7862-2BF00-0AA0** |

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## SIMATIC Industrial Flat Panel

### Overview

The Industrial Flat Panels are rugged industry-standard LCD monitors in a widescreen design.

- Installation:
  - Equally suited for installation in the machine, in control cabinets, in consoles and gantries, or in 19" racks.
- Type of operator control:
  - Simple display devices without operator functionality
  - Optional devices with touch control
  - Optional devices with multi-touch control
  - Rear-mounted connection of I/O devices (optional)

Industrial Flat Panels are now available as fully enclosed Flat Panels.

- IFP1900 PRO (degree of protection IP65)
- Ethernet monitor IFP1900/IFP2200 for remote connection via standard Ethernet (TCP/IP)

### Technical specifications

| Article number | **6AV7863-2AA00-0AA0**<br>SIMATIC Flat Panel 15" Display only | **6AV7863-2AB10-0AA0**<br>SIMATIC Flat Panel 15" Display only Ext | **6AV7863-2BB10-0AA0**<br>SIMATIC Flat Panel 15" Touch/Key | **6AV7863-2TA00-0AA0**<br>SIMATIC Flat Panel 15" Touch | **6AV7863-2TB10-0AA0**<br>SIMATIC Flat Panel 15" Touch Ext |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | IFP1500 | IFP1500 | IFP1500 | IFP1500 | IFP1500 |
| Short designation | Flat Panel 15" display | Flat Panel 15" display ext. | Flat Panel 15" touch/ keys | Flat Panel 15" touch | Flat Panel 15" touch ext. |
| **Display** | | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | | |
| Screen diagonal | 15.4 in | 15.4 in | 15.4 in | 15.4 in | 15.4 in |
| Screen diagonal [cm] | 40 cm | 40 cm | 40 cm | 40 cm | 40 cm |
| Display width | 331.2 mm | 331.2 mm | 331.2 mm | 331.2 mm | 331.2 mm |
| Display height | 207 mm | 207 mm | 207 mm | 207 mm | 207 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | | | | |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° |
| **Resolution (pixels)** | | | | | |
| • Horizontal image resolution | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel |
| • Vertical image resolution | 800 Pixel | 800 Pixel | 800 Pixel | 800 Pixel | 800 Pixel |
| • Pixel size, horizontal | 0.259 mm | 0.259 mm | 0.259 mm | 0.259 mm | 0.259 mm |
| • Pixel size, vertical | 0.259 mm | 0.259 mm | 0.259 mm | 0.259 mm | 0.259 mm |
| **General features** | | | | | |
| • Brightness/contrast | 400 cd/m² / 1 000:1 | 400 cd/m² / 1 000:1 | 400 cd/m² / 1 000:1 | 400 cd/m² / 1 000:1 | 400 cd/m² / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes | | |
| • Detachable from computer unit | 5 m | 30 m | 5 m | 5 m | 5 m |
| • Luminance | 400 cd/m² | 400 cd/m² | 400 cd/m² | 400 cd/m² | 400 cd/m² |
| **Backlighting** | | | | | |
| • Type of backlighting | LED | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |

## **Technical specifications** (continued)

| Article number | **6AV7863-2AA00-0AA0**<br>SIMATIC Flat Panel 15" Display only | **6AV7863-2AB10-0AA0**<br>SIMATIC Flat Panel 15" Display only Ext | **6AV7863-2BB10-0AA0**<br>SIMATIC Flat Panel 15" Touch/Key | **6AV7863-2TA00-0AA0**<br>SIMATIC Flat Panel 15" Touch | **6AV7863-2TB10-0AA0**<br>SIMATIC Flat Panel 15" Touch Ext |
|---|---|---|---|---|---|
| **Control elements** | | | | | |
| **Input device** | | | | | |
| • Integrated mouse cursor control | No | No | | No | No |
| **Keyboard fonts** | | | | | |
| • Function keys | No | No | | No | No |
| - Number of function keys | 0 | 0 | 36 | 0 | 0 |
| **Touch operation** | | | | | |
| • Design as touch screen | No | No | Yes; Analog-resistive | Yes; Analog-resistive | Yes; Analog-resistive |
| • Monitor keyboard | | | Yes | Yes | Yes |
| **Installation type/mounting** | | | | | |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | | |
| Type of supply voltage | DC | AC/DC | AC/DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| Rated value (AC) | | 100 V; Up to 240V, 50/60 Hz | 100 V; Up to 240V, 50/60 Hz | | |
| permissible range, lower limit (AC) | | 90 V | 90 V | | 90 V |
| permissible range, upper limit (AC) | | 264 V | 264 V | | 264 V |
| **Power loss** | | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W | 40 W |
| Power loss, max. | 65 W | 65 W | 65 W | 65 W | 65 W |
| **Interfaces** | | | | | |
| USB on the rear | | Yes; 2x onboard | Yes; 1 | | Yes; 2x onboard |
| USB at the front | | | Yes; 1 | | |
| Connection for keyboard/mouse | | USB | USB | | USB |
| **Video interfaces** | | | | | |
| • analog video signal (VGA) | No | No | | No | No |
| • DVI-D | Yes | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | | |
| • USB | No | No | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | | |
| • FM Class I Division 2 | Yes | No | No | Yes | No |

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## Technical specifications (continued)

| Article number | **6AV7863-2AA00-0AA0**<br>SIMATIC Flat Panel 15" Display only | **6AV7863-2AB10-0AA0**<br>SIMATIC Flat Panel 15" Display only Ext | **6AV7863-2BB10-0AA0**<br>SIMATIC Flat Panel 15" Touch/Key | **6AV7863-2TA00-0AA0**<br>SIMATIC Flat Panel 15" Touch | **6AV7863-2TB10-0AA0**<br>SIMATIC Flat Panel 15" Touch Ext |
|---|---|---|---|---|---|
| **Ambient conditions** | | | | | |
| **Ambient temperature during operation** | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | | |
| Enclosure material (front) | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | | |
| Width of the housing front | 415 mm | 415 mm | 483 mm | 415 mm | 415 mm |
| Height of housing front | 310 mm | 310 mm | 310 mm | 310 mm | 310 mm |
| Mounting cutout, width | 396 mm; Tolerance: +1 mm | 396 mm; Tolerance: +1 mm | 450 mm; Tolerance: +1 mm | 396 mm; Tolerance: +1 mm | 396 mm; Tolerance: +1 mm |
| Mounting cutout, height | 291 mm; Tolerance: +1 mm | 291 mm; Tolerance: +1 mm | 291 mm; Tolerance: +1 mm | 291 mm; Tolerance: +1 mm | 291 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | | |
| Weight without packaging | 3.9 kg | 3.9 kg | 4.3 kg | 3.9 kg | 3.9 kg |
| Weight incl. packaging | 5 kg | 5 kg | 5.4 kg | 5 kg | 5 kg |

## Technical specifications (continued)

| Article number | **6AV7863-3AA00-0AA0**<br>SIMATIC Flat Panel 19" Display only | **6AV7863-3AB10-0AA0**<br>SIMATIC Flat Panel 19" Display only Ext | **6AV7863-3TA00-0AA0**<br>SIMATIC Flat Panel 19" Touch | **6AV7863-3TB10-0AA0**<br>SIMATIC Flat Panel 19" Touch Ext |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP1900 | IFP1900 | IFP1900 | IFP1900 |
| Short designation | Flat Panel 19" display | Flat Panel 19" display ext. | Flat Panel 19" touch | Flat Panel 19" touch ext. |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | |
| Screen diagonal | 18.5 in | 18.5 in | 18.5 in | 18.5 in |
| Screen diagonal [cm] | 47 cm | 47 cm | 47 cm | 47 cm |
| Display width | 409.8 mm | 409.8 mm | 409.8 mm | 409.8 mm |
| Display height | 230.4 mm | 230.4 mm | 230.4 mm | 230.4 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | | | |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 160° | 170° x 160° | 170° x 160° | 170° x 160° |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel |
| • Pixel size, horizontal | 0.3 mm | 0.3 mm | 0.3 mm | 0.3 mm |
| • Pixel size, vertical | 0.3 mm | 0.3 mm | 0.3 mm | 0.3 mm |
| **General features** | | | | |
| • Brightness/contrast | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | | |
| • Detachable from computer unit | 5 m | 30 m | 5 m | 30 m |
| • Luminance | 300 cd/m² | 300 cd/m² | 300 cd/m² | 300 cd/m² |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | |
| **Input device** | | | | |
| • Integrated mouse cursor control | No | No | No | No |
| **Keyboard fonts** | | | | |
| • Function keys | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 |
| **Touch operation** | | | | |
| • Design as touch screen | No | No | Yes; Analog-resistive | Yes; Analog-resistive |
| • Monitor keyboard | | | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes; Portrait mode possible | | | |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | AC/DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| Rated value (AC) | | 100 V; Up to 240V, 50/60 Hz | | 100 V; Up to 240V, 50/60 Hz |
| permissible range, lower limit (AC) | | 90 V | | 90 V |
| permissible range, upper limit (AC) | | 264 V | | 264 V |
| **Power loss** | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W |
| Power loss, max. | 65 W | 65 W | 65 W | 65 W |

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## **Technical specifications** (continued)

| Article number | **6AV7863-3AA00-0AA0**<br>SIMATIC Flat Panel 19" Display only | **6AV7863-3AB10-0AA0**<br>SIMATIC Flat Panel 19" Display only Ext | **6AV7863-3TA00-0AA0**<br>SIMATIC Flat Panel 19" Touch | **6AV7863-3TB10-0AA0**<br>SIMATIC Flat Panel 19" Touch Ext |
|---|---|---|---|---|
| **Interfaces** | | | | |
| USB on the rear | | Yes; 2x onboard | | Yes; 2x onboard |
| Connection for keyboard/mouse | | USB | | USB |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | |
| • USB | No | No | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • FM Class I Division 2 | Yes | No | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 483 mm | 483 mm | 483 mm | 483 mm |
| Height of housing front | 337 mm | 337 mm | 337 mm | 337 mm |
| Mounting cutout, width | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm |
| Mounting cutout, height | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | |
| Weight without packaging | 5.5 kg | 5.5 kg | 5.5 kg | 5.5 kg |
| Weight incl. packaging | 6.5 kg | 6.5 kg | 6.5 kg | 6.5 kg |

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## Technical specifications (continued)

| Article number | **6AV7863-2MA00-0AA0**<br>SIMATIC Flat Panel 15" Multitouch | **6AV7863-2MA00-0SA0**<br>SIMATIC Flat Panel 15" Multitouch | **6AV7863-2MB10-0AA0**<br>SIMATIC Flat Panel 15" Multitouch Ext | **6AV7863-2MB10-0SA0**<br>SIMATIC Flat Panel 15" Multitouch Ext |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP1500 | IFP1500 | IFP1500 | IFP1500 |
| Short designation | Flat Panel 15" multi-touch | Flat Panel 15" multi-touch ext. marine | Flat Panel 15" multi-touch ext. | Flat Panel 15" multi-touch ext. marine |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 15.6 in | 15.6 in | 15.6 in | 15.6 in |
| Screen diagonal [cm] | 40 cm | 40 cm | 40 cm | 40 cm |
| Display width | 344.2 mm | 344.2 mm | 344.2 mm | 344.2 mm |
| Display height | 193.5 mm | 193.5 mm | 193.5 mm | 193.5 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216 | 16 777 216; 24 bit | 16 777 216 |
| Viewing angle | 160° x 160° | 160° x 160° | 160° x 160° | 160° x 160° |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel |
| • Pixel size, horizontal | 0.252 mm | 0.252 mm | 0.252 mm | 0.252 mm |
| • Pixel size, vertical | 0.252 mm | 0.252 mm | 0.252 mm | 0.252 mm |
| **General features** | | | | |
| • Brightness/contrast | 400 cd/m² / 900:1 | 400 cd/m² / 900:1 | 400 cd/m² / 900:1 | 400 cd/m² / 900:1 |
| • Detachable from computer unit | 5 m | 5 m | 30 m | 30 m |
| • Luminance | 400 cd/m² | 400 cd/m² | 400 cd/m² | 400 cd/m² |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 70 000 h; At 25°C | 70 000 h; At 25°C | 70 000 h; At 25°C | 70 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | |
| **Input device** | | | | |
| • Integrated mouse cursor control | No | | | |
| **Keyboard fonts** | | | | |
| • Function keys | No | No | No | No |
| - Number of function keys | 0 | | | |
| **Touch operation** | | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| Rated value (AC) | | | | 100 V; Up to 240V, 50/60 Hz |
| permissible range, lower limit (AC) | | | | 90 V |
| permissible range, upper limit (AC) | | | | 264 V |
| **Power loss** | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W |
| Power loss, max. | 65 W | 60 W | 60 W | 60 W |
| **Interfaces** | | | | |
| USB on the rear | | | Yes; 2x onboard | Yes; 2x onboard |
| Connection for keyboard/mouse | | | USB | USB |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |

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## **Technical specifications** (continued)

| Article number | **6AV7863-2MA00-0AA0**<br>SIMATIC Flat Panel 15" Multitouch | **6AV7863-2MA00-0SA0**<br>SIMATIC Flat Panel 15" Multitouch | **6AV7863-2MB10-0AA0**<br>SIMATIC Flat Panel 15" Multitouch Ext | **6AV7863-2MB10-0SA0**<br>SIMATIC Flat Panel 15" Multitouch Ext |
|---|---|---|---|---|
| **Touch interfaces** | | | | |
| • USB | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | | IP65 |
| IP (rear) | IP20 | IP20 | | IP20 |
| NEMA (front) | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • ATEX Zone 2 | Yes | Yes | No | No |
| • ATEX Zone 22 | Yes | Yes | No | No |
| • FM Class I Division 2 | Yes | Yes | No | No |
| **Marine approval** | | | | |
| • Germanischer Lloyd (GL) | No | Yes | No | Yes |
| • American Bureau of Shipping (ABS) | No | Yes | No | Yes |
| • Bureau Veritas (BV) | No | Yes | No | Yes |
| • Det Norske Veritas (DNV) | No | Yes | No | Yes |
| • Lloyds Register of Shipping (LRS) | No | Yes | No | Yes |
| • Nippon Kaiji Kyokai (Class NK) | No | Yes | No | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | |
| • Vibration load in operation | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| • Vibration load during transport/ storage | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| **Shock testing** | | | | |
| • Shock load during operation | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| • shock acceleration during storage/ transport | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Glass | Yes | | Yes | |
| **Dimensions** | | | | |
| Width of the housing front | 416.5 mm | 416.5 mm | 416.5 mm | 416.5 mm |
| Height of housing front | 298 mm | 298 mm | 298 mm | 298 mm |
| Mounting cutout, width | 398 mm; Tolerance: +1 mm | 398 mm; Tolerance: +1 mm | 398 mm; Tolerance: +1 mm | 398 mm; Tolerance: +1 mm |
| Mounting cutout, height | 279 mm; Tolerance: +1 mm | 279 mm; Tolerance: +1 mm | 279 mm; Tolerance: +1 mm | 279 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | |
| Weight without packaging | 4.2 kg | 4.2 kg | 4.2 kg | 4.2 kg |
| Weight incl. packaging | 5.3 kg | 5.3 kg | 5.3 kg | 5.3 kg |

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## **Technical specifications** (continued)

| Article number | **6AV7863-4AA00-0AA0**<br>SIMATIC Flat Panel 22" Display only | **6AV7863-4AB10-0AA0**<br>SIMATIC Flat Panel 22" Display only Ext | **6AV7863-4TA00-0AA0**<br>SIMATIC Flat Panel 22" Touch | **6AV7863-4TB10-0AA0**<br>SIMATIC Flat Panel 22" Touch Ext |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP2200 | IFP2200 | IFP2200 | IFP2200 |
| Short designation | Flat Panel 22" display | Flat Panel 22" display ext. | Flat Panel 22" touch | Flat Panel 22" touch ext. |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | |
| Screen diagonal | 21.5 in | 21.5 in | 21.5 in | 21.5 in |
| Screen diagonal [cm] | 56 cm | 56 cm | 56 cm | 56 cm |
| Display width | 476 mm | 476 mm | 476 mm | 476 mm |
| Display height | 268 mm | 268 mm | 268 mm | 268 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| • Pixel size, horizontal | 0.2475 mm | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| • Pixel size, vertical | 0.2475 mm | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| **General features** | | | | |
| • Brightness/contrast | 250 cd/m² / 1 000:1 | 250 cd/m² / 1 000:1 | 250 cd/m² / 1 000:1 | 250 cd/m² / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | | |
| • Detachable from computer unit | 5 m | 30 m | 5 m | 30 m |
| • Luminance | 250 cd/m² | 250 cd/m² | 250 cd/m² | 250 cd/m² |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | |
| **Input device** | | | | |
| • Integrated mouse cursor control | No | No | No | No |
| **Keyboard fonts** | | | | |
| • Function keys | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 |
| **Touch operation** | | | | |
| • Design as touch screen | No | No | Yes; Analog-resistive | Yes; Analog-resistive |
| • Monitor keyboard | | | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | AC/DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| Rated value (AC) | | 100 V; Up to 240V, 50/60 Hz | | 100 V; Up to 240V, 50/60 Hz |
| permissible range, lower limit (AC) | | 90 V | | 90 V |
| permissible range, upper limit (AC) | | 264 V | | 264 V |

## Technical specifications (continued)

| Article number | **6AV7863-4AA00-0AA0**<br>SIMATIC Flat Panel 22" Display only | **6AV7863-4AB10-0AA0**<br>SIMATIC Flat Panel 22" Display only Ext | **6AV7863-4TA00-0AA0**<br>SIMATIC Flat Panel 22" Touch | **6AV7863-4TB10-0AA0**<br>SIMATIC Flat Panel 22" Touch Ext |
|---|---|---|---|---|
| **Power loss** | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W |
| Power loss, max. | 65 W | 65 W | 65 W | 65 W |
| **Interfaces** | | | | |
| USB on the rear | | Yes; 2x onboard | | Yes; 2x onboard |
| Connection for keyboard/mouse | | USB | | USB |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | |
| • USB | No | No | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • FM Class I Division 2 | Yes | No | Yes | No |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 560 mm | 560 mm | 560 mm | 560 mm |
| Height of housing front | 380 mm | 380 mm | 380 mm | 380 mm |
| Mounting cutout, width | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm |
| Mounting cutout, height | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | |
| Weight without packaging | 6.5 kg | 6.5 kg | 6.5 kg | 6.5 kg |
| Weight incl. packaging | 7.6 kg | 7.6 kg | 7.6 kg | 7.6 kg |

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## **Technical specifications** (continued)

| Article number | **6AV7863-3AA00-0AA0**<br>SIMATIC Flat Panel 19" Display only | **6AV7863-3AB10-0AA0**<br>SIMATIC Flat Panel 19" Display only Ext | **6AV7863-3TA00-0AA0**<br>SIMATIC Flat Panel 19" Touch | **6AV7863-3TB10-0AA0**<br>SIMATIC Flat Panel 19" Touch Ext |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP1900 | IFP1900 | IFP1900 | IFP1900 |
| Short designation | Flat Panel 19" display | Flat Panel 19" display ext. | Flat Panel 19" touch | Flat Panel 19" touch ext. |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 18.5 in | 18.5 in | 18.5 in | 18.5 in |
| Screen diagonal [cm] | 47 cm | 47 cm | 47 cm | 47 cm |
| Display width | 409.8 mm | 409.8 mm | 409.8 mm | 409.8 mm |
| Display height | 230.4 mm | 230.4 mm | 230.4 mm | 230.4 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 160° | 170° x 160° | 170° x 160° | 170° x 160° |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel |
| • Pixel size, horizontal | 0.3 mm | 0.3 mm | 0.3 mm | 0.3 mm |
| • Pixel size, vertical | 0.3 mm | 0.3 mm | 0.3 mm | 0.3 mm |
| **General features** | | | | |
| • Brightness/contrast | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | | |
| • Detachable from computer unit | 5 m | 30 m | 5 m | 30 m |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | |
| **Input device** | | | | |
| • Integrated mouse cursor control | No | No | No | No |
| **Touch operation** | | | | |
| • Design as touch screen | No | No | Yes; Analog-resistive | Yes; Analog-resistive |
| • Monitor keyboard | | | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | AC/DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| Rated value (AC) | | 100 V; Up to 240V, 50/60 Hz | | 100 V; Up to 240V, 50/60 Hz |
| **Power loss** | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W |

## Technical specifications (continued)

| Article number | **6AV7863-3AA00-0AA0**<br>SIMATIC Flat Panel 19" Display only | **6AV7863-3AB10-0AA0**<br>SIMATIC Flat Panel 19" Display only Ext | **6AV7863-3TA00-0AA0**<br>SIMATIC Flat Panel 19" Touch | **6AV7863-3TB10-0AA0**<br>SIMATIC Flat Panel 19" Touch Ext |
|---|---|---|---|---|
| **Interfaces** | | | | |
| USB on the rear | | Yes; 2x onboard | | Yes; 2x onboard |
| Connection for keyboard/mouse | | USB | | USB |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | |
| • USB | No | No | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • FM Class I Division 2 | Yes | No | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Relative humidity** | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 483 mm | 483 mm | 483 mm | 483 mm |
| Height of housing front | 337 mm | 337 mm | 337 mm | 337 mm |
| Mounting cutout, width | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm | 465 mm; Tolerance: +1 mm |
| Mounting cutout, height | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm | 319 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | |
| Weight without packaging | 5.5 kg | 5.5 kg | 5.5 kg | 5.5 kg |

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## **Technical specifications** (continued)

| Article number | **6AV7863-4AA00-0AA0**<br>SIMATIC Flat Panel 22" Display only | **6AV7863-4AB10-0AA0**<br>SIMATIC Flat Panel 22" Display only Ext | **6AV7863-4TA00-0AA0**<br>SIMATIC Flat Panel 22" Touch | **6AV7863-4TB10-0AA0**<br>SIMATIC Flat Panel 22" Touch Ext |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | IFP2200 | IFP2200 | IFP2200 | IFP2200 |
| Short designation | Flat Panel 22" display | Flat Panel 22" display ext. | Flat Panel 22" touch | Flat Panel 22" touch ext. |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 21.5 in | 21.5 in | 21.5 in | 21.5 in |
| Screen diagonal [cm] | 56 cm | 56 cm | 56 cm | 56 cm |
| Display width | 476 mm | 476 mm | 476 mm | 476 mm |
| Display height | 268 mm | 268 mm | 268 mm | 268 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| • Pixel size, horizontal | 0.2475 mm | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| • Pixel size, vertical | 0.2475 mm | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| **General features** | | | | |
| • Brightness/contrast | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | | |
| • Detachable from computer unit | 5 m | 30 m | 5 m | 30 m |
| **Backlighting** | | | | |
| • Type of backlighting | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | |
| **Input device** | | | | |
| • Integrated mouse cursor control | No | No | No | No |
| **Touch operation** | | | | |
| • Design as touch screen | No | No | Yes; Analog-resistive | Yes; Analog-resistive |
| • Monitor keyboard | | | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes; Portrait mode possible | | | |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | AC/DC | DC | AC/DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| Rated value (AC) | | 100 V; Up to 240V, 50/60 Hz | | 100 V; Up to 240V, 50/60 Hz |
| **Power loss** | | | | |
| Power loss, typ. | 40 W | 40 W | 40 W | 40 W |

## Technical specifications (continued)

| Article number | **6AV7863-4AA00-0AA0**<br>SIMATIC Flat Panel 22" Display only | **6AV7863-4AB10-0AA0**<br>SIMATIC Flat Panel 22" Display only Ext | **6AV7863-4TA00-0AA0**<br>SIMATIC Flat Panel 22" Touch | **6AV7863-4TB10-0AA0**<br>SIMATIC Flat Panel 22" Touch Ext |
|---|---|---|---|---|
| **Interfaces** | | | | |
| USB on the rear | | Yes; 2x onboard | | Yes; 2x onboard |
| Connection for keyboard/mouse | | USB | | USB |
| **Video interfaces** | | | | |
| • analog video signal (VGA) | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | |
| • USB | No | No | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • FM Class I Division 2 | Yes | No | Yes | No |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Relative humidity** | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 560 mm | 560 mm | 560 mm | 560 mm |
| Height of housing front | 380 mm | 380 mm | 380 mm | 380 mm |
| Mounting cutout, width | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm | 542 mm; Tolerance: +1 mm |
| Mounting cutout, height | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm | 362 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm |
| **Weights** | | | | |
| Weight without packaging | 6.5 kg | 6.5 kg | 6.5 kg | 6.5 kg |

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## Technical specifications (continued)

| Article number | **6AV7863-5MA10-1AA0** | **6AV7863-5MA10-1NA0** | **6AV7863-6MA10-1AA0** | **6AV7863-6MA10-1NA0** | **6AV7466-8MA10-0AA0** | **6AV7466-8MA10-0AX0** |
|---|---|---|---|---|---|---|
| | SIMATIC Flat Panel 15" MT V1+ | SIMATIC Flat Panel 15" MT V1+ | SIMATIC Flat Panel 19" MT V1+ | SIMATIC Flat Panel 19" MT V1+ | SIMATIC Flat Panel 22" Multitouch Ext | SIMATIC Flat Panel 22" Multitouch Ext |
| **General information** | | | | | | |
| Product type designation | IFP1500 | IFP1500 | IFP1900 | IFP1900 | IFP2200 | IFP2200 |
| Short designation | 15" Flat Panel Full HD | 15" Flat Panel Full HD, neutral | 19" Flat Panel Full HD | 19" Flat Panel Full HD, neutral | Flat Panel 22" multi-touch ext. | Flat Panel 22" multi-touch ext. |
| **Display** | | | | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 15.6 in | 15.6 in | 18.5 in | 18.5 in | 21.5 in | 21.5 in |
| Screen diagonal [cm] | 40 cm | 40 cm | 47 cm | 47 cm | 56 cm | 56 cm |
| Display width | 344.2 mm | 344.2 mm | 409.8 mm | 409.8 mm | 476 mm | 476 mm |
| Display height | 193.5 mm | 193.5 mm | 230.4 mm | 230.4 mm | 268 mm | 268 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 160° x 140° | 160° x 140° | 178° x 178° | 178° x 178° | 170° x 170° | 170° x 170° |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| • Pixel size, horizontal | 0.17925 mm | 0.17925 mm | 0.213 mm | 0.213 mm | 0.2475 mm | 0.2475 mm |
| • Pixel size, vertical | 0.17925 mm | 0.17925 mm | 0.213 mm | 0.213 mm | 0.2475 mm | 0.2475 mm |
| **General features** | | | | | | |
| • Brightness/contrast | 400 cd/m$^2$ / 700:1 | 400 cd/m$^2$ / 700:1 | 350 cd/m$^2$ / 1 000:1 | 350 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes | Yes | Yes | Yes |
| • Detachable from computer unit | 30 m | 30 m | 30 m | 30 m | 30 m | 30 m |
| • Luminance | 400 cd/m$^2$ | 400 cd/m$^2$ | 350 cd/m$^2$ | 350 cd/m$^2$ | 250 cd/m$^2$ | 250 cd/m$^2$ |
| **Backlighting** | | | | | | |
| • Type of backlighting | LED | LED | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | | |
| **Input device** | | | | | | |
| • Integrated mouse cursor control | No | No | No | No | | |
| **Keyboard fonts** | | | | | | |
| • Function keys | No | No | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 | 0 | 0 |
| **Touch operation** | | | | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | | | |
| Design | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit |
| VESA mounting | No | No | No | No | | |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° | 35° | 35° | 35° |
| **Supply voltage** | | | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC | 24 V DC | DC | DC |
| Rated value (DC) | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Power loss** | | | | | | |
| Power loss, typ. | 20 W | 20 W | 25 W | 25 W | 40 W | 40 W |
| Power loss, max. | 25 W | 25 W | 30 W | 30 W | 65 W | 65 W |

## Technical specifications (continued)

| Article number | **6AV7863-5MA10-1AA0**<br>SIMATIC Flat Panel 15" MT V1+ | **6AV7863-5MA10-1NA0**<br>SIMATIC Flat Panel 15" MT V1+ | **6AV7863-6MA10-1AA0**<br>SIMATIC Flat Panel 19" MT V1+ | **6AV7863-6MA10-1NA0**<br>SIMATIC Flat Panel 19" MT V1+ | **6AV7466-8MA10-0AA0**<br>SIMATIC Flat Panel 22" Multitouch Ext | **6AV7466-8MA10-0AX0**<br>SIMATIC Flat Panel 22" Multitouch Ext |
|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | |
| USB on the rear | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard |
| Connection for keyboard/mouse | USB | USB | USB | USB | USB | USB |
| **Video interfaces** | | | | | | |
| • analog video signal (VGA) | No | No | No | No | No | No |
| • DVI-D | Yes | Yes | Yes | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | | | |
| • USB | Yes | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| NEMA (front) | | | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes; cULus, cUL | Yes; cULus, cUL | Yes; cULus, cUL | Yes; cULus, cUL | Yes; cULus, cUL | Yes; cULus, cUL |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes | Yes |
| KC approval | No; Available soon | No; Available soon | No; Available soon | No; Available soon | Yes | Yes |
| **Use in hazardous areas** | | | | | | |
| • ATEX Zone 2 | Yes | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • ATEX Zone 22 | Yes | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • FM Class I Division 2 | Yes | No; Available soon | No; Available soon | No; Available soon | | |
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • American Bureau of Shipping (ABS) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • Bureau Veritas (BV) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • Det Norske Veritas (DNV) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • Lloyds Register of Shipping (LRS) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |
| • Nippon Kaiji Kyokai (Class NK) | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon | No; Available soon |

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## **Technical specifications** (continued)

| Article number | **6AV7863-5MA10-1AA0**<br>SIMATIC Flat Panel 15" MT V1+ | **6AV7863-5MA10-1NA0**<br>SIMATIC Flat Panel 15" MT V1+ | **6AV7863-6MA10-1AA0**<br>SIMATIC Flat Panel 19" MT V1+ | **6AV7863-6MA10-1NA0**<br>SIMATIC Flat Panel 19" MT V1+ | **6AV7466-8MA10-0AA0**<br>SIMATIC Flat Panel 22" Multitouch Ext | **6AV7466-8MA10-0AX0**<br>SIMATIC Flat Panel 22" Multitouch Ext |
|---|---|---|---|---|---|---|
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | | | |
| • Vibration load in operation | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| • Vibration load during transport/ storage | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| **Shock testing** | | | | | | |
| • Shock load during operation | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| • shock acceleration during storage/ transport | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Glass | Yes; at front | Yes | Yes | Yes | Yes | Yes; at front |
| Enclosure material (rear) | aluminum | | | | | aluminum |
| **Dimensions** | | | | | | |
| Width of the housing front | 398 mm | 398 mm | 464 mm | 464 mm | 529 mm | 529 mm |
| Height of housing front | 257 mm | 257 mm | 294 mm | 294 mm | 331 mm | 331 mm |
| Mounting cutout, width | 382 mm; Tolerance: +1 mm | 382 mm; Tolerance: +1 mm | 448 mm; Tolerance: +1 mm | 448 mm; Tolerance: +1 mm | 513 mm; Tolerance: +1 mm | 513 mm; Tolerance: +1 mm |
| Mounting cutout, height | 241 mm; Tolerance: +1 mm | 241 mm; Tolerance: +1 mm | 278 mm; Tolerance: +1 mm | 278 mm; Tolerance: +1 mm | 315 mm; Tolerance: +1 mm | 315 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm | 62.5 mm | 62.5 mm | 62.5 mm | 72 mm | 72 mm |
| **Weights** | | | | | | |
| Weight without packaging | 4 kg | 4 kg | 5.7 kg | 5.7 kg | 6.7 kg | 6.7 kg |
| Weight incl. packaging | 5 kg | 5 kg | 6.8 kg | 6.8 kg | 6.8 kg | 6.8 kg |

## Ordering data

| | Article No. |
|---|---|
| Industrial Flat Panel Monitor | |
| **SIMATIC IFP1500**<br>Flat Panel 15" display (16:10), DisplayPort/DVI port | |
| without touch screen, display only, 1 280 x 800 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-2AA00-0AA0** |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-2AB10-0AA0** |
| with touch screen and pushbuttons, 1 280 x 800 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-2BB10-0AA0** |
| Multi-touch, 1 366 x 768, for 24 V DC | |
| • Standard up to 5 m, incl. DVI/USB cable 1.8 m | **6AV7863-2MA00-0AA0** |
| • Standard up to 5 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-2MA00-0SA0** |
| Multi-touch, 1 366 x 768 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-2MB10-0AA0** |
| • Extended version up to 30 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-2MB10-0SA0** |
| Touch, 1 280 x 800 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-2TA00-0AA0** |
| Touch, 1 280 x 800 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-2TB10-0AA0** |
| 15" Full HD / Extended multi-touch | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-5MA10-1AA0** |
| • Neutral design | **6AV7863-5MA10-1NA0** |

| | Article No. |
|---|---|
| **SIMATIC IFP1900**<br>Flat Panel 19" display (16:10), DisplayPort/DVI port | |
| without touch screen, display only, 1 366 x 768 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-3AA00-0AA0** |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-3AB10-0AA0** |
| Multi-touch, 1 366 x 768 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI/USB cable 1.8 m | **6AV7863-3MA00-0AA0** |
| • Standard up to 5 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-3MA00-0SA0** |
| • DisplayPort, Ethernet interface, incl. DVI/USB cable 1.8 m | **6AV7863-3MA20-0AA0** |
| Multi-touch, 1 366 x 768 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-3MB10-0AA0** |
| • Extended version up to 30 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-3MB10-0SA0** |
| Touch, 1 366 x 768 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-3TA00-0AA0** |
| Touch, 1 366 x 768 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-3TB10-0AA0** |
| 19" Full HD / Extended multi-touch | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-6MA10-1AA0** |
| • Neutral design | **6AV7863-6MA10-1NA0** |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IFP2200**<br>Flat Panel 22" display (16:10), DisplayPort/DVI port | |
| without touch screen, display only, 1 920 x 1 080 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-4AA00-0AA0** |
| without touch screen, display only, 1 920 x 1 080 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-4AB10-0AA0** |
| Multi-touch, 1 920 x 1 080 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI/USB cable 1.8 m | **6AV7863-4MA00-0AA0** |
| • Standard up to 5 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-4MA00-0SA0** |
| • DisplayPort, Ethernet interface, incl. DVI/USB cable 1.8 m | **6AV7863-4MA20-0AA0** |
| Multi-touch, 1 920 x 1 080 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-4MB10-0AA0** |
| • Extended version up to 30 m, marine approval, incl. DVI/USB cable 1.8 m | **6AV7863-4MB10-0SA0** |
| Touch, 1 920 x 1 080 pixels, for 24 V DC | |
| • Standard up to 5 m, incl. DVI cable 1.8 m | **6AV7863-4TA00-0AA0** |
| Touch, 1 920 x 1 080 pixels, for 24 V DC and 100-240 V AC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7863-4TB10-0AA0** |
| **SIMATIC IFP2200 with narrow border** | |
| Multi-touch, 1 920 x 1 080 pixels, for 24 V DC | |
| • Extended version up to 30 m, incl. DVI/USB cable 1.8 m | **6AV7466-8MA10-0AX0** |
| • Extended version up to 30 m, neutral front without logo, incl. DVI/USB cable 1.8 m | **6AV7466-8MA10-0AA0** |

| | Article No. |
|---|---|
| ***Accessories*** | |
| **Set of protective films for ITC/IFP/TP1500** | **6AV2124-6QJ00-0AX1** |
| **Set of protective films for ITC/IFP/TP1900** | **6AV2124-6UJ00-0AX1** |
| **Set of protective films for ITC/IFP/TP2200** | **6AV2124-6XJ00-0AX1** |
| **Touch pen**<br>Undetachable pen for operation of the touch devices, mounting of the support on the control cabinet or directly on the PRO unit | **6AV7672-1JB00-0AA0** |
| **Accessories for standard variants up to 5 m (6AV7863-..A0.-0AA0 and 6AV7466-1TA00-0AA0)** | |
| **DisplayPort cable (industrial quality)** | |
| • 3 m | **6AV7860-0DH30-0AA0** |
| • 5 m | **6AV7860-0DH50-0AA0** |
| **DVI-D cable (industrial quality)** | |
| • 3 m | **6AV7860-0BH30-0AA0** |
| • 5 m | **6AV7860-0BH50-0AA0** |
| **USB cable (industrial quality)** | |
| • 3 m | **6AV7860-0CH30-0AA0** |
| • 5 m | **6AV7860-0CH50-0AA0** |
| **Accessories for extended variants up to 30 m (6AV7863-..B1.-0AA0)** | |
| **Cable set (USB/Cat5; sender module, DVI)** | |
| • 10 m | **6AV7860-1EX21-0AA1** |
| • 15 m | **6AV7860-1EX21-5AA1** |
| • 20 m | **6AV7860-1EX22-0AA1** |
| • 30 m | **6AV7860-1EX23-0AA1** |

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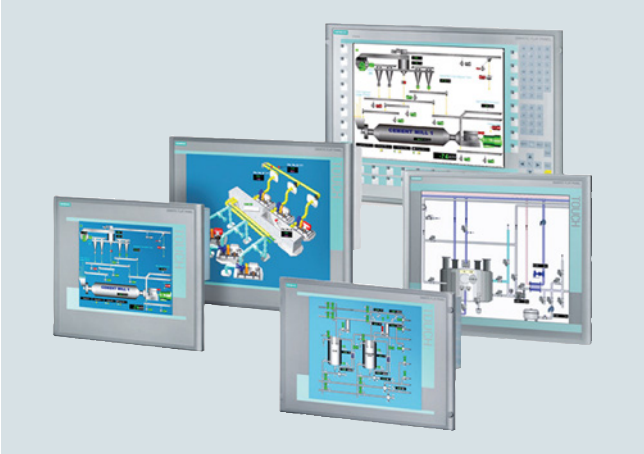
## Overview



The Flat Panels are rugged industry-standard LCD monitors.

- Installation:
  - They are equally suited to installation in the machine, in control cabinets, consoles and gantries or in 19" racks.
- Type of operator control:
  - Simple display devices without operator functionality
  - Optional devices with touch control
  - Rear connection of I/O devices (optional)

## Technical specifications

| Article number | **6AV7861-2AA00-2AA0**<br>SIMATIC Flat Panel 15, f. DC24V | **6AV7861-2AB00-2AA0**<br>SIMATIC Flat Panel 15 | **6AV7861-2AB10-2AA0**<br>SIMATIC Flat Panel 15 Extended | **6AV7861-2TA00-2AA0**<br>SIMATIC Flat Panel 15T, f. DC24V | **6AV7861-2TB00-2AA0**<br>SIMATIC Flat Panel 15T | **6AV7861-2TB10-2AA0**<br>SIMATIC Flat Panel 15T Extended |
|---|---|---|---|---|---|---|
| **Display** | | | | | | |
| Design of display | TFT display, LED backlighting | | | | | |
| Screen diagonal | 15 in | 15 in | 15 in | 15 in | 15 in | 15 in |
| Display width | 304.1 mm | 304.1 mm | 304.1 mm | 304.1 mm | 304.1 mm | 304.1 mm |
| Display height | 228.1 mm | 228.1 mm | 228.1 mm | 228.1 mm | 228.1 mm | 228.1 mm |
| On Screen Display (OSD) configuration | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of colors | 16 000 000; 16.2 million | 16 000 000; 16.2 million | 16 000 000; 16.2 million | 16 000 000; 16.2 million | 16 000 000; 16.2 million | 16 000 000; 16.2 million |
| Viewing angle | 100° x 90° (min) | 100° x 90° (min) | 100° x 90° (min) | 100° x 90° (min) | 100° x 90° (min) | 100° x 90° (min) |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel | 768 Pixel |
| **General features** | | | | | | |
| • Brightness/contrast | > 260 cd/m$^2$ / 350:1 | > 260 cd/m$^2$ / 350:1 | > 260 cd/m$^2$ / 350:1 | > 260 cd/m$^2$ / 350:1 | > 260 cd/m$^2$ / 350:1 | > 260 cd/m$^2$ / 350:1 |
| **Backlighting** | | | | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | | |
| Control elements | none | none | none | Touch | Touch | Touch |
| **Input device** | | | | | | |
| • Integrated mouse cursor control | No | No | No | No | No | No |
| **Keyboard fonts** | | | | | | |
| • Function keys | No | No | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 | 0 | 0 |

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## **Technical specifications** (continued)

| Article number | **6AV7861-2AA00-2AA0**<br>SIMATIC Flat Panel 15, f. DC24V | **6AV7861-2AB00-2AA0**<br>SIMATIC Flat Panel 15 | **6AV7861-2AB10-2AA0**<br>SIMATIC Flat Panel 15 Extended | **6AV7861-2TA00-2AA0**<br>SIMATIC Flat Panel 15T, f. DC24V | **6AV7861-2TB00-2AA0**<br>SIMATIC Flat Panel 15T | **6AV7861-2TB10-2AA0**<br>SIMATIC Flat Panel 15T Extended |
|---|---|---|---|---|---|---|
| **Touch operation** | | | | | | |
| • Design as touch screen | No | No | No | Yes | Yes | Yes |
| **Installation type/mounting** | | | | | | |
| Design | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit |
| VESA mounting | No | No | No | No | No | No |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C |
| maximum permitted backward tilt angle from vertical | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C |
| **Supply voltage** | | | | | | |
| Type of supply voltage | DC | AC/DC | AC/DC | DC | AC/DC | AC/DC |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| permissible range, lower limit (AC) | | 90 V | 90 V | | 90 V | 90 V |
| permissible range, upper limit (AC) | | 264 V | 264 V | | 264 V | 264 V |
| **Interfaces** | | | | | | |
| **Video interfaces** | | | | | | |
| • analog video signal (VGA) | Yes | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| CSA approval | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | No | No | No | No | No | No |
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional |
| • American Bureau of Shipping (ABS) | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional |
| • Bureau Veritas (BV) | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional |
| • Det Norske Veritas (DNV) | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional |
| • Lloyds Register of Shipping (LRS) | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional | Yes; Optional |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | | | |
| Width of the housing front | 483 mm | 483 mm | 483 mm | 483 mm | 483 mm | 483 mm |
| Height of housing front | 310 mm | 310 mm | 310 mm | 310 mm | 310 mm | 310 mm |
| Mounting cutout, width | 450 mm | 450 mm | 450 mm | 450 mm | 450 mm | 450 mm |
| Mounting cutout, height | 290 mm | 290 mm | 290 mm | 290 mm | 290 mm | 290 mm |
| Overall depth | 55 mm | 55 mm | 55 mm | 55 mm | 55 mm | 55 mm |

## **Technical specifications** (continued)

| Article number | **6AV7861-3AA00-2AA0**<br>SIMATIC Flat Panel 19, f. DC24V | **6AV7861-3AB00-2AA0**<br>SIMATIC Flat Panel 19 | **6AV7861-3AB10-2AA0**<br>SIMATIC Flat Panel 19 Extended | **6AV7861-3TA00-2AA0**<br>SIMATIC Flat Panel 19T, f. DC24V | **6AV7861-3TB00-2AA0**<br>SIMATIC Flat Panel 19T | **6AV7861-3TB10-2AA0**<br>SIMATIC Flat Panel 19T Extended |
|---|---|---|---|---|---|---|
| **Display** | | | | | | |
| Design of display | TFT display, LED backlighting | TFT display, LED backlighting | TFT display, LED backlighting | TFT display, LED backlighting | TFT display, LED backlighting | TFT display, LED backlighting |
| Screen diagonal | 19 in | 19 in | 19 in | 19 in | 19 in | 19 in |
| Display width | 376.3 mm | 376.3 mm | 376.3 mm | 376.3 mm | 376.3 mm | 376.3 mm |
| Display height | 301.1 mm | 301.1 mm | 301.1 mm | 301.1 mm | 301.1 mm | 301.1 mm |
| On Screen Display (OSD) configuration | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of colors | 16 000 000; 16.7 million | 16 000 000; 16.7 million | 16 000 000; 16.7 million | 16 000 000; 16.7 million | 16 000 000; 16.7 million | 16 000 000; 16.7 million |
| Viewing angle | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° | 170° x 170° |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel | 1 280 Pixel |
| • Vertical image resolution | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel | 1 024 Pixel |
| **General features** | | | | | | |
| • Brightness/contrast | > 300 cd/$m^2$ / 300:1 | > 300 cd/$m^2$ / 300:1 | > 300 cd/$m^2$ / 300:1 | > 300 cd/$m^2$ / 300:1 | > 300 cd/$m^2$ / 300:1 | > 300 cd/$m^2$ / 300:1 |
| **Backlighting** | | | | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | | |
| Control elements | Touch | none | none | Touch | Touch | Touch |
| **Input device** | | | | | | |
| • Integrated mouse cursor control | No | No | No | No | No | No |
| **Keyboard fonts** | | | | | | |
| • Function keys | No | No | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 | 0 | 0 |
| **Touch operation** | | | | | | |
| • Design as touch screen | No | No | No | Yes | Yes | Yes |
| **Installation type/mounting** | | | | | | |
| Design | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit | Built-in unit |
| VESA mounting | No | No | No | No | No | No |
| Built-in unit | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C | 35°; max. 40°C |
| maximum permitted backward tilt angle from vertical | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C | 70°; max. 40°C |
| **Supply voltage** | | | | | | |
| Type of supply voltage | DC | AC/DC | AC/DC | DC | AC/DC | AC/DC |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| permissible range, lower limit (AC) | | 90 V | 90 V | | 90 V | 90 V |
| permissible range, upper limit (AC) | | 264 V | 264 V | | 264 V | 264 V |

## **Technical specifications** (continued)

| Article number | **6AV7861-3AA00-2AA0**<br>SIMATIC Flat Panel 19, f. DC24V | **6AV7861-3AB00-2AA0**<br>SIMATIC Flat Panel 19 | **6AV7861-3AB10-2AA0**<br>SIMATIC Flat Panel 19 Extended | **6AV7861-3TA00-2AA0**<br>SIMATIC Flat Panel 19T, f. DC24V | **6AV7861-3TB00-2AA0**<br>SIMATIC Flat Panel 19T | **6AV7861-3TB10-2AA0**<br>SIMATIC Flat Panel 19T Extended |
|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | |
| **Video interfaces** | | | | | | |
| • analog video signal (VGA) | Yes | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | | |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| CSA approval | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | No | No | No | No | No | No |
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | Yes; Optional | Yes; Optional | Yes | Yes | Yes; Optional | Yes; Optional |
| • American Bureau of Shipping (ABS) | Yes; Optional | Yes; Optional | Yes | Yes | Yes; Optional | Yes; Optional |
| • Bureau Veritas (BV) | Yes; Optional | Yes; Optional | Yes | Yes | Yes; Optional | Yes; Optional |
| • Det Norske Veritas (DNV) | Yes; Optional | Yes; Optional | Yes | Yes | Yes; Optional | Yes; Optional |
| • Lloyds Register of Shipping (LRS) | Yes; Optional | Yes; Optional | Yes | Yes | Yes; Optional | Yes; Optional |
| • Polski Rejestr Statkow (PRS) | | | Yes | Yes | | |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | | | |
| Width of the housing front | 483 mm | 483 mm | 483 mm | 483 mm | 483 mm | 483 mm |
| Height of housing front | 400 mm | 400 mm | 400 mm | 400 mm | 400 mm | 400 mm |
| Mounting cutout, width | 450 mm | 450 mm | 450 mm | 450 mm | 450 mm | 450 mm |
| Mounting cutout, height | 380 mm | 380 mm | 380 mm | 380 mm | 380 mm | 380 mm |
| Overall depth | 57 mm | 57 mm | 57 mm | 57 mm | 57 mm | 57 mm |

| Ordering data | Article No. |
|---|---|
| **SIMATIC Flat Panels** | |
| **15"** | |
| 15" TFT screen<br>With 1 024 x 768 pixel resolution<br>VGA<br>DVI-D interface<br>Incl. VGA cable 1.8 m | |
| • For 24 V DC | **6AV7861-2AA00-2AA0** |
| • For 24 V DC and 120/240 V AC | **6AV7861-2AB00-2AA0** |
| • 15" extended<br>15" TFT screen<br>With 1 024 x 768 pixel resolution<br>For 24 V DC and 120/240 V AC<br>VGA, DVI-D interface<br>Can be located at a distance of up to 30 m | **6AV7861-2AB10-2AA0** |
| 15" TFT screen<br>With 1 024 x 768 pixel resolution<br>VGA, DVI-D interface<br>Incl. VGA cable 1.8 m | |
| • For 24 V DC | **6AV7861-2TA00-2AA0** |
| • For 24 V DC and 120/240 V AC | **6AV7861-2TB00-2AA0** |
| • 15" extended<br>15" TFT screen<br>With 1 024 x 768 pixel resolution<br>For 24 V DC and 120/240 V AC<br>VGA, DVI-D interface<br>Can be located at a distance of up to 30 m | **6AV7861-2TB10-2AA0** |
| **19"** | |
| 19" TFT screen<br>With 1 280 x 1024 pixel resolution<br>VGA, DVI-D interface<br>Incl. VGA cable 1.8 m | |
| • For 24 V DC | **6AV7861-3AA00-2AA0** |
| • For 24 V DC and 120/240 V AC | **6AV7861-3AB00-2AA0** |
| • 19" extended<br>19" TFT screen<br>With 1 280 x 1 024 pixel resolution<br>For 24 V DC and 120/240 V AC<br>VGA, DVI-D interface<br>Can be located at a distance of up to 30 m | **6AV7861-3AB10-2AA0** |
| 19" T Touch TFT screen<br>With 1 280 x 1 024 pixel resolution<br>VGA, DVI-D interface<br>Incl. VGA cable 1.8 m | |
| • For 24 V DC | **6AV7861-3TA00-2AA0** |
| • For 24 V DC and 120/240 V AC | **6AV7861-3TB00-2AA0** |
| • 19" T Extended<br>19" Touch TFT screen<br>With 1 280 x 1 024 pixel resolution<br>For 24 V DC and 120/240 V AC<br>VGA, DVI-D interface<br>Can be located at a distance of up to 30 m | **6AV7861-3TB10-2AA0** |

| | Article No. |
|---|---|
| **Accessories** | |
| **Protective films** | |
| For protecting the touch screen against dirt and scratches<br>Pack with 10 units | |
| • for 15" touch | **6AV7671-4BA00-0AA0** |
| • for 19" touch | **6AV7672-1CE00-0AA0** |
| **Touch pen** | |
| Undetachable pen for operation of the touch devices, mounting of the support on the control cabinet or directly on the PRO unit | **6AV7672-1JB00-0AA0** |
| **Connection cables for Standard, Extended and PRO versions** | |
| Video (DVI-D) | |
| • 3.0 m | **6AV7860-0BH30-0AA0** |
| • 5.0 m | **6AV7860-0BH50-0AA0** |
| USB for optional touch screen | |
| • 3.0 m | **6AV7860-0CH30-0AA0** |
| • 5.0 m | **6AV7860-0CH50-0AA0** |
| **Connection cables for Extended versions only** | |
| • Cable set 10 m (DVI-D, CAT5 cable (USB), USB transmitter module) | **6AV7860-1EX21-0AA1** |
| • Cable set 15 m (DVI-D, CAT5 cable (USB), USB transmitter module) | **6AV7860-1EX21-5AA1** |
| • Cable set 20 m (DVI-D, CAT5 cable (USB), USB transmitter module) | **6AV7860-1EX22-0AA1** |
| • Cable set 30 m (DVI-D, CAT5 cable (USB), USB transmitter module) | **6AV7860-1EX23-0AA1** |

Additional information is available on the Internet at:

http://www.siemens.com/industrial-lcd

Note:

Do you need a specific modification or extension to the products described here? Then refer to "Customized Automation". There you will find information about additional and generally available sector-specific products as well as options for customer-specific modification and adaptation.

Examples are:

- SIMATIC SCD monitor 1900 for portrait operation
- SIMATIC Flat Panels with 6" and 10" Touch

## Overview

SIMATIC ITC Industrial Thin Clients are powerful operating units for flexible use in distributed visualization applications. All devices are equipped with high-resolution, brilliant widescreen displays, and due to the diverse communication protocols they can be used both for challenging machine-level operator control & monitoring and for the connection to control systems, e.g. in the SCADA environment.

They can be used as (additional) operator panels on a SIMATIC Industrial PC, Panel PC, or server, and on a SIMATIC Panel or SINUMERIK.

SIMATIC Industrial Thin Clients are also available as glass-front, capacitive multi-touch devices in display sizes 15", 19" and 22".

- SIMATIC ITC1500 V3 – 15" multi-touch 1 366 x 768
- SIMATIC ITC1900 V3 – 19" multi-touch 1 366 x 768
- SIMATIC ITC2200 V3 – 22" multi-touch 1 920 x 1 080

The following installation versions are still available with resistive single-touch:

- SIMATIC ITC1200 – 12" touch
- SIMATIC ITC1500 – 15" touch
- SIMATIC ITC1900 – 19" touch
- SIMATIC ITC2200 – 22" touch

The SIMATIC HMI Thin Client Ex is available for hazardous areas (Zone 1/11). This device differs technically from the devices mentioned above. For more details, refer to the SIMATIC Thin Client EX chapter.

## Technical specifications

| Article number | **6AV6646-1BA15-0AA0**<br>SIMATIC ITC1500 V3 | **6AV6646-1BA18-0AA0**<br>SIMATIC ITC1900 V3 | **6AV6646-1BA22-1AA0**<br>SIMATIC ITC2200 V3 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | ITC1500 V3 | ITC1900 V3 | ITC2200 V3 |
| Short designation | SIMATIC ITC1500 V3 | SIMATIC ITC1900 V3 | SIMATIC ITC2200 V3 |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 15.6 in | 18.5 in | 21.5 in |
| Display width | 344.2 mm | 409.8 mm | 495.6 mm |
| Display height | 193.5 mm | 230.4 mm | 292.2 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 920 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 1 080 Pixel |
| **General features** | | | |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| **Backlighting** | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 30 000 h; At 25°C |
| • Backlight dimmable | Yes | Yes | Yes |
| **Touch operation** | | | |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Built-in unit | Built-in unit | Built-in unit |
| Rack mounting | Yes; With frame | Yes; With frame | No |
| Built-in unit | Yes | Yes | Yes |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° |
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |

## **Technical specifications** (continued)

| Article number | **6AV6646-1BA15-0AA0**<br>SIMATIC ITC1500 V3 | **6AV6646-1BA18-0AA0**<br>SIMATIC ITC1900 V3 | **6AV6646-1BA22-1AA0**<br>SIMATIC ITC2200 V3 |
|---|---|---|---|
| **Input current** | | | |
| Current consumption (rated value) | 1.4 A | 1.4 A | 1.7 A |
| Starting current inrush I²t | 0.5 A²·s | 0.5 A²·s | 0.5 A²·s |
| **Power** | | | |
| Active power input, typ. | 34 W | 34 W | 41 W |
| **Power loss** | | | |
| Power loss, typ. | 34 W | 34 W | |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) | 2; 2 ports (switch) | 2; 2 ports (switch) |
| Number of USB interfaces | 4; on rear | 4; on rear | 4; on rear |
| Connection for keyboard/mouse | USB | USB | USB |
| **Industrial Ethernet** | | | |
| • Transmission rate, max. | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s |
| **Protocols** | | | |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes |
| • SNMP | | Yes | |
| • DCP | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes |
| **WEB characteristics** | | | |
| • HTTP | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes |
| • HTML | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 |
| • XML | Yes | Yes | Yes |
| • CSS | Yes | Yes | Yes |
| • Active X | No | No | No |
| • JavaScript | Yes | Yes | Yes |
| • Java VM | No | No | No |
| **Protocols (terminal link)** | | | |
| • Sm@rtServer | Yes | Yes | Yes |
| • RDP | Yes | Yes | Yes |
| • VNC viewer | Yes | Yes | Yes |
| • Citrix | Yes | Yes | Yes |
| • SINUMERIK | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FM approval | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes | Yes |
| • IECEx Zone 2 | Yes | Yes | Yes |
| • IECEx Zone 22 | Yes | Yes | Yes |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes |
| • FM Class I Division 2 | Yes | Yes | Yes |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No; Available soon | No; Available soon | No; Available soon |
| • American Bureau of Shipping (ABS) | No; Available soon | No; Available soon | No; Available soon |
| • Bureau Veritas (BV) | No; Available soon | No; Available soon | No; Available soon |
| • Det Norske Veritas (DNV) | No; Available soon | No; Available soon | No; Available soon |
| • Korean Register of Shipping (KRS) | No | No | No |
| • Lloyds Register of Shipping (LRS) | No; Available soon | No; Available soon | No; Available soon |
| • Nippon Kaiji Kyokai (Class NK) | No; Available soon | No; Available soon | No; Available soon |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |

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## Technical specifications (continued)

| Article number | **6AV6646-1BA15-0AA0**<br>SIMATIC ITC1500 V3 | **6AV6646-1BA18-0AA0**<br>SIMATIC ITC1900 V3 | **6AV6646-1BA22-1AA0**<br>SIMATIC ITC2200 V3 |
|---|---|---|---|
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² |
| **Software** | | | |
| Web browser | Yes; HTML5, CSS | Yes; HTML5, CSS | Yes; HTML5, CSS |
| PDF reader | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration** | | | |
| • Local | Yes | Yes | Yes |
| • Remote | Yes; Via web page | Yes; Via web page | Yes; Via web page |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 3; german / english | 2; german / english | 3; german / english |
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| USB memory | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected |
| Additional software components loadable | No | No | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Aluminum | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 398 mm | 464 mm | 529 mm |
| Height of housing front | 257 mm | 294 mm | 331 mm |
| Mounting cutout, width | 382 mm | 448 mm | 513 mm |
| Mounting cutout, height | 241 mm | 278 mm | 315 mm |
| Overall depth | 73 mm | 73 mm | 73 mm |
| **Weights** | | | |
| Weight without packaging | 5 kg | 6.1 kg | 7.2 kg |

| Article number | **6AV6646-1AA22-0AX0**<br>SIMATIC ITC1200 | **6AV6646-1AB22-0AX0**<br>SIMATIC ITC1500 | **6AV6646-1AC22-0AX0**<br>SIMATIC ITC1900 | **6AV6646-1AD22-0AX0**<br>SIMATIC ITC2200 |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | ITC1200 | ITC1500 | ITC1900 | ITC2200 |
| **Display** | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | |
| Screen diagonal | 12.1 in | 15.4 in | 18.5 in | 21.5 in |
| Display width | 261.1 mm | 331.2 mm | 409.8 mm | 495.6 mm |
| Display height | 163.2 mm | 207 mm | 230.4 mm | 292.2 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | | |
| • Horizontal image resolution | 1 280 Pixel | 1 280 Pixel | 1 366 Pixel | 1 920 Pixel |
| • Vertical image resolution | 800 Pixel | 800 Pixel | 768 Pixel | 1 080 Pixel |
| **General features** | | | | |
| • Luminance | | | | 250 cd/m² |
| **Backlighting** | | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | | | | 30 000 h; At 25°C |
| • Backlight dimmable | Yes; 5-100 % | Yes; 5-100 % | Yes; 5-100 % | Yes; 5-100 % |

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## Technical specifications (continued)

| Article number | **6AV6646-1AA22-0AX0**<br>SIMATIC ITC1200 | **6AV6646-1AB22-0AX0**<br>SIMATIC ITC1500 | **6AV6646-1AC22-0AX0**<br>SIMATIC ITC1900 | **6AV6646-1AD22-0AX0**<br>SIMATIC ITC2200 |
|---|---|---|---|---|
| **Touch operation** | | | | |
| • Design as touch screen | Yes | Yes | Yes | Yes |
| • Monitor keyboard | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | |
| Built-in unit | Yes | Yes | Yes | Yes |
| **Supply voltage** | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC | 24 V DC |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption, max. | 1.2 A | 1.5 A | 1.3 A | 2.2 A |
| Starting current inrush $I^2t$ | $0.5\ A^2 \cdot s$ | $0.5\ A^2 \cdot s$ | $0.5\ A^2 \cdot s$ | $0.5\ A^2 \cdot s$ |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 1 | 1 | 1 | 1 |
| Number of USB interfaces | 2; on rear | 2; on rear | 2; on rear | 2; on rear |
| Connection for keyboard/mouse | USB | USB | USB | USB |
| **Industrial Ethernet** | | | | |
| • Transmission rate, max. | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s |
| **Protocols** | | | | |
| **Protocols (Ethernet)** | | | | |
| • TCP/IP | Yes | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes | Yes |
| **WEB characteristics** | | | | |
| • HTTP | Yes | Yes | Yes | Yes |
| • HTML | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 |
| • XML | Yes | Yes | Yes | Yes |
| • CSS | Yes | Yes | Yes | Yes |
| • JavaScript | Yes | Yes | Yes | Yes |
| **Protocols (terminal link)** | | | | |
| • Sm@rtServer | Yes | Yes | Yes | Yes |
| • RDP | Yes | Yes | Yes | Yes |
| • VNC viewer | Yes | Yes | Yes | Yes |
| • Citrix | No | No | No | No |
| • SINUMERIK | Yes | Yes | Yes | No |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| NEMA (front) | | | | |
| • Enclosure Type 4 at the front | | | | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | |
| • ATEX Zone 2 | Yes | | | |
| • ATEX Zone 22 | Yes | | | |
| • cULus Class I Zone 1 | No | No | No | No |
| • cULus Class I Zone 2, Division 2 | Yes | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • FM Class I Division 2 | Yes | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % |
| **Software** | | | | |
| Web browser | Yes | Yes | Yes | Yes |
| PDF reader | Yes | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6AV6646-1AA22-0AX0**<br>SIMATIC ITC1200 | **6AV6646-1AB22-0AX0**<br>SIMATIC ITC1500 | **6AV6646-1AC22-0AX0**<br>SIMATIC ITC1900 | **6AV6646-1AD22-0AX0**<br>SIMATIC ITC2200 |
|---|---|---|---|---|
| **Configuration** | | | | |
| **Configuration** | | | | |
| • Local | Yes | Yes | Yes | Yes |
| • Remote | Yes; With Remote Configuration Center (RCC) as of V2.0 | | | |
| **Languages** | | | | |
| **Online languages** | | | | |
| • Number of online/runtime languages | 2; german / english | 2; german / english | 2; german / english | 3; DE, EN, HU |
| **Peripherals/Options** | | | | |
| Printer | No | No | No | No |
| USB memory | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected |
| Additional software components loadable | No | No | No | No |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width of the housing front | 330 mm | 415 mm | 483 mm | 560 mm |
| Height of housing front | 241 mm | 310 mm | 337 mm | 380 mm |
| Mounting cutout, width | 310 mm | 396 mm | 465 mm | 542 mm |
| Mounting cutout, height | 221 mm | 291 mm | 319 mm | 362 mm |
| Overall depth | 82 mm | 75 mm | 75 mm | 75 mm |
| **Weights** | | | | |
| Weight without packaging | 3.4 kg | 5.2 kg | 6.5 kg | 7.1 kg |
| Weight incl. packaging | 4.1 kg | 5.7 kg | 7.1 kg | 7.8 kg |

## Ordering data

| | Article No. |
|---|---|
| ***Industrial Thin Client with multi-touch*** | |
| **SIMATIC Industrial Thin Client V3**<br>Capacitive touch sensor<br>Protocols supported: RDP, VNC, SMARTSERVER HTML5, etc., standard design, built-in unit | |
| • SIMATIC ITC1500 V3 15" widescreen TFT display | **6AV6646-1BA15-0AA0** |
| • SIMATIC ITC1900 V3 19" widescreen TFT display | **6AV6646-1BA18-0AA0** |
| • SIMATIC ITC2200 V3 22" widescreen TFT display | **6AV6646-1BA22-1AA0** |

| | Article No. |
|---|---|
| ***Industrial Thin Client*** | |
| **Industrial Thin client V2**<br>Touch operation<br>Protocols supported: RDP, VNC, SMARTSERVER, Web | |
| • SIMATIC ITC1200 12" widescreen TFT display | **6AV6646-1AA22-0AX0** |
| • SIMATIC ITC1500 15" widescreen TFT display | **6AV6646-1AB22-0AX0** |
| • SIMATIC ITC1900 19" widescreen TFT display | **6AV6646-1AC22-0AX0** |
| • SIMATIC ITC2200 22" widescreen TFT display | **6AV6646-1AD22-0AX0** |

## Introduction

### Overview

***Fully enclosed IP65 devices***

The fully enclosed IP65 SIMATIC devices (SIMATIC Industrial Flat Panel PRO, SIMATIC Flat Panel PRO, SIMATIC Thin Client PRO and SIMATIC IPC477D PRO) are specially designed for mounting on a support arm/pedestal. Thanks to their extremely rugged design, the devices are ideal for industrial applications in harsh environments.

Portfolio:

- Comfort Panels PRO
- SIMATIC Industrial Flat Panel PRO
- SIMATIC Flat Panel PRO
- SIMATIC Industrial Thin Client PRO
- SIMATIC Thin Client PRO
- SIMATIC IPC477E PRO (15", 19", 22" display size)
- SIMATIC IPC477D PRO (15", 19", 22" display size)
- System components for fully-enclosed IP65 devices:
  - Fasteners
  - Extension Units and operator controls
  - Extension components

***Devices with stainless steel fronts***

SIMATIC devices with stainless steel fronts (SIMATIC Industrial Thin Client INOX) are designed for use in the food and beverage, pharmaceutical and fine chemicals industries and other hygienic applications for machine-level operator control and monitoring.

The fully enclosed SIMATIC devices with stainless steel fronts (SIMATIC IPC277E 19" INOX PRO, SIMATIC IFP1900 INOX PRO) are specially designed for mounting on a support arm/pedestal. Thanks to their slim design, the devices are ideally suited to space-saving use on food and beverage machinery and packaging machinery.

Portfolio:

- SIMATIC Industrial Thin Client INOX
- SIMATIC Industrial Flat Panel IFP1900 INOX PRO
- SIMATIC Industrial Flat Panel IFP2200 INOX MT ETH
- SIMATIC IPC277E 19" INOX PRO

***Devices for hazardous areas***

The SIMATIC HMI Ex devices are intrinsically safe Panel PCs and thin clients that have been specially designed for "Zone 1" and "Zone 2" hazardous areas.

Portfolio:

- SIMATIC HMI Panel PC Ex NG
- SIMATIC HMI Panel PC Ex OG
- SIMATIC HMI Panel PC Ex
- SIMATIC HMI Thin Client Ex NG
- SIMATIC HMI Thin Client Ex OG
- SIMATIC HMI Thin Client Ex2

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## Overview

***SIMATIC IFP PRO and SIMATIC IFP PRO ETH: The new Industrial Flat Panels with fully enclosed IP65 protection – the industrial widescreen monitors for harsh ambient conditions that can be installed directly on the machine***

SIMATIC IFP2200 PRO

The ***SIMATIC IFP2200 PRO*** supplements the current product range of the new Industrial Flat Panels. Equipped with innovative, projected capacitive touchscreen technology for the detection of multi-touch gestures with up to ten fingers and with a brilliant widescreen display and glass front.

The devices are connected by means of a DVI or DisplayPort interface and USB to PCs, in particular SIMATIC IPCs. The rugged aluminum housing of the monitor enables it to be used directly at the machine and ensures durability, even in harsh and extreme operating environments.

- Fully enclosed IP65 protection
- Can be positioned up to 30 m away from the processor unit (IFP Extended version)
- Rugged, industrial 15", 19" and 22" widescreen displays (multi-touch)
- Slim, modern design
- Can be adapted to support arm system of various manufacturers
- Fast integration capability
- Low energy requirement
- Small footprint and low weight
- Low wiring overhead and short maintenance times thanks to use of standard connecting cables
- Integration of operator controls in the new Extension Units

SIMATIC IFP PRO ETH

***IFP1500 PRO ETH, IFP1900 PRO ETH and IFP2200 PRO ETH*** supplement the current product range of new Industrial Flat Panels with their full HD resolution (1 920 x 1 080 pixels) and neutral design fronts.

Equipped with innovative, projected capacitive touchscreen technology for the detection of multi-touch gestures with up to ten fingers and with a brilliant widescreen display and glass front.

The devices are connected by means of a DisplayPort or Ethernet and USB to PCs, in particular SIMATIC IPCs. The rugged aluminum housing of the monitor enables it to be used directly at the machine and ensures durability, even in harsh and extreme operating environments.

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## Technical specifications

| Article number | **6AV7863-3MA14-1AA0**<br>SIMATIC IFP1900 PRO pedestal and ext. | **6AV7863-3MA15-1AA0**<br>SIMATIC IFP1900 PRO support arm w/o ext. | **6AV7863-3MA16-1AA0**<br>SIMATIC IFP1900 PRO support arm and ext. |
|---|---|---|---|
| **General information** | | | |
| Product type designation | IFP1900 PRO | IFP1900 PRO | IFP1900 PRO |
| Short designation | Flat Panel 19" PRO multi-touch ext. | Flat Panel 19" PRO multi-touch ext. | Flat Panel 19" PRO multi-touch ext. |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | | |
| Screen diagonal | 19 in | 19 in | 19 in |
| Screen diagonal [cm] | 47 cm | 47 cm | 47 cm |
| Display width | 409.8 mm | 409.8 mm | 409.8 mm |
| Display height | 230.4 mm | 230.4 mm | 230.4 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 170° x 160° | 170° x 160° | 170° x 160° |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel |
| • Pixel size, horizontal | 0.3 mm | 0.3 mm | 0.3 mm |
| • Pixel size, vertical | 0.3 mm | 0.3 mm | 0.3 mm |
| **General features** | | | |
| • Brightness/contrast | 300 cd/m$^2$ / 1 000:1 | 300 cd/m$^2$ / 1 000:1 | 300 cd/m$^2$ / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| • Detachable from computer unit | 30 m | 30 m | 30 m |
| • Luminance | 300 cd/m$^2$ | 300 cd/m$^2$ | 300 cd/m$^2$ |
| **Backlighting** | | | |
| • Type of backlighting | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Input device** | | | |
| • Integrated mouse cursor control | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB |
| **Keyboard fonts** | | | |
| • Function keys | No | No | No |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes | Yes | Yes |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Pedestal mounting | Support arm mounting | Support arm mounting |
| Support arm mounting | No | Yes; Suitable for support arm without extension components | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes | No | No |
| Built-in unit | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed |
| maximum permitted forward tilt angle from vertical | 45° | 45° | 45° |
| maximum permitted backward tilt angle from vertical | 45° | 45° | 45° |
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 2 A | 2 A | 2 A |
| Inrush current, max. | 2.8 A | 2.8 A | 2.8 A |
| Starting current inrush $I^2t$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ |
| **Power** | | | |
| Active power input, typ. | 40 W | 40 W | 40 W |
| **Power loss** | | | |
| Power loss, typ. / max. | 40 W / 60 W | 40 W / 60 W | 40 W / 60 W |

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## **Technical specifications** (continued)

| Article number | **6AV7863-3MA14-1AA0**<br>SIMATIC IFP1900 PRO pedestal and ext. | **6AV7863-3MA15-1AA0**<br>SIMATIC IFP1900 PRO support arm w/o ext. | **6AV7863-3MA16-1AA0**<br>SIMATIC IFP1900 PRO support arm and ext. |
|---|---|---|---|
| **Interfaces** | | | |
| Number of USB interfaces | 2; USB 2.0 type A | 2; USB 2.0 type A | 2; USB 2.0 type A |
| USB on the rear | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard |
| Connection for keyboard/mouse | USB | USB | USB |
| **Video interfaces** | | | |
| • analog video signal (VGA) | No | No | No |
| • DVI-D | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | |
| • USB | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP20 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes | Yes |
| • IECEx Zone 2 | Yes | Yes | Yes |
| • IECEx Zone 22 | Yes | Yes | Yes |
| • cULus Class I Zone 2, Division 2 | Yes | Yes | Yes |
| • FM Class I Division 2 | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| • Vibration load during transport/ storage | 10 m/s$^2$ | 10 m/s$^2$ | 10 m/s$^2$ |
| **Shock testing** | | | |
| • Shock load during operation | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| • shock acceleration during storage/ transport | 150 m/s$^2$ | 150 m/s$^2$ | 150 m/s$^2$ |
| **Mechanics/material** | | | |
| Enclosure material (front) | In standard design | In standard design | In standard design |
| • Aluminum | Yes | Yes | Yes |
| • Glass | Yes; at front | Yes; at front | Yes; at front |
| **Dimensions** | | | |
| Width | 462 mm | 462 mm | 462 mm |
| Height | 296 mm; Without basic adapter | 296 mm; Without basic adapter | 296 mm; Without basic adapter |
| Depth | 94 mm; Without basic adapter | 94 mm; Without basic adapter | 160 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 7.3 kg | 7.3 kg | 8.2 kg |
| Weight incl. packaging | 10 kg | 10 kg | 11 kg |

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## Technical specifications (continued)

| Article number | **6AV7863-4MA14-1AA0**<br>SIMATIC IFP2200 PRO pedestal and ext. | **6AV7863-4MA15-1AA0**<br>SIMATIC IFP2200 PRO support arm w/o ext. | **6AV7863-4MA16-1AA0**<br>SIMATIC IFP2200 PRO support arm and ext. |
|---|---|---|---|
| **General information** | | | |
| Product type designation | IFP2200 PRO | IFP2200 PRO | IFP2200 PRO |
| Short designation | Flat Panel 22" PRO multi-touch ext. | Flat Panel 22" PRO multi-touch ext. | Flat Panel 22" PRO multi-touch ext. |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | | |
| Screen diagonal | 22 in | 22 in | 22 in |
| Screen diagonal [cm] | 56 cm | 56 cm | 56 cm |
| Display width | 476 mm | 476 mm | 476 mm |
| Display height | 268 mm | 268 mm | 268 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | No; Adjustable by means of software | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 178° x 178° | 178° x 178° | 178° x 178° |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| • Pixel size, horizontal | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| • Pixel size, vertical | 0.2475 mm | 0.2475 mm | 0.2475 mm |
| **General features** | | | |
| • Brightness/contrast | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 | 250 cd/m$^2$ / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| • Detachable from computer unit | 30 m | 30 m | 30 m |
| • Luminance | 250 cd/m$^2$ | 250 cd/m$^2$ | 250 cd/m$^2$ |
| **Backlighting** | | | |
| • Type of backlighting | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 30 000 h; At 25°C | 30 000 h; At 25°C | 30 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | |
| **Input device** | | | |
| • Integrated mouse cursor control | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB |
| **Keyboard fonts** | | | |
| • Function keys | No | No | No |
| - Number of function keys | 0 | 0 | 0 |
| **Touch operation** | | | |
| • Design as touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Pedestal mounting | Support arm mounting | Support arm mounting |
| Support arm mounting | No | Yes; Suitable for support arm without extension components | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes | No | No |
| Built-in unit | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed |
| maximum permitted forward tilt angle from vertical | 45° | 45° | 45° |
| maximum permitted backward tilt angle from vertical | 45° | 45° | 45° |
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 2.5 A | 2.5 A | 2.5 A |
| Current consumption, max. | 3 A | 3 A | 3 A |
| Inrush current, max. | 2.8 A | 2.8 A | 2.8 A |
| Starting current inrush $I^2t$ | 0.5 A$^2$·s | 0.5 A$^2$·s | 0.5 A$^2$·s |
| **Power** | | | |
| Active power input, typ. | 40 W | 40 W | 40 W |
| **Power loss** | | | |
| Power loss, typ. | 40 W | 40 W | 40 W |
| Power loss, max. | 60 W | 60 W | 60 W |

## **Technical specifications** (continued)

| Article number | **6AV7863-4MA14-1AA0**<br>SIMATIC IFP2200 PRO pedestal and ext. | **6AV7863-4MA15-1AA0**<br>SIMATIC IFP2200 PRO support arm w/o ext. | **6AV7863-4MA16-1AA0**<br>SIMATIC IFP2200 PRO support arm and ext. |
|---|---|---|---|
| **Interfaces** | | | |
| Number of USB interfaces | 2; USB 2.0 type A | 2; USB 2.0 type A | 2; USB 2.0 type A |
| USB on the rear | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard |
| Connection for keyboard/mouse | USB | USB | USB |
| **Video interfaces** | | | |
| • analog video signal (VGA) | No | No | No |
| • DVI-D | Yes | Yes | Yes |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | |
| • USB | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes; cULus, cUL |
| cULus | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 | Yes; Corresponds to UL 508 |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • ATEX Zone 22 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • IECEx Zone 2 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • IECEx Zone 22 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • cULus Class I Zone 2, Division 2 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| • FM Class I Division 2 | Yes; Available soon | Yes; Available soon | Yes; Available soon |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 $m/s^2$ | 10 $m/s^2$ | 10 $m/s^2$ |
| • Vibration load during transport/ storage | 10 $m/s^2$ | 10 $m/s^2$ | 10 $m/s^2$ |
| **Shock testing** | | | |
| • Shock load during operation | 150 $m/s^2$ | 150 $m/s^2$ | 150 $m/s^2$ |
| • shock acceleration during storage/ transport | 150 $m/s^2$ | 150 $m/s^2$ | 150 $m/s^2$ |
| **Mechanics/material** | | | |
| Enclosure material (front) | In standard design | In standard design | |
| • Aluminum | Yes | Yes | |
| • Glass | Yes; at front | Yes; at front | Yes; at front |
| Enclosure material (rear) | | | aluminum |
| **Dimensions** | | | |
| Width | 527 mm | 527 mm | 527 mm |
| Height | 329 mm; Without basic adapter | 329 mm; Without basic adapter | 329 mm; Without basic adapter |
| Depth | 94 mm; Without basic adapter | 94 mm; Without basic adapter | 163 mm; Without basic adapter |
| Width of the housing front | 527 mm | 527 mm | 527 mm |
| Height of housing front | 329 mm | 329 mm | 329 mm |
| **Weights** | | | |
| Weight without packaging | 8.1 kg | 8.1 kg | 9.1 kg |
| Weight incl. packaging | 11 kg | 11 kg | 12 kg |

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## **Technical specifications** (continued)

| Article number | **6AV7466-5MA01-0AA0**<br>SIMATIC IFP1500 PRO OEM ETH pedestal | **6AV7466-5MA02-0AA0**<br>SIMATIC IFP1500 PRO HD OEM ETH sup. arm | **6AV7466-6MA01-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH pedestal | **6AV7466-6MA02-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH sup. arm | **6AV7466-8MA01-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH pedestal | **6AV7466-8MA02-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH support arm |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | IFP1500 PRO HD | IFP1500 PRO HD | IFP1900 PRO HD | IFP1900 PRO HD | IFP2200 PRO | IFP2200 PRO |
| Short designation | Flat Panel 15" PRO Full HD multi-touch Ethernet monitor | Flat Panel 15" PRO Full HD multi-touch Ethernet monitor | Flat Panel 19" PRO Full HD ETH multi-touch ext. | Flat Panel 19" PRO Full HD ETH multi-touch ext. | Flat Panel 22" PRO ETH multi-touch ext. | Flat Panel 22" PRO ETH multi-touch ext. |
| **Display** | | | | | | |
| Design of display | TFT widescreen display, LED backlighting | | | | | |
| Screen diagonal | 15.6 in | 15.6 in | 18.5 in | 18.5 in | 22 in | 22 in |
| Screen diagonal [cm] | 40 cm | 40 cm | 47 cm | 47 cm | 56 cm | 56 cm |
| Display width | 344.2 mm | 344.2 mm | 409.8 mm | 409.8 mm | 475.2 mm | 475.2 mm |
| Display height | 193.5 mm | 193.5 mm | 230.4 mm | 230.4 mm | 267.3 mm | 267.3 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software | | | | | |
| Number of colors | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit | 16 777 216; 24 bit |
| Viewing angle | 160° x 140° | 160° x 140° | 178° x 178° | 178° x 178° | 170° x 160° | 170° x 160° |
| **Resolution (pixels)** | | | | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| • Pixel size, horizontal | 0.17925 mm | 0.17925 mm | 0.213 mm | 0.213 mm | 0.3 mm | 0.3 mm |
| • Pixel size, vertical | 0.17925 mm | 0.17925 mm | 0.213 mm | 0.213 mm | 0.3 mm | 0.3 mm |
| **General features** | | | | | | |
| • Brightness/contrast | 400 cd/m² / 700:1 | 400 cd/m² / 700:1 | 350 cd/m² / 1 000:1 | 350 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 | 300 cd/m² / 1 000:1 |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes | Yes | Yes | Yes |
| • Detachable from computer unit | 100 m; Ethernet | 100 m; Ethernet | 100 m; Ethernet | 100 m; Ethernet | 100 m; Ethernet | 100 m; Ethernet |
| • Luminance | 400 cd/m² | 400 cd/m² | 350 cd/m² | 350 cd/m² | 300 cd/m² | 300 cd/m² |
| **Backlighting** | | | | | | |
| • Type of backlighting | LED | LED | LED | LED | LED | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % | Yes; 0-100 % |
| **Control elements** | | | | | | |
| **Input device** | | | | | | |
| • Integrated mouse cursor control | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB | Yes; Also externally via USB |
| **Keyboard fonts** | | | | | | |
| • Function keys | No | No | No | No | No | No |
| - Number of function keys | 0 | 0 | 0 | 0 | 0 | 0 |
| **Touch operation** | | | | | | |
| • Design as touch screen | Yes | Yes | Yes | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | | | | |
| • Monitor keyboard | Yes | Yes | Yes | Yes | Yes | Yes |

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## Technical specifications (continued)

| Article number | **6AV7466-5MA01-0AA0**<br>SIMATIC IFP1500 PRO OEM ETH pedestal | **6AV7466-5MA02-0AA0**<br>SIMATIC IFP1500 PRO HD OEM ETH sup. arm | **6AV7466-6MA01-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH pedestal | **6AV7466-6MA02-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH sup. arm | **6AV7466-8MA01-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH pedestal | **6AV7466-8MA02-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH support arm |
|---|---|---|---|---|---|---|
| **Installation type/mounting** | | | | | | |
| Design | Pedestal mounting | Support arm mounting | Pedestal mounting | Support arm mounting | Pedestal mounting | Support arm mounting |
| Support arm mounting | No | Yes; Suitable for support arm and extension components (please refer to manual) | No | Yes; Suitable for support arm and extension components (please refer to manual) | No | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes | No | Yes | No | Yes | No |
| VESA mounting | No | Yes; With VESA adapter set | No | Yes; With VESA adapter set | No | Yes; With VESA adapter set |
| Built-in unit | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed | No; IP65 fully enclosed |
| maximum permitted forward tilt angle from vertical | 45° | 45° | 45° | 45° | 45° | 45° |
| maximum permitted backward tilt angle from vertical | 45° | 45° | 45° | 45° | 45° | 45° |
| **Supply voltage** | | | | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating | 24 V; PELV / SELV floating |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Power loss** | | | | | | |
| Power loss, typ. | 25 W | 25 W | 30 W | 30 W | 40 W | 40 W |
| Power loss, max. | 30 W | 30 W | 30 W | 30 W | 65 W | 65 W |
| **Interfaces** | | | | | | |
| Number of industrial Ethernet interfaces | 1; Ethernet, 1 port, RJ45 | 1; Ethernet, 1 port, RJ45 | 1; Ethernet, 1 port, RJ45 | 1; Ethernet, 1 port, RJ45 | 1; Ethernet, 1 port, RJ45 | 1; Ethernet, 1 port, RJ45 |
| USB on the rear | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard | Yes; 2x onboard |
| Connection for keyboard/mouse | USB | USB | USB | USB | USB | USB |
| **Video interfaces** | | | | | | |
| • analog video signal (VGA) | No | No | No | No | No | No |
| • DVI-D | No | No | No | No | No | No |
| • DisplayPort | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 | Yes; DisplayPort V1.1 |
| **Touch interfaces** | | | | | | |
| • USB | Yes | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 | IP65 | IP65 | IP65 |
| NEMA (front) | | | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process |
| cULus | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process |
| RCM (formerly C-TICK) | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process |
| KC approval | No | No | No | No | No | No |
| EAC (formerly Gost-R) | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process | Yes; In application process |
| **Use in hazardous areas** | | | | | | |
| • ATEX Zone 2 | No | No | No | No | No | No |
| • ATEX Zone 22 | No | No | No | No | No | No |
| • FM Class I Division 2 | No | No | No | No | No | No |

## Technical specifications (continued)

| Article number | **6AV7466-5MA01-0AA0**<br>SIMATIC IFP1500 PRO OEM ETH pedestal | **6AV7466-5MA02-0AA0**<br>SIMATIC IFP1500 PRO HD OEM ETH sup. arm | **6AV7466-6MA01-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH pedestal | **6AV7466-6MA02-0AA0**<br>SIMATIC IFP1900 PRO HD OEM ETH sup. arm | **6AV7466-8MA01-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH pedestal | **6AV7466-8MA02-0AA0**<br>SIMATIC IFP2200 PRO OEM ETH support arm |
|---|---|---|---|---|---|---|
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | No | No | No | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No | No | No | No |
| • Bureau Veritas (BV) | No | No | No | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No | No | No | No |
| • Lloyds Register of Shipping (LRS) | No | No | No | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No | No | No | No |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 50 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 % | 95 % | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation | 95 %; no condensation |
| **Vibrations** | | | | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² | 150 m/s² |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Glass | Yes; at front | Yes; at front | Yes; at front | Yes; at front | Yes; at front | Yes; at front |
| Enclosure material (rear) | | aluminum | | | | |
| **Dimensions** | | | | | | |
| Width | 396 mm | 396 mm | 462 mm | 462 mm | 527 mm | 527 mm |
| Height | 255 mm; Without basic adapter | 255 mm | 292 mm; Without basic adapter | 292 mm | 329 mm; Without basic adapter | 329 mm |
| Depth | 101 mm; Without basic adapter | 163 mm | 94 mm; Without basic adapter | 163 mm | 94 mm; Without basic adapter | 163 mm |
| **Weights** | | | | | | |
| Weight without packaging | 4 kg | 4 kg | 5.7 kg | 5.7 kg | 6.7 kg | 6.7 kg |
| Weight incl. packaging | 6 kg | 6 kg | 10 kg | 10 kg | 10 kg | 10 kg |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IFP1900 PRO**<br>19" (16:9) Flat Panel, multi-touch, extended version up to 30 m, 1 366 x 768 pixels, for 24 V DC DisplayPort/DVI port, IP65 all-round protection | |
| • Prepared for pedestal and extension components | **6AV7863-3MA14-1AA0** |
| • Prepared for support arm without extension components | **6AV7863-3MA15-1AA0** |
| • Prepared for support arm and extension components | **6AV7863-3MA16-1AA0** |
| **SIMATIC IFP2200 PRO**<br>22" (16:9) Flat Panel, multi-touch, extended version up to 30 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/DVI port, fully enclosed IP65 protection | |
| • Prepared for pedestal and extension components | **6AV7863-4MA14-1AA0** |
| • Prepared for support arm without extension components | **6AV7863-4MA15-1AA0** |
| • Prepared for support arm and extension components | **6AV7863-4MA16-1AA0** |
| **SIMATIC IFP1500 PRO HD ETH**<br>15" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully enclosed IP65 protection, neutral design | |
| • Prepared for pedestal and extension components | **6AV7466-5MA01-0AA0** |
| • Prepared for support arm and extension components | **6AV7466-5MA02-0AA0** |

| | Article No. |
|---|---|
| **SIMATIC IFP1900 PRO HD ETH**<br>19" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully enclosed IP65 protection, neutral design | |
| • Prepared for pedestal and extension components | **6AV7466-6MA01-0AA0** |
| • Prepared for support arm and extension components | **6AV7466-6MA02-0AA0** |
| **SIMATIC IFP2200 PRO HD ETH**<br>22" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully enclosed IP65 protection, neutral design | |
| • Prepared for pedestal and extension components | **6AV7466-8MA01-0AA0** |
| • Prepared for support arm and extension components | **6AV7466-8MA02-0AA0** |

Note:

As in the case of the Flat Panel PRO, adaptation to support arm/pedestal systems is possible using the basic adapter. This is included in the scope of supply (only in the case of the "prepared for support arm and extension components" version is the basic adapter not included, as the connection is made via a round tube).

For the version "prepared for support arm and extension components", installation can alternatively take place with the Siemens flange mount or with a standard 48 mm diameter round tube.
The flange mount enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter. This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

More information is available on the Internet at:

http://www.siemens.com/ip65-hmi-devices

Note:

Do you require a specific modification or extension to the products described here? Then refer to "Customized Automation". There you will find information about additional and generally available sector-specific products as well as options for customer-specific modification and adaptation.

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## Overview

IFP PRO, ITC PRO, IPC PRO, Comfort PRO, 22 inch, for support arm (not extendable, flange on top)

### *SIMATIC Industrial Thin Client PRO*

SIMATIC Industrial Thin Client PRO with capacitive multi-touch display is suitable for mounting directly on the support arm/ pedestal.

## Technical specifications

| Article number | **6AV6646-1BB15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BC15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BD15-0AA0**<br>SIMATIC ITC1500 V3 PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | ITC1500 V3 | ITC1500 V3 | ITC1500 V3 |
| Short designation | SIMATIC ITC1500 V3 | SIMATIC ITC1500 V3 | SIMATIC ITC1500 V3 |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | | |
| Screen diagonal | 15.6 in | 15.6 in | 15.6 in |
| Display width | 344.2 mm | 344.2 mm | 344.2 mm |
| Display height | 193.5 mm | 193.5 mm | 193.5 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel |
| **General features** | | | |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| **Backlighting** | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes | Yes | Yes |
| **Touch operation** | | | |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Pedestal mounting | Support arm mounting | Support arm mounting |
| Support arm mounting | | Yes; Suitable for support arm without extension components | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes; Prepared for pedestal and extension components | | |
| Built-in unit | No | No | No |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° |

## **Technical specifications** (continued)

| Article number | **6AV6646-1BB15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BC15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BD15-0AA0**<br>SIMATIC ITC1500 V3 PRO |
|---|---|---|---|
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 1.4 A | 1.4 A | 1.4 A |
| Starting current inrush $I^2t$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ |
| **Power** | | | |
| Active power input, typ. | 34 W | 34 W | 34 W |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) | 2; 2 ports (switch) | 2; 2 ports (switch) |
| Number of USB interfaces | 4; on rear | 4; on rear | 4; on rear |
| Connection for keyboard/mouse | USB | USB | USB |
| **Industrial Ethernet** | | | |
| • Transmission rate, max. | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s |
| **Protocols** | | | |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes |
| **WEB characteristics** | | | |
| • HTTP | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes |
| • HTML | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 |
| • XML | Yes | Yes | Yes |
| • CSS | Yes | Yes | Yes |
| • Active X | No | No | No |
| • JavaScript | Yes | Yes | Yes |
| • Java VM | No | No | No |
| **Protocols (terminal link)** | | | |
| • Sm@rtServer | Yes | Yes | Yes |
| • RDP | Yes | Yes | Yes |
| • VNC viewer | Yes | Yes | Yes |
| • Citrix | Yes | Yes | Yes |
| • SINUMERIK | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FM approval | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |
| • ATEX Zone 22 | No | No | No |
| • IECEx Zone 2 | No | No | No |
| • IECEx Zone 22 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |

## Technical specifications (continued)

| Article number | **6AV6646-1BB15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BC15-0AA0**<br>SIMATIC ITC1500 V3 PRO | **6AV6646-1BD15-0AA0**<br>SIMATIC ITC1500 V3 PRO |
|---|---|---|---|
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No |
| • Bureau Veritas (BV) | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No |
| • Korean Register of Shipping (KRS) | No | No | No |
| • Lloyds Register of Shipping (LRS) | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² |
| **Software** | | | |
| Web browser | Yes; HTML5, CSS | Yes; HTML5, CSS | Yes; HTML5, CSS |
| PDF reader | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration** | | | |
| • Local | Yes | Yes | Yes |
| • Remote | Yes; Via web page | Yes; Via web page | Yes; Via web page |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 2; german / english | 2; german / english | 2; german / english |
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| USB memory | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected |
| Additional software components loadable | No | No | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Aluminum | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 396 mm | 396 mm | 396 mm |
| Height of housing front | 256 mm; Without basic adapter | 256 mm; Without basic adapter | 256 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 6.3 kg | 6.3 kg | 6.3 kg |

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## **Technical specifications** (continued)

| Article number | **6AV6646-1BB18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BC18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BD18-0AA0**<br>SIMATIC ITC1900 V3 PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | ITC1900 V3 | ITC1900 V3 | ITC1900 V3 |
| Short designation | SIMATIC ITC1900 V3 | SIMATIC ITC1900 V3 | SIMATIC ITC1900 V3 |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | | |
| Screen diagonal | 18.5 in | 18.5 in | 18.5 in |
| Display width | 409.8 mm | 409.8 mm | 409.8 mm |
| Display height | 230.4 mm | 230.4 mm | 230.4 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 366 Pixel | 1 366 Pixel | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel | 768 Pixel | 768 Pixel |
| **General features** | | | |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| **Backlighting** | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C | 50 000 h; At 25°C | 50 000 h; At 25°C |
| • Backlight dimmable | Yes | Yes | Yes |
| **Touch operation** | | | |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Pedestal mounting | Support arm mounting | Support arm mounting |
| Support arm mounting | | Yes; Suitable for support arm without extension components | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes; Prepared for pedestal and extension components | | |
| Built-in unit | No | No | No |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° |
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 1.4 A | 1.4 A | 1.4 A |
| Starting current inrush $I^2t$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ |
| **Power** | | | |
| Active power input, typ. | 34 W | 34 W | 34 W |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) | 2; 2 ports (switch) | 2; 2 ports (switch) |
| Number of USB interfaces | 4; on rear | 4; on rear | 4; on rear |
| Connection for keyboard/mouse | USB | USB | USB |
| **Industrial Ethernet** | | | |
| • Transmission rate, max. | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s |

## Technical specifications (continued)

| Article number | **6AV6646-1BB18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BC18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BD18-0AA0**<br>SIMATIC ITC1900 V3 PRO |
|---|---|---|---|
| **Protocols** | | | |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes |
| **WEB characteristics** | | | |
| • HTTP | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes |
| • HTML | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 |
| • XML | Yes | Yes | Yes |
| • CSS | Yes | Yes | Yes |
| • Active X | No | No | No |
| • JavaScript | Yes | Yes | Yes |
| • Java VM | No | No | No |
| **Protocols (terminal link)** | | | |
| • Sm@rtServer | Yes | Yes | Yes |
| • RDP | Yes | Yes | Yes |
| • VNC viewer | Yes | Yes | Yes |
| • Citrix | Yes | Yes | Yes |
| • SINUMERIK | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FM approval | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |
| • ATEX Zone 22 | No | No | No |
| • IECEx Zone 2 | No | No | No |
| • IECEx Zone 22 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No |
| • Bureau Veritas (BV) | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No |
| • Korean Register of Shipping (KRS) | No | No | No |
| • Lloyds Register of Shipping (LRS) | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |

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## Technical specifications (continued)

| Article number | **6AV6646-1BB18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BC18-0AA0**<br>SIMATIC ITC1900 V3 PRO | **6AV6646-1BD18-0AA0**<br>SIMATIC ITC1900 V3 PRO |
|---|---|---|---|
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² |
| **Software** | | | |
| Web browser | Yes; HTML5, CSS | Yes; HTML5, CSS | Yes; HTML5, CSS |
| PDF reader | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration** | | | |
| • Local | Yes | Yes | Yes |
| • Remote | Yes; Via web page | Yes; Via web page | Yes; Via web page |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 2; german / english | 2; german / english | 2; german / english |
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| USB memory | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected |
| Additional software components loadable | No | No | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Aluminum | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 462 mm | 462 mm | 462 mm |
| Height of housing front | 293 mm; Without basic adapter | 293 mm; Without basic adapter | 293 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 7.4 kg | 7.4 kg | 7.4 kg |

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## **Technical specifications** (continued)

| Article number | **6AV6646-1BB22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BC22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BD22-1AA0**<br>SIMATIC ITC2200 V3 PRO |
|---|---|---|---|
| **General information** | | | |
| Product type designation | ITC2200 V3 | ITC2200 V3 | ITC2200 V3 |
| Short designation | SIMATIC ITC2200 V3 | SIMATIC ITC2200 V3 | SIMATIC ITC2200 V3 |
| **Display** | | | |
| Design of display | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting | TFT widescreen display, LED backlighting |
| Screen diagonal | 21.5 in | 21.5 in | 21.5 in |
| Display width | 475.2 mm | 475.2 mm | 475.2 mm |
| Display height | 267.3 mm | 267.3 mm | 267.3 mm |
| Number of colors | 16 777 216 | 16 777 216 | 16 777 216 |
| **Resolution (pixels)** | | | |
| • Horizontal image resolution | 1 920 Pixel | 1 920 Pixel | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel | 1 080 Pixel | 1 080 Pixel |
| **General features** | | | |
| • non-reflective and tempered mineral glass screen | Yes | Yes | Yes |
| **Backlighting** | | | |
| • Type of backlighting | LED, dimmable | LED, dimmable | LED, dimmable |
| • MTBF backlighting (at 25 °C) | 30 000 h; At 25°C | 30 000 h; At 25°C | 30 000 h; At 25°C |
| • Backlight dimmable | Yes | Yes | Yes |
| **Touch operation** | | | |
| • Design as multi-touch screen | Yes; Projective-capacitive | Yes; Projective-capacitive | Yes; Projective-capacitive |
| • Monitor keyboard | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Design | Pedestal mounting | Support arm mounting | Support arm mounting |
| Support arm mounting | | Yes; Suitable for support arm without extension components | Yes; Suitable for support arm and extension components (please refer to manual) |
| Stand mounting | Yes; Prepared for pedestal and extension components | | |
| Built-in unit | No | No | No |
| maximum permitted forward tilt angle from vertical | 35° | 35° | 35° |
| maximum permitted backward tilt angle from vertical | 35° | 35° | 35° |
| **Supply voltage** | | | |
| Type of supply voltage | 24 V DC | 24 V DC | 24 V DC |
| Rated value (DC) | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | |
| Current consumption (rated value) | 1.7 A | 1.7 A | 1.7 A |
| Starting current inrush $I^2t$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ | 0.5 $A^2 \cdot s$ |
| **Power** | | | |
| Active power input, typ. | 41 W | 41 W | 41 W |
| **Interfaces** | | | |
| Number of industrial Ethernet interfaces | 2; 2 ports (switch) | 2; 2 ports (switch) | 2; 2 ports (switch) |
| Number of USB interfaces | 4; on rear | 4; on rear | 4; on rear |
| Connection for keyboard/mouse | USB | USB | USB |
| **Industrial Ethernet** | | | |
| • Transmission rate, max. | 1 000 Mbit/s | 1 000 Mbit/s | 1 000 Mbit/s |

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## **Technical specifications** (continued)

| Article number | **6AV6646-1BB22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BC22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BD22-1AA0**<br>SIMATIC ITC2200 V3 PRO |
|---|---|---|---|
| **Protocols** | | | |
| **Protocols (Ethernet)** | | | |
| • TCP/IP | Yes | Yes | Yes |
| • DHCP | Yes | Yes | Yes |
| • SNMP | Yes | Yes | Yes |
| • DCP | Yes | Yes | Yes |
| • LLDP | Yes | Yes | Yes |
| **WEB characteristics** | | | |
| • HTTP | Yes | Yes | Yes |
| • HTTPS | Yes | Yes | Yes |
| • HTML | Yes; HTML5 | Yes; HTML5 | Yes; HTML5 |
| • XML | Yes | Yes | Yes |
| • CSS | Yes | Yes | Yes |
| • Active X | No | No | No |
| • JavaScript | Yes | Yes | Yes |
| • Java VM | No | No | No |
| **Protocols (terminal link)** | | | |
| • Sm@rtServer | Yes | Yes | Yes |
| • RDP | Yes | Yes | Yes |
| • VNC viewer | Yes | Yes | Yes |
| • Citrix | Yes | Yes | Yes |
| • SINUMERIK | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| NEMA (front) | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes |
| • Enclosure Type 4x at the front | Yes | Yes | Yes |
| • Enclosure Type 12 at the front | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes |
| FM approval | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes | Yes |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | No | No | No |
| • ATEX Zone 22 | No | No | No |
| • IECEx Zone 2 | No | No | No |
| • IECEx Zone 22 | No | No | No |
| • cULus Class I Zone 2, Division 2 | No | No | No |
| • FM Class I Division 2 | No | No | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | No | No | No |
| • American Bureau of Shipping (ABS) | No | No | No |
| • Bureau Veritas (BV) | No | No | No |
| • Det Norske Veritas (DNV) | No | No | No |
| • Korean Register of Shipping (KRS) | No | No | No |
| • Lloyds Register of Shipping (LRS) | No | No | No |
| • Nippon Kaiji Kyokai (Class NK) | No | No | No |
| • Polski Rejestr Statkow (PRS) | No | No | No |
| • Chinese Classification Society (CCS) | No | No | No |

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## **Technical specifications** (continued)

| Article number | **6AV6646-1BB22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BC22-1AA0**<br>SIMATIC ITC2200 V3 PRO | **6AV6646-1BD22-1AA0**<br>SIMATIC ITC2200 V3 PRO |
|---|---|---|---|
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C | 45 °C |
| **Ambient temperature during storage/transportation** | | | |
| • min. | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Vibrations** | | | |
| • Vibration load in operation | 10 m/s² | 10 m/s² | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² | 10 m/s² | 10 m/s² |
| **Shock testing** | | | |
| • Shock load during operation | 150 m/s² | 150 m/s² | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² | 150 m/s² | 150 m/s² |
| **Software** | | | |
| Web browser | Yes; HTML5, CSS | Yes; HTML5, CSS | Yes; HTML5, CSS |
| PDF reader | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration** | | | |
| • Local | Yes | Yes | Yes |
| • Remote | Yes; Via web page | Yes; Via web page | Yes; Via web page |
| **Languages** | | | |
| **Online languages** | | | |
| • Number of online/runtime languages | 2; german / english | 2; german / english | 2; german / english |
| **Peripherals/Options** | | | |
| Printer | No | No | No |
| USB memory | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected | Yes; USB storage medium can be connected |
| Additional software components loadable | No | No | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Aluminum | Yes | Yes | Yes |
| **Dimensions** | | | |
| Width of the housing front | 527 mm | 527 mm | 527 mm |
| Height of housing front | 330 mm; Without basic adapter | 330 mm; Without basic adapter | 330 mm; Without basic adapter |
| Overall depth | 101 mm; Without basic adapter | 101 mm; Without basic adapter | 101 mm; Without basic adapter |
| **Weights** | | | |
| Weight without packaging | 8.5 kg | 8.5 kg | 8.5 kg |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC Industrial Thin Client PRO** | |
| **SIMATIC ITC1500 V3 PRO** | |
| Industrial Thin Client<br>15" widescreen TFT display<br>Capacitive touch sensor<br>Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.<br>Standard design | |
| • Pedestal mounting | **6AV6646-1BB15-0AA0** |
| • Prepared for support arm without extension components | **6AV6646-1BC15-0AA0** |
| • Prepared for support arm with extension components | **6AV6646-1BD15-0AA0** |
| **SIMATIC ITC1900 V3 PRO** | |
| Industrial Thin Client<br>19" widescreen TFT display<br>Capacitive touch sensor<br>Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.<br>Standard design | |
| • Pedestal mounting | **6AV6646-1BB18-0AA0** |
| • Prepared for support arm without extension components | **6AV6646-1BC18-0AA0** |
| • Prepared for support arm with extension components | **6AV6646-1BD18-0AA0** |

| | Article No. |
|---|---|
| **SIMATIC ITC2200 V3 PRO** | |
| Industrial Thin Client<br>22" widescreen TFT display<br>Capacitive touch sensor<br>Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.<br>Standard design | |
| • Pedestal mounting | **6AV6646-1BB22-1AA0** |
| • Prepared for support arm without extension components | **6AV6646-1BC22-1AA0** |
| • Prepared for support arm with extension components | **6AV6646-1BD22-1AA0** |

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully enclosed HMI devices".

More information is available on the Internet at:

http://www.siemens.com/ip65-hmi-devices

Do you require a specific modification or extension to the products described here? Under "Customized products" you can find information about additional and generally available products for this sector and options for customized modification and adaptation.

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## Overview

### *SIMATIC IPC477E PRO*

The fully enclosed IP65-protected SIMATIC IPC477E PRO in 15", 19" and 22" versions extends the portfolio of PRO devices.

The robust aluminum housing allows it to be used directly on the machine even in harsh environmental conditions.

The operating unit can either be mounted on a pedestal or connected to a support arm system from above.

## Technical specifications

| Article number | **6AV7251-.....-....**<br>SIMATIC IPC477E PRO |
|---|---|
| **Installation type/mounting** | |
| Design | Panel PC on pedestal or supporting arm |
| maximum permissible installation angle +/- | ±45 ° |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 20 ms |
| **Processor** | |
| Processor type | Celeron G3902<br>(2C/2T, 1.6 GHz, 2 MB Cache);<br>Core i3-6102E<br>(2C/4T, 1.9 GHz, 3 MB Cache);<br>Core i5-6442EQ<br>(4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT);<br>Xeon E3-1505L v5<br>(4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT) |
| Chipset | Intel C236 / Intel H110 |
| **Graphic** | |
| Graphics controller | Intel HD graphics controller |
| **Drives** | |
| Optical drives | possible as external drive via USB |
| SSD | Yes; ≥ 128 GB optional |
| **Memory** | |
| Type of memory | DDR4-2400 SO-DIMM |
| Main memory | 4 / 8 / 16 Gbyte, ECC optional |
| Capacity of main memory, max. | 16 Gbyte |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time |
| **Hardware configuration** | |
| **Slots** | |
| • Number of PCI slots | 0; Different to the built-in unit |
| • Number of PCI slots | 0; Different to the built-in unit |
| • Number of compact flash slots | 1; CFast |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 3; 3x Ethernet (RJ45) |
| USB port | 4x USB 3.0 onboard (rear) |
| Connection for keyboard/mouse | USB / USB |
| serial interface | Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS |
| **Video interfaces** | |
| • Graphics interface | 2x DisplayPort |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 3x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | Yes |

| Article number | **6AV7251-.....-....**<br>SIMATIC IPC477E PRO |
|---|---|
| **Interrupts/diagnostics/status information** | |
| Bus diagnostics | Yes |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | Yes |
| • Watchdog | Yes |
| • Fan | No |
| • Monitoring function via network | Optional |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±6 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m, 80 ... 2 000 MHz, 80 % AM acc. to IEC 61000-4-3;<br>3 V/m, 2 ... 2.7 GHz; 10 V, 10 kHz ... 80 MHz acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m;<br>±2 kV acc. to IEC 61000-4-4; burst; length > 3 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A |
| **Degree and class of protection** | |
| IP65 (all-round) | Yes; IP65 fully enclosed |
| IP (at the front) | IP65 |
| IP (rear) | IP65 |

## Technical specifications (continued)

| Article number | **6AV7251-.....-....**<br>SIMATIC IPC477E PRO |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| CSA approval | Yes |
| UL approval | Yes |
| • UL 508 | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| EMC | CE, EN 61000-6-4; CISPR 22 Class A; FCC Class A |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes; Optional |
| • IECEx Zone 2 | Yes; Optional |
| • cULus Class I Zone 2, Division 2 | Yes; Optional |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes |
| • American Bureau of Shipping (ABS) | Yes |
| • Det Norske Veritas (DNV) | Yes |
| • Korean Register of Shipping (KRS) | Yes |
| • Lloyds Register of Shipping (LRS) | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 45 °C |

| Article number | **6AV7251-.....-....**<br>SIMATIC IPC477E PRO |
|---|---|
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s² (5 g), 30 ms, 100 shocks per axis |
| **Operating systems** | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10 |
| without operating system | Yes; Optional |
| **pre-installed operating system** | |
| • Windows 7 | Yes; Ultimate 64 bit |
| • Windows 10 Enterprise | Yes; Windows 10 Enterprise 2016 LTSB, 64 bit, MUI |

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## Ordering data

| **SIMATIC IPC477E PRO** [1] | **Article No.**<br>**6AV7251-** ■■■■■ **-** ■■■■ |
|---|---|
| CPUs and fieldbus | |
| - Celeron G3902E; 3x Gigabit Ethernet (IE/PN) | **1** |
| - Core i3-6102E; 3x Gigabit Ethernet (IE/PN) | **3** |
| - Core i5-6442EQ; 3x Gigabit Ethernet (IE/PN) | **5** |
| - XEON E3-1505L; 3x Gigabit Ethernet (IE/PN) | **7** |
| Operating unit | |
| - 15" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **B** |
| - 15" multi-touch (1 366 x 768), for pedestal (expandable, flange below) | **C** |
| - 15" multi-touch (1 366 x 768), for support arm (expandable, round tube) | **D** |
| - 19" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **E** |
| - 19" multi-touch (1 366 x 768), for pedestal (expandable, flange below) | **F** |
| - 19" multi-touch (1 366 x 768), for support arm (expandable, round tube) | **G** |
| - 22" multi-touch (1 920 x 1 080), for support arm (not expandable, flange on top) | **H** |
| - 22" multi-touch (1 920 x 1 080), for pedestal (expandable, flange below) | **J** |
| - 22" multi-touch (1 920 x 1 080), for support arm (expandable, round tube) | **K** |
| Work memory/NVRAM | |
| - 4 GB | **A** |
| - 8 GB | **B** |
| - 16 GB | **C** |
| - 8 GB with ECC | **D** |
| - 16 GB with ECC | **E** |
| - 4 GB and NVRAM | **F** |
| - 8 GB and NVRAM | **G** |
| - 16 GB and NVRAM | **H** |
| - 8 GB with ECC and NVRAM | **J** |
| - 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| - No RS232/485, without PCIe | **0** |
| - Two RS232/RS485, without PCIe | **3** |
| - No RS 232 without PCIe, with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **5** |
| - Two RS 232 without PCIe, with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **6** |

| **SIMATIC IPC477E PRO** [1] | **Article No.**<br>**6AV7251-** ■■■■■ **-** ■■■■ |
|---|---|
| Operating system | |
| - Without operating system | **0** |
| - Windows Embedded Standard 7 SP1, English, 32-bit | **1** |
| - Windows Embedded Standard 7 SP1, English, 64-bit | **2** |
| - Windows Embedded Standard 7 P SP1, MUI, 64-bit, multi-touch | **3** |
| - Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **4** |
| - Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **5** |
| - Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Celeron, I3 and I5 | **7** |
| - Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Xeon | **8** |
| Mass storage, external | |
| - Without external mass storage | **0** |
| - CFast 2 GB, without operating system | **1** |
| - CFast 4 GB, without operating system | **2** |
| - CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | **3** |
| - CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | **4** |
| - CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | **5** |
| Mass storage, internal | |
| - Without internal mass storage | **A** |
| - 128 GB solid-state drive SATA | **D** |
| - 240 GB solid-state drive SATA | **F** |
| - 480 GB solid-state drive SATA | **G** |
| SIMATIC software pre-installed (bundles) | |
| - Without SIMATIC software | **A** |
| - IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | **S** |
| Power supply | |
| - 24 V DC industrial power supply | **0** |
| - 24 V DC industrial power supply and TPM [2] (not for China or Russia) | **8** |

[1] IPC477E PRO as "built to order" version (max. delivery time 15 working days).

[2] TPM = Trusted Platform Module

Note:

As with the existing 4:3 IPC477C/D PRO devices, adaptation to different support arm/pedestal systems is by means of the basic adapter. The basic adapter is included in the scope of supply (except in the case of the "prepared for support arm and extension components" version, as the connection is made via a round tube).

For the version "prepared for support arm and extension components", installation can alternatively take place with the Siemens flange mount or with a standard 48 mm diameter round tube. The flange mount enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter.

This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

More information is available on the Internet at:

http://www.siemens.com/ip65-hmi-devices

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## Overview

***SIMATIC IPC477D PRO: The new Multitouch Panel PC with all-round IP65 protection - powerful, maintenance-free, and can be installed directly at the machine***

The IPC477D PRO in 15", 19" and 22" widescreen format extends the portfolio of glass-fronted devices. The rugged aluminum housing of the SIMATIC Panel PC enables it to be used directly at the machine and guarantees durability, even in harsh and extreme operating environments.

- All-round IP65 protection
- Embedded PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation
- Rugged, industrial 15", 19", and 22" widescreen displays (Multitouch)
- Maintenance-free (no rotating components such as fan and hard disk)
- Rugged construction: The PC is resistant to severe mechanical stress and is extremely reliable in operation.
- Slim, modern design
- Battery-independent retentive memory onboard
- Can be adapted to support arm system of various manufacturers
- Integration of operator controls in the new Extension Units (coming soon)
- High degree of investment security
- Fast integration capability

The IPC477D PRO 15", 19" and 22" Panel PCs are available in three different versions, depending on the application:

- Prepared for support arm and extension components (mounting by means of standard 48 mm round tube or Siemens flange adapter)
- Prepared for support arm without extension components (mounting by means of basic adapter, included in scope of delivery)
- Prepared for pedestal/extension components (mounting by means of basic adapter, included in scope of delivery)

## Technical specifications

| Article number | **6AV7250-.....-...0**<br>SIMATIC IPC 477D PRO | **6AV7250-.....-...8**<br>SIMATIC IPC 477D Pro with TPM |
|---|---|---|
| **Installation type/mounting** | | |
| Design | Panel PC on pedestal or supporting arm | |
| maximum permissible installation angle +/- | ±45 ° | ±45 ° |
| **Supply voltage** | | |
| Type of supply voltage | 24 V DC | 24 V DC |
| **Line frequency** | | |
| • Rated value 50 Hz | Yes | Yes |
| • Rated value 60 Hz | Yes | Yes |
| **Processor** | | |
| Processor type | Intel Core i7-3517UE<br>Intel Core i3-3217UE<br>Intel Celeron 827E | |
| **Graphic** | | |
| Graphics controller | Intel HD graphics controller | |
| **Drives** | | |
| Optical drives | possible as external drive via USB | |
| SSD | Yes; 1x 240 GB SSD, 1x 480 GB SSD | Yes; 1x 240 GB SSD, 1x 480 GB SSD |
| **Memory** | | |
| Type of memory | DDR3-SDRAM | DDR3-SDRAM |
| Main memory | 2 / 4 / 8 GB | 2 / 4 / 8 GB |
| Capacity of main memory, max. | 8 Gbyte | 8 Gbyte |
| **Data areas and their retentivity** | | |
| Retentive data area (incl. timers, counters, flags), max. | 512 kbyte; 128 KB can be stored in the buffer time; optional | |
| **Hardware configuration** | | |
| **Slots** | | |
| • Number of PCI slots | 0 | 0 |
| • Number of PCI slots | 0; Different to the built-in unit | 0; Different to the built-in unit |
| • Number of compact flash slots | 2; CFast | 2; CFast |
| **Interfaces** | | |
| PROFIBUS/MPI | | onboard, electrically isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5611-compatible |
| Number of PROFINET interfaces | 1; 3 ports (incl. switch) | |
| USB port | 4x USB 3.0 onboard (rear) | |
| Connection for keyboard/mouse | USB / USB | USB / USB |
| serial interface | COM1 (RS 232) | COM1 (RS 232) |
| **Video interfaces** | | |
| • Graphics interface | 1x DVI,<br>1x DisplayPort | 1x DVI,<br>1x DisplayPort |

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## **Technical specifications** (continued)

| Article number | **6AV7250-.....-...0**<br>SIMATIC IPC 477D PRO | **6AV7250-.....-...8**<br>SIMATIC IPC 477D Pro with TPM |
|---|---|---|
| **Industrial Ethernet** | | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes | Yes |
| - 1000 Mbps | Yes | Yes |
| **Interrupts/diagnostics/status information** | | |
| Bus diagnostics | Yes | Yes |
| **Integrated Functions** | | |
| **Monitoring functions** | | |
| • Temperature monitoring | Yes | Yes |
| • Watchdog | Yes | Yes |
| • Fan | No | No |
| • Monitoring function via network | Optional | Optional |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes; IP65 fully enclosed | |
| IP (at the front) | IP65 | IP65 |
| IP (rear) | IP65 | IP65 |
| **Standards, approvals, certificates** | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | |
| UL approval | Yes | Yes |
| • UL 508 | Yes | Yes |
| cULus | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes |
| KC approval | Yes | Yes |
| EMC | CE, EN 55011, EN 61000-6-4, EN 61000-6-2 | |
| **Use in hazardous areas** | | |
| • ATEX Zone 2 | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes |
| • IECEx Zone 2 | Yes | Yes |
| • cULus Class I Zone 2, Division 2 | Yes | Yes |

| Article number | **6AV7250-.....-...0**<br>SIMATIC IPC 477D PRO | **6AV7250-.....-...8**<br>SIMATIC IPC 477D Pro with TPM |
|---|---|---|
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • Ambient temperature during operation | 5 to +45°C | 5 to +45°C |
| **Ambient temperature during storage/transportation** | | |
| • min. | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C |
| **Relative humidity** | | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) | |
| **Operating systems** | | |
| pre-installed operating system | Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit, Windows Embedded Standard 7 32-bit / 64-bit | Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit, Windows Embedded Standard 7 32-bit / 64-bit |
| Additional info on operating system | Multi-Language: GER, ENG, ITAL, FR, SP, KOR, CHN (Traditional), CHN (Simplified), JPN - not with XPe | Multi-Language: GER, ENG, ITAL, FR, SP, KOR, CHN (Traditional), CHN (Simplified), JPN - not with XPe |
| without operating system | Yes; Optional | Yes; Optional |
| **pre-installed operating system** | | |
| • Windows 7 | Yes; Ultimate 32 bit or 64 bit | Yes; Ultimate 32 bit or 64 bit |
| **Dimensions** | | |
| Width | 475 mm | 475 mm |
| Height | 296 mm; Without basic adapter | 296 mm; Without basic adapter |
| Depth | 98 mm; Without basic adapter | 98 mm; Without basic adapter |

## Ordering data

| **SIMATIC IPC477D PRO** [1] | **Article No.**<br>**6AV7250 -** ■ ■ ■ ■ ■ **-** ■ ■ ■ ■ |
|---|---|
| Processors and fieldbus | |
| • Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **0** |
| • Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **1** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **3** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **4** |
| • Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **5** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN) | **6** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 | **7** |
| • Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB Cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) | **8** |
| Operating unit | |
| • 15" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **B** |
| • 15" multi-touch (1 366 x 768) for pedestal version (expandable, flange at bottom) | **C** |
| • 15" multi-touch (1 366 x 768) for support arm (expandable, round tube) | **D** |
| • 19" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **E** |
| • 19" multi-touch (1 366 x 768) for pedestal version (expandable, flange at bottom) | **F** |
| • 19" multi-touch (1 366 x 768) for support arm (expandable, round tube) | **G** |
| • 22" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **H** |
| • 22" multi-touch (1 366 x 768) for pedestal version (expandable, flange at bottom) | **J** |
| • 22" multi-touch (1 366 x 768) for support arm (expandable, round tube) | **K** |

| **SIMATIC IPC477D PRO** [1] | **Article No.**<br>**6AV7250-** ■ ■ ■ ■ ■ **-** ■ ■ ■ ■ |
|---|---|
| Work memory/NVRAM | |
| • 2 GB | **B** |
| • 4 GB | **C** |
| • 8 GB | **D** |
| • 2 GB and NVRAM | **K** |
| • 4 GB and NVRAM | **L** |
| • 8 GB and NVRAM | **M** |
| Expansions (HW) | |
| • 1 x RS232 | **0** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 Professional, 32-bit, MUI | **3** |
| • Windows Embedded Standard 7 SP1, English, 32-bit | **4** |
| • Windows Embedded Standard 7 SP1, English, 64-bit | **5** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **6** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **7** |
| Externally accessible mass storage (without operating system): | |
| • Without external mass storage | **0** |
| • CFAST 2 GB, without software | **1** |
| • CFAST 4 GB | **2** |
| • CFAST 8 GB | **3** |
| • CFAST 16 GB | **4** |
| Mass storage, internal | |
| • Without internal mass storage | **A** |
| • CFAST 2 GB | **B** |
| • CFAST 4 GB | **C** |
| • CFAST 8 GB | **D** |
| • CFAST 16 GB | **E** |
| • SSD 240 GB Standard | **P** |
| • SSD 480 GB Standard | **R** |
| Software | |
| • Without SIMATIC software | **A** |
| Power supply | |
| • 24 V DC industrial power supply | **0** |
| • 24 V DC industrial power supply and TPM [2] (not for China or Russia) | **8** |

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[1] IPC477D PRO as "built to order" version (max. delivery time 15 working days).

[2] TPM = Trusted Platform Module

Note:

As with the existing 4:3 IPC477C PRO devices, adaptation to different support arm/pedestal systems is by means of the basic adapter. The basic adapter is included in the scope of supply (except in the case of the "prepared for support arm and extension components" version, as the connection is made via a round tube).

For the version "prepared for support arm and extension components", installation can alternatively take place with the Siemens flange mount or with a standard 48 mm diameter round tube. The flange mount enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter. This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

Additional information is available on the Internet at:

http://www.siemens.com/ip65-hmi-devices

## System components for fully enclosed IP65 devices

### Overview

***System components for fully enclosed IP65 devices***

System components for PRO devices are only suitable for SIMATIC HMI/IPC PRO devices. In combination with the SIMATIC HMI PRO basic devices, these components enable easy adaptation to individual customer requirements for operation and monitoring at the machine level, as well as offering a versatile and attractive solution for visualization and automation without a control cabinet.

The following system components are available:

- Fasteners
  - Adapter sets
  - Basic adapters
  - Flange mount
- Extension Units and operator controls
- Extension components
  - Stainless steel keyboard
  - Tool and keyboard tray
  - USB port for PRO devices

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## Overview

### *Fixing elements*

Adapter sets, basic adapter, round tube adapter and round tube cap

The fixing elements are required for connecting the SIMATIC HMI PRO device with the support arm head of the respective support arm system.

Since the support arm head is connected directly to the device, there is complete flexibility in the choice of support arm components.

Adapter sets are available for the VESA 75 and VESA 100 systems.

Further adapter sets can be obtained directly from the respective support arm manufacturers:

- Bernstein
- Rittal
- Rose
- Haseke and
- Rolec

For the 4:3 and 16:9 variants, basic adapters are available according to design:

- The basic adapter is included in the scope of delivery of the device for 4:3 systems (dark gray)
- The basic adapter is included in the scope of delivery of the device for 16:9 systems (silver) (the basic adapter is included in the scope of delivery as a matter of principle. It is excluded only from the version "prepared for support arm and extension components", because connection is made via a round tube.)

For the version "prepared for support arm and extension components" of the 16:9 PRO devices, installation can alternatively take place with the Siemens round tube adapter or with a standard 48 mm diameter round tube.

The round tube adapter enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter. This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

## Technical specifications

| Article number | **6AV7674-1KA00-0AA0**<br>Basic Adapter for HMI/IPC Pro (16:9) |
|---|---|
| **General information** | |
| Product type designation | Basic adapter |
| **Other** | |
| Merchandise | Yes |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |

| Article number | **6AV7674-1KF00-0AA0**<br>Flange Mount for Pro Devices |
|---|---|
| **General information** | |
| Product type designation | Flange mount |
| **Installation type/mounting** | |
| Mounting | for the transition from a size 48 round tube to a flange plate (compatible with basic adapter interface) |
| **Degree and class of protection** | |
| IP65 (all-round) | Yes; IP65 when installed |
| **Mechanics/material** | |
| Material | Steel, powder coating in RAL 9006 |
| **Dimensions** | |
| Width | 76.3 mm; Width of flange plate, distance between holes 40 mm |
| Height | 168 mm; Round tube and flange plate |
| Depth | 80 mm; Depth of flange plate, distance between holes 63 mm |
| Enclosure diameter | 48.3 mm; Round tube in interface area |
| **Weights** | |
| Weight without packaging | 900 g |
| Weight incl. packaging | 1 kg |
| **Scope of supply** | |
| Delivery quantity in pieces | 1 |
| **Other** | |
| Target devices | Suitable for PRO devices, prepared for support arm and extension components (round tube connection) |
| **Usable in the following products** | |
| • Product 1 | 6AV7250-.G...-...8 |
| • Product 2 | 6AV7250-.G...-...0 |
| • Product 3 | 6AV7250-.K...-...0 |
| • Product 4 | 6AV7250-.K...-...8 |
| • Product 5 | 6AV7250-.D...-...0 |
| • Product 6 | 6AV7250-.D...-...8 |
| • Product 7 | 6AV7863-3MA16-0AA0 |
| • Product 8 | 6AV7863-4MA16-0AA0 |

| Article number | **6AV7674-0KA00-0AA0**<br>Basic Adapter for Fully enclosed HMI |
|---|---|
| **General information** | |
| Product type designation | Basic adapter |
| **Other** | |
| Merchandise | Yes |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |

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## Technical specifications (continued)

| Article number | **6AV7674-0KD00-0AA0**<br>Adapter Set VESA 100 Fully enclosed HMI | **6AV7674-0KE00-0AA0**<br>Adapter Set VESA 75 f. Fully Enclose HMI |
|---|---|---|
| **General information** | | |
| Product type designation | Adapter set VESA 100 | Adapter set VESA 75 |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes | Yes |
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | No | No |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C |
| **Ambient temperature during storage/transportation** | | |
| • min. | -20 °C | -20 °C |
| • max. | 70 °C | 70 °C |
| **Relative humidity** | | |
| • Operation, max. | 90 % | 90 % |
| • Condensation permissible | No | No |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1 | 1 |
| **Other** | | |
| Merchandise | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Not suitable for 19" 4:3 devices | Not suitable for 19" 4:3 devices |

| Article number | **6AV6881-0AD56-0AA0**<br>Flange mount adapter VESA 100/75 |
|---|---|
| **General information** | |
| Product type designation | VESA 100/75 flange adapter |
| **Installation type/mounting** | |
| Mounting | VESA 100 mm / 75 mm with M6 thread |
| Mounting type | Support arm with VESA 100 mm or 75 mm |
| **Degree and class of protection** | |
| IP (at the front) | IP20 (depending on mounting) |
| **Ambient conditions** | |
| Suited for indoor use | Yes |
| Suited for outdoor use | No |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 55 °C |
| **Relative humidity** | |
| • Operation, max. | 90 % |
| • Condensation permissible | No |
| **Mechanics/material** | |
| Material | steel |
| • Aluminum | No; Powder-coated |

| Article number | **6AV6881-0AD56-0AA0**<br>Flange mount adapter VESA 100/75 |
|---|---|
| **Dimensions** | |
| Width | 135 mm |
| Height | 120 mm |
| Depth | 67.5 mm |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; VESA round tube adapter 100/75 suitable for PRO devices, max. IP20 attainable |
| Components included | Without additional accessories |
| **Other** | |
| Merchandise | Yes; VESA 100/75 PRO adapter |
| Target devices | Not suitable for 19" 4:3 devices |
| Note: | Max. load 35 kg, for expandable support arm mounting |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **VESA 100 adapter set**[1] | **6AV7674-0KD00-0AA0** |
| **VESA 75 adapter set** | **6AV7674-0KE00-0AA0** |
| **Basic adapter for 16:9 systems**<br>Spare part (silver, included in the scope of delivery of the device) | **6AV7674-1KA00-0AA0** |
| **Round tube adapter for 16:9 systems**<br>Suitable for 16:9 PRO devices of the type "prepared for support arm and extension components (round tube connection)" | **6AV7674-1KF00-0AA0** |
| **VESA 100/75 round tube adapter**<br>For SIMATIC PRO devices. Can be mounted with a 100 mm (M6) or 75 mm (M6) VESA. IP20 cable entry directly in the round tube adapter. Suitable for all common support arm systems with corresponding VESA coupling, load capacity and hole spacing. More information is available in the technical specifications. | **6AV6881-0AD56-0AA0** |

[1] The VESA 100 adapter set cannot be used in combination with the 19" Flat Panel PRO.

Note:

The 48 mm internal diameter of the support arm tubes is not suitable for feeding through the standard DVI-D cable.

Scope of delivery:

- One adapter set or basic adapter, round tube adapter
- Fittings for mounting

## More information

Additional information is available on the Internet at:

http://www.siemens.com/ip65-hmi-devices

Note:

Do you require a specific modification to or option for the products described here? Under "Customized products" you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

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## Overview

### *Extension Units*

Extension Units 12" to 22" for SIMATIC HMI PRO devices are an integral part of the system components for fully enclosed IP65 devices. They enable the expansion of the operating options on site by the installation of various operator controls. Communication can take place via PROFINET, PROFIsafe or conventional wiring.

### *SIMATIC Extension Unit (BTO & Advanced)*

With Customized Automation, Extension Units are built to specific customer requirements and given their own customer MLFB. BTO (built to order).

Extension Units for 16:9 PRO devices

Equipping an Extension Unit with operator controls

Equipping an Extension Unit Advanced (example 22" KP48)

Extension Units for the 16:9 PRO devices are suitable for the flexible installation of various operator controls that extend the operating options on site easily and on an individual basis. They are coordinated with the design of the 16:9 PRO devices and can easily be mounted below the device by the customers themselves.

Additionally, the Extension Unit box is available for the flexible installation of lower operator controls.

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## Technical specifications

| Article number | **6AV7674-1LA31-0AA0**<br>Extension Unit 12" hardwired | **6AV7674-1LA41-0AA0**<br>Extension Unit 15" hardwired | **6AV7674-1LA51-0AA0**<br>Extension Unit 19" hardwired | **6AV7674-1LA61-0AA0**<br>Extension Unit 22" hardwired |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" Hardwired | Extension Unit 15" hardwired | Extension Unit 19" hardwired | Extension Unit 22" hardwired |
| **Connection type** | | | | |
| • Connection type of the LED module | 12-pin connector | 12-pin connector | 12-pin connector | 12-pin connector |
| • Connection type of the contacts of the control elements | 16-pin connector | 16-pin connector | 16-pin connector | 16-pin connector |
| • Connection type of the safety-related contacts (emergency stop) | 8-pin connector | 8-pin connector | 8-pin connector | 8-pin connector |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 6 | 8 | 10; Max. 8 control elements + 1 emergency stop button can be mounted (refer to manual) | |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 10 mA; without load | 10 mA; without load | 10 mA; without load | 10 mA; without load |
| **Power** | | | | |
| Active power input, typ. | 0.1 W | 0.1 W | 0.1 W | 0.1 W |
| Emitted active power | 5 W | 5 W | 5 W; Max. with lamp load | 5 W; Max. with lamp load |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| NEMA (front) | | | | |
| • Enclosure Type 4 at the front | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | | | |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Cables** | | | | |
| Cable length | 30 m | 30 m | 30 m | 30 m |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | | | |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | | | |
| Thickness | | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | all connectors required for customer interfaces | | | |

## Technical specifications (continued)

| Article number | **6AV7674-1LA32-0AA0**<br>Extension Unit 12" PROFINET | **6AV7674-1LA42-0AA0**<br>Extension Unit 15" PROFINET | **6AV7674-1LA52-0AA0**<br>Extension Unit 19" PROFINET | **6AV7674-1LA62-0AA0**<br>Extension Unit 22" PROFINET |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" PROFINET | Extension Unit 15" PROFINET | Extension Unit 19" PROFINET | Extension Unit 22" PROFINET |
| **Control elements** | | | | |
| With parameterizable keys | Yes | Yes | Yes | Yes |
| **Connection type** | | | | |
| • Connection type of the safety-related contacts (emergency stop) | 8-pin connector | 8-pin connector | 8-pin connector | 8-pin connector |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 6 | 8 | 10 | 12 |
| RFID reader can be installed | | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 150 mA; without load | 150 mA; without load | 150 mA; without load | 150 mA; without load |
| **Power** | | | | |
| Active power input, typ. | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |
| **Protocols** | | | | |
| PROFINET | Yes | Yes | Yes | Yes |
| **Redundancy mode** | | | | |
| **Media redundancy** | | | | |
| - MRP | Yes | Yes | Yes | Yes |
| **Test commissioning functions** | | | | |
| Key and signal lamp test | Yes; automatically when switching on | Yes; automatically when switching on | Yes; automatically when switching on | Yes; automatically when switching on |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| NEMA (front) | | | | |
| • Enclosure Type 4x at the front | Yes; All-round | Yes; All-round | Yes; All-round | Yes; All-round |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop |

## Technical specifications (continued)

| Article number | **6AV7674-1LA32-0AA0**<br>Extension Unit 12" PROFINET | **6AV7674-1LA42-0AA0**<br>Extension Unit 15" PROFINET | **6AV7674-1LA52-0AA0**<br>Extension Unit 19" PROFINET | **6AV7674-1LA62-0AA0**<br>Extension Unit 22" PROFINET |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Cables** | | | | |
| Cable length | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs |

| Article number | **6AV7674-1LA33-0AA0**<br>Extension Unit 12" PROFISAFE | **6AV7674-1LA43-0AA0**<br>Extension Unit 15" PROFISAFE | **6AV7674-1LA53-0AA0**<br>Extension Unit 19" PROFISAFE | **6AV7674-1LA63-0AA0**<br>Extension Unit 22" PROFISAFE |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" PROFIsafe | Extension Unit 15" PROFIsafe | Extension Unit 19" PROFIsafe | Extension Unit 22" PROFIsafe |
| **Control elements** | | | | |
| With parameterizable keys | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 6 | 8 | 10 | 12 |
| RFID reader can be installed | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 150 mA; without load | 150 mA; without load | 150 mA; without load | 150 mA; without load |

## **Technical specifications** (continued)

| Article number | **6AV7674-1LA33-0AA0**<br>Extension Unit 12" PROFISAFE | **6AV7674-1LA43-0AA0**<br>Extension Unit 15" PROFISAFE | **6AV7674-1LA53-0AA0**<br>Extension Unit 19" PROFISAFE | **6AV7674-1LA63-0AA0**<br>Extension Unit 22" PROFISAFE |
|---|---|---|---|---|
| **Power** | | | | |
| Active power input, typ. | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED | 3 W; Additionally 0.1 W per control element with LED |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |
| **Protocols** | | | | |
| PROFIsafe | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor |
| **Redundancy mode** | | | | |
| **Media redundancy** | | | | |
| - MRP | Yes | Yes | | |
| **Test commissioning functions** | | | | |
| Key and signal lamp test | Yes; automatically when switching on | Yes; automatically when switching on | Yes; automatically when switching on | Yes; automatically when switching on |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| NEMA (front) | | | | |
| • Enclosure Type 4x at the front | Yes; All-round | Yes; All-round | Yes; All-round | Yes; All-round |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop |

## Technical specifications (continued)

| Article number | **6AV7674-1LA33-0AA0**<br>Extension Unit 12" PROFISAFE | **6AV7674-1LA43-0AA0**<br>Extension Unit 15" PROFISAFE | **6AV7674-1LA53-0AA0**<br>Extension Unit 19" PROFISAFE | **6AV7674-1LA63-0AA0**<br>Extension Unit 22" PROFISAFE |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | Power supply connector | Power supply connector | Power supply connector | Power supply connector |

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## **Technical specifications** (continued)

| Article number | **6AV2185-8CE01-0AA0**<br>Extension Unit 12" KP12 PN | **6AV2185-8DE01-0AA0**<br>Extension Unit 15" KP12 PN | **6AV2185-8EE01-0AA0**<br>Extension Unit 19" KP12 PN | **6AV2185-8FE01-0AA0**<br>Extension Unit 22" KP12 PN |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" KP12 PN | Extension Unit 15" KP12 PN | Extension Unit 19" KP12 PN | Extension Unit 22" KP12 PN |
| **Control elements** | | | | |
| Version of actuating element | 1x Key Panel 12 | 1x Key Panel 12 | 1x Key Panel 12 | 1x Key Panel 12 |
| Operating principle of the actuating element | Tactile feedback | Tactile feedback | Tactile feedback | Tactile feedback |
| Functional lighting | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow |
| With parameterizable keys | Yes | Yes | Yes | Yes |
| **Connection type** | | | | |
| • Connection type of the safety-related contacts (emergency stop) | 8-pin connector | 8-pin connector | 8-pin connector | 8-pin connector |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 3 | 5 | 6 | 8 |
| RFID reader can be installed | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 150 mA; without load | 150 mA; without load | 150 mA; without load | 150 mA; without load |
| **Power** | | | | |
| Active power input, typ. | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |
| **Protocols** | | | | |
| PROFINET | Yes | Yes | Yes | Yes |
| **Redundancy mode** | | | | |
| **Media redundancy** | | | | |
| - MRP | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes; EAC | Yes; EAC | Yes; EAC | Yes; EAC |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop |

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## **Technical specifications** (continued)

| Article number | **6AV2185-8CE01-0AA0**<br>Extension Unit 12" KP12 PN | **6AV2185-8DE01-0AA0**<br>Extension Unit 15" KP12 PN | **6AV2185-8EE01-0AA0**<br>Extension Unit 19" KP12 PN | **6AV2185-8FE01-0AA0**<br>Extension Unit 22" KP12 PN |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Cables** | | | | |
| Cable length | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs |

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## Technical specifications (continued)

| Article number | **6AV2185-8CE08-0AA0**<br>Extension Unit 12" KP24 PN | **6AV2185-8DE08-0AA0**<br>Extension Unit 15" KP36 PN | **6AV2185-8EE08-0AA0**<br>Extension Unit 19" KP36 PN | **6AV2185-8FE08-0AA0**<br>Extension Unit 22" KP48 PN |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" KP24 PN | Extension Unit 15" KP36 PN | Extension Unit 19" KP36 PN | Extension Unit 22" KP48 PN |
| **Control elements** | | | | |
| Version of actuating element | 2x Key Panel 12 | 3x Key Panel 12 | 3x Key Panel 12 | 4x Key Panel 12 |
| Operating principle of the actuating element | Tactile feedback | Tactile feedback | Tactile feedback | Tactile feedback |
| Functional lighting | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow |
| With parameterizable keys | Yes | Yes | Yes | Yes |
| **Connection type** | | | | |
| • Connection type of the safety-related contacts (emergency stop) | 8-pin connector | 8-pin connector | 8-pin connector | 8-pin connector |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 0 | 0 | 0 | 0 |
| RFID reader can be installed | No | No | No | No |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 150 mA; without load | 150 mA; without load | 150 mA; without load | 150 mA; without load |
| **Power** | | | | |
| Active power input, typ. | 3.6 W; Additional 2.6 W per KP12 | 3.6 W; Additional 2.6 W per KP12 | 3.6 W; Additional 2.6 W per KP12 | 3.6 W; Additional 2.6 W per KP12 |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |
| **Protocols** | | | | |
| PROFINET | Yes | Yes | Yes | Yes |
| **Redundancy mode** | | | | |
| **Media redundancy** | | | | |
| - MRP | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| CSA approval | | | Yes | |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes; EAC | Yes; EAC | Yes; EAC | Yes; EAC |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop |

## Technical specifications (continued)

| Article number | **6AV2185-8CE08-0AA0** | **6AV2185-8DE08-0AA0** | **6AV2185-8EE08-0AA0** | **6AV2185-8FE08-0AA0** |
|---|---|---|---|---|
| | Extension Unit 12" KP24 PN | Extension Unit 15" KP36 PN | Extension Unit 19" KP36 PN | Extension Unit 22" KP48 PN |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Cables** | | | | |
| Cable length | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop | 30 m; Max. for emergency stop |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs | Power supply connectors and 8-pole plug-in connectors for safety-related inputs |

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## **Technical specifications** (continued)

| Article number | **6AV2185-8CF01-0AA0**<br>Extension Unit 12" KP12F PN | **6AV2185-8DF01-0AA0**<br>Extension Unit 15" KP12F PN | **6AV2185-8EF01-0AA0**<br>Extension Unit 19" KP12F PN | **6AV2185-8FF01-0AA0**<br>Extension Unit 22" KP12F PN |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Extension Unit 12" KP12F PN | Extension Unit 15" KP12F PN | Extension Unit 19" KP12F PN | Extension Unit 22" KP12F PN |
| **Control elements** | | | | |
| Version of actuating element | 1x Key Panel 12 | 1x Key Panel 12 | 1x Key Panel 12 | 1x Key Panel 12 |
| Operating principle of the actuating element | Tactile feedback | Tactile feedback | Tactile feedback | Tactile feedback |
| Functional lighting | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow | Yes; Freely configurable colors: Red, green, blue, white, yellow |
| With parameterizable keys | Yes | Yes | Yes | Yes |
| **Installation type/mounting** | | | | |
| Mounting | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) | For mounting on a 16:9 HMI / IPC PRO device (lower part) |
| Mounting type | Screwed joint | Screwed joint | Screwed joint | Screwed joint |
| Rack mounting | No | No | No | No |
| Front mounting | No | No | No | No |
| Number of slots for command devices and signaling units | 3 | 5 | 6 | 8 |
| RFID reader can be installed | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R | Yes; SIMATIC RF200 Access Control Reader RF1060R |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| permissible range, lower limit (DC) | 19.2 V | 19.2 V | 19.2 V | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V | 28.8 V | 28.8 V | 28.8 V |
| **Input current** | | | | |
| Current consumption (rated value) | 150 mA; without load | 150 mA; without load | 150 mA; without load | 150 mA; without load |
| **Power** | | | | |
| Active power input, typ. | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 | 3.6 W; Additional 0.1 W per operator control with LED or 0.5 W per RGB illuminated pushbutton or 2.6 W per KP12 |
| **Interfaces** | | | | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch | 2; Incl. switch |
| **Protocols** | | | | |
| PROFIsafe | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor | Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor |
| **Redundancy mode** | | | | |
| **Media redundancy** | | | | |
| - MRP | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | |
| IP65 (all-round) | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| UL approval | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes |
| KC approval | Yes | Yes | Yes | Yes |
| EAC (formerly Gost-R) | Yes; EAC | Yes; EAC | Yes; EAC | Yes; EAC |
| Suitable for safety functions | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop | Yes; e.g. installation of emergency stop |

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## **Technical specifications** (continued)

| Article number | **6AV2185-8CF01-0AA0**<br>Extension Unit 12" KP12F PN | **6AV2185-8DF01-0AA0**<br>Extension Unit 15" KP12F PN | **6AV2185-8EF01-0AA0**<br>Extension Unit 19" KP12F PN | **6AV2185-8FF01-0AA0**<br>Extension Unit 22" KP12F PN |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m | 2 000 m | 2 000 m |
| **Relative humidity** | | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Aluminum | Yes | Yes | Yes | Yes |
| Enclosure material (front) | | | | |
| • Aluminum | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film | Yes; Knockout covered with black film |
| **Dimensions** | | | | |
| Width | 313 mm | 396 mm | 462 mm | 527 mm |
| Height | 99 mm | 99 mm | 99 mm | 99 mm |
| Depth | 100.65 mm | 100.65 mm | 100.65 mm | 100.65 mm |
| **Weights** | | | | |
| Weight without packaging | 2.2 kg | 2.5 kg | 2.7 kg | 2.8 kg |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| Components included | Power supply connector | Power supply connector | Power supply connector | Power supply connector |

| Article number | **6AV7674-1MA00-0AA0**<br>E-Stop Pushbutton for Ext. Unit | **6AV7674-1MB00-0AA0**<br>Illuminated Pushbutton for Ext. Unit | **6AV7674-1MG00-0AA0**<br>Illum. pushbutton for ext.unit (1NO+1NC) | **6AV7674-1MC00-0AA0**<br>Indicator Light for Ext. Unit | **6AV7674-1MD00-0AA0**<br>Selector Switch for Ext. Unit | **6AV7674-1ME00-0AA0**<br>Key-operated Switch for Ext. Unit | **6AV7674-1MF00-0AA0**<br>USB interface for extension unit |
|---|---|---|---|---|---|---|---|
| **General information** | | | | | | | |
| Product type designation | EMERGENCY STOP mushroom pushbutton for Extension Unit | Illuminated pushbutton for Extension Unit | Illuminated pushbutton for Extension Unit (1 NC contact / 1 NO contact) | Indicator light for Extension Unit | Selector switch for Extension Unit | Key-operated switch for Extension Unit | USB interface for Extension Unit |
| **Control elements** | | | | | | | |
| Version of actuating element | Conical mushroom pushbutton | Pushbutton with flat button | Pushbutton with flat button | Flat lens | Rotary handle, 3 switch positions | 3 switch positions (withdrawal positions) | |
| Operating principle of the actuating element | Latching, rotate to unlatch | Momentary contact | Momentary contact | | Latching | Latching | |
| Shape of actuating element | Round | Round | Round | Round | Round | Round | |
| Illuminant | No; Cannot be illuminated | Yes; Can be illuminated | Yes; Can be illuminated | Yes; Can be illuminated | Yes; Can be illuminated | No; Cannot be illuminated | |
| • Type of light source | | | | SMT LED | SMT LED | | |
| • Color of light source | | Translucent white (different colors are created using the colored disk supplied) | Translucent white (different colors are created using the colored disk supplied) | Translucent white (different colors are created using the colored disk supplied) | Translucent white | | |
| Contact configuration | 2 NC contacts | 1 NO contact | 1 NC contact, 1 NO contact | | 2 NO contacts | 2 NO contacts | |
| **Connection type** | | | | | | | |
| • USB | | | | | | | Yes; USB 2.0 type A |
| • Cable length | | | | | | | 0.7 m |

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## **Technical specifications** (continued)

| Article number | **6AV7674-1MA00-0AA0**<br>E-Stop Pushbutton for Ext. Unit | **6AV7674-1MB00-0AA0**<br>Illuminated Pushbutton for Ext. Unit | **6AV7674-1MG00-0AA0**<br>Illum. pushbutton for ext.unit (1NO+1NC) | **6AV7674-1MC00-0AA0**<br>Indicator Light for Ext. Unit | **6AV7674-1MD00-0AA0**<br>Selector Switch for Ext. Unit | **6AV7674-1ME00-0AA0**<br>Key-operated Switch for Ext. Unit | **6AV7674-1MF00-0AA0**<br>USB interface for extension unit |
|---|---|---|---|---|---|---|---|
| **Installation type/mounting** | | | | | | | |
| Mounting type | Threaded ring | Threaded ring | Threaded ring | Threaded ring | Threaded ring | Threaded ring | Threaded ring |
| Front mounting | Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices | | | | | | |
| **Supply voltage** | | | | | | | |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V | 24 V | |
| **Input current** | | | | | | | |
| Current consumption (rated value) | 100 mA | 100 mA | 100 mA | 100 mA | 100 mA | 100 mA | |
| **EMC** | | | | | | | |
| **Emission of radio interference acc. to EN 55 011** | | | | | | | |
| • Limit class A, for use in industrial areas | No | No | No | No | No | No | Yes |
| **Degree and class of protection** | | | | | | | |
| IP65 (all-round) | | | | | | | Yes; IP65 fully enclosed (when protective cover is closed) |
| IP (at the front) | IP65 (on front) to EN60529 and NEMA4 | IP65 (on front) to EN60529 and NEMA4 | IP65 (on front) to EN60529 and NEMA4 | IP65 (on front) to EN60529 and NEMA4 | IP65 (on front) to EN60529 and NEMA4 | IP65 (on front) to EN60529 and NEMA4 | IP20 when protective cover is open |
| **Standards, approvals, certificates** | | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| UL approval | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes |
| cULus | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes |
| RCM (formerly C-TICK) | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes; Only in combination with Extension Unit | Yes |
| KC approval | | | | | | | Yes |
| EAC (formerly Gost-R) | | | | | | | Yes |
| Suitable for safety functions | Yes; TÜV IEC 60947-5-x | No | No | No | No | No | |
| **Ambient conditions** | | | | | | | |
| **Ambient temperature during operation** | | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Ambient temperature during storage/transportation** | | | | | | | |
| • min. | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C | -20 °C |
| • max. | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C |
| **Altitude during operation relating to sea level** | | | | | | | |
| • Installation altitude above sea level, max. | 3 500 m | 3 500 m | 3 500 m | 3 500 m | 3 500 m | 3 500 m | 3 500 m |
| **Relative humidity** | | | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % | 90 % | 90 % |
| • Condensation permissible | No | No | No | No | No | No | No |
| **Runs under operating system** | | | | | | | |
| • other | | | | | | | Yes; Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit |
| **Cables** | | | | | | | |
| Cable length | | | | | | | 0.5 m |
| smallest bending radius | | | | | | | 0 mm |

## **Technical specifications** (continued)

| Article number | **6AV7674-1MA00-0AA0**<br>E-Stop Pushbutton for Ext. Unit | **6AV7674-1MB00-0AA0**<br>Illuminated Pushbutton for Ext. Unit | **6AV7674-1MG00-0AA0**<br>Illum. pushbutton for ext.unit (1NO+1NC) | **6AV7674-1MC00-0AA0**<br>Indicator Light for Ext. Unit | **6AV7674-1MD00-0AA0**<br>Selector Switch for Ext. Unit | **6AV7674-1ME00-0AA0**<br>Key-operated Switch for Ext. Unit | **6AV7674-1MF00-0AA0**<br>USB interface for extension unit |
|---|---|---|---|---|---|---|---|
| **Mechanics/material** | | | | | | | |
| Material | | | | | | | aluminum |
| • Plastic | Yes | Yes | Yes | Yes | Yes | Yes | |
| Material of the actuating element | plastic | plastic | plastic | plastic | plastic | plastic | |
| Material of the front ring | plastic | plastic | plastic | plastic | plastic | plastic | |
| Enclosure color (front) | | Colorless | Colorless | Colorless | gray | gray | Silver-metallic |
| Color of the front ring | Yellow | Silver-metallic | Silver-metallic | Silver-metallic | Silver-metallic | Silver-metallic | |
| **Service life** | | | | | | | |
| • Number of operating cycles, keys | 50 000 | 1 000 000 | 1 000 000 | | 300 000 | 50 000 | 1 500; Insertion cycles |
| **Dimensions** | | | | | | | |
| Height of housing front | 33.2 mm | 9.85 mm | 9.85 mm | 9.85 mm | 22.24 mm | 45.1 mm | |
| Overall depth | | | | | | | 10 mm |
| Mounting diameter | 22.3 mm | 22.3 mm | 22.3 mm | 22.3 mm | 22.3 mm | 22.3 mm | 22.3 mm |
| **Weights** | | | | | | | |
| Weight without packaging | 50 g | 50 g | 50 g | 50 g | 50 g | 50 g | 0.13 g |
| Weight incl. packaging | 100 g | 100 g | 100 g | 100 g | 100 g | 100 g | 0.14 g |
| **Scope of supply** | | | | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 | 1 | 1; Including 2 keys | |
| Components included | | | | | | | USB socket with cable and connector, threaded ring |
| • Number of colored lenses | | 5; colorless, red, yellow, green, blue | 5; colorless, red, yellow, green, blue | 5; colorless, red, yellow, green, blue | | | |
| **Other** | | | | | | | |
| Target devices | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) | Suitable for Extension Units of the 16:9 HMI/ IPC PRO devices (refer to manual) |
| **Usable in the following products** | | | | | | | |
| • Product 1 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA31-0AA0 | 6AV7674-1LA41-0AA0 |
| • Product 2 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA41-0AA0 | 6AV7674-1LA51-0AA0 |
| • Product 3 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA51-0AA0 | 6AV7674-1LA61-0AA0 |
| • Product 4 | 6AV7674-1LA61-0AA0 | 6AV7674-1LA61-0AA0 | 6AV7674-1LA61-0AA0 | 6AV7674-1LA61-0AA0 | 6AV7674-1LA61-0AA0 | 6AV7674-1LA61-0AA0 | |
| • Product 5 | 6AV7674-1LA32-0AA0 | 6AV7674-1LA32-0AA0 | 6AV7674-1LA32-0AA0 | 6AV7674-1LA32-0AA0 | 6AV7674-1LA32-0AA0 | 6AV7674-1LA32-0AA0 | |
| • Product 6 | 6AV7674-1LA42-0AA0 | 6AV7674-1LA42-0AA0 | 6AV7674-1LA42-0AA0 | 6AV7674-1LA42-0AA0 | 6AV7674-1LA42-0AA0 | 6AV7674-1LA42-0AA0 | |
| • Product 7 | 6AV7674-1LA52-0AA0 | 6AV7674-1LA52-0AA0 | 6AV7674-1LA52-0AA0 | 6AV7674-1LA52-0AA0 | 6AV7674-1LA52-0AA0 | 6AV7674-1LA52-0AA0 | |
| • Product 8 | 6AV7674-1LA62-0AA0 | 6AV7674-1LA62-0AA0 | 6AV7674-1LA62-0AA0 | 6AV7674-1LA62-0AA0 | 6AV7674-1LA62-0AA0 | 6AV7674-1LA62-0AA0 | |
| • Product 9 | | 6AV7674-1LA33-0AA0 | 6AV7674-1LA33-0AA0 | 6AV7674-1LA33-0AA0 | | | |
| • Product 10 | | 6AV7674-1LA43-0AA0 | 6AV7674-1LA43-0AA0 | 6AV7674-1LA43-0AA0 | | | |
| • Product 11 | | 6AV7674-1LA53-0AA0 | 6AV7674-1LA53-0AA0 | 6AV7674-1LA53-0AA0 | | | |
| • Product 12 | | 6AV7674-1LA63-0AA0 | 6AV7674-1LA63-0AA0 | 6AV7674-1LA63-0AA0 | | | |

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## Ordering data

| | Article No. |
|---|---|
| Extension Units for 16:9 PRO devices | |
| **Extension Unit Hardwired** | |
| • 12" | **6AV7674-1LA31-0AA0** |
| • 15" | **6AV7674-1LA41-0AA0** |
| • 19" | **6AV7674-1LA51-0AA0** |
| • 22" | **6AV7674-1LA61-0AA0** |
| **Extension Unit PROFINET** | |
| • 12" | **6AV7674-1LA32-0AA0** |
| • 15" | **6AV7674-1LA42-0AA0** |
| • 19" | **6AV7674-1LA52-0AA0** |
| • 22" | **6AV7674-1LA62-0AA0** |
| **Extension Unit PROFIsafe** | |
| • 12" | **6AV7674-1LA33-0AA0** |
| • 15" | **6AV7674-1LA43-0AA0** |
| • 19" | **6AV7674-1LA53-0AA0** |
| • 22" | **6AV7674-1LA63-0AA0** |
| **Extension Unit box** | |
| • 12" | **6AV7674-1LA30-0AA0** |
| • 15" | **6AV7674-1LA40-0AA0** |
| • 19" | **6AV7674-1LA50-0AA0** |
| • 22" | **6AV7674-1LA60-0AA0** |
| **Extension Unit Advanced PROFINET** [1] | |
| • 12" KP12 PN | **6AV2185-8CE01-0AA0** |
| • 15" KP12 PN | **6AV2185-8DE01-0AA0** |
| • 19" KP12 PN | **6AV2185-8EE01-0AA0** |
| • 22" KP12 PN | **6AV2185-8FE01-0AA0** |
| • 12" KP24 PN | **6AV2185-8CE08-0AA0** |
| • 15" KP36 PN | **6AV2185-8DE08-0AA0** |
| • 19" KP36 PN | **6AV2185-8EE08-0AA0** |
| • 22" KP48 PN | **6AV2185-8FE08-0AA0** |
| **Extension Unit Advanced PROFIsafe** [1] | |
| • 12" KP12F PN | **6AV2185-8CF01-0AA0** |
| • 15" KP12F PN | **6AV2185-8DF01-0AA0** |
| • 19" KP12F PN | **6AV2185-8EF01-0AA0** |
| • 22" KP12F PN | **6AV2185-8FF01-0AA0** |

[1] Max. two Extension Units possible as extension

| | Article No. |
|---|---|
| Operator controls | |
| **Emergency stop button** | **6AV7674-1MA00-0AA0** |
| **Illuminated pushbutton** | |
| • One NO contact | **6AV7674-1MB00-0AA0** |
| • One NO contact and one NC contact | **6AV7674-1MG00-0AA0** |
| **Indicator light** | **6AV7674-1MC00-0AA0** |
| **Selector switch** | **6AV7674-1MD00-0AA0** |
| **Key-operated switch** | **6AV7674-1ME00-0AA0** |
| Accessories | |
| **USB port for front mounting in Extension Unit**<br>USB 2.0 type A, IP65 degree of protection with closed protective cover, cable and plug | **6AV7674-1MF00-0AA0** |
| **Insert labels for self-inscription** | **6AV7674-1LB30-0AA0** |
| **Label holders for self-inscription** | **6AV7674-1LB20-0AA0** |

### Scope of delivery

Extension Units Hardwired:

- 1 Extension Unit
- 1 plug connector, 16-pin, for interface X12
- 1 plug connector, 12-pin, for interface X11
- 1 plug connector, 8-pin, for interface X10
- 1 power supply terminal for 24 V DC
- 4 bolts M4x20 for mounting the Extension Unit on the SIMATIC PRO device

PROFINET Extension Units:

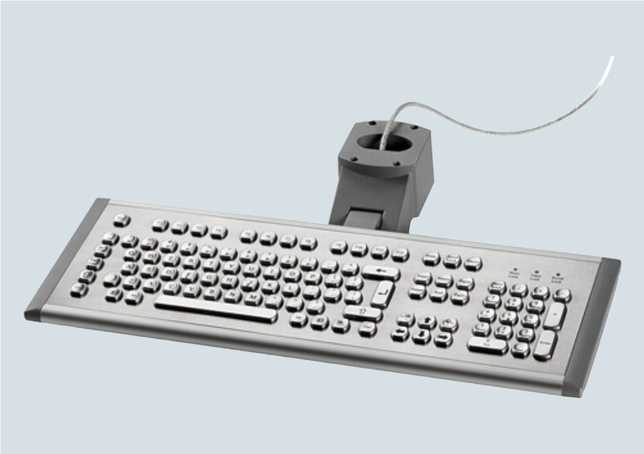
- 1 Extension Unit
- 1 plug connector, 8-pin, for interface X10
- 1 power supply connector for 24 V DC
- 4 bolts M4x20 for mounting the Extension Unit on the SIMATIC PRO device

Additional information is available on the Internet at:

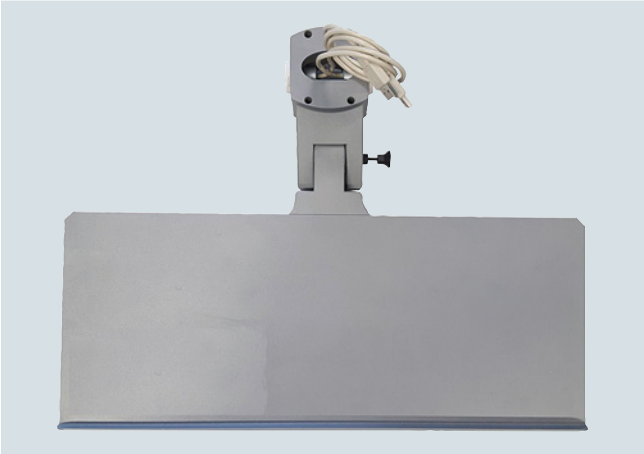
https://www.siemens.com/simatic-hmi-pro

## Overview

### *Stainless steel keyboard and keyboard shelf*



HMI accessories, metal keyboard



HMI accessories, metal keyboard

### *Extension components*

The extension components are part of the system components for PRO devices and complement the portfolio of devices with all-round protection. These components in combination with the basic devices enable customers to implement a large variety of operating scenarios.

The following products are available as extension components:

- Keyboard shelf for PRO devices
- Keyboard tray for PRO devices
- USB keyboard INT, KV25605 INOX with IP67 USB plug
- USB keyboard GER, KV25605 INOX with IP67 USB plug

## Technical specifications

| Article number | **6AV7674-1LX00-0AA0**<br>USB Interface for Pro Devices |
|---|---|
| **General information** | |
| Product type designation | USB interface for PRO devices |
| **Connection type** | |
| • USB | Yes; USB 2.0 type A |
| • Cable length | 0.5 m |
| **Installation type/mounting** | |
| Mounting | Integrated by means of cover on the side of the basic adapter. |
| **EMC** | |
| **Emission of radio interference acc. to EN 55 011** | |
| • Limit class A, for use in industrial areas | Yes |
| **Degree and class of protection** | |
| IP65 (all-round) | Yes; IP65 fully enclosed (when protective cover is closed) |
| IP (at the front) | IP20 when protective cover is open |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 50 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Altitude during operation relating to sea level** | |
| • Installation altitude above sea level, max. | 3 500 m |
| **Relative humidity** | |
| • Operation, max. | 90 % |
| • Condensation permissible | No |
| **Cables** | |
| Cable length | 0.5 m |
| **Mechanics/material** | |
| Material | Brass, nickel-plated |
| Enclosure material (front) | USB cover: Anodized aluminum, cover for basic adapter: Aluminum, powder-coated, RAL 9006 |
| Enclosure color (front) | Silver-metallic |
| **Service life** | |
| • Number of operating cycles, keys | 1 500; Insertion cycles |
| **Dimensions** | |
| Enclosure diameter | 22.5 mm; Hole diameter in the cover for the basic adapter |
| Overall depth | 20 mm |
| **Weights** | |
| Weight without packaging | 0.25 kg |
| Weight incl. packaging | 0.53 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1 |
| Components included | USB socket with cable and connector, cover for the basic adapter, bolts for fastening |
| **Other** | |
| **Usable in the following products** | |
| • Product 1 | 6AV7674-1KA00-0AA0 |

| Ordering data | Article No. |
|---|---|
| **Keyboard shelf for PRO devices**<br>Tiltable, incl. 2-way USB port; color: silver | **6AV7674-1NF01-0AA0** |
| **Keyboard tray for PRO devices**<br>Tiltable, incl. 2-way USB port; color: silver | **6AV7674-1NG00-0AA0** |
| **USB port for PRO devices**<br>Cable and connector, USB 2.0 type A.<br>IP65 degree of protection if protective cover is closed.<br>Integrated via cover on the side of the basic adapter | **6AV7674-1LX00-0AA0** |
| **Handles for PRO devices**<br>For optimum handling and haptics when positioning and tilting the HMI PRO device. Universally adjustable from 12" to 22". | **6AV7674-1LB10-0AA0** |

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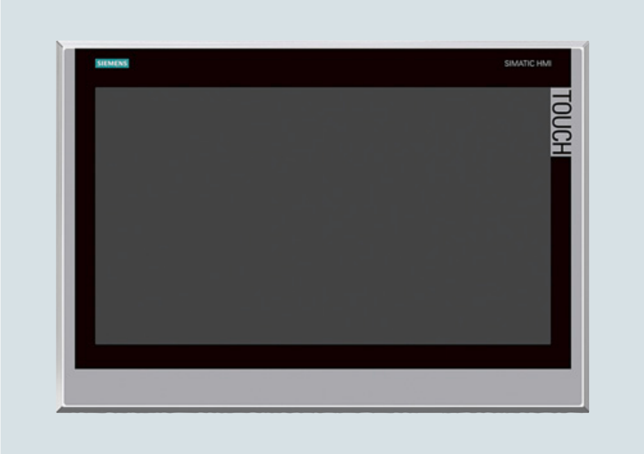
## Overview



### *SIMATIC ITC1900 INOX*

The Industrial Thin Client with touch screen and stainless steel front is designed for use in the food and beverage industry, the pharmaceuticals industry, fine chemicals and in other hygiene areas for machine-level operator control and monitoring.

For this reason, the devices with stainless steel front have been developed in compliance with EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

## Technical specifications

| Article number | **6AV6646-8AC10-0AA0**<br>SIMATIC ITC1900 INOX |
|---|---|
| **General information** | |
| Product type designation | ITC1900 INOX |
| **Display** | |
| Design of display | TFT widescreen display, LED backlighting |
| Screen diagonal | 18.5 in |
| Display width | 409.8 mm |
| Display height | 230.4 mm |
| Number of colors | 16 777 216 |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 1 366 Pixel |
| • Vertical image resolution | 768 Pixel |
| **Backlighting** | |
| • Type of backlighting | LED, dimmable |
| • Backlight dimmable | Yes; 5-100 % |
| **Touch operation** | |
| • Design as touch screen | Yes |
| • Monitor keyboard | Yes |
| **Installation type/mounting** | |
| Built-in unit | Yes |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| **Input current** | |
| Current consumption, max. | 1.3 A |
| Starting current inrush $I^2t$ | 0.5 $A^2 \cdot s$ |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1 |
| Number of USB interfaces | 2; on rear |
| Connection for keyboard/mouse | USB |
| **Industrial Ethernet** | |
| • Transmission rate, max. | 1 000 Mbit/s |
| **Protocols** | |
| **Protocols (Ethernet)** | |
| • TCP/IP | Yes |
| • DHCP | Yes |
| • SNMP | Yes |
| • DCP | Yes |
| • LLDP | Yes |
| **WEB characteristics** | |
| • HTTP | Yes |
| • HTML | Yes; HTML5 |
| • XML | Yes |
| • CSS | Yes |
| • JavaScript | Yes |
| **Protocols (terminal link)** | |
| • Sm@rtServer | Yes |
| • RDP | Yes |
| • VNC viewer | Yes |
| • Citrix | No |
| • SINUMERIK | Yes |
| **Degree and class of protection** | |
| IP (at the front) | IP66K |
| NEMA (front) | |
| • Enclosure Type 4x at the front | Yes; indoor use only |

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## Technical specifications (continued)

| Article number | **6AV6646-8AC10-0AA0**<br>SIMATIC ITC1900 INOX |
|---|---|
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes |
| • ATEX Zone 22 | Yes |
| • IECEx Zone 2 | Yes |
| • IECEx Zone 22 | Yes |
| • cULus Class I Zone 1 | No |
| • cULus Class I Zone 2, Division 2 | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 45 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Relative humidity** | |
| • Operation, max. | 70 % |
| **Software** | |
| Web browser | Yes |
| PDF reader | Yes |
| **Configuration** | |
| **Configuration** | |
| • Local | Yes |
| • Remote | Yes; With Remote Configuration Center (RCC) as of V2.0 |
| **Languages** | |
| **Online languages** | |
| • Number of online/runtime languages | 2; german / english |
| **Peripherals/Options** | |
| Printer | No |
| USB memory | Yes; USB storage medium can be connected |
| Additional software components loadable | No |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Aluminum | No |
| • Stainless steel | Yes |
| **Dimensions** | |
| Width of the housing front | 483 mm |
| Height of housing front | 337 mm |
| Mounting cutout, width | 465 mm |
| Mounting cutout, height | 319 mm |
| Overall depth | 73 mm |
| **Weights** | |
| Weight without packaging | 8.5 kg |
| Weight incl. packaging | 9.1 kg |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC ITC1900 INOX**<br>With accessory pack comprising:<br>• Clamping frame<br>• Device seal<br>• Tension jack<br>• Terminal<br>• Installation instructions | **6AV6646-8AC10-0AA0** |

The device seals can be replaced using the corresponding service packages from the accessories.

## More information

Customized modifications

- Customized design (logo, type designation and membrane color)
- Protection against condensation and corrosive gases

Quotation preparation

Customized automation specialists define the product modifications precisely in accordance with customer requirements.

The quotation is then prepared with:

- Non-recurring costs
- Prototype costs
- Serial device prices and
- The general conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be ordered easily using this product agreement and a customer-specific order number.

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## Overview

19" INOX PRO with pedestal, front view

### *SIMATIC IFP1900 INOX PRO*

Industrial Flat Panel in fully enclosed stainless steel housing with high degree of protection for machine-level operation and monitoring in the food and beverage, pharmaceutical and fine chemicals industries and in other areas where hygienic requirements are high.

The device has been developed on the basis of EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

With its fully enclosed design and optional expansion modules, the SIMATIC PRO devices are eminently suitable for industrial and machine-level use.

The INOX PRO devices with their stainless steel housing are compact and hygienically designed and feature integrated operating elements. They are also even better equipped to meet the high requirements presented by the food and beverage production environment. IP66K degree of protection protects against water, even with a jet strength of 100 l/min at 10 bar from a distance of 2.5 m to 3 m.

The optimized profile and minimal housing depth allow liquids to run off.

The high quality requirements in the food and beverages industry demand a high standard of the food processing machinery. There are many relevant regulations, directives, ordinances, standards and laws. Essential here is that all equipment and components are easy to clean and disinfect so that cross-contamination of foodstuffs can be avoided.

## Technical specifications

| **IFP1900 INOX PRO** | | |
|---|---|---|
| Special features | Pedestal mounting | Support arm mounting |
| **General features** | | |
| Display | 18.5" TFT widescreen display | |
| Resolution (pixels) | 1 366 x 768 | |
| MTBF of backlit display (at 25°C) | 50,000 h | |
| Power supply | 24 V DC | |
| **Equipment** | | |
| Touch | Analog-resistive touch (single touch) | |
| Control elements | 2 x illuminated pushbutton with LED (red, green), 1 x emergency off; permanently wired on terminals | |
| Option | External, USB interface on rear with captive stainless steel lock | |
| **Special features** | Flange adapter for pedestal | Flange adapter for support arm |
| **Configuration / interfaces** | | |
| | Based on SIMATIC IFP1900 (6AV7863-3MA20-0AA0) | |
| | 1 x DisplayPort interface | |
| | 1 x Ethernet interface (RJ45) up to 1 Mbit/s | |
| | 2 x USB interface<br>For connecting to an IPC427D with these system requirements:<br>• Configuration 1:1, without multi-monitor mode<br>• RAM min. 2 GB<br>• Operating systems Windows 7, WES7<br>• Ethernet with min. 100 Mbit/s | |
| **Enclosure** | | |
| Front | Stainless steel 1.4301, polyester-based membrane | |
| Material | Stainless steel 1.4301 | |
| Surface | Hairline finish, 240 grit abrasive grain | |
| Device seals | FPM, molded parts, replaceable | |
| Special features | Decorative display membrane; without USB port on front | |
| **Ambient conditions** | | |
| Degree of protection, complete | IP66K, enclosure type 4 and 4x (indoor use only) | |
| Ambient temperature during operation | 0 ... +45 °C | |
| Relative humidity during operation | Max. 95 %, no condensation | |
| Transport temperature / storage temperature / humidity | - 20°C … + 60°C / 10 % to 90 % without condensation | |
| Approvals and inspections | CE; hygiene testing according to EN 1672-2 | |
| Approvals (planned) | RCM (previously C-Tick)/KC/CUL | |
| Sector | Food & beverages, pharmaceuticals industry, cosmetics industry, fine chemicals, other hygiene areas | |
| **Dimensions** | | |
| External dimensions (W x H x D in mm) | 544 x 430.7 x 136 | 544 x 430.7 x 136 |
| Depth of enclosure only (without flange and operator controls) in mm | 80 | 80 |
| Weight, net | 15.5 kg | 15.5 kg |
| Special features | Flange adapter for pedestal | Flange adapter for support arm |
| The other specifications correspond to the basic unit (MLFB) | SIMATIC IFP1900 (6AV7863-3MA20-0AA0) | |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IFP1900 INOX PRO for pedestal mounting**<br>19"; with accessory pack comprising:<br>Documentation and driver CD, product information; terminals; Quickinstall Guide | **6AV7484-6AB00-0AA0** |
| **SIMATIC IFP1900 INOX PRO for support-arm mounting**<br>19"; with accessory pack comprising:<br>Documentation and driver CD, product information; terminals; Quickinstall Guide | **6AV7484-6AB10-0AA0** |
| **Accessories**<br>Mounting packages are provided as accessories for mounting the devices on the support system. The device seals can be replaced using the corresponding service packages from the accessories. | See "System components for devices with all-round IP65 protection" |

## More information

More information is available on the Internet at:

http://www.siemens.com/inox-pro-hmi-devices

Customized modifications

- Customized design (logo, type designation and membrane color)
- Other display sizes
- Changes to the operator controls
- Further certificates and approvals

Quotation preparation

Customized automation specialists define the product modifications precisely in accordance with customer requirements.

The quotation is then prepared with:

- Non-recurring costs
- Prototype costs
- Serial device prices and
- The general conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be ordered easily using this product agreement and a customer-specific order number.

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## Overview

SIMATIC Industrial Flat Panel IFP2200 INOX MT ETH

The Industrial Flat Panel (Ethernet monitor) with its projective-capacitive touch screen for multi-finger operation and stainless steel front is designed for use in the food and beverage, pharmaceutical, and fine chemicals industries as well as in other hygienic areas for machine level operator control and monitoring.

For this reason, these stainless steel front devices have been developed in compliance with EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

## Technical specifications

| Article number | **6AV7485-6BE00-0AA0**<br>SIMATIC FLAT PANEL 22" INOX MT ETH |
|---|---|
| **General information** | |
| Product type designation | IFP2200 INOX |
| Short designation | Flat Panel 22" INOX multi-touch Ethernet |
| **Display** | |
| Design of display | TFT widescreen display, LED backlighting |
| Screen diagonal | 21.5 in |
| Screen diagonal [cm] | 56 cm |
| Display width | 476 mm |
| Display height | 268 mm |
| On Screen Display (OSD) configuration | No; Adjustable by means of software |
| Number of colors | 16 777 216; 24 bit |
| Viewing angle | 170° x 170° |
| **Resolution (pixels)** | |
| • Horizontal image resolution | 1 920 Pixel |
| • Vertical image resolution | 1 080 Pixel |
| • Pixel size, horizontal | 0.2475 mm |
| • Pixel size, vertical | 0.2475 mm |
| **General features** | |
| • Brightness/contrast | 250 $cd/m^2$ / 1 000:1 |
| • Luminance | 250 $cd/m^2$ |
| **Backlighting** | |
| • Type of backlighting | LED |
| • MTBF backlighting (at 25 °C) | 50 000 h; At 25°C |
| • Backlight dimmable | Yes; 0-100 % |
| **Keyboard fonts** | |
| • Function keys | No |
| - Number of function keys | 0 |
| **Touch operation** | |
| • Design as touch screen | Yes; Projective-capacitive |
| • Design as multi-touch screen | Yes |
| • Monitor keyboard | Yes |
| **Installation type/mounting** | |
| Built-in unit | Yes; Portrait mode possible |
| maximum permitted forward tilt angle from vertical | 35° |
| maximum permitted backward tilt angle from vertical | 35° |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| **Power loss** | |
| Power loss, typ. | 40 W |
| Power loss, max. | 65 W |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 1; Ethernet, 1 port, RJ45 |
| USB on the rear | Yes; 2x onboard |
| **Video interfaces** | |
| • analog video signal (VGA) | No |
| • DisplayPort | Yes; DisplayPort V1.1 |
| **Touch interfaces** | |
| • USB | Yes |
| **Industrial Ethernet** | |
| • Transmission rate, max. | 1 000 Mbit/s |

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## Technical specifications (continued)

| Article number | **6AV7485-6BE00-0AA0**<br>SIMATIC FLAT PANEL 22" INOX MT ETH |
|---|---|
| **Degree and class of protection** | |
| IP (at the front) | IP6x/IPx6K/IPx9 |
| IP (rear) | IP20 |
| NEMA (front) | |
| • Enclosure Type 4x at the front | No; Available soon |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | No; Available soon |
| RCM (formerly C-TICK) | No; Available soon |
| KC approval | No |
| EAC (formerly Gost-R) | No |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | No; Available soon |
| • ATEX Zone 22 | No; Available soon |
| • FM Class I Division 2 | No; Available soon |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | No |
| • American Bureau of Shipping (ABS) | No |
| • Bureau Veritas (BV) | No |
| • Det Norske Veritas (DNV) | No |
| • Lloyds Register of Shipping (LRS) | No |
| • Nippon Kaiji Kyokai (Class NK) | No |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 45 °C; Vertical installation (horizontal) |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 60 °C |
| **Vibrations** | |
| • Vibration load in operation | 10 m/s² |
| • Vibration load during transport/ storage | 10 m/s² |
| **Shock testing** | |
| • Shock load during operation | 150 m/s² |
| • shock acceleration during storage/ transport | 150 m/s² |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Glass | Yes |
| **Dimensions** | |
| Width of the housing front | 544 mm |
| Height of housing front | 345 mm |
| Mounting cutout, width | 513 mm; Tolerance: +1 mm |
| Mounting cutout, height | 315 mm; Tolerance: +1 mm |
| Overall depth | 62.5 mm |
| **Weights** | |
| Weight without packaging | 8 kg |
| Weight incl. packaging | 9.1 kg |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC IFP2200 INOX MT ETH**<br>With accessory pack comprising:<br>• Clamping frame<br>• Device seal<br>• Mounting clamp<br>• Terminal<br>• Installation instructions | **6AV7485-6BE00-0AA0** |

The device seals can be replaced using the corresponding service packages from the accessories.

## More information

Customized modifications

- Neutral design (black, no logo, type designation)
- Protection against condensation and corrosive gases

Quotation preparation

Customized automation specialists define the product modifications precisely in accordance with customer requirements.

The quotation is then prepared with:

- Non-recurring costs
- Prototype costs
- Serial device prices
- General conditions in the form of a product agreement (e.g. minimum quantity)

The defined device can then be ordered easily using this product agreement and a customer-specific order number.

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## Overview

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SIMATIC HMI
PLANT OVERVIEW
STATUS
REPORTS
USER

Configured Nanopanel PC in fully enclosed stainless steel housing with high degree of protection for machine-level operation and monitoring in the food and beverage, pharmaceutical and fine chemicals industries and in other areas of hygiene.

The device has been developed on the basis of EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

With its fully enclosed design and optional expansion modules, the SIMATIC PRO devices are eminently suitable for industrial and machine-level use.

The INOX PRO devices feature stainless steel housing and a compact, hygienic design, and are equipped to meet the high requirements presented by the food and beverage production environment. IP66K degree of protection protects against water, even with a jet strength of 100 l/min at 10 bar from a distance of 2.5 m to 3 m.

The optimized profile and minimal housing depth allow liquids to run off.

The high quality requirements in the food and beverages industry demand a high standard of the food processing machinery. There are many relevant regulations, directives, ordinances, standards and laws. Essential here is that all equipment and components are easy to clean and disinfect.

The INOX PRO devices with stainless steel front have a 240 grit hairline finish, and are thus suitably smooth to allow micro-organisms to be sufficiently removed during cleaning. On the front, the membrane covering the display cutout is tested with regard to its resistance to chemicals, has minimal grooves and gaps in which micro-organisms could settle, and also provides shatter protection for the display. The rear covers have an innovative sealing design with replaceable compression seals. This prevents liquids from seeping through.

## Technical specifications

| | **IPC277E 19" INOX PRO** | |
|---|---|---|
| Special features | **Pedestal mounting** | **Support arm mounting** |
| **General features** | | |
| Display | 18.5" TFT widescreen display | |
| Resolution (pixels) | 1 366 x 768 | 1 366 x 768 |
| MTBF of backlit display (at 25°C) | 50 000 h | 50 000 h |
| Power supply | 24 V DC | 24 V DC |
| **Equipment** | | |
| Touch | Analog-resistive touch | |
| Option | External, USB interface on rear with captive stainless steel lock | |
| Special features | Flange adapter for pedestal | |
| **Configuration / interfaces** | | |
| | Based on SIMATIC IPC277E, configured (6AV7882-0EB30-2LA0) | |
| | Celeron N2930, 8 GB RAM 8 GB CFAST | |
| | WES 7 SP1 64-bit, English | |
| | Without RTX/HMI software | |
| | 2 x 10/100/1000 Mbps Ethernet RJ45 | |
| | 1 x USB 3.0, 2 x USB V2.0; without serial (COM1) | |
| | CFAST slot | |
| **Enclosure** | | |
| Front | Stainless steel 1.4301, polyester-based membrane | Stainless steel 1.4301, polyester-based membrane |
| Material | Stainless steel 1.4301 | Stainless steel 1.4301 |
| Surface | Hairline finish, 240 grit abrasive grain | Hairline finish, 240 grit abrasive grain |
| Device seals | FPM, molded parts, replaceable | FPM, molded parts, replaceable |
| Special features | Decorative display membrane; without USB port on front | Decorative display membrane; without USB port on front |
| **Ambient conditions** | | |
| Degree of protection, fully enclosed | IP66, enclosure type 4 and 4x (indoor use only) | |
| Ambient temperature during operation | 0 ... +45 °C | |
| Relative humidity during operation | Max. 95 %, no condensation | |
| Transport temperature / storage temperature / humidity | - 20°C … + 60°C / 10 % to 90 % without condensation | |
| Approvals and inspections | CE, UL, IECEx, ATEX Zone 2/22<br>Hygiene inspection on the basis of EN 1672-2 | |
| Approvals (planned) | RCM (previously C-Tick)/KC/CUL | |
| Sector | Food & beverages, pharmaceuticals industry, cosmetics industry, fine chemicals, other hygiene areas | |
| **Dimensions** | | |
| External dimensions (W x H x D in mm) | 544 x 430.7 x 136 | 544 x 430.7 x 136 |
| Depth of enclosure only (without flange and operator controls) in mm | 80 | 80 |
| Weight, net | 15.5 kg | 15.5 kg |
| Special features | Flange adapter for pedestal | Flange adapter for support arm |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC277E 19" INOX PRO for pedestal mounting**<br>Device with accessory pack. Accessory pack comprising: operating system license, product information, terminals in the accessory pack, Quickinstall Guide | **6AV7484-5AB00-0AA0** |
| **SIMATIC IPC277E 19" INOX PRO for support arm mounting**<br>Device with accessory pack. Accessory pack comprising: operating system license, product information, terminals in the accessory pack, Quickinstall Guide | **6AV7484-5AB10-0AA0** |
| **Accessories** | |
| **Assembly kit for pedestal mounting**<br>Assembly kit comprising tube, straight, 40 mm internal diameter, 500 mm long with welded flange, seal, screws and product information | **6AV7675-1GB00-0AA0** |
| **Assembly kit for support arm mounting**<br>Assembly kit comprising tube, straight, 40 mm internal diameter, 500 mm long with welded flange, adapter to support arm, 2 x flange seals for support arm, 8 x screws for flange, plus product information | **6AV7675-1GB10-0AA0** |
| **Service pack for devices with pedestal mounting**<br>Service pack comprising seal for SERVICE FLAP, seal for pedestal flange, screws, connecting terminals 24 V DC, I/O | **6AV7675-1JD20-0AA0** |
| **Service pack for devices with support arm mounting**<br>Service pack comprising seal for SERVICE FLAP, flange seal, adapter seal, screws, connecting terminals 24 V DC, I/O | **6AV7675-1JD20-1AA0** |
| **Service Pack 2**<br>Service Pack 2 comprising rear cover seal, flange seal, 4 x screws for flange mounting and 4 x replacement screws for rear cover, connecting terminal 24 V DC | **6AV7675-1JD21-0AA0** |

## More information

***Note:***

Customized modifications

- Customized design (logo, type designation and membrane color)
- Other display sizes
- Further certificates and approvals

Quotation preparation

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.
The quotation is then prepared with:

- Non-recurring costs
- Prototype costs
- Serial device prices and
- The general conditions in the form of a product agreement (e.g. minimum quantity).
- The defined device can then be ordered easily using this product agreement and a customer-specific order number.

More information is available on the Internet at:

http://www.siemens.com/inox-pro-hmi-devices

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## Overview

The SIMATIC HMI Ex devices are intrinsically safe Panel PCs and thin clients that have been specially designed for hazardous areas. The intrinsically-safe design allows simple installation on site. The variety of certification allows use in many parts of the world without further approvals.

The devices are fanless and permit completely maintenance-free installation without batteries or rotating parts.

Available as HMI devices for hazardous areas "Zone 1" and "Zone 2" are:

- SIMATIC HMI Panel PC Ex NG
- SIMATIC HMI Panel PC Ex OG
- SIMATIC HMI Panel PC Ex
- SIMATIC HMI Thin Client Ex NG
- SIMATIC HMI Thin Client Ex OG
- SIMATIC HMI Thin Client Ex2

Further SIMATIC HMI devices are also available for the "Zone 2/22" hazardous area and can be found in the "Operator panels" chapter:

- SIMATIC HMI Comfort Panels

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## Overview

### *SIMATIC HMI Panel PC Ex NG*

The new generation SIMATIC HMI Panel PC Ex NG has been specially developed for use in the pharmaceutical, chemical and life science industries, but can also be used in many other areas since it satisfies the requirements for operator control and monitoring directly in hazardous areas.

Due to the 22" and 24" display diagonals, these devices are ideal for showing plant and process information provided from systems such as PCS.
A modern Intel ATOM E3845 Quad Core processor is used with this SIMATIC HMI Panel PC Ex NG.

Highlights:

- High degree of industrial functionality and industrial front panels
  - Single-touch fronts 22" (1 680 x 1 050), 24" (1 920 x 1 080) and 24" WU (1 920 x 1 200)
  - -30 °C up to 55 °C ambient temperature in operation
  - Resistive Touch Display 300 cd/m$^2$
  - Built-in unit optional stainless steel enclosure or GMP/ cleanroom
- Certificates for hazardous area
  - IECEx, ATEX Zones 1, 21 and 2, 22
  - Class 1, Division 2
  - NEC
  - CEC
  - KGS
  - TR
  - Certificates for marine applications DNV / GL
- High system performance in hazardous areas
  - Intel Bay Trail (BT) 1.91 GHz Quad Core

## Technical specifications

| | SIMATIC HMI Panel PC Ex NG |
|---|---|
| **General features** | |
| Design | Built-in unit |
| **Fronts** | |
| Display diagonal | • 22" (1 680 x 1 050) 16:10,<br>• 24" (1 920 x 1 080) 16:9 and<br>• 24" WU (1 920 x 1 200) 16:10 |
| Resolution | 1 680 x 1 050 or 1 920 x 1 080 or 1 920 x 1 200 |
| Number of colors | 16.7 million |
| Brightness | • Standard display 300 cd/m$^2$ |
| Contrast | 1 000:1 |
| MTBF backlight | LED backlight approx. 50 000 h |
| Single-touch | Resistive? 5-wire glass or membrane touch |
| **Computing unit** | |
| Processor | ATOM E3845,<br>Intel Bay Trail (BT)? 1.91 GHz? Quad Core |
| Main memory | 4 GB RAM |
| **Operating system** | |
| Windows Embedded Standard 7 (64-bit) | Pre-installed |
| Windows 7 Ultimate (64-bit) | Pre-installed |
| **Drives** | |
| Mass storage | 32 GB SSD, 64 GB SSD, 128 GB SSD MLC |
| **Interfaces** | |
| Ethernet | • 10/100BaseTX - copper Ethernet or<br>• 2x 10/100BaseTX - 2x copper Ethernet or<br>• 1000BaseSX - Fiber Optic Ethernet or<br>• 1000BaseLX - Fiber Optic Ethernet or<br>• 100BaseFX - Fiber Optic Ethernet |
| USB | 2 x USB (Ex ia), 1 x USB (Ex e), 2 x USB (Ex ia) (keyboard, pointer instrument) |
| Serial | 1 x RS 232 (Ex e) |
| Audio | 1 x audio line out (Ex e) |
| Barcode | Optionally via USB |
| Bluetooth | Optionally via USB |
| **Power supply** | |
| • 230 V AC | • Yes (100 – 240 V AC) |
| • 24 V DC | • Yes; optional |
| **Ambient conditions** | |
| Temperature | • -20 °C ... +55 °C<br>• -30 °C ... +55 °C with heater<br>• Storage -40 °C ... +70 °C |
| Relative humidity during operation | +55 °C (±2 °C) ≥ 95%, according to IEC 60068-2-30 : 2005 |
| Degree of protection | IP66 front, IP65 rear? optionally according to GMP |
| Vibration | Operation: 5 to 13.2 Hz: ± 1 mm<br>13.2 to 100 Hz: ± 0.7 g |
| Shock | Operation: 15 g / 11 ms |
| **Miscellaneous** | |
| Power consumption at 24 V DC | Typ. 50 W / 100 W at O30 / max. 150 W (typ. 170 BTU / 341 BTU at O30 / max. 510 BTU) |
| **Weight / Size** | |
| Weights | |
| Dimensions (W x H x D) | • 22": 660 mm x 475 mm x 110 mm<br>• 24": 660 mm x 475 mm x 110 mm |
| **Approvals** | |
| IECEx | • Ex e q [ia op is Ga] IIC T4 Gb?<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| ATEX | • II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb II 2(1) D<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| NEC | Class I, Zone 1 AEx e q [ia] IIC T4 Gb |
| CEC | Ex e q [ia] IIC T4 Gb Class I, Division 2 |
| TR | • 1Ex e q [ia op is Ga] IIC T4 Gb X<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| KGS | • Ex e q IIC T4<br>• Ex tb IIIC IP64 T110 °C<br>• Ex ia IIC T4<br>• Ex ia IIIB T110 °C |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI Panel PC Ex NG** | **6AV7200- 6 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Display | |
| • 22", 1 680 x 1 050, 16:10 format, Zone 1 | **A** |
| • 24", 1 920 x 1 080, 16:9 format, Zone 1 | **B** |
| • 24", 1 920 x 1 200, 16:10 format, Zone 1 | **C** |
| • 22", 1 680 x 1 050, 16:10 format, Zone 2 | **D** |
| • 24", 1 920 x 1 080, 16:9 format, Zone 2 | **E** |
| • 24", 1 920 x 1 200, 16:10 format, Zone 2 | **F** |
| • 22", 1 680 x 1 050, 16:10 format, non-Ex | **G** |
| • 24", 1 920 x 1 080, 16:9 format, non-Ex | **H** |
| • 24", 1 920 x 1 200, 16:10 format, non-Ex | **J** |
| Network | |
| • 10/100BaseTX - copper Ethernet | **A** |
| • 2 x 10/100BaseTX - 2 x copper Ethernet | **B** |
| • 1000BaseSX - Fiber Optic Ethernet | **C** |
| • 1000BaseLX - Fiber Optic Ethernet | **D** |
| • 100BaseFX - Fiber Optic Ethernet | **E** |
| Mass storage / main memory / operating system | |
| • 32 GB SSD, 4 GB RAM, Windows 7 Ultimate 64-bit | **0** |
| • 64 GB SSD, 4 GB RAM, Windows 7 Ultimate 64-bit | **1** |
| • 128 GB SSD MLD, 4 GB RAM, Windows 7 Ultimate 64-bit | **2** |
| • 32 GB SSD, 4 GB RAM, Windows Embedded Standard 7 (WES 7) 64-bit | **3** |
| • 64 GB SSD, 4 GB RAM, Windows Embedded Standard 7 (WES 7) 64-bit | **4** |
| • 128 GB SSD MLD, 4 GB RAM, Windows Embedded Standard 7 (WES 7) 64-bit | **5** |
| Touch and front design | |
| • Without touch, panel mount with aluminum front | **0** |
| • Analog-resistive, polyester membrane with aluminum front | **1** |
| • Analog-resistive, glass touch with aluminum front | **2** |
| Enclosure type and material | |
| • No enclosure | **0** |
| • Cleanroom enclosure front door (CFR), SS304 | **1** |
| • Front door enclosure (FR), SS304 | **2** |
| • Back door enclosure (BD), SS304 | **3** |

| | Article No. |
|---|---|
| **SIMATIC HMI Panel PC Ex NG** | **6AV7200- 6 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Keyboard with housing / layout | |
| • No keyboard | **A** |
| • Keyboard housing SS304; layout DE | **B** |
| • Keyboard housing SS304; layout US | **C** |
| • Keyboard housing SS304; layout FR | **D** |
| • Keyboard housing SS304; layout CH | **E** |
| • Keyboard housing SS304; layout ES | **F** |
| • Keyboard housing SS304; layout SI | **G** |
| • Keyboard housing SS304; layout FR-BE | **H** |
| Integrated mouse / trackball | |
| • No mouse / trackball | **A** |
| • Trackball 50 mm IP54 | **B** |
| • Trackball (SS304) 50 mm IP54 | **C** |
| • Touchpad | **D** |
| • Joystick | **E** |
| • Mouse module | **F** |
| Mounting options | |
| • Without, front panel fastening only | **0** |
| • Direct wall mounting | **1** |
| • Fastener for pedestal or elbow on enclosure bottom | **2** |
| • Fastener for ceiling or elbow mounting on enclosure top part | **3** |
| Additional options | |
| • 24 V DC power supply | **A01** |
| • Outdoor to -20 °C for enclosure | **B01** |
| • Outdoor to -30 °C | **C01** |
| • Emergency off button 8003 right, only with enclosure | **D01** |
| • Emergency off button 8003 left, only with enclosure | **E01** |

### Accessories

| | |
|---|---|
| **USB flash drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX10-0AA0** |
| • Non-intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX20-0AA0** |
| **Pedestal** | |
| • 60.3 mm; requires enclosure | **6AV7675-0KE00-0AA0** |
| • 60.3 mm; with corner brace; requires enclosure | **6AV7675-0KF00-0AA0** |
| • Large (88.9 mm); requires enclosure | **6AV7675-0KG00-0AA0** |
| • Extra large (114 mm); requires enclosure | **6AV7675-0KH00-0AA0** |
| **Bracket (elbow)** | **6AV7675-0KJ00-0AA0** |
| Requires enclosure | |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or configuration editor in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

You can find additional information on the Internet at:

http://www.siemens.com/simatic-hmi-ex

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## Overview

SIMATIC HMI Panel PC Ex OG with international approvals for operator control and monitoring in hazardous areas.

## Technical specifications

| | SIMATIC HMI Panel PC Ex OG |
|---|---|
| **General features** | |
| Design | Panel PC, stand-alone device for use outdoors |
| Front | 15" 4:3 or 21.5" 16:9 |
| Resolution | 1 024 x 768 or 1 920 x 1 080 |
| Number of colors | 16.7 million |
| Brightness | • Standard display 350 $cd/m^2$<br>• Sunlight-readable display 21.5", 1 000 $cd/m^2$<br>• Sunlight-readable display 15", 1 200 $cd/m^2$ |
| MTBF backlight | LED backlight approx. 50 000 h (70 000 h at 25 °C) |
| Multi-touch | Capacitive |
| Keys | 8 function keys (capacitive) |
| **Computing unit** | |
| Processor | Intel Core i7-3517UE with 1.7 GHz |
| Main memory | 4 GB or 8 GB RAM |
| **Operating system** | |
| Windows 7 Ultimate | Pre-installed |
| WES 7 P | Pre-installed |
| **Drives** | |
| Mass storage | SSD with<br>• 240 GB<br>• 480 GB |
| **Interfaces** | |
| Ethernet | • 2 x Ethernet 10/100/1000 Base Tx (Ex e) or<br>• FO 100 Base Fx 100 Mb (Ex op is) |
| USB | 1 x USB (Ex e). 3 x USB (Ex ia) |
| Serial | 1x RS 232/RS 422/RS 485 (Ex e) |
| DVI | 1 x DVI Out (Ex e) |
| Barcode | 1 x reader interface (external barcode scanner/reader) |
| Bluetooth | 1 x (optional) |
| **Power supply** | |
| • 230 V AC<br>• 24 V DC | • Standard (100 - 240 V AC)<br>• Optional |
| **Ambient conditions** | |
| Temperature | • Running operation: -10 °C to +65 °C<br>• Optional: -40 °C to +65 °C<br>• Storage: -40 °C to +70 °C |
| Relative humidity during operation | > 95% at +65 °C in accordance with IEC 60068-2-30 |
| Degree of protection | IP66/4X all-round |
| Vibration | Operation:<br>3 Hz to 22 Hz: 1 mm<br>22 to 500 Hz: 9.8 $m/s^2$ = 1 g<br>In accordance with EN 60068-2-6 and DNV<br>Marine approval vibration class A |
| Shock | Operation: 15 g/11 mS |
| **Miscellaneous** | |
| Power consumption at 24 V DC | 4.6 A (6.9 A in heating mode), (recommended fuses: 12 A) |
| **Weight/size** | |
| Weights | 15" Zone 1; < 22.6 kg<br>21.5" Zone 1; < 34 kg |
| Dimensions (W x H x D) | 15": 380 x 394 x 137 mm<br>21.5": 553 x 458 x 141 mm |
| **Approvals** | |
| ATEX, IECEx | • Gas: II 2 (1) G Ex e q [ia op is Ga] IIC T4 Gb<br>• Dust: II 2 (1) D Ex tb [ia op is Da] IIIC T115°C Db |
| More, such as UL, NEC, CSA, coming soon | |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI Panel PC Ex OG** | **6AV7200 - 2 ■ ■ ■ ■ - ■ ■ A 0** |
| Display | |
| • 15", 1 024 x 768, 4:3 format; Zone 1 | **A** |
| • 21.5" Full HD, 1 920 x 1 080, format 16:9; Zone 1 | **B** |
| • 15", 1 024 x 768, 4:3 format; Zone 2 and non-Ex | **C** |
| • 21.5" FullHD, 1 920 x 1 080, format 16:9; Zone 2 and non-Ex | **D** |
| Network | |
| • 1 x 1000 Base TX – copper Ethernet in combination with WLAN | **A** |
| • 2 x 1000 Base TX – copper Ethernet not in combination with WLAN | **B** |
| • 2 x 1000 Base FX – fiber-optic Ethernet not in combination with WLAN | **C** |
| Mass storage/main memory | |
| • 240 GB SSD, 4 GB RAM | **1** |
| • 240 GB SSD, 8 GB RAM | **2** |
| • 480 GB SSD, 8 GB RAM | **3** |
| Operating system | |
| • Windows 7 Ultimate | **1** |
| • WES7 P | **2** |
| Display options | |
| • Standard TFT, not touch; for 15" display only | **1** |
| • Sunlight-readable display 15", not touch | **2** |
| • Sunlight-readable display 21.5", not touch | **3** |
| • Standard TFT, capacitive glass touch, for 15" display only | **4** |
| • Sunlight-readable display 15", capacitive glass touch | **5** |
| • Sunlight-readable display 21.5", capacitive glass touch | **6** |

| | Article No. |
|---|---|
| **SIMATIC HMI Panel PC Ex OG** | **6AV7200 - 2 ■ ■ ■ ■ - ■ ■ A 0** |
| Optional expansions [1] | |
| • No WLAN, no Bluetooth, no RFID | **A** |
| • WLAN 2.4 GHz, no Bluetooth, no RFID | **B** |
| • WLAN 2.4 GHz and 5 GHz, no Bluetooth, no RFID | **C** |
| • No WLAN, Bluetooth, no RFID | **D** |
| • WLAN 2.4 GHz, Bluetooth, no RFID | **E** |
| • WLAN 2.4 GHz and 5 GHz, Bluetooth, no RFID | **F** |
| • No WLAN, no Bluetooth, RFID, not for 15" display | **G** |
| • WLAN 2.4 GHz, no Bluetooth, RFID, not for 15" display | **H** |
| • WLAN 2.4 GHz and 5 GHz, no Bluetooth, RFID, not for 15" display | **J** |
| • No WLAN, Bluetooth, RFID, not for 15" display | **K** |
| • WLAN 2.4 GHz, Bluetooth, RFID, not for 15" display | **L** |
| • WLAN 2.4 GHz and 5 GHz, Bluetooth, RFID, not for 15" display | **M** |
| Additional options | |
| • 24 V power supply | **-A01** |
| • CAN bus interface open CAN Ex e | **-B01** |
| • VESA 200 and table pedestal and bracket SS316L material | **-C01** |
| • Outdoor design E01, F01, G01 and H01 now listed under accessories | **-D01** |

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[1] RFID option only with 21.5" display

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "System components for devices with all-round IP65 protection".

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## Ordering data

| | Article No. |
|---|---|
| Accessories | |
| **Digital KVM for HMI Thin Client Ex monitor option**<br>With 2 x USB, 2 x PS/2, 1 x VGA/DVI-i | **6AV7675-0EX00-0AA0** |
| **USB drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery function | **6AV7675-0FX10-0AA0** |
| • NOT intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX20-0AA0** |
| **Ethernet switch**<br>With FOC 4x 100Base Tx, 1x 100 Base (MTRJ), Fx Ex op is | **6AV7675-0PX00-0AA0** |
| **Pedestal** | **6AV7675-0KA00-0AA0** |
| **Yoke Mount (fixing bracket)** | **6AV7675-0KB00-0AA0** |
| **Sun roof** | |
| • For 15" | **6AV7675-0KC00-0AA0** |
| • For 21.5" | **6AV7675-0KD00-0AA0** |
| **Keyboard** | |
| • DE layout, trackball | **6AV7675-0NA00-0AA0** |
| • US layout, trackball | **6AV7675-0NB00-0AA0** |
| • FR layout, trackball | **6AV7675-0NC00-0AA0** |
| • DE layout, touchpad | **6AV7675-0ND00-0AA0** |
| • US layout, touchpad | **6AV7675-0NE00-0AA0** |
| • FR layout, touchpad | **6AV7675-0NG00-0AA0** |
| • DE layout, joystick | **6AV7675-0NH00-0AA0** |
| • US layout, joystick | **6AV7675-0NJ00-0AA0** |
| • FR layout, joystick | **6AV7675-0NL00-0AA0** |
| • Desktop keyboard US Zone 1, 2, 21, 22 | **6AV7675-0NK00-0AA0** |
| • Desktop keyboard DE Zone 1, 2, 21, 22 | **6AV7675-0NM00-0AA0** |
| **Transportation in a wooden crate** | **6AV7675-0NP00-0AA0** |

## More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

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## Overview

***SIMATIC HMI Panel PC Ex*** with international approvals for operation and monitoring in hazardous areas.

Notice:

Effective immediately, the SIMATIC Panel PC Ex will be supplied with a Quad-Core Intel Atom Processor E3845, thus enabling it to offer around four times the performance of the current Intel Atom N270 systems.
A new ordering configurator with the Article No. 6AV7200-4....-.... has been created:

Additional information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

And in the Industry Mall:

https://mall.industry.siemens.com

## Technical specifications

| | **SIMATIC HMI Panel PC Ex** |
|---|---|
| **General features** | |
| **Design** | Panel PC built-in unit, protective enclosure available as an option |
| **Front** | 15" and 19", optional 15" sunlight-readable displays |
| **Operation** | Touch with 8 function keys |
| **Processor** | Intel Atom E3845 with 1.91 GHz |
| **Main memory** | 4 GB DDR2 SDRAM |
| **Operating system, preinstalled and configured** | Windows 7 MUI, Windows 7 Ultimate, WES7 E |
| **Mass storage** | 32 GB SSD, 128 GB SSD |
| **Power supply** | 24 V DC, max. 2.1 A (19") |
| **Interfaces** | |
| Ethernet | 10/100 Mbit Ex e, or fiber-optics 100 Mbit (SC) Ex op is |
| USB 2.0 | 2 x Ex i, 2 x Ex e (Zone 1) or<br>2 x Ex nA (Zone 2) |
| Serial | 1 x RS232 or 1 x RS422/485 |
| **Ambient conditions** | |
| Degree of protection | IP66 at front, IP65 at rear, IP66 in protective enclosure |
| Ambient temperature during operation | - 20 °C ... + 50 °C (cold start -10 °C)<br>with optional auxiliary heater down to - 30 °C |
| Relative humidity during operation | 90 % at + 40 °C, no condensation |

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## Technical specifications (continued)

| | SIMATIC HMI Panel PC Ex |
|---|---|
| **Approvals/directives** | |
| **Devices in version "Zone 1"** | |
| ATEX directive 94/9/EC | |
| • Network 10/100 Base-Tx | II 2 (2) G Ex d e ia ib mb [ia ib] IIC T4 Gb<br>II 2 (2) D Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | II 2 (2) G Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>II 2 (2) D Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |
| IECEx | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb [ia ib] IIC T4 Gb<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |
| GOST-R | |
| • Network 10/100 Base-Tx | 2 Ex d e ia ib mb [iaib] IIC T4 DIP A21 TA80°C, IP66 |
| • Network 10/100 Base-Fx | 2 Ex d e ia ib mb [iaibopis] IIC T4 DIP A21 TA80°C, IP66 |
| CSA | Ex d e ia ib mb [ia ib] IIC T4 Gb, Type 4X, IP66<br>Class II, Division 1, Groups E, F, G, T80°C<br>Ex ia tb [ia ib] IIIC T80°C Db, IP66 |
| KGS | Ex d e ia ib mb [ia ib] IIC T4<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| InMetro | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb [ia ib] IIC T4 Gb<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |
| Device version "UL Class 1, Division 2" | Class 1, Division 2, Groups A, B, C, D<br>Class 2, Division 2, Groups F, G<br>Class 3, Hazardous Locations |
| **Devices in version "Zone 2"** | |
| ATEX directive 94/9/EC | |
| • Network 10/100 Base-Tx | II 3 (2/3) G Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>II3 (2/3) D Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | II 3 (2/3) G Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc<br>II 3 (2/3) D Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| IECEx | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| GOST-R | |
| • Network 10/100 Base-Tx | 2 Ex d e ia ib mb nA [ib][ic] IIC T4 DIP A21 TA80°C, IP66 |
| • Network 10/100 Base-Fx | 2 Ex d e ia ib mb nA [ib opis][ic] IIC T4 DIP A21 TA80°C, IP66 |
| CSA | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc, Type 4X, IP66<br>Class II, Division 2, Groups E, F, G, T80°C;<br>Ex ia tc [ib ic] IIIC T80°C Dc, IP66 |
| InMetro | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb nA [ib op is Gb] IIC T4<br>Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| Device version "UL Class 1, Division 2" | Class 1, Division 2, Groups A, B, C, D<br>Class 2, Division 2, Groups F, G<br>Class 3, Hazardous Locations |
| **Dimensions** | |
| Mounting dimensions (W x H x D) | 15": 427.5 mm x 327.5 mm x 165 mm<br>19": 522.5 mm x 412.5 mm x 165 mm |
| Front dimensions (W x H) | 15": 440 mm x 340 mm<br>19": 535 mm x 425 mm |
| **Weight** | 15": 15 kg<br>19": 23 kg |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC HMI Panel PC Ex2** | **6AV7200 - 4 ■ ■ ■ ■ - ■ ■ A 0** |
| SIMATIC HMI Panel PC Ex;<br>4 x USB 2.0, 2 x RS 232/422;<br>power supply 24 V DC;<br>Intel Atom E3845; 1.91 GHz | |
| Design / display size | |
| • Zone 2: 15" touch with 8 function keys | **A** |
| • Zone 2: 19" touch with 8 function keys | **B** |
| • Zone 1: 15" touch with 8 function keys | **C** |
| • Zone 1: 19" touch with 8 function keys | **D** |
| • Zone 2: 15" touch, sunlight-readable with 8 function keys | **E** |
| • Zone 1: 15" touch, sunlight-readable with 8 function keys | **F** |
| Network | |
| • 10/100 base Tx, Ex e | **A** |
| • 100 base Fx FOC (SC), Ex op is | **B** |
| Mass storage | |
| • SSD 32 GB, 4 GB RAM | **0** |
| • SSD 128 GB MLC, 4 GB RAM | **1** |
| Operating system (pre-installed) | |
| • Windows 7 Ultimate (64-bit) | **0** |
| • Windows 7 Embedded Standard 7 E 64-bit | **1** |
| • Without | **2** |
| Enclosure options | |
| • Without protective enclosure | **0** |
| • Stainless steel enclosure for: | |
| - Wall mounting | **1** |
| - Pedestal (incl. coupling, 300° rotation possible) | **2** |
| - Suspension bracket (incl. coupling, 300° rotation possible) | **3** |
| - Support arm (incl. coupling, 300° rotation possible) | **4** |
| - Swivel arm from above (incl. coupling, 300° rotation possible) | **5** |
| External keyboard | |
| • Without | **A** |
| • QWERTZ keyboard, mounted on protective enclosure | **B** |
| • QWERTY keyboard, mounted on protective enclosure | **C** |
| • AZERTY keyboard, mounted on protective enclosure | **D** |
| • QWERTZ keyboard with trackball, mounted on protective enclosure | **E** |
| • QWERTY keyboard with trackball, mounted on protective enclosure | **F** |
| • AZERTY keyboard with trackball, mounted on protective enclosure | **G** |
| Further options together with stainless steel enclosure | |
| • Breather glands (to avoid build-up of condensation) | **-z A01** |
| • Heater (2 x 50 W incl. temp. controller, only in protective enclosure) | **-z B01** |
| • Handles, mounted (only in protective enclosure) | **-z C01** |
| • Front USB (bottom) (only in protective enclosure) | **-z D01** |
| • NPT thread for pedestal mounting (only in protective enclosure) | **-z G01** |

| | Article No. |
|---|---|
| Accessories | |
| **Digital KVM for HMI Thin Client Ex** | **6AV7675-0EX00-0AA0** |
| **USB drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery function | **6AV7675-0FX10-0AA0** |
| • Not intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX20-0AA0** |
| **Ethernet switch** | **6AV7675-0PX00-0AA0** |
| With FOC 4x 100Base Tx,<br>1x 100 Base (MTRJ), Fx Ex op is | |

Additional information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

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## Overview

### *SIMATIC HMI Thin Client Ex NG*

The new generation SIMATIC HMI Thin client Ex NG has been specially developed for use in the pharmaceutical, chemical and life science industries, but can also be used in many other areas since it satisfies the requirements for operator control and monitoring directly in hazardous areas.

Due to the 22" and 24" display diagonals, these devices are ideal for showing plant and process information provided from systems such as PCS.

Highlights:

- High degree of industrial functionality and industrial front panels
  - Single-touch fronts 22" (1 680 x 1 050), 24" (1 920 x 1 080) and 24" WU (1 920 x 1 200)
  - -30 °C up to 55 °C ambient temperature in operation
  - Resistive Touch Display 300 cd/m²
  - Built-in unit optional stainless steel enclosure or GMP/ cleanroom
- Certificates for hazardous area
  - IECEx, ATEX Zones 1, 21 and 2, 22
  - Class 1, Division 2
  - NEC
  - CEC
  - KGS
  - TR
  - Certificates for marine applications DNV / GL
- High system performance in hazardous areas
  - Intel Bay Trail (BT) 1.91 GHz Quad Core

## Technical specifications

| | SIMATIC HMI Thin Client Ex NG |
|---|---|
| **General features** | |
| Design | Built-in unit |
| **Fronts** | |
| Display diagonal | • 22" (1 680 x 1 050) 16:10,<br>• 24" (1 920 x 1 080) 16:9 and<br>• 24" WU (1 920 x 1 200) 16:10 |
| Resolution | 1 680 x 1 050 or 1 920 x 1 080 or 1 920 x 1 200 |
| Number of colors | 16.7 million |
| Brightness | • Standard display 300 cd/m² |
| Contrast | 1 000:1 |
| MTBF backlight | LED backlight approx. 50 000 h |
| Single-touch | Resistive? 5-wire glass or membrane touch |
| **Computing unit** | |
| Processor | ATOM E3845, Intel Bay Trail (BT)? 1.91 GHz? Quad Core |
| Main memory | 4 GB RAM |
| **Operating system** | |
| Windows 10 IoT Enterprise | Pre-installed |
| Image | Remote firmware |
| **Drives** | |
| Mass storage | 64 GB SSD |
| **Interfaces** | |
| Ethernet | • 10/100BaseTX - copper Ethernet or<br>• 2x 10/100BaseTX - 2x copper Ethernet or<br>• 1000BaseSX - Fiber Optic Ethernet or<br>• 1000BaseLX - Fiber Optic Ethernet or<br>• 100BaseFX - Fiber Optic Ethernet |
| USB | 2 x USB (Ex ia), 1 x USB (Ex e),<br>2 x USB (Ex ia) (keyboard, pointer instrument) |
| Serial | 1 x RS 232 (Ex e) |
| Audio | 1 x audio line out (Ex e) |
| Barcode | Optionally via USB |
| Bluetooth | Optionally via USB |

| | SIMATIC HMI Thin Client Ex NG |
|---|---|
| **Power supply** | |
| • 230 V AC | • Yes (100 – 240 V AC) |
| • 24 V DC | • Yes; optional |
| **Ambient conditions** | |
| Temperature | • -20 °C ... +55 °C<br>• -30 °C ... +55 °C with heater<br>• Storage -40 °C ... +70 °C |
| Relative humidity during operation | +55 °C (±2 °C) ≥ 95%, according to IEC 60068-2-30 : 2005 |
| Degree of protection | IP66 front, IP65 rear? optionally according to GMP |
| Vibration | Operation: 5 to 13.2 Hz: ± 1 mm<br>13.2 to 100 Hz: ± 0.7 g |
| Shock | Operation: 15 g / 11 ms |
| **Miscellaneous** | |
| Power consumption at 24 V DC | Typ. 50 W / 100 W at O30 / max. 150 W (typ. 170 BTU / 341 BTU at O30 / max. 510 BTU) |
| **Weight / Size** | |
| Weights | |
| Dimensions (W x H x D) | • 22": 660 mm x 475 mm x 110 mm<br>• 24": 660 mm x 475 mm x 110 mm |
| **Approvals** | |
| IECEx | • Ex e q [ia op is Ga] IIC T4 Gb?<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| ATEX | • II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb II 2(1) D<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| NEC | Class I, Zone 1 AEx e q [ia] IIC T4 Gb |
| CEC | Ex e q [ia] IIC T4 Gb Class I, Division 2 |
| TR | • 1Ex e q [ia op is Ga] IIC T4 Gb X<br>• Ex tb IIIC [ia op is Da] IP65 T110 °C Db |
| KGS | • Ex e q IIC T4<br>• Ex tb IIIC IP64 T110 °C<br>• Ex ia IIC T4<br>• Ex ia IIIB T110 °C |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex NG** | **6AV7200- 5 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Display | |
| • 22", 1 680 x 1 050, 16:10 format, Zone 1 | **A** |
| • 24", 1 920 x 1 080, 16:9 format, Zone 1 | **B** |
| • 24", 1 920 x 1 200, 16:10 format, Zone 1 | **C** |
| • 22", 1 680 x 1 050, 16:10 format, Zone 2 | **D** |
| • 24", 1 920 x 1 080, 16:9 format, Zone 2 | **E** |
| • 24", 1 920 x 1 200, 16:10 format, Zone 2 | **F** |
| • 22", 1 680 x 1 050, 16:10 format, non-Ex | **G** |
| • 24", 1 920 x 1 080, 16:9 format, non-Ex | **H** |
| • 24", 1 920 x 1 200, 16:10 format, non-Ex | **J** |
| Network | |
| • 10/100BaseTX - copper Ethernet | **A** |
| • 2 x 10/100BaseTX - 2 x copper Ethernet | **B** |
| • 1000BaseSX - Fiber Optic Ethernet | **C** |
| • 1000BaseLX - Fiber Optic Ethernet | **D** |
| • 100BaseFX - Fiber Optic Ethernet | **E** |
| Mass storage / main memory / operating system | |
| • 64 GB SSD, 4 GB RAM, Windows 10 IoT & Remote Firmware V5 | **0** |
| • 128 GB SSD MLC, 4 GB RAM, Windows 10 IoT & Remote Firmware V5 | **1** |
| Touch and front design | |
| • Without touch, panel mount with aluminum front | **0** |
| • Analog-resistive, polyester membrane with aluminum front | **1** |
| • Analog-resistive, glass touch with aluminum front | **2** |
| Enclosure type and material | |
| • No enclosure | **0** |
| • Cleanroom enclosure front door (CFR), SS304 | **1** |
| • Front door enclosure (FR), SS304 | **2** |
| • Back door enclosure (BD), SS304 | **3** |

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex NG** | **6AV7200- 5 ■ ■ ■ ■ - ■ ■ ■ ■** |
| Keyboard with housing / layout | |
| • No keyboard | **A** |
| • Keyboard housing SS304; layout DE | **B** |
| • Keyboard housing SS304; layout US | **C** |
| • Keyboard housing SS304; layout FR | **D** |
| • Keyboard housing SS304; layout CH | **E** |
| • Keyboard housing SS304; layout ES | **F** |
| • Keyboard housing SS304; layout SI | **G** |
| • Keyboard housing SS304; layout FR-BE | **H** |
| Integrated mouse / trackball | |
| • No mouse / trackball | **A** |
| • Trackball 50 mm IP54 | **B** |
| • Trackball (SS304) 50 mm IP54 | **C** |
| • Touchpad | **D** |
| • Joystick | **E** |
| • Mouse module | **F** |
| Mounting options | |
| • Without, front panel fastening only | **0** |
| • Direct wall mounting | **1** |
| • Fastener for pedestal or elbow on enclosure bottom | **2** |
| • Fastener for ceiling or elbow mounting on enclosure top part | **3** |
| Additional options | |
| • 24 V DC power supply | **-A01** |
| • Outdoor to -20 °C for enclosure | **-B01** |
| • Outdoor to -30 °C | **-C01** |
| • Emergency-off button 8003 right, only with enclosure | **-D01** |
| • Emergency off button 8003 left, only with enclosure | **-E01** |
| Accessories | |
| **USB flash drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX10-0AA0** |
| • Non-intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX20-0AA0** |
| **Ethernet switch** | **6AV7675-0PX00-0AA0** |
| With FOC 4x 100Base Tx, 1x 100 Base (MTRJ), Fx Ex op is | |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

You can find additional information on the Internet at:

http://www.siemens.com/simatic-hmi-ex

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## Overview

SIMATIC HMI Thin Client Ex OG with international approvals for operator control and monitoring in hazardous areas.

## Technical specifications

| | **SIMATIC HMI Thin Client Ex OG** |
|---|---|
| **General features** | |
| **Design** | Panel PC, stand-alone device for use outdoors |
| Front | 15" 4:3 or 21.5" 16:9 |
| Resolution | 1 024 x 768 or 1 920 x 1 080 |
| Number of colors | 16.7 million |
| Brightness | • Standard display 350 cd/m$^2$<br>• Sunlight-readable display 21.5", 1 000 cd/m$^2$<br>• Sunlight-readable display 15", 1 200 cd/m$^2$ |
| MTBF backlight | LED backlight approx. 50 000 h (70 000 h at 25 °C) |
| Multi-touch | Capacitive |
| Keys | 8 function keys (capacitive) |
| **Computing unit** | |
| Processor | Intel Core i7-3517UE with 1.7 GHz;<br>AMD GX-217GA |
| Main memory | 4 GB |
| **Operating system** | |
| Windows 10 Enterprise 2016 LTSB | Pre-installed |
| Remote Firmware V5 | Pre-installed |
| **Drives** | |
| Mass storage | SSD with<br>• 60 GB<br>• 80 GB |
| **Interfaces** | |
| Ethernet | • 2 x Ethernet 10/100/1000 Base Tx (Ex e) or<br>• FO 100 Base Fx 100 Mb (Ex op is) |
| USB | 1 x USB (Ex e). 3 x USB (Ex ia) |
| Serial | 1x RS 232/RS 422/RS 485 (Ex e) |
| DVI | 1 x DVI Out (Ex e) |
| Barcode | 1 x reader interface (external barcode scanner/reader) |
| Bluetooth | 1 x (optional) |
| **Power supply** | |
| • 230 V AC | • Standard (100 - 240 V AC) |
| • 24 V DC | • Optional |
| **Ambient conditions** | |
| Temperature | • Running operation: -10 °C to +65 °C<br>• Optional: -40 °C to +65 °C<br>• Storage: -40 °C to +70 °C |
| Relative humidity during operation | > 95% at +65 °C in accordance with IEC 60068-2-30 |
| Degree of protection | IP66/4X all-round |
| Vibration | Operation:<br>3 Hz to 22 Hz: 1 mm<br>22 to 500 Hz: 9.8 m/s$^2$ = 1 g<br>In accordance with EN 60068-2-6 and DNV<br>Marine approval vibration class A |
| Shock | Operation: 15 g/11 mS |
| **Miscellaneous** | |
| Power consumption at 24 V DC | 4.6 A (6.9 A in heating mode), (recommended fuses: 12 A) |
| **Weight/size** | |
| Weights | 15" Zone 1; < 22.6 kg<br>21.5" Zone 1; < 34 kg |
| Dimensions (W x H x D) | 15": 380 x 394 x 137 mm<br>21.5": 553 x 458 x 141 mm |
| **Approvals** | |
| ATEX, IECEx | • Gas: II 2 (1) G Ex e q [ia op is Ga] IIC T4 Gb<br>• Dust: II 2 (1) D Ex tb [ia op is Da] IIIC T115°C Db |
| More, such as UL, NEC, CSA, coming soon | |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex OG** | **6AV7200 - 3 ■■■■ - ■■ A 0** |
| Display | |
| • 15", 1 024 x 768, 4:3 format; Zone 1 | **A** |
| • 21.5" Full HD, 1 920 x 1 080, format 16:9; Zone 1 | **B** |
| • 15", 1 024 x 768, 4:3 format; Zone 2 | **C** |
| • 21.5" Full HD, 1 920 x 1 080, format 16:9; Zone 2 | **D** |
| Network | |
| • 1 x 1000 Base TX - copper Ethernet in combination with WLAN | **A** |
| • 2 x 1000 Base TX - copper Ethernet not in combination with WLAN | **B** |
| • 2 x 1000 Base FX - fiber-optic Ethernet not in combination with WLAN | **C** |
| Mass storage / main memory | |
| • 60 GB SSD, 4 GB RAM | **0** |
| • 80 GB SSD, 4 GB RAM | **1** |
| Processor | |
| • AMD GX-217GA | **0** |
| • Intel Core i/-3517 UE | **1** |
| • Intel Core i/-3517 UE with TPM | **2** |
| Display options | |
| • Standard TFT, not touch; for 15" display only | **0** |
| • Sunlight-readable display 15", not touch | **1** |
| • Sunlight-readable display 21.5", not touch | **2** |
| • Standard TFT, capacitive glass touch, for 15" display only | **3** |
| • Sunlight-readable display 15", capacitive glass touch | **4** |
| • Sunlight-readable display 21.5", capacitive glass touch | **5** |

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex OG** | **6AV7200 - 3 ■■■■ - ■■ A 0** |
| Optional expansions [1] | |
| • No WLAN, no Bluetooth, no RFID | **A** |
| • WLAN 2.4 GHz, no Bluetooth, no RFID | **B** |
| • WLAN 2.4 GHz and 5 GHz, no Bluetooth, no RFID | **C** |
| • No WLAN, Bluetooth, no RFID | **D** |
| • WLAN 2.4 GHz, Bluetooth, no RFID | **E** |
| • WLAN 2.4 GHz and 5 GHz, Bluetooth, no RFID | **F** |
| • No WLAN, no Bluetooth, RFID, not for 15" display | **G** |
| • WLAN 2.4 GHz, no Bluetooth, RFID, not for 15" display | **H** |
| • WLAN 2.4 GHz and 5 GHz, no Bluetooth, RFID, not for 15" display | **J** |
| • No WLAN, Bluetooth, RFID, not for 15" display | **K** |
| • WLAN 2.4 GHz, Bluetooth, RFID, not for 15" display | **L** |
| • WLAN 2.4 GHz and 5 GHz, Bluetooth, RFID, not for 15" display | **M** |
| Additional options | |
| • 24 V power supply | **-A01** |
| • CAN bus interface open CAN Ex e | **-B01** |
| • VESA 200 and table pedestal and bracket SS316L material | **-C01** |
| • Outdoor design up to -40 °C | **-D01** |

---

[1] RFID option only with 21.5" display

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "System components for devices with all-round IP65 protection".

## Ordering data

| | Article No. |
|---|---|
| Accessories | |
| **Digital KVM for HMI Thin Client Ex monitor option**<br>With 2 x USB, 2 x PS/2, 1 x VGA/DVI-i | **6AV7675-0EX00-0AA0** |
| **USB drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery function | **6AV7675-0FX10-0AA0** |
| • NOT intrinsically safe, 16 GB with recovery and backup function | **6AV7675-0FX20-0AA0** |
| **Ethernet switch**<br>With FOC 4x 100Base Tx, 1x 100 Base (MTRJ), Fx Ex op is | **6AV7675-0PX00-0AA0** |
| **Pedestal** | **6AV7675-0KA00-0AA0** |
| **Yoke Mount (fixing bracket)** | **6AV7675-0KB00-0AA0** |
| **Sun roof** | |
| • For 15" | **6AV7675-0KC00-0AA0** |
| • For 21.5" | **6AV7675-0KD00-0AA0** |
| **Keyboard** | |
| • DE layout, trackball | **6AV7675-0NA00-0AA0** |
| • US layout, trackball | **6AV7675-0NB00-0AA0** |
| • FR layout, trackball | **6AV7675-0NC00-0AA0** |
| • DE layout, touchpad | **6AV7675-0ND00-0AA0** |
| • US layout, touchpad | **6AV7675-0NE00-0AA0** |
| • FR layout, touchpad | **6AV7675-0NG00-0AA0** |
| • DE layout, joystick | **6AV7675-0NH00-0AA0** |
| • US layout, joystick | **6AV7675-0NJ00-0AA0** |
| • FR layout, joystick | **6AV7675-0NL00-0AA0** |
| • Desktop keyboard US Zone 1, 2, 21, 22 | **6AV7675-0NK00-0AA0** |
| • Desktop keyboard DE Zone 1, 2, 21, 22 | **6AV7675-0NM00-0AA0** |

## More information

More information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

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## Overview

TOUCH
TOUCH

*SIMATIC HMI Thin Client Ex2* with international approvals for operation and monitoring in hazardous areas.

## Technical specifications

| | **SIMATIC HMI Thin Client Ex2** |
|---|---|
| **General features** | |
| **Design** | Thin Client built-in unit, available in protective enclosure as an option |
| Front | 15" and 19" display |
| Operation | Touch with 8 function keys |
| MTBF backlight | 50 000 h |
| **Operating system** | Windows 10 Enterprise 2016 LTSB |
| **Mass storage** | integrated, 64 GB SSD |
| **Power supply** | 24 V DC, max. 2.1 A (19") |
| **Interfaces** | |
| Ethernet | 100 Mbit Ex e, or alternatively fiber-optics 100 Mbit (SC) Ex op is |
| USB 2.0 | 2 x Ex i, 2 x Ex e (Zone 1) or 2 x Ex nA (Zone 2) |
| Serial | 1 x RS232 or 1 x RS422/485 |
| **Ambient conditions** | |
| Degree of protection | IP66 at front, IP65 at rear, IP66 in protective enclosure |
| Ambient temperature during operation | -20 °C ... + 50 °C, (cold start -10 °C) with optional auxiliary heater down to -30 °C |
| Relative humidity during operation | 90 % at 40 °C, no condensation |
| **Approvals/directives** | |
| **Devices in "Zone 1" version** | |
| ATEX directive 94/9/EC | |
| • Network 10/100 Base-Tx | II 2 (2) G Ex d e ia ib mb [ia ib] IIC T4 Gb<br>II 2 (2) D Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | II 2 (2) G Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>II 2 (2) D Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |
| IECEx | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb [ia ib] IIC T4 Gb<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |
| GOST-R | |
| • Network 10/100 Base-Tx | 2 Ex d e ia ib mb [iaib] IIC T4<br>DIP A21 TA80°C, IP66 |
| • Network 10/100 Base-Fx | 2 Ex d e ia ib mb [iaibopis] IIC T4<br>DIP A21 TA80°C, IP66 |
| CSA | Ex d e ia ib mb [ia ib] IIC T4 Gb, Type 4X, IP66<br>Class II, Division 1, Groups E, F, G, T80°C<br>Ex ia tb [ia ib] IIIC T80°C Db, IP66 |
| KGS | Ex d e ia ib mb [ia ib] IIC T4<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| InMetro | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb [ia ib] IIC T4 Gb<br>Ex ia tb [ia ib] IIIC T80°C Db IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb [ia ib op is] IIC T4 Gb<br>Ex ia tb [ia ib op is] IIIC T80°C Db IP66 |

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## Technical specifications (continued)

| | SIMATIC HMI Thin Client Ex2 |
|---|---|
| **Devices in version "Zone 2"** | |
| ATEX directive 94/9/EC | |
| • Network 10/100 Base-Tx | II 3 (2/3) G Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>II3 (2/3) D Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | II 3 (2/3) G Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc<br>II 3 (2/3) D Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| IECEx | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| GOST-R | |
| • Network 10/100 Base-Tx | 2 Ex de i a ib mb nA [ib][ic] IIC T4 DIP A21 TA80°C, IP66 |
| • Network 10/100 Base-Fx | 2 Ex de i a ib mb nA [ibopis][ic] IIC T4 DIP A21 TA80°C, IP66 |

| | SIMATIC HMI Thin Client Ex2 |
|---|---|
| CSA | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc, Type 4X, IP66<br>Class II, Division 2, Groups E, F, G, T80°C;<br>Ex ia tc [ib ic] IIIC T80°C Dc, IP66 |
| InMetro | |
| • Network 10/100 Base-Tx | Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc<br>Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 |
| • Network 10/100 Base-Fx | Ex d e ia ib mb nA [ib op is Gb] IIC T4<br>Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 |
| **Protocols** | RDP, RealVNC |
| **Digital KVM switch** | Input: DVI / VGA, PS/2 / USB, output: RJ45 (IP network) |
| **Dimensions** | |
| Mounting dimensions (W x H x D) in mm | 15": 427.5 x 327.5 x 165<br>19": 522.5 x 412.5 x 165 |
| Front dimensions in mm | 15": 440 x 340<br>19": 535 x 425 |
| **Weight** | 15": 15 kg, 19": 23 kg |

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex2** | **6AV7200- 7 ■ ■ 0 ■ - ■ ■ ■ ■** |
| Intel Atom E3845 1.91 GHz, 24 V DC power supply | |
| Design / display size | |
| • Zone 2: 15" touch with 8 function keys | **A** |
| • Zone 2: 19" touch with 8 function keys | **B** |
| • Zone 1: 15" touch with 8 function keys | **C** |
| • Zone 1: 19" touch with 8 function keys | **D** |
| Networks | |
| • 10/100 BaseTX, copper Ethernet | **A** |
| • 100 BaseFX, Fibre Optic Ethernet | **B** |
| Mass storage / main memory / operating system | |
| • 64 GB SSD, 4 GB RAM, Windows 10 IoT & Remote Firmware V5 | **0** |
| Optional interfaces | |
| • No interfaces | **0** |
| • Second serial interface | **1** |
| • Intrinsically safe reader interface | **2** |
| Enclosure type and material | |
| • No enclosure | **0** |
| • Cleanroom enclosure front door (CFR), SS304 | **1** |
| • Front door enclosure (FR), SS304 | **2** |
| • Backdoor enclosure (BD), SS304; (only without wall mounting, without 240 V AC and without -30 °C options) | **3** |
| Keyboard with housing; layout | |
| • No keyboard | **A** |
| • Keyboard SS304, layout DE | **B** |
| • Keyboard SS304, layout US | **C** |
| • Keyboard SS304, layout FR | **D** |
| • Keyboard SS304, layout DK | **E** |

| | Article No. |
|---|---|
| **SIMATIC HMI Thin Client Ex2** | **6AV7200- 7 ■ ■ 0 ■ - ■ ■ ■ ■** |
| Integrated mouse / trackball | |
| • No mouse/trackball | **A** |
| • Trackball 50 mm IP54 integrated | **B** |
| • Trackball 50 mm IP54 separate | **C** |
| Mounting options | |
| • Without, front panel mounting only | **0** |
| • Direct wall mounting | **1** |
| • Mount for pedestal or bracket mounting on enclosure base | **2** |
| • Mount for ceiling or bracket mounting on enclosure top part | **3** |
| **Additional options** | |
| • 100 .. 240 V AC power supply, (requires enclosure) | **A01** |
| • Outdoor to -20 °C (requires enclosure, only without keyboard) | **B01** |
| • -20°C (only without keyboard) | **C01** |
| • Emergency off button 8003 right (only with enclosure) | **D01** |
| • Emergency off button 8003 left (only with enclosure) | **E01** |
| • Outdoor to -30 °C (requires enclosure, only without keyboard) | **F01** |
| • Outdoor to -10 °C (requires enclosure, for keyboard) | **G01** |
| Accessories | |
| **Digital KVM for HMI Thin Client Ex** | **6AV7675-0EX00-0AA0** |
| **USB drive** | |
| • Intrinsically safe, 16 GB | **6AV7675-0FX00-0AA0** |
| • Intrinsically safe, 16 GB with recovery function | **6AV7675-0FX10-0AA0** |
| **Ethernet switch** | **6AV7675-0PX00-0AA0** |
| With FOC 4x 100Base Tx, 1x 100 Base (MTRJ), Fx Ex op is | |

Additional information is available on the Internet at:
http://www.siemens.com/simatic-hmi-ex

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## Introduction

### Overview

SIMATIC industrial PCs offer users a wide range of designs and systems which are perfectly matched to industrial applications and meet the stringent demands for ruggedness.

These include e.g.:

- Wide temperature range up to 60 °C
- High resistance to vibration/shock
- Rugged housing design
- Special degrees of protection up to IP65, NEMA 4
- High electromagnetic compatibility (EMC)
- UL, CE industry certification
- Integral industrial power supplies (NAMUR)
- Easy-to-service design for rapid replacement of faulty components

***Higher system availability***

A graded concept is available for effective early detection of potential failures and minimization of actual downtimes. It consists of software developed specifically for the SIMATIC IPCs, which enables system availability to be individually increased according to the safety requirements.

***Reduced costs***

Special backup mechanisms reduce the risk of data loss and allow the introduction of new concepts at initial or repeated commissioning.
The remote control and automatic self-diagnostics options reduce travel expenditure and time spent on on-site service calls, allowing service measures to be planned more efficiently.

Downtimes are minimized or eliminated altogether.
The SIMATIC IPC software products thus help to significantly reduce the total cost of ownership (TCO) of the installation according to the motto: "Small effort, great effect".

The following components are available:

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data backup of hard disk contents
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up
- Secure processing of hard disk partitions
- Creation of bootable and password-protected USB flash drives
- Secure deletion of data storage media

SIMATIC IPC DiagMonitor

- Diagnostic and alarm software for monitoring SIMATIC IPCs
- Comprehensive monitoring of temperature, fans, hard disks (SMART, RAID, CompactFlash, CFast, SSD), watchdog
- Operating hours counter for preventive maintenance
- Event logging and task planning
- Data exchange via OPC, email, text messages or SNMP
- Integrated BIOS Manager

SIMATIC IPC Remote Manager

- Efficient remote maintenance and operation of SIMATIC IPCs
- Use of the Intel Active Management Technology (Intel AMT) for SIMATIC IPCs
- Remote access to desktop, BIOS and power management
- Booting of a remote PC by means of a local ISO image

SIMATIC IPC FirmwareManager

- Display of the firmware information
- Updating the firmware
- Setting the booting behavior
- Display of the SMBIOS data
- Setting the password parameters
- Editing the setup settings (Bios configuration)
- Insertion of a boot logo
- Setup of a secure boot

***Operating systems for applications in the industrial environment***

SIMATIC Industrial OS

Apart from the hardware, the operating system is the most important internal component of a computer. It can come supplied with user programs or simply provide the application resources.

The SIMATIC Industrial OS with its Linux-based operating system not only constitutes an alternative to the Microsoft Windows operating systems also available for the SIMATIC IPCs, it also offers a suitable solution to the challenges listed above.

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## Overview

SIMATIC IPC Image & Partition Creator is the software tool for easy, preventive backup and restoring of hard disk contents (images of individual partitions or complete hard disks).
This software can be ordered using the
SIMATIC IPC Configurator, or separately as a single license.

- Can run on all SIMATIC IPCs, regardless of the computer configuration
- Direct starting from the USB flash drive possible (no installation required)
- Complete backup by means of a mouse double-click with "1ClickImage" (must be installed)
- Independent of operating system thanks to start from bootable USB flash drive with Image & Partition Creator
- Extremely easy system restore using end customer's USB flash drive https://support.industry.siemens.com/cs/ww/en/view/109766855

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC Image & Partition Creator V3.5** | Can be ordered using the SIMATIC IPC Configurator |
| **SIMATIC IPC Image & Partition Creator V3.5**<br>Software tool for very easy preventive data backup and efficient partition management on SIMATIC IPCs | **6ES7648-6AA13-5YA0** |

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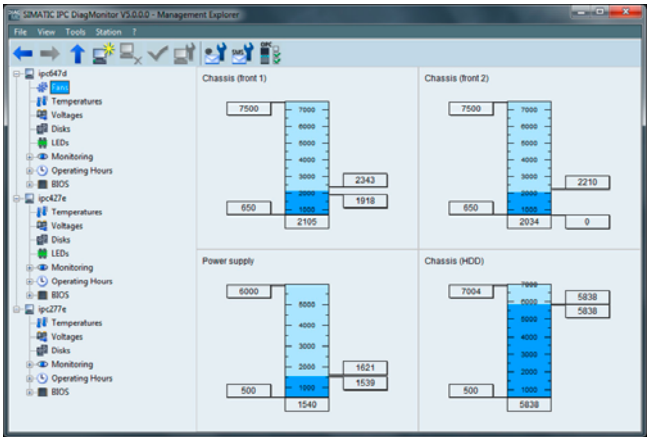
# SIMATIC IPC DiagMonitor

## Overview


SIMATIC IPC DiagMonitor V5.0.0.0 - Management Explorer
File View Tools Station ?
ipc647d
Fans
Temperatures
Voltages
Disks
LEDs
Monitoring
Operating Hours
BIOS
ipc427e
Temperatures
Voltages
Disks
LEDs
Monitoring
Operating Hours
BIOS
ipc277e
Temperatures
Voltages
Disks
Monitoring
Operating Hours
BIOS
Chassis (front 1)
7500
650
2105
2343
1918
Chassis (front 2)
7500
650
2034
2210
0
Power supply
6000
500
1540
1621
1539
Chassis (HDD)
7004
500
5838
5838
5838

The SIMATIC IPC DiagMonitor permits intelligent and comprehensive monitoring and diagnostics of SIMATIC Industrial PCs.

It detects potential hardware and software faults at an early stage, visualizes operating states and offers various options for access and data exchange.

The SIMATIC IPC DiagMonitor supports not only local diagnostics, but also access via the network to SIMATIC IPC. When installed on a standard PC, all remote functions required for remote access are available.

Only the following SIEMENS products are supported:

- SIMATIC IPC127E
- SIMATIC IPC227E / IPC277E
- SIMATIC IPC427E / IPC477E / IPC427D / IPC477D
- SIMATIC IPC547G
- SIMATIC IPC647E / IPC627D / IPC647D / IPC677D
- SIMATIC IPC847E / IPC827D / IPC847D
- CPU 1515SP PC
- CPU 1515SP PC2

The software can be ordered as:

- Individual product from stock (e.g. for server applications on third-party PCs or immediate integration in new systems) on USB flash drive, as download via Online Software Delivery (OSD), or
- as option ordered according to the SIMATIC IPC Configurator (Internet, Industry Mall).

Note:

As of Version 5.1, the SIMATIC IPC DiagMonitor is delivered on a USB flash drive.

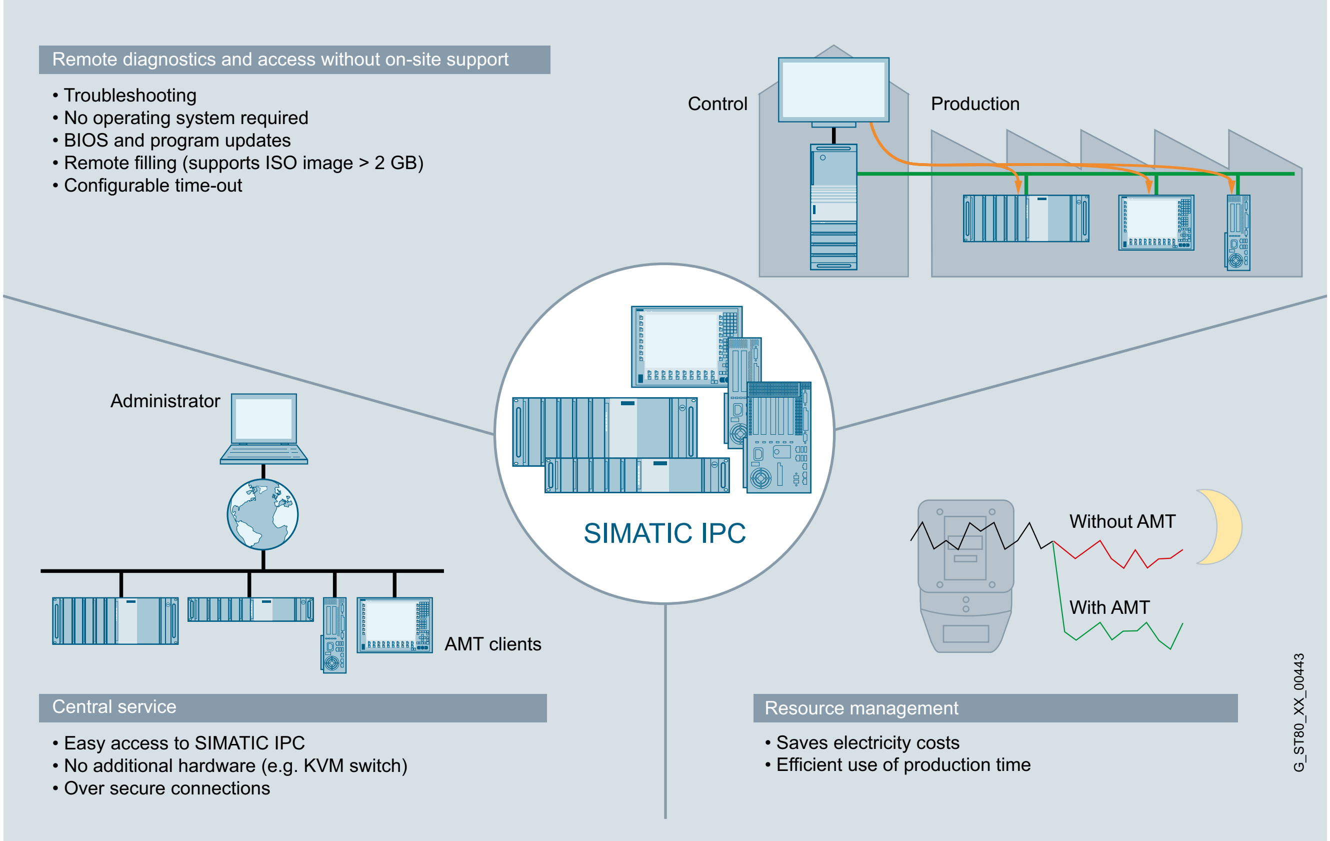
One version of SIMATIC IPC DiagMonitor is required for each monitoring PC or for each SIMATIC IPC to be monitored.

https://support.industry.siemens.com/cs/ww/en/view/109763202

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC DiagMonitor V5.1** | Can be ordered using the SIMATIC IPC Configurator |
| **SIMATIC IPC DiagMonitor V5.1**<br>Software for diagnostics/messages via Ethernet, email, SMS, OPC, web | |
| • On USB flash drive; single license | **6ES7648-6CA15-1YX0** |
| • Download via OSD; single license; software and license for download; email address required for delivery | **6ES7648-6CA85-1YX0** |

## Overview



Remote diagnostics and access without on-site support

- Troubleshooting
- No operating system required
- BIOS and program updates
- Remote filling (supports ISO image > 2 GB)
- Configurable time-out

Central service

- Easy access to SIMATIC IPC
- No additional hardware (e.g. KVM switch)
- Over secure connections

Resource management

- Saves electricity costs
- Efficient use of production time

### *SIMATIC IPC Remote Manager*

Efficient remote maintenance and management of SIMATIC IPCs.

With the SIMATIC IPC Remote Manager you can use functions of the Intel Active Management Technology (Intel AMT) for SIMATIC IPCs. Intel AMT is used for remote management of PCs.

Intel AMT offers a range of functions, such as:

- Remote reboot
- IDE redirection
- Keyboard video mouse redirection
- Power on / off / reset, and
- An integrated web server.

https://support.industry.siemens.com/cs/ww/en/view/109744024

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC Remote Manager V1.3**<br>Software tool for remote maintenance and management of SIMATIC IPC, incl. manual on CD-ROM (English, German), single license | **6ES7648-6EA01-3YA0** |

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## SIMATIC IPC FirmwareManager

### Overview

***SIMATIC IPC FirmwareManager***

The SIMATIC IPC FirmwareManager is a management tool for configuring and replacing firmware components.
The FirmwareManager is controlled via command line options.

Only the following Siemens products are supported:

- SIMATIC IPC647E, SIMATIC IPC647D, SIMATIC IPC847E, SIMATIC IPC847D
- SIMATIC IPC127E, SIMATIC IPC227E, SIMATIC IPC427E, SIMATIC IPC427D, SIMATIC IPC627E, SIMATIC IPC627D, SIMATIC IPC827D
- SIMATIC IPC277E, SIMATIC IPC477E, SIMATIC IPC477D, SIMATIC IPC677E, SIMATIC IPC677D
- SIMATIC Field PG M5, SIMATIC Field PG M6
- SIMATIC ITP1000

Supported operating systems:

- UEFI Shell
- Windows XP 32/64-bit
- Windows 7 32/64-bit
- Windows 10 64-bit
- Linux-based (kernel 3.x, 4.x, 5.x) 32/64-bit

The SIMATIC IPC FirmwareManager is available via online software delivery (OSD).

***Licenses:***

There are two license versions available for the SIMATIC IPC FirmwareManager.

- The ***single license*** is intended for use with a single IPC.
  It allows installation or mobile use with only one SIMATIC IPC.
- The ***license for 50 devices*** allows mobile use (via e.g. a USB flash drive) together with up to 50 IPCs.
  If the FirmwareManager is to be used with more than 50 IPCs, a corresponding number of licenses is required.

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC FirmwareManager V4.0**<br>Software and license for download: E-mail address absolutely required for delivery. | |
| • **Single license;**<br>One version of the "SIMATIC IPC FirmwareManager" is required for each SIMATIC IPC on which the firmware manager is installed. | **6ES7648-6FA84-0YX0** |
| • **SIMATIC IPC FirmwareManager for 50 devices;**<br>One version of the "SIMATIC IPC FirmwareManager for 50 devices" is required for mobile use with up to 50 SIMATIC IPC | **6ES7648-6GA84-0YX0** |

Additional information is available on the Internet at:

https://support.industry.siemens.com/cs/ww/en/view/109773878

https://support.industry.siemens.com/cs/ww/en/view/109778609

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## Overview

***SIMATIC Industrial OS – the operating system for applications in the industrial environment***

The SIMATIC Industrial OS with its Linux-based operating system constitutes an alternative to the tried-and-tested Microsoft Windows operating systems available for the SIMATIC IPCs.

The focus is on a small footprint, without unnecessary ballast, but with all components for fast commissioning and simple further development.

It was put together and tested on the SIMATIC IPCs and can be used in industrial environments and other areas of application.

Released devices:

Siemens has released the following SIMATIC IPCs for version 1.5 of SIMATIC Industrial OS:

- SIMATIC IPC127E
- SIMATIC IPC227E/277E
- SIMATIC IPC327E/377E/IPC347E
- SIMATIC IPC427E/477E
- SIMATIC IPC527G/IPC547G
- SIMATIC IPC647E
- SIMATIC IPC847E

Minimum requirements:

- USB flash drive with a memory of at least 8 GB
- SIMATIC IPC (see released devices) with at least 4 GB capacity on the target storage medium (CFAST, SSD, etc.)

https://support.industry.siemens.com/cs/ww/en/view/109766374

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC Industrial OS V1.5, based on Linux**<br>Operating system for SIMATIC IPC; single license; software and license for download; email address required for delivery | **6ES7648-6LA81-0YA8** |

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## Embedded bundles, starter systems, software packages

### Overview

***Embedded bundles and starter systems - The fast, efficient way to get started with PC-based automation***

Embedded bundles and starter systems

Embedded bundles and IPC starter systems for PC-based automation are based on rugged, fan-free embedded industrial PCs:

- Nanobox PC SIMATIC IPC227 and Microbox PC SIMATIC IPC427 or
- Panel PC SIMATIC IPC277 and SIMATIC IPC477

They are pre-installed, configured, and ready-to-use with the SIMATIC S7-1507S / SIMATIC WinAC RTX (F) Software Controller and/or a version of the SIMATIC WinCC Advanced visualization software.

Embedded bundles and IPC starter systems are embedded IPC configurations with pre-installed software, specially designed for automation and visualization tasks.

- All embedded bundles and IPC starter systems are based on rugged, fanless SIMATIC IPCs
- Various CPU performance classes are available for different applications. From Intel Atom CPUs for simple open-loop control and visualization tasks, all the way to Intel Xeon CPUs for complex automation solutions
- Optionally pre-installed and configured with the SIMATIC S7-1507S (for IPC227E / 277E / IPC427E / IPC477E / IPC477E PRO) / SIMATIC WinAC RTX (F) Software Controller and/or SIMATIC WinCC RT Advanced visualization software
- Embedded bundles are based on Windows Embedded Standard 7 and the scope of supply includes licenses for the configured system in each case
- The IPC starter systems are based on Windows 10 Enterprise 2016 LTSB.
  The license for the CPU 1507S can be obtained for the IPC427E and IPC477E when ordering the software controller. Software packages can be accessed for the IPC227E and IPC277E.
  For WinCC Runtime Advanced licenses we recommend ordering the software packages required in order to benefit from price savings.

Software packages

Software packages with SIMATIC WinCC (SCADA, Advanced, Professional), SIMATIC WinCC flexible and SIMATIC WinAC RTX (F) are available for all SIMATIC IPCs.

Ordering the automation software together with an industrial PC results in significant price savings.

***A software package can only be supplied if the same number of SIMATIC industrial PCs is ordered together with the software.***

### Benefits

Embedded bundles and starter systems:

- Fast commissioning thanks to preinstalled software
- IPC hardware and software perfectly tuned to each other
- High system availability in order to reduce the risk of potential failures and maintenance costs
- Maintenance-free since no rotating parts (fans, hard disks) and operation without battery possible
- NVRAM can be overwritten by the software controller
- SIMATIC software system-tested
- Long-term availability: Service and support period of 8 to 10 years after market launch

Software packages:

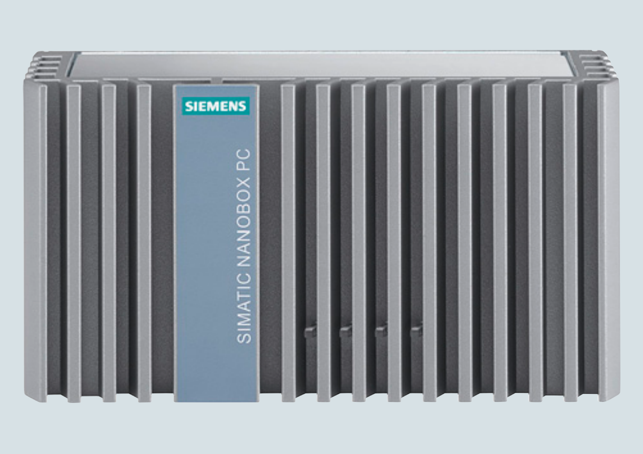
- Easy to order
- Cost savings compared to ordering components individually
- Optimally tuned hardware for the SIMATIC HMI software
- System-tested solution
- Available for all SIMATIC IPCs

### More information

Additional information is available on the Internet at:

http://www.automation.siemens.com/mcms/pc-based-automation/en/embedded-bundles

## Overview



***SIMATIC IPC227E (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged***

The SIMATIC IPC227E Nanobox PC is an extremely compact and flexible embedded industrial PC.

Thanks to its closed, dust-protected all-metal enclosure, the IPC227E offers maximum industrial functionality for flexible use under harsh conditions—while remaining maintenance-free.

Modern interfaces and the option for expansion via a PCIe slot mean this Box PC can be easily integrated into the automation system. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here in an ultra-compact design.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC227E** | **6ES7647- 8 B■■■-■■■■** |
| Processor | |
| • Celeron N2807 (2C/2T) | **A** |
| • Celeron N2930 (4C/4T) | **B** |
| • Celeron N2807 (2C/2T)/TPM (not for China) | **C** |
| • Celeron N2930 (4C/4T)/TPM (not for China) | **D** |
| • Celeron E3845 ET (4C/4T) / TPM (not for China) | **E** |
| Work memory/NVRAM | |
| • 2 GB | **1** |
| • 4 GB | **2** |
| • 8 GB | **3** |
| • 2 GB/NVRAM | **4** |
| • 4 GB/NVRAM | **5** |
| • 8 GB/NVRAM | **6** |
| • 4 GB RAM ET / NVRAM | **7** |
| Device version/interface | |
| • Basis without COM | **1** |
| • Basis with COM1/2 | **2** |
| • PCIe without COM | **3** |
| • PCIe with COM1/2 | **4** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 E SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 E SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 P SP1, English, 32-bit | **3** |
| • Windows Embedded Standard 7 P SP1, English, 64-bit | **4** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **5** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **6** |
| • Windows 10 IoT Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) | **7** |

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## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC227E** | **6ES7647- 8 B■■■ - ■■■■** |
| Mass storage | |
| - None | **A** |
| - 128 GB SSD | **E** |
| - 240 GB SSD | **C** |
| - 480 GB SSD | **D** |
| - 60 GB SSD ET | **H** |
| - 4 GB CFast | **K** |
| - 8 GB CFast | **L** |
| - 16 GB CFast | **M** |
| - 30 GB CFast | **N** |
| - 320 GB HDD | **R** |
| Software | |
| - Without SIMATIC software | **A** |
| - CPU 1507S | **B** |
| - WinCC RT Advanced V14, 128 PT (V15 license package) | **D** |
| - WinCC RT Advanced V14, 512 PT (V15 license package) | **E** |
| - WinCC RT Advanced V14, 2 048 PT (V15 license package) | **F** |
| - WinCC RT Advanced V14, 4 096 PT (V15 license package) | **G** |
| - CPU 1507S/WinCC RT Advanced V14, 128 PT (V15 license package) | **J** |
| - CPU 1507S/WinCC RT Advanced V14, 512 PT (V15 license package) | **K** |
| - CPU 1507S/WinCC RT Advanced V14, 2 048 PT (V15 license package) | **L** |
| - CPU 1507S/WinCC RT Advanced V14, 4 096 PT (V15 license package) | **M** |
| - Starter system, with CPU1507S and WinCC RT Advanced, without licenses | **S** |
| - Industrial Edge | **V** |

| | Article No. |
|---|---|
| **SIMATIC IPC227E** | **6ES7647- 8 B■■■ - ■■■■** |
| Mounting accessories | |
| - Standard mounting rail | **1** |
| - Wall mounting | **2** |
| - Portrait mounting | **3** |
| - DIN rail mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **4** |
| - Wall mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **5** |
| - Portrait mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 | **6** |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

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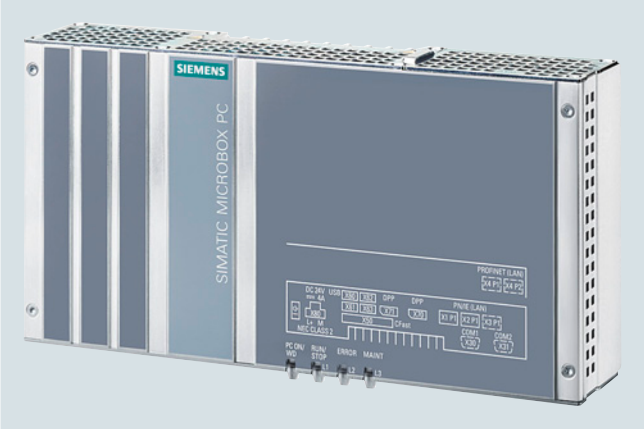
## Overview



***SIMATIC IPC427E (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration***

Ready-to-run, complete solution:

- Ultra-compact
- Maintenance-free
- Intel Core i technology of the 6th Generation

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC427E (Box PC)** 1) | **6AG4141-■■■■■-■■■■** |
| Processor and fieldbus | |
| • Celeron G3902E;<br>2 x Gigabit Ethernet (IE/PN) | **0** |
| • Celeron G3902E;<br>3 x Gigabit Ethernet (IE/PN) | **1** |
| • Core i3-6102E;<br>3 x Gigabit Ethernet (IE/PN) | **3** |
| • Core i5-6442EQ;<br>3 x Gigabit Ethernet (IE/PN) | **5** |
| • Xeon E3-1505L;<br>3 x Gigabit Ethernet (IE/PN) | **7** |
| Mounting accessories/ATEX | |
| • DIN rail mounting | **B** |
| • Wall mounting | **C** |
| • Portrait mounting | **D** |
| • DIN rail mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **F** |
| • Wall mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **G** |
| • Portrait mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 | **H** |
| Work memory/NVRAM/ECC | |
| • 4 GB | **A** |
| • 8 GB | **B** |
| • 16 GB | **C** |
| • 8 GB with ECC | **D** |
| • 16 GB with ECC | **E** |
| • 4 GB and NVRAM | **F** |
| • 8 GB and NVRAM | **G** |
| • 16 GB and NVRAM | **H** |
| • 8 GB with ECC and NVRAM | **J** |
| • 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| • No RS 232/RS 485, without PCIe | **0** |
| • No RS 232/RS 485 and one PCIe | **1** |
| • No RS 232/RS 485 and two PCIe | **2** |
| • Two RS 232/RS 485, without PCIe | **3** |
| • Two RS 232/RS 485 and one PCIe | **4** |
| • Two RS 232/RS 485 and two PCIe | **5** |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 SP1, English, 64-bit, multi-touch | **3** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **4** |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Celeron, Core i3 and Core i5 processors | **7** |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Xeon processors | **8** |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IPC427E (Box PC)** [1] | **6AG4141-** ■■■■■ **-** ■■■■ |
| Mass storage, externally accessible | |
| • Without external mass storage | **0** |
| • CFast 2 GB without operating system | **1** |
| • CFast 4 GB without operating system | **2** |
| • CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | **3** |
| • CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | **4** |
| • CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | **5** |
| Mass storage, internal | |
| • Without internal mass storage | **A** |
| • 128 GB solid-state drive SATA | **D** |
| • 240 GB solid-state drive SATA | **F** |
| • 480 GB solid-state drive SATA | **G** |
| • 320 GB HDD | **J** |
| SIMATIC Software (bundles/starter system) | |
| • Without SIMATIC software | **A** |
| • CPU 1507S | **B** |
| • WinCC RT Advanced V15 | |
| - 128 PT | **C** |
| - 512 PT | **D** |
| - 2 048 PT | **E** |
| - 4 096 PT | **F** |
| - 8 192 PT | **G** |
| CPU 1507S / WinCC RT Advanced V15 | |
| - 128 PT | **H** |
| - 512 PT | **J** |
| - 2 048 PT | **K** |
| - 4 096 PT | **L** |
| - 8 192 PT | **M** |
| • IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | **S** |
| Power supply | |
| • 24 V DC industrial power supply | **0** |
| • 24 V DC and TPM [2] (not for China or Russia) | **8** |

[1] For an up-to-date overview, see the SIMATIC PC Online Configurator: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

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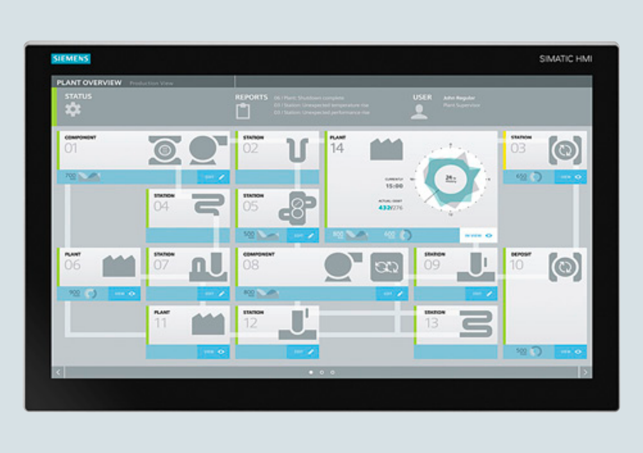
## Overview



***SIMATIC IPC277E: The Panel PC with optimized performance – maintenance-free and compact with displays from 7"***

The SIMATIC IPC277E Nanopanel PC is a flexible embedded industrial PC with rugged and durable displays.

Technologically it is based on the IPC227E Nanobox PC and thus offers maximum industrial functionality for flexible use even under harsh conditions – all without the need for maintenance.

The Panel PC is characterized by modern interfaces and a high degree of flexibility in the selection of the display. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here for visualization and control tasks.

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC277E (Nanopanel PC)** | **6AV7882- 0 ■ ■ ■ 0 - ■ ■ ■ 0** |
| Operating unit | |
| • 7" touch | A |
| • 9" touch | B |
| • 12" touch | C |
| • 15" touch front USB | D |
| • 19" touch front USB | E |
| • 12" multi-touch (with WES7-E only single-touch mode) | H |
| • 15" multi-touch (with WES7-E only single-touch mode) | F |
| • 19" multi-touch (with WES7-E only single-touch mode) | G |
| • 15" multi-touch (1 366 x 768; ATEX/IECEx/UL HazLoc; with WES7-E only single-touch mode) | J |
| • 19" multi-touch (1 366 x 768; ATEX/IECEx/UL HazLoc; with WES7-E only single-touch mode) | K |
| Processor | |
| • Celeron N2807 (2C/2T) | A |
| • Celeron N2930 (4C/4T) | B |
| • Celeron N2807 (2C/2T)/TPM | C |
| • Celeron N2930 (4C/4T)/TPM | D |
| Work memory/NVRAM | |
| • 2 GB | 1 |
| • 4 GB | 2 |
| • 8 GB | 3 |
| • 2 GB/NVRAM | 4 |
| • 4 GB/NVRAM | 5 |
| • 8 GB/NVRAM | 6 |
| Operating system | |
| • Without operating system | 0 |
| • Windows Embedded Standard 7 E SP1, English, 32-bit | 1 |
| • Windows Embedded Standard 7 E SP1, English, 64-bit | 2 |
| • Windows Embedded Standard 7 P SP1, English, 32-bit | 3 |
| • Windows Embedded Standard 7 P SP1, English, 64-bit | 4 |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | 5 |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | 6 |
| • Windows 10 IoT Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) | 7 |

| | Article No. |
|---|---|
| **SIMATIC IPC277E (Nanopanel PC)** | **6AV7882- 0 ■ ■ ■ 0 - ■ ■ ■ 0** |
| Mass storage | |
| • None | A |
| • 128 GB SSD | E |
| • 240 GB SSD | C |
| • 480 GB SSD | D |
| • 4 GB CFast | K |
| • 8 GB CFast | L |
| • 16 GB CFast | M |
| • 30 GB CFast | N |
| Software | |
| • Without SIMATIC software | A |
| • CPU 1507S | B |
| • WinCC RT Advanced V14, 128 PT (V15 license package) | D |
| • WinCC RT Advanced V14, 512 PT (V15 license package) | E |
| • WinCC RT Advanced V14, 2 048 PT (V15 license package) | F |
| • WinCC RT Advanced V14, 4 096 PT (V15 license package) | G |
| • CPU 1507S/WinCC RT Advanced V14, 128 PT (V15 license package) | J |
| • CPU 1507S/WinCC RT Advanced V14, 512 PT (V15 license package) | K |
| • CPU 1507S/WinCC RT Advanced V14, 2 048 PT (V15 license package) | L |
| • CPU 1507S/WinCC RT Advanced V14, 4 096 PT (V15 license package) | M |

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

## SIMATIC IPC477E bundles and starter systems

### Overview

SIEMENS
SIMATIC HMI
PLANT OVERVIEW
STATUS
REPORTS
USER

***SIMATIC IPC477E: The powerful embedded Panel PC – maintenance-free with versatile configuration***

- Embedded PC platform with extremely high industrial compatibility for demanding tasks in the field of PC-based automation
- Maintenance-free (no rotating components such as fan and hard disk)
- Rugged construction: The PC is resistant to even the harshest mechanical stress and extremely reliable in operation
- Compact design
- Battery-independent retentive memory onboard
- High degree of investment security
- Fast integration capability
- Built-in versions
  - 15" TFT touch
  - 19" TFT touch
  - 22" TFT touch
  - 15" TFT multi-touch
  - 19" TFT multi-touch
  - 22" TFT multi-touch
  - 24" TFT multi-touch

### Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| Processor and fieldbus | |
| • Celeron G3902E;<br>3 x Gigabit Ethernet (IE/PN) | **1** |
| • Core i3-6102E;<br>3 x Gigabit Ethernet (IE/PN) | **3** |
| • Core i5-6442EQ;<br>3 x Gigabit Ethernet (IE/PN) | **5** |
| • Xeon E3-1505L;<br>3 x Gigabit Ethernet (IE/PN) | **7** |
| Operating unit | |
| • 15" single-touch (1 280 x 800) with front USB | **B** |
| • 19" single-touch (1 366 x 768) with front USB | **D** |
| • 22" single-touch (1 920 x 1 080) with front USB | **E** |
| • 15" multi-touch (1 366 x 768), single-touch mode only with WES7-E | **J** |
| • 19" multi-touch (1 366 x 768), single-touch mode only with WES7-E | **K** |
| • 22" multi-touch (1 920 x 1 080), single-touch mode only with WES7-E | **L** |
| • 24" multi-touch (1 920 x 1 080), single-touch mode only with WES7-E | **R** |

| | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| Work memory/NVRAM | |
| • 4 GB | **A** |
| • 8 GB | **B** |
| • 16 GB | **C** |
| • 8 GB with ECC | **D** |
| • 16 GB with ECC | **E** |
| • 4 GB and NVRAM | **F** |
| • 8 GB and NVRAM | **G** |
| • 16 GB and NVRAM | **H** |
| • 8 GB with ECC and NVRAM | **J** |
| • 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| • No RS 232/RS 485, without PCIe | **0** |
| • No RS 232/RS 485 and one PCIe | **1** |
| • Second RS 232/RS 485, without PCIe | **3** |
| • Second RS 232/RS 485 and one PCIe | **4** |
| • No RS 232, without PCIe with ATEX/IECEx Cat 3G Zone 2 | **5** |
| • No RS 232 and one PCIe with ATEX/IECEx Cat 3G Zone 2 | **6** |
| • Two RS 232 without PCIe with ATEX/IECEx Cat 3G Zone 2 | **7** |
| • Two RS 232 and one PCIe with ATEX/IECEx Cat 3G Zone 2 | **8** |

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[1] For an up-to-date overview, see the SIMATIC PC Online Configurator: http://www.siemens.com/ipc-configurator

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| Operating system | |
| • Without operating system | 0 |
| • Windows Embedded Standard 7 SP1, English, 32-bit | 1 |
| • Windows Embedded Standard 7 SP1, English, 64-bit | 2 |
| • Windows Embedded Standard 7 P SP1, English, 64-bit, multi-touch | 3 |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | 4 |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Celeron, Core i3 and Core i5 processors | 7 |
| • Windows 10 Enterprise 2016 LTSB (64-bit) for Xeon processors | 8 |
| Mass storage, externally accessible | |
| • Without external mass storage | 0 |
| • CFAST 2 GB, without operating system | 1 |
| • CFast 4 GB, without operating system | 2 |
| • CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | 3 |
| • CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | 4 |
| • CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | 5 |
| Mass storage, internal | |
| • Without internal mass storage | A |
| • 128 GB solid-state drive SATA | D |
| • 240 GB solid-state drive SATA | F |
| • 480 GB solid-state drive SATA | G |
| • 320 GB HDD | J |

| | Article No. |
|---|---|
| **SIMATIC IPC477E** [1] | **6AV7241 - ■■■■■ - ■■■■** |
| SIMATIC software (bundles and starter systems) | |
| • Without SIMATIC software | A |
| • CPU 1507S | B |
| • WinCC RT Advanced V15 | |
| - 128 PT | C |
| - 512 PT | D |
| - 2 048 PT | E |
| - 4 096 PT | F |
| - 8 192 PT | G |
| • CPU 1507S / WinCC RT Advanced V15 | |
| - 128 PT | H |
| - 512 PT | J |
| - 2 048 PT | K |
| - 4 096 PT | L |
| - 8 192 PT | M |
| • IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | S |
| Power supply: | |
| • 24 V DC industrial power supply | 0 |
| • 110/230 V AC industrial power supply with NAMUR; European power cable | 1 |
| • 110/230 V AC industrial power supply with TPM [2] (not for China or Russia) NAMUR, European power cable | 7 |
| • 24 V DC industrial power supply and TPM [2] (not for China or Russia) | 8 |

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[1] For an up-to-date overview, see the SIMATIC PC Online Configurator: http://www.siemens.com/ipc-configurator

[2] TPM = Trusted Platform Module

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## SIMATIC IPC477E PRO bundles

### Overview

*SIMATIC IPC477E PRO*

The fully enclosed IP65-protected SIMATIC IPC477E PRO in 15", 19" and 22" versions extends the portfolio of PRO devices.

The robust aluminum housing allows it to be used directly on the machine even in harsh environmental conditions.
The operating unit can either be mounted on a pedestal or connected to a support arm system from above.

### Ordering data

| | Article No. |
|---|---|
| **SIMATIC IPC477E PRO** [1] | **6AV7251-** ■■■■■ - ■■■■ |
| CPUs and fieldbus | |
| • Celeron G3902E; 3x Gigabit Ethernet (IE/PN) | **1** |
| • Core i3-6102E; 3x Gigabit Ethernet (IE/PN) | **3** |
| • Core i5-6442EQ; 3x Gigabit Ethernet (IE/PN) | **5** |
| • XEON E3-1505L; 3x Gigabit Ethernet (IE/PN) | **7** |
| Operating unit | |
| • 15" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **B** |
| • 15" multi-touch (1 366 x 768), for pedestal (expandable, flange below) | **C** |
| • 15" multi-touch (1 366 x 768), for support arm (expandable, round tube) | **D** |
| • 19" multi-touch (1 366 x 768), for support arm (not expandable, flange on top) | **E** |
| • 19" multi-touch (1 366 x 768), for pedestal (expandable, flange below) | **F** |
| • 19" multi-touch (1 366 x 768), for support arm (expandable, round tube) | **G** |
| • 22" multi-touch (1 920 x 1 080), for support arm (not expandable, flange on top) | **H** |
| • 22" multi-touch (1 920 x 1 080), for pedestal (expandable, flange below) | **J** |
| • 22" multi-touch (1 920 x 1 080), for support arm (expandable, round tube) | **K** |
| Work memory/NVRAM | |
| • 4 GB | **A** |
| • 8 GB | **B** |
| • 16 GB | **C** |
| • 8 GB with ECC | **D** |
| • 16 GB with ECC | **E** |
| • 4 GB and NVRAM | **F** |
| • 8 GB and NVRAM | **G** |
| • 16 GB and NVRAM | **H** |
| • 8 GB with ECC and NVRAM | **J** |
| • 16 GB with ECC and NVRAM | **K** |
| Expansions/interfaces | |
| • No RS232/485, without PCIe | **0** |
| • Two RS232/RS485, without PCIe | **3** |
| • No RS 232 without PCIe, with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 [3] | **5** |
| • Two RS 232 without PCIe, with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2 [3] | **6** |

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[1] IPC477E PRO as "built to order" version (max. delivery time 15 working days).

[2] TPM = Trusted Platform Module

[3] Scheduled start of delivery: Q1/2019

| | Article No. |
|---|---|
| **SIMATIC IPC477E PRO** [1] | **6AV7251-** ■■■■■ - ■■■■ |
| Operating system | |
| • Without operating system | **0** |
| • Windows Embedded Standard 7 SP1, English, 32-bit | **1** |
| • Windows Embedded Standard 7 SP1, English, 64-bit | **2** |
| • Windows Embedded Standard 7 P SP1, MUI, 64-bit, multi-touch | **3** |
| • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) | **4** |
| • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) | **5** |
| • Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Celeron, I3 and I5 | **7** |
| • Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Xeon | **8** |
| Mass storage, external | |
| • Without external mass storage | **0** |
| • CFast 2 GB, without operating system | **1** |
| • CFast 4 GB, without operating system | **2** |
| • CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) | **3** |
| • CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) | **4** |
| • CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) | **5** |
| Mass storage, internal | |
| • Without internal mass storage | **A** |
| • 128 GB solid-state drive SATA | **D** |
| • 240 GB solid-state drive SATA | **F** |
| • 480 GB solid-state drive SATA | **G** |
| SIMATIC software pre-installed (bundles) | |
| • Without SIMATIC software | **A** |
| • IPC starter system with CPU 1507S and WinCC RT Advanced, without licenses | **S** |
| Power supply | |
| • 24 V DC industrial power supply | **0** |
| • 24 V DC industrial power supply and TPM [2] (not for China or Russia) | **8** |

Note:

As with the existing 4:3 IPC477C/D PRO devices, adaptation to different support arm/pedestal systems is by means of the basic adapter. The basic adapter is included in the scope of supply (except in the case of the "prepared for support arm and extension components" version, as the connection is made via a round tube). For the version "prepared for support arm and extension components", installation can alternatively take place with the Siemens flange mount or with a standard 48 mm diameter round tube. The flange mount enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter. This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

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## Overview

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***Software packages with SIMATIC IPC***

Software packages with SIMATIC WinCC, WinCC flexible, or SIMATIC WinAC together with the corresponding SIMATIC IPC.

Available:

- SIMATIC IPC packages with WinCC Unified PC RT (TIA Portal)
- SIMATIC IPC packages with WinCC V7
- SIMATIC IPC packages with WinCC Open Architecture – WinCC OA
- SIMATIC IPC packages with WinCC RT Advanced (TIA Portal)
- SIMATIC IPC packages with WinCC RT Professional (TIA Portal)
- SIMATIC WinCC flexible
- SIMATIC IPC packages with WinAC RTX (F)

A software package can only be supplied if the same number of SIMATIC industrial PCs is ordered together with the software. It cannot be ordered subsequently.

## Ordering data

| | Article No. |
|---|---|
| ***Software packages for SIMATIC IPC*** | |
| **SIMATIC WinCC Unified V16 PC Runtime** [1) 2)] | |
| Software and documentation on DVD, single license, license key on USB flash drive for: | |
| • 150 PowerTags | **6AV2155-3DB01-6AA0** |
| • 500 PowerTags | **6AV2155-1EB01-6AA0** |
| • 1k PowerTags | **6AV2155-2EB01-6AA0** |
| • 2.5k PowerTags | **6AV2155-2MB01-6AA0** |
| • 5k PowerTags | **6AV2155-1FB01-6AA0** |
| • 10k PowerTags | **6AV2155-2FB01-6AA0** |
| • 50k PowerTags | **6AV2155-1GB01-6AA0** |
| **SIMATIC WinCC Runtime Advanced V16** [1) 2)] | |
| Software and documentation on DVD, incl. WinCC Archives and WinCC Recipes.<br>Single license, license key on USB flash drive for: | |
| • 128 PowerTags | **6AV2114-2BA06-0AA0** |
| • 512 PowerTags | **6AV2114-2DA06-0AA0** |
| • 2 048 PowerTags | **6AV2114-2FA06-0AA0** |
| • 4 096 PowerTags | **6AV2114-2HA06-0AA0** |
| • 8 192 PowerTags | **6AV2114-2KA06-0AA0** |
| **SIMATIC WinCC Runtime Advanced V15.1** [1) 2)] | |
| Software and documentation on DVD, including WinCC Archives and WinCC Recipes.<br>Single license, license key on USB flash drive for: | |
| • 128 PowerTags | **6AV2114-2BA05-0AA0** |
| • 512 PowerTags | **6AV2114-2DA05-0AA0** |
| • 2 048 PowerTags | **6AV2114-2FA05-0AA0** |
| • 4 096 PowerTags | **6AV2114-2HA05-0AA0** |
| • 8 192 PowerTags | **6AV2114-2KA05-0AA0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC Runtime Professional V16** [1) 2) 3)] | |
| • WinCC Client for RT Professional | **6AV2117-2DB06-0AA0** |
| • 128 PowerTags | **6AV2117-2BA06-0AA0** |
| • 512 PowerTags | **6AV2117-2DA06-0AA0** |
| • 2 048 PowerTags | **6AV2117-2FA06-0AA0** |
| • 4 096 PowerTags | **6AV2117-2HA06-0AA0** |
| • 8 192 PowerTags | **6AV2117-2KA06-0AA0** |
| • 65 536 PowerTags | **6AV2117-2MA06-0AA0** |
| **SIMATIC WinCC Runtime Professional V15.1** [1) 2) 3)] | |
| • WinCC Client for RT Professional | **6AV2117-2DB05-0AA0** |
| • 128 PowerTags | **6AV2115-2BA05-0AA0** |
| • 512 PowerTags | **6AV2115-2DA05-0AA0** |
| • 2 048 PowerTags | **6AV2115-2FA05-0AA0** |
| • 4 096 PowerTags | **6AV2115-2HA05-0AA0** |
| • 8 192 PowerTags | **6AV2115-2KA05-0AA0** |
| • 65 536 PowerTags | **6AV2115-2MA05-0AA0** |

[1)] Only if ordered together with a SIMATIC IPC.

[2)] The current version is always supplied.

[3)] IPC127 only as client and single-user station for small projects, IPC227E/IPC277E and IPC327E/IPC377E only as WinCC client & single-user station.

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## Software packages for SIMATIC IPC

### Ordering data

| | Article No. |
|---|---|
| **SIMATIC WinCC V7.5 SP1 Runtime** 1) 2) | |
| • WinCC RT Client | **6AV6382-2AA07-5AX0** |
| • 128 PowerTags | **6AV6382-2CA07-5AX0** |
| • 512 PowerTags | **6AV6382-2DA07-5AX0** |
| • 2 048 PowerTags | **6AV6382-2EA07-5AX0** |
| • 8 192 PowerTags | **6AV6382-2HA07-5AX0** |
| • 65 536 PowerTags | **6AV6382-2FA07-5AX0** |
| **SIMATIC WinCC V7.5 SP1 Runtime ASIA** 1) 2) | |
| • WinCC RT Client | **6AV6382-2AA07-5AV0** |
| • 128 PowerTags | **6AV6382-2CA07-5AV0** |
| • 512 PowerTags | **6AV6382-2DA07-5AV0** |
| • 2 048 PowerTags | **6AV6382-2EA07-5AV0** |
| • 8 192 PowerTags | **6AV6382-2HA07-5AV0** |
| • 65 536 PowerTags | **6AV6382-2FA07-5AV0** |
| **SIMATIC WinCC flexible Runtime** | |
| SW package for SIMATIC IPC; WinCC flexible Runtime current version, WinCC flexible/ Archives+Recipes; | |
| Delivery only when ordering the same number of SIMATIC IPCs on the same order form | |
| • 128 PowerTags | **6AV6623-2BA00-0AA0** |
| • 512 PowerTags | **6AV6623-2DA00-0AA0** |
| • 2 048 PowerTags | **6AV6623-2FA00-0AA0** |
| • 4 096 PowerTags | **6AV6623-2GA00-0AA0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC Open Architecture Version 3.17** | |
| Only offered with IPC127E and IPC227E/IPC277E. These packages cannot be extended with further WinCC OA options (restrictions according to WinCC OA documentation). N/EAR99S 9377 | |
| • 128 PowerTags | **6AV6355-1AA31-7FA0** |
| • 512 PowerTags | **6AV6355-1AA31-7FA1** |
| • 2 048 PowerTags | **6AV6355-1AA31-7FA2** |
| • 4 096 PowerTags | **6AV6355-1AA31-7FA3** |
| **SIMATIC S7-1500 Software Controller CPU1507S Package** | |
| SW package only available for IPC227E/IPC277E | |
| • SW Controller CPU 1507S for IPC2x7E V2.7 (DVD) 1) 2) | **6ES7672-7AC01-6YA0** |
| • SW Controller CPU 1507S (F) for IPC2x7E V2.7 (DVD) 1) 2) | **6ES7672-7FC01-6YA0** |
| **SIMATIC WinAC RTX (F) Package** | |
| • SIMATIC WinAC RTX 1) 2) 3) 4) | **6ES7671-0RC08-6YA0** |
| • SIMATIC WinAC RTX F 1) 2) 3) 4) | **6ES7671-1RC08-6YA0** |

1) Only if ordered together with a SIMATIC IPC

2) The current version is always supplied

3) For 32-bit operating systems only

4) Not for IPC327E, IPC347D/E, IPC377E, ITP1000, Panel PC Ex

Note:

For ordering data for Panel PCs and accessories, see configurators in "SIMATIC Panel PCs".

More information is available on the Internet at:

http://www.automation.siemens.com/simatic-hmi

## Overview

***SIMATIC IOT2000***

The SIMATIC IOT2000 is the reliable, open platform designed for the acquisition, processing and transfer of data directly in the production environment.

It is ideally suited for use as a gateway between the cloud or company IT level and production.

It can serve as an interface in both directions. It can also transfer evaluated data from the cloud to production control. This continuous exchange of data closes the control loop for optimizing the production process. The openness of the system in supporting numerous communication protocols and programming in high-level languages enables tailored solutions.

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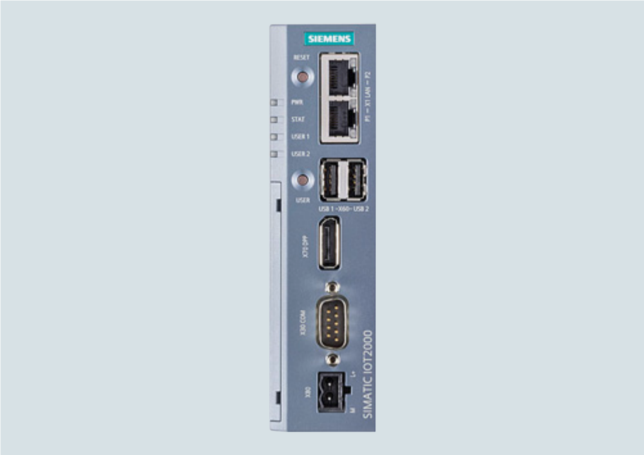
## SIMATIC IOT2050

### Overview



**_SIMATIC IOT2050_**

The SIMATIC IOT2050 is the reliable, open platform designed for the acquisition, processing and transfer of data directly in the production environment.
It is ideally suited for use as a gateway between the cloud or company IT level and production.

The openness of the system in supporting numerous communication protocols and programming in high-level languages enables tailored solutions.

Openness for industrial IOT applications

- Wide range of options for programming in high-level languages
- Implementation of flexible communication solutions with different protocols, from Modbus RTU, OPC UA to cloud protocols such as MQTT/AMQP
- Use of open source application examples and libraries
- SIMATIC Industrial OS, via OSD + free "ISAR" Debian via download

Additional information is available on the Internet at:
http://siemens.com/iot2000

### Technical specifications

| Article number | **6ES7647-0BA00-0YA2**<br>SIMATIC IoT2050 | **6ES7647-0BA00-1YA2**<br>SIMATIC IoT2050 |
|---|---|---|
| **Installation type/mounting** | | |
| Design | IoT Gateway, built-in unit | IoT Gateway, built-in unit |
| **Supply voltage** | | |
| Type of supply voltage | 12/24 V DC | 12/24 V DC |
| **Mains buffering** | | |
| • Mains/voltage failure stored energy time | 5 ms | 5 ms |
| **Processor** | | |
| Processor type | ARM TI AM6528 GP | ARM TI AM6548 HS |
| **Graphic** | | |
| Graphics controller | Integrated | Integrated |
| **Drives** | | |
| Slot for drives | 1x microSD card slot | 1x microSD card slot |
| **Memory** | | |
| Type of memory | DDR4 | DDR4 |
| Main memory | 1 GB RAM | 2 GB RAM |
| Capacity of main memory, max. | 1 Gbyte | 2 Gbyte |
| **Hardware configuration** | | |
| **Slots** | | |
| • free slots | 1x Arduino,<br>1x mPCIe | 1x Arduino,<br>1x mPCIe |
| **Digital inputs** | | |
| Number of digital inputs | 20 | 20 |
| **Input voltage** | | |
| • Type of input voltage | DC | DC |
| **Digital outputs** | | |
| Number of digital outputs | 20 | 20 |
| **Output voltage** | | |
| • Type of output voltage | DC | DC |
| • permissible voltage at output, min. | 3.3 V | 3.3 V |
| • permissible voltage at output, max. | 5 V | 5 V |
| **Analog inputs** | | |
| Number of analog inputs | | 6 |
| **Input ranges** | | |
| • Voltage | | Yes; 0 ... 5 V |
| **Interfaces** | | |
| PROFIBUS/MPI | can be implemented with plug-in card | |
| Number of industrial Ethernet interfaces | 2 | 2 |
| Number of PROFINET interfaces | 2 | 2 |
| USB port | 2x USB 2.0 | 2x USB 2.0 |
| Connection for keyboard/mouse | USB | USB |
| serial interface | 1x COM (1x RS 232 / 422 / 485) | |
| **Video interfaces** | | |
| • Graphics interface | 1x DisplayPort | 1x DisplayPort |
| **Industrial Ethernet** | | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes | Yes |
| - 1000 Mbps | Yes | Yes |
| **Integrated Functions** | | |
| **Monitoring functions** | | |
| • Temperature monitoring | Yes | Yes |
| • Watchdog | Yes | Yes |
| • Status LEDs | Yes | Yes |
| **EMC** | | |
| **Interference immunity against discharge of static electricity** | | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 | |

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## Technical specifications (continued)

| Article number | **6ES7647-0BA00-0YA2**<br>SIMATIC IoT2050 | **6ES7647-0BA00-1YA2**<br>SIMATIC IoT2050 |
|---|---|---|
| **Interference immunity against high-frequency electromagnetic fields** | | |
| • Interference immunity against high frequency radiation | | 10 V/m for 80 ... 1 000 MHz, 80 % AM according to IEC 61000-4-3;<br>3 V/m for 1.4 ... 6 GHz, 80 % AM according to IEC 61000-4-3 |
| **Interference immunity to cable-borne interference** | | |
| • Interference immunity on supply cables | ±2 kV (according to IEC 61000-4-4, burst);<br>±1 kV (according to IEC 61000-4-5, surge pulse/line to line);<br>±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) | |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst | |
| **Interference immunity against voltage surge** | | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric | |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric | |
| **Degree and class of protection** | | |
| IP degree of protection | IP20 | IP20 |
| IP (all-round) | IP20 | IP20 |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| UL approval | Yes | Yes |
| cULus | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes |
| KC approval | Yes | Yes |
| EAC (formerly Gost-R) | Yes | Yes |
| FCC | Yes | Yes |
| EMC | CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005, CE, EN IEC 61000-6-4:2019, EN IEC 61000-6-2:2019 | |
| **Ambient temperature during storage/transportation** | | |
| • min. | -20 °C | -20 °C |
| • max. | 70 °C | 70 °C |
| **Altitude during operation relating to sea level** | | |
| • Installation altitude above sea level, max. | 2 000 m | 2 000 m |
| **Relative humidity** | | |
| • Relative humidity | 5 ... 85 % at 30 °C, no condensation | 5 ... 85 % at 30 °C, no condensation |
| • Operation, max. | 85 % | 85 % |
| **Operating systems** | | |
| pre-installed operating system | No | SIMATIC Industrial OS |
| without operating system | Yes | No |

| Article number | **6ES7647-0BA00-0YA2**<br>SIMATIC IoT2050 | **6ES7647-0BA00-1YA2**<br>SIMATIC IoT2050 |
|---|---|---|
| **Mechanics/material** | | |
| Enclosure material (front) | plastic | plastic |
| • Plastic | Yes | Yes |
| • Aluminum | Yes | Yes |
| • Stainless steel | Yes | Yes |
| • Glass | No | No |
| **Dimensions** | | |
| Width | 37 mm | 37 mm |
| Height | 142 mm | 142 mm |
| Depth | 100 mm | 100 mm |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC IOT2050**<br>2 x GB Ethernet RJ45;<br>Display Port; 2x USB 2.0;<br>SD CARD slot;<br>24 V DC industrial power supply | |
| • Hard disk: 1x microSD card slot; memory: DDR4-SDRAM 1 GB | **6ES7647-0BA00-0YA2** |
| • Hard disk: 16 GB eMMc 1x microSD card slot; memory: DDR4-SDRAM 2 GB | **6ES7647-0BA00-1YA2** |

Additional information is available on the Internet at:

http://siemens.com/iot2000

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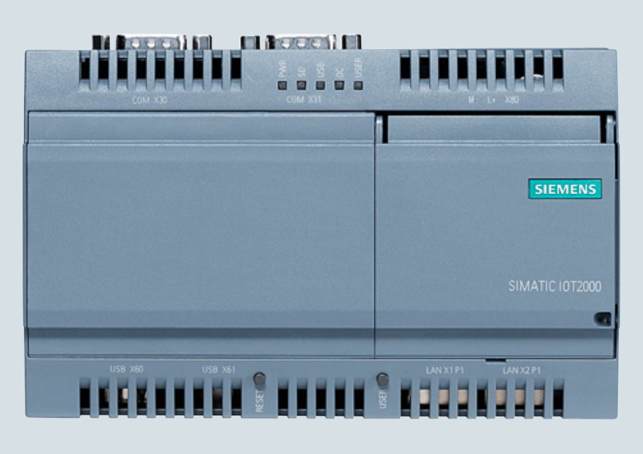
## SIMATIC IOT2040

### Overview



***SIMATIC IOT2040***

The SIMATIC IOT2040 is the reliable, open platform designed for the acquisition, processing and transfer of data directly in the production environment.

It is ideally suited for use as a gateway between the cloud or company IT level and production.

The openness of the system in supporting numerous communication protocols and programming in high-level languages enables tailored solutions.

Openness for industrial IOT applications

- Wide range of options for programming in high-level languages
- Implementation of flexible communication solutions with different protocols, from Modbus RTU, OPC UA to cloud protocols such as MQTT/AMQP
- Use of open source application examples and libraries
- Yocto Linux support

Additional information

More information is available on the Internet at:
http://siemens.com/iot2000

### Technical specifications

| Article number | **6ES7647-0AA00-1YA2**<br>SIMATIC IoT2040 |
|---|---|
| **Installation type/mounting** | |
| Design | IoT Gateway, built-in unit |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC (9 ... 36 V) |
| **Mains buffering** | |
| • Mains/voltage failure stored energy time | 5 ms |
| **Processor** | |
| Processor type | Intel Quark X1020 |
| **Drives** | |
| Hard disk | 1x microSD card slot |
| **Memory** | |
| Type of memory | DDR3-SDRAM |
| Main memory | 1 GB |
| Capacity of main memory, max. | 1 Gbyte |
| **Hardware configuration** | |
| **Slots** | |
| • free slots | 1x Arduino, 1x mPCIe |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2 |
| USB port | 1x USB 2.0, 1x USB client |
| Connection for keyboard/mouse | USB / USB |
| serial interface | 2x COM ports (RS 232, RS 485) |
| **Industrial Ethernet** | |
| • Industrial Ethernet interface | 2x Ethernet (RJ45) |
| - 100 Mbps | Yes |
| - 1000 Mbps | No |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | No |
| • Watchdog | Yes |
| • Status LEDs | Yes |
| • Fan | No |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |

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## Technical specifications (continued)

| Article number | **6ES7647-0AA00-1YA2**<br>SIMATIC IoT2040 |
|---|---|
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±2 kV in accordance with IEC 61000-4-4, burst, length > 30 m |
| **Interference immunity against voltage surge** | |
| • asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| • Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | EN 61000-6-4:2007 +A1:2011 |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |
| IP (at the front) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| KC approval | Yes |
| EMC | CE, EN 61000-6-4:2007 +A1:2011,<br>EN 61000-6-2:2005,<br>EN 61000-6-3:2007 +A1:2011,<br>EN 61000-6-1:2007 |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • Ambient temperature during operation | 0 °C to 50 °C |
| **Relative humidity** | |
| • Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Vibrations** | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | Tested according to IEC 60068-2-6:<br>5 Hz to 9 Hz: 3.5 mm;<br>9 Hz to 200 Hz: 9.8 m/s$^2$ |
| **Shock testing** | |
| • Shock load during operation | Tested according to IEC 60068-2-27: 150 m/s$^2$, 11 ms |
| **Operating systems** | |
| without operating system | Yes |
| **Dimensions** | |
| Width | 144 mm |
| Height | 90 mm |
| Depth | 53 mm |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC IOT2040**<br>2 x 10/100 Mbps Ethernet RJ45;<br>1 x USB 2.0,<br>1 x USB client;<br>SD card slot;<br>24 V DC industrial power supply | **6ES7647-0AA00-1YA2** |

Additional information is available on the Internet at:

http://siemens.com/iot2000

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## SIMATIC IOT2000 Input/Output Module

### Overview

***IO shield for SIMATIC IOT2000 industrial IoT Gateways***

The SIMATIC IOT2000 IO shield allows for direct connection of non-time-critical sensor data to the SIMATIC IOT2000 via digital and analog IOs.

Essential highlights:

- High degree of industrial functionality
- Arduino shield with 5x DI, 2x DO, 2x AI
- Rapid installation since suitable cover and fixing accessories supplied
- Industrial design
- For use in standard industrial voltage ranges (e.g. 24 V with digital In)
- Tested environmental conditions as for IOT2040 (e.g. for 0 ... 50° C)
- Approvals as for IOT2040 (CE UL)
- Developed and tested for 24/7 operation
- Extremely versatile application creation
- Module addressing via GPIOs allows wide choice of programming language and development environment.

Target applications:

- Direct connection of
  - Sensors
  - Actuators (especially lamps, horns)
- Distribution of data to higher-level units, such as clouds

### Technical specifications

| Article number | **6ES7647-0KA01-0AA2**<br>SIMATIC IoT2000 input/output module |
|---|---|
| **Installation type/mounting** | |
| Design | Plug-in card |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| **Digital inputs** | |
| Number of digital inputs | 5 |
| **Input voltage** | |
| • Type of input voltage | DC |
| • for signal "0" | < 5 V DC |
| • for signal "1" | > 12 V DC |
| **Input current** | |
| • for signal "0", max. (permissible quiescent current) | 0.9 mA |
| • for signal "1", typ. | 2.1 mA |
| **Input delay (for rated value of input voltage)** | |
| **for standard inputs** | |
| - at "0" to "1", max. | 1.5 ms |
| - at "1" to "0", max. | 1.5 ms |
| **Digital outputs** | |
| Type of digital output | transistor |
| Number of digital outputs | 2 |
| Short-circuit protection | Yes |
| **Output voltage** | |
| • Type of output voltage | DC |
| • permissible voltage at output, min. | 0 V |
| • permissible voltage at output, max. | 28.8 V |
| **Output current** | |
| • for signal "1" rated value | 0.3 A |
| **Parallel switching of two outputs** | |
| • for uprating | No |
| **Switching frequency** | |
| • with resistive load, max. | 10 Hz |
| • with inductive load, max. | 0.5 Hz |
| **Analog inputs** | |
| Number of analog inputs | 2 |
| **Input ranges** | |
| • Voltage | Yes; 0 to 10V |
| • Current | Yes; 0 to 20 mA |
| • Thermocouple | No |
| • Resistance thermometer | No |
| • Resistance | No |
| **Input ranges (rated values), voltages** | |
| • 0 to +10 V | Yes |
| **Input ranges (rated values), currents** | |
| • 0 to 20 mA | Yes |
| **Analog value generation for the inputs** | |
| **Integration and conversion time/ resolution per channel** | |
| • Resolution with overrange (bit including sign), max. | 9 bit |
| **Integrated Functions** | |
| **Monitoring functions** | |
| • Temperature monitoring | No |
| • Watchdog | No |
| • Status LEDs | No |
| • Fan | No |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ±4 kV contact discharge acc. to IEC 61000-4-2;<br>±8 kV air discharge acc. to IEC 61000-4-2 |
| **Interference immunity against high-frequency electromagnetic fields** | |
| • Interference immunity against high frequency radiation | 10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3;<br>3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;<br>1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;<br>10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on supply cables | ±2 kV acc. to IEC 61000-4-4, burst;<br>±1 kV acc. to IEC 61000-4-5, surge symmetric;<br>±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| • Interference immunity on signal cables >30m | ±2 kV acc. to IEC 61000-4-5, surge, length > 30 m |
| • Interference immunity on signal cables < 30m | ±2 kV in accordance with IEC 61000-4-4, burst, length > 30 m |

## Technical specifications (continued)

| Article number | **6ES7647-0KA01-0AA2**<br>SIMATIC IoT2000 input/output module |
|---|---|
| **Interference immunity against voltage surge** | |
| - asymmetric interference | ±2 kV acc. to IEC 61000-4-5, surge asymmetric |
| - symmetric interference | ±1 kV acc. to IEC 61000-4-5, surge symmetric |
| **Interference immunity to magnetic fields** | |
| - Interference immunity to magnetic fields at 50 Hz | 100 A/m; to IEC 61000-4-8 |
| **Emission of conducted and non-conducted interference** | |
| - Interference emission via line/ AC current cables | EN 61000-6-4:2007 +A1:2011 |
| **Degree and class of protection** | |
| IP (at the front) | n.a. |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| KC approval | Yes; For use inside SIMATIC IoT2040 |
| EMC | CE, EN 61000-6-4:2007 +A1:2011,<br>EN 61000-6-2:2005,<br>EN 61000-6-3:2007 +A1:2011,<br>EN 61000-6-1:2007 |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| - Ambient temperature during operation | 0 °C to 50 °C |
| **Relative humidity** | |
| - Relative humidity | Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation) |
| **Operating systems** | |
| without operating system | Yes |
| **Dimensions** | |
| Width | 75 mm |
| Height | 57 mm |
| Depth | 32 mm |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC IOT2000 Input/Output Module**<br>5x DI, 2x AI, 2x DO, Arduino shield for SIMATIC IOT2020 and IOT2040 | **6ES7647-0KA01-0AA2** |

Technical support:

Technical and application support for the SIMATIC IOT2000 Input/Output Module is exclusively via the moderated Siemens Industry Online Forum:
IOT2000 Forum link:

https://support.industry.siemens.com/tf/ww/en/search/mainsearch/?text=IOT2000

Here you can find Getting Started, FAQs etc.

Application examples are continually being added.

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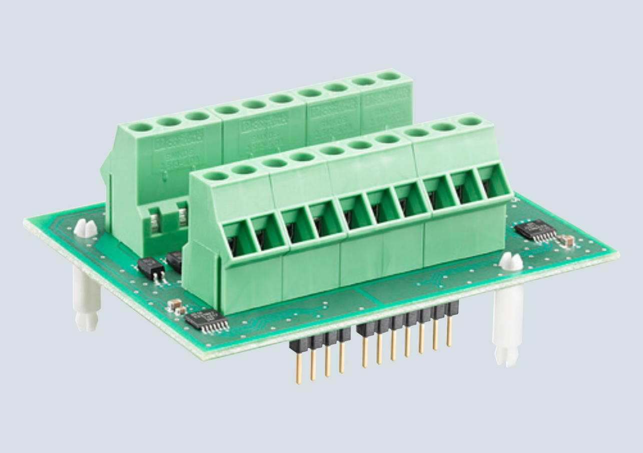
## SIMATIC IOT2000 Input Module Sink/Source

### Overview



***IO shield for SIMATIC IOT2000 industrial IoT gateway***

The SIMATIC IOT2000 IO shield allows for direct connection of non-time-critical sensor data to the SIMATIC IOT2000 via its digital IOs.

Essential highlights:

- High degree of industrial functionality
- Arduino shield with 10x DI
- Each input can be used as a sink or source, no configuration necessary
- Rapid installation since suitable cover and fixing accessories supplied
- Industrial design
- For use with standard industrial voltage ranges (e.g. 24 V with digital In)
- Tested environmental conditions as for IOT2040 (e.g. for 0 ... 50° C)
- Approvals as for IOT2040 (CE UL)
- Developed and tested for 24/7 operation
- Extremely versatile application creation
- Module addressing via GPIOs allows wide choice of programming languages and development environments.

Target applications:

- Direct connection of sensors
- Distribution of data to higher-level units, such as clouds

### Technical specifications

| Article number | **6ES7647-0KA02-0AA2**<br>SIMATIC IoT2000 input module sink/source |
|---|---|
| **Installation type/mounting** | |
| Mounting | On Arduino interface |
| Design | Plug-in card |
| **Supply voltage** | |
| Type of supply voltage | 24 V |
| **Digital inputs** | |
| Number of digital inputs | 10 |
| **Input voltage** | |
| • for signal "0" | < 5 V DC |
| • for signal "1" | > 12 V DC |
| **Input current** | |
| • for signal "0", max. (permissible quiescent current) | 0.9 mA |
| • for signal "1", typ. | 2.1 mA |
| **Input delay (for rated value of input voltage)** | |
| **for standard inputs** | |
| - at "0" to "1", max. | 1.5 ms |
| - at "1" to "0", max. | 1.5 ms |
| **Digital outputs** | |
| Type of digital output | without |
| **EMC** | |
| **Interference immunity against discharge of static electricity** | |
| • Interference immunity against discharge of static electricity | ± 6 KV contact discharge at the front in accordance with IEC 61000-4-2;<br>±4 kV, housing contact discharge at the back in accordance with IEC 61000-4-2;<br>± 8 kV air discharge in accordance with IEC 61000-4-2 |
| **Interference immunity to cable-borne interference** | |
| • Interference immunity on signal cables < 30m | ±1 kV acc. to IEC 61000-4-4, Burst |
| **Emission of conducted and non-conducted interference** | |
| • Interference emission via line/AC current cables | 10 V/m for 80 - 2 000 MHz,<br>80 % AM acc. to IEC 61000-4-3;<br>3 V/m for 2 - 2.7 GHz,<br>80 % AM acc. to IEC 61000-4-3 |
| **Compliance with line harmonic distortion limits** | |
| • Compliance with line harmonic distortion acc. to IEC 61000-3-2, IEC 61000-3-3 | No |

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## Technical specifications (continued)

| Article number | **6ES7647-0KA02-0AA2**<br>SIMATIC IoT2000 input module sink/source |
|---|---|
| **Degree and class of protection** | |
| IP (at the front) | 20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| FCC | Yes |
| EMC | CE (industry) |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 70 °C |
| **Mechanics/material** | |
| Enclosure material (front) | plastic |
| • Plastic | Yes |
| • Aluminum | No |
| • Stainless steel | No |
| • Glass | No |
| **Dimensions** | |
| Width | 75 mm |
| Height | 57 mm |
| Depth | 32 mm |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC IOT2000 Input Module Sink/Source**<br>10x DI, Arduino shield for SIMATIC IOT2020 and IOT2040 | **6ES7647-0KA02-0AA2** |

## More information

Technical support:

Technical and application support for the SIMATIC IOT2000 Input/Output Module is exclusively via the moderated Siemens Industry Online Forum:
IOT2000 Forum link:

https://support.industry.siemens.com/tf/ww/en/search/mainsearch/?text=IOT2000

You can find Getting Started, FAQs etc. here.

Application examples are continually being added.

## Overview

***SIMATIC S7-1500 Software Controller***

- SIMATIC S7-1500 Software Controller for implementing control tasks with SIMATIC IPC
- High system availability thanks to innovative real-time system
- Available as standard and fail-safe version
- Improved know-how and copy protection
- Integrated motion control functionalities for controlling speed-controlled and positioning axes, support for external encoders, cams/cam tracks and probes
- Integrated web server for diagnostics with the option of creating user-defined web pages
- SIMATIC ODK 1500S for the development and integration of control functions under Windows with the high-level languages C/C++, VB and C#
- SIMATIC Target 1500™ for the development of control functions using Matlab Simulink®

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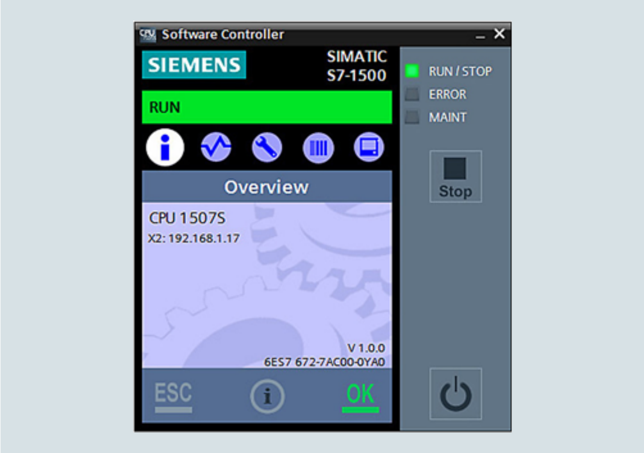
## Overview



- Software Controller for implementing the functions of a SIMATIC S7-1500 controller on a SIMATIC IPC
- For use as a PC-based controller in machines with distributed I/O via PROFINET and PROFIBUS
- For utilizing IPC onboard interfaces and PC plug-in cards for PROFINET and PROFIBUS connections
- Optimized for PC-based control tasks with the IPC427E Microbox PC and the IPC477E Panel PC
- Can also be used in IPC227E, IPC477D, IPC627D and IPC827D Box PCs, IPC277E, IPC477D and IPC677D Panel PCs, and IPC647D and IPC847D Rack PCs
- Execution of functions and algorithms implemented with high-level languages under Windows (C/C++, C#, VB) and locally in the CPU 1507S (C/C++)
- Integrated motion control functionalities for controlling speed-controlled and positioning axes as well as synchronous operation, support for external encoders, precise position gearing between axes, output cams/cam tracks and probes
- Integrated web server for diagnostics with the option of creating user-defined web pages
- OPC UA server (data access) and client as runtime option for easy connection of the software controller to Windows applications or non-Siemens devices/systems

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC S7-1500 Software Controller CPU 1507S**<br>For implementing the function of an S7-1500 controller on SIMATIC IPCs<br>**Target system:**<br>Optimized for PC-based control tasks with Microbox PC IPC427E and Panel PC IPC477E<br>Can also be used with<br>IPC277E Panel PC<br>IPC477D Panel PC<br>IPC677D Panel PC<br>IPC227E Box PC<br>IPC427D Box PC<br>IPC627D Box PC<br>IPC827D Box PC<br>IPC647DRack PC<br>IPC847D Rack PC<br>**Requirement:**<br>Windows 7 / Windows Embedded Standard 7 / Windows 10 Enterprise LTSB 2016 with MBR boot<br>**Type of delivery:**<br>en, de, fr, it, es, zh | |
| • Single license for one installation Software and documentation on DVD, license key on USB flash drive | **6ES7672-7AC01-0YA0** |
| • Single license for one installation Software download including license key [1] | **6ES7672-7AC01-0YG0** |
| ***Accessories*** | |
| **SIMATIC IPC** | |
| • SIMATIC IPC427E Microbox PC | **6AG4141-…..-….** |
| • SIMATIC IPC477E Panel PC | **6AV7241-…..-….** |
| • SIMATIC IPC427D Microbox PC | **6AG4140-.....-....** |
| • SIMATIC IPC227E Nanobox PC | **6ES7647-8B…-….** |
| • SIMATIC IPC277E Panel PC | **6AV7882-0…0-…0** |
| • SIMATIC IPC477D Panel PC | **6AV7240-.....-....** |
| • SIMATIC IPC677D Panel PC | **6AV7260-.....-....** |
| • SIMATIC IPC627D Box PC | **6AG4131-2....-....** |
| • SIMATIC IPC827D Box PC | **6AG4132-2....-....** |
| • SIMATIC IPC647D Rack PC | **6AG4112-2....-....** |
| • SIMATIC IPC847D Rack PC | **6AG4114-2....-....** |
| **CP 1625 communications processor**<br>PCI Express x1 card for connecting PROFINET with IRT to the S7-1500 Software Controller | **6ES7648-2CF10-1AA0** |
| **CP 5622 communications processor**<br>PCI Express x1 card (32-bit) for connecting a programming device or PC to PROFIBUS | **6GK1562-2AA00** |
| **CP 5623 communications processor**<br>PCI Express x1 card (32-bit) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A; for operating system support see SIMATIC NET software<br>en/de | **6GK1562-3AA00** |

[1] For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

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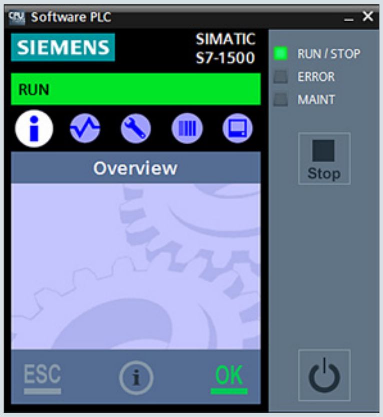
## Overview



- Software Controller for implementing the functions of a SIMATIC S7-1500 controller on a SIMATIC IPC
- For use with control applications with increased requirements for program and data memory
- For use as a PC-based controller in machines with distributed I/O via PROFINET and PROFIBUS
- For utilizing IPC onboard interfaces and PC plug-in cards for PROFINET and PROFIBUS connections
- Optimized for PC-based control tasks with IPC627D and IPC827D Box PCs, IPC677D Panel PC and IPC647D and IPC847D Rack PCs
- Can also be used on IPC427E Box PCs and IPC477E Panel PCs
- Execution of functions and algorithms implemented with high-level languages under Windows (C/C++, C#, VB) and locally in the CPU 1508S (C/C++)
- Integrated motion control functionalities for controlling speed-controlled and positioning axes as well as synchronous operation, support for external encoders, precise position gearing between axes, output cams/cam tracks and probes
- OPC UA server (data access) and client as runtime option for easy connection of the software controller to Windows applications or non-Siemens devices/systems

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC S7-1500 Software Controller CPU 1508S**<br>For implementing the function of an S7-1500 controller on a SIMATIC IPC<br>**Target system:**<br>Optimized for PC-based control tasks with:<br>IPC677D Panel PC<br>IPC627D Box PC<br>IPC827D Box PC<br>IPC647D Rack PC<br>IPC847D Rack PC<br>Can also be used with:<br>IPC477E Panel PC<br>IPC427E Box PC<br>**Requirement:**<br>Windows 7 / Windows Embedded Standard 7 / Windows 10 (64-bit)<br>**Type of delivery:**<br>en, de, fr, it, es, zh | |
| • Single license for one installation Software and documentation on DVD, license key on USB flash drive | **6ES7672-8AC01-0YA0** |
| • Single license for one installation Software download including license key [1] | **6ES7672-8AC01-0YG0** |
| ***Accessories*** | |
| **SIMATIC IPC** | |
| • SIMATIC IPC427E Microbox PC | **6AG4141-…..-….** |
| • SIMATIC IPC477E Panel PC | **6AV7241-…..-….** |
| • SIMATIC IPC477D Panel PC | **6AV7240-.....-....** |
| • SIMATIC IPC677D Panel PC | **6AV7260-.....-....** |
| • SIMATIC IPC627D Box PC | **6AG4131-2....-....** |
| • SIMATIC IPC827D Box PC | **6AG4132-2....-....** |
| • SIMATIC IPC647D Rack PC | **6AG4112-2....-....** |
| • SIMATIC IPC847D Rack PC | **6AG4114-2....-....** |
| **CP 1625 communications processor**<br>PCI Express x1 card for connecting PROFINET with IRT to the S7-1500 Software Controller | **6ES7648-2CF10-1AA0** |
| **CP 5622 communications processor**<br>PCI Express x1 card (32-bit) for connecting a programming device or PC to PROFIBUS | **6GK1562-2AA00** |
| **CP 5623 communications processor**<br>PCI Express x1 card (32-bit) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A; for operating system support see SIMATIC NET software<br>en/de | **6GK1562-3AA00** |

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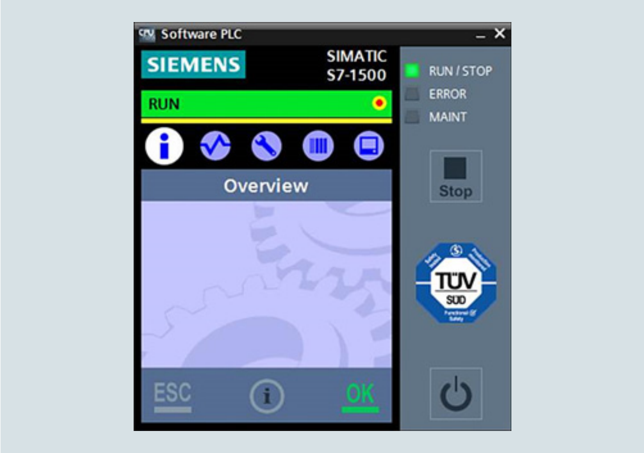
[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

## Overview



- Software Controller for implementing the functions of a SIMATIC S7-1500 controller on a SIMATIC IPC
- For use as a PC-based controller in machines with distributed I/O via PROFINET and PROFIBUS
- For utilizing IPC onboard interfaces and PC plug-in cards for PROFINET and PROFIBUS connections
- Can be used for safety functions up to SIL 3 according to IEC 61508 and up to PL e according to ISO 13849
- Supports PROFIsafe in distributed configurations
- Optimized for PC-based control tasks with the IPC427E Microbox PC and the IPC477E Panel PC (requires configuration with NVRAM)
- Can also be used in IPC227E, IPC477D, IPC627D and IPC827D Box PCs as well as IPC277E, IPC477D and IPC677D Panel PCs (requires configuration with NVRAM)
- Execution of functions and algorithms implemented with high-level languages under Windows (C/C++, C#, VB) and locally in the CPU 1507S F (C/C++)
- Integrated motion control functionalities for controlling speed-controlled and positioning axes as well as synchronous operation, support for external encoders, precise position gearing between axes, output cams/cam tracks and probes
- Integrated web server for diagnostics with the option of creating user-defined web pages
- OPC UA server (data access) and client as runtime option for easy connection of the software controller to Windows applications or non-Siemens devices/systems

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC S7-1500 Software Controller CPU 1507S F**<br>For implementing the function of a fail-safe S7-1500 controller on SIMATIC IPCs<br>**Target system:**<br>Optimized for PC-based control tasks with IPC427E Microbox PC and IPC477E Panel PC<br>Can also be used with<br>IPC277E Panel PC<br>IPC477D Panel PC<br>IPC677D Panel PC<br>IPC227E Box PC<br>IPC427D Box PC<br>IPC627D Box PC<br>IPC827D Box PC<br>**Requirement:**<br>Windows 7 / Windows Embedded Standard 7 / Windows 10 Enterprise LTSB with MBR boot (IPC configuration with NVRAM required)<br>**Type of delivery:**<br>en, de, fr, it, es, zh | |
| • Single license for one installation Software and documentation on DVD, license key on USB flash drive | **6ES7672-7FC01-0YA0** |
| • Single license for one installation Software download including license key [1] | **6ES7672-7FC01-0YG0** |
| ***Accessories*** | |
| **SIMATIC IPC** | |
| • SIMATIC IPC427E Microbox PC | **6AG4141-…..-….** |
| • SIMATIC IPC477E Panel PC | **6AV7241-…..-….** |
| • SIMATIC IPC427D Microbox PC | **6AG4140-.....-....** |
| • SIMATIC IPC227E Nanobox PC | **6ES7647-8B…-….** |
| • SIMATIC IPC277E Panel PC | **6AV7882-0…0-…0** |
| • SIMATIC IPC477D Panel PC | **6AV7240-.....-....** |
| • SIMATIC IPC677D Panel PC | **6AV7260-.....-....** |
| • SIMATIC IPC627D Box PC | **6AG4131-2....-....** |
| • SIMATIC IPC827D Box PC | **6AG4132-2....-....** |
| **CP 1625 communications processor**<br>PCI Express x1 card for connecting PROFINET with IRT to the S7-1500 Software Controller | **6ES7648-2CF10-1AA0** |
| **CP 5622 communications processor**<br>PCI Express x1 card (32-bit) for connecting a programming device or PC to PROFIBUS | **6GK1562-2AA00** |
| **CP 5623 communications processor**<br>PCI Express x1 card (32-bit) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A; for operating system support see SIMATIC NET software<br>en/de | **6GK1562-3AA00** |

For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

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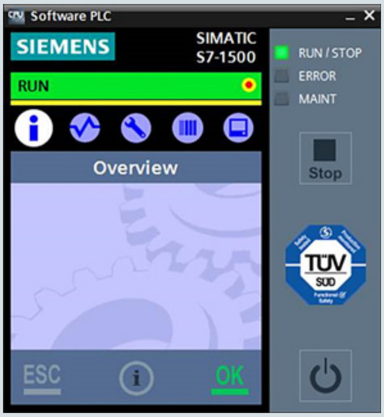
## Overview



- Software Controller for implementing the functions of a SIMATIC S7-1500 controller on a SIMATIC IPC
- For use with control applications with increased requirements for program and data memory
- For use as a PC-based controller in machines with distributed I/O via PROFINET and PROFIBUS
- For utilizing IPC onboard interfaces and PC plug-in cards for PROFINET and PROFIBUS connections
- Can be used for safety functions up to SIL 3 according to IEC 61508 and up to PL e according to ISO 13849
- Supports PROFIsafe in distributed configurations
- Optimized for PC-based control tasks with IPC627D and IPC827D Box PCs, IPC677D Panel PC and IPC647D and IPC847D Rack PCs (configuration with NVRAM required)
- Can also be used on IPC427E Box PC and IPC477E Panel PC (configuration with NVRAM required)
- Execution of functions and algorithms implemented with high-level languages under Windows (C/C++, C#, VB) and locally in the CPU 1508S F (C/C++)
- Integrated motion control functionalities for controlling speed-controlled and positioning axes as well as synchronous operation, support for external encoders, precise position gearing between axes, output cams/cam tracks and probes
- Integrated web server for diagnostics with the option of creating user-defined web pages
- OPC UA server (data access) and client as runtime option for easy connection of the software controller to Windows applications or non-Siemens devices/systems

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC S7-1500 Software Controller CPU 1508S F**<br>For implementing the function of an S7-1500 Controller on SIMATIC IPCs (IPC configuration with NVRAM required)<br>**Target system:**<br>Optimized for PC-based control tasks with:<br>IPC677D Panel PC<br>IPC627D Box PC<br>IPC827D Box PC<br>Can also be used with:<br>IPC477E Panel PC<br>IPC427E Box PC<br>**Requirement:**<br>Windows 7 / Windows Embedded Standard 7 / Windows 10 (64-bit)<br>**Type of delivery:**<br>en, de, fr, it, es, zh | |
| • Single license for one installation Software and documentation on DVD, license key on USB flash drive | **6ES7672-8FC01-0YA0** |
| • Single license for one installation Software download including license key [1] | **6ES7672-8FC01-0YG0** |
| ***Accessories*** | |
| **SIMATIC IPC** | |
| • SIMATIC IPC427E Microbox PC | **6AG4141-.....-....** |
| • SIMATIC IPC477E Panel PC | **6AV7241-.....-....** |
| • SIMATIC IPC677D Panel PC | **6AV7260-.....-....** |
| • SIMATIC IPC627D Box PC | **6AG4131-2....-....** |
| • SIMATIC IPC827D Box PC | **6AG4132-2....-....** |
| **CP 1625 communications processor**<br>PCI Express x1 card for connecting PROFINET with IRT to the S7-1500 Software Controller | **6ES7648-2CF10-1AA0** |
| **CP 5622 communications processor**<br>PCI Express x1 card (32-bit) for connecting a programming device or PC to PROFIBUS | **6GK1562-2AA00** |
| **CP 5623 communications processor**<br>PCI Express x1 card (32-bit) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A; for operating system support see SIMATIC NET software en/de | **6GK1562-3AA00** |

[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

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## Overview

### *SIMATIC ODK 1500S*

- For developing dynamically loadable function libraries for the S7-1500 Software Controllers and S7-1500 Advanced Controllers CPU 1518 MFP:
  - Implementation of function libraries for the S7-1500 software controller that are executed under Windows with the high-level languages C/C++, C# and VB
  - Implementation of function libraries for the PLCSIM Advanced that are executed under Windows with the high-level languages C/C++
  - Implementation of function libraries that are executed in real-time in the context of the user program of the CPU with the high-level language C++
  - Implementation of applications for the C++ runtime of the CPU 1518 MFP
- "Eclipse" development environment for real-time function libraries in the CPU user program and applications for the C++ runtime in the scope of delivery.
- Development of library functions under Windows with MS Visual Studio (optional)
- Easy introduction to development by using basic projects via templates
- Automatic creation of function blocks for calling the library functions
- Simple integration of the function blocks into STEP 7 by importing.
- Simple use of the library functions in the controller without specific high-level language know-how.

### *Licensing*

- ODK 1500S is supplied with a floating license. The floating license allows installation of the software on any number of computers. The number of licenses acquired determines the number of computers on which the software can be used simultaneously.
- An upgrade to version 2.5 is offered for users of the previous versions 1.0 and 2.0.
- The integrated development environment Eclipse, required for developing real-time libraries, is included in the scope of supply of ODK 1500S as well as templates for Visual Studio.
- SIMATIC ODK 1500S is available as a standalone product or in a bundle with SIMATIC Target 1500S™ for Simulink®.

You can find more information on the Software Update Service, license types, online software delivery and handling your software licenses with the Automation License Manager here:

http://www.siemens.com/simatic-licenses

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC ODK 1500S** | |
| Open Development Kit V2.0 for support in developing high-level language applications for SIMATIC S7-1500 Software Controllers V2.0 or V2.1 | |
| • single license; supplied on DVD | **6ES7806-2CD02-0YA0** |
| • single license; software download [1)] E-mail address required for delivery | **6ES7806-2CD02-0YG0** |
| Open Development Kit V2.5 for support in developing high-level language applications for SIMATIC S7-1500 Advanced Controllers | |
| • supplied on DVD, license key (floating license) on USB flash drive | **6ES7806-2CD03-0YA0** |
| • software download including license key (floating license) [1)] E-mail address required for delivery | **6ES7806-2CD03-0YG0** |
| • upgrade to V2.5 for existing installations as from V1.0; software download including license key (floating license) [1)] E-mail address required for delivery | **6ES7806-2CD03-0YK0** |

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[1)] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

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## Overview

### *ODK 1500S XML Data Access driver*

With the function blocks of the ODK 1500S XML Data Access driver it is possible to access specific information in XML files in the Windows file system from the PLC program.

XPath expressions are used for accessing XML file elements since they provide the highest possible flexibility for processing XML data. This means that extremely large XML files can be edited, too.

The driver offers the following functionality:

- XML data can be read into and processed in the PLC.
- XML data can be modified and written back to the XML file.

Technical specifications

| | |
|---|---|
| System requirements | |
| • Runtime PC | SIMATIC IPC with S7-1500 Software Controller or SIMATIC ET 200SP Open Controller |
| • Engineering | STEP 7 in the TIA Portal V13 SP1 |

If you are interested, please contact your sales representative: http://www.automation.siemens.com/partner/

You can find Service and Support at: https://support.industry.siemens.com/cs/ww/en/view/109479496

### *ODK 1500S FileServer*

The ODK 1500S FileServer enhances the file functions of the SIMATIC S7-1500 Software Controller with an option enabling direct access to the Windows file system of the PC from the STEP 7 program.

The driver enables reading and writing of data blocks in/from files in structured form. Various file formats are supported.

There are also FBs available for handling files (e.g. renaming, deleting).

Technical specifications

| | |
|---|---|
| Supported file formats | • CSV<br>• ASCII<br>• Windows-INI<br>• XML[1]<br>• Binary |
| System requirements | |
| • Runtime PC | SIMATIC IPC with S7-1500 Software Controller or SIMATIC ET 200SP Open Controller |
| • Engineering | STEP 7 in the TIA Portal V13 SP1 |

[1] The XML format is predefined. A DB can be saved and read in as an XML file. It is not possible to parse any particular XML file.

If you are interested, please contact your sales representative: http://www.automation.siemens.com/partner/

You can find Service and Support at: https://support.industry.siemens.com/cs/ww/en/view/109479497

### *ODK 1500S SMX driver*

The ODK 1500S SMX driver permits access from a Windows user program to data of the PLC program. A shared memory which can be accessed by the PLC and user program is set up for this purpose. The ODK 1500S simplifies the changeover to the S7-1500 Software Controller of applications that previously used the SMX interface of the SIMATIC WinAC RTX.

If you are interested, please contact your sales representative: http://www.automation.siemens.com/partner/

You can find Service and Support at: https://support.industry.siemens.com/cs/ww/en/view/109741583

### *ODK 1500S serial driver*

The ODK 1500S serial driver enables serial communication from the STEP 7 user program via the integrated serial interface of a SIMATIC IPC or, depending on the application environment, via a USB-to-serial adapter. All serial interfaces of the PC are supported, which are addressed in Windows as COM*n* interface, e.g. RS232, RS422 or RS485.

If you are interested, please contact your sales representative: http://www.automation.siemens.com/partner/

You can find Service and Support at: https://support.industry.siemens.com/cs/ww/en/view/109479259

## Overview

Compact and powerful

The ET 200SP Open Controller, CPU 1515SP PC (F/T/TF), is a rugged, compact control system that combines the functionality of an ET 200SP controller with a PC-based platform. It can be used to control special and series machines, or plants in a distributed configuration. As well as the standard and fail-safe variants, technology and technology fail-safe variants are also available.

The ET 200SP I/O modules can be inserted centrally and communicate via the integrated backplane bus. S7 communication can be established and distributed I/Os can be connected via the PROFINET adapter of the ET 200SP system. The PROFIBUS CM DP module provides simple expandability for PROFIBUS communication. The CPU 1515SP PC (fail-safe) + HMI with pre-installed WinCC Runtime Advanced is offered for additional HMI functionality.

The CPU 1515SP PC is used wherever special automation functions are to be integrated with support from SIMATIC ODK 1500S via the programming language C or C++, or if a close connection of independent applications is required in Windows for the software controller.

| **Characteristics** | **CPU 1515SP PC (F)** | **CPU 1515SP PC2 (F/T/TF)** |
|---|---|---|
| DDR3 DRAM | 4 GB | 8 GB |
| CFast card | 30 GB | 30 GB |
| Operating system | WES 7E 32-bit / WES 7P 64-bit | Windows 10 Enterprise LTSB 2016 |
| WinCC RT Advanced (optional) | Yes | Yes (not for T or TF) |
| Work memory for program, integrated | 1 MB (1.5 MB for F) | |
| Work memory for data, integrated | 5 MB | |
| Load memory | 320 MB | |
| **Command execution times** | | |
| • Bit operations | 10 ns | |
| • Word operations | 12 ns | |
| • Fixed-point operations | 16 ns | |
| • Floating-point operations | 64 ns | |
| **Bit memories, timers, counters** | | |
| S7 counters/timers | 2 048 | |
| IEC counters | Any number (limited only by work memory) | |
| IEC timers | Any number (limited only by work memory) | |
| Bit memories | 16 KB | |
| **I/O address range** | | |
| Inputs | 32 KB (all inputs stored in process image) | |
| Outputs | 32 KB (all inputs stored in process image) | |
| **Motion** | | |
| Motion control resources | 2 400 | |
| **Communication** | | |
| PtP | Yes (via CM) | |
| PROFINET IO | 1 x PN IO IRT (BusAdapter not included in scope of delivery) | |
| PROFIBUS DP | Yes (via CM DP) | |
| Web server | Yes | |
| GB-Ethernet | Yes, 1 x via GB-Ethernet RJ45 interface | |

### *Further information and downloads*

Manuals

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support.

https://support.industry.siemens.com/cs/ww/en/ps/13891/man

General information

http://www.siemens.com/open-controller

SIMATIC Selection Tool

http://www.siemens.com/tia-selection-tool

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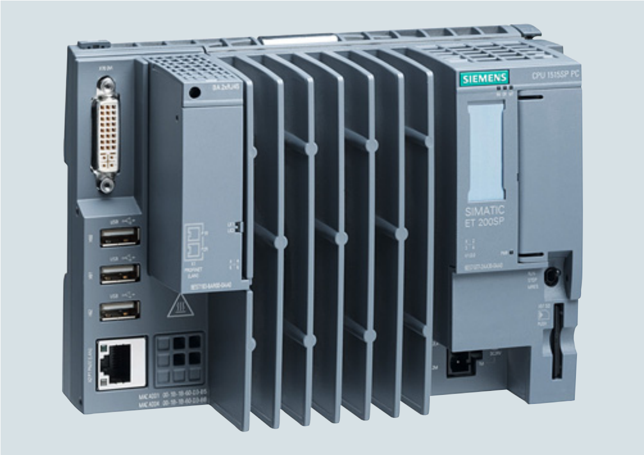
## Overview



- Turnkey all-in-one solution with pre-installed SIMATIC S7-1500 Software Controller Standard control and optional pre-installed WinCC Runtime Advanced
- Central expansion via ET 200SP modules (station width up to 1 m or up to 64 modules)
- SIMATIC Hypervisor: for separating Windows systems from control functions
- Dual-core processor for optimal use of the Hypervisor
- Swappable flash memory (CFast card) for operating system, runtime and project data
- Integrated DVI-I graphics connection; 3x USB 2.0 connection
- 2 PROFINET interfaces: X1 via PN-IO bus adapter (RJ45 or FC) with 2 ports; X2: GB Ethernet interface (RJ45)
- PROFINET IRT
- Open Ethernet communication (TCP/IP, UDP, ISO-on-TCP)
- Web server functionality for information, status, diagnostics and user-defined web pages
- PROFIBUS DP communication optionally via CM DP module as DP master
- Configuration control (option handling)
- Improved know-how and copy protection; Security Integrated
- Integrated system diagnostics
- Integrated motion control functionalities for controlling speed-controlled and positioning axes with support for external encoders
- Trace function
- Especially suitable for high data volumes and user-specific, open applications
- Integration of control functions and applications implemented in C/C++ (using SIMATIC ODK-1500S Open Development Kit)

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC (+ HMI)** | |
| ET 200SP CPU with Windows Embedded Standard 7 and pre-installed SIMATIC S7-1500 Software Controller (with WinCC RT Advanced as option); | |
| **Type of delivery:**<br>en, de, fr, it, es, zh | |
| **Windows Embedded Standard 7 E 32-bit, 8 GB CFast card** | |
| • **CPU 1515SP PC (4 GB RAM)** | **6ES7677-2AA31-0EB0** |
| **Windows Embedded Standard 7 P 64-bit (multi-touch), 16 GB CFast card** | |
| • **CPU 1515SP PC (4 GB RAM)** | **6ES7677-2AA41-0FB0** |
| • **CPU 1515SP PC + HMI 128PT (4 GB RAM)** | **6ES7677-2AA41-0FK0** |
| • **CPU 1515SP PC + HMI 512PT (4 GB RAM)** | **6ES7677-2AA41-0FL0** |
| • **CPU 1515SP PC + HMI 2048PT (4 GB RAM)** | **6ES7677-2AA41-0FM0** |

| | Article No. |
|---|---|
| *Accessories* | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC**<br>For increased vibration and EMC loads | **6ES7193-6AP40-0AA0** |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU**<br>PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | **6ES7545-5DA00-0AB0** |
| **Equipment labeling plates**<br>10 sheets of 16 plates | **6ES7193-6LF30-0AW0** |

## Ordering data

| | Article No. |
|---|---|
| **Labeling strips** | |
| 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1]<br>E-mail address required for delivery | **6ES7822-1AE06-0YA5** |

| | Article No. |
|---|---|
| **SIMATIC ODK 1500S** | |
| • Open Development Kit V2.0 for support in developing high-level language applications for SIMATIC S7-1500 Software Controllers V2.0 or V2.1; single license; supplied on DVD | **6ES7806-2CD02-0YA0** |
| • Open Development Kit V2.0 for support in developing high-level language applications for SIMATIC S7-1500 Software Controllers V2.0 or V2.1; single license; software download [1]<br>E-mail address required for delivery | **6ES7806-2CD02-0YG0** |
| • Open Development Kit V2.5 for support in developing high-level language applications for SIMATIC S7-1500 Advanced Controllers;<br>supplied on DVD, license key (floating license) on USB flash drive | **6ES7806-2CD03-0YA0** |

[1] For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

### *Further information and downloads*

### *Manuals*

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support:
https://support.industry.siemens.com/cs/ww/en/ps/13891/man

### *General information*

http://www.siemens.com/open-controller

### *SIMATIC Selection Tool*

http://www.siemens.com/tia-selection-tool

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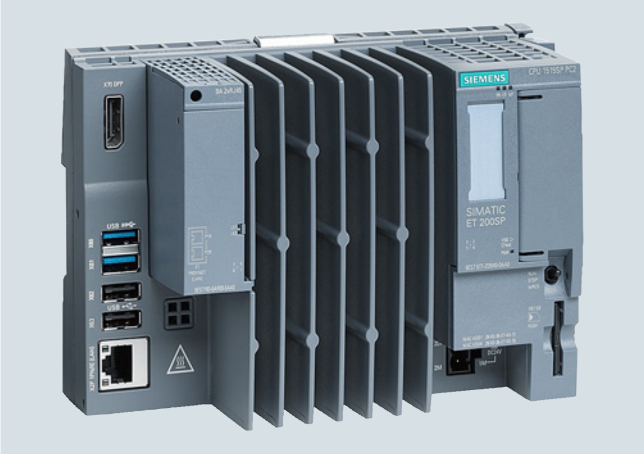
## Overview



ET 200SP Open Controller, CPU 1515SP PC2, combines robustness and compact dimensions with the flexibility of centralized or decentralized communication in the highest industrial functionality. Furthermore, the CPU offers the entire value added of the ET 200SP system, the S7-1500 controller family and the TIA world together.

- Rugged, compact control system
- Combines the functions of an ET 200SP controller with those of a PC-based platform
- Turnkey all-in-one controller
- High performance automation tasks with the use of new generation Intel Quad Core processors
- Connects high-level language applications and processes high data volumes with support from SIMATIC ODK 1500S

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC2 (+ HMI)** | |
| ET 200SP central module with Windows 10 IoT Enterprise 64-bit and pre-installed SIMATIC S7-1500 Software Controller (optionally with WinCC RT Advanced); 8 GB RAM, 128 GB CFast card | |
| **Type of delivery:**<br>en, de, fr, it, es, zh | |
| • **CPU 1515SP PC2** | **6ES7677-2DB42-0GB0** |
| With pre-installed WinCC RT Advanced | |
| • **CPU 1515SP PC2 + HMI 128PT** | **6ES7677-2DB42-0GK0** |
| • **CPU 1515SP PC2 + HMI 512PT** | **6ES7677-2DB42-0GL0** |
| • **CPU 1515SP PC2 + HMI 2048PT** | **6ES7677-2DB42-0GM0** |
| ***Accessories*** | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC** | **6ES7193-6AP40-0AA0** |
| For increased vibration and EMC loads | |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU** | **6ES7545-5DA00-0AB0** |
| PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | |
| **Server module** | **6ES7193-6PA00-0AA0** |
| Spare part | |
| **Power supply connector** | **6ES7193-4JB00-0AA0** |
| Spare part; for connecting the 24 V DC supply voltage; with push-in terminals (10 units) | |
| **Equipment labeling plates** | **6ES7193-6LF30-0AW0** |
| 10 sheets of 16 plates | |
| **Labeling strips** | |
| • 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| • 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |

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## Ordering data

| | Article No. |
|---|---|
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1] | **6ES7822-1AE06-0YA5** |
| E-mail address required for delivery | |
| **SIMATIC ODK 1500S** | |
| Open Development Kit for support in developing Windows and real-time library functions for S7-1500 Software Controllers | |
| • supplied on DVD | **6ES7806-2CD03-0YA0** |
| • software download including license key [1]; E-mail address required for delivery | **6ES7806-2CD03-0YG0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC Advanced V16** | |
| Engineering software in the TIA Portal; in 6 languages: de, en, fr, es, it, zh; for configuring SIMATIC Panels, WinCC Runtime Advanced, WinCC Unified PC Runtime | |
| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA06-0AA5** |
| • Floating license; software, documentation and license key for download [1]: E-mail address required for delivery | **6AV2102-0AA06-0AH5** |

[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

## *Further information and downloads*

### *Manuals*

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support:
https://support.industry.siemens.com/cs/ww/en/ps/13891/man

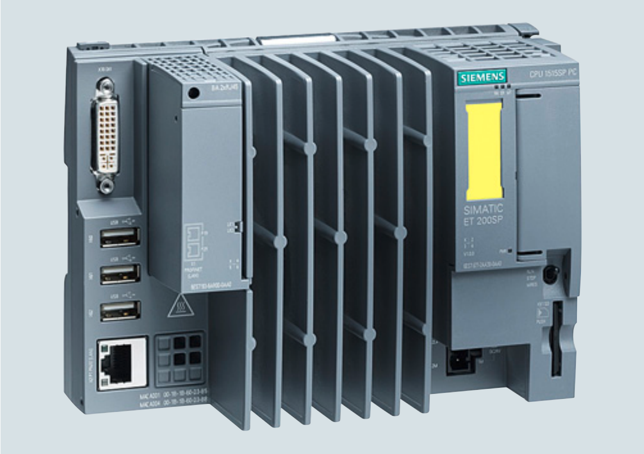
### *General information*

http://www.siemens.com/open-controller

### *SIMATIC Selection Tool*

http://www.siemens.com/tia-selection-tool

## Overview



- Turnkey all-in-one solution with pre-installed fail-safe SIMATIC S7-1500 Software Controller and optional pre-installed WinCC Runtime Advanced
- Fail-safe versions make it possible to control machines or plants in a fail-safe environment. This makes it possible to address applications which require an SIL3 (Safety Integrity Level) safety class according to IEC 61508 2nd Edition or a PL e (Performance Level) according to ISO 13849.
- Central expansion via ET 200SP modules (station width up to 1 m or up to 64 modules)
- SIMATIC Hypervisor: for separating Windows systems from control functions
- Dual-core processor for optimal use of the Hypervisor
- Swappable flash memory (CFast card) for operating system, runtime and project data
- Integrated DVI-I graphics connection; 3x USB 2.0 connection
- 2 PROFINET interfaces: X1 via PN-IO bus adapter (RJ45 or FC) with 2 ports; X2: GB Ethernet interface (RJ45)
- PROFINET IRT
- Open Ethernet communication (TCP/IP, UDP, ISO-on-TCP)
- Web server functionality for information, status, diagnostics and user-defined web pages
- PROFIBUS DP communication optionally via CM DP module as DP master
- Configuration control (option handling)
- Improved know-how and copy protection; Security Integrated
- Integrated system diagnostics
- Integrated motion control functionalities for controlling speed-controlled and positioning axes with support for external encoders
- Trace function
- Especially suitable for high data volumes and user-specific, open applications
- Integration of control functions and applications implemented in C/C++ (using SIMATIC ODK-1500S Open Development Kit)

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC F (+ HMI)** | |
| Fail-safe ET 200SP CPU with Windows Embedded Standard 7 and pre-installed fail-safe SIMATIC S7-1500 Software Controller (with WinCC RT Advanced option) | |
| **Type of delivery:**<br>en, de, fr, it, es, zh | |
| **Windows Embedded Standard 7 E 32-bit, 8 GB CFast card** | |
| **• CPU 1515SP PC F (4 GB RAM)** | **6ES7677-2FA31-0EB0** |
| **Windows Embedded Standard 7 P 64-bit (multi-touch), 16 GB CFast card** | |
| **• CPU 1515SP PC F (4 GB RAM)** | **6ES7677-2FA41-0FB0** |
| **• CPU 1515SP PC F + HMI 128PT (4 GB RAM)** | **6ES7677-2FA41-0FK0** |
| **• CPU 1515SP PC F + HMI 512PT (4 GB RAM)** | **6ES7677-2FA41-0FL0** |
| **• CPU 1515SP PC F + HMI 2048PT (4 GB RAM)** | **6ES7677-2FA41-0FM0** |
| ***Accessories*** | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC** | **6ES7193-6AP40-0AA0** |
| For increased vibration and EMC loads | |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU** | **6ES7545-5DA00-0AB0** |
| PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | |
| **Equipment labeling plates** | **6ES7193-6LF30-0AW0** |
| 10 sheets of 16 plates | |
| **Labeling strips** | |
| • 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| • 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |

## Ordering data

| | Article No. |
|---|---|
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1] | **6ES7822-1AE06-0YA5** |
| E-mail address required for delivery | |
| **SIMATIC ODK 1500S** | |
| Open Development Kit V2.0 for support in developing high-level language applications for SIMATIC S7-1500 Software Controllers V2.0 or V2.1; | |
| • single license; supplied on DVD | **6ES7806-2CD02-0YA0** |
| • single license; software download [1]<br>E-mail address required for delivery | **6ES7806-2CD02-0YG0** |
| Open Development Kit V2.5 for support in developing high-level language applications for SIMATIC S7-1500 Advanced Controllers; | |
| • supplied on DVD, license key (floating license) on USB flash drive | **6ES7806-2CD03-0YA0** |
| • software download including license key (floating license) [1]<br>E-mail address required for delivery | **6ES7806-2CD03-0YG0** |
| • upgrade to V2.5 for existing installations as from V1.0; software download including license key (floating license) [1]<br>E-mail address required for delivery | **6ES7806-2CD03-0YK0** |

| | Article No. |
|---|---|
| **WinCC Advanced V16** | |
| Engineering software in the TIA Portal; in 6 languages: de, en, fr, es, it, zh; for configuring SIMATIC Panels, WinCC Runtime Advanced, WinCC Unified PC Runtime | |
| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA06-0AA5** |
| • Floating license; software, documentation and license key for download [1]; E-mail address required for delivery | **6AV2102-0AA06-0AH5** |

[1] For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

### *Further information and downloads*

#### *Manuals*

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support:
https://support.industry.siemens.com/cs/ww/en/ps/13891/man

#### *General information*

http://www.siemens.com/open-controller

#### *SIMATIC Selection Tool*

http://www.siemens.com/tia-selection-tool

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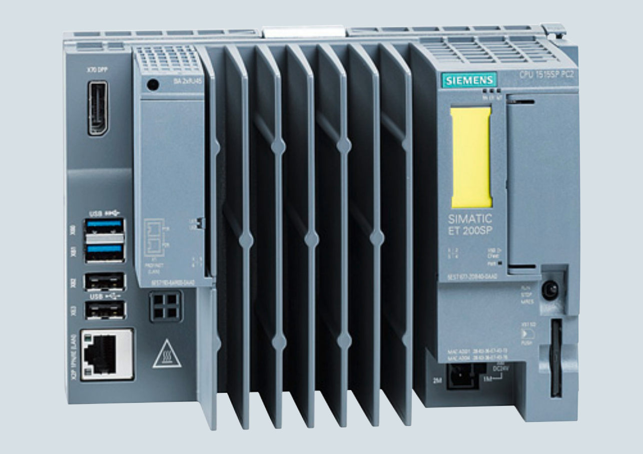
## Overview



ET 200SP Open Controller, CPU 1515SP PC2 F, combines robustness and compact dimensions with the flexibility of centralized or decentralized communication in the highest industrial functionality. Furthermore, the CPU offers the entire value added of the ET 200SP system, the S7-1500 controller family and the TIA world together.

- Rugged, compact control system
- Combines the functions of an ET 200SP controller with those of a PC-based platform
- Turnkey all-in-one controller
- Can be used up to safety class SIL3 (Safety Integrity Level) according to IEC 61508 2nd Edition or PL e (Performance Level) according to ISO 13849
- High performance automation tasks with the use of new generation Intel Quad Core processors
- Connects high-level language applications and processes high data volumes with support from SIMATIC ODK 1500S

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC2 F (+ HMI)**<br>Fail-safe ET 200SP CPU with Windows 10 IoT Enterprise 64-bit and pre-installed SIMATIC S7-1500 Failsafe Software Controller (optionally with WinCC RT Advanced); 8 GB RAM, 128 GB CFast card;<br>**Type of delivery:**<br>en, de, fr, it, es, zh | |
| • **CPU 1515SP PC2 F** | **6ES7677-2SB42-0GB0** |
| With pre-installed WinCC RT Advanced | |
| • **CPU 1515SP PC2 F + HMI 128PT** | **6ES7677-2SB42-0GK0** |
| • **CPU 1515SP PC2 F + HMI 512PT** | **6ES7677-2SB42-0GL0** |
| • **CPU 1515SP PC2 F + HMI 2048PT** | **6ES7677-2SB42-0GM0** |
| *Accessories* | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC**<br>For increased vibration and EMC loads | **6ES7193-6AP40-0AA0** |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU**<br>PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | **6ES7545-5DA00-0AB0** |
| **Equipment labeling plates**<br>10 sheets of 16 plates | **6ES7193-6LF30-0AW0** |
| **Labeling strips** | |
| • 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| • 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |

## Ordering data

| | Article No. |
|---|---|
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1] | **6ES7822-1AE06-0YA5** |
| E-mail address required for delivery | |
| **SIMATIC ODK 1500S** | |
| Open Development Kit V2.5 for support in developing high-level language applications for SIMATIC S7-1500 Advanced Controllers; | |
| • license key (floating license) on USB flash drive | **6ES7806-2CD03-0YA0** |
| • software download including license key (floating license) [1] E-mail address required for delivery | **6ES7806-2CD03-0YG0** |

| | Article No. |
|---|---|
| **WinCC Advanced V16** | |
| Engineering software in the TIA Portal; in 6 languages: de, en, fr, es, it, zh; for configuring SIMATIC Panels, WinCC Runtime Advanced, WinCC Unified PC Runtime | |
| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA06-0AA5** |
| • Floating license; software, documentation and license key for download [1]: E-mail address required for delivery | **6AV2102-0AA06-0AH5** |

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[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

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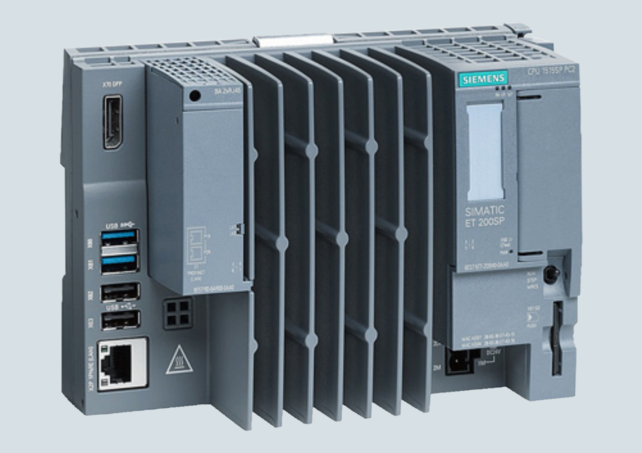
## Overview



ET 200SP Open Controller CPU 1515SP PC2 T combines robustness and compact dimensions with the flexibility of centralized or decentralized communication in the highest industrial functionality. Furthermore, the CPU offers the entire value added of the ET 200SP system, the S7-1500 controller family and the TIA world together.

- Rugged, compact control system
- Combines the functions of an ET 200SP controller with those of a PC-based platform
- Turnkey all-in-one controller
- High performance automation tasks with the use of new generation Intel Quad Core processors
- Connects high-level language applications and processes high data volumes with support from SIMATIC ODK 1500S

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC2 T** | |
| ET 200SP central module with Windows 10 IoT Enterprise 64-bit and pre-installed SIMATIC S7-1500 Software Controller (with WinCC RT Advanced option); 8 GB RAM, 128 GB CFast card; with extended motion control functionality | |
| Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • CPU 1515SP PC2 T | **6ES7677-2VB42-0GB0** |
| With pre-installed WinCC RT Advanced | |
| • CPU 1515SP PC2 T + HMI 128PT | **6ES7677-2VB42-0GK0** |
| • CPU 1515SP PC2 T + HMI 512PT | **6ES7677-2VB42-0GL0** |
| • CPU 1515SP PC2 T + HMI 2048PT | **6ES7677-2VB42-0GM0** |
| *Accessories* | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC** | **6ES7193-6AP40-0AA0** |
| For increased vibration and EMC loads | |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU** | **6ES7545-5DA00-0AB0** |
| PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | |
| **Equipment labeling plates** | **6ES7193-6LF30-0AW0** |
| 10 sheets of 16 plates | |
| **Labeling strips** | |
| • 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| • 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |

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## Ordering data

| | Article No. |
|---|---|
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1] | **6ES7822-1AE06-0YA5** |
| Email address required for delivery | |
| **SIMATIC ODK 1500S** | |
| Open Development Kit for support in developing Windows and real-time library functions for S7-1500 Software Controllers | |
| • supplied on DVD | **6ES7806-2CD03-0YA0** |
| • software download including license key [1]<br>Email address required for delivery | **6ES7806-2CD03-0YG0** |

| | Article No. |
|---|---|
| **WinCC Advanced V16** | |
| Engineering software in the TIA Portal; in 6 languages: de, en, fr, es, it, zh; for configuring SIMATIC Panels, WinCC Runtime Advanced, WinCC Unified PC Runtime | |
| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA06-0AA5** |
| • Floating license; software, documentation and license key for download [1]: Email address required for delivery | **6AV2102-0AA06-0AH5** |

[1] For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

### *Further information and downloads*

#### *Manuals*

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support:
https://support.industry.siemens.com/cs/ww/en/ps/13891/man

#### *General information*

http://www.siemens.com/open-controller

#### *SIMATIC Selection Tool*

http://www.siemens.com/tia-selection-tool

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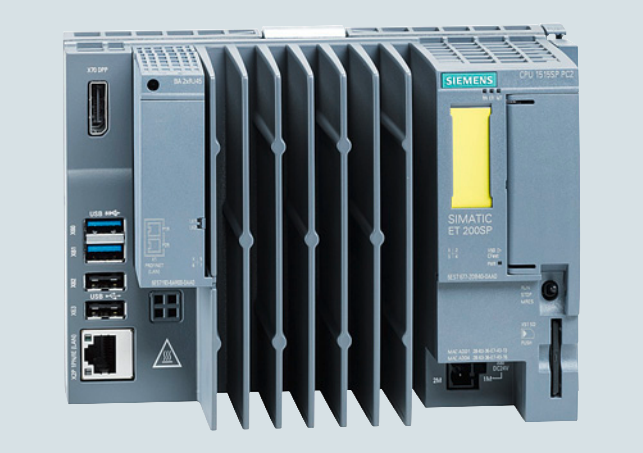
## Overview



ET 200SP Open Controller, CPU 1515SP PC2 TF, combines robustness and compact dimensions with the flexibility of centralized or decentralized communication in the highest industrial functionality. Furthermore, the CPU offers the entire value added of the ET 200SP system, the S7-1500 controller family and the TIA world together.

- Rugged, compact control system
- Combines the functions of a ET 200SP controller with those of a PC-based platform
- Turnkey all-in-one controller
- Can be used up to safety class SIL3 (Safety Integrity Level) according to IEC 61508 2nd Edition or PL e (Performance Level) according to ISO 13849
- High performance automation tasks with the use of new generation Intel Quad Core processors
- Connects high-level language applications and processes high data volumes with support from SIMATIC ODK 1500S

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC ET 200SP Open Controller CPU 1515SP PC2 TF** | |
| Fail-safe ET 200SP central module with Windows 10 IoT Enterprise 64-bit and pre-installed fail-safe SIMATIC S7-1500 Software Controller (with WinCC RT Advanced option); 8 GB RAM, 128 GB CFast card; with extended motion control functionality | |
| Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • CPU 1515SP PC2 TF | **6ES7677-2WB42-0GB0** |
| With pre-installed WinCC RT Advanced | |
| • CPU 1515SP PC2 TF + HMI 128PT | **6ES7677-2WB42-0GK0** |
| • CPU 1515SP PC2 TF + HMI 512PT | **6ES7677-2WB42-0GL0** |
| • CPU 1515SP PC2 TF + HMI 2048PT | **6ES7677-2WB42-0GM0** |
| *Accessories* | |
| **BusAdapter BA 2xRJ45** | **6ES7193-6AR00-0AA0** |
| **BusAdapter BA 2xFC** | **6ES7193-6AF00-0AA0** |
| **BusAdapter BA 2xSCRJ** | **6ES7193-6AP00-0AA0** |
| **BusAdapter BA SCRJ/RJ45** | **6ES7193-6AP20-0AA0** |
| **BusAdapter BA SCRJ/FC** | **6ES7193-6AP40-0AA0** |
| For increased vibration and EMC loads | |
| **BusAdapter BA 2XLC** | **6ES7193-6AG00-0AA0** |
| **BusAdapter BA LC/RJ45** | **6ES7193-6AG20-0AA0** |
| **BusAdapter BA LC/FC** | **6ES7193-6AG40-0AA0** |
| **CM DP for ET 200SP CPU** | **6ES7545-5DA00-0AB0** |
| PROFIBUS DP master with electrical interface for connecting the ET 200SP CPUs to PROFIBUS at up to 12 Mbps | |
| **Equipment labeling plates** | **6ES7193-6LF30-0AW0** |
| 10 sheets of 16 plates | |
| **Labeling strips** | |
| • 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer | **6ES7193-6LR10-0AA0** |
| • 1 000 labeling strips DIN A4, light gray, card, for inscription with laser printer | **6ES7193-6LA10-0AA0** |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **STEP 7 Professional V16** | |
| Target system:<br>SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC<br>Requirement:<br>Windows 7 Professional SP1<br>Windows 7 Enterprise SP1<br>Windows 7 Ultimate SP1<br>Windows 10 Professional Version 1809, 1903<br>Windows 10 Enterprise Version 1809, 1903<br>Windows 10 IoT Enterprise 2015 LTSB<br>Windows 10 IoT Enterprise 2016 LTSB<br>Windows 10 IoT Enterprise 2019 LTSC<br>Windows Server 2012 R2 StdE (full installation)<br>Windows Server 2016 Standard (full installation)<br>Windows Server 2019 Standard (full installation)<br>Type of delivery:<br>German, English, Chinese, Italian, French, Spanish | |
| • STEP 7 Professional V16, floating license | **6ES7822-1AA06-0YA5** |
| • STEP 7 Professional V16, floating license, software download including license key [1] | **6ES7822-1AE06-0YA5** |
| Email address required for delivery | |
| **SIMATIC ODK 1500S** | |
| Open Development Kit for support in developing Windows and real-time library functions for S7-1500 Software Controllers | |
| • supplied on DVD | **6ES7806-2CD03-0YA0** |
| • software download including license key [1]<br>Email address required for delivery | **6ES7806-2CD03-0YG0** |

| | Article No. |
|---|---|
| **SIMATIC WinCC Advanced V16** | |
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| • Floating license; software and documentation on DVD; license key on USB flash drive | **6AV2102-0AA06-0AA5** |
| • Floating license; software, documentation and license key for download [1]: Email address required for delivery | **6AV2102-0AA06-0AH5** |

[1] For up-to-date information and download availability, see:
http://www.siemens.com/tia-online-software-delivery

### *Further information and downloads*

#### *Manuals*

The manuals for the ET 200SP Open Controller can be downloaded online for free from SIMATIC Customer Support:
https://support.industry.siemens.com/cs/ww/en/ps/13891/man

#### *General information*

http://www.siemens.com/open-controller

#### *SIMATIC Selection Tool*

http://www.siemens.com/tia-selection-tool

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## SIPLUS CPU 1515SP PC (F)

### Overview

***SIPLUS ET 200SP Open Controllers***

SIPLUS ET 200SP Open Controller, SIPLUS CPU 1515SP PC (F) is a rugged, compact control system that combines the functionality of a SIPLUS ET 200SP controller with a PC-based platform. It can be used to control special-purpose and series machines, or plants in a distributed configuration.

The SIPLUS ET 200SP I/O modules can be inserted centrally and communicate via the integrated backplane bus.

S7 communication can be established and distributed I/Os can be connected via the PROFINET adapter of the SIPLUS ET 200SP system. The PROFIBUS CM DP module provides simple expandability for PROFIBUS communication.

The SIPLUS CPU 1515SP PC is used wherever special automation functions are to be integrated with support from SIMATIC ODK 1500S via the programming language C or C++, or if a close connection of independent applications is required in Windows for the software controller.

### Ordering data

| Ordering data | Article No. |
|---|---|
| ***SIPLUS ET 200SP Open Controller standard CPUs*** | |
| **SIPLUS CPU 1515SP PC2**<br>(Extended temperature range and exposure to environmental substances)<br>SIPLUS ET 200SP CPU with Windows 10 IoT Enterprise 64-bit and pre-installed SIMATIC S7-1500 Software Controller; 8 GB RAM, 30 GB CFast card<br>Type of delivery:<br>English, German, Chinese, Italian, French, Spanish | **6AG1677-2DB42-2GB0** |
| ***SIPLUS ET 200SP Open Controller fail-safe CPUs*** | |
| **SIPLUS CPU 1515SP PC2 F**<br>(Extended temperature range and exposure to environmental substances)<br>SIPLUS ET 200SP CPU with Windows 10 IoT Enterprise 64-bit and pre-installed SIMATIC S7-1500 Failsafe Software Controller (with WinCC RT Advanced option); 8 GB RAM, 30 GB CFast card; 8Gbyte RAM, 30 Gbyte CFast-Karte;<br>Type of delivery:<br>English, German, Chinese, Italian, French, Spanish | **6AG1677-2SB42-2GB0** |
| **Accessories** | |
| **SIPLUS BA 2xRJ45 BusAdapter**<br>(Extended temperature range and exposure to environmental substances) | **6AG1193-6AR00-7AA0** |
| **SIPLUS BA 2xFC BusAdapter**<br>(Extended temperature range and exposure to environmental substances) | **6AG1193-6AF00-7AA0** |
| **SIPLUS BA 2xSCRJ BusAdapter**<br>(Extended temperature range and exposure to environmental substances) | **6AG1193-6AP00-2AA0** |
| **SIPLUS BA 2xLC BusAdapter**<br>(Extended temperature range and exposure to environmental substances) | **6AG1193-6AG00-2AA0** |
| **Other accessories** | see SIMATIC CPU 1515SP PC2 |

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## Overview

### *SITOP PSU6200 family*

The SITOP PSU6200 product family is the new standard power supply for customers with high technical requirements regarding reliability, efficiency and integration. It is suitable for many fields of application, particularly in the industrial environment, such as series machine building. The SITOP PSU6200 represents the state-of-the-art and takes the SITOP product portfolio into new dimensions of efficiency.

The stabilized 1-phase power supplies with wide-range input of 120 – 230 V AC nominal voltage and 120 – 240 V DC are available with an output voltage of 12 V in three performance classes, with an output voltage of 24 V in six performance classes and with 48 V in one performance class.

The stabilized 3-phase power supplies with input 3 AC 400 - 500 V nominal voltage are available with an output voltage of 24 V in three performance classes.

The premium design of the PSU6200 series, in connection with the push-in terminals, represents effective wiring. The modules in this product family are all-rounders featuring a long service life and absolute reliability.

The high level of efficiency across the entire load range, as well as the minimal no-load losses, result in lower overall energy consumption. New levels of convenience during commissioning and service are offered for modules from 24 A/10 A or 48 V/5 A by the diagnostic monitor with LED indicators for DC o.k., utilization and service life, as well as the diagnostics interface for reporting status information. For power supplies with an output of more than 24 V/10 A or 48 V/5 A, the DC o.k. status is also equipped with glitch recognition that indicates even the smallest supply voltage failures.

For power supply modules up to 24 V/10 A or from 48 V/5 A, a diagnostics LED indicates DC o.k.; this information is also reported by means of a relay for devices of 3.7 A and above.

To further increase the 24 V availability, the SITOP PSU6200 power supplies can be combined with buffer, DC UPS, redundancy and selectivity modules.

### *Main product highlights*

- Diagnostic monitor from 24 V/10 A or from 48 V/5 A output power
  - LED display for DC o.k., utilization and operating hours
- Diagnostics interface from 24 V/10 A or from 48 V/5 A output power
  - Provision of important operating parameters (e.g. power, voltage, overload, etc.)
- Constant current
  - Up to 30 V supply voltage for 48 V devices, up to 15 V supply voltage for 24 V devices, up to 9 V supply voltage for 12 V devices
  - Power supply not switched off immediately in the event of overload
- Robust AC input
  - Active PFC
  - Optimized protection of the input circuit
- DC capability / wide-range input for 1-phase devices
  - Enhanced versatility and reliability
- Coordinated product family
  - Comprehensive range of products for a wide range of requirements
- Narrow overall width
  - For direct side-by-side mounting without lateral clearance requirements
  - Attractive metal enclosure from 3.7 A, plastic enclosure with similar form and color up to 2.5 A
- Push-in terminals
  - Easy, time-saving installation without need for tools
  - Separate ground terminal
- Selectivity and redundancy modules
  - Narrow width
  - In SITOP PSU6200 design

## Ordering data

| | Article No. |
|---|---|
| ***SITOP PSU6200***<br>***1-phase*** | |
| **24 V DC/1.3 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/1.3 A | **6EP3331-7SB00-0AX0** |
| **24 V DC/2.5 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/2.5 A | **6EP3332-7SB00-0AX0** |
| **24 V DC/3.7 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/3.7 A | **6EP3333-7LB00-0AX0** |
| **1-phase, 24 V DC/5 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/5 A | **6EP3333-7SB00-0AX0** |
| **24 V DC/10 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/10 A | **6EP3334-7SB00-3AX0** |
| **24 V DC/20 A**<br>Stabilized power supply<br>Input:<br>120 - 230 V AC/<br>120 - 240 V DC<br>Output: 24 V DC/20 A | **6EP3336-7SB00-3AX0** |

| | Article No. |
|---|---|
| ***SITOP PSU6200***<br>***3-phase*** | |
| **24 V DC/5 A**<br>Stabilized power supply<br>Input: 3 AC 400 - 500 V<br>Output: 24 V DC/5 A | **6EP3433-7SB00-0AX0** |
| **24 V DC/10 A**<br>Stabilized power supply<br>Input: 3 AC 400 - 500 V<br>Output: 24 V DC/10 A | **6EP3434-7SB00-3AX0** |
| **24 V DC/20 A**<br>Stabilized power supply<br>Input: 3 AC 400 - 500 V<br>Output: 24 V DC/20 A | **6EP3436-7SB00-3AX0** |

### *More information*

Select the appropriate power supply quickly and easily with the TIA Selection Tool :

http://www.siemens.com/tst

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## Overview

SITOP UPS500S
SITOP UPS501S
SIEMENS
SIEMENS

SITOP 24 V power supplies can be expanded with a SITOP UPS500 uninterruptible DC power supply (DC UPS) for bridging short-term power failures in the order of minutes.

In PC-based automation solutions, the highly capacitive double-layer capacitors of the SITOP UPS500 supply enough energy to safeguard operating and application data and close software applications in a defined manner. You can increase the buffer times using SITOP PSU501S expansion modules (up to 3).

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SITOP UPS500S** | |
| DC UPS basic device 15 A | |
| • With USB port and 2.5 kWs | **6EP1933-2EC41** |
| • With USB port and 5 kWs | **6EP1933-2EC51** |
| **SITOP UPS501S** | |
| Expansion module 5 kWs for UPS500S | **6EP1935-5PG01** |

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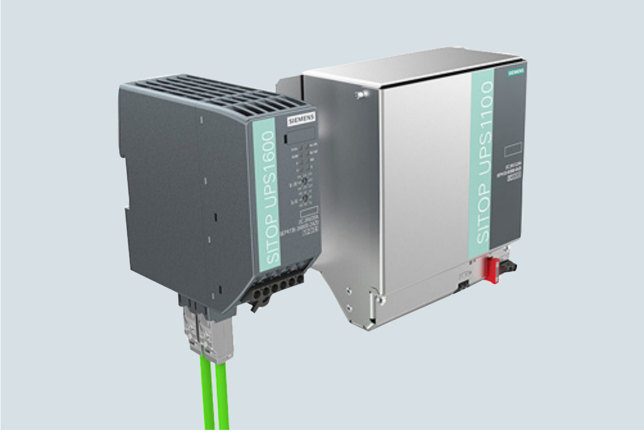
## SITOP UPS1600 DC UPS modules

### Overview



By combining one DC UPS module SITOP UPS1600 with at least one UPS1100 battery module and a SITOP power supply unit, longer power failures can be bridged without any interruption.

The intelligent battery management automatically detects the UPS1100 energy storage unit, ensures optimized temperature-specific charging and continuous monitoring.

The compact DC UPS modules have overload capability, for example, to supply the inrush current of industrial PCs. In stand-alone mode, they support starting from the battery.

The DC UPS communicates openly over a USB or Ethernet/PROFINET port. It is easily integrated into the PC or PLC environment over the two Ethernet/PROFINET ports.

Total integration in TIA provides user-friendly engineering in the TIA Portal and is supported with ready-to-use function blocks for S7 user programs and WinCC faceplates for fast visualization.

SITOP Manager also enables simple monitoring and configuration in PC systems, e.g. shutting down multiple PCs according to the master-slave principle.

The UPS1600 modules with Ethernet/PROFINET ports have an OPC UA server, with which the DC UPS can communicate with both PCs and PLCs, even from different manufacturers, thanks to the open communication standard. Parameter assignment and the diagnostics of the uninterruptible power supply is possible via the open interface.

The integrated web server supports remote monitoring of the DC UPS.

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SITOP UPS1600 24 V/10 A** | |
| • With USB port | **6EP4134-3AB00-0AY0** |
| • With PROFINET/Ethernet: two RJ45 sockets (2 port switch) | **6EP4134-3AB00-1AY0**<br>**6EP4134-3AB00-2AY0** |
| **SITOP UPS1600, 24 V/20 A** | |
| • With USB port | **6EP4136-3AB00-0AY0** |
| • With PROFINET/Ethernet: two RJ45 sockets (2 port switch) | **6EP4136-3AB00-1AY0**<br>**6EP4136-3AB00-2AY0** |
| **SITOP UPS1600 24 V/40 A** | |
| • With USB port | **6EP4137-3AB00-0AY0** |
| • With PROFINET/Ethernet: two RJ45 sockets (2 port switch) | **6EP4137-3AB00-1AY0**<br>**6EP4137-3AB00-2AY0** |

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## Overview

SITOP UPS1100
SIEMENS
DC 24V/1.2Ah
6EP4131-0GB00-0AY0

Maintenance-free SITOP UPS1100 battery modules with 1.2 Ah up to 12 Ah and various types of energy storage (lead, pure lead, lithium iron phosphate = LiFePo) for SITOP UPS1600 DC UPS modules.

The intelligent UPS1600 battery management charges the UPS1100 with the optimal temperature-controlled charging characteristics and monitors the status (operating data and diagnostics information) of the connected battery modules via the energy storage link.

For longer buffer times, up to six battery modules can be connected in parallel. These can be mounted onto a standard mounting rail or directly to the wall.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SITOP UPS1100 battery module 1.2 Ah**<br>With maintenance-free, sealed rechargeable lead-acid batteries for DC UPS module SITOP UPS1600, 10 A | **6EP4131-0GB00-0AY0** |
| **SITOP UPS1100 battery module 3.2 Ah**<br>With maintenance-free, sealed rechargeable lead-acid batteries for DC UPS module SITOP UPS1600, 10 A and 20 A | **6EP4133-0GB00-0AY0** |
| **SITOP UPS1100 battery module 5 Ah, LiFePo**<br>With maintenance-free, sealed rechargeable lithium iron phosphate batteries for DC UPS module SITOP UPS1600, 10 A and 20 A | **6EP4133-0JB00-0AY0** |
| **SITOP UPS1100 battery module 7 Ah**<br>With maintenance-free, sealed rechargeable lead-acid batteries for DC UPS module SITOP UPS1600, 10 A, 20 A and 40 A | **6EP4134-0GB00-0AY0** |
| **SITOP UPS1100 battery module 12 Ah**<br>With maintenance-free, sealed rechargeable lead-acid batteries for DC UPS module SITOP UPS1600, 20 A and 40 A | **6EP4135-0GB00-0AY0** |
| **SITOP UPS1100 battery module 2.5 Ah, high temperature**<br>With maintenance-free, sealed rechargeable lead-acid batteries for DC UPS module SITOP UPS1600, 10 A and 20 A | **6EP4132-0GB00-0AY0** |

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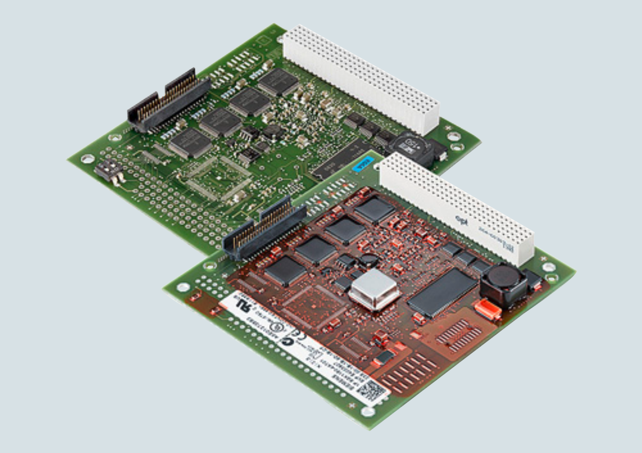
# CP 1604

## Overview



| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
|  | ● | ● | ● |  |  |  |  |

G_IK10_XX_10159

- PCI-104 module for connecting PCI-104 systems to PROFINET IO
- Full/half duplex with autonegotiation
- With Ethernet real-time ASIC ERTEC 400
- Integral 4-port real-time switch
- Communication services:
  - PROFINET IO Controller and/or PROFINET IO device
  - Support of IRT in motion control applications
  - Support of PROFIenergy functionality
- High performance through direct memory access
- Integration in network management systems through the support of SNMP
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- Powerful configuration tools are part of the scope of delivery of the module
- The CP 1604 EEC (Enhanced Environmental Conditions) is suitable for use in extremely harsh industrial environments

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 1604 communications processor**<br>PCI-104 card (32-bit) with ASIC ERTEC 400 for connecting PCI-104 systems to PROFINET IO with 4-port real-time switch (RJ45); incl. IO-Base software for PROFINET IO Controller and NCM PC; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows XP Professional and Windows 7; other operating systems using DK-16xx PN IO Development Kit<br>English/German | |
| **Product version CP 1604** | **6GK1160-4AA01** |
| **Product version CP 1604 EEC** | **6GK1160-4AT01** |
| ***Accessories*** | |
| **Connection board for CP 1604**<br>Connection board for CP 1604 with four RJ45 sockets incl. connecting cable | **6GK1160-4AC00** |
| **Power supply for CP 1604**<br>Redundant power supply for CP 1604 for operating the integral 4-port switch of the CP 1604 with the PC-104 system switched off; includes connecting cable | **6GK1160-4AP00** |
| **DK-16xx PN IO Development Kit**<br>Software Development Kit for CP 1616/CP 1604;<br>driver and IO-Base software for CP 1616/CP 1604 as PN IO Controller and PN IO Device in source code for transfer to other PC-based operating systems; incl. executable sample code for SUSE Linux 10, Windows XP Professional and Windows 7 | See https://support.industry.siemens.com/cs/ww/en/view/109480928 |
| **IE TP Cord RJ45/RJ45**<br>TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |
| **SCALANCE X204IRT**<br>Managed Industrial Ethernet switches; isochronous real time, LED diagnostics, error signaling contact with SET button, redundant power supply; 4 x 10/100 Mbps RJ45 ports | **6GK5204-0BA00-2BA3** |

Note:

You can find order information for software under System connections – software overview

## More information

The DK-16xx PN IO Development Kit is available on the Internet at:
https://support.industry.siemens.com/cs/ww/en/view/109762689

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## Overview

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| | ● | ● | ● | | | | |

- PCI module for connecting PCs and SIMATIC PGs/PCs to PROFINET IO (universal keyed 3.3 V and 5 V; 33 MHz/ 66 MHz; 32-bit, runs in 64-bit PCI-X systems)
- Full/half duplex with autonegotiation
- With Ethernet real-time ASIC ERTEC 400
- Integral 4-port real-time switch
- Communication services:
  - PROFINET IO Controller and/or PROFINET IO Device
  - Support of IRT in motion control applications
- High performance through direct memory access
- Integration in network management systems through the support of SNMP
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- Powerful configuration tools are part of the scope of delivery of the module

## Ordering data

| | Article No. |
|---|---|
| **CP 1616 communications processor** | **6GK1161-6AA02** |
| PCI card (32 bit; 3.3/5 V universal keyed) with ASIC ERTEC 400 for connecting PCs to PROFINET IO with 4-port real-time switch (RJ45); incl. IO-Base software for PROFINET IO Controller and NCM PC; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows XP Professional and Windows 7; other operating systems via Development Kit DK-16xx PN IO;<br>English/German | |
| **Accessories** | |
| **Development Kit DK-16xx PN IO** | see http://www.siemens.com/simatic-net/dk16xx |
| Software Development Kit for CP 1616/CP 1604;<br>driver and IO-Base software for CP 1616/CP 1604 as PN IO Controller and IO device in source code for transfer to other PC-based operating systems; including executable example code for SUSE Linux 10, Windows XP Professional and Windows 7 | |
| **IE TP Cord RJ45/RJ45** | |
| TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |
| **SCALANCE X204IRT** | **6GK5204-0BA00-2BA3** |
| Managed Industrial Ethernet switches; isochronous real time, LED diagnostics, error signaling contact with SET button, redundant power supply; 4 x 10/100 Mbps RJ45 ports | |

Note:

You can find order information for software under System connections – software overview

## More information

The DK-16xx PN IO Development Kit is available on the Internet at:
http://www.siemens.com/simatic-net/dk16xx

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# CP 1612 A2

## Overview

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| ● | ● | ● |  | ● | ● | ● | ● |

G_IK10_XX_10158

- PCI card (32 bit; 33 MHz/66 MHz; 3.3 V/5 V universal key) for the connection of PG/PC to Industrial Ethernet
- 1 x 10/100/1000 Mbps RJ45 port, electrical
- Automatic data transmission rate detection (10/100/1000 Mbps), with autosensing and autocrossover function
- Communication services via
  - PROFINET
  - ISO or TCP/IP transport protocol
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE)
- Designed for use in industrial environments
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communication software.

## Ordering data

| | Article No. |
|---|---|
| **CP 1612 A2 communications processor** | **6GK1161-2AA01** |
| PCI card (32 bit, 33 MHz/66 MHz; 3.3 V/5 V universal keyed) for connection to Industrial Ethernet (10/100/1000 Mbps) with RJ45 interface, incl. driver for 32-bit Windows XP Professional SP2/3, 32/64-bit Windows 7, 2003 R2 Server SP2, Vista Business/Ultimate SP1, Windows 2008 Server; German/English | |
| ***Accessories*** | |
| **IE TP Cord RJ45/RJ45** | |
| TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |

Note:

You can find order information for software under System connections – software overview

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## Overview

| ISO | TCP/<br>UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| ● | ● | | | ● | ● | ● | ● |

G_IK10_XX_10158

- PCI Express card (PCIe x1) with internal microprocessor for connection of PG/PC to Industrial Ethernet
- 10/100/1000 Mbps (autosensing/autocrossover/autonegotiation)
- Integrated 2-port switch (2 x RJ45 connection)
- Communication services via:
  - Open IE communication (TCP/IP and UDP)
  - ISO transport protocol
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE)
- Time synchronization
- ISO and TCP/IP transport protocol on board
- Integration into network management systems through the support of SNMP (V1)
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

## Ordering data

| | Article No. |
|---|---|
| **CP 1623 communications processor**<br>PCI Express x1 card for connection to Industrial Ethernet (10/100/1000 Mbps), with 2-port switch (RJ45) via HARDNET-IE S7/S7-1613 and S7-REDCONNECT. For operating system support, see SIMATIC NET Software | **6GK1162-3AA00** |
| ***Accessories*** | |
| **IE TP Cord RJ45/RJ45** | |
| TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |

Note:

You can find order information for software under System connections – software overview

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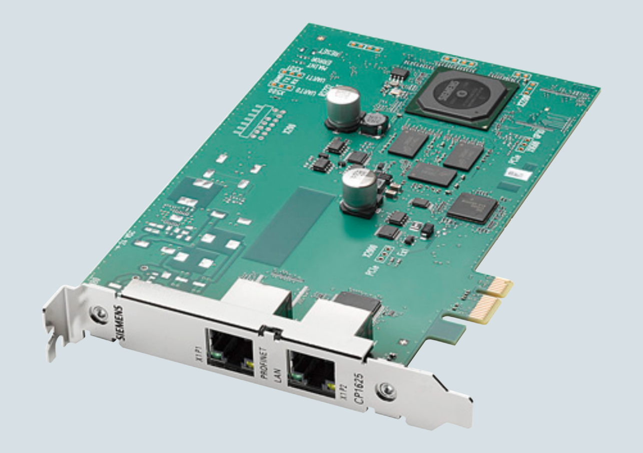
## CP 1625

### Overview



***CP 1625***

CP 1625 is a PCIe module for connecting IPCs to Industrial Ethernet and for PROFINET IRT with software controller CPU1500S.

Requirement:

- TIA Portal ≥ V15
- S7-1500 software controller CPU 1507S (F) ≥ V2.5 is installed on the IPC

### Ordering data

| | Article No. |
|---|---|
| **SIMATIC CP 1625**<br>PCIe card for PROFINET IRT for software controller CPU1500S | **6ES7648-2CF10-1AA0** |

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## Overview

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| | ● | ● | ● | | | | |

G_IK10_XX_10159

- PCI Express module for connecting PCs and SIMATIC PGs/PCs to PROFINET IO (3.3 V/12 V)
- Optimized for PROFINET IO
- With Ethernet real-time ASICs
- 2 integrated 2-port real-time switches
- Communication services:
  - PROFINET IO Controller and/or PROFINET IO Device
  - Support of IRT in motion control applications
- High performance through direct memory access
- Supply disconnection between IO Controller and IO Device IP subnet
- PROFIenergy functions for switching the host PC on and off
- Integration in network management systems through the support of SNMP
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- Powerful configuration tools are part of the scope of delivery of the module

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 1626 communications processor** | **6GK1162-6AA01** |
| CP 1626 communications processor PCI Express card for connecting PC/IPC to Industrial Ethernet/PROFINET; PROFINET IO controller and IO Device, network disconnection, series machines | |
| **Accessories** | |
| **Development Kit DK-16xx PN IO** | see http://www.siemens.com/simatic-net/dk16xx |
| Software Development Kit for CP 1616/CP 1604; driver and IO-Base software for CP 1616/CP 1604 as PN IO Controller and IO Device in source code for transfer to other PC-based operating systems; including executable example code for SUSE Linux 10, Windows XP Professional and Windows 7 | |
| **IE TP Cord RJ45/RJ45** | |
| TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |
| **SCALANCE X204IRT** | **6GK5204-0BA00-2BA3** |
| Managed Industrial Ethernet switches; isochronous real time, LED diagnostics, error signaling contact with SET button, redundant power supply; 4 x 10/100 Mbps RJ45 ports | |

Note:

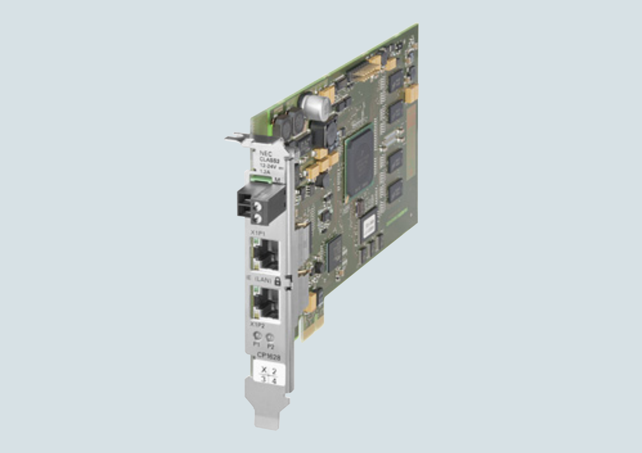
You can find order information for software under System connections – software overview

## More information

The DK HN-IE PN IO Development Kit is available on the Internet at:
http://www.siemens.com/simatic-net/DK HN-IE PN IO

## CP 1628

### Overview



| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| ● | ● |  |  | ● | ● | ● | ● |

G_IK10_XX_10158

- PCI Express card (PCIe x1) with internal microprocessor and integrated 2-port switch (2 x RJ45 connection, 10/100/1000 Mbps) for connecting a PG/PC to Industrial Ethernet
- Integrated security mechanisms (e.g. firewall, VPN)
- ISO and TCP/IP transport protocol on board
- Communication services via:
  - Open IE communication (TCP/IP and UDP)
  - ISO transport protocol
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE)
- Integration into network management systems through the support of SNMP (V1/V3)

### Ordering data

| | Article No. |
|---|---|
| **CP 1628 communications processor**<br>PCI Express x1 card for connection to Industrial Ethernet (10/100/1 000 Mbps), with 2-port switch (RJ45) and integrated security (firewall, VPN) via HARDNET-IE S7 and S7-REDCONNECT. For operating system support, see SIMATIC NET Software | **6GK1162-8AA00** |
| ***Accessories*** | |
| **IE TP Cord RJ45/RJ45** | |
| TP cable 4 x 2 with 2 RJ45 connectors | |
| • 0.5 m | **6XV1870-3QE50** |
| • 1 m | **6XV1870-3QH10** |
| • 2 m | **6XV1870-3QH20** |
| • 6 m | **6XV1870-3QH60** |
| • 10 m | **6XV1870-3QN10** |

Note:

You can find order information for software under System connections – software overview

### More information

You can find further information on the topic of Industrial Security on the Internet at:
http://www.siemens.com/industrialsecurity

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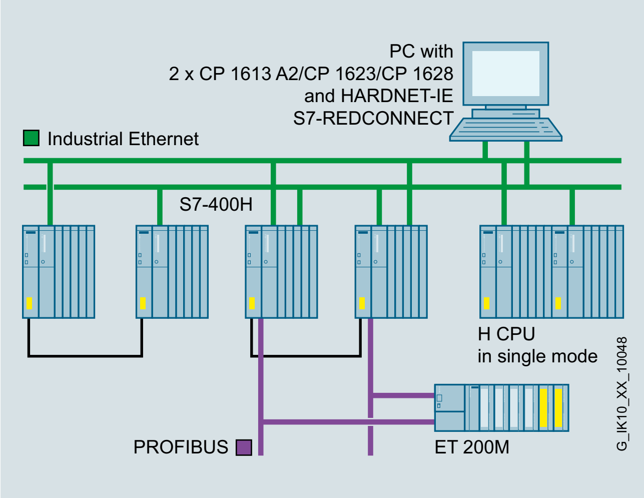
## Overview



System configuration for S7-REDCONNECT

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| ● | | | | ● | ● | ● | |

G_IK10_XX_10184

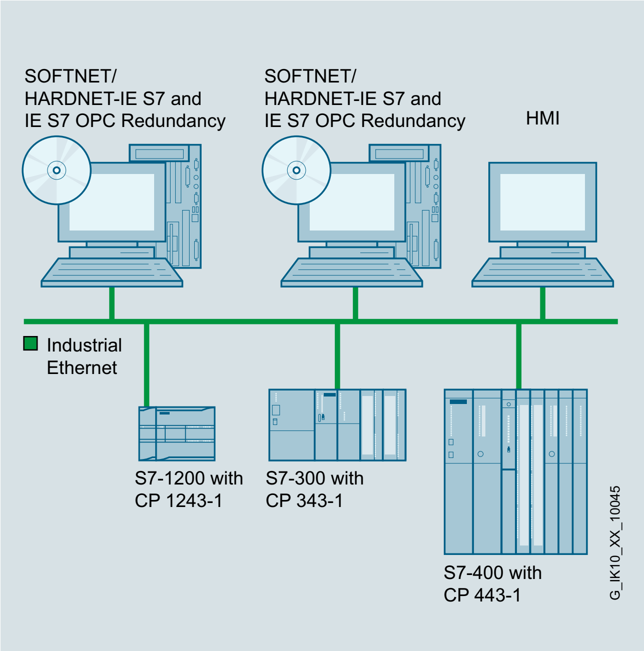
- For connecting PCs over redundant Industrial Ethernet to the SIMATIC S7-400H
- Protects from communication failures arising from a fault in the double bus or in redundant rings
- For redundant Layer 2 or Layer 3 Industrial Ethernet
- Can also be implemented in non-redundant networks
- No additional programming overhead for the PC and in H systems
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software
- Enhanced redundancy over 4-way communication (STEP 7 V5.1 + SP4 and higher)

## Ordering data

| | **Article No.** |
|---|---|
| ***HARDNET-IE S7-REDCONNECT*** | |
| Software for fail-safe S7 communication via redundant networks, incl. S7 OPC server, HARDNET-IE S7, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| *For CP 1613 A2, CP 1623, CP 1628* | |
| **HARDNET-IE S7-REDCONNECT V14** | |
| For 32/64-bit: Windows 7 SP1 Professional/Ultimate<br>For 64-bit: Windows 8.1 Pro<br>For 64-bit: Windows 10 PRO and Ent., Windows Server 2016, Windows Server 2008 R2 SP1<br>For 64-bit: Windows Server 2012 R2;<br>English/German; single license for one installation | |
| • On DVD | **6GK1716-0HB14-0AA0** |
| • Download [1] | **6GK1716-0HB14-0AK0** |
| **Software Update Service** | **6GK1716-0HB00-3AL0** |
| For 1 year with automatic extension; requirement: current software version | |
| **Upgrade** | |
| • From Edition 2006 to S7-REDCONNECT Edition 2008 or HARDNET-IE S7-REDCONNECT V13 | **6GK1716-0HB00-3AE0** |
| • From V6.0, V6.1, V6.2 or V6.3 to S7-REDCONNECT Edition 2008 or HARDNET-IE S7-REDCONNECT V13 | **6GK1716-0HB00-3AE1** |
| *For CP 1613 A2, CP 1623, CP 1628* | |
| ***HARDNET-IE S7-REDCONNECT Power Pack*** | |
| For expansion from HARDNET-IE S7 to HARDNET-IE S7-REDCONNECT / from S7-1613 to S7 REDCONNECT, single license for one installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| **HARDNET-IE S7-REDCONNECT Powerpack V14** | |
| For 32/64-bit: Windows 7 SP1 Professional/Ultimate<br>For 64-bit: Windows 8.1 Pro<br>For 64-bit: Windows 10 PRO and Ent., Windows Server 2016, Windows Server 2008 R2 SP1<br>For 64-bit: Windows Server 2012 R2;<br>English/German | |
| • On DVD | **6GK1716-0HB14-0AC0** |
| • Download [1] | **6GK1716-0HB14-0AK1** |

[1] For more details of online software delivery, visit: http://www.siemens.com/tia-online-software-delivery under Ordering Data.

## Overview



System configuration SOFTNET for Industrial Ethernet

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
| ● | ● |  |  | ● | ● | ● |  |

G_IK10_XX_10185

- Software for coupling programming devices/PCs/workstations to automation systems
- Communication services:
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE)
- Can be used with
  - Layer 2 Ethernet card (PCI/PCIe), e.g. CP 1612 A2
  - Integrated Industrial Ethernet interface
  - Modem/ISDN (Remote Access Service RAS)
- Complete protocol stack as a software package
- Increased availability thanks to additional option packages such as OPC server redundancy

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SOFTNET S7 for Industrial Ethernet* |  |
| **SOFTNET-IE S7 V14** |  |
| For 32/64-bit: Windows 7 SP1 Professional/Ultimate<br>For 64-bit: Windows 8.1 Pro<br>For 64-bit: Windows 10 PRO and Ent., Windows Server 2016, Windows Server 2008 R2 SP1<br>For 64-bit: Windows Server 2012 R2<br>English/German |  |
| Up to 64 connections; single license for one installation |  |
| • On DVD | 6GK1704-1CW14-0AA0 |
| • Download [1] | 6GK1704-1CW14-0AK0 |
| **Software Update Service** | 6GK1704-1CW00-3AL0 |
| For 1 year with automatic extension<br>Requirement: current software version |  |
| **Upgrade** |  |
| • From Edition 2006 to Edition 2008 or V13 | 6GK1704-1CW00-3AE0 |
| • From V6.0, V6.1, V6.2 or V6.3 to Edition 2008 or V13 | 6GK1704-1CW00-3AE1 |
| **SOFTNET-IE S7 REDCONNECT VM V14** |  |
| Software for fail-safe S7 communication via redundant networks, incl. S7 OPC server, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A<br>For 32/64-bit: Windows 7 SP1 Professional/Ultimate<br>For 64-bit: Windows 8.1 Pro<br>For 64-bit: Windows Server 2008 R2 SP1;<br>For 64-bit: Windows Server 2012 R2;<br>English/German |  |
| • Single license for one installation | 6GK1704-0HB14-0AA0 |
| **SOFTNET-IE S7 Lean Edition V14** |  |
| For 32/64-bit: Windows 7 SP1 Professional/Ultimate<br>For 64-bit: Windows 8.1 Pro<br>For 64-bit: Windows Server 2008 R2 SP1;<br>For 64-bit: Windows Server 2012 R2;<br>Up to eight connections;<br>English/German;<br>single license for one installation |  |
| • On DVD | 6GK1704-1LW14-0AA0 |
| • Download [1] | 6GK1704-1LW14-0AK0 |
| **Software Update Service** | 6GK1704-1LW00-3AL0 |
| For 1 year with automatic extension<br>Requirement: current software version |  |
| **Upgrade** |  |
| • From Edition 2006 to Edition 2008 or V13 | 6GK1704-1LW00-3AE0 |
| • From V6.0, V6.1, V6.2 or V6.3 to Edition 2008 or V13 | 6GK1704-1LW00-3AE1 |
| *IE S7 OPC Redundancy* |  |
| Software for redundant OPC servers in the environment of Industrial Ethernet software, S7 products, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A |  |
| **IE S7 OPC Redundancy V13** | 6GK1706-1CW13-0AA0 |
| For 64-bit: Windows 2008 Server R2 SP1; English/German |  |
| • Single license for one installation |  |

[1] For more details of online software delivery, visit: http://www.siemens.com/tia-online-software-delivery under Ordering Data.

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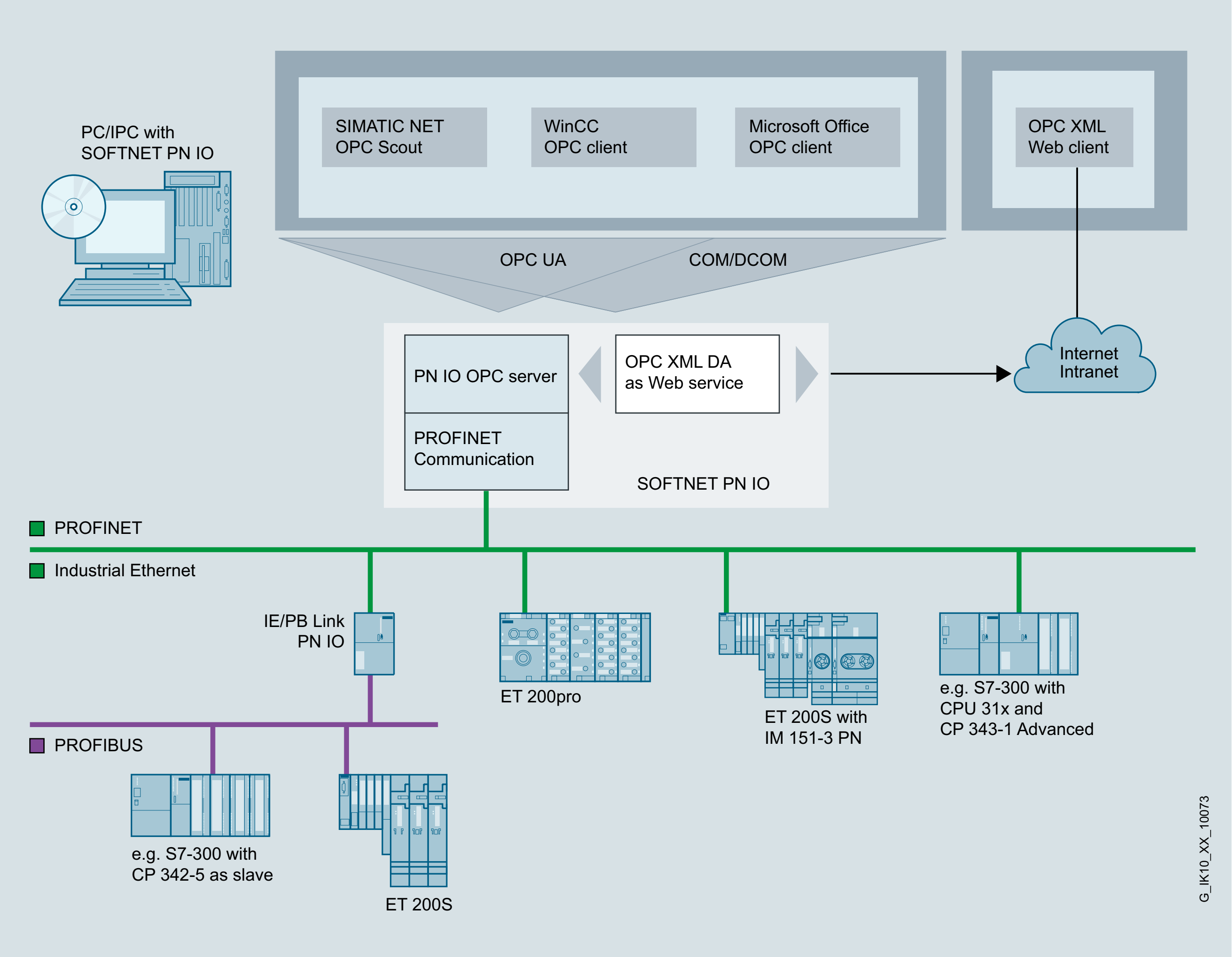
## SOFTNET PN IO

### Overview


PC/IPC with
SOFTNET PN IO
SIMATIC NET
OPC Scout
WinCC
OPC client
Microsoft Office
OPC client
OPC XML
Web client
OPC UA
COM/DCOM
PN IO OPC server
OPC XML DA
as Web service
PROFINET
Communication
SOFTNET PN IO
Internet
Intranet
PROFINET
Industrial Ethernet
IE/PB Link
PN IO
ET 200pro
ET 200S with
IM 151-3 PN
e.g. S7-300 with
CPU 31x and
CP 343-1 Advanced
PROFIBUS
e.g. S7-300 with
CP 342-5 as slave
ET 200S
G_IK10_XX_10073

PC with SOFTNET PN IO as PROFINET IO Controller

| ISO | TCP/ UDP | PN | MRP | OPC | PG/OP | S7/S5 | IT |
|---|---|---|---|---|---|---|---|
|  | ● | ● |  | ● |  |  |  |

G_IK10_XX_10170

- Software with PROFINET IO Controller function for coupling PG/PC and IPC with PROFINET IO Devices
- Possible applications:
  - PC-based control systems
  - HMI systems
  - Test applications
- Communication services:
  - PROFINET IO Controller
- Can be used with
  - Layer 2 Ethernet card (PCI/PCIe), e.g. CP 1612 A2
  - Integral Industrial Ethernet interfaces of SIMATIC programming devices/PCs
- Cost-effective solution for the low-end performance range
- OPC server for I/O connection over PROFINET included in scope of delivery

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SOFTNET PN IO* | |
| Software for PROFINET IO Controller with OPC server and NCM PC / STEP7 Professional V14 SP1; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| **SOFTNET-IE PN IO V14** | **6GK1704-1HW14-0AA0** |
| For 32/64-bit Windows 7 Professional/Ultimate<br>For Windows 2008 Server R2 SP1<br>For Windows Server 2012 R2<br>English/German<br>Single license for one installation | |
| **Software Update Service** | **6GK1704-1HW00-3AL0** |
| For 1 year with automatic extension; requirement: current software version | |

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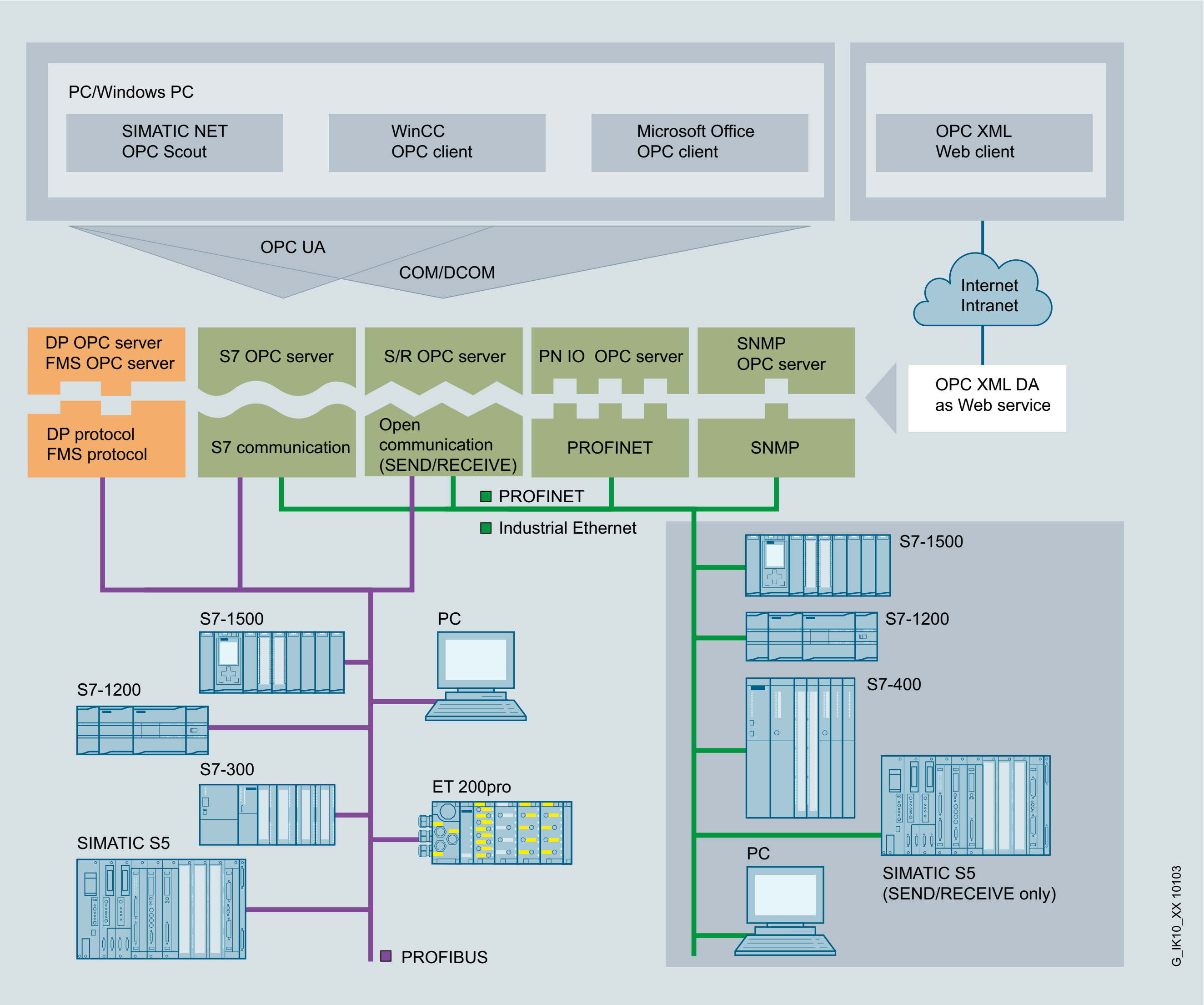
## Overview


PC/Windows PC
SIMATIC NET OPC Scout
WinCC OPC client
Microsoft Office OPC client
OPC XML Web client
OPC UA
COM/DCOM
Internet Intranet
DP OPC server FMS OPC server
S7 OPC server
S/R OPC server
PN IO OPC server
SNMP OPC server
OPC XML DA as Web service
DP protocol FMS protocol
S7 communication
Open communication (SEND/RECEIVE)
PROFINET
SNMP
🟩 PROFINET
🟩 Industrial Ethernet
S7-1500
S7-1200
S7-400
SIMATIC S5 (SEND/RECEIVE only)
PC
S7-1500
PC
S7-1200
S7-300
ET 200pro
SIMATIC S5
🟪 PROFIBUS
G_IK10_XX 10103

System integration with OPC server

OPC (**O**penness, **P**roductivity & **C**ollaboration) is a standardized, open, and vendor-independent interface that is widely used in automation.

A fundamental distinction is made between the classic OPC and its consistent further development OPC UA (**U**nified **A**rchitecture). Smooth migration to the new OPC UA standard is easily possible; this offers further value added, such as security. The SIMATIC NET OPC servers offer the two interfaces OPC UA and classic OPC for SIMATIC S7 and PROFINET.

- The corresponding OPC servers are included in the scope of supply of the respective communication software
- Standardized, open, multi-vendor interface
- Interfacing of OPC-capable Windows applications to S7 communication, open communication (SEND/RECEIVE), PROFINET, and SNMP
- Increased availability thanks to additional option packages such as OPC server redundancy
- OPC Scout with browser functionality as an OPC client and OCX Data Control/.NET Data Control for simple OPC client creation

| **Ordering data** | **Article No.** |
|---|---|
| *SNMP OPC Server* | See SNMP OPC server |
| Status monitoring of SNMP-capable devices in any OPC client systems; e.g. SIMATIC WinCC/PCS 7 | |
| *S7 OPC Redundancy* | |
| Software for redundant OPC servers in the environment of Industrial Ethernet software, S7 products, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| **S7 OPC Redundancy V13** | **6GK1706-1CW13-0AA0** |
| For 64-bit: Windows 2008 Server R2 SP1; English/German<br>Single license for one installation | |

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## S7 OPC Redundancy for Industrial Ethernet

### Overview

OPC (**O**penness, **P**roductivity & **C**ollaboration) is a standardized, open, and vendor-independent interface that is widely used in automation. OPC UA (**U**nified **A**rchitecture) is the result of consistent further development of this standard, offering additional functions such as security or redundancy.

S7 OPC Redundancy is a software product compliant with the OPC UA standard that enables redundant configuration of OPC UA servers for SIMATIC S7.

The availability of automation data to operator control and monitoring systems is ensured thanks to the redundant use of OPC UA servers. This requires neither additional cabling for synchronizing the redundant OPC UA servers, nor additional programming effort on the PC. The OPC UA servers are synchronized via high-performance Industrial Ethernet network accesses at 10/100 and 1000 Mbps. S7 OPC Redundancy represents an integrated customer solution for all SIMATIC NET S7 SOFTNET and HARDNET software products in the automation world.

### Ordering data

| Ordering data | Article No. |
|---|---|
| ***S7 OPC Redundancy*** | |
| Software for redundant OPC servers in the environment of Industrial Ethernet software, S7 products, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| **S7 OPC Redundancy V13 for Industrial Ethernet** | **6GK1706-1CW13-0AA0** |
| Single license for one installation;for 64-bit: Windows 2008 Server R2; English/German | |

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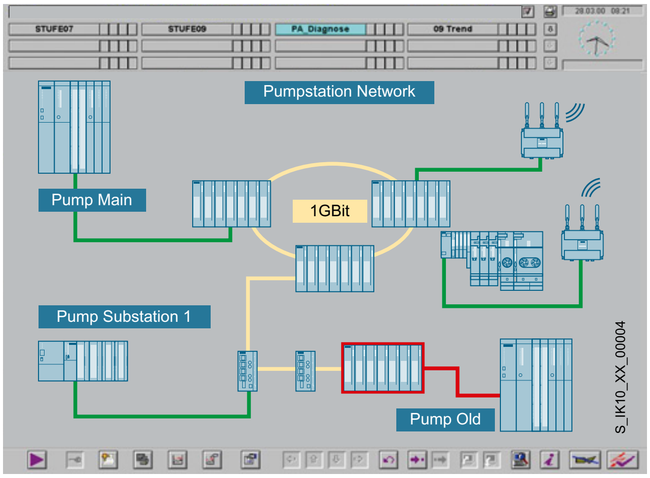
## Overview



- Status monitoring of SNMP-capable devices in any OPC client systems; e.g. SIMATIC WinCC/PCS 7
- Easy access to SNMP-capable devices over the OPC interface
- Devices without SNMP agents can be monitored using the ping mechanism
- Configuration with STEP 7 (up to STEP 7 V5.5) or NCM PC
- Ready-to-use SNMP diagnostics profiles for Siemens devices, e.g. SCALANCE X/W
- Generation of any SNMP diagnostics profiles by means of the integral MIB compiler
- Easy setup of the monitored devices with the help of an Autodiscovery function

## Ordering data

| | Article No. |
|---|---|
| *SNMP OPC Server* | |
| Including MIB compiler; single license for one installation of runtime software; software and electronic manual on CD-ROM; license key on USB flash drive, Class A; | |
| **SNMP OPC Server Basic** | |
| Administration of up to 20 IP addresses | |
| • **Basic V14**<br>For 32/64-bit: Windows 7 SP1 Professional/Ultimate;<br>for 64-bit: Windows 8.1 Pro<br>for Windows 10;<br>Windows Server 2008 R2 SP1;<br>Windows Server 2012 R2;<br>single license for one installation | **6GK1706-1NW14-0AA0** |
| **Software Update Service SNMP OPC Server Basic**<br>For 1 year with automatic extension; requirement: current software version | **6GK1706-1NW00-3AL0** |
| **Upgrade SNMP OPC Server Basic** | |
| • From Edition 2006 to Edition 2008 or V13 | **6GK1706-1NW00-3AE0** |
| • From V6.0, V6.1, V6.2 or V6.3 to Edition 2008 or V13 | **6GK1706-1NW00-3AE1** |
| **SNMP OPC Server Extended** | |
| Administration of up to 200 IP addresses | |
| • **Extended V14**<br>For 32/64-bit: Windows 7 SP1 Professional/Ultimate;<br>for 64-bit: Windows 8.1 Pro<br>for Windows 10;<br>Windows Server 2008 R2 SP1;<br>Windows Server 2012 R2;<br>single license for one installation | **6GK1706-1NX14-0AA0** |
| **Software Update Service SNMP OPC Server Extended**<br>For 1 year with automatic extension; requirement: current software version | **6GK1706-1NX00-3AL0** |
| **Upgrade SNMP OPC Server Extended** | |
| • From Edition 2006 to Edition 2008 or V13 | **6GK1706-1NX00-3AE0** |
| • From V6.0, V6.1, V6.2 or V6.3 to Edition 2008 or V13 | **6GK1706-1NX00-3AE1** |
| *SNMP OPC Server Power Pack* | |
| For upgrade from SNMP OPC Server Basic to SNMP OPC Server Extended | |
| **Powerpack V14** | **6GK1706-1NW14-0AC0** |

## Overview

The SINEMA server software has been specially developed for industrial applications. It enables you to fully visualize and monitor networks. Using SNMP and simultaneous diagnostics via SIMATIC and PROFINET mechanisms, many aspects of plant diagnostics can be portrayed in a single tool.

Captured data is stored in a long-term archive and can be evaluated and presented as required. The predefined network diagnostics can also be seamlessly integrated into HMI/SCADA systems (e.g. WinCC, PCS 7) via OPC UA and web mechanisms.

**Main features:**

**Inventory:** Inventorying of all network subscribers

**Topology:** Topological representation of the network (HTML 5-based UI)

**Monitoring:** Read-out of status information

**Diagnostics:** Evaluation and presentation of diagnostic states

**Reporting:** Presentation of statistics for any time period

**Validation:** Validation of network parameters

**Propagation:** Forwarding of data to other systems

**Management:** Configuration of devices via CLI / firmware management

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SINEMA server V14** | |
| Network monitoring software for Industrial Ethernet and PROFINET networks, runtime software, software and electronic manual on DVD (not with download), license key on USB flash drive (not with download); software for installation on PC hardware with Windows 7 Professional/Ultimate/ Enterprise SP1 (64-bit), Windows Server 2008 R2 + SP1 (64-bit), Windows 10 Pro/ Enterprise Version 1607/1703 (64-bit) English/German/French/Chinese. Other languages possible on request. | |
| **For 50 devices that can be identified via IP address** | |
| • On DVD | **6GK1781-1BA14-0AA0** |
| • Download [1] | **6GK1781-1BA14-0AK0** |
| **For 100 devices that can be identified via IP address** | |
| • On DVD | **6GK1781-1DA14-0AA0** |
| • Download [1] | **6GK1781-1DA14-0AK0** |
| **For 250 devices that can be identified via IP address** | |
| • On DVD | **6GK1781-1JA14-0AA0** |
| • Download [1] | **6GK1781-1JA14-0AK0** |
| **For 500 devices that can be identified via IP address** | |
| • On DVD | **6GK1781-1TA14-0AA0** |
| • Download [1] | **6GK1781-1TA14-0AK0** |
| **Upgrade SINEMA server V13 to V14** | |
| • On DVD | **6GK1781-2AA14-0AA0** |
| • Download [1] | **6GK1781-2AA14-0AK0** |

[1] For more details of online software delivery, visit: http://www.siemens.com/tia-online-software-delivery under Ordering Data.

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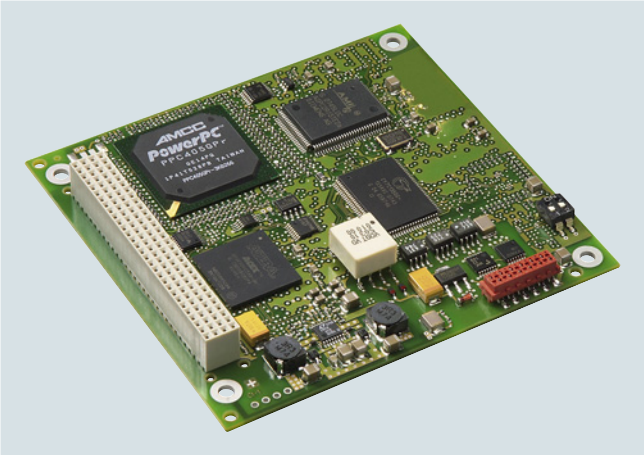
## Overview



| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● | ● | ● | ● | ● |

G_IK10_XX_10165

- PCI-104 interface card with internal microprocessor for connecting embedded systems with PCI-104 interface to PROFIBUS at up to 12 Mbps
- Function compatible with CP 5613 A2
- Communication services:
  - PROFIBUS DP master Class 1 and 2 or DP slave according to IEC 61158/61784
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication with HARDNET-PB S7 software package
  - Open communication (SEND/RECEIVE) based on the FDL interface
  - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- Extensive diagnostics options for installation, commissioning and operation of the module
- Event and filter mechanism for reducing the load on the host CPU
- Multiprotocol operation and parallel operation of up to three CPs
- The appropriate OPC server and configuration tools are included in the scope of delivery of the respective communication software
- Development Kit with driver sources for integration into "non-Windows" environments

Note:
FMS-5613 supports up to two CP 5603/CP 5613 A2/5614 A2/CP 5623/CP 5624 processors

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5603 communications processor**<br>PCI-104 card for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software;<br>English/German | **6GK1560-3AA00** |
| **CP 5603 Microbox Package**<br>For use of CP 5603 in Microbox 420/427B/427C; consisting of CP 5603 module and Microbox expansion rack | **6GK1560-3AU00** |
| **CP 5603 expansion rack**<br>For use in Microbox 420/427B/427C with mounting material | **6GK1560-3AA00-0AU0** |
| **CP 5603 mEC Package**<br>For use of CP 5603 in SIMATIC S7-MEC;<br>consisting of CP 5603 and insert plate for CP 5603 for installation in the EM PCI-104 expansion module of the SIMATIC S7-MEC | **6GK1560-3AE00** |
| **CP 5603 insert plate**<br>Metal plate with RS 485 cutout for inserting for the S7 modular embedded controller | **6GK1560-3AA00-0AE0** |
| ***Accessories*** | |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-core, shielded, sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

## More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

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## CP 5613 A3

### Overview

| DP–M | DP–S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● |  | ● | ● | ● |

G_IK10_XX_10163

- PCI card (universal keyed 5 V/3.3 V) with internal microprocessor for connection of PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps
- Communication services:
  - PROFIBUS DP master according to IEC 61158/61784 on one PCI card
  - PG/OP communication with STEP 7
  - S7 communication with HARDNET-PB S7 software package
  - Open communication (SEND/RECEIVE) based on the FDL interface
- Comprehensive diagnostics possibilities for installation, commissioning and operation of the module
- High performance over direct dual-port RAM access
- Event and filter mechanisms to reduce the loading on the host CPU
- Multiprotocol operation and parallel operation of up to four CPs
- Implementation in motion control applications is possible because a constant bus cycle time is supported
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software

### Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5613 A3 communications processor**<br>PCI card (32-bit; 3.3 V/5 V) for connection to PROFIBUS incl. DP-Base software; DP-RAM interface for DP master, incl. PG and FDL protocols; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software V12; English/German | **6GK1561-3AA02** |
| ***Accessories*** |  |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-core, shielded<br>Sold by the meter<br>Delivery unit max. 1 000 m<br>Minimum order 20 m |  |
| **PROFIBUS FastConnect bus connector RS 485 plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

### More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

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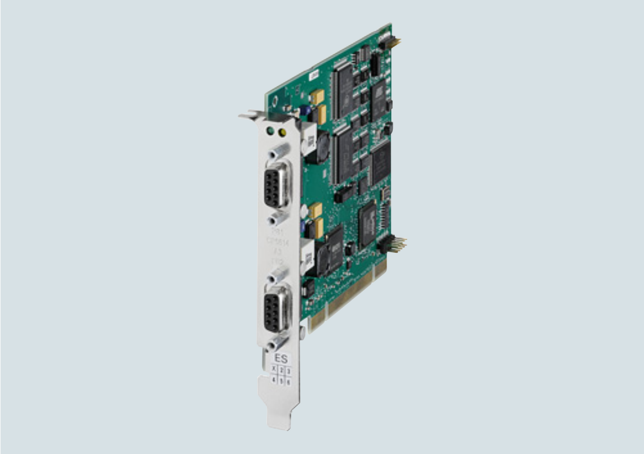
## Overview



| DP–M | DP–S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● |  | ● | ● | ● |

G_IK10_XX_10163

- PCI card (universal keyed 5 V/3.3 V) with own microprocessor for connection of PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps
- Communication services:
  - PROFIBUS DP master and slave interface according to IEC 61158/61784 on one PCI card
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication with HARDNET-PB S7 software package
  - Open communication (SEND/RECEIVE) based on the FDL interface
- Comprehensive diagnostics possibilities for installation, commissioning and operation of the module
- High performance over direct dual-port RAM access
- Event and filter mechanisms to reduce the loading on the host CPU
- Multiprotocol operation and parallel operation of up to four CPs
- Implementation of motion control applications is possible because a constant bus cycle time is supported
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software.

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5614 A3 communications processor**<br>PCI card (32-bit; 3.3 V/5 V) master and slave connection to PROFIBUS incl. DP-Base software; DP-RAM interface for DP master, incl. PG and FDL protocols; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software V12; English/German | **6GK1561-4AA02** |
| ***Accessories*** |  |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-core, shielded<br>Sold by the meter<br>Delivery unit max. 1 000 m<br>Minimum order quantity 20 m |  |
| **PROFIBUS FastConnect bus connector RS 485 plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for fast mounting, 2-core, shielded, sold by the meter; max. delivery unit 1 000 m,<br>minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

## More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

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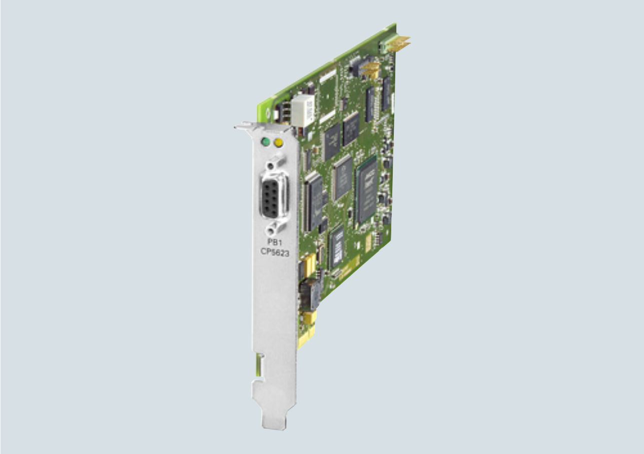
## CP 5623

### Overview



| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● | ● | ● | ● | ● |

- PCI Express card (PCIe x1) with internal microprocessor for connecting PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps
- Communication services:
  - PROFIBUS DP master Class 1 and 2 or DP slave according to IEC 61158/61784 on one PCI card
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication with HARDNET-PB S7 software package
  - Open communication (SEND/RECEIVE) based on the FDL interface
  - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- Extensive diagnostics options for installation, commissioning and operation of the module
- Event and filter mechanism for reducing the load on the host CPU
- Multiprotocol operation and parallel operation of up to four CPs
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communication software

### Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5623 communications processor**<br>PCI Express x1 card (32 bit) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP slave, incl. PG and FDL protocols; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software English/German | **6GK1562-3AA00** |
| ***Accessories*** | |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-wire, shielded, sold by the meter; max. length 1 000 m, minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

### More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

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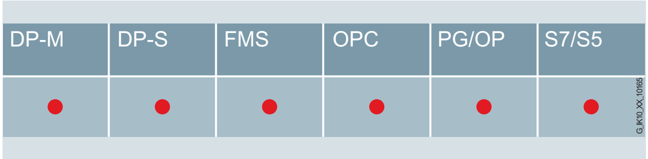
## Overview

PB1
CP5624
PB2



| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● | ● | ● | ● | ● |

G_IK10_XX_10165

- PCI Express card (PCIe x1) with own microprocessor for connecting PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps
- Two 9-pin sub-D sockets for parallel operation as DP master and DP slave
- Communication services:
  - PROFIBUS DP master and slave interface according to IEC 61158/61784 on one PCI card
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication with HARDNET-PB S7 software package
  - Open communication (SEND/RECEIVE) based on the FDL interface
  - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- Extensive diagnostics options for installation, commissioning and operation of the module
- Event and filter mechanism for reducing the load on the host CPU
- Multiprotocol operation and parallel operation of up to four CPs
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communication software

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5624 communications processor**<br>PCI Express x1 card (32 bit) for master and slave connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocols; single license for one installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software; English/German | **6GK1562-4AA00** |
| ***Accessories*** | |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-wire, shielded, sold by the meter; max. length 1 000 m, minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

## More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

# CP 5612

4

## Overview

| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● |  | ● | ● | ● |

- PCI card (universal keyed 5 V/3.3 V) for connection of PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps and to the MPI interface of SIMATIC S7
- Communication services:
  - PROFIBUS DP master Class 1 incl. acyclic DP expansions with SOFTNET-PB DP software package
  - PROFIBUS DP master Class 2 incl. acyclic DP expansions with SOFTNET-PB DP software package
  - PROFIBUS DP slave with SOFTNET-PB DP slave software package
  - PG/OP communication with STEP 7
  - S7 communication with SOFTNET-PB S7 software package
  - Open communication (SEND/RECEIVE on basis of FDL interface) with SOFTNET-PB DP or SOFTNET-PB S7 software package
- Can be used with:
  - STEP 7, STEP 7 Micro/Win, SIMATIC PDM (for PG/OP communication)
  - SOFTNET-PB S7 (for S7 communication)
  - SOFTNET-PB DP, SOFTNET-PB DP slave (for DP)
- Corresponding OPC servers and configuration tools are included in the scope of delivery of the respective communication software

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5612 communications processor**<br>• PCI card (32-bit) for connection of a programming device or PC to PROFIBUS | **6GK1561-2AA00** |
| ***Accessories*** |  |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-wire, shielded, sold by the meter; max. length 1 000 m, minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

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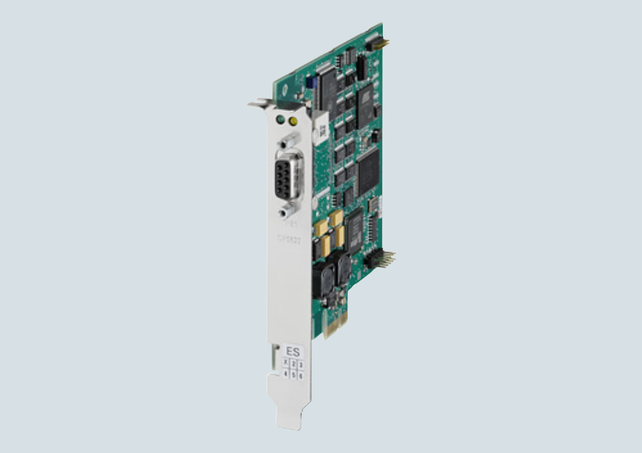
## Overview



| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● |  | ● | ● | ● |

G_IK10_XX_10162

- PCI Express card (PCIe x1) for connection of PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbps and to the MPI interface of SIMATIC S7
- Communication services:
  - PROFIBUS DP master Class 1 incl. acyclic DP expansions with SOFTNET-PB DP software package
  - PROFIBUS DP master Class 2 incl. acyclic DP expansions with SOFTNET-PB DP software package
  - PROFIBUS DP slave with SOFTNET-PB DP slave software package
  - PG/OP communication with STEP 7
  - S7 communication with SOFTNET-PB S7 software package
  - Open communication (SEND/RECEIVE on basis of FDL interface) with SOFTNET-PB DP or SOFTNET-PB S7 software package
- Can be used with:
  - STEP 7, STEP 7-Micro/Win, SIMATIC PDM (for PG/OP communication)
  - SOFTNET-PB S7 (for S7 communication)
  - SOFTNET-PB DP, SOFTNET-PB DP slave (for DP)
- Corresponding OPC servers and configuration tools are included in the scope of delivery of the respective communication software

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5622 communications processor**<br>• PCI Express x1 card (32-bit) for connection of a PG or PC to PROFIBUS | **6GK1562-2AA00** |
| *Accessories* | |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-wire, shielded, sold by the meter; max. length 1 000 m, minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

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# CP 5711

## Overview

| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● |  | ● | ● | ● |

4

- USB adapter for the connection of PCs and SIMATIC PG/PC to PROFIBUS DP or MPI via USB 2.0
- Operation in extended temperature range of -20 °C to +60 °C
- Active PROFIBUS termination to supply the PROFIBUS network as the end station of a segment
- Robust USB connection due to mechanical locking of the USB plug to the CP 5711 housing
- Communication services:
  - PROFIBUS DP master Class 1 and 2 according to IEC 61158/61784 with SOFTNET-PB DP software package
  - PROFIBUS DP slave with SOFTNET-PB DP slave software package
  - PG/OP communication with STEP 5 or STEP 7 software package
  - S7 communication with SOFTNET-PB S7 software package
  - Open communication (SEND/RECEIVE on basis of FDL interface) with SOFTNET-PB DP or SOFTNET-PB S7 software package
- PROFIBUS connection with up to 12 Mbps
- Can be used with:
  - STEP 7, STEP 7 Micro/WIN, WinCC/WinCC flexible, NCM PC, SIMATIC PDM (for PG/OP communication)
  - SOFTNET-PB S7 (for S7 communication)
  - SOFTNET-PB DP, SOFTNET-PB DP slave (for DP)
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communication software

## Ordering data

| Ordering data | Article No. |
|---|---|
| **CP 5711 communications processor**<br>For connection of a programming device or notebook to PROFIBUS or MPI, under 32 bit in connection with PROFIBUS SOFTNET software or STEP 7; English/German<br>USB V2.0 adapter | **6GK1571-1AA00** |
| *Accessories* |  |
| **Mounting rail support for CP 5711**<br>Compartment for CP 5711 enclosure; mechanically fastened to 35 mm DIN rail | **6GK1571-1AA00-0AH0** |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With 180° cable outlet, insulation displacement | **6GK1500-0FC10** |
| **PROFIBUS FC Standard Cable GP**<br>Standard type with special design for quick assembly, 2-wire, shielded, sold by the meter; max. length 1 000 m, minimum order quantity 20 m | **6XV1830-0EH10** |
| **PROFIBUS FastConnect Stripping Tool**<br>Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables | **6GK1905-6AA00** |
| **PROFIBUS bus terminal 12M**<br>Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long | **6GK1500-0AA10** |

Note:

You can find order information for software for communicating with PC systems under: System connections – Communication for PC-based systems – Software

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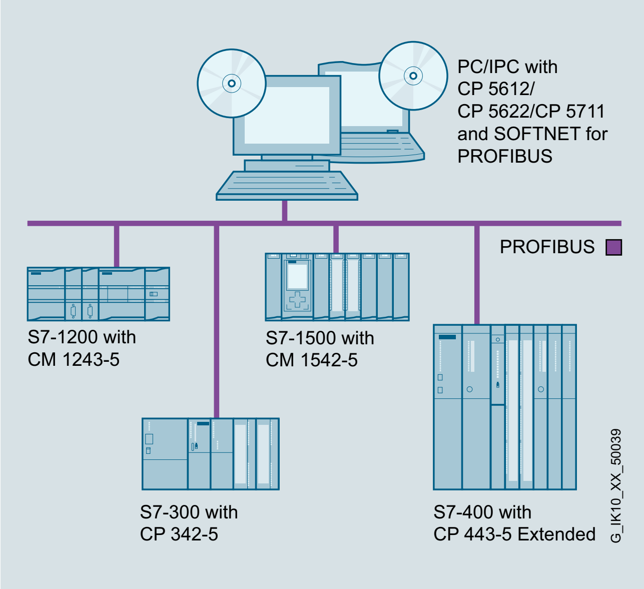
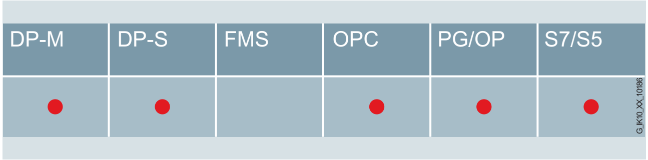
## Overview





| DP-M | DP-S | FMS | OPC | PG/OP | S7/S5 |
|---|---|---|---|---|---|
| ● | ● | | ● | ● | ● |

G_IK10_XX_10168

- Software for connecting PCs/programming devices and notebooks to automation systems
- Communication services:
  - PROFIBUS DP master Class 1 and 2 with acyclic expansions
  - PROFIBUS DP slave
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE) based on the FDL interface
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software

## Ordering data

| Ordering data | Article No. |
|---|---|
| *SOFTNET-PB S7* | |
| **SOFTNET-PB S7 V15**<br>For 32/64-bit: Windows 7 SP1 P for Windows 7 SP1 (Professional, Enterprise, Ultimate), 64-bit<br>For Windows Server 2008 R2 SP1 (Standard or Enterprise Edition)<br>For Windows Server 2012 R2 Update (Standard Edition)<br>For Windows 10 Pro, 64-bit, Version 1607 or higher<br>For Windows 10 Enterprise, 64-bit, Version 1607 or higher<br>English/German<br>Single license for one installation | **6GK1704-5CW15-0AA0** |
| **Software Update Service**<br>For 1 year, with automatic extension<br>Requirement: current software version | **6GK1704-5CW00-3AL0** |
| **Upgrade**<br>From Edition 2006 to SOFTNET-S7 Edition 2008 or V15 | **6GK1704-5CW00-3AE0** |
| *SOFTNET-PB DP* | |
| **SOFTNET-PB DP V15**<br>For Windows 7 SP1 (Professional, Enterprise, Ultimate), 64-bit<br>For Windows Server 2008 R2 SP1 (Standard or Enterprise Edition)<br>For Windows Server 2012 R2 Update (Standard Edition)<br>For Windows 10 Pro, 64-bit, Version 1607 or higher<br>For Windows 10 Enterprise, 64-bit, Version 1607 or higher<br>English/German<br>Single license for one installation | **6GK1704-5DW15-0AA0** |
| **Software Update Service**<br>For 1 year, with automatic extension<br>Requirement: current software version | **6GK1704-5DW00-3AL0** |
| **Upgrade**<br>From Edition 2006 to SOFTNET-DP Edition 2008 or V15 | **6GK1704-5DW00-3AE0** |
| *SOFTNET-PB DP Slave* | |
| **SOFTNET-PB DP Slave V15**<br>For Windows 7 SP1 (Professional, Enterprise, Ultimate), 64-bit<br>For Windows Server 2008 R2 SP1 (Standard or Enterprise Edition)<br>For Windows Server 2012 R2 Update (Standard Edition)<br>For Windows 10 Pro, 64-bit, Version 1607 or higher<br>For Windows 10 Enterprise, 64-bit, Version 1607 or higher<br>English/German<br>Single license for one installation | **6GK1704-5SW15-0AA0** |
| **Software Update Service**<br>For 1 year, with automatic extension<br>Requirement: current software version | **6GK1704-5SW00-3AL0** |
| **Upgrade**<br>From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V15 | **6GK1704-5SW00-3AE0** |

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## S7 OPC Redundancy for PROFIBUS

### Overview

OPC (**O**penness, **P**roductivity & **C**ollaboration) is a standardized, open, and vendor-independent interface that is widely used in automation. OPC UA (**U**nified **A**rchitecture) is the result of consistent further development of this standard, offering additional functions such as security or redundancy.

S7 OPC Redundancy is a software product compliant with the OPC UA standard that enables redundant configuration of OPC UA servers for SIMATIC S7.

The availability of automation data to operator control and monitoring systems is ensured thanks to the redundant use of OPC UA servers. This requires neither additional cabling for synchronizing the redundant OPC UA servers, nor additional programming effort on the PC. The OPC UA servers are synchronized via high-performance Industrial Ethernet network accesses at 10/100 and 1000 Mbps. S7 OPC Redundancy represents an integrated customer solution for all SIMATIC NET S7 SOFTNET and HARDNET software products in the automation world.

### Ordering data

| Ordering data | Article No. |
|---|---|
| ***S7 OPC Redundancy*** | |
| Software for redundant OPC servers, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A | |
| **S7 OPC Redundancy V13 for PROFIBUS** | **6GK1706-5CW13-0AA0** |
| for 64-bit Windows 2008 server R2; English/German<br>Single license for one installation | |

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## Overview

SIEMENS
PC ADAPTER USB A2
ACTIVITY
FAULT
USB 5V

| DP-M | DP-S | FMS | PG/OP | S7/S5 | |
|---|---|---|---|---|---|
| | | | ● | | G_IK10_XX_10358 |

USB adapter for the connection of PCs/notebooks and SIMATIC PG/PC to the SIMATIC S7 automation system via USB port.

- For connection to USB 1.1, 2.0 and 3.0 interfaces
- Power supply from the USB port
- PROFIBUS connection with up to 12 Mbps
- Support for routing
- Automatic transmission rate and profile search
- Can be used as of Windows XP SP2
- As of Windows 7, can also be used with 64-bit systems
- Scope of delivery:
  - PC adapter USB A2
  - CD with drivers for the PC adapter USB A2
  - USB cable
  - MPI cable 0.3 m

## Ordering data

| | Article No. |
|---|---|
| **PC adapter USB A2**<br>For connecting a PG/PC or notebook to PROFIBUS or MPI; USB cable included in scope of delivery | **6GK1571-0BA00-0AA0** |

## Notes

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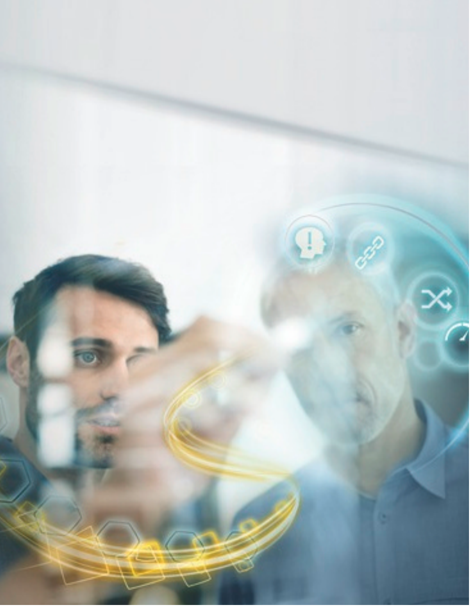
# Customized Automation

# 5



| | |
|---|---|
| **5/2** | **Introduction** |
| **5/4** | **Customized hardware** |
| **5/5** | **Customized software** |
| 5/6 | SIMATIC Modbus/TCP |
| **5/13** | **Examples of sector products** |
| 5/14 | Renewable energy |
| 5/15 | Solar plants |
| 5/16 | Wind farms |
| 5/17 | Automotive industry |
| 5/17 | Controllers for electric monorail systems |
| 5/18 | EMS400S |
| 5/19 | Power signal booster |
| 5/19 | SIMATIC EMS400S PSB-C module |
| 5/20 | SIMATIC EMS400S PSB-S module |
| 5/21 | SIMATIC EMS400S DU |
| 5/22 | Infrared display unit |
| 5/22 | SIMATIC EMS400S IR-RC |
| 5/23 | SIMATIC EMS400S IR-DU |
| 5/24 | Control cabinets |
| 5/24 | SIMATIC EMS451S |
| 5/25 | EMS600 *NEW* |
| 5/25 | Power Line Booster |
| 5/26 | Communication modules |
| 5/27 | Accessories |
| 5/28 | Infrared display unit |
| 5/28 | SIMATIC HMI IRD400 |
| 5/29 | SIMATIC EMS400S IR-RC |
| 5/30 | Control cabinets |
| 5/31 | General mechanical engineering |
| 5/31 | Front Panel 15" Touch and Key for Panel PCs, resistant to honing oil |
| 5/32 | Food and beverages industry/ pharmaceuticals |
| 5/34 | Panels and Panel PCs with stainless steel front |
| 5/37 | HMI Panels as rear-mounted devices |
| 5/39 | Flat Panels with stainless steel front |
| 5/41 | HMI stainless steel operator stations |

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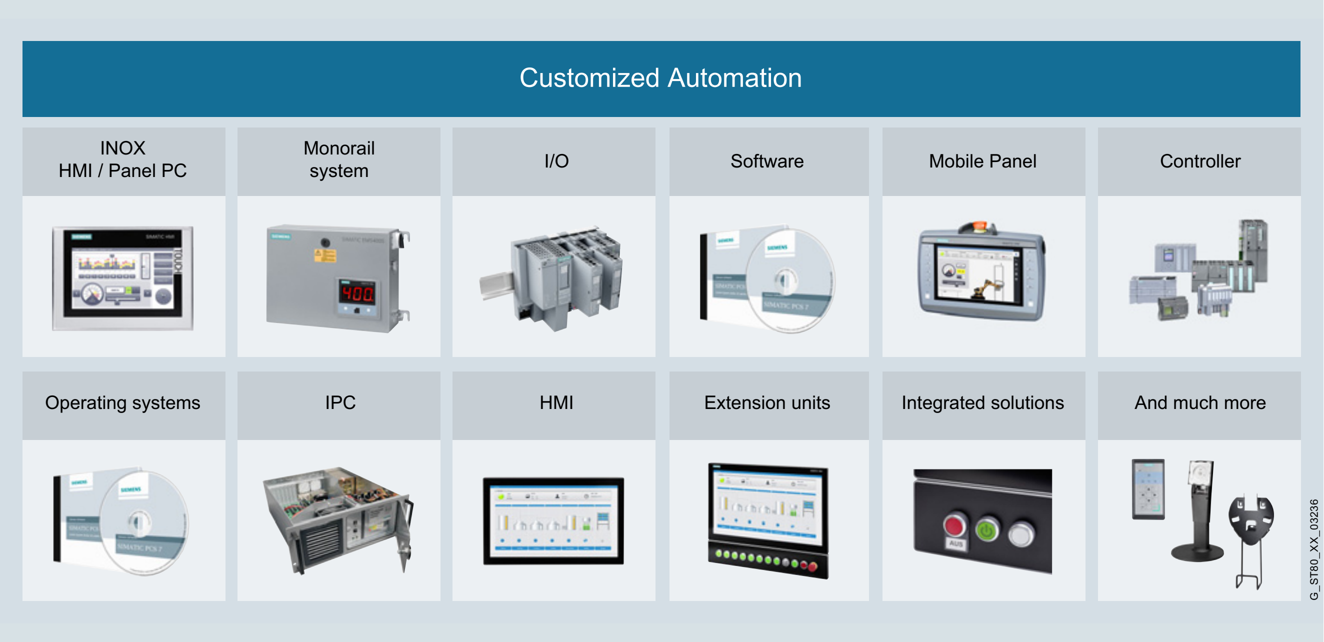
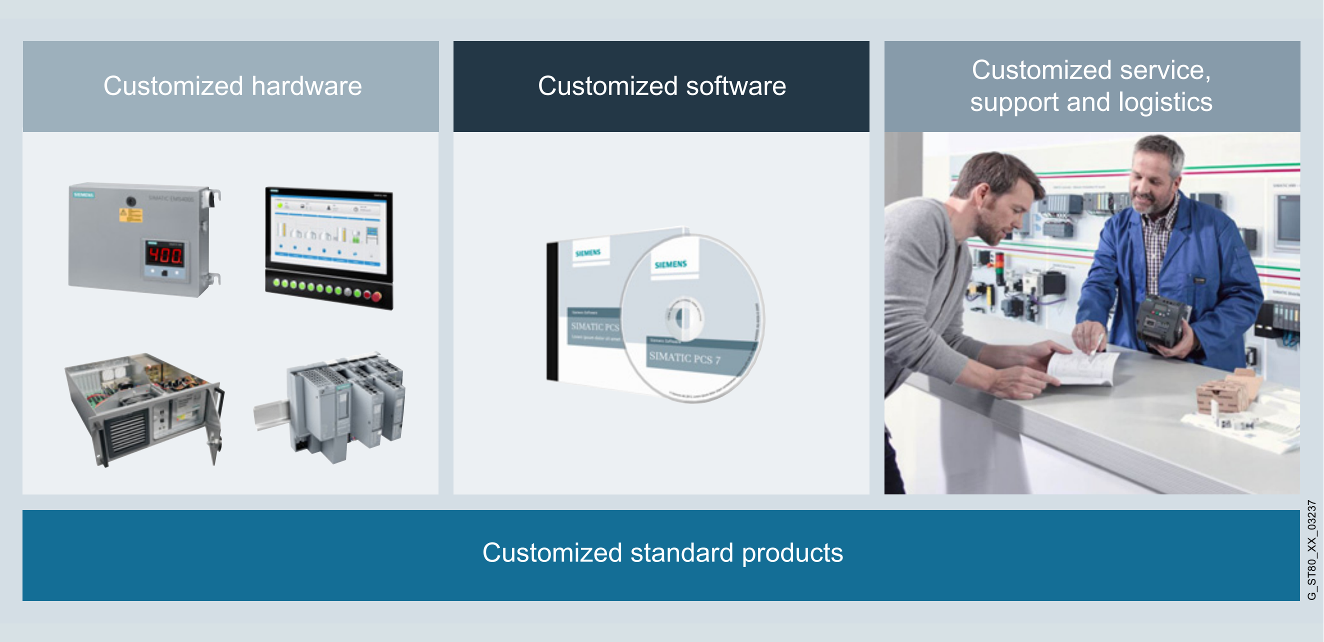
## Customized Automation

### Overview


Customized Automation
INOX
HMI / Panel PC
Monorail
system
I/O
Software
Mobile Panel
Controller
Operating systems
IPC
HMI
Extension units
Integrated solutions
And much more
G_ST80_XX_03236

Overview of Customized Automation Hardware


Customized hardware
Customized software
Customized service, support and logistics
Customized standard products
G_ST80_XX_03237

Overview of Customized Automation

With Siemens Customized Automation, Siemens provides customized products based on the Siemens automation portfolio.

We modify our proven, successful standard products to satisfy your requirements: from slight design modifications up to OEM hardware and software systems.

This change portfolio ranges from individual design modifications, software filling of customer images, special tests and certifications, to changes in the service, support and logistics.

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## Benefits

### *Time savings*

- You can use our comprehensive customization expertise and our long years of experience with the Siemens components
- You do not have to build up any additional know-how, leaving you to concentrate completely on your own core competence
- Close cooperation with our expert team to implement all our requests and changes quickly to produce a tailor-made solution

### *Increase in profitability*

- You invest your money and resources selectively in your core competence
- You implement reliable material requirements and logistics planning, tailored to your needs, thanks to our logistics services
- You have maximum investment security thanks to highest quality, long-term availability and continuity with SIMATIC, SIMATIC IPC and SIMATIC HMI

### *Increase in competitive edge for the machine*

- Components perfectly matched to the expected application environment, including detection of and protection against unwanted modifications to software and hardware
- You receive customized products with Siemens Customized Automation that fit outstandingly well into the "Totally Integrated Automation" (TIA) concept
- You can draw attention not only to your exceptional technology but also to the individual design of your machine, by printing a logo on the front of the enclosure, for example.

### *Customized hardware:*

Customized products are modified SIMATIC HMI standard products. According to the necessary degree of modification of the hardware, these types of product are separately identified as:

- Design products
- OEM products
- Turnkey products

Customer-specific product modifications are available in all performance classes, starting with Push Button Panels or Key Panels, Basic Panels, Comfort Panels, Industrial Flat Panels and Extension Units up to Rack/Box/Panel PCs.

### *Customized software:*

In the case of customer-specific products, the software can also be individually installed. This includes the generation of operating systems and also the integration and installation of driver software and images – for complete, turnkey systems. A software change can also be implemented to increase system protection against theft of know-how and service piracy.

Customized software products:

- Remote Operate Software
  for implementation of multi-user systems with HMI IPC and clients on the basis of MP 377 and HMI IPC477
- Open Modbus for SIMATIC systems
  provides the capability of connecting systems from various manufacturers to SIMATIC automation systems

### *Customized service, support and logistics*

Special additional services for proven Siemens products can be implemented with Siemens Customized Automation. These include new certifications and approvals, such as for marine or country-specific releases. Individual project planning, repair concepts and delivery agreements can also be made for each product. Customized Automation also offers the option of a design freeze or extended availability for individual products.

### *Customized products from various industries*

SIMATIC HMI products are provided with additional features in order to facilitate optimum use in specific sectors of industry. Stainless steel front panels for the food, beverages and tobacco industry are one such example. With the exception of their front panels, the devices are identical to standard products in respect of function and technology.

We offer products for the following industries:

- Renewable energy
- Automotive – HMI for factory automation
- General mechanical engineering
- Food and beverages industry/pharmaceuticals
- Oil & gas/chemicals and shipbuilding/marine
- Woodworking industry

Customized products for various industries are developed and produced in conjunction with a customized product agreement.

## More information

Additional information is available on the Internet at:
http://www.siemens.com/customized-automation

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## Introduction

### Overview

***Customized products are standard Siemens automation products which have been modified.***

A distinction is made according to the degree of hardware modification:

- Design products
- OEM products
- Integrated solutions

More information can be found on the Internet at:

http://www.siemens.com/customized-automation

***Customized hardware***

Design products

Customized design means modifying the design and visual impact of Siemens products for seamless adaptation into the customer's individual machine and plant design and special operator philosophy.

The modification options are:

- Changing the company logo and the device type designation
- Changing the keyboard color scheme, the key labeling, or the key symbols
- Changing the enclosure color (front frame)

Design products are fully compatible with the standard products in technology and functionality, and can thus be fully integrated into the Totally Integrated Automation environment. Identical technology enables, for example, replacement using standard devices in the event of a fault in case the machine or plant supplier does not currently have a customized product in the spare parts warehouse.

OEM products

Product modifications for OEM (Original Equipment Manufacturer) customers are suitable for individual, industrial automation solutions that cannot be fulfilled with the help of standard products, or can only be handled with design-modified panels.

OEM products are individual solutions based on standard Siemens components. They are specified, offered, developed and supplied individually in consultation with the customer.

As in a system of building blocks, the standard components, customized components and additionally required software/ function extensions are combined to create an OEM device.

Integrated solutions

The customized integrated solutions house the automation system, together with HMI and operator controls, in a single enclosure. The system is developed and manufactured according to customer requirements in the usual Siemens quality. The product is then a ready to start device that can be installed directly in a machine.

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## Overview

### *Customized software*

In the case of customer-specific products, the software can also be individually installed. This includes the generation of operating systems and also the integration and installation of driver software and images – for complete, turnkey systems.

The customized software suite comprises:

- Generation of operating systems
    - For Windows XP embedded, Windows 7, Windows 10, for example
    - For customized LINUX installation
- Integration and installation of driver software and pre-installed images
    - For additional cards, controllers, or memory media, for example
    - For complete turnkey systems

In addition, customized software products based on our experience in industrial automation offer an opportunity to set up multi-user systems and industrial remote operation systems as well as the possibility of integrating SIMATIC S7 into building automation.

Remote Operate Software

The HMI Remote Operate Software is an industrial remote control system based on Ethernet.

The software (server) enables the creation of a multi-user system with HMI IPC. Up to 6 operator stations (slaves) based on Comfort Panel Clients and HMI IPCs.
The clients can also be assigned to multiple servers.

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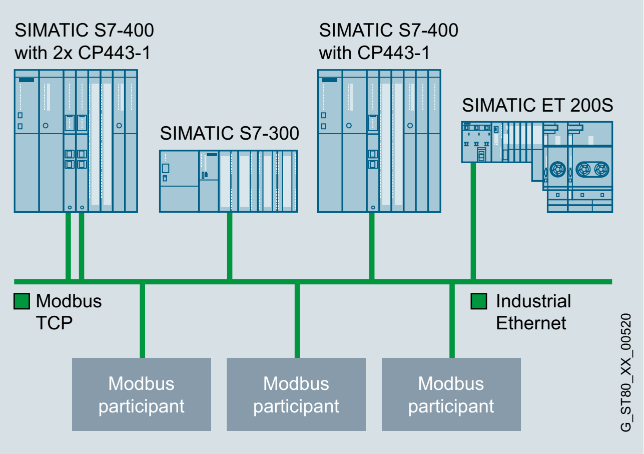
## SIMATIC Modbus/TCP

### Overview


SIMATIC S7-400
with 2x CP443-1
SIMATIC S7-300
SIMATIC S7-400
with CP443-1
SIMATIC ET 200S
🟩 Modbus TCP
🟩 Industrial Ethernet
Modbus participant
Modbus participant
Modbus participant
G_ST80_XX_00520

- Software for communication between SIMATIC S7 and devices that support the Modbus/TCP protocol
- Expansion or upgrade of existing plants with SIMATIC automation systems
- Connection of controllers and systems from different manufacturers

### Benefits

- Easy coupling of systems from different manufacturers with SIMATIC automation systems over Industrial Ethernet
- No specialized Modbus know-how required
- Engineering with the standard SIMATIC STEP 7 tool or TIA Portal
- Fast configuration with the help of a wizard or editor

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## Technical specifications

| | 6AV6676-6MB00-6AX0<br>6AV6676-6MB00-6AD0<br>2XV9450-1MB00 | 6AV6676-6MB10-0AX0<br>6AV6676-6MB10-0AD0 | 6AV6676-6MB20-3AX0<br>6AV6676-6MB20-3AD0<br>2XV9450-1MB02 | 6AV6676-6MB30-4AX0<br>6AV6676-6MB30-4AD0<br>6AV6676-6MB30-3AX0<br>6AV6676-6MB30-3AD0 | 6AV6676-6MB40-0AX0<br>6AV6676-6MB40-0AD0 |
|---|---|---|---|---|---|
| **Client/server functionality** | • / • | • / • | • / • | • / • | • / • |
| **Function codes** | 1, 2, 3, 4, 5, 6, 15 and 16 | 1, 2, 3, 4, 5, 6, 15 and 16 | 1, 2, 3, 4, 5, 6, 15 and 16 | 1, 2, 3, 4, 5, 6, 15 and 16 | 1, 2, 3, 4, 5, 6, 8, 11,15,16, (23) |
| **Multiport** | • | • | • | • | • |
| **Modbus address range** | 0 - 65535 | 0 - 65535 | 0 - 65535 | 0 - 65535 | 0 - 65535 |
| **Data volume** | | | | | |
| **Read register** | 125 | 125 | 125 | 125 | 125 |
| **Write register** | 123 | 123 | 123 | 123 | 123 |
| **Read bits** | 2000 | 2000 | 2000 | 2000 | 2000 |
| **Write bits** | 1968 | 1968 | 1968 | 1968 | 1968 |
| **Capable of multi-instance** | • | • | • | • | • |
| **Max. number of parallel block calls** | • CPU-dependent<br>• Client: No limit to the number of block calls; maximum number of simultaneously active blocks limited by the CPU (AG_SEND/ AG_RECV)<br>• Server: limited by the max. number of AG_SEND/AG_RECV calls of the CPU | • Unlimited number of block calls<br>• Number of simultaneously established connections is dependent on the CPU | • Unlimited number of block calls<br>• Number of simultaneously established connections is dependent on the CPU | • CPU-dependent<br>• Client: No limit to the number of block calls; maximum number of simultaneously active blocks limited by the CPU (AG_SEND/ AG_RECV)<br>• Server: limited by the max. number of AG_SEND/AG_RECV calls of the CPU | • Unlimited number of block calls<br>• Number of simultaneously established connections is dependent on the CPU |
| **Connection configuration** | Static connections over NetPro | Dynamic connections over TCON and TDISCON | Dynamic connections over TCON and TDISCON | Static connections over NetPro | Dynamic connections over TCON and TDISCON |
| **Communication** | AG_(L)SEND/ AG_(L)RECV | TSEND/TRCV | TSEND/TRCV | AG_(L)SEND/ AG_(L)RECV | TSEND/TRCV |
| **Work memory requirement FB (Client/Server)** | 16 KB | 17 KB | 19 KB | 20 KB | 11 KB |
| **IDB** | approx. 1 KB | approx. 1 KB | approx. 1 KB | approx. 1 KB | approx. 6 KB |
| **Can be used in CFC/PCS 7** | • | • | • | • | |
| **Use with older CPs that do not support the AG_CNTRL** | No | - | - | No | |
| **Multiplexing of TCP connections** | CP-dependent | - | - | CP-dependent | |
| **Redundancy functions** | - | Single-sided or double-sided redundancy is possible | - | Single-sided or double-sided redundancy is possible | Single-sided or double-sided redundancy is possible |
| **Use of bit memories/timers** | No | No | No | No | No |
| **Programming languages** | LAD<br>FBD<br>STL<br>SCL<br>GRAPH<br>CFC | LAD<br>FBD<br>STL<br>SCL<br>GRAPH<br>CFC | LAD<br>FBD<br>STL<br>SCL<br>GRAPH<br>CFC | LAD<br>FBD<br>STL<br>SCL<br>GRAPH<br>CFC | FBD<br>STL<br>SCL<br>GRAPH |

## **Technical specifications** (continued)

| | 6AV6676-6MA30-0AX0<br>6AV6676-6MA30-1AX0<br>6AV6676-6MA30-2AX0 |
|---|---|
| **Client functionality** | Yes |
| **Functions** | • Reading of basic type 3 values and the energy counter<br>• Reset of operating hours counter, maximum and minimum values and energy counter |
| **Multi-instance capability** | |
| Max. number of parallel block calls | • Number of block calls unlimited<br>• Number of simultaneously established connections is dependent on the CPU |
| **Configuring connections** | Dynamic connections over TCON and TDISCON |

| | 6AV6676-6MA30-0AX0<br>6AV6676-6MA30-1AX0<br>6AV6676-6MA30-2AX0 |
|---|---|
| **Communication** | TSEND / TRCV |
| **Work memory requirement (block dependent)** | • FB 31 … 36 KB<br>• IDB 7 … 29 KB |
| **Can be used in CFC/PCS 7** | Yes |
| **Multiplexing of TCP connections** | CP-dependent |
| **Redundancy functions** | No |
| **Use of bit memories/timers** | No |

## **Technical specifications**

| Article number | **6AV6676-6MB00-6AX0**<br>SIMATIC MODBUS / TCP CP | **6AV6676-6MB00-6AD0**<br>SIMATIC MODBUS / TCP CP | **2XV9450-1MB00**<br>SIMATIC MODBUS/TCP CP |
|---|---|---|---|
| **General information** | | | |
| **Engineering with** | | | |
| • STEP 7 TIA Portal configurable/ integrated as of version | V14 | V14 | STEP 7 V14 SP1 or higher |
| • STEP 7 configurable/ integrated as of version | STEP 7 V5.5 or higher | STEP 7 V5.5 or higher | From STEP 7 V5.4 and higher |
| • PCS 7 configurable/ integrated as of version | PCS 7 V7.1 SP2 | PCS 7 V7.1 SP2 | |
| **Protocols** | | | |
| **SIMATIC communication** | | | |
| • Communication as Modbus server | Yes | Yes | No; "Drive ready" |
| • Communication as Modbus client | Yes | Yes | No |
| • User data per job (of which consistent), max. | 250 byte | 250 byte | 125 byte; "Power section ready" |
| **Operating systems** | | | |
| **Runs under operating system** | | | |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes; 32 bit |
| • Windows 10 | | | No |
| **Software** | | | |
| **Runtime software** | | | |
| **Target system** | | | |
| - ET 200S | Yes; FW V3.2 or higher | Yes; FW V3.2 or higher | |
| - ET 200pro | | | No |
| - S7-300 | Yes; FW V3.2 or higher | Yes; FW V3.2 or higher | |
| - S7-400 | Yes; FW V6.0 or higher | Yes; FW V6.0 or higher | |
| - S7-1500 | | | No |
| - WinAC | No | No | PROFINET Version/Option required |
| - Suitable for other target system | Yes; See: https://support.industry.siemens.com/cs/ww/en/view/104946406 | | |
| **Block** | | | |
| • Local data requirements | 288 byte | 288 byte | 186 byte |
| • FB length in RAM, max. | 18 kbyte | 18 kbyte | |
| **Communication data** | | | |
| • Multiport | Yes; Dependent on CP | Yes; Dependent on CP | Yes |
| • implemented function codes | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 |
| **Authorization/licenses** | | | |
| • Single license (EL) | Yes | Yes | |
| **Configuration** | | | |
| **Configuration software** | | | |
| • Wizard for configuration support | Yes; Wizard | Yes; Wizard | No |

## **Technical specifications** (continued)

| Article number | **6AV6676-6MB10-0AX0**<br>SIMATIC MODBUS/TCP PN RED | **6AV6676-6MB10-0AD0**<br>SIMATIC MODBUS/TCP PN RED |
|---|---|---|
| **General information** | | |
| **Engineering with** | | |
| • STEP 7 TIA Portal configurable/ integrated as of version | V13 | V13 |
| • STEP 7 configurable/ integrated as of version | STEP 7 V5.5 SP2 HF1 or higher | STEP 7 V5.5 SP2 HF1 or higher |
| • PCS 7 configurable/ integrated as of version | PCS 7 V8.0 Udp1 | PCS 7 V8.0 Udp1 |
| **Protocols** | | |
| **SIMATIC communication** | | |
| • Communication as Modbus server | Yes | Yes |
| • Communication as Modbus client | Yes | Yes |
| • User data per job (of which consistent), max. | 250 byte | 250 byte |
| **Operating systems** | | |
| **Runs under operating system** | | |
| • Windows XP | Yes | Yes |
| • Windows 7 | Yes | Yes |
| **Software** | | |
| **Runtime software** | | |
| **Target system** | | |
| - ET 200S | Yes | Yes |
| - S7-300 | Yes | Yes |
| - S7-400 | Yes | Yes |
| - WinAC | Yes | Yes |
| - Suitable for other target system | Yes; See: https://support.industry.siemens.com/cs/ww/en/view/104946406 | |
| **Block** | | |
| • Local data requirements | 186 byte | 186 byte |
| • FB length in RAM, max. | 29 kbyte | 29 kbyte |
| **Communication data** | | |
| • Multiport | Yes | Yes |
| • implemented function codes | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 |
| **Authorization/licenses** | | |
| • Single license (EL) | Yes | Yes |
| **Configuration** | | |
| **Configuration software** | | |
| • Wizard for configuration support | Yes; Wizard | Yes; Wizard |

## Technical specifications (continued)

| Article number | **6AV6676-6MB20-3AX0**<br>SIMATIC MODBUS/TCP PN-CPU | **6AV6676-6MB20-3AD0**<br>SIMATIC MODBUS/TCP PN-CPU | **2XV9450-1MB02**<br>SIMATIC MODBUS/TCP PN-CPU |
|---|---|---|---|
| **General information** | | | |
| **Engineering with** | | | |
| • STEP 7 TIA Portal configurable/ integrated as of version | V13 | V13 | V11 / V13 Update 3 |
| • STEP 7 configurable/ integrated as of version | STEP 7 V5.5 or higher | STEP 7 V5.5 or higher | STEP 7 V5.5 or higher |
| • PCS 7 configurable/ integrated as of version | PCS 7 V7.1 SP2 | PCS 7 V7.1 SP2 | PCS 7 V7.1 SP2 |
| **Protocols** | | | |
| **SIMATIC communication** | | | |
| • Communication as Modbus server | Yes | Yes | Yes |
| • Communication as Modbus client | Yes | Yes | Yes |
| • User data per job (of which consistent), max. | 250 byte | 250 byte | 250 byte |
| **Operating systems** | | | |
| **Runs under operating system** | | | |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes |
| **Software** | | | |
| **Runtime software** | | | |
| **Target system** | | | |
| - ET 200S | Yes; FW V3.2 or higher | Yes; FW V3.2 or higher | Yes |
| - ET 200pro | Yes; FW V3.2 or higher | Yes; FW V3.2 or higher | Yes |
| - S7-300 | Yes; FW V3.2 or higher | Yes; FW V3.2 or higher | Yes |
| - S7-400 | Yes; FW V6.0 or higher | Yes; FW V6.0 or higher | Yes |
| - WinAC | No | No | Yes |
| - Suitable for other target system | Yes; See: https://support.industry.siemens.com/cs/ww/en/view/104946406 | | |
| **Block** | | | |
| • Local data requirements | 156 byte | 156 byte | 156 byte |
| • FB length in RAM, max. | 19 kbyte | 19 kbyte | 19 kbyte |
| **Communication data** | | | |
| • Multiport | Yes | Yes | Yes |
| • Client-server coupling | SIMATIC S7 as master or slave | SIMATIC S7 as master or slave | |
| • implemented function codes | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 |
| **Authorization/licenses** | | | |
| • Single license (EL) | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration software** | | | |
| • Wizard for configuration support | Yes; Wizard | Yes; Wizard | Yes; Wizard |

## Technical specifications (continued)

| Article number | **6AV6676-6MB30-4AX0**<br>SIMATIC Modbus/TCP CP RED | **6AV6676-6MB30-3AX0**<br>SIMATIC Modbus/TCP CP RED | **6AV6676-6MB30-3AD0**<br>SIMATIC Modbus/TCP CP RED |
|---|---|---|---|
| **General information** | | | |
| **Engineering with** | | | |
| • STEP 7 TIA Portal configurable/ integrated as of version | V13 | V13 | V13 |
| • STEP 7 configurable/ integrated as of version | STEP 7 V5.5 or higher | STEP 7 V5.5 or higher | STEP 7 V5.5 or higher |
| • PCS 7 configurable/ integrated as of version | PCS 7 V7.1 SP2 | PCS 7 V7.1 SP2 | PCS 7 V7.1 SP2 |
| **Protocols** | | | |
| **SIMATIC communication** | | | |
| • Communication as Modbus server | Yes | Yes | Yes |
| • Communication as Modbus client | Yes | Yes | Yes |
| • User data per job (of which consistent), max. | 250 byte | 250 byte | 250 byte |
| **Operating systems** | | | |
| **Runs under operating system** | | | |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes |
| **Software** | | | |
| **Runtime software** | | | |
| **Target system** | | | |
| - ET 200S | Yes; FW V3.2 or higher | Yes | Yes; FW V3.2 or higher |
| - S7-300 | Yes; FW V3.2 or higher | Yes | Yes; FW V3.2 or higher |
| - S7-400 | Yes; FW V6.0 or higher | Yes | Yes; FW V6.0 or higher |
| - WinAC | No | No | No |
| - Suitable for other target system | Yes; See: https://support.industry.siemens.com/cs/ww/en/view/104946406 | | |
| **Block** | | | |
| • Local data requirements | 344 byte | 302 byte | 302 byte |
| • FB length in RAM, max. | 22 kbyte | 24 kbyte | 24 kbyte |
| **Communication data** | | | |
| • Multiport | Yes; Dependent on CP | Yes; Dependent on CP | Yes; Dependent on CP |
| • implemented function codes | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 | 01, 02, 03, 04, 05, 06, 15, 16 |
| **Authorization/licenses** | | | |
| • Single license (EL) | Yes | Yes | Yes |
| **Configuration** | | | |
| **Configuration software** | | | |
| • Wizard for configuration support | Yes; Wizard | Yes; Wizard | Yes; Wizard |

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## Technical specifications (continued)

| Article number | **6AV6676-6MB40-0AX0**<br>SIMATIC Modbus/TCP Red S7-1200/S7-1500 | **6AV6676-6MB40-0AD0**<br>SIMATIC Modbus/TCP Red S7-1200/S7-1500 |
|---|---|---|
| **General information** | | |
| **Engineering with** | | |
| • STEP 7 TIA Portal configurable/ integrated as of version | V15 | V15 |
| **Protocols** | | |
| **SIMATIC communication** | | |
| • Communication as Modbus server | Yes | Yes |
| • Communication as Modbus client | Yes | Yes |
| • User data per job (of which consistent), max. | 250 byte | 250 byte |
| **Operating systems** | | |
| **Runs under operating system** | | |
| • Windows 7 | Yes | Yes |
| • Windows 10 | Yes | Yes |
| **Software** | | |
| **Runtime software** | | |
| **Target system** | | |
| - S7-1200 | Yes | Yes |
| - S7-1500 | Yes | Yes |
| **Communication data** | | |
| • Multiport | Yes | Yes |
| • implemented function codes | 01, 02, 03, 04, 05, 06, 08, 11, 15, 16 | 01, 02, 03, 04, 05, 06, 08, 11, 15, 16 |
| **Authorization/licenses** | | |
| • Single license (EL) | Yes | Yes |

## Ordering data

| | Article No. |
|---|---|
| **Modbus/TCP PN RED** | |
| Redundant Modbus communication via the integrated PN interface; for S7-400 PN (H) systems; single license | |
| • On CD-ROM | **6AV6676-6MB10-0AX0** |
| • Online software delivery variant | **6AV6676-6MB10-0AD0** |
| **Modbus/TCP CP RED** | |
| Single license, redundant Modbus communication via a communications processor (CP) in the S7-400 (H) CPU or the S7-300 CPU, valid for 1 H CPU pair or 1 single CPU | |
| • On CD-ROM | **6AV6676-6MB30-4AX0** |
| • Online software delivery variant | **6AV6676-6MB30-4AD0** |
| For S7-400 CPU FW < V6.0 and S7-300 CPU FW < V3.2, valid for 1 H CPU pair or 1 single CPU | |
| • On CD-ROM | **6AV6676-6MB30-3AX0** |
| • Online software delivery variant | **6AV6676-6MB30-3AD0** |
| **Modbus/TCP 20 SENTRON PAC**<br>For PN CPU; for connecting 20 SENTRON PAC devices; single license, on CD-ROM | **6AV6676-6MA30-0AX0** |
| **Modbus/TCP 100 SENTRON PAC**<br>For PN CPU; for connecting 100 SENTRON PAC devices; single license, on CD-ROM | **6AV6676-6MA30-1AX0** |
| **Modbus/TCP 512 SENTRON PAC**<br>For PN CPU; for connecting 512 SENTRON PAC devices; single license, on CD-ROM | **6AV6676-6MA30-2AX0** |

| | Article No. |
|---|---|
| **Modbus/TCP CP** | |
| Single license, Modbus communication via a communications processor (CP) in the S7-400 CPU or the S7-300 CPU, valid for 1 CPU | |
| • On CD-ROM | **6AV6676-6MB00-6AX0** |
| • Online software delivery variant | **6AV6676-6MB00-6AD0** |
| • For S7-400 CPU FW < V6.0 and S7-300 CPU FW < V3.2, valid for 1 CPU | **2XV9450-1MB00** |
| **Modbus/TCP PN CPU** | |
| Single license, Modbus communication via the integrated PN interface of the S7-400 PN CPU and S7-300 PN CPU, valid for 1 PN CPU | |
| • On CD-ROM | **6AV6676-6MB20-3AX0** |
| • Online software delivery variant | **6AV6676-6MB20-3AD0** |
| • For S7-400 CPU FW < V6.0 and S7-300 CPU FW < V3.2, valid for 1 PN CPU | **2XV9450-1MB02** |
| **Modbus/TCP Red S7-1200/ S7-1500** | |
| Single license, redundant Modbus communication via the integrated PN interface of the S7-1200 CPU and S7-1500 CPU as well as a CM in an S7-1500 CPU, valid for 1 CPU | |
| • On CD-ROM | **6AV6676-6MB40-0AX0** |
| • Online software delivery variant | **6AV6676-6MB40-0AD0** |

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## Examples of sector products

### Overview

SIMATIC HMI products are provided with additional features in order to facilitate optimum use in specific sectors of industry. Stainless steel front panels for the food, beverages and tobacco industry are one such example. With the exception of their front panels, the devices are identical to standard products in respect of function and technology.

We offer products for the following industries:

- Renewable energy
- Automotive – HMI for factory automation
- General mechanical engineering
- Food and beverages, pharmaceuticals
- Oil & gas, chemicals and shipbuilding/marine
- Woodworking industry

Customized products for various industries are developed and produced in association with a customized product agreement.

Examples:

- Area of application renewable energy:
  - SIMATIC Rack PC with flexible expansion
  - SIMATIC Box PC: 627/427 with QNX
- Area of application automotive:
  - HMI operator stations
  - Extension Units (operator controls)
  - Front panel for Panel PC, 15" with arrow keys on the side
  - Mobile Panel 277 10" Remote Operate
- Area of application general mechanical engineering:
  - Front panel 15" Touch and Key for Panel PCs, resistant to honing oil
  - Flat Panels 10.4" for Panel PCs – Flat Panel SCD1900 portrait
- Areas of application food and beverages and pharmaceuticals:
  - Panels and Panel PCs with stainless steel fronts
  - HMI Panels as rear-mounted devices
  - Flat Panels with stainless steel fronts
  - HMI stainless steel operator stations
- Areas of application oil & gas, chemicals and shipbuilding:
  - MP 377 15" Touch daylight readable

## Renewable energy

### Overview

SIMATIC HMI products are provided with additional features in order to facilitate use in specific sectors.

#### *Solar plants*

Photovoltaic plants are subject to hardly any mechanical stress and therefore require little maintenance. This also requires reliable and low-maintenance devices in the automation system. With the wide operating temperature range at a high computing power, with their various mounting styles, as well as options for diagnostics and data backup, SIMATIC Panels and IPCs meet these requirements.

#### *Wind farms*

Wind farms can be used in all climatic zones and also in poorly accessible areas, e.g. offshore. The requirements regarding the control systems are accordingly diverse, and complete freedom from maintenance of the devices is required. The industrial PCs of the 427 series can meet these requirements. Versions of the Microbox treated by special paint processes can also be used in salt-laden air.

## Overview

### *Solar plants*

Compared to other power plants, photovoltaic plants are subject to hardly any mechanical stress and therefore require little maintenance. The same also applies for solar and solar-thermal systems. This also reduces the maintenance overhead on the devices. The SIMATIC Industrial PCs and Panels meet these requirements through the targeted selection of high-quality components and special production processes.

## Benefits

SIEMENS
SIMATIC BOX PC
SIEMENS
SIMATIC BOX PC

SIMATIC Box PC family with mounting bracket for front mounting in portrait format

- Long service life
- Extra long spare parts availability
- Adapted computing power
- High system availability
- Individually adaptable

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## Wind farms

### Overview

### Benefits

SIMATIC IPC427C with expansion frame

- Suitable for special temperature requirements
- Maintenance-free for offshore use
- Can handle high mechanical load
- High system availability
- Individually adaptable

***Wind farms***

Wind farms can be used to produce electrical power in all climatic zones, at sea, and in all types of terrain.
The requirements regarding the control systems for wind turbines and wind parks are as diverse as the installation locations.

These locations are increasingly difficult to reach. This means the equipment must be completely maintenance-free.
The Industrial PCs of the 427 series can meet these requirements. By selecting high-quality components and special production procedures, all the SIMATIC IPCs and Panels can be used for several years without requiring servicing.

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## Overview

Controllers for electric monorail systems (EMS) with different communication types

For its portfolio of electric monorail systems (EMS), Siemens provides products for rail communication systems and for displays that can be read from a considerable distance.
The products can also be used for other applications besides EMS applications.

The controllers intended for this purpose are the new SIMATIC S7-1200 and S7-1500, which are both programmed using standard Siemens software.

On the drive end, frequency converters (SINAMICS) and drives (SIMOGEAR) from Siemens, which are also programmed using standard Siemens software, will be used.

The controllers are generally differentiated based on the communication between carriage and plant.

EMS400S communicates by means of power signal booster communication (full duplex pulse code communication via the rail with 4x16 bps).

EMS600 uses the power line booster system for communication with Ethernet-based communication connections and thereby supports the use of the proven SIMATIC PROFINET automation components on mobile plant units.

# EMS400S

## Overview

SIEMENS
SIMATIC EMS400S
400
400

EMS400S family for S7-1200

PSB-C and PSB-S power signal boosters with S7-1200

- Device family for the low-cost transmission of pulse-encoded commands via contact wire for transport EOCs.
- Bidirectional communication between vehicle and system control with a transmission rate of 16 bits/250 ms.
- Control via S7-1200; programmable via TIA Portal.

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## Overview

EMS PSB-C
SYNC
EMS RAIL
EMS DISP
PSB-C

EMS400S rail signal booster

The PSB-C (***power signal booster carrier***) module is employed in the cart and establishes the communication between the cart and the segment control.

The module is connected on the right of the S7-1200 as an I/O module.

The PSB-C module can operate one rail channel.

Other interfaces:

- Analog velocity setpoint
- RS232 interface for the IR-DU display module

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S PSB-C module** |
|---|---|
| **Power supply** | |
| Nominal voltage | 24 V DC |
| Power consumption, typical | Approx. 0.1 A |
| **Analog output** | |
| Number of outputs | 1 |
| Output | Voltage, 0-10 V DC |
| Resolution | 10 bits |
| **RAIL interface** | |
| Number | 1 |
| Type | Differential, 48 V AC |
| Data rate | 16 bits / 250 ms |
| **Display unit interface** | |
| Number | 1 |
| Type | RS232-based |
| **Environmental conditions** | |
| **Degree of protection** | |
| Front/rear | IP20 |
| **Ambient temperature** | |
| In operation, vertical installation | 0 °C to +45 °C |
| In operation, horizontal installation | 0 °C to +55 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -40 °C to +70 °C |
| **Certificates** | CE, cULus |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 70 x 100 x 75 |
| **Weight** | Approx. 210 g |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC EMS400S PSB-C module**<br>PSB-C power signal booster, 1 x AQ, 0 ... 10 V DC, RS 232, rail signal 48 V DC | **6ES7228-1RC51-0AA0** |

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## Overview

PSB-S
SYNC
DIAG
ERR RAIL

EMS400S rail signal booster

The PSB-S (***power signal booster segment***) module is used for segment control and establishes the communication between the cart and the segment control.

The module is connected on the right of the S7-1200 as an I/O module.

The PSB-S module can operate 3 rail channels.
Up to 8 PSB-S modules can be connected on the right-hand side of the S7-1200 CPU.

Other interfaces:

- SYNC input
- Digital inputs

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S PSB-S module** |
|---|---|
| **Power supply 1** | |
| Nominal voltage | 24 V DC |
| Power consumption, typical | Approx. 0.1 A |
| **Power supply 2** | |
| Nominal voltage | 48 V DC |
| Power consumption, typical | Approx. 1.9 A |
| **SYNC input** | |
| Number of inputs | 1 |
| Type | Current-sinking, IEC Type 1 |
| Nominal voltage | 24 V |
| **Digital inputs** | |
| Number of inputs | 6, in a group |
| Type | Current-sinking, IEC Type 1 |
| Nominal voltage | 24 V |
| **RAIL interface** | |
| Number | 3 |
| Type | Differential, 48 V AC, non-isolated from P48 V |
| Data rate | 16 bits / 250 ms |
| **Environmental conditions** | |
| **Degree of protection** | |
| Front/rear | IP20 |
| **Ambient temperature** | |
| In operation, vertical installation | 0 °C to +45 °C |
| In operation, horizontal installation | 0 °C to +55 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -40 °C to +70 °C |
| **Certificates** | CE, cULus |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 70 x 100 x 75 |
| **Weight** | Approx. 230 g |

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC EMS400S PSB-S module**<br>Power signal booster PSB-S, 6 x DI, 24 V DC, 1 x DI, 24 V DC Sync, 3 x rail signal 48 V DC | **6ES7228-1RC52-0AA0** |

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## Overview

SIMATIC EMS400S
DIAGNOSIS UNIT
F1
F2
F3
F4

EMS400S diagnostics unit

The EMS400S module (diagnostics unit) is a test tool for:

- System and control cabinet configuration
- Commissioning of a system, segment control, carriage
- Maintenance, troubleshooting (also while in operation)
- Operating modes:
  - Signal and frame analysis, configuration

It contains load resistors for simulating multiple PSB-C modules, and can simulate one PSB-C module and establish communication for segment control.

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S DU** |
|---|---|
| **Power supply** | |
| Nominal voltage | |
| **Graphic** | Graphic display 240 x 320 pixels color |
| **Keyboard** | 16 x membrane keys |
| **Contacting** | |
| Contacting | • Galvanic on rail, 4 mm socket<br>• Signal input galvanically isolated |
| **Data interface** | USB for PC communication and USB flash drive |
| **Certificates** | CE |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC EMS400S DU**<br>Test tool | **6ES7292-0EA50-0AA0** |

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## Overview

SIEMENS
BATT
F1
F2
1
2
3
4
5
6
7
8
9
ESC
0
ENTER

EMS400S IR-RC infrared remote control

The EMS400S IR-RC (***infrared remote control***) module establishes the connection between the operator and the EMS400S-IR-DU.

Via the EMS400S-IR-DU, the encoded signals of the remote control go to the S7-1200 CPU.

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S IR-RC** |
|---|---|
| **Power supply** | |
| Nominal voltage | 3 V DC (2 x AA batteries) |
| Power consumption, typical | < 15 mA |
| **Infrared reception** | |
| Opening angle | <16° |
| Range | Min 10 m |
| **Keys** | |
| Number | 16 |
| **Environmental conditions** | |
| **Degree of protection** | |
| Front/rear | IP65 |
| **Ambient temperature** | |
| During operation | 0 °C to +60 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -20 °C to +60 °C |
| **Certificates** | CE |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 152 x 83 x 35 |
| **Weight** | < 200 g |

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC EMS400S IR-RC**<br>IR-RC infrared remote control for SIMATIC S7-1200 | **6ES7292-0CA50-0AA0** |

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## Overview

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EMS400S IR-DU infrared display unit

The EMS400S IR-DU (***infrared display unit***) module represents the HMI unit in the cart.

It contains three 7-segment displays, indicator lights and an infrared receiver.

It is controlled by the S7-1200 in the cart.

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S IR-DU** |
|---|---|
| **Power supply** | |
| Nominal voltage | 24 V DC |
| Power consumption, typical | Approx. 0.1 A |
| **Infrared reception** | |
| Opening angle | <120° |
| Range | Min 10 m |
| **Interface for external infrared sensor** | |
| Number | 1 |
| **Data exchange interface** | |
| Number | 1 |
| Type | RS232-based |
| **Environmental conditions** | |
| **Degree of protection** | |
| At the front | IP65 |
| At the rear | IP20 |
| **Ambient temperature** | |
| During operation | 0 °C to +60 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -20 °C to +60 °C |
| **Certificates** | CE, cUL |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 140 x 116 x 37.5 |
| **Weight** | < 350 g |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC EMS400S IR-DU**<br>Infrared display unit | **6ES7292-0AA50-0AA0** |

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## Overview

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SIMATIC EMS451S
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EMS451S controller, front view

The EMS451S controller is part of the EMS400S family and consists of an enclosure with the following integrated components:

- S7-1212 DC/DC/DC
- SITOP power supply SITOP PSU 300E 6EP1433-0AA00, 400 V AC / 50 Hz – 3-phase / 24 V DC / 5 A
- SINAMICS V20 frequency converter
- SIMATIC PSB-C module for sending and receiving pulse-encoded signals on the rail
- Display unit with three 7-segment displays for depicting control states

## Technical specifications

| **Technical specifications** | **EMS451S** |
|---|---|
| **Display** | See IR-DU |
| **Power supply** | |
| Nominal voltage | 3-phase alternating current 400 V AC, 50 / 60 Hz |
| Power consumption, typical | Approx. 0.4 A (400 V AC) |
| **Environmental conditions** | |
| **Degree of protection** | |
| Without fan: Front/rear/bottom side | IP65 / IP65 |
| With fan: Front/rear/bottom side | IP65 / IP54 |
| **Ambient temperature** | |
| Without fan: During operation | +0 °C … +45 °C |
| With fan: During operation | +0 °C … +50 °C |
| Relative humidity | 10% ... 90%, without condensation |
| Transport / storage temperature | -20 °C ... +60 °C |
| **Data interfaces** | |
| Programming interface | PROFINET |
| Signal on RAIL A and RAIL B | 48 V modulated |
| **Certificates** | CE, others on request |
| **Dimensions** | |
| Exterior overall dimensions (W x H x D) in mm | |
| • Without fan: | |
| - Without a plug | 400 x 230 x 153 |
| - Incl. plug | 468 x 230 x 153 |
| • Incl. fan | |
| - Without a plug | 400 x 250 x 153 |
| - Incl. plug | 468 x 250 x 153 |
| **Weight** | |
| • Without fan: | 9.2 kg |
| • Incl. fan | 10 kg |

## Ordering data

| | **Article No.** |
|---|---|
| **EMS451S control system** | |
| • With S7-1200 and PSB-C, with integrated SINAMICS V20 frequency converter, 0 ... 45 °C | **6ES7212-0AA51-0AA0** |
| • With S7-1200 and PSB-C, with integrated SINAMICS V20 frequency converter and external PN interface, 0 ... 50 °C | **6ES7212-0AA51-0AB0** |
| **EMS475S control system**<br>With S7-1200F, PSB-C and phase monitors | **6ES7212-0AA71-0AB5** |

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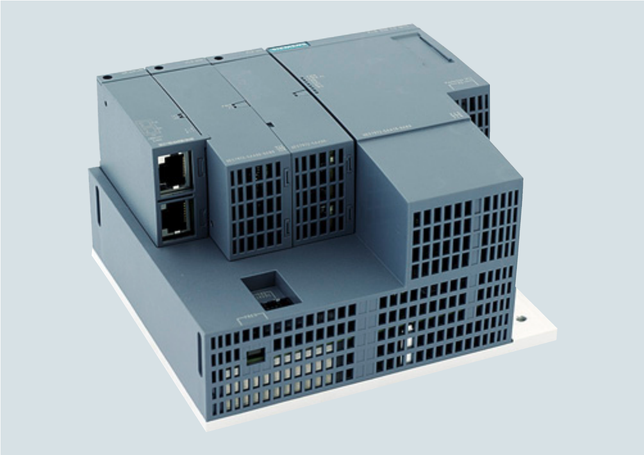
## Overview



***SIMATIC Power Line Booster***

The Power Line Booster system is a communication system for general data transmission on conductive media.

It enables Ethernet-based communication links between stationary system controls and mobile plant units:
The transmission media can be sliding contact systems (graphite/copper on copper) such as in electric monorail conveyors or flexible cables such as the ones used in crane systems as well as slip ring transmitters.

The Power Line Booster is designed for operation in industrial environments and supports the use of the proven SIMATIC PROFINET automation components on mobile plant units.

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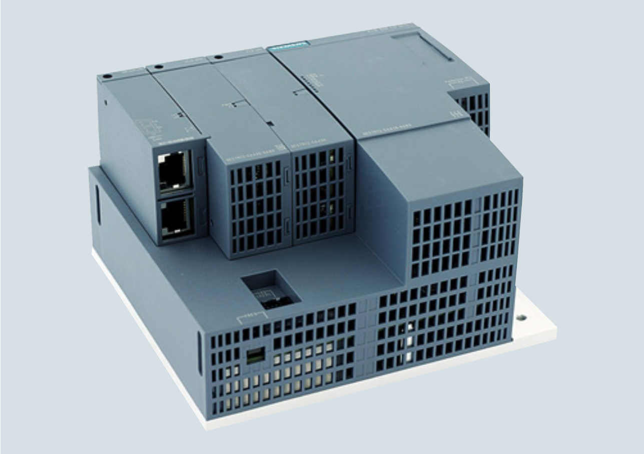
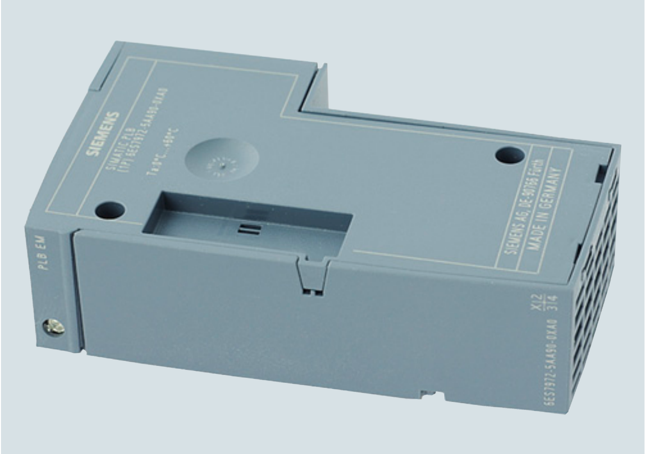
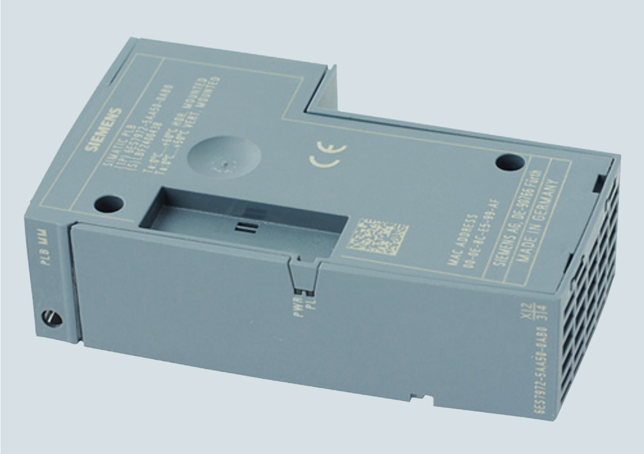
## Overview


SIMATIC PLB BM LV M/S

- SIMATIC PLB BM LV M/S basic module; for accommodating
  - the Power Line Booster modem module,
  - the empty module and
  - the BusAdapter module RJ-45 ET 200SP BA 2xRJ45 or BusAdapter FastConnect ET 200SP BA 2xFC


SIMATIC PLB EM

- SIMATIC PLB EM empty module; to cover the module bay and the DIP switches of the PLB BM


SIMATIC PLB MM

- SIMATIC PLB MM modem module; modulates or demodulates the Ethernet data frames into a form that is suitable for the "Powerline" transmission medium (e.g. sliding contact lines).

## Ordering data

| | Article No. |
|---|---|
| **SIMATIC PLB BM LV M/S basic module**<br>To accommodate the Power Line Booster modem module, the empty module and the BusAdapter module RJ-45 ET 200SP BA 2xRJ45 or BusAdapter FastConnect ET 200SP BA 2xFC | **6ES7972-5AA10-0AB0** |
| **SIMATIC PLB MM modem module**<br>Modulates or demodulates the Ethernet data frames into a form that is suitable for the "Powerline" transmission medium (e.g. sliding contact lines). | **6ES7972-5AA51-0AB0** |
| **SIMATIC PLB EM empty module**<br>to cover the module bay and the DIP switches of the PLB BM | **6ES7972-5AA80-0XA0** |

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## Overview

- SIMATIC PLB TC termination module;
  to terminate both ends of the communication cable of a segment
- SIMATIC PLB connection cable;
  the connection cables in a powerline system have a strong impact on the signal attenuation and cause poles in the frequency range used. This is why the selection of cables also has an effect on the maximum configuration limit.
  The PLB connection cable, with a length of 8 m, is optimized for PLB use. The following are available:
  - Connection cable without plug, length 8 m
  - Connection cable with plug at one end, length 8 m
  - Connection cable with 2 plugs

## Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC PLB TC termination module**<br>to terminate both ends of the communication cable of a segment | **6ES7972-5AB00-0XA0** |
| **SIMATIC PLB connecting cable** | |
| Length 8 m | |
| • Without a plug | **6ES7903-1AH40-0AB0** |
| • With a plug on one side | **6ES7903-1AH41-0AB0** |
| • With two plugs | **6ES7903-1AH42-0AB0** |

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## Overview

### *SIMATIC HMI IRD400*

The SIMATIC HMI IRD400 (infrared display unit) module is an HMI unit for making status information clearly visible on a 7-segment display from a considerable distance.

It contains 3 x 7-segment displays, signal lamps and an infrared receiver and transmitter. It is controlled via PROFINET.

## Benefits

The SIMATIC HMI IRD400 links a 7-segment display and/or an infrared interface in a PROFINET network in the TIA Portal.

The bright 7-segment display – as a new SIMATIC HMI device for specific applications – can display numerical values in a highly legibly manner. The main advantage is therefore readability from very long distances. The integrated IR interface now makes it possible to link bidirectional infrared communication with a range of up to 10 m in SIMATIC applications and into the TIA Portal.

The infrared interface contains both an infrared receiver for remote control and an infrared sender for communication between display units. A compatible remote control (6ES7292-0CA50-0AA0) can also be supplied. 8 digital inputs/ outputs and two LEDs are also available on the module.

The configuration is made in the TIA Portal V14 or higher. An GSD file is available to the user for this purpose.

The SIMATIC IRD400 has an internal PROFINET switch and integrates itself seamlessly into a PROFINET network.

## Technical specifications

| **Technical specifications** | **SIMATIC HMI IRD400** |
|---|---|
| **Power supply** | |
| Nominal voltage | 24 V DC |
| Power consumption, typical | Approx. 0.1 A |
| **Infrared reception** | |
| Opening angle | <120° |
| Range | Min 10 m |
| **Interface for external infrared sensor** | |
| Number | 1 |
| **Data exchange interface** | |
| Number | 1 |
| Type | PROFINET-based |
| **Environmental conditions** | |
| **Degree of protection** | |
| At the front | IP65 |
| At the rear | IP20 |
| **Ambient temperature** | |
| During operation | 0 °C to +60 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -20 °C to +60 °C |
| **Certificates** | CE, cUL |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 140 x 116 x 37.5 |
| **Weight** | < 350 g |

## Ordering data

| | **Article No.** |
|---|---|
| **SIMATIC HMI IRD400**<br>Infrared display unit;<br>PROFINET interface;<br>3 x 7-segment displays | **6ES7292-0AA50-1AA0** |

## Overview

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EMS400S IR-RC infrared remote control

The EMS400S IR-RC (***infrared remote control***) module establishes the connection between the operator and the EMS400S-IR-DU.

Via the EMS400S-IR-DU, the encoded signals of the remote control go to the S7-1200 CPU.

## Technical specifications

| **Technical specifications** | **SIMATIC EMS400S IR-RC** |
|---|---|
| **Power supply** | |
| Nominal voltage | 3 V DC (2 x AA batteries) |
| Power consumption, typical | < 15 mA |
| **Infrared reception** | |
| Opening angle | <16° |
| Range | Min 10 m |
| **Keys** | |
| Number | 16 |
| **Environmental conditions** | |
| **Degree of protection** | |
| Front/rear | IP65 |
| **Ambient temperature** | |
| During operation | 0 °C to +60 °C |
| Relative humidity | 10 % to 95%, without condensation |
| Storage temperature | -20 °C to +60 °C |
| **Certificates** | CE |
| **Dimensions** | |
| Dimensions (W x H x D) in mm | 152 x 83 x 35 |
| **Weight** | < 200 g |

## Ordering data

| **Ordering data** | **Article No.** |
|---|---|
| **SIMATIC EMS400S IR-RC**<br>IR-RC infrared remote control for SIMATIC S7-1200 | **6ES7292-0CA50-0AA0** |

## Control cabinets

### Overview

EMS control cabinets have a preassembled and type-tested configuration with integrated Power Line Booster. They enable the simple installation of single slider and double slider applications. The following are available:

- SIMATIC EMS630 PSS;
  single control cabinet with integrated Power Line Booster (PLB) for single slider systems. Can be used in conjunction with EMS630 PDS for double slider systems.
- SIMATIC EMS630 PDS;
  single control cabinet with integrated Power Line Booster (PLB) and SCALANCE RNA switch. Can be used in conjunction with EMS630 PSS for double slider systems.
- SIMATIC EMS630 SC;
  can be used as stationary segment control cabinet. Comprises a line filter, fuses, motor circuit breaker and the 42 V AC segment power supply in addition to the PLB master.

### Ordering data

| Ordering data | Article No. |
|---|---|
| **SIMATIC EMS630 PSS control cabinet**<br>Single control cabinet with integrated Power Line Booster (PLB) for single slider systems. Can be used in conjunction with EMS630 PDS for double slider systems. | **6ES7212-0AA63-0AB1** |
| **SIMATIC EMS630 PDS control cabinet**<br>Single control cabinet with integrated Power Line Booster (PLB) and SCALANCE RNA switch for single slider systems. Can be used in conjunction with EMS630 PSS for double slider systems. | **6ES7212-0AA63-0AB2** |
| **SIMATIC EMS630 SC control cabinet**<br>Can be used as stationary segment control cabinet. Comprises a line filter, fuses, motor circuit breaker and the 42 V AC segment power supply in addition to the PLB master. | **6ES7212-0AA63-0AB0** |

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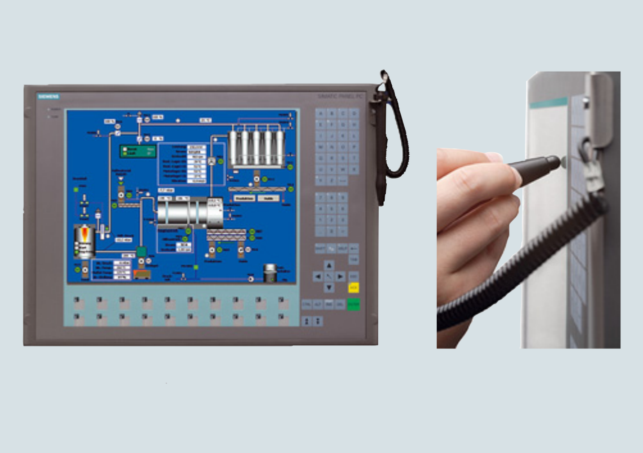
## Front Panel 15" Touch and Key for Panel PCs, resistant to honing oil

### Overview



The Front Panel Touch and Key is designed as a front unit for Panel PCs. The combination of touch and key operation as well as the resistance to honing oil are characteristics of this product.

Complete lamination of the decorative membrane over the touch area of the display increases the resistance against contamination and welding beads, and the absence of edges and joints facilitates cleaning. Openings and cutouts in the front have been completely omitted in favor of a homogenous surface which can also be used in the environment of honing oil and similar cooling agents and lubricants.

Clear operation is achieved using the touch pen which is delivered as standard and can be stored in a front holder. Dirty or oily hands are therefore not an argument against using a touch screen. The pen has an ergonomic shape, is optimized for operations when wearing gloves, and is linked to the front using an elastic helix cable. Its "parking position" in the special stainless steel holder on the front means that it is always readily accessible.

### Benefits

- Combined touch and key operation for increased efficiency
- Touch pen operation avoids contamination of the display area
- Ergonomically shaped, captive touch pen
- Simple cleaning
- Resistant to coolants and lubricants

### Technical specifications

| **Type** | **Front Panel 15" Touch + Key, resistant to honing oil** |
|---|---|
| Display | 15.1" TFT Touch |
| Resolution (pixels) | 1024 x 768 pixels |
| General features | As Front Panel 15.1" Touch for Panel PC 677 |
| **Special features** | |
| Interfaces | Without front-sided USB interface |
| Connectable to Panel PC | PC 477, PC 677 compact and distributed design |
| Number of keys | 58 system keys and alphanumeric keys<br>20 function keys with LED |
| Resistance | Tested with:<br>Castrol Honilo 981 honing oil |

### More information

#### Quotation preparation

Product specification according to customer requirements.

Quotation preparation by SIMATIC HMI specialists, specification of:

- Non-recurring costs
- Prototype costs
- Standard unit prices
- General conditions (product agreement)

There is a minimum annual quantity/purchase quantity (minimum quantity per type: 20), which is agreed with the customer for the project.

Customized products can only be ordered in conjunction with a product agreement.

A customer-specific Article No. is specified as part of the product agreement.

http://www.siemens.com/automation/partner

## Food and beverages industry/pharmaceuticals

### Overview

Hygiene areas in food and beverage production, pharmaceuticals or fine chemicals all share one requirement: The devices and equipment must be easy to clean. The relevant directives, standards and legislative requirements must be observed, e.g. EHEDG, FDA, EN 1672-2 (Hygienic Design), GMP, LMHV, LMBG.

However, optimization and variation in the device hardware are also perfectly possible:

- Degree of protection
- Ruggedness
- Temperature resistance
- Design and installation versions
- Suitable for clean rooms
- Certification in accordance with ATEX

The aim is to find the cost-optimized solution for the specific application case.

The overview below shows different features depending on the applications areas, from packaging to the wet area in processing.

| **Applications** | | | | |
|---|---|---|---|---|
| **Features** | **Hygienic packaging** | **Pharmaceuticals, fine chemicals** | **Food and beverages, bottle cleaning, bottle filling, laboratories** | **Abattoirs, meat processing** |
| Stainless steel front | partially | x | x | x |
| Stainless steel control cabinet | x | x | x | x |
| Stainless steel fully enclosed | x | x | x | x |
| Simple to clean | x | x | x | x |
| No grooves and gaps, no projections | partially | partially | membrane-covered protective edge not always accepted | - |
| Increased tightness | - | - | x | x |
| Mechanical ruggedness, no membrane front | - | - | partially | x |
| Suitable for high-pressure cleaning (IP69K) | - | - | - | partially |
| ATEX Ex Zone 2/22 | x | x | partially | - |

The product examples described on the following pages cover a wide range of the most important requirements.

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## Benefits

- Simpler cleaning thanks to resistant and rugged stainless steel front with smooth surface, and minimal grooves and gaps
- High degree of protection IP66K (TP 177B and MP 277 additionally IP66K) on the front for increased sealing properties and ruggedness
- Food-standard sealing material and shatter protection for the display to prevent contamination of the foodstuffs
- Optimized frame design almost flush with the control cabinet so that liquids can run off
- Device front developed on the basis of EN 1672-2
- Decorative membrane tested against chemicals in accordance with DIN 42115, Part 2[1)]
- Food-standard flat seal in accordance with FDA 21 CFR 177.2600
- Rear tensioning frame (included in scope of supply) for even application pressure of the seal
- External dimensions and mounting cutout as for corresponding standard product

### *High degree of protection for humid environments*

With low installation depth and rugged fronts, the SIMATIC HMI Standard Panels are eminently suitable for industrial and machine-level use.

Panels with stainless steel fronts are also even better equipped to meet the high requirements presented by the food and beverage production environment. IP66K degree of protection protects against water even with a jet strength of 100 l/min at 10 bar from a distance of 2.5 m to 3 m. The optimized frame profile and almost flush-mounting of the device on the control cabinet allow liquids to run off.

Installation of the operator panels in a stainless steel control cabinet as a ready-to-use operator station is optionally available as a customized version.

### *Certificates, listings and appraisals*

SIMATIC HMI products with stainless steel fronts, and the stainless steel operator station, were subjected to some or all of the tests below and are listed or appraised in accordance with:

- High degree or protection IP66K, NEMA Type 4, 4x, 12
- CE-compliant, cULus-listed
- LGA mark "Hygiene tested" (Approval document No. 5664018)
- Expert appraisal of the Munich University of Technology, Research Center Weihenstephan, in accordance with EHEDG recommendation (Report No.126/01 March, 2007)
- Clean room qualification by IPA Fraunhofer Institute (test report: Examination of the clean room suitability and ESD characteristics of Panel PCs from Siemens AG, Report No. SI 0810-450 of October 2008)

### *Qualification for clean rooms*

High-quality products such as semiconductors, medicines, food & beverages, and nanotechnology products are subject to special demands with regard to contamination with particles or bacteria.

Increased requirements for protection of the products and processes can only be met by production in clean rooms with suitable equipment under controlled conditions.

Clean rooms are classified according to particle quantities and sizes per m$^3$ of room air and time unit. Clean room classes in accordance with ISO 14644-1 (ISO 1 to 9) have been introduced in pharmaceuticals, for example, in accordance with EG-GMP, Annex 1 (Classes A to F), and in semiconductor production.

Example:
A person in normal clothing emits approximately 80 000 particles >= 0.5 mm per second (in clean room clothing, this can be reduced to approximately 700 particles/s >= 0.5 mm).

Requirements regarding equipment in clean rooms include the following:

- Surfaces that are easy to clean and disinfect
- As few adhesives as possible, e.g. electrostatic
- No emitting surfaces
- Shape favorable to air circulation, no air eddies
- Dense, as few hollow or dead spaces as possible
- Smooth, as few grooves and gaps as possible

The SIMATIC HMI products with stainless steel fronts and the stainless steel operator station have been designed for these requirements.

The stainless steel operator stations with Panel PC 677B 15" Touch INOX and MP 377 15" Touch INOX have been tested by the Fraunhofer Institute and qualified for "obvious suitability for clean rooms of ISO Class 1 in accordance with EN ISO 14644-1".

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[1)] Special resistance requirements must be examined separately.

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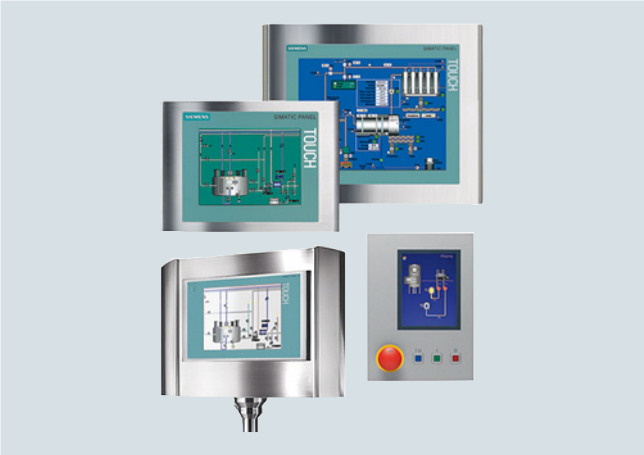
## Overview



***TP 177B color PN/DP, MP 277 10" Touch, MP 377 15" Touch and Panel PC 677B 15"***

Panels and panel PCs with touch screens and stainless steel fronts have been designed for use in the food, beverages and tobacco industry for operator control and monitoring close to food processing machines. They have been developed in compliance with EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".

- Simple cleaning and disinfecting:
  - Stainless steel surface with 240 grade hairline finish
  - Membrane tested for resistance to chemicals
  - Minimal number of grooves and joints
  - Optimized frame profile so that liquids can run off
- Display shatter protection
- Degree of protection IP66K

## Technical specifications

| | **Multi Panels** | |
|---|---|---|
| | **MP 277 10" Touch INOX** | **MP 377 15" Touch INOX** |
| **General features** | | |
| Power supply | 24 V DC | 24 V DC |
| Display | 10.4" color TFT Touch | 15.1" TFT Touch |
| Resolution (pixels) | 640 x 480 | 1024 x 768 |
| MTBF of backlighting (at 25 °C) | about 50 000 hours LED backlighting | about 50 000 hours CCFL backlighting |
| **Front** | | |
| Material | Stainless steel 1.4301, polyester-based membrane | |
| Surface | Hairline finish, 240 grit abrasive grain | |
| Device seal | EPDM flat seal | |
| Special features | | |
| **Ambient conditions** | | |
| Degree of protection | on the front: IP66K, NEMA 4, 4x and 12; on the rear: IP20 | |
| Ambient temperature during operation | 0 ... 50 °C | |
| Relative humidity | max. 85% (no condensation) | |
| Transport/storage temperature | -20 °C to +60 °C | |
| Approvals | FM Class 1 Div 2, cULus, CE, RCM (previously C-Tick), ATEX Zone 2/22 | |
| Sector | Food & beverages, pharmaceuticals | Food & beverages, pharmaceuticals |
| **HMI software (to be obtained separately)** | | |
| HMI engineering software | WinCC flexible 2005 Standard and higher | WinCC flexible 2007 Standard and higher |
| **Dimensions** | | |
| External dimensions (W x H x D in mm) | 325 x 263 | 400 x 310 |
| Installation cutout (W x H x D in mm) | 310 x 248 | 368 x 290 |
| Special features | Clamping frame | Clamping frame |
| **Weight** | Approx. 4.2 kg | Approx. 6.2 kg |

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## **Technical specifications** (continued)

| | **Panel PC** | **Panels** |
|---|---|---|
| | **Panel PC 677B 15" Touch INOX** | **TP 177B PN/DP INOX** |
| **General features** | | |
| Power supply | 100/230 V AC (autorange), 50/60 Hz or 24 V DC | 24 V DC |
| Display | 15.1" TFT Touch | 5.7" color STN Touch (256 colors) |
| Resolution (pixels) | 1024 x 768 | 320 x 240 |
| MTBF of backlighting (at 25 °C) | about 50,000 hours CCFL backlighting | |
| Special features | Without front USB interface | 1 x emergency-off, 3 x short-stroke membrane keys with LED on front, wired to terminal |
| **Front** | | |
| Material | Stainless steel 1.4301, polyester-based membrane | |
| Surface | Hairline finish, 240 grit abrasive grain | |
| Device seal | EPDM flat seal | |
| Special features | on the front: IP66K, NEMA 4, 4x and 12; on the rear: IP20 | Decorative membrane drawn across the display |
| **Ambient conditions** | | |
| Degree of protection | on the front: IP66K, NEMA 4, 4x and 12; on the rear: IP20 | on the front: IP66K, NEMA 4, 4x and 12; on the rear: IP20 |
| Ambient temperature during operation | 0 ... 50 °C | 0 ... 50 °C |
| Relative humidity | max. 85% (no condensation) | |
| Transport/storage temperature | -20 °C to +60 °C | |
| Approvals | CE, cULus | FM Class 1 Div 2, cULus, CE, RCM (previously C-Tick), ATEX Zone 2/22 |
| Sector | Food & beverages, pharmaceuticals | Food & beverages, pharmaceuticals |
| **HMI software (to be obtained separately)** | | |
| HMI engineering software | WinCC flexible Advanced and higher | WinCC flexible 2005 Compact and higher |
| HMI Runtime software | WinCC flexible RT | |
| **Dimensions** | | |
| External dimensions (W x H x D in mm) | 483 x 310 | 212 x 156 |
| Installation cutout (W x H x D in mm) | 450 x 296 | 198 x 142 |
| Special features | Clamping frame | Clamping frame |
| Can be connected to SIMATIC PC | On Panel PCs as well as other SIMATIC Rack and Box PCs | |
| **Weight** | Approx. 15 kg | Approx. 1.5 kg |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **TP 177B color PN/DP INOX**<br>with stainless steel front, otherwise corresponding to 6AV6642-0BA01-1AX0 | **6AV6642-8BA10-0AA0** |
| **MP 277 10" Touch INOX**<br>with stainless steel front and LED backlight, otherwise corresponding to 6AV6643-0CD01-1AX1 | **6AV6643-0ED01-2AX0** |
| **MP 377 15" Touch**<br>with stainless steel front and LED backlight; otherwise corresponding to 6AV6644-0AB01-2AX0 | **6AV6644-0CB01-2AX0** |
| **Panel PC 677B 15"**<br>with stainless steel front, otherwise corresponding to Panel PC 677B Configurator 6AV6643-0CD01-1AX1 | **6AV7872-2...** |

## More information

### *Customized modification options*

- Customized design
  - Use of the company name instead of the Siemens logo and modification of the type designation
  - Changing the background color
- Customer-specific hardware modifications such as the design and dimensions of the front plate, selection of the display, memory capacity, drives, options
- Customer-specific Panel PC configuration as a rugged embedded hardware and software system, without hard disk and with tailor-made software
- Customer-specific software suite with choice of Windows operating systems
- Customer-specific Panel PCs with software suite with choice of Windows operating systems
- Protection against condensation and corrosive gases (for selected panels)
- Device mounted in a stainless steel cabinet as a ready-to-install and ready-to-connect operator station which is ergonomic, functional, with high degree of protection as well as tested heat dissipation (e.g. with complete IP66K degree of protection)

### *Quotation preparation*

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting of a quote with:

- Non-recurring costs
- Prototype costs
- Standard unit prices
- and the marginal conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be ordered easily using this product agreement and a customer-specific Article No.

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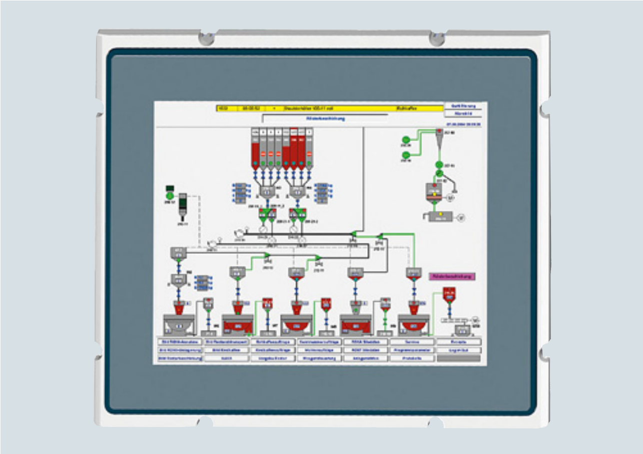
## Overview



MP 277
Infotour

***MP 377 12" Touch, rear-mounting,
MP 277 8" Touch portrait, rear-mounting***

The solution for installing HMI devices without "corners and edges" on the front. The devices are installed in the control cabinet enclosure from the rear and are flush with the control cabinet sheet metal at the front. They are therefore known as "rear-mounted devices".

## Benefits

- Front surface flush with the control box
- Simple to clean
- No dirt-collecting edges and deposits
- Front membrane resistant to the usual cleaning agents and disinfectants
- Can be replaced with front-mounted device of the same type for service purposes (MP 377 12" Touch rear-mounting only)

## Technical specifications

| | **MP 277 8" Touch portrait, rear-mounting** | **MP 377 12" Touch, rear-mounting** |
|---|---|---|
| **General features** | | |
| Power supply | 24 V DC | 24 V DC |
| Display | 7.5" TFT Touch | 12.1" TFT Touch |
| Resolution (pixels) | 480 x 640 (portrait) | 800 x 600 |
| MTBF of backlighting (at 25 °C) | Approx. 50 000 h CCFL backlighting | |
| Special features | 1 x emergency-off, 3 x short-stroke membrane keys with LED on front, wired to terminal | |
| **Front** | | |
| Material | Aluminum under polyester-based membrane | |
| Surface | Hairline finish, 240 grit abrasive grain | |
| Device seal | On the enclosure, customized | On the front |
| Special features | Decorative membrane drawn across display | |
| **Ambient conditions** | | |
| Degree of protection | IP65 at front; IP20 at rear | |
| Ambient temperature during operation | 0 ... 50 °C | |
| Relative humidity | max. 85% (no condensation) | |
| Transport/storage temperature | -20 °C to +60 °C | |
| Approvals | CE | CE, cULus |
| Sector | Food & beverages, packaging systems, pharmaceuticals | |
| **HMI software (to be obtained separately)** | | |
| HMI engineering software | From WinCC flexible 2007 Standard with add-on for portrait format | WinCC flexible 2007 Standard and higher |
| **Dimensions** | | |
| External dimensions (W x H x D in mm) | 229 x 318 | As installation cut-out |
| Installation cutout (W x H x D in mm) | 233 x 322 x 67 | Compatible with standard device |
| Special features | Rear-mounted panel in portrait format | Rear-mounted panel; panel cutout as on standard device |
| **Weight** | Approx. 2.7 kg | Approx. 5.5 kg |

## HMI Panels as rear-mounted devices

### Ordering data

| Ordering data | Article No. |
|---|---|
| **MP 377 12" Touch, rear-mounting**<br>Configuration on request | **6AV6644-...** |
| **MP 277 8" Touch portrait, rear-mounting**<br>With emergency-off button and 3 short-stroke keys with LEDs on the front<br>Configuration on request | **6AV6643-...** |

### More information

***Customized modification options***

Customized rear-mounted versions can also be implemented:

- Customized operator controls possible on the front, e.g. membrane keys, emergency-off
- Adaptation to the design of the customized enclosure
- Customized design (logo and color scheme) on the front membrane
- Portrait mode of the display
- Increased resistance to shock and machine vibration

***Quotation preparation***

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting of a quote with:

- Non-recurring costs
- Prototype costs
- Standard unit prices
- and the marginal conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be ordered easily using this product agreement and a customer-specific Article No.

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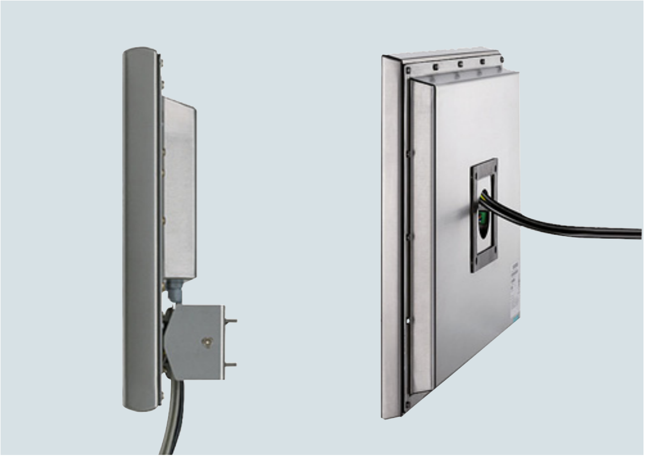
## Overview



***Flat Panel 15" Touch INOX, Flat Panel 15" Touch INOX (enclosed), Flat Panel 19" Touch INOX, Flat Panel 19" Touch INOX (enclosed)***

The Flat Panels with touch screen and stainless steel front are designed as a display and operating unit for SIMATIC PCs in the food and beverages industry, pharmaceuticals and related industries.

They are easy to clean and can be installed in production areas subjected to splashes in a suitable control cabinet.

## Technical specifications

| | **Flat Panel** | | | |
|---|---|---|---|---|
| | **15" Touch, INOX** | **15" Touch INOX fully enclosed** | **19" Touch, INOX** | **19" Touch INOX fully enclosed** |
| **General features** | | | | |
| Power supply | 24 V DC | 24 V DC | 24 V DC | 24 V DC |
| Display | 15.1" TFT Touch | 15.1" TFT Touch | 19.1" TFT Touch | 19.1" TFT Touch |
| Resolution (pixels) | 1024 x 768 | 1024 x 768 | 1280 x 1024 | 1280 x 1024 |
| MTBF of backlighting (at 25 °C) | approx. 50 000 hours CCFL backlighting | | | |
| Special features | Without front USB interface | OSD operation not accessible; values preset | Without front USB interface | OSD operation not accessible; values preset |
| **Front** | | | | |
| Material | Stainless steel 1.4301, polyester-based membrane | | | |
| Surface | Hairline finish, 240 grit abrasive grain | | | |
| Device seal | EPDM flat seal | | EPDM flat seal | EPDM flat seal |
| Special features | Decorative membrane drawn across the display | | | |
| **Ambient conditions** | | | | |
| Degree of protection | On the front: IP66K, NEMA 4, 4x and 12; on rear: IP20 | Complete IP65, NEMA 4 | On the front: IP66K, NEMA 4, 4x and 12; on rear: IP20 | Complete IP66K, NEMA 4, 4x and NEMA 12 |
| Ambient temperature during operation | 0 ... 50 °C | 0 ... +40 °C at an angle of up to +/- 20° from the vertical | 0 ... 50 °C | 0 ... +40 °C |
| Relative humidity | Max. 85% (no condensation) | | | |
| Transport/storage temperature | -20 °C to +60 °C | | | |
| Approvals | CE, cULus | CE, cULus | CE, cULus | CE, cULus |
| Sector | Food & beverages, pharmaceuticals | Pharmaceuticals | Food & beverages, pharmaceuticals | Food & beverages, pharmaceuticals |
| **Dimensions** | | | | |
| External dimensions (W x H x D in mm) | 483 x 310 | 383 x 324 x 72 | 483 x 400 | 483 x 399 x 61 |
| Installation cutout (W x H x D in mm) | 450 x 296 | | 450 x 380 | |
| Special features | Clamping frame | Tiltable customized flange for mounting on control cabinet, sealed by bellows | Clamping frame | Fully enclosed, VESA 100 |
| **Weight** | Approx. 7 kg | Approx. 12 kg | Approx. 10 kg | Approx. 12 kg |

## Flat Panels with stainless steel front

### Ordering data

| | Article No. |
|---|---|
| **Flat Panel 15" Touch INOX** | **6AV7486-2TA10-1AA0** |
| **Flat Panel 15" Touch INOX fully enclosed**<br>Configuration on request | **6AV7476-...** |

### More information

#### *Customized modification options*

- Customized design
- Customized flange connection
- Cable length up to 30 m

#### *Quotation preparation*

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting of a quote with:

- Non-recurring costs
- Prototype costs
- Standard unit prices
- and the marginal conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be ordered easily using this product agreement and a customer-specific Article No.

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## Overview

SIMATIC HMI Panels or Panel PCs mounted in a stainless steel cabinet as a ready-to-install and ready-to-use operator station that is ergonomic and functional, and has a high degree of protection (complete IP66K degree of protection) as well as tested heat balance.

The populated and wired turnkey solutions are based on the hygienic design requirements of the food and beverages industry as well as other hygiene and wet areas, pharmaceuticals, fine chemicals and semiconductor production.

## More information

### *Customized modification options*

- Other HMI devices, display sizes and resolutions
- External stainless steel keyboard, e.g. without short-stroke keys with piezo technology
- Modification of the front/enclosure design (hygiene test optional) and cable routing
- Specific flange from enclosure manufacturers
- Breather gland
- Use in extended ambient temperature range, e.g. -20 °C to +60 °C
  - Air-water heat exchanger (internal)
  - "Temperature Extension Kit" plus active heating and cooling elements

### *Certification/approvals*

- LGA Certificate "Hygiene-tested"
- Inspection certificate of the Munich University of Technology
- IPA Fraunhofer Institute

These modifications are defined by HMI specialists in consultation with the customer who then receives a specific offer.

A product agreement with minimum quantities is required for the implementation of customized modifications. Please contact your local/national Siemens HMI representative.

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## Notes

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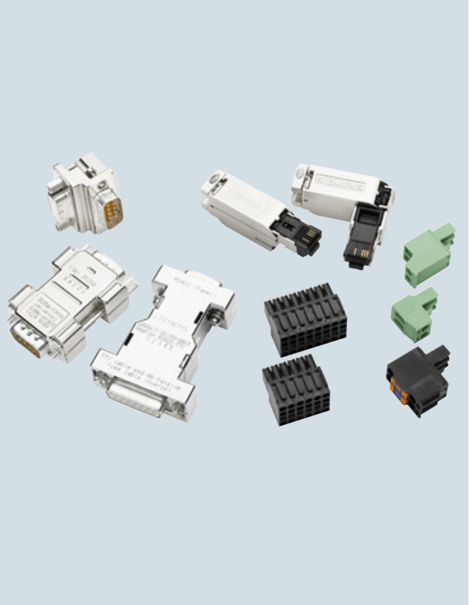
# Accessories

# 6



| | |
|---|---|
| **6/2** | **Introduction** |
| **6/4** | **Batteries** |
| **6/7** | **Fixing elements** |
| **6/15** | **Labeling strips** |
| **6/19** | **Input devices, cables** |
| **6/32** | **Input tools** |
| **6/35** | **HMI connecting components** |
| **6/42** | **IWLAN accessories** |
| **6/44** | **Power supply units, power supply cables** |
| **6/50** | **Back covers** |
| **6/55** | **Protective films** |
| **6/69** | **Protective covers, dust caps** |
| **6/72** | **Service sets** |
| **6/77** | **Storage media** |
| **6/92** | **Transport and storage** |
| **6/95** | **Distribution boards** |
| **6/98** | **Additional accessories** |
| **6/100** | **Process coupling** |
| 6/100 | Connecting cables |
| 6/107 | RS 485 bus connector |
| 6/108 | IE FC RJ45 plug 2 x 2, Cat5e |

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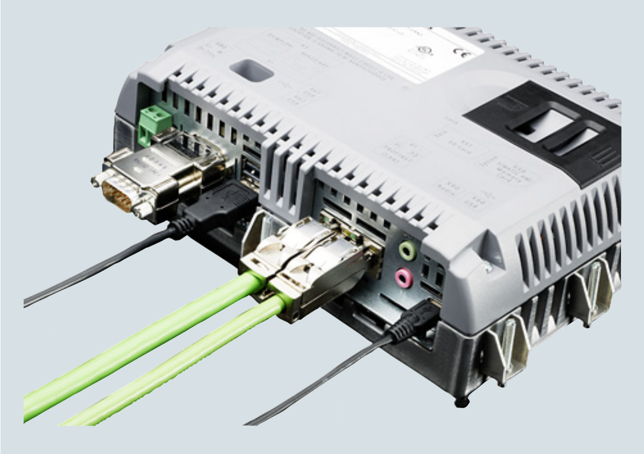
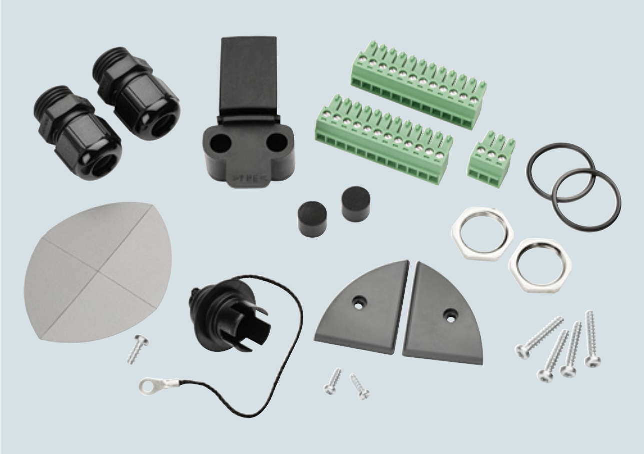
## Overview



HMI accessories, connection



SIMATIC not only offers first-class Panels, thin clients and IPCs, but also an extensive range of original accessories which harmonizes optimally with the core products. We place the same quality requirements on our accessories as we do on our core products.

Since accessory parts are required over the entire service life of a product despite wear, everything is done to ensure that all accessories remain available throughout the entire life cycle of the core products. In the event of deviations in exceptional cases, a relevant product announcement will be placed in the Customer Support area. We recommend subscribing to these announcements electronically.

SIMATIC accessories are intended exclusively for industrial use, such as in offices, workshops etc. In some cases, accessories can also be used with competitor products. This use is at your own responsibility.

The range of accessories includes:

- Batteries (rechargeable buffer battery, lithium batteries, main rechargeable battery, etc.)
- Fasteners (memory card lock, wall bracket, mounting frame, mounting clips, mounting bracket, etc.)
- Labeling strips (labeling strips, front film, labeling set, protective sleeve, etc.)
- Input devices, cables (keyboards, mice)
- Input aids (e.g. touch pens)
- HMI connecting components (converters, connectors, adapters)
- IWLAN accessories (access points, KeyPlug, power supplies, Moby D, small parts)
- Power supply units, power cables (supply units, non-heating apparatus cables)
- Back covers (in IP20 design)
- Protective films
- Protective covers, dust caps (covers, caps, port keys, USB/RJ45)
- Service sets (spare parts package with coordinated contents)
- Storage media (MM memory card, SD memory card, PC memory card, PC memory card adapter, CF memory card, USB memory stick, USB FlashDrive, memory module for pushbutton Panels, memory expansions)
- Transport and storage (bags and handles)
- Distribution boards (USB HUB, USB extensions, keyboard, video, mouse switch, Ethernet switch)
- Additional accessories (e.g. spare key, spare cover)
- Process coupling
  - Connecting cables
  - Bus connector DP
  - Bus connector PN

The aim is to offer accessories as new parts throughout the entire lifecycle of the core product.

This cannot be guaranteed because the consumer market changes quickly.

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## More information

Trade goods:

To be able to react quickly and flexibly to new requirements, we also use high quality accessories from major manufacturers and market these directly via our Mall. Introducing products as trade goods saves having to perform time-consuming, in-house tests, or applying for and generating our own certificates.

Trade goods are qualified in a short power-on test (power-on test only and no system test at Siemens), as the manufacturer tests are usually sufficient.

Certificates:

On account of technical requirements placed on trade goods, technical specifications, drivers, certificates and test certificates, etc. are provided by the manufacturer, and are partially available for downloading from the Siemens SIOS pages.
Current certificates for products marked as trade goods are always to be requested directly from the manufacturer.
The technical properties of trade goods may differ from the assured characteristics of our own products (for example, in respect of electromagnetic compatibility).
Trade goods are marked as such in the relevant technical specifications.

3D data:

3D data and technical drawings for trade goods are only available for download in the SIOS delivery release, providing the manufacturer has granted their approval.
Integration into the Siemens 3D download area is unfortunately not possible. For this reason, it is also not possible to provide a 3D (Step) file for every accessory.
The responsibility for trade good files always lies with the manufacturer. The manufacturer is always listed at the end of the technical specifications.

Note:

SIMATIC accessories are intended exclusively for industrial use, such as in offices, workshops, etc.
In some cases, accessories can also be used with competitor products. This use is at your own responsibility.

Tip:

The TIA Selection Tool automatically shows appropriate accessories for every SIMATIC product, making it even easier to find the right accessory.

Notice:

Photos and product images may differ from the actual product.

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## Overview

HMI accessories, battery, accumulator

### *Batteries and accumulators*

The following batteries and accumulators are available:

- Rechargeable buffer battery
- Button cell
- Main rechargeable battery

Note:

Transporting lithium batteries by air is not possible at all, or only feasible under restricted conditions.
When ordering replacements, please allow transport times of up to 6 months depending on the region (outside the EU).

Please read the notes under "More information".

## Technical specifications

| Article number | **6AV6671-5AD00-0AX0**<br>Buffer battery Mobile Panel | **6ES7623-1AE01-5AA0**<br>Lithium battery SIMATIC HMI, C7 and S7 | **W79084-E1001-B2**<br>Lithium battery SIMATIC HMI and C7 | **6AV6671-5CL00-0AX1**<br>Main battery Mobile Panel IWLAN |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Rechargeable back-up battery Mobile Panel | Lithium battery | Lithium battery | Main battery Mobile Panel IWLAN |
| **Installation type/mounting** | | | | |
| Wall mounting/direct mounting | Yes; in HMI devices, battery compartment | Yes; in HMI devices, battery compartment | Yes; in HMI devices, battery compartment | Yes; in HMI devices, battery compartment |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 3.6 V | 3.6 V | 3.6 V | 7.2 V |
| **Accumulator** | | | | |
| Charge status display | No | No | No | No |
| Rechargeable | Yes | Yes | Yes | Yes |
| Capacity | 1.15 A·h | 1.6 A·h | 1.6 A·h | 5.1 A·h |
| Lithium-ion | Yes; 1/CP7/34/50 01 CGA | Yes; SL-361 | Yes; SL-361 | Yes; ICR18650-26J |
| Special design | Yes; flat | Yes; 2/3 AA | Yes; 2/3 AA | Yes; bent |

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## Technical specifications (continued)

| Article number | **6AV6671-5AD00-0AX0**<br>Buffer battery Mobile Panel | **6ES7623-1AE01-5AA0**<br>Lithium battery SIMATIC HMI, C7 and S7 | **W79084-E1001-B2**<br>Lithium battery SIMATIC HMI and C7 | **6AV6671-5CL00-0AX1**<br>Main battery Mobile Panel IWLAN |
|---|---|---|---|---|
| **Degree and class of protection** | | | | |
| IP (all-round) | | | | IP20 |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| cULus | Yes | | | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C; Don't charge below | 0 °C | 0 °C | 0 °C; Don't charge below |
| • max. | 55 °C | 55 °C | 55 °C | 45 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Plastic | | | | Yes; Enclosure, black |
| **Dimensions** | | | | |
| Width | 35 mm | | | 75 mm |
| Height | 50 mm | | | 78 mm |
| Thickness | 10 mm | | | 33 mm |
| Length | | 33 mm | 33 mm | |
| Diameter | | 14.7 mm | 14.7 nm | |
| **Weights** | | | | |
| Weight without packaging | 38 g | 14 g | 12 g | 320 g |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1; incl. 65 mm connecting cable | 1; Incl. 45 mm + 210 mm connecting cable | 1; incl. 220 mm connecting cable | 1; with ejector |
| **Other** | | | | |
| Merchandise | No; 1S1P CQA 103450A | Yes; SL-361 PGHK | Yes; SL2361 PGHK | No; 2S2P ICR18650-26J / 11273-02 |
| Manufacturer name | BMZ GmbH | Tadiran Batteries GmbH | Tadiran Batteries GmbH | BMZ GmbH |
| Manufacturer's address | Auf dem Stützelberg, 35745 Herborn, Germany | Industriestr. 22, 63654 Büdingen, Germany | Industriestr. 22, 63654 Büdingen, Germany | Auf dem Stützelberg, 35745 Herborn, Germany |
| Target devices | for Mobile Panel DP cabled, Mobile Panel PN cabled, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN | for TD17, OP17, OP25, OP27, OP35, OP37, TP27, TP37, OP/TP270, MP270, MP270B, MP370, C7-621, C7-623, C7-624, C7-626 and PG 7xx | For TD17, OP17, OP25, OP27, OP35, OP37, TP27, TP37, OP/TP270, MP270, MP270B, MP370 | for Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN, Mobile Panel 277 IWLAN V2, Mobile Panel 277F IWLAN V2, Mobile Panel 277F IWLAN (RFID tag) |
| Note: | Dispose of battery (lithium) properly; hazardous product! | Dispose of battery (lithium) properly; hazardous product! | Dispose of battery (lithium) properly; hazardous product! | Dispose of battery (lithium) properly; hazardous product! |

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## Ordering data

| | |
|---|---|
| **Rechargeable buffer battery for Mobile Panel for wired Mobile Panels** | **6AV6671-5AD00-0AX0** |
| **Main rechargeable battery for Mobile Panel IWLAN** | **6AV6671-5CL00-0AX1** |
| **Lithium battery for SIMATIC HMI, C7, S7 and PG**<br>including connecting cable (approx. 250 mm) and adapter cable | **6ES7623-1AE01-5AA0** |
| **Lithium battery for SIMATIC HMI and S7**<br>Spare part Incl. connecting cable 210 mm. | **W79084-E1001-B2** |
| **Lithium battery (button cell) for SIMATIC IPC227D/IPC277D**<br>Currently only as spare part in the EDN | **A5E30314053** |
| **Lithium battery (button cell) for SIMATIC IPC227E/IPC277E**<br>Currently only as spare part in the EDN | **A5E34345932** |
| **Lithium battery (button cell) for SIMATIC IPC427E, IPC477E**<br>Currently only as spare part in the EDN | **A5E34734290** |

## More information

Accumulators are shipped with less than 30% of their maximum charging capacity to minimize risks during transport.
Diverse certificates are required for transport and import in some regions. They can be downloaded from Industry Online Support/ Product Support.
Enter the "Article No." as the search term and select "Certificate" as the Entry type.

https://support.industry.siemens.com/cs/products

Before first use, accumulators should always be recharged; this also ensures the longest possible service life of the accumulators.

Disposal of waste batteries and old electrical and electronic devices:

The device must not be disposed of with household waste (Battery Law, WEEE Directive).
The waste bin symbol on the product, the batteries or the packaging means that the product and any batteries contained within it must not be disposed of with household waste.
You are obliged to dispose of the product at an appropriate disposal point.
You can find out more about disposing of batteries and old electrical and electronic devices from the authorities in your city or community, the responsible waste disposal company, or the manufacturer.

Notes:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

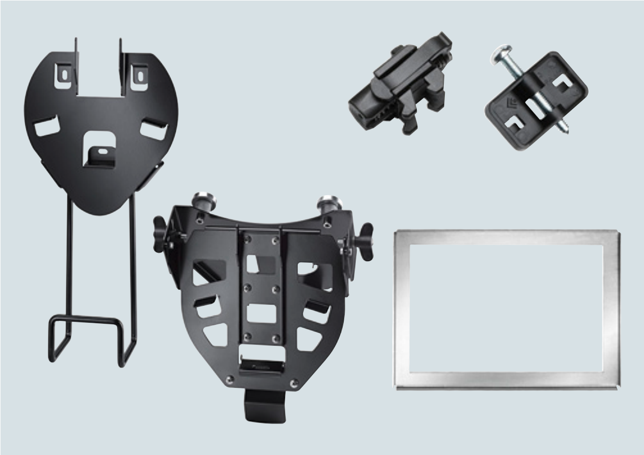
If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

## Overview



Depending on the device, various fixing elements are available for attaching the Panel.

- Memory card lock
- Wall brackets and fixing elements
- Mounting frame [1]
- Mounting clip
- Mounting bracket
- Installation enclosure

[1] The mounting frame for the USB HUB4 is contained in the service set (see "Service sets").

Mounting frames enable compliance with device-specific degrees of protection IP65, NEMA4x and NEMA12 if the thickness of the mounting plate is less than the minimum plate thickness specified in the operating instructions of the device. The mounting frames have been specially developed for thin plates.

***Fixing elements***

All parts required to install a SIMATIC device are listed here.

## Technical specifications

| Article number | **6AV2181-4DM10-0AX0**<br>Memory card lock 4" | **6AV2181-4XM00-0AX0**<br>Memory card lock 7 to 22" |
|---|---|---|
| **General information** | | |
| Product type designation | Memory card lock 4" | Memory card lock 7" ... 22" |
| **Installation type/mounting** | | |
| Wall mounting/direct mounting | Yes; Snap-on | Yes; Snap-on |
| **Degree and class of protection** | | |
| IP (at the front) | IP20 | IP20 |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C |
| **Relative humidity** | | |
| • Operation, max. | 90 % | 90 % |
| **Mechanics/material** | | |
| Material | | |
| • Plastic | Yes | Yes |
| **Dimensions** | | |
| Width | 25 mm | 45 mm |
| Height | 30 mm | 59 mm |
| Thickness | 10 mm | 12 mm |
| **Weights** | | |
| Weight without packaging | 4 g; Per unit | 6 g; Per unit |
| **Scope of supply** | | |
| Delivery quantity in pieces | 5 | 5 |
| **Other** | | |
| Merchandise | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Comfort Panel 4" | Comfort Panels 7" to 22" |

## **Technical specifications** (continued)

| Article number | **6AV6574-1AF04-4AA0**<br>Mobile Panels wall bracket, type 10 | **6AV2181-5AG80-0AX0**<br>Mobile Panels wall bracket, type 13 |
|---|---|---|
| **General information** | | |
| Product type designation | Wall-mounting bracket Mobile Panel, type 10 | Wall-mounting bracket |
| **Installation type/mounting** | | |
| Mounting in portrait format possible | Yes | Yes |
| Mounting in landscape format possible | No | No |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | No |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C |
| **Relative humidity** | | |
| • Operation, max. | 90 % | 90 % |
| **Mechanics/material** | | |
| Enclosure material (front) | | |
| • Sheet steel | Yes; Powder-coated | Yes; Powder-coated |
| **Dimensions** | | |
| Width | 200 mm | 230 mm |
| Height | 230 mm | 317 mm |
| Depth | 25 mm; Constructive | 125 mm |
| **Weights** | | |
| Weight without packaging | 550 g; Without cable holder | 1.01 kg |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1; Color: Black | 1 |
| **Other** | | |
| Merchandise | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Mobile Panel 170, Mobile Panel 177, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN V1 and V2, without mounting parts | KTP400F Mobile, KTP700 Mobile, KTP700F Mobile, KTP900 Mobile, KTP900F Mobile, TP1000F without mounting parts, including cable retainer |
| Note: | The trickle charge is only ensured with the 6AV6671-5CE00-0AX1 charging station. | The manuals of the target devices must always be observed. Specification of the target devices may differ after product changes. |

## Technical specifications (continued)

| Article number | 6AV6671-3CS00-0AX0<br>Mounting frame 8" Touch | 6AV6671-3CS01-0AX0<br>Mounting frame 8" Key | 6AV6671-8XS00-0AX0<br>Mounting frame 10" to 12" Touch devices |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Mounting frame 8" touch | Mounting frame 8" key | Mounting frame 10" ... 12" touch devices |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | No; No CE marking obligation |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | | | No |
| • ATEX Zone 22 | | | No |
| • ATEX as target device | | | No |
| • IECEx Zone 1 | | | No |
| • IECEx Zone 11 | | | No |
| • IECEx Zone 2 | | | No |
| • IECEx Zone 22 | | | No |
| • cULus Class I Zone 1 | | | No |
| • cULus Class I Zone 2, Division 2 | | | No |
| • cULus Class II Division 2 | | | No |
| • FM Class I Division 2 | | | No |
| • FM Class II Division 2 | | | No |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | | | No |
| • American Bureau of Shipping (ABS) | | | No |
| • Bureau Veritas (BV) | | | No |
| • Det Norske Veritas (DNV) | | | No |
| • Korean Register of Shipping (KRS) | | | No |
| • Lloyds Register of Shipping (LRS) | | | No |
| • Nippon Kaiji Kyokai (Class NK) | | | No |
| • Polski Rejestr Statkow (PRS) | | | No |
| • Chinese Classification Society (CCS) | | | No |
| • Marine approval as target device | | | No |
| **Ambient conditions** | | | |
| Suited for indoor use | | | Yes |
| Suited for outdoor use | | | No |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | |
| Material | | | |
| • Sheet steel | | | Yes; Powder-coated |
| Enclosure material (front) | | | |
| • Sheet steel | Yes | Yes | Yes; Powder-coated |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1 | 1 | 1; Adapter frame 10" |
| **Other** | | | |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For MP277 8" touch | For MP277 8" key | For KTP1000 Basic, MP277 10" touch, MP377 12" touch, Thin Client 10" |

## Technical specifications (continued)

| Article number | **6AV6671-8XK00-0AX2**<br>Plastic mounting clip | **6AV6671-8XK00-0AX1**<br>Spring mounting clip | **6AV6671-8XK00-0AX0**<br>Aluminum mounting clip | **6AV6671-8XK00-0AX3**<br>Steel mounting clip | **6AV6671-8XK00-0AX4**<br>Steel mounting clamp |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | Mounting clip, plastic | Mounting clip, spring | Mounting clip, aluminum | Mounting clip, steel | Mounting bracket, steel |
| **Installation type/mounting** | | | | | |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | |
| IP (all-round) | none | | | none | none |
| **Standards, approvals, certificates** | | | | | |
| CE mark | | | No; No CE marking obligation | | |
| **Use in hazardous areas** | | | | | |
| • ATEX Zone 2 | | | Yes; Always comply with the operating instructions of the target device. | | |
| • ATEX Zone 22 | | | Yes; Always comply with the operating instructions of the target device. | | |
| • IECEx Zone 2 | | | Yes; Always comply with the operating instructions of the target device. | | |
| • IECEx Zone 22 | | | Yes; Always comply with the operating instructions of the target device. | | |
| **Ambient conditions** | | | | | |
| Suited for indoor use | | | Yes | | |
| Suited for outdoor use | | | Yes; possible under certain conditions | | |
| **Ambient temperature during operation** | | | | | |
| • min. | -40 °C | -40 °C | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | | | |
| Material | | | | | |
| • Sheet steel | | | Yes | | |
| Enclosure material (front) | | | | | |
| • Plastic | Yes | Yes; For 1 ... 4 mm sheet thickness | | | |
| • Sheet steel | | | | Yes | Yes |
| Screw type | | | | | |
| • 4.5 V | Yes; Original partially Phillips screw | | Yes | Yes | Yes |
| **Torques/forces** | | | | | |
| • Tightening torque, min. | 0.18 N·m; If there is not enough torque, the degree of protection on the front may not be guaranteed | | | 0.18 N·m; If there is not enough torque, the degree of protection on the front may not be guaranteed | 0.18 N·m; If there is not enough torque, the degree of protection on the front may not be guaranteed |
| • Tightening torque, max. | 0.2 N·m | | | 0.2 N·m | 0.2 N·m |
| • Tightening torque, recommended | 0.2 N·m;<br>Higher torques may damage the product | | | 0.2 N·m;<br>Higher torques may damage the product | 0.2 N·m;<br>Higher torques may damage the product |

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## **Technical specifications** (continued)

| Article number | **6AV6671-8XK00-0AX2**<br>Plastic mounting clip | **6AV6671-8XK00-0AX1**<br>Spring mounting clip | **6AV6671-8XK00-0AX0**<br>Aluminum mounting clip | **6AV6671-8XK00-0AX3**<br>Steel mounting clip | **6AV6671-8XK00-0AX4**<br>Steel mounting clamp |
|---|---|---|---|---|---|
| **Dimensions** | | | | | |
| Width | 30 mm | 20 mm | 15 mm | 20 mm | 142 mm |
| Height | 17 mm; Without screw | 35 mm | 21 mm; Without screw | 15 mm; Without screw | 18 mm; Without screw |
| Depth | | | 15 mm | | |
| Thickness | 8 mm | 20 mm | | 8 mm | 8 mm |
| **Weights** | | | | | |
| Weight without packaging | 4 g; Per unit | 8 g; Per unit | 5 g; Per unit | 4 g; Per unit | 30 g; Per unit |
| **Scope of supply** | | | | | |
| Delivery quantity in pieces | 20; Units per set | 20; Spring-loaded terminals | 20; Units per set | 20 | 10 |
| **Other** | | | | | |
| Merchandise | No | No | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for TD17, OP7, OP17, OP73, OP77A/B, TP/OP17x except TP177 4", Push Button Panel, Key Panel, empty front design, KP300 Basic mono, Basic 2nd, KTP400 Comfort, USB hub, sheet thickness 2 ... 6 mm | TP177-4", TP/OP 277-6", MP177-6, MP277-10" T, MP277-8", MP277-8"T, MP277-10"K, MP377 12-19", TC 10", TC 15", KTP400 Basic mono, KTP600, KTP1000, KTP1500, KP700 Comfort, TP700 Comfort, KP900 Comfort, TP900 Comfort, KP1200 Comfort, TP1200 Comfort and IPC 277D 7, 9, 12" | TP177-4", TP/OP277-6", MP177-6, MP277-10"T, MP277-8", MP277-8"T, MP277-10"K, MP377 12"-19", TC 10", TC 15", KTP400 Basic mono, KTP600 Basic, KTP1000 Basic, TP1500 Basic, KP700 Comfort, TP700 Comfort, KP900 Comfort, TP900 Comfort, KP1200 Comfort, TP1200 Comfort and IPC277D 7", 9", 12" | 15", 19" and 22" widescreen - Comfort Panels, IPCs, Flat Panels and Thin Clients. Plate thicknesses up to 6 mm | 15", 19" and 22" widescreen - Comfort Panels, IPCs, Flat Panels and Thin Clients, except SCD1900 19" widescreen. Plate thicknesses up to 6 mm |
| Note: | | | | Function-compatible to article number 6AV6671-8XK00-0AX4 | |

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## Technical specifications (continued)

| Article number | **6AV6881-6AD10-0AA0**<br>Steel mounting clip, type 2 | **6AV2185-8MA00-0AA0**<br>Aluminum diecast mounting clip | **6AV6671-6AP00-0AX0**<br>Mounting clip Thin Client | **6AV6671-6AP00-0AX1**<br>Spring mounting clip Thin Client |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Mounting clip, steel, type 2 | Mounting clip, die-cast aluminum | Mounting clip, aluminum | Mounting clip, spring |
| **Installation type/mounting** | | | | |
| Mounting in portrait format possible | Yes | | Yes | Yes |
| Mounting in landscape format possible | Yes | | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | No; No CE marking obligation | | | |
| **Use in hazardous areas** | | | | |
| • ATEX Zone 2 | Yes; Always comply with the operating instructions of the target device. | | | |
| • ATEX Zone 22 | Yes; Always comply with the operating instructions of the target device. | | | |
| • IECEx Zone 2 | Yes; Always comply with the operating instructions of the target device. | | | |
| • IECEx Zone 22 | Yes; Always comply with the operating instructions of the target device. | | | |
| **Ambient conditions** | | | | |
| Suited for indoor use | Yes | | | |
| Suited for outdoor use | Yes; possible under certain conditions | | | |
| **Ambient temperature during operation** | | | | |
| • min. | -40 °C | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Plastic | Yes; Interlock | | | |
| • Sheet steel | Yes | | | |
| Enclosure material (front) | | | | |
| • Plastic | | | | Yes; For 1 ... 4 mm sheet thickness |
| • Sheet steel | | | Yes | |
| • Aluminum casting | | Yes | | |
| Screw type | M4x30 round head screw | | | |
| • Cross-tip | Yes | | | |
| • 4.5 V | Yes | | Yes | |
| • Hexagon socket | | Yes | | |
| **Dimensions** | | | | |
| Width | 19 mm | 12 mm | 15 mm | 20 mm |
| Height | 11.3 mm; Without screw | 18.5 mm; Without screw | 20 mm; Without screw | 35 mm |
| Depth | 15 mm | | | |
| Thickness | | 14 mm | 15 mm | 20 mm |
| **Weights** | | | | |
| Weight without packaging | 8 g | 0.14 kg | 4 g; Per unit | 8 g; Per unit |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 20; Units per set | 20 | 6; Incl. screw | 6; Spring-loaded terminals |
| **Other** | | | | |
| Merchandise | No | Yes | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Breslauer Strasse 5, 90766 Fürth, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Panel and IPC from 2019 | Comfort Panels INOX, ITC INOX, IFP INOX | SIMATIC Thin Client | SIMATIC Thin Client |
| Note: | | | | Function-compatible to article number 6AV6671-8XK00-0AX1 |

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## Technical specifications (continued)

| Article number | **6AV6881-0AD56-0AA0**<br>Flange mount adapter VESA 100/75 |
|---|---|
| **General information** | |
| Product type designation | VESA 100/75 flange adapter |
| **Installation type/mounting** | |
| Mounting | VESA 100 mm / 75 mm with M6 thread |
| Mounting type | Support arm with VESA 100 mm or 75 mm |
| **Degree and class of protection** | |
| IP (at the front) | IP20 (depending on mounting) |
| **Ambient conditions** | |
| Suited for indoor use | Yes |
| Suited for outdoor use | No |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 55 °C |
| **Relative humidity** | |
| • Operation, max. | 90 % |
| • Condensation permissible | No |
| **Mechanics/material** | |
| Material | steel |
| • Aluminum | No; Powder-coated |
| **Dimensions** | |
| Width | 135 mm |
| Height | 120 mm |
| Depth | 67.5 mm |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; VESA round tube adapter 100/75 suitable for PRO devices, max. IP20 attainable |
| Components included | Without additional accessories |
| **Other** | |
| Merchandise | Yes; VESA 100/75 PRO adapter |
| Manufacturer name | QUERUM Maschinenbau GmbH |
| Manufacturer's address | Gewerbegebiet Ost 27,<br>92353 Postbauer-Heng, Germany |
| Target devices | Not suitable for 19" 4:3 devices |
| Note: | Max. load 35 kg, for expandable support arm mounting |

| Article number | **6AV6881-2AM12-1AA0**<br>Switch housing KP8F | **6AV6881-2AM12-2AA0**<br>Switch housing KP8 |
|---|---|---|
| **General information** | | |
| Product type designation | Fixing element | |
| **Control elements** | | |
| Version of actuating element | 1x emergency stop (1 NC contact / 1 NO contact) | Without, with 2x 22.5 mm blanking plugs |
| Operating principle of the actuating element | Latching, rotate to unlatch | |
| With parameterizable keys | Yes; Retrofittable with KP8F (not included in the scope of supply) | Yes; Retrofittable with KP8 or KP8F (not included in the scope of supply) |
| Contact configuration | 1 NC contact, 1 NO contact | optionally retrofittable with switch, pushbutton, keyswitch, etc. |
| **Installation type/mounting** | | |
| Mounting | For horizontal and vertical mounting | |
| Mounting type | Backplane mounting | |
| Mounting in portrait format possible | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes; IP65 fully-enclosed | |
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | No | No |
| **Ambient temperature during operation** | | |
| • min. | 0 °C; Operating temperature KP8F must always be maintained | 0 °C; Operating temperature KP8 or KP8F must always be maintained |
| • max. | 40 °C; Operating temperature KP8F must always be maintained | 40 °C; Operating temperature KP8 or KP8F must always be maintained |
| **Relative humidity** | | |
| • Operation, max. | 90 % | 90 % |
| • Condensation permissible | No | No |
| **Mechanics/material** | | |
| Material | aluminum | aluminum |
| • Aluminum | Yes; Powder-coated | |
| **Dimensions** | | |
| Width | 259 mm | 259 mm |
| Height | 128 mm | 128 mm |
| Depth | 90 mm | 90 mm |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1; Bopla #115234 aluminum enclosure | |
| Components included | 1x Icotek cable entry KEL-ER B4 incl. various grommets | |
| **Other** | | |
| Merchandise | Yes | Yes |
| Manufacturer name | Wittwer Industrielle Elektronik | |
| Manufacturer's address | Hembacher Straße 4, 90592 Schwarzenbruck-Lindelburg, Germany | |
| Target devices | Suitable for the installation of KP8, KP8F, do not exceed the maximum operating temperature of the KP! | |
| Note: | IP65 can only be attained if a key panel and a cable entry are properly installed. | |

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## Ordering data

|  | Article No. |
|---|---|
| Mounts and interlocks |  |
| **Memory card lock** |  |
| • 4" | 6AV2181-4DM10-0AX0 |
| • 7" … 22" | 6AV2181-4XM00-0AX0 |
| **Wall bracket for Mobile Panels** |  |
| • Type 10, for Mobile Panel and Mobile Client900, without cable storage | 6AV6574-1AF04-4AA0 |
| • Type 13, for KTP Mobile Panels | 6AV2181-5AG80-0AX0 |
| For IP65 installation of Panels in thin-walled mounting plates |  |
| **Mounting frame** |  |
| • 8" Touch | 6AV6671-3CS00-0AX0 |
| • 8" Key | 6AV6671-3CS01-0AX0 |
| • 10"/12" Touch | 6AV6671-8XS00-0AX0 |
| Mounting clip/bracket for practical mounting of SIMATIC Panels, Thin Clients and IPCs |  |
| **Mounting clip** |  |
| • Aluminum | 6AV6671-8XK00-0AX0 |
| • Spring | 6AV6671-8XK00-0AX1 |
| • Plastic | 6AV6671-8XK00-0AX2 |
| • Sheet steel | 6AV6671-8XK00-0AX3 |
| • Captive sheet steel | 6AV6881-6AD10-0AA0 |
| • Die-cast aluminum | 6AV2185-8MA00-0AA0 |
| • Thin Client | 6AV6671-6AP00-0AX0 |
| • Spring Thin Client | 6AV6671-6AP00-0AX1 |
| **Mounting bracket steel** | 6AV6671-8XK00-0AX4 |
| **Keyboard lock**<br>Locking bolt for PRO keyboards and and keyboard trays for fixing the tray tilt adjustment, hardened V2A | 6AV6881-4AW41-4AA0 |
| **VESA 100/75 in IP20 / ST37 flange mount adapter**<br>Can be used with all PRO devices with matching tube connector for support arm systems. ST37 partly RAL 9006 powder coated | 6AV6881-0AD56-0AA0 |
| **VESA 100/75 in IP20 / V2A flange mount adapter**<br>Can be used with all PRO devices with matching tube connector for support arm systems. As above but 100% from V2A | 6AV6881-0AD56-2CA0 |
| **Adapter frame**<br>Adapter frame widescreen 19" rack mounting INOX for 19" widescreen Unified Panels and IPC WFP2.3 | 6AV6881-6UD42-0AA0 |

|  | Article No. |
|---|---|
| **Installation enclosure for KP8 and KP8F:**<br>Prefabricated IP65 installation enclosure for KP8 and KP8F, including 2 x 22.5 mm cutouts for long stroke keys or switches.<br>Supplied with blanking covers.<br>Max. of 4 cables can be connected in IP65, cable sleeves enclosed.<br>The enclosure can be permanently mounted or used as a portable device.<br>The Key Panel is not included in the scope of delivery. | 6AV6881-2AM12-2AA0 |
| **Installation enclosure KP8F**<br>Prefabricated IP65 installation enclosure KP8F, including 1x 22.5 mm cutout.<br>Supplied with an EMERGENCY OFF button<br>Max. of 4 cables can be connected in IP65, cable sleeves enclosed.<br>The enclosure can be permanently mounted or used as a portable device.<br>The Key Panel is not included in the scope of delivery. | 6AV6881-2AM12-1AA0 |

## *More information*

Note:

3D data and technical drawings for trade goods are only available for download in the SIOS delivery release if the manufacturer has granted permission. Integration into the Siemens 3D download area is unfortunately not possible.
For this reason, it is also not possible to provide a 3D (Step) file for every accessory.
The responsibility for trade good files always lies with the manufacturer.
The manufacturer is listed at the end of the technical specifications for each product.

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

## Overview

They enable you to create transparent films on your own printer.

Perforated labeling strips are available for some classic panels. In this case, make sure that a suitable printer is used.

The thickness of the films should be between 100 and 125 µm.

- Labeling strips
- Front film
- Labeling set
- Protective sleeve

Note:

Protective front films which are specially designed for holding labeling strips are available for Mobile Panel 2nd Generation. The labeling strips can be printed on standard film and attached to the front with adhesive pads. The protective film is then adhered evenly over the Mobile front.

### *Labeling strips and printable films*

Labeling strips enable keys and pushbuttons to be labeled. Print templates for the Panels and IPCs are available for downloading free of charge (in SIOS entry ID: 11274631).

## Technical specifications

| Article number | **6AV6574-1AB00-2BA0**<br>Labeling strips MP 37x Key | **6ES7272-1BF00-7AA0**<br>TD100C front film, blank | **6AV6671-0AP00-0AX0**<br>TD400C front film, blank | **6AV6671-5BF00-0AX0**<br>Labeling set Mobile Panel 277 | **6AV6574-1AB04-4AA0**<br>Protective pouch for labeling strips |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | Labeling strip MP 37x key | Front membrane TD100C, blank | Front membrane TD400C, blank | Labeling set Mobile Panel 277 | Protective pouch labeling strips |
| **Installation type/mounting** | | | | | |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | |
| CE mark | | Yes | Yes | Yes | |
| **Ambient conditions** | | | | | |
| **Ambient temperature during operation** | | | | | |
| • min. | -40 °C | -40 °C | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | | | |
| Enclosure material (front) | | | | | |
| • Plastic | Yes; DIN A4 perforated sheets | | | | |
| **Dimensions** | | | | | |
| Width | 210 mm | 210 mm | 210 mm | 210 mm | 170 mm; Approximate dimension |
| Height | 297 mm | 297 mm | 297 mm | 297 mm | 115 mm; Approximate dimension |
| Thickness | 0.13 mm;<br>Max. tolerance ± 0.03 mm | | | | |
| Width of the housing front | | | 163 mm | | |
| Height of housing front | | | 91 mm | | |
| **Weights** | | | | | |
| Weight without packaging | 45 g | | | | |

## Labeling strips

### Technical specifications (continued)

| Article number | **6AV6574-1AB00-2BA0**<br>Labeling strips MP 37x Key | **6ES7272-1BF00-7AA0**<br>TD100C front film, blank | **6AV6671-0AP00-0AX0**<br>TD400C front film, blank | **6AV6671-5BF00-0AX0**<br>Labeling set Mobile Panel 277 | **6AV6574-1AB04-4AA0**<br>Protective pouch for labeling strips |
|---|---|---|---|---|---|
| **Scope of supply** | | | | | |
| Delivery quantity in pieces | 1; Contains two sets | 10 | 10 | 2; 2 sheets with 3 labeling strips each, incl. corner seals, O-ring, replacement screw, decorative film for corner seal | 5 |
| • Number of films per sheet | | 6 | 2 | 6 | |
| • Parts per unit | 2; one set comprises a set of vertical and a set of horizontal labeling strips | 60 | 20 | 6 | 1 |
| **Other** | | | | | |
| printable with laser printer | Yes; Test printer suitability beforehand. No liability for printer damage | Yes | Yes | Yes | No |
| Merchandise | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For MP370 key, MP377 key | For TD100C | For TD400C | For Mobile Panel 277 | For Mobile Panel 170, Mobile Panel 177 |
| Note: | Transparent film, keys pre-printed in gray, LED area free | | | | |

## Technical specifications (continued)

| Article number | **6AV2181-5DJ10-0AX0**<br>Labeling set 4" wide, type 13 | **6AV2181-5GJ10-0AX0**<br>Labeling set 7" wide, type 13 | **6AV2181-5JJ10-0AX0**<br>Labeling set 9" wide, type 13 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Labeling set 4" widescreen | Labeling set 7" widescreen | Labeling set 9" widescreen |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes; Resistant to alcohol, dilute acids, diluted alkaline solutions, hydrocarbons, household cleaning agents | Yes; Resistant to alcohol, dilute acids, diluted alkaline solutions, hydrocarbons, household cleaning agents | Yes; Resistant to alcohol, dilute acids, diluted alkaline solutions, hydrocarbons, household cleaning agents |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | |
| Material | | | |
| • Plastic | Yes; Autoflex EBA 130 | Yes; Autoflex EBA 130 | Yes; Autoflex EBA 130 |
| Enclosure material (front) | | | |
| • Plastic | Yes; Film properties: Anti-glare 55 %, hardness 3H | Yes; Film properties: Anti-glare 55 %, hardness 3H | Yes; Film properties: Anti-glare 55 %, hardness 3H |
| **Dimensions** | | | |
| Width | 168 mm | 224 mm | 283 mm |
| Height | 120 mm | 149 mm | 178 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.125 mm |
| **Weights** | | | |
| Weight without packaging | 60 g | 80 g | 100 g |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 5 | 5 | 5 |
| Components included | including 20 double-sided adhesive dots | including 20 double-sided adhesive dots | including 20 double-sided adhesive dots |
| **Other** | | | |
| printable with laser printer | No | No | No |
| Merchandise | Yes | Yes | Yes |
| Manufacturer name | Kolb-Siebdruck GmbH & Co. KG | Kolb-Siebdruck GmbH & Co. KG | Kolb-Siebdruck GmbH & Co. KG |
| Manufacturer's address | Espenstraße 5, 95632 Wunsiedel, Germany | Espenstraße 5, 95632 Wunsiedel, Germany | Espenstraße 5, 95632 Wunsiedel, Germany |
| Target devices | KTP400F Mobile | KTP700 Mobile, KTP700F Mobile | KTP900 Mobile, KTP900F Mobile |
| Note: | Labeling strip SIOS entry No. 11274631 | Labeling strip SIOS entry No. 11274631 | Labeling strip SIOS entry No. 11274631 |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **Labeling strips**<br>for MP 377 Key | **6AV6574-1AB00-2BA0** |
| **Front film TD100C**<br>blank | **6ES7272-1BF00-7AA0** |
| **Front film TD400C**<br>blank | **6AV6671-0AP00-0AX0** |
| **Labeling set**<br>for Mobile Panel 277 | **6AV6671-5BF00-0AX0** |
| **Widescreen labeling set** | |
| • 4" widescreen for KTP400F Mobile 4" | **6AV2181-5DJ10-0AX0** |
| • 7" widescreen for KTP700 Mobile, KTP700F Mobile | **6AV2181-5GJ10-0AX0** |
| • 9" widescreen for KTP900 Mobile, KTP900F Mobile | **6AV2181-5JJ10-0AX0** |
| **Protective sleeve**<br>for Mobile Panel 170/177 | **6AV6574-1AB04-4AA0** |

## More information

Notice:

The labeling strips, blank films, and protective films should be printed at a printing works. Further details on printing the films can be found in the respective Technical Specifications.

Templates can be used to create labeling strips for SIMATIC HMI devices. Alternatively, a tool for the creation of labeling strips is available.

Download templates from:

http://support.automation.siemens.com/WW/view/en/11274631
and

Label Creator Download from:

http://support.automation.siemens.com/WW/view/en/61507590

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com/

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## Overview

HMI accessories, mouse

### *Input devices*

Input devices are all those devices via which information can be supplied to a computer or panel. This enables interaction with a program.

SIMATIC HMI input devices are specially designed for operation on panels and industrial PCs in industrial environments. Trade goods, which are identified as such in the technical specifications, have been approved by the manufacturer for typical office applications. Siemens does not always carry out in-depth industrial testing on trade goods.

The following input devices are available for use with IPCs and panels:

- Desktop keyboards
- Built-in and mounted keyboards
- Removable keyboard
- USB mouse
- USB cables
- RFID components for user identification

RFID components make it possible to log on to a suitable HMI panel or IPC using a chip card.

The RFID reader is connected to the panel via USB. Installation is described in detail in the FAQs:

https://support.industry.siemens.com/cs/ww/en/view/998081

Suitable RFID system card types:

- ISO 15693, dimensions: 85 x 54 x 0.8 mm (L x W x H)
- ISO 15693, dimensions: 50 x 3.5 mm (D x H) disc
- MOBY E (MIFARE, ISO 14443), dimensions: 85 x 54 x 0.8 mm (L x W x H)
- MOBY E (MIFARE, ISO 14443), dimensions: 85 x 54 x 2.5 mm (L x W x H)

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## Technical specifications

| Article number | **6AV2181-8AT00-0AX0**<br>USB 2.0 mouse |
|---|---|
| **General information** | |
| Product type designation | USB mouse |
| **Control elements** | |
| With parameterizable keys | No; 5 including scroll wheel |
| **Input device** | |
| • Scroll wheel | Yes; Vertical and horizontal scrolling |
| • Movement tracking | Microsoft - proprietary BlueTrack™ Technology |
| • Movement resolution | 1 000 dpi; 8 000 images/second |
| • Speed | 1 829 mm/s; 1.829 m/s |
| **Connection type** | |
| • USB | Yes; USB 2.0 type A |
| **Frame size/design** | |
| • Standard | Yes; For industrial applications |
| **Supply voltage** | |
| Rated value (DC) | 5 V; via USB |
| **Input current** | |
| Current consumption (rated value) | 100 mA; USB-compatible |
| **Battery** | |
| Battery-operated | No; Without battery |
| **Interfaces** | |
| Number of USB interfaces | 1 |
| **Standards, approvals, certificates** | |
| CE mark | Yes; WEEE (European Union) available |
| cULus | Yes; ICES-003 (Canada) available |
| RCM (formerly C-TICK) | No; EIP / EPUP available |
| **Marine approval** | |
| • Nippon Kaiji Kyokai (Class NK) | No; Only VCCI available |

| Article number | **6AV2181-8AT00-0AX0**<br>USB 2.0 mouse |
|---|---|
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 40 °C |
| **Relative humidity** | |
| • Operation, max. | 80 %; 65 % for storage |
| • Condensation permissible | No |
| **Runs under operating system** | |
| • Windows CE | Yes; Not all functions are available |
| • Windows Vista | Yes |
| • Windows XP | Yes; SP2 and higher |
| • Windows 7 | Yes |
| • Windows 8 | Yes |
| **Cables** | |
| Cable length | 1 930 mm |
| smallest bending radius | 10 mm |
| Color of cable sheath | |
| • Gray | Yes |
| **Mechanics/material** | |
| Material | |
| • Plastic | Yes; Anthracite |
| **Dimensions** | |
| Width | 67.9 mm |
| Height | 42.3 mm |
| Depth | 116 mm |
| **Weights** | |
| Weight without packaging | 131 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1 |
| **Other** | |
| Merchandise | Yes; 4EH-0002 |
| Manufacturer name | Microsoft Deutschland GmbH |
| Manufacturer's address | Walter-Gropius-Straße 5, 80807 Munich, Germany |
| Target devices | Suitable for HMI Panels and IPCs with USB interface |

## Technical specifications (continued)

| Article number | **6AV6881-0AU14-0AA0**<br>USB keyboard GER, TKL-105 | **6AV6881-0AU14-1AA0**<br>USB keyboard INT, TKL-105 |
|---|---|---|
| **General information** | | |
| Product type designation | USB keyboard GERMAN | USB keyboard international US |
| **Control elements** | | |
| Version of actuating element | Long-stroke key with 4 mm contact travel | Long-stroke key with 4 mm contact travel |
| Operating principle of the actuating element | Keyboard with long-stroke keys with membrane switching contacts | Keyboard with long-stroke keys with membrane switching contacts |
| **Input device** | | |
| • Scroll wheel | No | No |
| • Movement tracking | none | none |
| **Keyboard fonts** | | |
| • Design | Keyboard with long-stroke keys | Keyboard with long-stroke keys |
| • Keyboard assignment | 105 keys, German layout | 105 keys, international US layout |
| • Color of the buttons | Black | Black |
| • Color of the key inscription | White | White |
| • Key illumination | No | No |
| • Function keys | Yes | Yes |
| - Number of function keys | 12 | 12 |
| - Number of function keys with LEDs | 0 | 0 |
| - Programmable | No | No |
| • Number pad | Yes; Free-standing | Yes; Free-standing |
| • Status LED displays | Yes; Num, Caps and Scroll | Yes; Num, Caps and Scroll |
| - for number pad | Yes | Yes |
| - for Shift keys | Yes | Yes |
| **Connection type** | | |
| • USB | Yes; USB 2.0 type A | Yes; USB 2.0 type A |
| • PS/2 | No | No |
| • Cable length | 0 m; See cable length | 0 m; See cable length |
| **Frame size/design** | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications |
| **Installation type/mounting** | | |
| Mounting | Desktop | Desktop |
| Mounting type | none | none |
| **Supply voltage** | | |
| Rated value (DC) | 5 V; via USB | 5 V; via USB |
| **Battery** | | |
| Battery-operated | No; maintenance-free | No; maintenance-free |
| **Interfaces** | | |
| Number of USB interfaces | 1; USB 2.0 | 1; USB 2.0 |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes; IP68 all-round and dishwasher safe | Yes; IP68 all-round and dishwasher safe |
| IP (at the front) | USB connector without degree of protection | USB connector without degree of protection |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| cULus | Yes; cUL | Yes; cUL |

## Technical specifications (continued)

| Article number | **6AV6881-0AU14-0AA0**<br>USB keyboard GER, TKL-105 | **6AV6881-0AU14-1AA0**<br>USB keyboard INT, TKL-105 |
|---|---|---|
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | No; possible under certain conditions | No; possible under certain conditions |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 70 °C | 70 °C |
| **Relative humidity** | | |
| • Operation, max. | 80 %; no condensation | 80 %; no condensation |
| • Condensation permissible | No | No |
| **Runs under operating system** | | |
| • Windows CE | Yes | Yes |
| • Windows Vista | Yes | Yes |
| • Windows XP | Yes | Yes |
| • Windows 7 | Yes | Yes |
| • Windows 8 | Yes | Yes |
| • Windows 10 | Yes | Yes |
| **Cables** | | |
| Cable length | 1.5 m; USB | 1.5 m; USB |
| **Mechanics/material** | | |
| Material | | |
| • Plastic | Yes; Black | Yes; Black |
| Enclosure material (front) | | |
| • Plastic | Yes; ABS with antimicrobial coating | Yes; ABS with antimicrobial coating |
| Enclosure color (front) | Black | Black |
| Enclosure color (rear) | Black | Black |
| **Torques/forces** | | |
| • Breakdown torque | 0.53 N·m; Switching force buttons | 0.53 N·m; Switching force buttons |
| **Service life** | | |
| • Number of operating cycles, keys | 10 000 000; Operations (minimum) | 10 000 000; Operations (minimum) |
| **Dimensions** | | |
| Width | 459 mm | 459 mm |
| Height | 35 mm | 35 mm |
| Depth | 174 mm | 174 mm |
| **Weights** | | |
| Weight without packaging | 800 g | 800 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1 | 1 |
| **Other** | | |
| printable with laser printer | No; Layout change possible, one-off costs around € 2 000 | No; Layout change possible, one-off costs around € 2 000 |
| Merchandise | Yes; GETT TKL-105 | Yes; GETT TKL-105 |
| Manufacturer name | GETT Gerätetechnik GmbH | GETT Gerätetechnik GmbH |
| Manufacturer's address | Mittlerer Ring 1, 08233 Treuen (Vogtland), Germany | Mittlerer Ring 1, 08233 Treuen (Vogtland), Germany |
| Target devices | For SIMATIC HMI devices and IPCs with the appropriate slot | For SIMATIC HMI devices and IPCs with the appropriate slot |
| Note: | Corresponds to KL21203 | Corresponds to KL24603 |

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## **Technical specifications** (continued)

| Article number | **6AV7674-1NE00-0AA0**<br>USB keyboard INT for 16:9 PRO devices |
|---|---|
| **General information** | |
| Product type designation | Stainless steel keyboard |
| **Keyboard fonts** | |
| • Design | Keyboard with short-stroke keys |
| • Keyboard assignment | English |
| • Color of the buttons | Stainless steel |
| • Color of the key inscription | Black |
| • Key illumination | No |
| • Function keys | |
| - Number of function keys | 12 |
| • Number pad | Yes; Free-standing |
| • Status LED displays | Yes; Num, Caps and Scroll |
| - for number pad | Yes |
| - for Shift keys | Yes |
| **Connection type** | |
| • USB | Yes; Type A |
| • PS/2 | No |
| • Cable length | 1.5 m; Typical |
| **Frame size/design** | |
| • Standard | Yes; For industrial applications |
| • Ergonomic | Yes; 90° adjustable / tiltable |
| **Ergonomics** | |
| • Trackball rest | No |
| • Adjustable height | Yes; By adjusting inclination angle 0° to 90° |
| **Installation type/mounting** | |
| Mounting | Max. load bearing capacity of 2 kg |
| Mounting type | Suitable for PRO devices |
| maximum permissible angle of inclination without external ventilation | 90°; Between 0° and 90° in steps of 15° |
| **Supply voltage** | |
| Type of supply voltage | via USB |
| **Input current** | |
| Current consumption (rated value) | 100 mA; Typical |
| **Degree and class of protection** | |
| IP65 (all-round) | Yes |
| Splashproof | Yes |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 45 °C |
| **Relative humidity** | |
| • Operation, max. | 80 %; no condensation |
| • Condensation permissible | No; Condensation not permissible |
| **Runs under operating system** | |
| • Windows CE | Yes |
| • Windows Vista | Yes |
| • Windows XP | Yes |
| • Windows 7 | Yes |
| • Windows 8 | Yes |
| **Mechanics/material** | |
| Material | |
| • Aluminum | Yes; Powder-coated, RAL 9006 |
| • Stainless steel | Yes; Keyboard itself |
| **Service life** | |
| • Number of operating cycles, keys | 10 000 000; Operations (minimum) |

| Article number | **6AV7674-1NE00-0AA0**<br>USB keyboard INT for 16:9 PRO devices |
|---|---|
| **Dimensions** | |
| Width | 481 mm |
| Height | 20 mm |
| Depth | 171.6 mm |
| **Weights** | |
| Weight without packaging | 3 700 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; With support arm bracket |
| Components included | a basic adapter is required for mounting, this must be ordered separately |
| **Other** | |
| Merchandise | Yes; Sasse no. 1580.9906433 |
| Manufacturer name | Sasse Elektronik GmbH |
| Target devices | Merchandise suitable for 16:9 PRO devices |

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## Technical specifications (continued)

| Article number | **6AV7674-0NE01-0AA0**<br>Shelf for 4:3 PRO devices | **6AV7674-1NE01-0AA0**<br>Shelf for 16:9 PRO devices |
|---|---|---|
| **General information** | | |
| Product type designation | Tray incl. 2x USB | Tray incl. 2x USB |
| **Connection type** | | |
| • USB | Yes; USB 2.0 | Yes; USB 2.0 |
| • PS/2 | No | No |
| • Cable length | 500 mm; Typical | 500 mm; Typical |
| **Frame size/design** | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications |
| • Ergonomic | Yes; 90° adjustable / tiltable | Yes; 90° adjustable / tiltable |
| **Ergonomics** | | |
| • Trackball rest | No | No |
| • Adjustable height | Yes; By adjusting inclination angle 0° to 90° | Yes; By adjusting inclination angle 0° to 90° |
| **Installation type/mounting** | | |
| Mounting | Max. load bearing capacity of 2 kg | Max. load bearing capacity of 2 kg |
| Mounting type | Suitable for PRO devices | Suitable for PRO devices |
| maximum permissible angle of inclination without external ventilation | 90°; Between 0° and 90° in steps of 15° | 90°; Between 0° and 90° in steps of 15° |
| **Interfaces** | | |
| Number of USB interfaces | 2; USB 2.0 | 2; USB 2.0 |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes; IP65 fully-enclosed (when protective cover is closed) | |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 45 °C | 45 °C |
| **Relative humidity** | | |
| • Operation, max. | 80 %; no condensation | 80 %; no condensation |
| • Condensation permissible | No; Condensation not permissible | No; Condensation not permissible |
| **Mechanics/material** | | |
| Material | | |
| • Aluminum | Yes; Powder-coated, RAL 9023 | Yes; Powder-coated, RAL 9006 |
| **Dimensions** | | |
| Width | 500 mm | 500 mm |
| Height | 64 mm | 64 mm |
| Depth | 200 mm | 200 mm |
| **Weights** | | |
| Weight without packaging | 3 000 g | 3 000 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1; With support arm bracket, without keyboard | 1; With support arm bracket, without keyboard |
| Components included | | a basic adapter is required for mounting, this must be ordered separately |
| **Other** | | |
| Merchandise | Yes; Sasse no. 1580.9906124 | Yes; Sasse no. 1580.9906434 |
| Manufacturer name | Sasse Elektronik GmbH | Sasse Elektronik GmbH |
| Target devices | Merchandise suitable for 4:3 PRO devices | Merchandise suitable for 16:9 PRO devices |

## Technical specifications (continued)

| Article number | **6GF6710-2AC**<br>PS2 foil keyboard de, touchpad | **6GF6710-2BC**<br>PS2 foil keyboard INT, touchpad |
|---|---|---|
| **General information** | | |
| Product type designation | PS/2 membrane keyboard DEU | PS/2 membrane keyboard INT |
| **Keyboard fonts** | | |
| • Design | Membrane keyboard | Membrane keyboard |
| • Keyboard assignment | B3F, 101/102 or 104/105 OMRON | B3F, 101/102 or 104/105 OMRON |
| • Key illumination | No | No |
| • Function keys | | |
| - Number of function keys | 12 | 12 |
| - Programmable | Yes | Yes |
| • Number pad | Yes | Yes |
| • Status LED displays | Yes; Num, Caps and Scroll | Yes; Num, Caps and Scroll |
| - for number pad | Yes | Yes |
| - for Shift keys | Yes | Yes |
| **Connection type** | | |
| • USB | Yes; With PS/2 USB adapter (not included in the scope of supply) | Yes; With PS/2 USB adapter (not included in the scope of supply) |
| • PS/2 | Yes | Yes |
| • Cable length | 1.75 m | 1.75 m |
| **Frame size/design** | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications |
| **Installation type/mounting** | | |
| Rack mounting | No; Desktop housing | No; Desktop housing |
| **Input current** | | |
| Current consumption (rated value) | 25 mA; Typical | 25 mA; Typical |
| **Battery** | | |
| Battery-operated | No; maintenance-free | No; maintenance-free |
| **Degree and class of protection** | | |
| IP65 (all-round) | Yes | Yes |
| Splashproof | Yes | Yes |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 40 °C | 40 °C |
| **Relative humidity** | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation |
| • Condensation permissible | No | No |
| **Runs under operating system** | | |
| • Windows CE | Yes | Yes |
| • Windows Vista | Yes | Yes |
| • Windows XP | Yes | Yes |
| • Windows 7 | Yes | Yes |

## **Technical specifications** (continued)

| Article number | **6GF6710-2AC**<br>PS2 foil keyboard de, touchpad | **6GF6710-2BC**<br>PS2 foil keyboard INT, touchpad |
|---|---|---|
| **Mechanics/material** | | |
| Material | | |
| • Plastic | Yes; AUTOTEX (R) V150 | Yes; AUTOTEX (R) V150 |
| • Sheet steel | No | No |
| Enclosure material (front) | | |
| • Plastic | Yes; AUTOTEX (R) V150 | Yes; AUTOTEX (R) V150 |
| **Service life** | | |
| • Number of operating cycles, keys | 1 000 000; Operations (minimum) | 1 000 000; Operations (minimum) |
| **Dimensions** | | |
| Width | 478.5 mm | 478.5 mm |
| Height | 28 mm | 28 mm |
| Depth | 180 mm | 180 mm |
| **Weights** | | |
| Weight without packaging | 2 260 g | 2 260 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1; Membrane keyboard with mouse pad | 1; Membrane keyboard with mouse pad |
| **Other** | | |
| Merchandise | Yes; TIPRO no. K-547 | Yes; TIPRO no. K-547 |
| Manufacturer name | TIPRO Representative Office | TIPRO Representative Office |
| Manufacturer's address | Vogelweg 20, 31785 Hameln, Germany | Vogelweg 20, 31785 Hameln, Germany |
| Target devices | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) |
| Note: | Suitable PS/2 USB adapter (keyboard/mouse): 1x USB 1.1, plug A on 2x PS/2 sockets, 0.20 m, black; manufacturer: Renkforce; supply by Conrad Elektronik, order no.: 1360251 - 62 | Suitable PS/2 USB adapter (keyboard/mouse): 1x USB 1.1, plug A on 2x PS/2 sockets, 0.20 m, black; manufacturer: Renkforce; supply by Conrad Elektronik, order no.: 1360251 - 62 |

| Article number | **6GF6710-3BJ**<br>PS2 keyboard 19" de Trackb. | **6GF6710-3BK**<br>PS2 keyboard 19" INT Trackb. |
|---|---|---|
| **General information** | | |
| Product type designation | PS/2 withdrawable keyboard DEU | PS/2 withdrawable keyboard INT |
| **Keyboard fonts** | | |
| • Design | Membrane keyboard | Membrane keyboard |
| • Keyboard assignment | 84 (Germany (QWERTZ)) | 84 (US version) |
| • Color of the buttons | Light gray | Light gray |
| • Color of the key inscription | Dark gray | Dark gray |
| • Key illumination | No | No |
| • Function keys | | |
| - Number of function keys | 12 | 12 |
| • Number pad | Yes; Integrated into key layout | Yes; Integrated into key layout |
| • Status LED displays | Yes; Num, Caps, Scroll and Pad | Yes; Num, Caps, Scroll and Pad |
| - for number pad | Yes | Yes |
| - for Shift keys | Yes | Yes |
| **Connection type** | | |
| • Bluetooth radio standard | No | No |
| • USB | No | No |
| • PS/2 | Yes | Yes |
| • Cable length | 1.5 m | 1.5 m |
| **Frame size/design** | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications |

## **Technical specifications** (continued)

| Article number | **6GF6710-3BJ**<br>PS2 keyboard 19" de Trackb. | **6GF6710-3BK**<br>PS2 keyboard 19" INT Trackb. |
|---|---|---|
| **Installation type/mounting** | | |
| Rack mounting | Yes | Yes |
| Front mounting | No | No |
| Wall mounting/direct mounting | No | No |
| maximum permissible angle of inclination without external ventilation | 0° | 0° |
| **Supply voltage** | | |
| Type of supply voltage | via PS/2 | via PS/2 |
| **Input current** | | |
| Current consumption (rated value) | 10 mA; Typical | 10 mA; Typical |
| **Battery** | | |
| Battery-operated | No; maintenance-free | No; maintenance-free |
| **Degree and class of protection** | | |
| Splashproof | No | No |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 50 °C | 50 °C |
| **Relative humidity** | | |
| • Operation, max. | 80 %; no condensation | 80 %; no condensation |
| • Condensation permissible | No | No |
| **Runs under operating system** | | |
| • Windows CE | Yes | Yes |
| • Windows Vista | Yes | Yes |
| • Windows XP | Yes | Yes |
| • Windows 7 | Yes | Yes |
| • Windows 8 | Yes | Yes |
| **Mechanics/material** | | |
| Material | | |
| • Plastic | Yes; Keyboard itself | Yes; Keyboard itself |
| • Sheet steel | Yes; Powder-coated drawer | Yes; Powder-coated drawer |
| **Service life** | | |
| • Number of operating cycles, keys | 20 000 000; Operations (approx.) | 20 000 000; Operations (approx.) |
| **Dimensions** | | |
| Width | 370 mm; Keyboard | 370 mm; Keyboard |
| Height | 20 mm; Keyboard | 20 mm; Keyboard |
| Depth | 138.5 mm; Keyboard | 138.5 mm; Keyboard |
| Width of the housing front | 485 mm; Keyboard incl. drawer | 485 mm; Keyboard incl. drawer |
| Height of housing front | 45 mm; Keyboard incl. drawer | 45 mm; Keyboard incl. drawer |
| Enclosure diameter | 465 mm; Mounting depth drawer | 465 mm; Mounting depth drawer |
| **Weights** | | |
| Weight without packaging | 8 000 g; Without accessories | 8 000 g; Without accessories |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1; Keyboard incl. drawer | 1; Keyboard incl. drawer |
| **Other** | | |
| Merchandise | Yes | Yes |
| Manufacturer name | ZF Friedrichshafen AG, Cherry GmbH, Electronic Systems | ZF Friedrichshafen AG, Cherry GmbH, Electronic Systems |
| Manufacturer's address | Cherrystr., 91275 Auerbach/OPf., Germany | Cherrystr., 91275 Auerbach/OPf., Germany |
| Target devices | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) |

## Technical specifications (continued)

| Article number | **6GF6710-3AE**<br>PS2 keyboard 19" de, touch pad | **6GF6710-3BG**<br>PS2 keyboard 19" INT, track ball | **6GF6710-3BE**<br>PS2 keyboard 19" INT, touch pad |
|---|---|---|---|
| **General information** | | | |
| Product type designation | PS/2 built-in keyboard DEU | PS/2 built-in keyboard INT | PS/2 built-in keyboard INT |
| **Keyboard fonts** | | | |
| • Design | Membrane keyboard | Membrane keyboard | Membrane keyboard |
| • Keyboard assignment | B3F, 101/102 or 104/105 OMRON | B3F, 101/102 or 104/105 OMRON | B3F, 101/102 or 104/105 OMRON |
| • Color of the buttons | | Light gray | |
| • Color of the key inscription | | Black | |
| • Key illumination | No | No | No |
| • Function keys | | | |
| - Number of function keys | 12 | 12 | 12 |
| - Programmable | Yes | Yes | Yes |
| • Number pad | Yes | Yes; Free-standing | Yes |
| • Status LED displays | Yes; Num, Caps and Scroll | Yes; Num, Caps and Scroll | Yes; Num, Caps and Scroll |
| - for number pad | Yes | Yes | Yes |
| - for Shift keys | Yes | Yes | Yes |
| **Connection type** | | | |
| • USB | Yes; With PS/2 USB adapter (not included in the scope of supply) | Yes; With PS/2 USB adapter (not included in the scope of supply) | Yes; With PS/2 USB adapter (not included in the scope of supply) |
| • PS/2 | Yes | Yes | Yes |
| **Frame size/design** | | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications | Yes; For industrial applications |
| **Installation type/mounting** | | | |
| Rack mounting | No; Built-in keyboard, 19" rack | No | No; Built-in keyboard, 19" rack |
| Front mounting | | Yes | |
| Wall mounting/direct mounting | | No | |
| **Input current** | | | |
| Current consumption (rated value) | 25 mA; Typical | 35 mA; Typical | 25 mA; Typical |
| **Battery** | | | |
| Battery-operated | No; maintenance-free | No; maintenance-free | No; maintenance-free |
| **Degree and class of protection** | | | |
| IP65 (all-round) | | Yes; When the ball is actuated; mouse only IP55 | |
| IP (at the front) | IP65 | | IP65 |
| IP (rear) | IP20 | | IP20 |
| Splashproof | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |

## Technical specifications (continued)

| Article number | **6GF6710-3AE**<br>PS2 keyboard 19" de, touch pad | **6GF6710-3BG**<br>PS2 keyboard 19" INT, track ball | **6GF6710-3BE**<br>PS2 keyboard 19" INT, touch pad |
|---|---|---|---|
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 40 °C | 40 °C | 40 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 %; no condensation | 90 %; no condensation | 90 %; no condensation |
| • Condensation permissible | No | No | No |
| **Runs under operating system** | | | |
| • Windows CE | Yes | Yes | Yes |
| • Windows Vista | Yes | Yes | Yes |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Material | | | |
| • Sheet steel | Yes | Yes | Yes |
| Enclosure material (front) | | | |
| • Plastic | Yes; AUTOTEX (R) V150 | Yes; AUTOTEX (R) V150 | Yes; AUTOTEX (R) V150 |
| **Service life** | | | |
| • Number of operating cycles, keys | 1 000 000; Operations (minimum) | 1 000 000; Operations (minimum) | 1 000 000; Operations (minimum) |
| **Dimensions** | | | |
| Width | 482.6 mm | 482.6 mm | 482.6 mm |
| Height | 42.5 mm | 38 mm | 42.5 mm |
| Depth | 177.8 mm | 177.8 mm | 177.8 mm |
| **Weights** | | | |
| Weight without packaging | 1 480 g | 1 490 g | 1 480 g |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1; Built-in keyboard rack mounting | 1; Built-in keyboard with stud bolts | 1; Built-in keyboard rack mounting |
| **Other** | | | |
| Merchandise | Yes; TIPRO no. K-647 (K-847) | Yes; TIPRO no. K-842 (K-642) | Yes; TIPRO no. K-647 (K-847) |
| Manufacturer name | TIPRO Representative Office | TIPRO Representative Office | TIPRO Representative Office |
| Manufacturer's address | Vogelweg 20, 31785 Hameln, Germany | Vogelweg 20, 31785 Hameln, Germany | Vogelweg 20, 31785 Hameln, Germany |
| Target devices | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) |
| Note: | Suitable PS/2 USB adapter (keyboard/mouse):<br>1x USB 1.1,<br>plug A on 2x PS/2 sockets, 0.20 m, black;<br>manufacturer: Renkforce;<br>supply by Conrad Elektronik,<br>order no.: 1360251 - 62 | Suitable PS/2 USB adapter (keyboard/mouse):<br>1x USB 1.1,<br>plug A on 2x PS/2 sockets, 0.20 m, black;<br>manufacturer: Renkforce;<br>supply by Conrad Elektronik,<br>order no.: 1360251 - 62 | Suitable PS/2 USB adapter (keyboard/mouse):<br>1x USB 1.1,<br>plug A on 2x PS/2 sockets, 0.20 m, black;<br>manufacturer: Renkforce;<br>supply by Conrad Elektronik,<br>order no.: 1360251 - 62 |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **USB keyboard TKL-105** | |
| IP68 keyboard, black, with USB connection | |
| • with German layout | **6AV6881-0AU14-0AA0** |
| • with international US layout | **6AV6881-0AU14-1AA0** |
| **USB keyboard TKV-086 IP65 stainless steel** | |
| Desktop keyboard, INOX vandal-proof, also suitable for PRO system [1]. Incl. 4 plastic adhesive feet [2], cable holder/ties for fixing the USB cable. | |
| IP65 keyboard stainless steel with IP67 USB connection, incl. accessories | |
| • with German layout | **6AV6881-0AU14-0DB0** |
| • with international US layout | **6AV6881-0AU14-1DB0** |
| **IP65 stainless steel keyboard in RAL9023 (gray)** | **6AV7674-0NE00-0AA0** |
| IP65 stainless steel keyboard in RAL9023 (gray) for installation on all fully-enclosed 4:3 PRO devices with suitable mechanics. With numeric keypad, layout: US, tiltable, mouse cursor control via integrated keys, and USB connection | |
| **USB keyboard INT for PRO devices** | **6AV7674-1NE00-0AA0** |
| IP65 stainless steel keyboard in RAL9006 (silver) for installation on all fully-enclosed 16:9 PRO devices with suitable mechanics. With numeric keypad, layout: US, tiltable, mouse cursor control via integrated keys, and USB connection | |
| **Tray for PRO devices** | |
| For installation on all fully-enclosed IP65 PRO devices with suitable mechanics.<br>With 2x USB connection sockets including USB cable. Unused socket can be sealed to IP65 | |
| • Tray in RAL9023 (gray) for all fully-enclosed IP65 4:3 PRO devices | **6AV7674-0NE01-0AA0** |
| • Tray in RAL9006 (silver) for all fully-enclosed IP65 16:9 PRO devices | **6AV7674-1NE01-0AA0** |
| **Membrane keyboard IP65** | |
| with touchpad, PS/2 | |
| • with German layout | **6GF6710-2AC** |
| • with international US layout | **6GF6710-2BC** |
| **Slide-in keyboard** | |
| 19" Slide-in keyboard with trackball, PS/2 | |
| • with German layout | **6GF6710-3BJ** |
| • with international US layout | **6GF6710-3BK** |
| **Built-in keyboard, touchpad** | |
| 19" built-in keyboard, 4U with touchpad, PS/2 | |
| • with German layout | **6GF6710-3AE** |
| • with international US layout | **6GF6710-3BE** |

| | Article No. |
|---|---|
| **Built-in keyboard, trackball, international** | **6GF6710-3BG** |
| Built-in keyboard with trackball, PS/2 | |
| **USB 2.0 mouse** | **6AV2181-8AT00-0AX0** |
| For HMI Panels, programming devices and IPCs with corresponding interfaces.<br>Color: Anthracite | |
| **USB cables [3]** | |
| **USB cable 2.0** | |
| • Type A female USB A, IP20 / male USB A, IP20, length 2.5 m | **6AV6881-0AF21-0LB0** |
| • Type B with M20 screw sealing, female USB A, IP67 / male USB A, IP20, length 0.8 m | **6AV6881-0AF22-0DC0** |
| • Type C with M20 screw sealing, female USB A, IP67 / male USB A, IP20, length 2.5 m | **6AV6881-0AF22-0LC0** |
| • Type D female, USB A, IP67 / male USB A, IP20, length 2.5 m | **6AV6881-0AF21-0LC0** |
| **SIMATIC RF1060R Access Control Reader** | **6GT2831-6AA50** |
| Access control reader with USB interface;<br>can only be used to a limited extent in outdoor environments<br>-25 to +55 °C;<br>incl. 1.8 m connecting cable | |
| **SIMATIC RF200 card holder** | **6GT2890-0CA00** |
| Optional, for clipping onto the RF1060R Access Control Reader card.<br>Can be temporarily stored on the reader. | |
| **RFID D400 replacement cards** | **6GT2600-4AD00** |
| Transponder MDS, ISO 15693:<br>Minimum order quantity 50 units | |
| **RFID E600 replacement cards** | **6GT2300-0AA00** |
| MOBY E (MIFARE, ISO 14443)<br>Minimum order quantity 50 units | |

[1] Further mechanical attachment parts (keyboard tray, etc.) are required for use on PRO systems. Observe the respective specifications of the target systems!

[2] Plastic adhesive feet can be attached on the underside of the keyboard at the marked locations.

[3] With specification IP20, the connector type specified on the cable corresponds to a standard USB connector. With specification IP67, it corresponds to a connector with IP67-protected screw connection. IP67 connectors are fitted with a cover to ensure degree of protection IP67 even when the connector is unplugged and the cover is unscrewed. In some cases a M20 screw sealing is already part of the cable.
This version can be used for IP65 transitions (PRO system/control cabinet).
The IP67 sockets are also suitable for standard USB connectors, however in those cases the degree of protection is reduced to IP20.
Note:
A maximum cable length of 3 m should not be exceeded!

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## More information

Certificates:

Import/export certificates are available for downloading from Industry Online Support/Product Support:

https://support.industry.siemens.com/cs/products

Enter the "Article No." as the search term and select "Certificate" as the Entry type.

You can always find the current certification for trade goods on the manufacturer's home page.
The manufacturer data appear at the end of the technical specifications.

Notes:

The degree of protection stated for input media does not apply to the USB connection pieces.

IP20 is typical for use with USB interfaces, without any particular degree of protection.

If you need to modify or supplement the products described here, we'll be pleased to provide the necessary information at: "Custom made products".

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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## Input tools

### Overview

SIMATIC HMI accessories, capacitive touch pen system

***Input tools***

Input tools facilitate operation and input in difficult environments.

Touch pens are often extremely useful when operating touch displays, particularly if you are wearing gloves, because you can operate small buttons or input fields precisely despite the gloves.

Touch pens also protect the display from dirt and scratching during operation and when used in extreme environments.

The following input tools are available for operating the touch display:

- Touch pen
- Touch pen holder
- Spare caps for touch pens

Please be sure to note the correct touch system when ordering.

Not all touch pens are compatible with all touch types. There are touch pens available for both resistive and capacitive touch systems.

Note:

Continuous operation with hard touch pens on the same part of the display can significantly reduce the service life of a touch screen.

A longer service life can be achieved by using soft, wide-tip pens and variable-position input fields.

### Technical specifications

| Article number | **6AV7672-1JB00-0AA0** | **6AV2181-8AV20-0AX0** | **6AV2181-8AV60-0AX0** | **6AV6645-7AB14-0AS0** |
|---|---|---|---|---|
| | Touch pen, thick, resistive | Touch pen system | Touch pen caps | Touch pen, thin, resistive |
| **General information** | | | | |
| Product type designation | Touch pen, thick, resistive technology | Touch pen system capacitive technology | Touch pen caps | Touch pen, thin, resistive technology |
| **Frame size/design** | | | | |
| • Standard | Yes; For industrial applications | Yes; For industrial applications | Yes; Special cap for capacitive touch pens | Yes; For industrial applications |
| • Exceptional | | Yes; Spare caps can be stowed in the pen | | |
| • Ergonomic | Yes; With holder | Yes; With holder | | |
| **Installation type/mounting** | | | | |
| Mounting type | | Wall-mounting bracket can be mounted with mounting disk,<br>2x M3 screw or adhesive pads | | |
| Front mounting | | Yes; also optimized for PRO Extension Unit 22.5 mm opening (from HS01) | | |
| Wall mounting/direct mounting | Yes; Screw-on clamping holder and elastic attachment cord | Yes | Yes; Capacitive touch system | Yes; using 40 cm retaining cord |
| **Degree and class of protection** | | | | |
| IP (at the front) | | IP65 (depending on mounting) | | |

## **Technical specifications** (continued)

| Article number | **6AV7672-1JB00-0AA0**<br>Touch pen, thick, resistive | **6AV2181-8AV20-0AX0**<br>Touch pen system | **6AV2181-8AV60-0AX0**<br>Touch pen caps | **6AV6645-7AB14-0AS0**<br>Touch pen, thin, resistive |
|---|---|---|---|---|
| **Ambient conditions** | | | | |
| Suited for indoor use | | Yes | | |
| Suited for outdoor use | | Yes | | |
| **Ambient temperature during operation** | | | | |
| • min. | -40 °C; at temperatures below 10 °C and above 30 °C, the use of suitable gloves is recommended | -40 °C; at temperatures below 10 °C and above 30 °C, the use of suitable gloves is recommended | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C; at temperatures below 10 °C and above 30 °C, the use of suitable gloves is recommended | 80 °C | 80 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 90 % | 95 % | 90 % | 90 % |
| **Mechanics/material** | | | | |
| Material | | | | |
| • Plastic | Yes; Touch pen SIMATIC HMI | Yes; Attachment cord | Yes | Yes |
| • Aluminum | | Yes; Touch pen, wall-mounting bracket | | |
| • Sheet steel | Yes; Mounting | | | |
| Screw type | | | | |
| • Torx | Yes | | | No |
| **Dimensions** | | | | |
| Width | | | 8 mm | |
| Height | 155 mm; Length | 150 mm; Length | 8 mm | 125 mm; Length |
| Thickness | 20 mm; Diameter | 14 mm; Diameter | 8 mm | 8 mm; Diameter |
| Enclosure diameter | | 37 mm; Diameter wall-mounting bracket | | |
| Mounting cutout, height | | 39 mm; Height wall-mounting bracket | | |
| **Weights** | | | | |
| Weight without packaging | | 0.13 kg | 0.8 g | |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1; Optional for Extension Units of the PRO devices | 1; 1x touch pen with string, wall-mounting bracket, M6 screw, mounting disk, O-ring, adhesive pads, spare caps for touch pen | 10; Caps for touch pen | 5; Incl. retaining cord for Mobile Panel 277 10" |
| **Other** | | | | |
| Merchandise | Yes | Yes; Function depending on touch sensitivity, not suitable for Ceran cooktops, MP377 Daylight, possibly others | Yes | Yes |
| Manufacturer name | SIEMENS AG | QUERUM Maschinenbau GmbH | QUERUM Maschinenbau GmbH | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | An der Autobahn L8, 91161 Hilpoltstein, Germany | An der Autobahn L8, 91161 Hilpoltstein, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for resistive touch screens, optimized for operating while wearing gloves | For common capacitive and resistive touch systems | Pen for touch system, capacitive, aluminum | for resistive touch screens |
| Note: | | Length of the interconnecting lead 53 cm to 100 cm | | |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **Touch pen, thick, resistive**<br>For resistive touch screen, optimized for operation with gloves, including screw-on wall bracket | **6AV7672-1JB00-0AA0** |
| **Touch pen, thin, resistive**<br>For resistive touch screen, with retaining cord for Mobile Panel 277 10" and other resistive touch screens | **6AV6645-7AB14-0AS0** |
| **Touch pen system, aluminum, capacitive**<br>For capacitive or resistive touch screens, pen including holder for 22.5 mm,<br>screw or glue into place for capacitive or resistive touch screens | **6AV2181-8AV20-0AX0** |
| **Touch pen caps**<br>Replacement caps for touch pens used with capacitive or resistive touch screens.<br>Also optimized for PRO systems. | **6AV2181-8AV60-0AX0** |

## More information

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

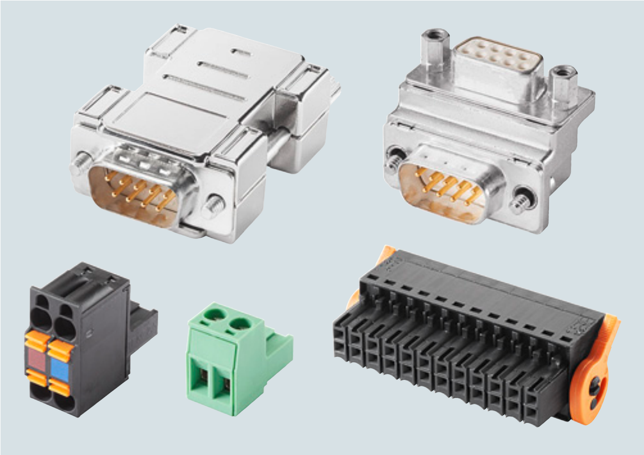
If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically.
This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

## Overview



### HMI connecting components

The following HMI connecting components are available for our operator panels and industrial PCs:

- Converters
  change signals from one physical system to another. Example: An RS 232 V.24 signal is converted to a TTY 20mA signal. The transmitted data is not affected.
- Connectors
  are used for connecting devices or expansion components to the power supply, data cables or I/O devices.
- Adapters
  can modify the pinning, as well as the output direction of a connector attached to the core product. It is also possible to implement transitions from "n"-pin" to "x"-pin.

## Technical specifications

| Article number | **6AV6671-8XE00-0AX0**<br>RS422 to RS232 converter | **6AV6671-8XJ00-0AX0**<br>RS422 to TTY converter |
|---|---|---|
| **General information** | | |
| Product type designation | Converter, RS 422 to RS 232 | Converter RS 422 to TTY |
| **Installation type/mounting** | | |
| Wall mounting/direct mounting | Yes; Can be screwed onto the HMI | Yes; Can be screwed onto the HMI |
| **Interfaces** | | |
| HMI-side interface | | |
| • Number of pins HMI-side | 9; Male (RS 422) | 9; Male (RS 422) |
| Device-side interface | | |
| • Number of pins device-side | 9; Female (RS 232) | 15; Female (TTY) |
| **Degree and class of protection** | | |
| IP (all-round) | none | none |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C |
| **Relative humidity** | | |
| • Operation, max. | 95 % | 95 % |
| **Mechanics/material** | | |
| Enclosure material (front) | | |
| • Plastic | Yes | Yes |
| Screw type | | |
| • 4.5 V | Yes; HMI page | Yes; HMI page |
| **Torques/forces** | | |
| • Tightening torque, min. | 0.18 N·m; Insufficient torque can lead to loosening of the screws | |
| • Tightening torque, max. | 0.2 N·m | 0.2 N·m |
| • Tightening torque, recommended | 0.2 N·m; Higher torques may damage the product | |
| **Dimensions** | | |
| Width x Height x Thickness in mm | 31 x 50 x 11 | 42 x 62 x 11 |
| **Weights** | | |
| Weight without packaging | 26 g | 28 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1 | 1 |
| **Other** | | |
| Merchandise | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | suitable for all SIMATIC HMI RS 422 interfaces, for details refer to the operating instructions of the respective device | |

## Technical specifications (continued)

| Article number | 6AV6671-8XA00-0AX0 | 6AV6881-0HE20-0AA0 | 6AV6671-3XY38-4AX0 | 6AV6671-3XY48-4AX0 | 6AV6671-3XY58-4AX0 |
|---|---|---|---|---|---|
| | Connector, female, 2-pin, type 1 | Connector, female, 8-pin | Connector, female, 12-pin | Connector, female, 16-pin | Connector, female, 24-pin |
| **General information** | | | | | |
| Product type designation | Connector, female, 2-pin, type 1 | Connector, female, 8-pin | Connector, female, 12-pin | Connector, female, 16-pin | Connector, female, 24-pin |
| **Frame size/design** | | | | | |
| • Standard | Yes; Z shape | | | | |
| **Installation type/mounting** | | | | | |
| Mounting type | | | Conductor cross-section 0.14 to 1.5 mm$^2$ | Conductor cross-section 0.14 to 1.5 mm$^2$ | |
| Wall mounting/direct mounting | Yes; can be plugged into SIMATIC HMI device | Yes; can be plugged into SIMATIC HMI device | Yes; can be plugged into SIMATIC HMI device | Yes; can be plugged into SIMATIC HMI device | Yes; can be plugged into SIMATIC HMI device |
| **Supply voltage** | | | | | |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V | 24 V |
| **Input current** | | | | | |
| Current consumption (rated value) | | | 9 A; Typical, maximum value | 9 A; Typical, maximum value | |
| **Interfaces** | | | | | |
| HMI-side interface | | | | | |
| • Number of pins HMI-side | 2; Male | 8; Female | 12; Female, spring-loaded terminals, 3.5 mm grid | 16; Female, spring-loaded terminals, 3.5 mm grid | 24; Female |
| Device-side interface | | | | | |
| • Number of pins device-side | 2; Female, screw terminals | 8; Female, spring-loaded terminals | 12; Female, spring-loaded terminals | 16; Female, spring-loaded terminals 0.75 mm$^2$ | 24; Female, spring-loaded terminals 0.75 mm$^2$ |
| **Standards, approvals, certificates** | | | | | |
| CE mark | | Yes | Yes | Yes | Yes |
| cULus | | | Yes; cURus | Yes; cURus | |
| **Use in hazardous areas** | | | | | |
| • ATEX Zone 2 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • ATEX Zone 22 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • IECEx Zone 2 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • IECEx Zone 22 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • cULus Class I Zone 1 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • cULus Class I Zone 2, Division 2 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| • FM Class I Division 2 | Yes; Device-dependent, see operating instructions | | Yes; Device-dependent, see operating instructions | Yes; Device-dependent, see operating instructions | |
| **Marine approval** | | | | | |
| • Germanischer Lloyd (GL) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • American Bureau of Shipping (ABS) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |

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## Technical specifications (continued)

| Article number | **6AV6671-8XA00-0AX0**<br>Connector, female, 2-pin, type 1 | **6AV6881-0HE20-0AA0**<br>Connector, female, 8-pin | **6AV6671-3XY38-4AX0**<br>Connector, female, 12-pin | **6AV6671-3XY48-4AX0**<br>Connector, female, 16-pin | **6AV6671-3XY58-4AX0**<br>Connector, female, 24-pin |
|---|---|---|---|---|---|
| • Bureau Veritas (BV) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Det Norske Veritas (DNV) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Korean Register of Shipping (KRS) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Lloyds Register of Shipping (LRS) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Nippon Kaiji Kyokai (Class NK) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Polski Rejestr Statkow (PRS) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| • Chinese Classification Society (CCS) | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. | |
| **Ambient conditions** | | | | | |
| Suited for indoor use | | | Yes; Flammability class according to UL 94-V0 | Yes; Flammability class according to UL 94-V0 | |
| Suited for outdoor use | | | Yes; possible under certain conditions | Yes; possible under certain conditions | |
| **Ambient temperature during operation** | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 95 % | 80 % | 80 % | 80 % | 95 % |

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## **Technical specifications** (continued)

| Article number | **6AV6671-8XA00-0AX0**<br>Connector, female, 2-pin, type 1 | **6AV6881-0HE20-0AA0**<br>Connector, female, 8-pin | **6AV6671-3XY38-4AX0**<br>Connector, female, 12-pin | **6AV6671-3XY48-4AX0**<br>Connector, female, 16-pin | **6AV6671-3XY58-4AX0**<br>Connector, female, 24-pin |
|---|---|---|---|---|---|
| **Mechanics/material** | | | | | |
| Material | | | | | |
| • Plastic | Yes; green | Yes; PA 66 GF 30 | Yes; Insulating material PA66 GF30, actuators PA66/6 | Yes; Insulating material PA66 GF30, actuators PA66/6 | |
| Enclosure material (front) | | | | | |
| • Plastic | Yes; Contact spacing 5.08 mm | Yes; Spring-loaded terminals 1.5 mm$^2$ | Yes; Spring-loaded terminals 1.5 mm$^2$ | Yes; Spring-loaded terminals 1.5 mm$^2$ | Yes; Spring-loaded terminals 1.5 mm$^2$ |
| Enclosure color (front) | | RAL 9011 (black) | Black | Black | |
| Enclosure color (rear) | | RAL 9011 (black) | | | |
| Screw type | | | | | |
| • 4.5 V | Yes; Screw terminals | | | | |
| **Service life** | | | | | |
| • Mechanical service life (mating cycles) | | | 25 | 25 | |
| **Dimensions** | | | | | |
| Width | 10 mm | 10.5 mm; 8-pin connector | 21 mm; 12-pin connector | 28 mm; 16-pin connector | 16 mm |
| Height | 15 mm | 20 mm | 15.2 mm | 15.2 mm | 54 mm |
| Depth | | | 26.25 mm | 26.25 mm | |
| Thickness | 27 mm | 20 mm | | | 20 mm |
| **Weights** | | | | | |
| Weight, approx. | | | 7.9 g | 10.5 g | |
| Weight without packaging | | 5.3 g; Per unit | | | |
| **Scope of supply** | | | | | |
| Delivery quantity in pieces | 10 | 10; Without ejector | 10; Without ejector | 10; Without ejector | 4; with ejector |
| **Other** | | | | | |
| Merchandise | Yes | Yes; B2CF 3.50/08/180 SN BK BX O/N:1277480000 | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | Weidmüller Interface GmbH & Co. KG | Weidmüller Interface GmbH & Co. KG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Klingenbergstraße 16, 32758 Detmold, Germany | Klingenbergstraße 16, 32758 Detmold, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for Comfort Panel, IPC, Flat Panel, Thin Client | suitable for all appropriate interfaces | for KP8 PN | for KP8F PN, KP32F PN | for KP32F PN |

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## **Technical specifications** (continued)

| Article number | **6ES7193-4JB00-0AA0**<br>Connector, female, 2x2-pin |
|---|---|
| **General information** | |
| Product type designation | Connector, female, 2x2-pin |
| **Installation type/mounting** | |
| Wall mounting/direct mounting | Yes; can be plugged into SIMATIC HMI device |
| **Supply voltage** | |
| Rated value (DC) | 24 V |
| **Interfaces** | |
| HMI-side interface | |
| • Number of pins HMI-side | 2; Outgoing side jumpered internally, color-coded |
| Device-side interface | |
| • Number of pins device-side | 4; Female, spring-loaded terminals 0.75 mm² |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| RoHS conformity | Yes |
| China RoHS compliance | Yes |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 70 °C |
| **Mechanics/material** | |
| Design of housing | plastic |
| **Dimensions** | |
| Width | 10 mm |
| Height | 22 mm |
| Thickness | 25 mm |
| **Scope of supply** | |
| Delivery quantity in pieces | 10 |
| **Other** | |
| Merchandise | Yes |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Note: | For ET 200S, interface module, KP32F, PN/PN coupler |

| Article number | **6AV6671-8XD00-0AX0**<br>90 degree bracket adapter, 1:1 | **6ES7648-3AG00-0XA0**<br>Displayport to VGA adapter | **6ES7648-3AF00-0XA0**<br>Displayport to DVI-D Adapter |
|---|---|---|---|
| **General information** | | | |
| Product type designation | 90 degree angle adapter, 1:1 | PCI to VGA adapter | PCI to DVI-D adapter |
| **Installation type/mounting** | | | |
| Wall mounting/direct mounting | Yes; Can be screwed onto the HMI | | |
| **Interfaces** | | | |
| Interfaces/bus type | | DisplayPort to VGA adapter | DisplayPort to DVI-D adapter |
| HMI-side interface | | | |
| • Number of pins HMI-side | 9; Male | | |
| Device-side interface | | For onboard interfaces and PCI graphics card NVS 295 | For onboard interfaces and PCI Express graphics card NVS 295 |
| • Number of pins device-side | 9; Female | | |
| **Degree and class of protection** | | | |
| IP (all-round) | none | | |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | |
| • max. | 55 °C | 50 °C | |
| **Relative humidity** | | | |
| • Operation, max. | 95 % | | |
| • Condensation permissible | | No | |
| **Cables** | | | |
| Cable length | | 178 mm; incl. connector | |

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## **Technical specifications** (continued)

| Article number | **6AV6671-8XD00-0AX0**<br>90 degree bracket adapter, 1:1 | **6ES7648-3AG00-0XA0**<br>Displayport to VGA adapter | **6ES7648-3AF00-0XA0**<br>Displayport to DVI-D Adapter |
|---|---|---|---|
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Aluminum casting | Yes | | |
| Screw type | | | |
| • 4.5 V | Yes; HMI page | | |
| **Torques/forces** | | | |
| • Tightening torque, min. | 0.18 N·m; Insufficient torque can lead to loosening of the screws | | |
| • Tightening torque, max. | 0.2 N·m | | |
| • Tightening torque, recommended | 0.2 N·m; Higher torques may damage the product | | |
| **Dimensions** | | | |
| Width | 31 mm | 36 mm; Widest point | 44 mm; Widest point |
| Height | 25 mm | 11.9 mm; Highest point | 20 mm; Highest point |
| Thickness | 25 mm | | |
| **Weights** | | | |
| Weight without packaging | 34 g | | |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1 | 1; Quantity | 1; Quantity |
| **Other** | | | |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | suitable for all appropriate interfaces | SIMATIC Rack IPC427D, IPC477D, IPC547D, IPC547E, IPC627D, IPC647C, IPC647D, IPC677D, IPC827D, IPC847C, IPC847D | SIMATIC Rack IPC227E, IPC277E, IPC427D, IPC477D, IPC547D, IPC547E, IPC627D, IPC647C, IPC647D, IPC677D, IPC827D, IPC847C, IPC847D |
| Note: | | Trade goods: BizLink KS10031-072 | Trade goods: BizLink KS10009-9-172 |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **Converters** | |
| **RS422 to RS232 converter**<br>9-pin male contact (on HMI) to 9-pin male contact, to be screwed onto HMI RS422 interface, cable outlet 180 degrees, for connection of non-Siemens PLC | **6AV6671-8XE00-0AX0** |
| **RS422 to TTY converter**<br>9-pin male contact (on HMI) to 15-pin socket, to be screwed onto HMI RS422 interface, 180 degree cable outlet, for the connection to SIMATIC S5 | **6AV6671-8XJ00-0AX0** |
| **Plugs** | |
| **24 V DC plug (2-pin)**<br>For all SIMATIC HMI Panels, without screw fixing, loop-through not possible. Approved for all SIMATIC HMI Panels except Key Panels. | **6AV6671-8XA00-0AX0** |
| **24 V DC plug (2-pin) (can be looped through)**<br>For all SIMATIC HMI Panels, without screw fixing, loop through possible, even with unconnected plug. Approved for Key Panels. | **6ES7193-4JB00-0AA0** |
| **Plug, female, 2-pin, type 2**<br>24 V DC for IPCs and Thin Client | **A5E03604831** |
| **Plug, female, 2-pin, type 3**<br>24 V DC for IPCs, with screw fixing | **A5E02717632** |
| **Plug, female, 3-pin, type 1**<br>24 V DC for IPCs, PCUs and Flat Panels | **A5E03404000** |
| **8-pin connection plug**<br>8-pin, 24 V DC for Extension Unit, etc. | **6AV6881-0HE20-0AA0** |
| **12-pin connection plug**<br>12-pin, 24 V DC for SIMATIC HMI Key Panel KP8 PN | **6AV6671-3XY38-4AX0** |
| **16-pin connection plug**<br>16-pin, 24 V DC for SIMATIC HMI Key Panel KP8F PN and Key Panel KP32F PN | **6AV6671-3XY48-4AX0** |
| **24-pin connection plug**<br>24-pin, 24 V DC for SIMATIC HMI Key Panel KP32F PN | **6AV6671-3XY58-4AX0** |

| | Article No. |
|---|---|
| **Adapters** | |
| **90 degree angle adapter**<br>9-pin male contact (on HMI) to 9-pin socket, 1:1 connection, to be screwed onto the RS485/422/232 HMI interface, or any other suitable interface | **6AV6671-8XD00-0AX0** |
| **VGA and DVI adapters**<br>For onboard interfaces and PCI-Express graphics card NVS 295 | |
| • Display port to VGA adapter | **6ES7648-3AG00-0XA0** |
| • Display port to DVI-D adapter | **6ES7648-3AF00-0XA0** |

### *More information*

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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## Overview

SIEMENS MOBY D MDS D100 6GT2600-0AD10 / AS.02

Moby D data card transponder

## Ordering data

| *SCALANCE* | |
|---|---|
| **SCALANCE W761-1 RJ45 Access Points** | |
| • National approvals for operation outside the U.S. | **6GK5761-1FC00-0AA0** |
| • National approvals for operation in the USA | **6GK5761-1FC00-0AB0** |
| **SCALANCE W774-1 RJ45 Access Points** [1)] | |
| • National approvals for operation outside the U.S. | **6GK5774-1FX00-0AA0** |
| • National approvals for operation in the USA | **6GK5774-1FX00-0AB0** |
| **SCALANCE W774-1 M12 EEC Access Points** [1)] | |
| • National approvals for operation outside the U.S. | **6GK5774-1FY00-0TA0** |
| • National approvals for operation in the USA | **6GK5774-1FY00-0TB0** |
| **SCALANCE W788-1 RJ45 Access Points** [1)] | |
| • National approvals for operation outside the U.S. | **6GK5788-1FC00-0AA0** |
| • National approvals for operation in the USA | **6GK5788-1FC00-0AB0** |
| **SCALANCE W788-2 RJ45 Access Points** [1)] | |
| • National approvals for operation outside the U.S. | **6GK5788-2FC00-0AA0** |
| • National approvals for operation in the USA | **6GK5788-2FC00-0AB0** |
| **SCALANCE W788-1 M12 Access Points** [1)] | |
| • National approvals for operation outside the U.S. | **6GK5788-1GD00-0AA0** |
| • National approvals for operation in the USA | **6GK5788-1GD00-0AB0** |

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## Ordering data

| | Article No. |
|---|---|
| **SCALANCE W788-2 M12 Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5788-2GD00-0AA0** |
| • National approvals for operation in the USA | **6GK5788-2GD00-0AB0** |
| **SCALANCE W788-2 M12 EEC Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5788-2GD00-0TA0** |
| • National approvals for operation in the USA | **6GK5788-2GD00-0TB0** |
| **SCALANCE W786-1 RJ45 Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5786-1FC00-0AA0** |
| • National approvals for operation in the USA | **6GK5786-1FC00-0AB0** |
| **SCALANCE W786-2 RJ45 Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5786-2FC00-0AA0** |
| • National approvals for operation in the USA | **6GK5786-2FC00-0AB0** |
| **SCALANCE W786-2IA RJ45 Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5786-2HC00-0AA0** |
| • National approvals for operation in the USA | **6GK5786-2HC00-0AB0** |
| **SCALANCE W786-2 SFP Access Points** [1] | |
| • National approvals for operation outside the U.S. | **6GK5786-2FE00-0AA0** |
| • National approvals for operation in the USA | **6GK5786-2FE00-0AB0** |
| **KEY-PLUG W780 iFeatures** | **6GK5907-8PA00** |
| **PS791-2DC power supply**<br>24 V DC power supply for installation in SCALANCE W-786 products; operating instructions in English/German | **6GK5791-2DC00-0AA0** |
| **PS791-2AC power supply**<br>110 V AC to 230 V AC power supply for installation in SCALANCE W-786 products; operating instructions in English/German | **6GK5791-2AC00-0AA0** |

| | Article No. |
|---|---|
| ***MOBY D accessories*** | |
| **MOBY D, MDS D100**<br>1 unit, contents: 50 units | **6GT2600-0AD10** |
| **RF200**<br>Access Control Reader RF1060R<br>ISO 14443 A/B Mifare, ISO15693<br>USB interface<br>IP 65 front, -25 °C ... +55 °C<br>90 x 62 x 25 mm L x W x H<br>With integrated antenna incl. 1.8 m connecting cable | **6GT2831-6AA50** |
| **Spacer**<br>1 unit | **6GT2190-0AA00** |
| **Fixing pocket**<br>1 unit | **6GT2190-0AB00** |

[1] iFeatures can be optionally connected using KEY-PLUG W780 iFeatures

### *More information*

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

## Power supply units, power supply cables

### Overview

HMI accessories, power supply units, cables, series

***Power supply unit and connecting cables***

The external power supply unit is intended for laboratory and office operation only.

The following power supply units and non-heating apparatus cables are available:

- Mobile Panel IWLAN power supply unit without non-heating apparatus cable
- Mobile Panel IWLAN power supply unit with non-heating apparatus cable
- Non-heating apparatus cable for Box and Panel PCs

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## Technical specifications

| Article number | **6AV6671-5CN00-0AX3**<br>Power supply AC/DC, external |
|---|---|
| **General information** | |
| Product type designation | Power supply, connecting cable |
| **Control elements** | |
| Functional lighting | Yes; LED indicator for power on |
| **Frame size/design** | |
| • Standard | Yes; For industrial applications |
| **Supply voltage** | |
| Type of supply voltage | 100 - 240 V AC |
| **Input current** | |
| Current consumption (rated value) | 1.4 A; 50 - 60 Hz |
| **Output voltage** | |
| Rated value (DC) | 12 V |
| **Output current** | |
| Current output (rated value) | 5 A |
| **Standards, approvals, certificates** | |
| CE mark | Yes; TÜV EN 60950-1, BSMI CNS14336 |
| cULus | Yes |
| **Ambient conditions** | |
| Suited for indoor use | Yes |
| Suited for outdoor use | No |
| **Ambient temperature during operation** | |
| • min. | -30 °C |
| • max. | 50 °C; Up to 70 °C, see manufacturer's data sheet |
| **Relative humidity** | |
| • Operation, max. | 90 %; Non-condensing (max. 95% humidity for storage) |
| **Cables** | |
| Cable length | |
| • Input side | 0 m; 3-pole AC inlet IEC320-C14, Class power unit |
| • Output side | 1 m; With ferrite core |
| Color of cable sheath | Black |

| Article number | **6AV6671-5CN00-0AX3**<br>Power supply AC/DC, external |
|---|---|
| **Connection method** | |
| Connector type | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC |
| **Mechanics/material** | |
| Material | |
| • Plastic | Yes |
| Color | Black |
| **Service life** | |
| • Mechanical service life (mating cycles) | 1; See manufacturer's data sheet |
| **Dimensions** | |
| Width | 125 mm |
| Height | 50 mm |
| Thickness | 31.5 mm |
| **Weights** | |
| Weight without packaging | 305 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; Incl. DC cable with P1J jack connector, excl. 3-pin AC connecting cable IEC320-C14 |
| **Other** | |
| Merchandise | Yes; MeanWell GST60A12-P1J |
| Manufacturer name | Elpro GmbH Importeur (MEAN WELL) |
| Manufacturer's address | Marzahner Straße 34, 13053 Berlin, Germany |
| Target devices | Standard power supply, e.g. suitable for Mobile Panel IWLAN (always see the Operating Instructions for the target device) |
| Note: | Manufacturer's address = importer's address (for manufacturer, see commercial goods information text) |

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## Technical specifications (continued)

| Article number | **6AV2181-5AL10-0AX0**<br>Power supply, ext., Mobile P. IWLAN DE | **6AV2181-5AL20-0AX0**<br>Power supply, ext., Mobile P. IWLAN UK | **6AV2181-5AL30-0AX0**<br>Power supply, ext., Mobile P. IWLAN SW | **6AV2181-5AL40-0AX0**<br>Power supply, ext., Mobile P. IWLAN US | **6AV2181-5AL50-0AX0**<br>Power supply, ext., Mobile P. IWLAN IT | **6AV2181-5AL60-0AX0**<br>Power supply, ext., Mobile P. IWLAN CN |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | External power supply unit | External power supply unit | External power supply unit | External power supply unit | External power supply unit | External power supply unit |
| **Supply voltage** | | | | | | |
| Type of supply voltage | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC | 100 - 240 V AC |
| **Input current** | | | | | | |
| Current consumption (rated value) | 1.4 A; 50 - 60 Hz | 1.4 A; 50 - 60 Hz | 1.4 A; 50 - 60 Hz | 1.4 A; 50 - 60 Hz | 1.4 A; 50 - 60 Hz | 1.4 A; 50 - 60 Hz |
| **Output voltage** | | | | | | |
| Rated value (DC) | 12 V | 12 V | 12 V | 12 V | 12 V | 12 V |
| **Output current** | | | | | | |
| Current output (rated value) | 5 A | 5 A | 5 A | 5 A | 5 A | 5 A |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved | Yes; UL 69950, TÜV EN 600950-1, BSMI CNS14336, CCC GB4942 approved |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Cables** | | | | | | |
| Cable length | | | | | | |
| • Input side | 3 m | 3 m | 3 m | 3 m | 3 m | 3 m |
| • Output side | 0.9 m | 0.9 m | 0.9 m | 0.9 m | 0.9 m | 0.9 m |
| Color of cable sheath | Black | Black | Black | Black | Black | Black |
| **Connection method** | | | | | | |
| Connector type | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC | Connector 5.5 mm jack ( -) / 2.1 mm pin ( +) 12 V DC |
| **Mechanics/material** | | | | | | |
| Material | | | | | | |
| • Plastic | Yes | Yes | Yes | Yes | Yes | Yes |
| Color | Black | Black | Black | Black | Black | Black |
| **Dimensions** | | | | | | |
| Width | 125 mm | 125 mm | 125 mm | 125 mm | 125 mm | 125 mm |
| Height | 50 mm | 50 mm | 50 mm | 50 mm | 50 mm | 50 mm |
| Thickness | 31.5 mm | 31.5 mm | 31.5 mm | 31.5 mm | 31.5 mm | 31.5 mm |
| **Weights** | | | | | | |
| Weight without packaging | 540 g | 560 g | 525 g | 540 g | 520 g | 540 g |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 1; Incl. AC and DC connecting cable | 1; Incl. AC and DC connecting cable | 1; Incl. AC and DC connecting cable | 1; Incl. AC and DC connecting cable | 1; Incl. AC and DC connecting cable | 1; Incl. AC and DC connecting cable |
| • Parts per unit | 1; AC cable for DE, FR, ES, NL, BE, SE, AT, FI | 1; AC cable for GB | 1; AC cable for CH | 1; AC cable for US | 1; AC cable for IT | 1; AC cable for CN |
| **Other** | | | | | | |
| Merchandise | Yes | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for Mobile Panel IWLAN | for Mobile Panel IWLAN | for Mobile Panel IWLAN | for Mobile Panel IWLAN | for Mobile Panel IWLAN | for Mobile Panel IWLAN |

## **Technical specifications** (continued)

| Article number | **6ES7900-0AA00-0XA0**<br>Power cord, Germany and others | **6ES7900-0BA00-0XA0**<br>Power cord, United Kingdom, | **6ES7900-0CA00-0XA0**<br>Power cord, Switzerland | **6ES7900-0DA00-0XA0**<br>Power cord, USA, Canada | **6ES7900-0EA00-0XA0**<br>Power cord, Italy type L | **6ES7900-0FA00-0XA0**<br>Power cord, China GB 1002 and others |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus |
| **Interfaces** | | | | | | |
| Interfaces/bus type | Line-side, country-specific connector: Type CEE 7/7 Schuko | Line-side, country-specific connector: Type BS 1363 (Commonwealth connector) | Line-side, country-specific connector: Type J (SEV 1011) | Line-side, country-specific connector: Type B (NEMA 5-15) | Line-side, country-specific connector: Type L (CEI 23-50) | Line-side, country-specific connector: Type I: GB 1002 (China), AS 3112 (Australia), IRAM 2073 (Argentina) |
| Device-side interface | | | | | | |
| • Number of pins device-side | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | | | |
| Suited for indoor use | Yes; Max. 10 A | Yes; Equipped with internal 13 A melting fuse | Yes; Max. 10 A | Yes; Max. 10 A | Yes; Max. 10 A | Yes; Max. 10 A |
| **Ambient temperature during operation** | | | | | | |
| • min. | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Cables** | | | | | | |
| Cable length | 3 m | 3 m | 3 m | 3 m | 3 m | 3 m |
| Color of cable sheath | Black | Black | Black | Black | Black | Black |
| **Weights** | | | | | | |
| Weight, approx. | 290 g | 300 g | 260 g | 230 g | 255 g | 280 g |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 1; AC cable for DE, FR, ES, NL, BE, SE, AT, FI | 1; AC cable for GB | 1; AC cable for CH | 1; AC cable for US | 1; AC cable for IT | 1; AC cable for CN |
| **Other** | | | | | | |
| Merchandise | Yes | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH |
| Manufacturer's address | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com |
| Target devices | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces |

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## Technical specifications (continued)

| Article number | **6ES7900-1AA00-0XA0**<br>Power cord, Germany | **6ES7900-1BA00-0XA0**<br>Power cord, United Kingdom, | **6ES7900-1CA00-0XA0**<br>Power cord, Switzerland | **6ES7900-1DA00-0XA0**<br>Power cord, USA | **6ES7900-1EA00-0XA0**<br>Power cord, Italy | **6ES7900-1FA00-0XA0**<br>Power cord, China |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus | Cable for non-heating apparatus |
| **Interfaces** | | | | | | |
| Interfaces/bus type | Line-side, country-specific connector: Type CEE 7/7 Schuko | Line-side, country-specific connector: Type BS 1363 (Commonwealth connector) | Line-side, country-specific connector: Type J (SEV 1011) | Line-side, country-specific connector: Type B (NEMA 5-15) | Line-side, country-specific connector: Type L (CEI 23-50) | Line-side, country-specific connector: Type I: GB 1002 (China), AS 3112 (Australia), IRAM 2073 (Argentina) |
| Device-side interface | | | | | | |
| • Number of pins device-side | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type | 3; Female, C13 connector type |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | | | |
| Suited for indoor use | Yes; Max. 10 A | Yes; Equipped with internal 13 A melting fuse | Yes; Max. 10 A | Yes; Max. 10 A | Yes; Max. 10 A | Yes; Max. 10 A |
| **Ambient temperature during operation** | | | | | | |
| • min. | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C | -10 °C |
| • max. | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 % | 90 % | 90 % | 90 % | 90 % | 90 % |
| **Cables** | | | | | | |
| Cable length | 3 m | 3 m | 3 m | 3 m | 3 m | 3 m |
| Color of cable sheath | Black | Black | Black | Black | Black | Black |
| **Weights** | | | | | | |
| Weight, approx. | 290 g | 300 g | 260 g | 230 g | 255 g | 280 g |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 1; AC cable for DE, FR, ES, NL, BE, SE, AT, FI | 1; AC cable for GB | 1; AC cable for CH | 1; AC cable for US | 1; AC cable for IT | 1; AC cable for CN |
| **Other** | | | | | | |
| Merchandise | Yes | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH | FELLER GmbH |
| Manufacturer's address | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com | Wärndorferstraße 3, 2525 Günselsdorf, Austria; email: sales@feller-at.com |
| Target devices | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces | Suitable for all appropriate DC interfaces |

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Power supply units* | |
| **Power supply unit, external, Mobile Panel IWLAN without non-heating apparatus cable**<br>Suitable only for operation under laboratory/office conditions. | **6AV6671-5CN00-0AX3** |
| **Power supply unit, external, Mobile Panel IWLAN with 90° non-heating apparatus cable**<br>Suitable only for operation under laboratory/office conditions. | |
| • Power supply unit with non-heating apparatus cable for Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6AV2181-5AL10-0AX0** |
| • Power supply unit with non-heating apparatus cable for the United Kingdom | **6AV2181-5AL20-0AX0** |
| • Power supply unit with non-heating apparatus cable for Switzerland | **6AV2181-5AL30-0AX0** |
| • Power supply unit with non-heating apparatus cable for USA | **6AV2181-5AL40-0AX0** |
| • Power supply unit with non-heating apparatus cable for Italy | **6AV2181-5AL50-0AX0** |
| • Power supply unit with non-heating apparatus cable for China | **6AV2181-5AL60-0AX0** |

| | Article No. |
|---|---|
| *Power supply cable* | |
| **Power supply cable 230 V AC, angled 90°**<br>For Box PCs and Panel PCs | |
| • For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6ES7900-1AA00-0XA0** |
| • For the United Kingdom | **6ES7900-1BA00-0XA0** |
| • For Switzerland | **6ES7900-1CA00-0XA0** |
| • For the USA | **6ES7900-1DA00-0XA0** |
| • For Italy | **6ES7900-1EA00-0XA0** |
| • For China | **6ES7900-1FA00-0XA0** |
| **Power supply cable 230 V AC, straight 180°**<br>For Box PCs and Panel PCs | |
| • For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland | **6ES7900-0AA00-0XA0** |
| • For the United Kingdom | **6ES7900-0BA00-0XA0** |
| • For Switzerland | **6ES7900-0CA00-0XA0** |
| • For the USA | **6ES7900-0DA00-0XA0** |
| • For Italy | **6ES7900-0EA00-0XA0** |
| • For China | **6ES7900-0FA00-0XA0** |

### *More information*

Notice:

The technical specifications remain unchanged; however, the power supply cable now has to be ordered separately.

Suitable SITOP power supplies are available for use with machinery and plants.

Network cables for the connection of IPC systems for various countries are also available.

The replacement type has the article number:
6AV6671-5CN00-0AX3

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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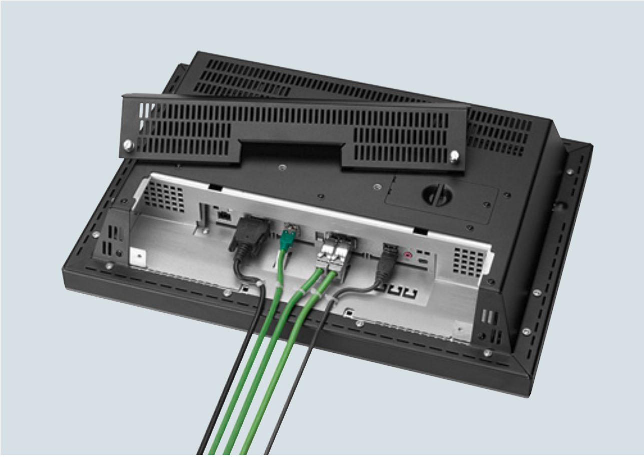
## Back covers

### Overview



Back cover IP20, partly installed

The back covers in IP20 design are ideal for simple mounting of Panels, Panel PCs, Flat Panels and industrial Thin Clients on VESA 100 brackets.

They are screwed onto the device and implement low-cost wall-mounting or connection to a supporting arm system.

Back covers are available for display size 15", 19" and 22" for the following SIMATIC HMI devices:

- Touch Panels
- Panel PC IPC477D [1] and IPC277D
- Flat Panels
- Thin Clients

[1] IPC477D 15" is only available as a single touch version.

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## Technical specifications

| Article number | **6AV7675-1RB00-0AA0**<br>BACK COVER IP20 15" (IPC277D/E) | **6AV7675-2RB00-0AA0**<br>BACK COVER IP20 15" (IPC477D) | **6AV7675-2RH00-0AA0**<br>BACK COVER IP20 15" (IPC477D MT) | **6AV7675-4RB00-0AA0**<br>BACK COVER IP20 15" (IFP1500) | **6AV7675-4RH00-0AA0**<br>BACK COVER IP20 15" (IFP1500 MT) | **6AV7675-8RB00-0AA0**<br>Backplane cover IP20 15" (TP/ITC1500) |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Backplane cover | Backplane cover | Backplane cover | Backplane cover | Backplane cover | Backplane cover |
| **Installation type/mounting** | | | | | | |
| Mounting type | VESA | VESA | VESA | VESA | VESA | VESA |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | | |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity |
| cULus | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | | | | | 0 °C | 0 °C |
| • max. | 40 °C | 40 °C | 40 °C | 40 °C | 40 °C | 40 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % | 95 % | 95 % |
| • Condensation permissible | No | No | No | No | No | No |
| **Mechanics/material** | | | | | | |
| Material | | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes | Yes |
| Screw type | | | | | | |
| • Torx | Yes; T10 | Yes; T10 | Yes; T10 | Yes; T10 | Yes; T10 | Yes; T10 |
| **Dimensions** | | | | | | |
| Width | 415 mm | 415 mm | 416.5 mm | 415 mm | 416.5 mm | 415 mm |
| Height | 310 mm | 310 mm | 298 mm | 310 mm | 298 mm | 310 mm |
| Depth | 90 mm | 90 mm | 89 mm | 89 mm | 89 mm | 90 mm |
| **Weights** | | | | | | |
| Weight without packaging | 1.6 kg | 1.6 kg | 1.6 kg | 1.6 kg | 1.6 kg | 1.6 kg |

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## **Technical specifications** (continued)

| Article number | **6AV7675-1RD00-0AA0**<br>BACK COVER IP20 19" (IPC277D/E) | **6AV7675-2RD00-0AA0**<br>back cover IP20 19" (IPC477x) | **6AV7675-4RD00-0AA0**<br>BACK COVER IP20 19" (IFP1900) | **6AV7675-4RD00-0AA1**<br>Back plane cover IP20 19" (IFP1900) | **6AV7675-8RD00-0AA0**<br>Backplane cover IP20 19" (TP/ITC1900) |
|---|---|---|---|---|---|
| **General information** | | | | | |
| Product type designation | Backplane cover | Backplane cover | Backplane cover | Backplane cover | Backplane cover |
| **Installation type/mounting** | | | | | |
| Mounting type | VESA | VESA | VESA | VESA | VESA |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes |
| **Degree and class of protection** | | | | | |
| IP (rear) | IP20 | IP20 | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity |
| cULus | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, f ile number E115352 | Yes; UL 60950-1, file number E115352 |
| **Ambient conditions** | | | | | |
| **Ambient temperature during operation** | | | | | |
| • min. | | | | | 0 °C |
| • max. | 40 °C | 40 °C | 40 °C | 40 °C | 40 °C |
| **Relative humidity** | | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % | 95 % |
| • Condensation permissible | No | No | No | No | No |
| **Mechanics/material** | | | | | |
| Material | | | | | |
| • Aluminum | Yes | Yes | Yes | Yes | Yes |
| Screw type | | | | | |
| • Torx | Yes; T10 | Yes; T10 | Yes; T10 | Yes; T10 | Yes; T10 |
| **Dimensions** | | | | | |
| Width | 483 mm | 483 mm | 483 mm | 483 mm | 483 mm |
| Height | 337 mm | 337 mm | 337 mm | 337 mm | 337 mm |
| Depth | 89 mm | 89 mm | 89 mm | 89 mm | 89 mm |
| **Weights** | | | | | |
| Weight without packaging | 1.9 kg | 1.9 kg | 1.9 kg | 1.9 kg | 1.9 kg |

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## Technical specifications (continued)

| Article number | **6AV7675-2RE00-0AA0**<br>back cover IP20 22" (IPC477x) | **6AV7675-4RE00-0AA0**<br>Backplane cover IP20 22" (IFP2200) | **6AV7675-8RE00-0AA0**<br>Backplane cover IP20 22" (TP/ITC2200) |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Backplane cover | Backplane cover | Backplane cover |
| **Installation type/mounting** | | | |
| Mounting type | VESA | VESA | VESA |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Degree and class of protection** | | | |
| IP (rear) | IP20 | IP20 | IP20 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity | Yes; CE marking / EC Declaration of Conformity |
| cULus | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 | Yes; UL 60950-1, file number E115352 |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | | 0 °C | 0 °C |
| • max. | 40 °C | 40 °C | 40 °C |
| **Relative humidity** | | | |
| • Operation, max. | 95 % | 95 % | 95 % |
| • Condensation permissible | No | No | No |
| **Mechanics/material** | | | |
| Material | | | |
| • Aluminum | Yes | Yes | Yes |
| Screw type | | | |
| • Torx | Yes; T10 | Yes; T10 | Yes; T10 |
| **Dimensions** | | | |
| Width | 560 mm | 560 mm | 560 mm |
| Height | 380 mm | 380 mm | 380 mm |
| Depth | 89 mm | 89 mm | 89 mm |
| **Weights** | | | |
| Weight without packaging | 2.2 kg | 2.2 kg | 2.2 kg |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **Back covers IP20** | |
| 15" devices | |
| • IPC277D 15" | **6AV7675-1RB00-0AA0** |
| • IPC477D 15" [1] | **6AV7675-2RB00-0AA0** |
| • IPC477D 15" MT [1] | **6AV7675-2RH00-0AA0** |
| • IFP1500 | **6AV7675-4RB00-0AA0** |
| • IFP1500 MT | **6AV7675-4RH00-0AA0** |
| • TP1500 / ITC1500 | **6AV7675-8RB00-0AA0** |
| 19" devices | |
| • IPC277D 19" | **6AV7675-1RD00-0AA0** |
| • IPC477D 19" [1] | **6AV7675-2RD00-0AA0** |
| • IFP1900, black | **6AV7675-4RD00-0AA0** |
| • IFP1900, gray | **6AV7675-4RD00-0AA1** |
| • TP1900 / ITC1900 | **6AV7675-8RD00-0AA0** |
| 22" devices | |
| • IPC477D 22" [1] | **6AV7675-2RE00-0AA0** |
| • IFP2200 | **6AV7675-4RE00-0AA0** |
| • TP2200 / ITC2200 | **6AV7675-8RE00-0AA0** |

[1] Without DVD/PCIe expansion

## More information

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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## Overview

SIEMENS
SIMATIC HMI
TOUCH
SIMATIC MOBILE PANEL

HMI accessories, protective film for display

### *Protective films*

Protective films are available for almost all SIMATIC HMI devices. They protect the display from dirt and scratching during operation and in harsh environments.

The SIMATIC protective films are non-reflective. This ensures that the display is always easy to read, even when using protective films.

The protective film can be removed without leaving any adhesive residue on the front. Adhesive-edged protective films are now available for resistive touch systems (membrane touch). For multi-touch systems (typically with glass fronts) full-width adhesive protective films are available. Full-width adhesive films should not be used on single-touch systems, as the touch system could be damaged when removing the film. All full-width adhesive films can be trimmed to any size, this does not affect the quality of the film. Adhesive-edged films should not be trimmed, as this would lead to the loss of the adhesive edge.

For complete protection of the front side in harsh environments, protective covers are also available for some devices.

Benefits of protective films/protective covers:

- Reduced reflections
- Lightweight, thin and frameless design
- Simple and fast to attach
- Residue-free removal
- Dust-resistant
- Antibacterial coating on request (for the medical sector or F&B)

The protective film does not always need to cover the whole front. For compatibility reasons, not all protective films extend as far as the edge of the enclosure. This does not in any way impair the function of protecting the display.

## Technical specifications

| Article number | **6AV6671-2EC00-0AX0**<br>Protect. Film 4" Touch Device | **6AV2124-6DJ00-0AX0**<br>Protect. Film 4" Widescreen | **6AV2181-5DJ00-0AX0**<br>Protect. film 4" widescreen, type 13 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 4" | Protective film 4" widescreen | Protective film 4" widescreen |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| • Condensation permissible | | No | No |
| **Mechanics/material** | | | |
| Material | | | |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Nonreflecting |
| **Dimensions** | | | |
| Width | 120 mm | 131.4 mm | 110.1 mm |
| Height | 105 mm | 107.4 mm | 68.9 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.125 mm |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10 | 10 |
| **Other** | | | |
| printable with laser printer | Yes | Yes | No |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for TP 177B 4", KTP 400 Basic | For KTP400 Basic,<br>KTP400 Basic 2nd,<br>KTP400 Comfort,<br>KTP400F Mobile | KTP400F Mobile 4" |

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## **Technical specifications** (continued)

| Article number | **6AV6574-1AD00-4AX0**<br>Protect. Film 6" Touch Device, Type 1 | **6AV6574-1AD00-4DX0**<br>Protect. Film 6" Touch Device, Type 2 | **6AV6574-1AD04-4AA0**<br>Protect. Film 6" Touch Device, Type 10 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 6" | Protective film 6" | Protective film 6" |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 50 °C | 50 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | |
| Material | | | |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Nonreflecting |
| **Dimensions** | | | |
| Width | 118.4 mm | 178.4 mm | 120.5 mm |
| Height | 89 mm | 135.4 mm | 91 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.125 mm |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10 | 10 |
| **Other** | | | |
| printable with laser printer | Yes | Yes | Yes |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For TP070, TP170micro, TP170A/B, C7-635 touch | For TP270 6", TP277 6", MP177 6" touch, MP270B 6" touch | For Mobile Panel 170, Mobile Panel 177 |

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## Technical specifications (continued)

| Article number | **6AV2124-6GJ00-0AX0**<br>Protect. film 7" widescreen | **6AV6881-0GJ22-0AA0**<br>Protect. film 7" front, type 5 | **6AV2181-5GJ00-0AX0**<br>Protect. film 7" widescreen, type 13 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 7" widescreen | Protective film 7" front, surface, type 5 | Protective film 7" widescreen |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | No; No CE marking obligation | Yes |
| **Ambient conditions** | | | |
| Suited for indoor use | | Yes; Processing temperature 5 °C to 32 °C, empirical value | |
| Suited for outdoor use | | No; possible under certain conditions | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -20 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 50 % | 90 % |
| • Condensation permissible | No | | No |
| **Mechanics/material** | | | |
| Material | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer | |
| • Plastic | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant | Yes; Nonreflecting |
| • PET | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue | |
| Enclosure material (front) | | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) | |
| • Plastic | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 | |
| • PET | | Yes; Basic foil, storage life > 1 year | |
| **Dimensions** | | | |
| Width | 205.4 mm | 206 mm | 169.5 mm |
| Height | 149.4 mm | 150 mm | 108.5 mm |
| Thickness | 0.125 mm | 0.225 mm | 0.125 mm |
| **Weights** | | | |
| Weight without packaging | | 8 g; Per unit | |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 5; Units per set | 10 |
| Components included | | 5x removers, 5x cleaning cloths, 1x spatula for applying | |
| **Other** | | | |
| printable with laser printer | No; digital UV printing | No | No |
| Merchandise | No | Yes; URM55 reflection shield, matte | No |
| Manufacturer name | SIEMENS AG | Bedifol GmbH | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Byk-Gulden-Straße 2 // F22,<br>78467 Constance,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany |
| Target devices | for KTP700 Basic 2nd, TP700 Comfort, IPC277D | Panels and IPC with start of delivery from 2020 (WFP2.3) | KTP700 Mobile, KTP700F Mobile |
| Note: | Edge-adhesive film, can be trimmed to a limited extent, printable, observe target device manual before attaching, high suitability for resistive touch systems, limited suitability for glass fronts | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems | |

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## Technical specifications (continued)

| Article number | **6AV6671-3CC00-0AX0**<br>Protect. Film 8" Touch Device, Type 1 | **6AV6671-3CC00-0AX5**<br>Protect. Film 8" Touch Device, Type 2 | **6AV6671-5BC00-0AX0**<br>Protect. film 8" Touch device, type 10 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 8" | Protective film 8" | Protective film 8" |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| **Mechanics/material** | | | |
| Material | | | |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Nonreflecting |
| **Dimensions** | | | |
| Width | 207 mm | 217 mm | 155.5 mm |
| Height | 165 mm | 217 mm | 117.7 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.3 mm |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10 | 2 |
| **Other** | | | |
| printable with laser printer | Yes | Yes | Yes |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany |
| Target devices | For MP277 8" touch up to product version "ES 14" | For MP277 8" touch in product version "ES 15" and later | for Mobile Panel 277 8" |

## Technical specifications (continued)

| Article number | **6AV2124-6JJ00-0AX0**<br>Protect. Film 9" Widescreen | **6AV2181-3JJ20-0AX0**<br>Protect. Film 9" Widescreen, Type 2 | **6AV2181-5JJ00-0AX0**<br>Protect. film 9" widescreen, type 13 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 9" widescreen | Protective film 9" widescreen | Protective film 9" widescreen |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| • Condensation permissible | No | No | No |
| **Mechanics/material** | | | |
| Material | | | |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Nonreflecting |
| **Dimensions** | | | |
| Width | 265.4 mm | 258.4 mm | 214.6 mm |
| Height | 181.4 mm | 173.4 mm | 134.6 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.125 mm |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10 | 10 |
| **Other** | | | |
| printable with laser printer | Yes | Yes | No |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany |
| Target devices | for TP900 Comfort, IPC277D | for KTP900 Basic | KTP900 Mobile, KTP900F Mobile |

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## **Technical specifications** (continued)

| Article number | **6AV6671-3DC00-0AX0**<br>Protect. Film 10" Touch Device, Type 1 | **6AV6671-3DC00-0AX5**<br>Protect. Film 10" Touch Device, Type 2 | **6AV6881-0AJ21-0AA0**<br>Protect. film 10" widescreen, type 4 | **6AV6881-0KJ22-0AA0**<br>Protect. film 10" front, type 5 | **6AV6645-7AB15-0AS0**<br>Protect. film 10" Touch device, type10 | **6AV6574-1AD00-4CX0**<br>Protect. Film 10" to 12" Touch Device |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Protective film 10" | Protective film 10" | Protective film 10" widescreen, type 4 | Protective film 10" front, surface, type 5 | Protective film 10" | Protective film 10" ... 12" |
| **Installation type/mounting** | | | | | | |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | No; No CE marking obligation | No; No CE marking obligation | Yes | Yes |
| **Ambient conditions** | | | | | | |
| Suited for indoor use | | | Yes | Yes; Processing temperature 5 °C to 32 °C, empirical value | | |
| Suited for outdoor use | | | No; possible under certain conditions | No; possible under certain conditions | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | -40 °C | -40 °C | 0 °C | -20 °C | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C | 55 °C | 80 °C | 80 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 90 % | 90 % | 50 % | 50 % | 90 % | 90 % |
| **Mechanics/material** | | | | | | |
| Material | | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer | | |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant | Yes; Nonreflecting | Yes; Polyester; non-reflecting |
| • PET | | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue | | |
| Enclosure material (front) | | | Scratching hardness 2H, adhesive force 0.011 N/25 mm | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) | | |
| • Plastic | | | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 | | |
| • PET | | | | Yes; Basic foil, storage life > 1 year | | |
| **Dimensions** | | | | | | |
| Width | 292 mm | 299.8 mm | 216.96 mm | 277 mm | 223.17 mm | 297.4 mm |
| Height | 248 mm | 259.9 mm | 135.6 mm | 198 mm | 170.37 mm | 254.4 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.225 mm | 0.225 mm | 0.3 mm | 0.125 mm |
| **Weights** | | | | | | |
| Weight without packaging | | | 30 g; Per unit | 16 g; Per unit | | |

## Technical specifications (continued)

| Article number | **6AV6671-3DC00-0AX0**<br>Protect. Film 10" Touch Device, Type 1 | **6AV6671-3DC00-0AX5**<br>Protect. Film 10" Touch Device, Type 2 | **6AV6881-0AJ21-0AA0**<br>Protect. film 10" widescreen, type 4 | **6AV6881-0KJ22-0AA0**<br>Protect. film 10" front, type 5 | **6AV6645-7AB15-0AS0**<br>Protect. film 10" Touch device, type10 | **6AV6574-1AD00-4CX0**<br>Protect. Film 10" to 12" Touch Device |
|---|---|---|---|---|---|---|
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 10 | 10 | 5; Units per set | 5; Units per set | 10 | 10 |
| Components included | | | 5x removers, 5x cleaning cloths, 5x spatulas for applying | 5x removers, 5x cleaning cloths, 1x spatula for applying | | |
| **Other** | | | | | | |
| printable with laser printer | Yes | Yes; Test printer suitability beforehand. No liability for printer damage | No | No | Yes | Yes |
| Merchandise | No | No | Yes; URM55 reflection shield, matte | Yes; URM55 reflection shield, matte | | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | Bedifol GmbH | Bedifol GmbH | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | Byk-Gulden-Straße 2 // F22, 78467 Constance, Germany | | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | |
| Target devices | | | SIMATIC ITP1000 | Panels and IPC with start of delivery from 2020 (WFP2.3) | for Mobile Panel 277 10" | |
| Note: | | | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems | | |

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## Technical specifications (continued)

| Article number | **6AV2124-6MJ00-0AX0**<br>Protect. Film 12" Widescreen | **6AV2181-3MJ20-0AX0**<br>Protect. Film 12" Widescreen, Type 2 | **6AV6881-0MJ22-0AA0**<br>Protect. film 12" front, type 5 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 12" widescreen | Protective film 12" widescreen | Protective film 12" front, surface, type 5 |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | No; No CE marking obligation |
| **Ambient conditions** | | | |
| Suited for indoor use | | | Yes; Processing temperature 5 °C to 32 °C, empirical value |
| Suited for outdoor use | | | No; possible under certain conditions |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -20 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 50 % |
| • Condensation permissible | No | No | |
| **Mechanics/material** | | | |
| Material | | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant |
| • PET | | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue |
| Enclosure material (front) | | | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) |
| • Plastic | | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 |
| • PET | | | Yes; Basic foil, storage life > 1 year |
| **Dimensions** | | | |
| Width | 321.4 mm | 321.4 mm | 318 mm |
| Height | 232.4 mm | 236.8 mm | 229 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.225 mm |
| **Weights** | | | |
| Weight without packaging | | | 22 g; Per unit |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10 | 5; Units per set |
| Components included | | | 5x removers, 5x cleaning cloths, 1x spatula for applying |
| **Other** | | | |
| printable with laser printer | Yes | Yes | No |
| Merchandise | No | No | Yes; URM55 reflection shield, matte |
| Manufacturer name | SIEMENS AG | SIEMENS AG | Bedifol GmbH |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Byk-Gulden-Straße 2 // F22, 78467 Constance, Germany |
| Target devices | for TP1200 Comfort, IPC277D | for KTP1200 Basic | Panels and IPC with start of delivery from 2020 (WFP2.3) |
| Note: | | | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems |

## Technical specifications (continued)

| Article number | 6AV6574-1AD00-4EX0<br>Protect. Film 15" Touch Device | 6AV2124-6QJ00-0AX1<br>Protect. Film 15" Widescreen | 6AV6881-0QJ22-0AA0<br>Protect. film 15" front, type 5 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 15", 4:3 | Protective film 15" widescreen | Protective film 15" front, surface, type 5 |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | | No; No CE marking obligation |
| **Ambient conditions** | | | |
| Suited for indoor use | | Yes | Yes; Processing temperature 5 °C to 32 °C, empirical value |
| Suited for outdoor use | | No | No; possible under certain conditions |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -40 °C | -20 °C |
| • max. | 50 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 50 % |
| **Mechanics/material** | | | |
| Material | | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant |
| • PET | | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue |
| Enclosure material (front) | | | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) |
| • Plastic | | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 |
| • PET | | | Yes; Basic foil, storage life > 1 year |
| **Dimensions** | | | |
| Width | 362 mm | 368 mm | 390 mm |
| Height | 289 mm | 259 mm | 249 mm |
| Thickness | 0.125 mm | 0.125 mm | 0.225 mm |
| **Weights** | | | |
| Weight without packaging | | 26 g; Per unit | 150 g; Per unit |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10 | 10; Units per set | 5; Units per set |
| Components included | | | 5x removers, 5x cleaning cloths, 1x spatula for applying |
| **Other** | | | |
| printable with laser printer | Yes | Yes | No; Suitable for screen printing |
| Merchandise | No | No | Yes; URM55 reflection shield, matte |
| Manufacturer name | SIEMENS AG | SIEMENS AG | Bedifol GmbH |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Byk-Gulden-Straße 2 // F22, 78467 Constance, Germany |
| Target devices | | for Comfort Panel, IPC, Flat Panel, Thin Client | Panels and IPC with start of delivery from 2020 (WFP2.3) |
| Note: | Not suitable for widescreen | not suitable for multi-touch (glass front) | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems |

## **Technical specifications** (continued)

| Article number | **6AV7672-1CE00-0AA0**<br>Protect. Film 19" Touch Device | **6AV2124-6UJ00-0AX1**<br>Protect. Film 19" Widescreen | **6AV6881-0UJ20-0AA0**<br>Protect. film 19" glass front, type 1 | **6AV6881-0UJ22-0AA0**<br>Protect. film 19" front, type 5 |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Protective film 19", 4:3 | Protective film 19" widescreen | Protective film, 19" glass front | Protective film 19" front, surface, type 5 |
| **Installation type/mounting** | | | | |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | | No; No CE marking obligation | No; No CE marking obligation |
| **Ambient conditions** | | | | |
| Suited for indoor use | | Yes | Yes | Yes; Processing temperature 5 °C to 32 °C, empirical value |
| Suited for outdoor use | | No | No; possible under certain conditions | No; possible under certain conditions |
| **Ambient temperature during operation** | | | | |
| • min. | -40 °C | -40 °C | 0 °C | -20 °C |
| • max. | 80 °C | 80 °C | 55 °C | 80 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 90 % | 90 % | 50 % | 50 % |
| **Mechanics/material** | | | | |
| Material | | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer |
| • Plastic | Yes; Nonreflecting | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant |
| • PET | | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue |
| Enclosure material (front) | | | Scratching hardness 2H, adhesive force 0.011 N/25 mm | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) |
| • Plastic | | | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 |
| • PET | | | | Yes; Basic foil, storage life > 1 year |
| **Dimensions** | | | | |
| Width | 378 mm | 451 mm | 409 mm | 456 mm |
| Height | 302.5 mm | 285 mm | 231 mm | 286 mm |
| Thickness | 0.2 mm | 0.125 mm | 0.225 mm | 0.225 mm |
| **Weights** | | | | |
| Weight without packaging | | 34 g; Per unit | 34 g; Per unit | 190 g; Per unit |

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## Technical specifications (continued)

| Article number | **6AV7672-1CE00-0AA0**<br>Protect. Film 19" Touch Device | **6AV2124-6UJ00-0AX1**<br>Protect. Film 19" Widescreen | **6AV6881-0UJ20-0AA0**<br>Protect. film 19" glass front, type 1 | **6AV6881-0UJ22-0AA0**<br>Protect. film 19" front, type 5 |
|---|---|---|---|---|
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 10 | 10; Units per set | 5; Units per set | 5; Units per set |
| Components included | | | 5x removers,<br>5x cleaning cloths,<br>5x spatulas for applying | 5x removers,<br>5x cleaning cloths,<br>1x spatula for applying |
| **Other** | | | | |
| printable with laser printer | Yes | Yes | No | No; Suitable for screen printing |
| Merchandise | No | No | Yes; URM55 reflection shield, matte | Yes; URM55 reflection shield, matte |
| Manufacturer name | SIEMENS AG | SIEMENS AG | Bedifol GmbH | Bedifol GmbH |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Byk-Gulden-Straße 2 // F22, 78467 Constance, Germany | Byk-Gulden-Straße 2 // F22, 78467 Constance, Germany |
| Target devices | | for Comfort Panel, IPC, Flat Panel, Thin Client | For 19" widescreen flat panels, can also be cut to size for smaller, glass front displays, not suitable for membrane fronts | Panels and IPC with start of delivery from 2020 (WFP2.3) |
| Note: | Not suitable for widescreen | not suitable for multi-touch (glass front) | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems |

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## Technical specifications (continued)

| Article number | **6AV2124-6XJ00-0AX1**<br>Protect. Film 22" Widescreen | **6AV6881-0VJ22-0AA0**<br>Protect. film 22" front, type 5 | **6AV6881-0WJ22-0AA0**<br>Protect. film 24" front, type 5 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Protective film 22" widescreen | Protective film 22" front, surface, type 5 | Protective film 24" front, surface, type 5 |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Standards, approvals, certificates** | | | |
| CE mark | | No; No CE marking obligation | No; No CE marking obligation |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes; Processing temperature 5 °C to 32 °C, empirical value | Yes; Processing temperature 5 °C to 32 °C, empirical value |
| Suited for outdoor use | No | No; possible under certain conditions | No; possible under certain conditions |
| **Ambient temperature during operation** | | | |
| • min. | -40 °C | -20 °C | -20 °C |
| • max. | 80 °C | 80 °C | 80 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 50 % | 50 % |
| **Mechanics/material** | | | |
| Material | | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer | Polyester with functional hard layer, dirt-repellant, URM55, silicone adhesive layer |
| • Plastic | Yes; Nonreflecting | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant | Yes; Non-reflecting, matte, can be removed without residue, hard-coated, dirt-repellant |
| • PET | | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue | Yes; Non-antistatic, non-reflecting, scratch-resistant, can be removed without residue |
| Enclosure material (front) | | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) | Scratch resistance 2H (acc. to JIS K 5600), adhesive force 0.011 N/25 mm (acc. to JIS Z 0237) |
| • Plastic | | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 | Yes; Haze 11.9% acc. to JIS K 7136 and transmission 90.5% acc. to JIS K 7361-1 |
| • PET | | Yes; Basic foil, storage life > 1 year | Yes; Basic foil, storage life > 1 year |
| **Dimensions** | | | |
| Width | 518 mm | 512 mm | 577 mm |
| Height | 334 mm | 323 mm | 355 mm |
| Thickness | 0.125 mm | 0.225 mm | 0.225 mm |
| **Weights** | | | |
| Weight without packaging | 44 g; Per unit | 220 g; Per unit | 240 g; Per unit |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 10; Units per set | 5; Units per set | 5; Units per set |
| Components included | | 5x removers, 5x cleaning cloths, 1x spatula for applying | 5x removers, 5x cleaning cloths, 1x spatula for applying |
| **Other** | | | |
| printable with laser printer | Yes | No; Suitable for screen printing | No; Suitable for screen printing |
| Merchandise | No | Yes; URM55 reflection shield, matte | Yes; URM55 reflection shield, matte |
| Manufacturer name | SIEMENS AG | Bedifol GmbH | Bedifol GmbH |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Byk-Gulden-Straße 2 // F22,<br>78467 Constance,<br>Germany | Byk-Gulden-Straße 2 // F22,<br>78467 Constance,<br>Germany |
| Target devices | for Comfort Panel, IPC, Flat Panel, Thin Client | Panels and IPC with start of delivery from 2020 (WFP2.3) | Panels and IPC with start of delivery from 2020 (WFP2.3) |
| Note: | not suitable for multi-touch (glass front) | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems | Surface-adhesive film, can be trimmed, printable, observe target device manual before attaching, limited suitability for resistive touch systems |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **Protective films 4"** | |
| • Touch devices | **6AV6671-2EC00-0AX0** |
| • Widescreen | **6AV2124-6DJ00-0AX0** |
| • Widescreen, Type 13 | **6AV2181-5DJ00-0AX0** |
| **Protective films 6"** | |
| • Touch devices, Type 1 | **6AV6574-1AD00-4AX0** |
| • Touch devices, Type 2 | **6AV6574-1AD00-4DX0** |
| • Touch devices, Type 4 | **6AV6671-2XC00-0AX0** |
| • Touch devices, Type 10 | **6AV6574-1AD04-4AA0** |
| **Protective films 7"** | |
| • Widescreen | **6AV2124-6GJ00-0AX0** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0GJ22-0AA0** |
| • Widescreen, Type 13 | **6AV2181-5GJ00-0AX0** |
| **Protective films 8"** | |
| • Touch devices, Type 1 | **6AV6671-3CC00-0AX0** |
| • Touch devices, Type 2 | **6AV6671-3CC00-0AX5** |
| • Touch devices, Type 10 | **6AV6671-5BC00-0AX0** |
| **Protective films 9"** | |
| • Widescreen, Type 1 | **6AV2124-6JJ00-0AX0** |
| • Widescreen, Type 2 | **6AV2181-3JJ20-0AX0** |
| • Widescreen, Type 13 | **6AV2181-5JJ00-0AX0** |
| **Protective films 10"** | |
| • Touch devices, Type 1 | **6AV6671-3DC00-0AX0** |
| • Touch devices, Type 2 | **6AV6671-3DC00-0AX5** |
| • Widescreen "full-surface bonding", Type 4 | **6AV6881-0AJ21-0AA0** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0KJ22-0AA0** |
| • Touch devices, Type 10 | **6AV6645-7AB15-0AS0** |
| **Protective films for 10" to 12" touch devices** | **6AV6574-1AD00-4CX0** |
| **Protective films 12"** | |
| • Widescreen, Type 1 | **6AV2124-6MJ00-0AX0** |
| • Widescreen, Type 2 | **6AV2181-3MJ20-0AX0** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0MJ22-0AA0** |
| **Protective films 15"** | |
| • Touch devices | **6AV6574-1AD00-4EX0** |
| • Widescreen | **6AV2124-6QJ00-0AX1** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0QJ22-0AA0** |
| **Protective films 19"** | |
| • Touch devices | **6AV7672-1CE00-0AA0** |
| • Widescreen | **6AV2124-6UJ00-0AX1** |
| • Widescreen "full-surface bonding" | **6AV6881-0UJ20-0AA0** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0UJ22-0AA0** |
| **Protective films 22"** | |
| • Widescreen | **6AV2124-6XJ00-0AX1** |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0VJ22-0AA0** |
| **Protective films 24"** | |
| • Widescreen, Type 5 Unified / IPC | **6AV6881-0WJ22-0AA0** |

## More information

Note:

Suitable target devices and contents can be found at the end of the technical specifications of each protective film.

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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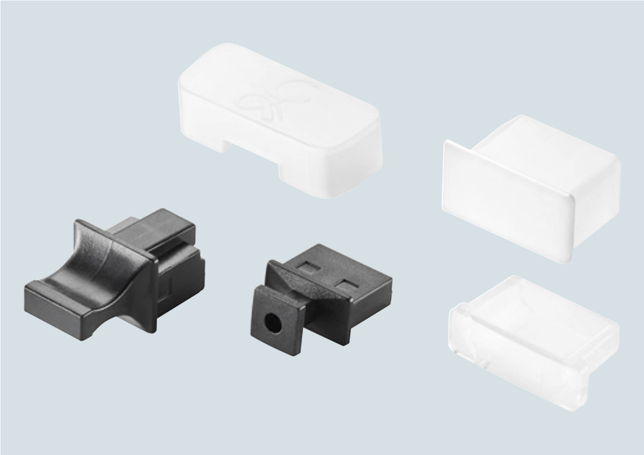
## Overview



***Protective covers and dust caps***

Protective covers

With a protective cover the complete panel front can be additionally protected. This gives IP65 degree of protection to the complete panel front.

Protective covers with IP65 degree of protection provide complete frontal protection of the panel and IPC against dirt and scratches.

If the protective cover is now attacked by corrosive substances, the actual front of the device remains unaffected. If it is damaged, the protective cover can easily be replaced at any time.

Self-adhesive protective films are available for simple display protection.

The protective covers can be kept clean using high-pressure cleaning equipment.

Ready-made templates can be downloaded to help you create and print out your own low-cost frame designs between panel and protective cover.

Unfortunately, no protective covers are available for the Basic and Comfort Panels, or the IPCs.

Dust caps

It is also possible to dustproof unused or rarely used interfaces on the back or underside of the device.

For this purpose we offer dust caps.

## Technical specifications

| Article number | **6AV6574-1AE00-4AX0**<br>Protective Cover 6" Touch Devices | **6AV6671-1AJ00-0AX0**<br>Protective Cover OP 77 | **6AV6671-2DJ00-0AX0**<br>Protective Cover OP 177 | **6AV6671-3CK01-0AX0**<br>Protective Cover MP 277-8" Touch | **6AV6671-3CK00-0AX0**<br>Protective Cover MP 277 10" Touch | **6ES7648-1AA50-0XG0**<br>Dust protection set interfaces |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Protective cover 6" touch devices | Protective cover | Protective cover | Protective cover MP277 8" touch | Protective cover MP277 10" touch | Dust protection set interfaces |
| **Installation type/mounting** | | | | | | |
| Mounting in portrait format possible | Yes | Yes | Yes | Yes | Yes | |
| Mounting in landscape format possible | Yes | Yes | Yes | Yes | Yes | |
| **Degree and class of protection** | | | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 | IP65 | |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | -40 °C | -40 °C | -40 °C | -40 °C | -40 °C | |
| • max. | 80 °C | 80 °C | 80 °C | 80 °C | 80 °C | |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % | 95 % | |

## Technical specifications (continued)

| Article number | **6AV6574-1AE00-4AX0**<br>Protective Cover 6" Touch Devices | **6AV6671-1AJ00-0AX0**<br>Protective Cover OP 77 | **6AV6671-2DJ00-0AX0**<br>Protective Cover OP 177 | **6AV6671-3CK01-0AX0**<br>Protective Cover MP 277-8" Touch | **6AV6671-3CK00-0AX0**<br>Protective Cover MP 277 10" Touch | **6ES7648-1AA50-0XG0**<br>Dust protection set interfaces |
|---|---|---|---|---|---|---|
| **Mechanics/material** | | | | | | |
| Material | | | | | | |
| • Plastic | Yes | Yes | Yes | Yes | Yes | |
| **Dimensions** | | | | | | |
| Width | 242.3 mm | 178.6 mm | 274.3 mm | 270.8 mm | 355.8 mm | |
| Height | 186.3 mm | 214.6 mm | 243.26 mm | 211 mm | 294 mm | |
| Thickness | 10 mm | 7.8 mm | 7.8 mm | 7.8 mm | 7.8 mm | |
| Mounting cutout, width | 198 mm | 135 mm | 229 mm | 226 mm | 310 mm | |
| Mounting cutout, height | 142 mm | 171 mm | 196 mm | 166 mm | 248 mm | |
| **Weights** | | | | | | |
| Weight without packaging | 750 g | 750 g | 750 g | 750 g | 750 g | |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | | | | | | |
| • Parts per unit | 2; 2 cover frames, 2 base frames, 2 protective covers, molded (for TP070, TP170micro, TP170A/B), 2 protective covers, smooth (for TP177micro, TP177A/B, TP270 6", MP177 6" touch, MP270 6" touch) | 2; 2 cover frames, 2 base frames, 2 protective covers | 2; 2 cover frames, 2 base frames, 2 protective covers | 2; 2 cover frames, 2 base frames, 2 protective covers | 2; 2 cover frames, 2 base frames, 2 protective covers | |
| **Other** | | | | | | |
| Merchandise | No | No | No | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For TP070, TP170A, TP170B, TP170micro, TP177micro, TP177A, TP177B, TP270 6 ", TP277 6 ", MP270 6" touch | for OP 77A, OP 77B | For OP177B | For MP277 8" touch as far as product version "ES 14" with narrow frame | For MP277 10" touch up to product version "ES 14 ", Thin Client 10" up to "ES 03" (6AV6646-0AA21-2AX0) with narrow frame | |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **Protective covers for 6" touch devices**<br>for TP 070, TP 170micro, TP 177micro, TP 170A/B, TP 177A/B, TP 270 6", TP 277 6"<br>MP 177 6" touch, MP 270 6" touch | **6AV6574-1AE00-4AX0** |
| **Protective covers for OP 77**<br>for OP77 and OP77B | **6AV6671-1AJ00-0AX0** |
| **Protective covers for OP 177**<br>for OP177B | **6AV6671-2DJ00-0AX0** |
| **Protective covers for MP 277 8" touch devices**<br>Only suitable for MP 277 8" touch up to E14 [1] (for devices with a narrow frame geometry) | **6AV6671-3CK01-0AX0** |
| **Protective covers for MP 277 10" touch devices**<br>Only suitable for MP 277 10" touch up to E14 [1] and 10" Thin Client up to E03 [2] (for devices with a narrow frame geometry) | **6AV6671-3CK00-0AX0** |
| **Dust protection set for USB and RJ45 interfaces**<br>SIMATIC PC, dust protection set accessory, interfaces for Panels, Thin Clients and IPCs with suitable USB or RJ45 (LAN) interface | **6ES7648-1AA50-0XG0** |

[1] E14 = Product version 14

[2] E03 = Product version 03

## More information

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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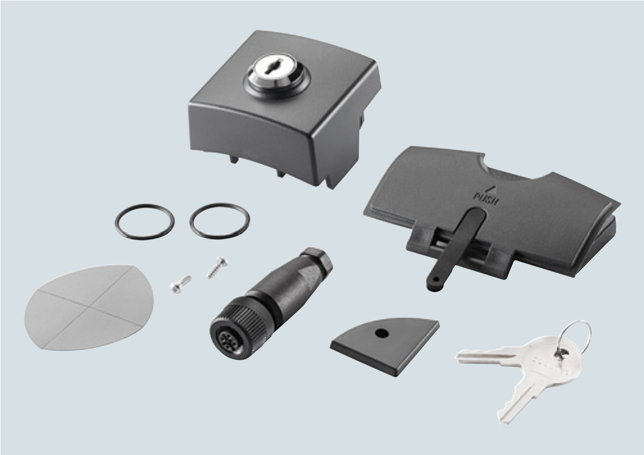
## Overview



### *Service sets*

A service set contains all the typical parts that are required for a core product.

If several identical parts are required, e.g. mounting clips, it makes more sense to order these separately.

Detailed information and quantities can be obtained from the relevant technical specifications. The number and contents are optimized in terms of functionality and cost. For this reason, accessories can only be obtained in the specified pack sizes.

## Technical specifications

| Article number | **6AV6671-2EA00-0AX0**<br>Service set for 4" and 6" devices | **6AV6574-1AA00-4AX0**<br>Service set for 6" devices, type 1 | **6AV2181-8XA80-0AX0**<br>Service set for 6" devices, type 2 | **6AV6671-2XA00-0AX0**<br>Service set for 6" devices, type 3 | **6AV6671-3XA01-0AX0**<br>Service set for 6" to 10" devices | **6AV6671-3XA01-0AX1**<br>Service set for 8" to 10" devices |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | | | | | Service set 6" ... 10" | Service set 8" ... 10" |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | | | |
| **Ambient temperature during operation** | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % | 95 % | 95 % |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | | | | | | |
| • Parts per unit | 1; Content:<br>2x seal KTP 400-TP 177B 4",<br>2x seal for KTP 600,<br>7x aluminum mounting clip,<br>1x 2-pin female connector | 1; Content:<br>3x mounting seal,<br>2x labeling strip,<br>7x plastic mounting clip,<br>1x 2-pin female connector | 1; Content:<br>3x mounting seal,<br>2x labeling strip,<br>7x plastic mounting clip,<br>20x aluminum mounting clip,<br>1x 2-pin female connector | 1; Content:<br>1x mounting seal TP 177,<br>1x mounting seal OP 177,<br>7x plastic mounting clip,<br>1x 2-pin female connector | 1; Content:<br>6x device-specific seals,<br>15x aluminum mounting clips,<br>1x 2-pin female connector,<br>1x product information clamp | 1; Content:<br>14x spring mounting clip,<br>1x 2-pin female connector |
| **Other** | | | | | | |
| Merchandise | Yes | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | | | | |
| Target devices | for KTP 400 Basic, KTP 600 Basic, TP 177B 4" | For TP070, TP170A/B, OP170B, TP170micro, OP270 6", TP270 6", MP270B 6" touch | For TP070, TP170A/B, OP170B, TP170micro, OP/TP270 6", MP177 6"T, MP270B 6" touch | for TP 177micro, TP 177A, TP 177B, OP 177B | For TP/OP277 6", MP277 8" touch, MP277 8" key, MP277 10" key product version "ES 14" and later, MP277 10" touch product version "ES 14" and later | For MP277 8" touch, MP277 8" key product version "ES 15" and later, MP277 10" touch product version "ES 15" and later |

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## Technical specifications (continued)

| Article number | **6AV6574-1AA00-2DX0**<br>Service set for 10" devices, type 1 | **6AV6675-3AA00-0AX0**<br>Service set for 10" devices, type 2 | **6AV6574-1AA00-2CX0**<br>Service set for 10" to 15" devices | **6AV6574-1AA00-2BX0**<br>Service set for 12" devices |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | | Service set 10" | | Service set, 12" ... 15" |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | | 0 °C | | 0 °C |
| • max. | | 55 °C | | 55 °C |
| **Relative humidity** | | | | |
| • Operation, max. | | 95 % | | 95 % |
| **Mechanics/material** | | | | |
| Screw type | | | | |
| • Hexagon socket | | | | Yes; 2.5 mm |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | | | | |
| • Parts per unit | 1; Content:<br>1x slide-in label strip for OP270 10" and MP270 10" key,<br>1x installation seal for OP270 10" and MP270 10" key,<br>10x cast aluminum mounting clips,<br>1x 2-pin female connector,<br>1x Allen key | 1; Content:<br>1x installation seal,<br>10x cast aluminum mounting clips,<br>1x 2-pin female connector,<br>1x Allen key | 1; Content:<br>10x aluminum mounting clips,<br>1x 2-pin female connector,<br>1x CF card interlock,<br>1x PC card interlock,<br>1x installation seal, C7-636, TP/MP270(B), MP370-12"T,<br>1x installation seal for MP370-15"T, all other panels have a non-replaceable foam seal | 1; Content:<br>1x mounting gasket sold by the meter,<br>2x memory card lock wide,<br>2x memory card lock narrow,<br>10x mounting clip cast aluminum,<br>6x mounting bracket,<br>1x female connector 2-pole 90 degrees,<br>1x female connector 2-pole 180 degrees,<br>2x Allen key and labeling strips for Key Panel |
| **Other** | | | | |
| Merchandise | Yes | | Yes | Yes |
| Manufacturer name | SIEMENS AG | | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg, Germany | | Gleiwitzerstraße 555,<br>90475 Nuremberg, Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg, Germany |
| Target devices | for OP270 10", MP270B key | For MP277 10" touch with stainless steel front | For C7-636 touch, TP270 10",<br>MP270B 10" touch,<br>MP370 12" touch,<br>MP370 15" touch | For MP370 12" ... 15" Touch/Key and TP37 |

| Article number | **6AV6671-4XA00-0AX0**<br>Service set for 12" to 19" devices | **6AV6671-4CA00-0AX0**<br>Service set for 15" devices |
|---|---|---|
| **General information** | | |
| Product type designation | Service set 12" ... 19" | Service set 15" |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C |
| **Relative humidity** | | |
| • Operation, max. | 95 % | 95 % |
| **Mechanics/material** | | |
| Screw type | | |
| • 4.5 V | Yes | |
| **Scope of supply** | | |
| Delivery quantity in pieces | | |
| • Parts per unit | 1; Content: 1x mounting seal MP377 12" key, 1x mounting seal MP377 12" touch, 1x mounting seal MP377 15" touch, 1x mounting seal MP377 19" touch, 18x aluminum mounting clip, 1x 2-pin female connector | 1; Content: 1x mounting seal, 1x memory card lock, 12x cast aluminum mounting clip, 1x 2-pin female connector, 1x Allen key |

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## Technical specifications (continued)

| Article number | **6AV6671-4XA00-0AX0**<br>Service set for 12" to 19" devices | **6AV6671-4CA00-0AX0**<br>Service set for 15" devices |
|---|---|---|
| **Other** | | |
| Merchandise | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For MP377 12" key, MP377 12" touch, MP377 15" touch, MP377 19" touch | For MP377 15" touch with stainless steel front |

| Article number | **6AV6574-1AA04-4AA0**<br>Service set Mobile Panel | **6AV6671-5CA00-0AX1**<br>Service set Mobile Panel Wireless V1 | **6AV6671-5CA00-0AX2**<br>Service set Mobile Panel Wireless V2 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | | Service set Mobile Panel 277 (F) IWLAN V1 | Service set Mobile Panel 277 (F) IWLAN V2 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | | 0 °C | 0 °C |
| • max. | | 55 °C | 55 °C |
| **Relative humidity** | | | |
| • Operation, max. | | 95 % | 95 % |
| **Scope of supply** | | | |
| Delivery quantity in pieces | | | |
| • Parts per unit | 1; Content:<br>1x blanking plug,<br>2x PG cable gland A-box,<br>1x screw set cover A-box,<br>2x 12-pin terminal box,<br>1x 3-pin terminal box,<br>1x dummy cap A-box,<br>2x corner seal l/r and O-ring,<br>4x decorative film corner seal l/r | 1; Content:<br>2x covers for charging station l/r,<br>1x connector for charging station,<br>2x corner seals l/r,<br>2x gasket corner seals,<br>4x decorative film corner seals l/r,<br>1x backup battery 3.6 V / 1.5 Ah including cover,<br>1x spare key for charging cradle | 1; Content:<br>1x battery slot cover device with seal,<br>2x cover charging station l/r,<br>1x circular connector charging station,<br>2x corner seal l/r,<br>2x O-ring seal,<br>4x decorative foil,<br>1x charging tray spare key incl. lock and lock holder, screws |
| **Other** | | | |
| Merchandise | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For Mobile Panel 170, Mobile Panel 177 | for Mobile Panel 277 IWLAN V1, Mobile Panel 277F IWLAN V1 | for Mobile Panel 277 IWLAN V2, Mobile Panel 277F IWLAN V2 |

| Article number | **6AV6671-3EA01-0AX0**<br>Service set Industrial USB Hub 4 | **6AV3678-3XC30**<br>Service Package F: PP7, PP17 I, PP17 II | **6AV3678-1CC10**<br>Service Package f.OP7/17 and TD17 | **6AV6671-1XA00-0AX0**<br>OP73Micro, OP73, OP77 Service Set |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | Industrial USB Hub 4 | | | |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | | | | |
| • Parts per unit | 1; Content:<br>1x mounting seal,<br>1x mounting frame,<br>5x plastic mounting clip,<br>1x 2-pin female connector | 1; Content:<br>1x mounting seal PP7,<br>1x mounting seal PP17,<br>5x plastic mounting clip,<br>1x 2-pin female connector,<br>1x 3-pin female connector,<br>1x 4-pin female connector,<br>2x 16-pin female connector | 1; Content:<br>1x mounting seal TD17,<br>1x mounting seal OP7,<br>1x mounting seal TD/OP17,<br>5x plastic mounting clip | 1; Content:<br>1x mounting seal OP73,<br>1x mounting seal OP77,<br>4x plastic mounting clip,<br>1x 2-pin female connector |

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## Technical specifications (continued)

| Article number | **6AV6671-3EA01-0AX0**<br>Service set Industrial USB Hub 4 | **6AV3678-3XC30**<br>Service Package F: PP7, PP17 I, PP17 II | **6AV3678-1CC10**<br>Service Package f.OP7/17 and TD17 | **6AV6671-1XA00-0AX0**<br>OP73Micro, OP73, OP77 Service Set |
|---|---|---|---|---|
| **Other** | | | | |
| Merchandise | Yes | | | |
| Manufacturer name | SIEMENS AG | | | |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | | |
| Target devices | For the Industrial USB Hub 4 | | | |
| Note: | | for PP7, PP17-I, PP17-II | for TD17, OP7, OP17 | for OP73micro, OP73, OP77A, OP77B |

| Article number | **6AV6881-5AA00-0AA1**<br>Service set KTP Mobile covers | **6AV6881-5AA00-0AA2**<br>Service set KTP Mobile covers | **6AV6881-0AG11-0AA0**<br>Service set KTP Mobile screws M3 |
|---|---|---|---|
| **General information** | | | |
| Product type designation | Mobile Panel Cover Set without M3 | Mobile Panel Cover Set incl. M3 | Mobile Panel M3 screw |
| **Standards, approvals, certificates** | | | |
| CE mark | No; No CE marking obligation | | |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | No; possible under certain conditions | No; possible under certain conditions | No; possible under certain conditions |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | |
| • Operation, max. | 95 % | 95 % | 95 % |
| **Mechanics/material** | | | |
| Material | | | general requirement according to DIN ISO 8992 |
| • Plastic | Yes; Misc. parts | Yes; Misc. parts | |
| • Sheet steel | Yes; Miscellaneous screws | Yes; Miscellaneous screws | |
| Screw type | | | |
| • Cross-tip | Yes; Cross-tip including slot | Yes; Cross-tip including slot | Yes; Cross-tip including slot |
| **Dimensions** | | | |
| Height | | | 12 mm; Overall |
| Depth | | | 10 mm; Up to underside of screw head |
| Thickness | | | 11 mm; Screw head |
| **Weights** | | | |
| Weight without packaging | 40 g | 45 g | 2.2 g |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1; Combination cross-tip collar screw (M3x10) | 1; 5x plastic cable clamps, 5x USB covers, and 5x (M3x10) screws | 5; Combination cross-tip collar screw (M3x10) |
| Components included | Combination cross-tip collar screw (M3x10) | 5x plastic cable clamps, 5x USB covers, and 5x (M3x10) screws | Screws for attachment |
| **Other** | | | |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Wired Mobile Panel (PROFIBUS and PROFINET) | Wired Mobile Panel (PROFIBUS and PROFINET) | Wired Mobile Panel (PROFIBUS and PROFINET) |
| Note: | Observe documentation of the target device | Observe documentation of the target device | Observe documentation of the target device |

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| Ordering data | Article No. |
|---|---|
| *Service sets*<br>**For contents and matching devices, see technical specifications in the Mall** | |
| **For 4" and 6" devices**<br>Service set for KTP400 Basic, KTP600 Basic, TP 177B 4" | **6AV6671-2EA00-0AX0** |
| **For 6" devices, type 1**<br>Service set for TP 070, TP 170A/B, OP 170B, TP 170micro, OP 270, TP 270B, MP 270B touch | **6AV6574-1AA00-4AX0** |
| **For 6" devices, type 2**<br>Service set for TP 070, TP 170A/B, OP 170B, TP 170micro, TP/OP 270 6", MP 270B 6" touch | **6AV2181-8XA80-0AX0** |
| **For 6" devices, type 3**<br>Service set for TP 177micro, TP 177A/B, OP 177B | **6AV6671-2XA00-0AX0** |
| **For 6" to 10" devices**<br>Service set for TP/OP 277 6", MP 277 8" touch, MP 277 8" key, MP 277 10" key and MP 277 10" touch devices up to product version "ES 14" | **6AV6671-3XA01-0AX0** |
| **For 8" to 10" devices**<br>Service set for MP 277 8" touch and key devices from product version "ES 15", MP 277 10" touch devices from product version "ES 15" | **6AV6671-3XA01-0AX1** |
| **For 10", type 1**<br>Service set for OP 270 10", MP 270B key devices | **6AV6574-1AA00-2DX0** |
| **For 10" devices, type 2**<br>Service set for MP 277 10" touch devices with stainless steel front | **6AV6675-3AA00-0AX0** |
| **For 10" to 15" devices**<br>Service set for C7-636 touch, TP 270 10", MP 270B 10" touch, MP 370 12"/15" touch devices | **6AV6574-1AA00-2CX0** |
| **For 12" devices**<br>Service set suitable for MP 370 12"/15" touch/key devices and TP37 | **6AV6574-1AA00-2BX0** |
| **For 12" to 19" devices**<br>Service set for MP 377 12" touch and key devices, MP 377 15" touch, MP 377 19" touch devices | **6AV6671-4XA00-0AX0** |
| **For 15" devices**<br>Service set for MP 377 15" touch devices with stainless steel front | **6AV6671-4CA00-0AX0** |
| **For Mobile Panel 177/277** | **6AV6574-1AA04-4AA0** |
| **For Mobile Panel 277(F) IWLAN V1** | **6AV6671-5CA00-0AX1** |
| **For Mobile Panel 277(F) IWLAN V2** | **6AV6671-5CA00-0AX2** |
| **For Industrial USB Hub 4** | **6AV6671-3EA01-0AX0** |
| **For Pushbutton Panels**<br>Service set for PP7, PP17I, PP17 II,<br>PP17 mounting gasket,<br>5x mounting clamps,<br>2-pin 24 V DC plug,<br>3-pin 24 V DC plug,<br>4-pin plug,<br>16-pin plug | **6AV3678-3XC30** |
| **For TD17, OP7/17**<br>Service set for OP7/OP17 and TD17;<br>TD17 mounting gasket,<br>OP7 mounting gasket,<br>OP17 mounting gasket<br>5x mounting clamps | **6AV3678-1CC10** |
| **For OP73 micro, OP73, OP77**<br>Service set for OP73micro, OP 73, OP 77A, OP 77B | **6AV6671-1XA00-0AX0** |
| **KTP Mobile covers complete set**<br>Cable clamp, USB cover incl. M3x10 screws. | **6AV6881-5AA00-0AA2** |
| **KTP Mobile covers**<br>Cable clamp, USB cover | **6AV6881-5AA00-0AA1** |
| **KTP Mobile screw set M3x10**<br>M3x10 screws | **6AV6881-0AG11-0AA0** |

### *More information*

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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## Overview

### *Storage media*

Storage media which has been tested and approved by Siemens ensure the best possible functionality and compatibility.

SIMATIC HMI storage media are suitable for industry and optimized for the requirements in industrial environments. Special formatting and write algorithms ensure fast read/write cycles and a long service life of the memory cells.

MultiMediaCards can also be used in operator panels with SD slots. Detailed information on usability can be found in the storage media and panels technical specifications.

The actual memory capacity of the memory cards or USB flash drives may change depending on production factors. This means that the specified memory capacity may not always be 100% available to the user. When selecting or searching for core products using the SIMATIC selection guide, accessories appropriate to the core product are always automatically displayed or offered.

Due to the nature of the technology used, the reading/writing speed can diminish over time. This is always dependent on the environment, the size of the files saved, the extent to which the card is filled and a number of additional factors. SIMATIC memory cards, however, are always designed so that typically all of the data is reliably written to a card even when the device is being switched off.
Further information can be taken from the operating instructions of the respective devices.

The following storage media are available:

- Multi Media Card
- Secure Digital Memory Card
- SD memory card Outdoor
- PC memory card (PC Card)
- PC memory card adapter (PC Card Adapter)
- CompactFlash Card
- CFast memory card
- SIMATIC HMI USB memory stick
- SIMATIC HMI USB FlashDrive
- Pushbutton Panel memory module
- IPC memory expansions

Note:

SIMATIC S7 memory cards from S7 controllers **may not** be used in HMI devices or PC systems.
If used in this way, the memory cards lose their functionality and can then no longer be used with S7 controllers.

SIMATIC HMI system cards **must not be formatted** because this irrevocably deletes system files, and **they can then no longer be used for their usual functions,** or may even become totally worthless.

Cyclic archiving may place very high stress on the memory and could lead to failure. In this case, it is necessary to calculate the write cycles in respect of the frequency and size of the data volume in advance. Network drives are more suitable for archiving larger data volumes at short to very short intervals. In cases of doubt, please clarify with your Siemens contact person. Failure to comply rules out any repair or replacement.

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## Technical specifications

| Article number | **6AV6671-1CB00-0AX2**<br>SIMATIC MM memory card 128 MB | **6AV6671-8XB10-0AX1**<br>SIMATIC SD memory card 512 MB | **6AV2181-8XP00-0AX0**<br>SIMATIC SD memory card 2 GB |
|---|---|---|---|
| **General information** | | | |
| Product type designation | MM memory card | SD memory card | SD memory card |
| **Frame size/design** | | | |
| • Standard | Yes; Typically 10 000 insertion cycles | Yes; Typically 10 000 insertion cycles | Yes; Typically 10 000 insertion cycles |
| • Flat | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | DC |
| Rated value (DC) | 3.3 V; Max 3.6 V | 3.3 V; Max 3.6 V | 3.3 V; Max 3.6 V |
| **Input current** | | | |
| Current consumption (rated value) | 80 mA; Typical, maximum value | 100 mA; Typical, maximum value | 100 mA; Typical, maximum value |
| **Memory** | | | |
| Type of memory | MultiMediaCard | Secure Digital memory card | Secure Digital memory card |
| Memory size | 128 Mbyte | 512 Mbyte | 2 048 Mbyte; Larger internal memory |
| Transmission rate for reading, max. | 0 kbit/s; No value available | 1.6 Mbit/s; Minimum, typical for newly formatted memory | 1.6 Mbit/s; Minimum, typical for newly formatted memory |
| Transmission rate for writing, max. | 300 kbit/s; Minimum, typical for newly formatted memory | 1.6 Mbit/s; Minimum, typical for newly formatted memory | 1.6 Mbit/s; Minimum, typical for newly formatted memory |
| Wear leveling (distributed writing) | Yes; > 100 000 write/read cycles per cell and > 3 000 000 write/read cycles per card | | |
| Write protection switch | No | Yes; Effectiveness depends on the device | Yes; Effectiveness depends on the device |
| **Interfaces** | | | |
| Device-side interface | | | |
| • Number of pins device-side | 7 | 9 | 9 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | | Yes | Yes |
| Marine approval | Yes; Passive component, therefore dependent on target device | | |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes; Always comply with the operating instructions of the target device. | | |
| • ATEX Zone 22 | Yes; Always comply with the operating instructions of the target device. | | |
| • IECEx Zone 2 | Yes; Always comply with the operating instructions of the target device. | | |
| • IECEx Zone 22 | Yes; Always comply with the operating instructions of the target device. | | |
| • cULus Class I Zone 2, Division 2 | Yes; Always comply with the operating instructions of the target device. | | |
| • FM Class I Division 2 | Yes; Always comply with the operating instructions of the target device. | | |
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | Yes; Always comply with the operating instructions of the target device. | | |
| • American Bureau of Shipping (ABS) | Yes; Always comply with the operating instructions of the target device. | | |
| • Bureau Veritas (BV) | Yes; Always comply with the operating instructions of the target device. | | |
| • Det Norske Veritas (DNV) | Yes; Always comply with the operating instructions of the target device. | | |
| • Lloyds Register of Shipping (LRS) | Yes; Always comply with the operating instructions of the target device. | | |
| • Nippon Kaiji Kyokai (Class NK) | Yes; Always comply with the operating instructions of the target device. | | |
| • Polski Rejestr Statkow (PRS) | Yes; Always comply with the operating instructions of the target device. | | |
| • Chinese Classification Society (CCS) | Yes; Always comply with the operating instructions of the target device. | | |
| • Compass working clearance | 5 m | 5 m | 5 m |

## Technical specifications (continued)

| Article number | **6AV6671-1CB00-0AX2**<br>SIMATIC MM memory card 128 MB | **6AV6671-8XB10-0AX1**<br>SIMATIC SD memory card 512 MB | **6AV2181-8XP00-0AX0**<br>SIMATIC SD memory card 2 GB |
|---|---|---|---|
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | Yes | Yes |
| Suited for outdoor use | | No | Yes; possible under certain conditions |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C; Indoor | 0 °C; Indoor | -30 °C |
| • max. | 50 °C; Indoor | 50 °C; Indoor | 60 °C |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 95 % |
| • Condensation permissible | No; Condensation not permissible | No; Condensation not permissible | No; Condensation not permissible |
| **Operating systems** | | | |
| **pre-installed operating system** | | | |
| • Windows CE | | | No; Preinstalled system files |
| **Runs under operating system** | | | |
| • Windows CE | Yes | Yes | Yes |
| • Windows Vista | Yes | Yes | Yes |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes |
| • Windows 8 | Yes | Yes | Yes |
| • Windows 10 | Yes | Yes | Yes |
| • Linux | No | No | No |
| • other | Yes; Card must not be formatted! | Yes; Card must not be formatted! | Yes; Card must not be formatted! |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes; Gold contacts | Yes; Gold contacts | Yes; Gold contacts |
| Enclosure color (front) | RAL 6034 (color deviation possible) | RAL 6034 (color deviation possible) | RAL 6034 (color deviation possible) |
| **Service life** | | | |
| • Number of operating cycles, keys | 10; Min. data storage without loss (in years) | 10; Min. data storage without loss (in years) | 10; Min. data storage without loss (in years) |
| **Dimensions** | | | |
| Width | 24 mm | 24 mm | 24 mm |
| Height | 32 mm | 32 mm | 32 mm |
| Thickness | 2.1 mm | 2.1 mm | 2.1 mm |
| **Weights** | | | |
| Weight without packaging | 3 g | 3 g | 3 g |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1 | 1 | 1 |
| **Other** | | | |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany | Gleiwitzerstraße 555,<br>90475 Nuremberg,<br>Germany |
| Target devices | for OP77B, TP177B, OP177B, TP277, OP277, C7-635, MP177, MP277, MP377, Mobile Panel 177, Mobile Panel 277, Comfort Panel | for MP177, MP277, MP377 and Mobile Panel 277, WinCC flexible 2008 SP1 and higher for OP77, TP/OP177, TP/OP277, Mobile Panel 177, with SD/MMC slot | Especially for KTP Mobile Panels 2nd Generation, MP377 and Comfort Panels, but also for all other panels (other than Classic Panels) and PCs with suitable slot |
| Note: | | MP377 only up to and including FS:04 or ES:04 - Alternatively 2 GB SD card | Not suitable for MP177, MP277, Mobile Panel 277, OP77, TP/OP177, TP/OP277 and Mobile Panel 177 |

## **Technical specifications** (continued)

| Article number | **6AV6574-2AC00-2AA1**<br>SIMATIC HMI CF memory card, 512 MB | **6AV6574-2AC00-2AF1**<br>PC memory card 512 MB | **6AV6574-2AF00-8AX0**<br>PC card adapter for CF memory card |
|---|---|---|---|
| **General information** | | | |
| Product type designation | CompactFlash card | PC memory card | PC card adapter for CF memory card |
| **Connection type** | | | |
| • USB | | No | |
| **Frame size/design** | | | |
| • Standard | Yes | Yes | Yes |
| • Flat | Yes | Yes | Yes |
| **Installation type/mounting** | | | |
| Mounting in portrait format possible | Yes | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes | Yes |
| **Supply voltage** | | | |
| Type of supply voltage | DC | DC | none |
| Rated value (DC) | 3.3 V; Selectable power supply: 3.3 V ±10% or 5.0 V ±10% | 3.3 V | |
| **Input current** | | | |
| Current consumption (rated value) | 75 mA; Typical, maximum value | 75 mA | 0 mA; No additional power consumption |
| **Memory** | | | |
| Type of memory | CompactFlash memory CF type I | Personal computer memory card type II | Personal computer memory card type II |
| Design | CompactFlash | | |
| Memory size | 512 Mbyte | 512 Mbyte | 0 byte; Only adapter |
| SLC flash write cycles | 2; Millions, consumer quality | | |
| Write protection switch | No | No | No |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| cULus | No | | No |
| Marine approval | Yes; Passive component, therefore dependent on target device | | Yes; Passive component, therefore dependent on target device |
| **Use in hazardous areas** | | | |
| • ATEX Zone 2 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • ATEX Zone 22 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • IECEx Zone 2 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • IECEx Zone 22 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • cULus Class I Zone 2, Division 2 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • FM Class I Division 2 | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |

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## **Technical specifications** (continued)

| Article number | **6AV6574-2AC00-2AA1**<br>SIMATIC HMI CF memory card, 512 MB | **6AV6574-2AC00-2AF1**<br>PC memory card 512 MB | **6AV6574-2AF00-8AX0**<br>PC card adapter for CF memory card |
|---|---|---|---|
| **Marine approval** | | | |
| • Germanischer Lloyd (GL) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • American Bureau of Shipping (ABS) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Bureau Veritas (BV) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Det Norske Veritas (DNV) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Lloyds Register of Shipping (LRS) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Nippon Kaiji Kyokai (Class NK) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Polski Rejestr Statkow (PRS) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Chinese Classification Society (CCS) | Yes; Always comply with the operating instructions of the target device. | | Yes; Always comply with the operating instructions of the target device. |
| • Compass working clearance | 5 m | | 5 m |
| **Ambient conditions** | | | |
| Suited for indoor use | Yes | | Yes |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C; Any mounting angle | 0 °C | 0 °C; Indoor |
| • max. | 50 °C; Any mounting angle | 50 °C | 50 °C; Indoor |
| **Relative humidity** | | | |
| • Operation, max. | 90 % | 90 % | 90 % |
| • Condensation permissible | No; Condensation not permissible | No | No; Condensation not permissible |
| **Runs under operating system** | | | |
| • Windows CE | Yes | Yes | Yes |
| • Windows Vista | Yes | Yes | Yes |
| • Windows XP | Yes | Yes | Yes |
| • Windows 7 | Yes | Yes | Yes |
| • Windows 8 | Yes | Yes | Yes |
| • Linux | No | No | No |
| • other | Yes; Card must not be formatted! | | No |
| **Mechanics/material** | | | |
| Enclosure material (front) | | | |
| • Plastic | Yes | Yes | |
| • Sheet steel | | | Yes |
| **Service life** | | | |
| • Number of operating cycles, keys | 10; Min. data storage without loss (in years) | | |
| **Dimensions** | | | |
| Width | 42.8 mm | 54 mm | 54 mm |
| Height | 36.4 mm | 85.6 mm | 85.6 mm |
| Thickness | 3.3 mm | 5 mm | 5 mm |
| **Weights** | | | |
| Weight without packaging | 10 g | 34 g | 24 g |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1 | 1; Content: CF memory card, 512 MB, and PC card adapter | 1 |
| **Other** | | | |
| Merchandise | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | |
| Target devices | for SIMATIC HMI devices with CF slot | for SIMATIC HMI devices with PC card slot | for SIMATIC HMI devices with PC card slot |

## Technical specifications (continued)

| Article number | **6ES7648-2BF02-0XF0**<br>SIMATIC CF memory card, 2 GB | **6ES7648-2BF02-0XG0**<br>SIMATIC CF memory card, 4 GB | **6ES7648-2BF02-0XH0**<br>SIMATIC CF memory card, 8 GB | **6ES7648-2BF02-0XJ0**<br>SIMATIC CF memory card, 16 GB |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | CompactFlash card | | | |
| **Supply voltage** | | | | |
| Type of supply voltage | DC | DC | DC | DC |
| Rated value (DC) | 3.3 V; Selectable power supply: 3.3 V ±10% or 5.0 V ±10% | 3.3 V; Selectable power supply: 3.3 V ±10% or 5.0 V ±10% | 3.3 V; Selectable power supply: 3.3 V ±10% or 5.0 V ±10% | 3.3 V; Selectable power supply: 3.3 V ±10% or 5.0 V ±10% |
| **Power** | | | | |
| Active power input, typ. | 1 W | 1 W | 1 W | 1 W |
| **Memory** | | | | |
| Type of memory | CompactFlash memory CF type I | | | |
| Design | SLC flash | SLC flash | SLC flash | SLC flash |
| Memory size | 2 Gbyte; 1 year (data retention) | 4 Gbyte; 1 year (data retention) | 8 Gbyte; 1 year (data retention) | 16 Gbyte; 1 year (data retention) |
| Speed class | Write speed: up to 16 MB/s (UDMA4), read speed: up to 36 MB/s (UDMA4) | Write speed: up to 16 MB/s (UDMA4), read speed: up to 36 MB/s (UDMA4) | Write speed: up to 16 MB/s (UDMA4), read speed: up to 36 MB/s (UDMA4) | Write speed: up to 16 MB/s (UDMA4), read speed: up to 36 MB/s (UDMA4) |
| SLC flash write cycles | 2; Millions, industrial quality | 2; Millions, industrial quality | 2; Millions, industrial quality | 2; Millions, industrial quality |
| Write protection switch | No | No | No | No |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | -40 °C; Any mounting angle | -40 °C; Any mounting angle | -40 °C; Any mounting angle | -40 °C; Any mounting angle |
| • max. | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 85 °C; Any mounting angle |
| **Ambient temperature during storage/transportation** | | | | |
| • min. | -50 °C | -50 °C | -50 °C | -50 °C |
| • max. | 100 °C | 100 °C | 100 °C | 100 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 85 % | 85 % | 85 % | 85 % |
| • Condensation permissible | No | No | No | No |
| **Mechanics/material** | | | | |
| Enclosure material (front) | | | | |
| • Plastic | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | |
| Width | 42.8 mm | 42.8 mm | 42.8 mm | 42.8 mm |
| Height | 36.4 mm | 36.4 mm | 36.4 mm | 36.4 mm |
| Thickness | 3.3 mm | 3.3 mm | 3.3 mm | 3.3 mm |
| **Weights** | | | | |
| Weight, approx. | 10 g | 10 g | 10 g | 10 g |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| **Other** | | | | |
| Merchandise | No | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | | |
| Target devices | For SIMATIC HMI devices and IPCs with the appropriate slot | | | |

## Technical specifications (continued)

| Article number | **6ES7648-2BF10-0XF0**<br>SIMATIC CFAST memory card, 2 GB | **6ES7648-2BF10-0XG0**<br>SIMATIC CFAST memory card, 4 GB | **6ES7648-2BF10-0XH0**<br>SIMATIC CFAST memory card, 8 GB | **6ES7648-2BF10-0XJ0**<br>SIMATIC CFAST memory card, 16 GB | **6ES7648-2BF10-0XK1**<br>SIMATIC CFAST memory card, 30 GB | **6ES7648-2BF10-0XM1**<br>SIMATIC CFAST memory card, 128 GB |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | CFast memory card | | | | | |
| **Frame size/design** | | | | | | |
| • Standard | | | | | Yes; Serial ATA | Yes |
| • Flat | | | | | Yes | Yes |
| **Installation type/mounting** | | | | | | |
| Mounting in portrait format possible | | | | | Yes | Yes |
| Mounting in landscape format possible | | | | | Yes | Yes |
| **Supply voltage** | | | | | | |
| Type of supply voltage | DC | DC | DC | DC | DC | DC |
| Rated value (DC) | 3.3 V; ±5 % | 3.3 V; ±5 % | 3.3 V; ±5 % | 3.3 V; ±5 % | 3.3 V; ±5 % | 3.3 V; ±5 % |
| **Input current** | | | | | | |
| Current consumption (rated value) | | | | | | 100 mA; Typical |
| **Memory** | | | | | | |
| Type of memory | CFast Type I | CFast Type I | CFast Type I | CFast Type I | CFast Type I | CFast Type I |
| Design | SLC NAND flash | SLC NAND flash | SLC NAND flash | SLC NAND flash | Multi-level cell (MLC) | |
| Memory size | 2 Gbyte; 1 year (data retention) | 4 Gbyte; 1 year (data retention) | 8 Gbyte; 1 year (data retention) | 16 Gbyte; 1 year (data retention) | 30 Gbyte; 1 year (data retention) | 128 Gbyte; 1 year (data retention) |
| Speed class | Write speed: up to 60 MB/s (UDMA6), read speed: up to 100 MB/s (UDMA6) | Write speed: up to 60 MB/s (UDMA6), read speed: up to 100 MB/s (UDMA6) | Write speed: up to 60 MB/s (UDMA6), read speed: up to 100 MB/s (UDMA6) | Write speed: up to 60 MB/s (UDMA6), read speed: up to 100 MB/s (UDMA6) | Write speed: up to 45 MBps (UDMA6), read speed: up to 200 MBps (UDMA6) | Write speed: up to 200 MB/s (UDMA6), read speed: up to 100 MB/s (UDMA6) |
| SLC flash write cycles | 4; Number of write cycles determines the lifetime - With flash mass storage devices, the maximum number of possible write cycles is limited due to the physical properties of the flash cells. The intelligent data management of the flash controller ensures that the write cycle count of the mass storage device far surpasses the write cycles of a single flash memory cell. To ensure overall performance, it is recommended not use the memory area completely. | 4.5; Number of write cycles determines the lifetime - With flash mass storage devices, the maximum number of possible write cycles is limited due to the physical properties of the flash cells. The intelligent data management of the flash controller ensures that the write cycle count of the mass storage device far surpasses the write cycles of a single flash memory cell. To ensure overall performance, it is recommended not use the memory area completely. | 4; Number of write cycles determines the lifetime - With flash mass storage devices, the maximum number of possible write cycles is limited due to the physical properties of the flash cells. The intelligent data management of the flash controller ensures that the write cycle count of the mass storage device far surpasses the write cycles of a single flash memory cell. To ensure overall performance, it is recommended not use the memory area completely. | 17; Number of write cycles determines the lifetime - With flash mass storage devices, the maximum number of possible write cycles is limited due to the physical properties of the flash cells. The intelligent data management of the flash controller ensures that the write cycle count of the mass storage device far surpasses the write cycles of a single flash memory cell. To ensure overall performance, it is recommended not use the memory area completely. | | |
| Write cycles MLC flash | | | | | 8.8; Terabytes, industrial quality | 8.8; Terabytes, industrial quality |
| Wear leveling (distributed writing) | | | | | | Yes |
| Write protection switch | | | | | | No |

## Technical specifications (continued)

| Article number | **6ES7648-2BF10-0XF0**<br>SIMATIC CFAST memory card, 2 GB | **6ES7648-2BF10-0XG0**<br>SIMATIC CFAST memory card, 4 GB | **6ES7648-2BF10-0XH0**<br>SIMATIC CFAST memory card, 8 GB | **6ES7648-2BF10-0XJ0**<br>SIMATIC CFAST memory card, 16 GB | **6ES7648-2BF10-0XK1**<br>SIMATIC CFAST memory card, 30 GB | **6ES7648-2BF10-0XM1**<br>SIMATIC CFAST memory card, 128 GB |
|---|---|---|---|---|---|---|
| **Interfaces** | | | | | | |
| Interfaces/bus type | | | | | | Serial ATA |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes |
| **Use in hazardous areas** | | | | | | |
| • ATEX Zone 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • ATEX Zone 22 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • IECEx Zone 1 | | | | | No | No |
| • IECEx Zone 11 | | | | | No | No |
| • IECEx Zone 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • IECEx Zone 22 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • cULus Class I Zone 1 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • cULus Class I Zone 2, Division 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • cULus Class II Division 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • FM Class I Division 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • FM Class II Division 2 | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |

## Technical specifications (continued)

| Article number | **6ES7648-2BF10-0XF0**<br>SIMATIC CFAST memory card, 2 GB | **6ES7648-2BF10-0XG0**<br>SIMATIC CFAST memory card, 4 GB | **6ES7648-2BF10-0XH0**<br>SIMATIC CFAST memory card, 8 GB | **6ES7648-2BF10-0XJ0**<br>SIMATIC CFAST memory card, 16 GB | **6ES7648-2BF10-0XK1**<br>SIMATIC CFAST memory card, 30 GB | **6ES7648-2BF10-0XM1**<br>SIMATIC CFAST memory card, 128 GB |
|---|---|---|---|---|---|---|
| **Marine approval** | | | | | | |
| • Germanischer Lloyd (GL) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • American Bureau of Shipping (ABS) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Bureau Veritas (BV) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Det Norske Veritas (DNV) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Korean Register of Shipping (KRS) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Lloyds Register of Shipping (LRS) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Nippon Kaiji Kyokai (Class NK) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Polski Rejestr Statkow (PRS) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| • Chinese Classification Society (CCS) | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| **Ambient conditions** | | | | | | |
| Suited for indoor use | | | | | Yes; Always comply with the operating instructions of the target device. | Yes; Always comply with the operating instructions of the target device. |
| Suited for outdoor use | | | | | No | Yes; Always comply with the operating instructions of the target device. |
| **Ambient temperature during operation** | | | | | | |
| • min. | -40 °C; Any mounting angle | -40 °C; Any mounting angle | -40 °C; Any mounting angle | -40 °C; Any mounting angle | -40 °C; Any mounting angle | 0 °C; Any mounting angle |
| • max. | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 85 °C; Any mounting angle | 55 °C; Any mounting angle |
| **Relative humidity** | | | | | | |
| • Operation, max. | 85 % | 85 % | 85 % | 85 % | 85 % | 85 % |
| • Condensation permissible | No | No | No | No | No | No |

## Technical specifications (continued)

| Article number | **6ES7648-2BF10-0XF0**<br>SIMATIC CFAST memory card, 2 GB | **6ES7648-2BF10-0XG0**<br>SIMATIC CFAST memory card, 4 GB | **6ES7648-2BF10-0XH0**<br>SIMATIC CFAST memory card, 8 GB | **6ES7648-2BF10-0XJ0**<br>SIMATIC CFAST memory card, 16 GB | **6ES7648-2BF10-0XK1**<br>SIMATIC CFAST memory card, 30 GB | **6ES7648-2BF10-0XM1**<br>SIMATIC CFAST memory card, 128 GB |
|---|---|---|---|---|---|---|
| **Operating systems** | | | | | | |
| **pre-installed operating system** | | | | | | |
| • Windows CE | | | | | | Yes |
| **Runs under operating system** | | | | | | |
| • Windows CE | | | | | No | No |
| • Windows Vista | | | | | Yes | No |
| • Windows XP | | | | | No | No |
| • Windows 7 | | | | | Yes | Yes |
| • Windows 8 | | | | | Yes | Yes |
| • Windows 10 | | | | | | Yes |
| • Linux | | | | | Yes | Yes |
| **Mechanics/material** | | | | | | |
| Enclosure material (front) | | | | | | |
| • Plastic | Yes | Yes | Yes | Yes | Yes | Yes |
| **Dimensions** | | | | | | |
| Width | 42.8 mm | 42.8 mm | 42.8 mm | 42.8 mm | 42.8 mm | 42.8 mm |
| Height | 36.4 mm | 36.4 mm | 36.4 mm | 36.4 mm | 36.4 mm | 36.4 mm |
| Thickness | 3.6 mm | 3.6 mm | 3.6 mm | 3.6 mm | 3.6 mm | 3.6 mm |
| **Weights** | | | | | | |
| Weight, approx. | 10 g | 10 g | 10 g | 10 g | | |
| Weight without packaging | | | | | 10 g | 10 g |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 | 1 | 1 |
| **Other** | | | | | | |
| Merchandise | No | No | No | No | No | No |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | | | | |
| Target devices | For SIMATIC HMI devices and IPCs with the appropriate slot | | | | | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) |
| Note: | Bootable, real-time capable, error correction, wear leveling, power loss protection and diagnostics-capable | | | | | |

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## Technical specifications (continued)

| Article number | **6AV2181-8AQ10-0AX0**<br>SIMATIC SD outdoor card 2 GB |
|---|---|
| **General information** | |
| Product type designation | SD memory card |
| **Frame size/design** | |
| • Standard | Yes; Typically 10 000 insertion cycles |
| • Flat | Yes |
| **Installation type/mounting** | |
| Mounting in portrait format possible | Yes |
| Mounting in landscape format possible | Yes |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 3.3 V; Max 3.6 V |
| **Input current** | |
| Current consumption (rated value) | 100 mA; Typical, maximum value |
| **Memory** | |
| Type of memory | Secure Digital memory card |
| Memory size | 2 048 Mbyte; Larger internal memory |
| Transmission rate for reading, max. | 1.6 Mbit/s; Minimum, typical for newly formatted memory |
| Transmission rate for writing, max. | 1.6 Mbit/s; Minimum, typical for newly formatted memory |
| Wear leveling (distributed writing) | Yes; > 100 000 write/read cycles per cell and > 3 000 000 write/read cycles per card |
| Write protection switch | Yes; Effectiveness depends on the device |
| **Interfaces** | |
| Device-side interface | |
| • Number of pins device-side | 9 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes |
| Marine approval | Yes; Passive component, therefore dependent on target device |
| **Use in hazardous areas** | |
| • ATEX Zone 2 | Yes; Always comply with the operating instructions of the target device. |
| • ATEX Zone 22 | |
| • IECEx Zone 2 | |
| • IECEx Zone 22 | |
| • cULus Class I Zone 2, Division 2 | |
| • FM Class I Division 2 | |
| **Marine approval** | |
| • Germanischer Lloyd (GL) | Yes; Always comply with the operating instructions of the target device. |
| • American Bureau of Shipping (ABS) | |
| • Bureau Veritas (BV) | |
| • Det Norske Veritas (DNV) | |
| • Lloyds Register of Shipping (LRS) | |
| • Nippon Kaiji Kyokai (Class NK) | |
| • Polski Rejestr Statkow (PRS) | |
| • Chinese Classification Society (CCS) | |
| • Compass working clearance | 5 m |

| Article number | **6AV2181-8AQ10-0AX0**<br>SIMATIC SD outdoor card 2 GB |
|---|---|
| **Ambient conditions** | |
| Suited for indoor use | Yes |
| Suited for outdoor use | Yes |
| **Ambient temperature during operation** | |
| • min. | -30 °C; Indoor/outdoor |
| • max. | 60 °C; Indoor/outdoor |
| **Relative humidity** | |
| • Operation, max. | 95 %; no condensation |
| • Condensation permissible | No; Condensation not permissible |
| **Operating systems** | |
| **pre-installed operating system** | |
| • Windows CE | No; Preinstalled system files |
| **Runs under operating system** | |
| • Windows CE | Yes |
| • Windows Vista | Yes |
| • Windows XP | Yes |
| • Windows 7 | Yes |
| • Windows 8 | Yes |
| • Windows 10 | Yes |
| • Linux | No |
| • other | Yes; Card must not be formatted! |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | Yes; Gold contacts |
| Enclosure color (front) | RAL 6034 (color deviation possible) |
| **Service life** | |
| • Number of operating cycles, keys | 10; Min. data storage without loss (in years) |
| **Dimensions** | |
| Width | 24 mm |
| Height | 32 mm |
| Thickness | 2.1 mm |
| **Weights** | |
| Weight without packaging | 3 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1 |
| **Other** | |
| Merchandise | No |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Storage medium especially for outdoors, suitable for Comfort Panels, but also for all other panels and PCs with suitable slot |

## Technical specifications (continued)

| Article number | **6AV6881-0AS42-0AA1**<br>USB flash drive, 32 GB |
|---|---|
| **General information** | |
| Product type designation | USB flash drive (without software) |
| **Connection type** | |
| • USB | Yes; USB 3.0 type A |
| **Frame size/design** | |
| • Standard | Yes |
| • Flat | Yes |
| **Installation type/mounting** | |
| Mounting in portrait format possible | Yes |
| Mounting in landscape format possible | Yes |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 5 V |
| **Input current** | |
| Current consumption (rated value) | 100 mA; Typical |
| **Memory** | |
| Type of memory | Multi-level cell (MLC) |
| Memory size | 32 Gbyte |
| Speed class | Up to: read: 75 MB/s, write: 21 MB/s |
| File format | FAT32 |
| Write cycles MLC flash | 3 000; Program/Erase cycle |
| Write protection switch | No |
| **Interfaces** | |
| Number of USB interfaces | 1; USB 3.0 type A |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 50 °C |
| **Relative humidity** | |
| • Operation, max. | 85 % |
| • Condensation permissible | No |

| Article number | **6AV6881-0AS42-0AA1**<br>USB flash drive, 32 GB |
|---|---|
| **Operating systems** | |
| **pre-installed operating system** | |
| • Windows CE | Yes |
| **Runs under operating system** | |
| • Windows CE | Yes |
| • Windows Vista | No |
| • Windows XP | Yes |
| • Windows 7 | Yes |
| • Windows 8 | Yes |
| • Windows 10 | Yes |
| • Linux | Yes |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Aluminum | Yes |
| **Dimensions** | |
| Width | 16.7 mm |
| Height | 59.1 mm |
| Thickness | 7 mm |
| **Weights** | |
| Weight without packaging | 12 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; Without content |
| **Other** | |
| Merchandise | No |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) |
| Note: | TP1500 Comfort Outdoor, TP700 Comfort Outdoor: Observe the temperature range |

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## Technical specifications (continued)

| Article number | **6AV7675-0FX00-0AA0**<br>SIMATIC USB flash drive 32 GB, Ex | **6AV7675-0FX10-0AA0**<br>SIMATIC USB flash drive 32 GB, Ex |
|---|---|---|
| **General information** | | |
| Product type designation | USB flash drive | USB flash drive |
| **Connection type** | | |
| • USB | Yes | Yes |
| **Frame size/design** | | |
| • Standard | No; Special enclosure for screw mounting | No; Special enclosure for screw mounting |
| • Flat | No | No |
| • Space-saving | Yes; Suitable for hazardous zones with locking screw | Yes; Suitable for hazardous zones with locking screw |
| **Installation type/mounting** | | |
| Mounting in portrait format possible | Yes | Yes |
| Mounting in landscape format possible | Yes | Yes |
| **Supply voltage** | | |
| Type of supply voltage | DC | DC |
| Rated value (DC) | 5.9 V | 5.9 V |
| **Input current** | | |
| Current consumption (rated value) | 3 A | 3 A |
| **Memory** | | |
| Type of memory | USB drive | USB drive |
| Memory size | 32 Gbyte | 32 Gbyte |
| Write protection switch | No | No |
| **Degree and class of protection** | | |
| IP (all-round) | IP20 | IP20 |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Use in hazardous areas** | | |
| • ATEX Zone 2 | Yes | Yes |
| • ATEX Zone 22 | Yes | Yes |
| • IECEx Zone 1 | Yes; Up to Zone 1, TÜV (German Technical Inspectorate) 06 ATEX 7342, IECEx TUR 13.0005 | Yes; Up to Zone 1, TÜV (German Technical Inspectorate) 06 ATEX 7342, IECEx TUR 13.0005 |
| • IECEx Zone 11 | Yes; Up to Zone 1, TÜV (German Technical Inspectorate) 06 ATEX 7342, IECEx TUR 13.0005 | Yes; Up to Zone 1, TÜV (German Technical Inspectorate) 06 ATEX 7342, IECEx TUR 13.0005 |
| • IECEx Zone 2 | Yes | Yes |
| • IECEx Zone 22 | Yes | Yes |
| • cULus Class I Zone 1 | Yes; CSA Class II No. 2649448 | Yes; CSA Class II No. 2649448 |
| • cULus Class I Zone 2, Division 2 | Yes; CSA Class II No. 2649448 | Yes; CSA Class II No. 2649448 |
| • FM Class I Division 2 | Yes; CSA Class II No. 2649448 | Yes; CSA Class II No. 2649448 |
| • FM Class II Division 2 | Yes; CSA, Group F and G; T 130 °C | Yes; CSA, Group F and G; T 130 °C |

## Technical specifications (continued)

| Article number | **6AV7675-0FX00-0AA0**<br>SIMATIC USB flash drive 32 GB, Ex | **6AV7675-0FX10-0AA0**<br>SIMATIC USB flash drive 32 GB, Ex |
|---|---|---|
| **Ambient conditions** | | |
| Suited for indoor use | Yes | Yes |
| Suited for outdoor use | No | No |
| **Ambient temperature during operation** | | |
| • min. | -20 °C | -20 °C |
| • max. | 70 °C | 70 °C |
| **Relative humidity** | | |
| • Condensation permissible | No | No |
| **Runs under operating system** | | |
| • Windows CE | No | No |
| • Windows Vista | Yes | Yes |
| • Windows XP | Yes | Yes |
| • Windows 7 | Yes | Yes |
| • Windows 8 | Yes | Yes |
| • Linux | No | No |
| **Mechanics/material** | | |
| Material | | |
| • Aluminum | Yes | Yes |
| **Dimensions** | | |
| Width | 25 mm | 25 mm |
| Height | 110 mm | 110 mm |
| Thickness | 15 mm | 15 mm |
| **Weights** | | |
| Weight without packaging | 70 g | 70 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1 | 1 |
| Components included | USB flash drive (encapsulated) screw fastening and leather casing | |
| **Other** | | |
| Merchandise | Yes; USBi drive, 16 GB | Yes; USBi drive, 16 GB recovery |
| Manufacturer name | R. Stahl HMI Systems GmbH | R. Stahl HMI Systems GmbH |
| Manufacturer's address | Adolf-Grimme-Allee 8, 50829 Cologne, Germany | Adolf-Grimme-Allee 8, 50829 Cologne, Germany |
| Target devices | ATEX certified for operating on xx6 USB Ex-i and non-Ex interfaces,<br>Zones 1, 2, 21<(>&<)>22 Gas Zones: II 2 G Ex is IIC T4 Dust Zones: II 2 D Ex ibD 21 T110 degrees C | |
| Note: | Suitable for IPC and HMI devices with the corresponding interfaces (see manual) | |

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## Technical specifications (continued)

| Article number | **6ED1056-1BA00-0AA0**<br>SIMATIC PP memory module |
|---|---|
| **General information** | |
| Product type designation | Memory module for Push Button Panel |
| **Supply voltage** | |
| Type of supply voltage | DC |
| **Memory** | |
| Type of memory | Retentive memory module |
| Write protection switch | No |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| **Ambient conditions** | |
| **Ambient temperature during operation** | |
| • min. | 0 °C |
| • max. | 55 °C |
| **Ambient temperature during storage/transportation** | |
| • min. | -20 °C |
| • max. | 70 °C |
| **Relative humidity** | |
| • Operation, max. | 95 % |
| • Condensation permissible | No |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | Yes; Yellow |
| **Dimensions** | |
| Width | 14 mm |
| Height | 20 mm |
| Thickness | 8 mm |
| **Weights** | |
| Weight, approx. | 3 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1 |
| **Other** | |
| Merchandise | No |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for Push Button Panel 7 /17, system memory with retentivity, suitable for duplication, can also be used for duplication of the LOGO! switching program for LOGO! order numbers ... 0BA1, ... 0BA2, ... 0BA3) |

## Ordering data

| Ordering data | Article No. |
|---|---|
| *Memory cards* [1] | |
| *Indoor use only* | |
| **SIMATIC MM memory card 128 MB** | **6AV6671-1CB00-0AX2** |
| **SIMATIC SD memory card 512 MB** | **6AV6671-8XB10-0AX1** |
| **SIMATIC SD memory card 2 GB** | **6AV2181-8XP00-0AX0** |
| **SIMATIC SD memory card 32 GB** | **6AV6881-0AP40-0AA0** |
| **SIMATIC CF memory card 512 MB** | **6AV6574-2AC00-2AA1** |
| **PC memory card, 512 MB (PCMCIA)** | **6AV6574-2AC00-2AF1** |
| **PC card adapter for CF memory card** | **6AV6574-2AF00-8AX0** |
| *Can be used indoors and outdoors* | |
| **SIMATIC SD memory card, outdoor 2 GB**<br>corresponds to 6AV2181-8XP00-0AX0 | **6AV2181-8AQ10-0AX0** |
| **SIMATIC SD memory card, outdoor 2 GB** | **6AV6881-0AQ10-0AA0** |
| **SIMATIC SD memory card, outdoor 32 GB** | **6AV6881-0AQ40-0AA0** |
| **USB flash drive** [2]<br>32 GB, USB 3.0, metal enclosure, boot capability, without software, for current and new SIMATIC HMI Panels and IPCs. | **6AV6881-0AS42-0AA1** |
| **SIMATIC HMI USB FlashDrive EX1** | |
| • 32 GB, explosion protection, for HMI devices and IPCs with the corresponding slot. | **6AV7675-0FX00-0AA0** |
| • 32 GB, explosion protection, for HMI devices and IPCs with the corresponding slot, with recovery function | **6AV7675-0FX10-0AA0** |
| **SIMATIC IPC CompactFlash** | |
| • 2 GB | **6ES7648-2BF02-0XF0** |
| • 4 GB | **6ES7648-2BF02-0XG0** |
| • 8 GB | **6ES7648-2BF02-0XH0** |
| • 16 GB | **6ES7648-2BF02-0XJ0** |
| **SIMATIC IPC CFast** | |
| • 2 GB | **6ES7648-2BF10-0XF0** |
| • 4 GB | **6ES7648-2BF10-0XG0** |
| • 8 GB | **6ES7648-2BF10-0XH0** |
| • 16 GB | **6ES7648-2BF10-0XJ0** |
| • 30 GB | **6ES7648-2BF10-0XK1** |
| • 128 GB | **6ES7648-2BF10-0XM1** |
| **SIMATIC PP memory module** | **6ED1056-1BA00-0AA0** |

[1] Not all memory is compatible with every target device. Please observe the current technical specifications of the memory.

[2] Note: This memory stick does not support Classic Panels such as TPs, OPs, and multi-panels.
The following software in SIOS is available for download for IPC systems. SIMATIC IPC Image & Partition Creator V3.3.2 and SIMATIC IPC BIOS-Manager V3.3 (Win PE) pre-installed, incl. CD.

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## Overview

Tablet PC transport case

Tablet PC storage case

Tablet PC additional case

### *Transport and storage cases*

Transport and storage cases are perfectly suited for tablet PCs and industrial tablet PCs such as the ITP100.

The basic transport case was created especially for mobile operation of a tablet PC with all of the required accessories, such as a power supply unit, mouse, keyboard, etc. It can be modularly expanded. Various expansion pockets are available for this purpose.

Additional expansion pockets can easily be connected to the basic case. Covered holes allow the tablet to be connected to the power supply unit even during transport without the cable visibly hanging out of the case. This ensures particularly fast access times when used. The basic case features a hook-and-loop strip and a wrist rest for using an optional Bluetooth keyboard. The rear part of the transport case can be opened to allow the tablet PC to be optimally set up in the case as well. The outer fabric straps can be used for securing anything from tools to writing materials, meaning that everything is at your fingertips during a service call.

Optimal ventilation during operation is also provided for. Thick, elastic material ribs not only protect against small impacts, but also against over-heating. A rugged shoulder strap, a double carrying handle, and side reflective strips round off the well thought out transport case.

A case with all-round protection meant purely for storage purposes is also available for tablet PCs.

Note:

The expansion module pockets must be ordered separately. 1 to 3 small expansion pockets or 1 small and 1 medium expansion pocket can be attached to one basic case at the same time.

## Technical specifications

| Article number | **6AV6881-0AW11-3AA0**<br>Transport bag Basic Tablet | **6AV6881-0AW12-3AA0**<br>Additional pocket small Tablet | **6AV6881-0AW13-3AA0**<br>Additional pocket medium Tablet | **6AV6881-0AW11-2AA0**<br>Storage bag Tablet | **6AV6881-0AW21-3AA0**<br>Tablet PC support with handle | **6AV6881-0AW31-3AA0**<br>Tablet PC carrying strap |
|---|---|---|---|---|---|---|
| **General information** | | | | | | |
| Product type designation | Transport pouch basic | Transport pouch small | Transport pouch medium | Transport pouch storage | Tablet PC holder with handle | Tablet PC carrying strap |
| **Frame size/design** | | | | | | |
| • Exceptional | Yes; Integrated ventilation, laying of cables possible | No | Yes; With integrated cable opening | No | Yes; Optimized for tablet PC, ITP1000 | Yes; Optimized for tablet PC, ITP1000 |
| **Ergonomics** | | | | | | |
| • Trackball rest | Yes | No | No | No | No; Adjustable handle with hook-and-loop connection, any useful angle can be set | No; Carrying strap with adjustable shoulder pad |
| • Adjustable height | No; Case with stand function | No | No | No | No | No; Strap can be adjusted for length |
| **Installation type/mounting** | | | | | | |
| Mounting type | | | | | Real assembly with provided screws | Rear lug mounting, also suitable as a belt strap |
| **Degree and class of protection** | | | | | | |
| IP (all-round) | | | | | none | none |
| **Standards, approvals, certificates** | | | | | | |
| CE mark | | | | | No;<br>No CE marking obligation | No;<br>No CE marking obligation |
| **Ambient conditions** | | | | | | |
| Suited for indoor use | Yes; Washable | Yes; Washable | Yes; Washable | Yes; Washable | Yes | Yes |
| Suited for outdoor use | Yes; Washable | Yes; Washable | Yes; Washable | Yes; Washable | Yes | Yes |
| **Ambient temperature during operation** | | | | | | |
| • min. | -30 °C; Indoor/outdoor | | | | 0 °C | 0 °C |
| • max. | 60 °C; Indoor/outdoor | | | | 50 °C | 50 °C |
| **Relative humidity** | | | | | | |
| • Operation, max. | 95 % | 95 % | 95 % | 95 % | 90 % | 90 % |
| • Condensation permissible | Yes; Applies only for case, not for contents | | | | | |
| **Mechanics/material** | | | | | | |
| Material | | | | | | |
| • Plastic | Yes; 420 HD nylon | Yes; 420 HD nylon | Yes; 420 HD nylon | Yes; 420 HD nylon | - | - |
| **Torques/forces** | | | | | | |
| • Tightening torque, min. | | | | | 1 N·m; Insufficient torque can lead to loosening of the screws | |
| • Tightening torque, max. | | | | | 1.5 N·m | 1.5 N·m |
| **Dimensions** | | | | | | |
| Width | 40 cm; Approximate dimension | 18 cm; Approximate dimension | 25 cm; Approximate dimension | 35 cm; Approximate dimension | | |
| Height | 30 cm; Approximate dimension | 12 cm; Approximate dimension | 18 cm; Approximate dimension | 24 cm; Approximate dimension | | |
| Depth | 10 cm; Approximate dimension | 5 cm; Approximate dimension | 5 cm; Approximate dimension | 5 cm; Approximate dimension | | |
| Mounting cutout, width | 33 cm; Max. device width | 10 cm; Max. device width | 20 cm; Max. device width | 33 cm; Max. device width | | |
| Mounting cutout, height | 23 cm; Max. device height | 14 cm; Max. device height | 14 cm; Max. device height | 23 cm; Max. device height | | |
| Overall depth | 3 cm; Max. device depth | 3 cm; Max. device depth | 3 cm; Max. device depth | 3 cm; Max. device depth | | |

## Technical specifications (continued)

| Article number | **6AV6881-0AW11-3AA0**<br>Transport bag Basic Tablet | **6AV6881-0AW12-3AA0**<br>Additional pocket small Tablet | **6AV6881-0AW13-3AA0**<br>Additional pocket medium Tablet | **6AV6881-0AW11-2AA0**<br>Storage bag Tablet | **6AV6881-0AW21-3AA0**<br>Tablet PC support with handle | **6AV6881-0AW31-3AA0**<br>Tablet PC carrying strap |
|---|---|---|---|---|---|---|
| **Weights** | | | | | | |
| Weight without packaging | 280 g | 35 g | 50 g | 50 g | 0.4 kg | 0.25 kg |
| **Scope of supply** | | | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 | 1; 1x mounting plate with 4 lugs, 1x handle with hook-and-loop pad, 4x M4 screws, 4x washers | 1; 1x carrying strap, adjustable length with snap hooks, 2 lugs, 2x M4 screws, 2x washers |
| **Other** | | | | | | |
| Merchandise | Yes; Tatonka 6540.040 | Yes; Tatonka 6541.040 | Yes; Tatonka 6542.040 | Yes; Tatonka 6539.040 | Yes | Yes |
| Manufacturer name | TATONKA GmbH | TATONKA GmbH | TATONKA GmbH | TATONKA GmbH | ADViTEX GmbH | ADViTEX GmbH |
| Manufacturer's address | Robert-Bosch-Straße 3, 86451 Dasing, Germany | | | | Eisenbahnstraße 40, 75228 Ispringen, Germany | |
| Target devices | Suitable laptops and tablets, or similar | | | | suitable for all appropriate interfaces | |
| Note: | Integrated cable inlets for power supply unit, hard disks etc. - simply flip open to get started | | | | Commodity, can be used for ITP1000 | |

## Ordering data

| | Article No. |
|---|---|
| **Basic transport bag for tablet PC:**<br>Multifunctional transport bag, suitable, for example, for the tablet PC ITP1000 or other tablet PCs, laptops. Can be expanded. Can be used as stand, with carrying strap. Quantity and content: See technical specifications. | **6AV6881-0AW11-3AA0** |
| **Small expansion pocket for tablet PC**<br>Expansion pocket, small, suitable for transport bag ITP1000. Quantity and content: See technical specifications. | **6AV6881-0AW12-3AA0** |
| **Medium expansion pocket for tablet PC**<br>Expansion pocket, medium-size, suitable for transport bag ITP1000. Can be used instead of 2 small ones. Quantity and content: See technical specifications. | **6AV6881-0AW13-3AA0** |

| | Article No. |
|---|---|
| **Storage bag for tablet PC**<br>Universal storage bag, suitable for all tablet PCs. Quantity and content: See technical specifications. | **6AV6881-0AW11-2AA0** |
| **Tablet PC support with handle for ITP1000** | **6AV6881-0AW21-3AA0** |
| **Tablet PC carrying strap for ITP1000** | **6AV6881-0AW31-3AA0** |

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.

Industry Mall: https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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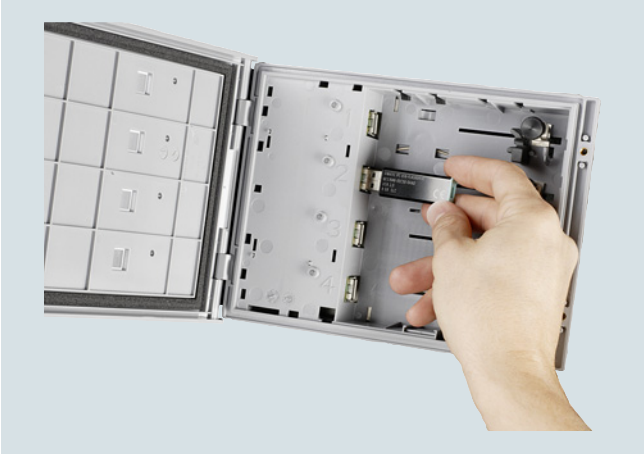
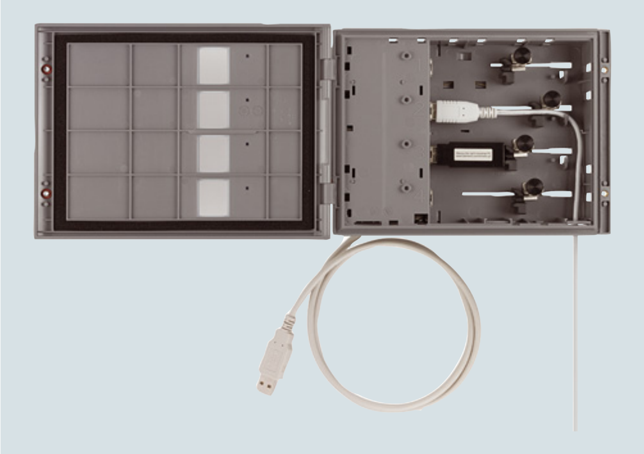
## Overview





Industrial USB Hub 4, opened

***Distribution boards***

Industrial distribution boards are used for extending and/or multiplying interfaces. The distribution boards offered here are optimized for SIMATIC devices and intended for industrial use.

This also includes the interface extensions. A USB device interface with IP65 [1] degree of protection is provided on the front of the control cabinet or console.

[1] The stated degree of protection always refers to the closed interface. The stated degree of protection can differ significantly from the stated value when using the USB interfaces.

USB extension

Installation of an external USB interface is practical if external input devices or mass storage devices are frequently connected to a SIMATIC HMI PRO device. The USB interface can optionally be mounted at the top or bottom of the device. Use of the USB interface increases the availability of the system to be operated. It is also no longer necessary to open the backplane of the SIMATIC HMI PRO device to connect I/O.

Further benefits:

- Accessible to any operator without the need for tools
- Also suitable for retrofitting in enclosure
- Mountable on the front
- Increased degree of protection at front if protective cover is closed

Industrial USB Hub 4

Use of the Industrial USB Hub 4

- Permits the simultaneous connection of up to four I/O devices such as USB stick, USB flash drive, mouse, keyboard, printer or barcode reader to a central USB interface.
- Increases the availability of the system to be operated. The control cabinet door no longer has to be opened in order to connect peripherals. Operation is possible at any time from the Panel or PC.

In addition, the Industrial USB Hub 4 has the following features:

- Inspection window on each interface
- Vibration-proof restraint of connected USB cables and USB sticks
- One LED indicator per interface for checking the data traffic
- Sufficient interior space for attaching USB sticks and connectors
- For control cabinet installation or DIN rail mounting
- Interface duplicators

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## Technical specifications

| Article number | **6AV6671-3AH00-0AX0**<br>Industrial USB Hub 4 |
|---|---|
| **General information** | |
| Product type designation | Industrial USB Hub 4 |
| **Installation type/mounting** | |
| Rail mounting | Yes; Standard - DIN rail |
| Mounting in landscape format possible | Yes |
| **Supply voltage** | |
| Type of supply voltage | 24 V DC |
| Rated value (DC) | 24 V |
| **Interfaces** | |
| Number of USB interfaces | 4; Type USB 2.0, 500 mA each; e.g. connection of mouse, keyboard, printer, USB stick, USB IPC flash drive |
| **Degree and class of protection** | |
| IP (at the front) | IP65 |
| IP (rear) | IP20 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| cULus | Yes; UL for US, UL for Canada |
| RCM (formerly C-TICK) | Yes; C-Tick |
| **Relative humidity** | |
| • Operation, max. | 90 % |
| **Mechanics/material** | |
| Enclosure material (front) | |
| • Plastic | Yes |
| **Dimensions** | |
| Width of the housing front | 212 mm |
| Height of housing front | 156 mm |
| Overall depth | 50 mm |
| **Weights** | |
| Weight without packaging | 460 g |
| **Scope of supply** | |
| Delivery quantity in pieces | 1; Content: 1x USB Hub 4, 10x plastic mounting clip, 1x female 2-pin connector |
| **Other** | |
| Merchandise | Yes |
| Manufacturer name | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | for access to the USB interface of a built-in device without having to open the control cabinet, mounting on DIN rail possible, suitable for standard USB interfaces |
| Note: | TP1500 Comfort Outdoor, TP700 Comfort Outdoor: Observe the temperature range |

| Article number | **6AV7674-0LX00-0AA0**<br>1 port USB interface set RAL9023 | **6AV7674-0LX01-0AA0**<br>2 port USB interface set RAL9023 |
|---|---|---|
| **General information** | | |
| Product type designation | USB port | USB port |
| **Standards, approvals, certificates** | | |
| CE mark | No; No CE marking obligation | |
| **Scope of supply** | | |
| Delivery quantity in pieces | 1 | 1 |
| **Other** | | |
| Merchandise | Yes; 1-port USB interface | Yes; 2-port USB interface |
| Manufacturer name | RITTAL GmbH & Co. KG | |
| Manufacturer's address | Auf dem Stützelberg, 35745 Herborn, Germany | |
| Note: | for general use or for PRO devices with a suitable USB interface | |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **Industrial USB Hub 4**<br>Use of standard USB interface four times simultaneously without having to open the control cabinet, DIN rail mounting possible, suitable up to and including USB 2.0 standard. | **6AV6671-3AH00-0AX0** |
| **1-port USB interface set RAL9023**<br>RAL9023 (gray), with USB 2.0 socket, type A, for basic adapter for PRO devices,<br>max. current consumption USB with thin client, MP377 and flat panel must be observed | **6AV7674-0LX00-0AA0** |
| **2-port USB interface set RAL9023**<br>RAL9023 (gray), with USB 2.0 socket, type A, for basic adapter for PRO devices,<br>max. current consumption USB with thin client, MP377 and flat panel must be observed | **6AV7674-0LX01-0AA0** |

## More information

Note:

Modifications or additions to the products described here can be found and ordered under "Customer-specific products". It is also still possible to request special sector-specific products for customer-specific modification and adaptation.

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall: https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

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http://support.automation.siemens.com

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## Additional accessories

### Overview

SIMATIC small components are also perfected for the industrial environment and optimally matched to the SIMATIC HMI devices.

In order to achieve attractive prices, it is only possible in some cases to order packages containing larger quantities.

Note:

Keys for KTP Mobile come with a preset breaking point. This ensures that a key can still always be removed from a KTP Mobile lock even if it breaks off.

### Technical specifications

| Article number | **6AV6574-1AG04-4AA0**<br>Spare key Mobile Panel, type 10 | **6AV2181-5AR80-0AX0**<br>Spare key Mobile Panel, type 13 |
|---|---|---|
| **General information** | | |
| Product type designation | Spare key Mobile Panel 1st Generation | Spare key |
| **Standards, approvals, certificates** | | |
| CE mark | Yes | Yes |
| **Ambient conditions** | | |
| **Ambient temperature during operation** | | |
| • min. | -40 °C | -40 °C |
| • max. | 80 °C | 80 °C |
| **Relative humidity** | | |
| • Operation, max. | 90 % | 90 % |
| **Mechanics/material** | | |
| Material | | |
| • Sheet steel | Yes; Handle made of plastic | Yes; Handle made of plastic |
| **Dimensions** | | |
| Width | 35 mm | 15 mm |
| Height | 18 mm | 35 mm |
| Thickness | 4 mm | 4 mm |
| **Weights** | | |
| Weight without packaging | 30 g | 5 g |
| **Scope of supply** | | |
| Delivery quantity in pieces | 10; Coupled with key ring | 5 |
| **Other** | | |
| Merchandise | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |
| Target devices | For Mobile Panel 1st Generation | For Mobile Panel 2nd Generation |

## Ordering data

| Ordering data | Article No. |
|---|---|
| **Spare key for Mobile Panel, Type 10**<br>For key-operated switch of the Mobile Panel. | **6AV6574-1AG04-4AA0** |
| **Spare key for Mobile Panel, Type 13**<br>For key-operated switch of the Mobile Panel 2nd Generation. | **6AV2181-5AR80-0AX0** |
| **Battery compartment lid for all IWLAN Mobile Panels with Article No. 6AV6645-0…** | **6AV6881-5AM52-0AA0** |

## More information

Note:

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com
If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

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http://support.automation.siemens.com

## Connecting cables

### Overview

Connecting cables

***Key***

P = PROCESS COUPLING

K = Optional process coupling (option required)

D = DOWNLOAD (update operating system, project, …)

U = Booting (factory setting in the case of a missing or damaged operating system)

MBP = Mobile Panel

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## **Overview** (continued)

### *Overview of SIMATIC HMI connection options*

| | RS 232 external (15/9-pin) | TD-PPI (incl. voltage) | RS 232 Null modem | RS 232/PPI multi-master cable | USB/PPI multi-master cable | MPI (PG-S7) up to 187.5 kbaud |
|---|---|---|---|---|---|---|
| | 6XV1440-2Kxxx | 6ES7901-3EB10-0XA0 | 6ES7901-1BF00-0XA0 | 6ES7901-3CB30-0XA0 | 6ES7901-3DB30-0XA0 | 6ES7901-0BF00-0AA0 |
| Key Panel KP8/KP8F, KP32F | - | - | - | - | - | - |
| PP7, PP17-I, PP17-II | - | - | - | - | - | - |
| KTP400 Basic mono PN | - | - | - | - | - | - |
| KTP600 Basic mono PN | - | - | - | - | - | - |
| KTP600 Basic color DP | - | - | - | D/U | D/U | P/D |
| KTP600 Basic color PN | - | - | - | - | - | - |
| KTP1000 Basic color DP | - | - | - | D/U | D/U | P/D |
| KTP1000 Basic color PN | - | - | - | - | - | - |
| KTP1500 Basic color PN | - | - | - | - | - | - |
| K(T)P400 Comfort | - | - | - | - | - | P/D |
| K(T)P700 - KP1500 Comfort | - | - | - | - | - | P/D |
| TP700 -TP2200 Comfort | - | - | - | - | - | P/D |
| MBP 177 | - | - | - | D/U | - | - |
| MBP 277 | - | - | - | D/U | - | - |
| TD200 | - | P | - | D/U | - | P |
| TD400C | - | P | - | D/U | - | P |
| OP73micro | - | P | - | D/U | D/U | P |
| TP177micro | - | - | - | D/U | D/U | - |
| OP73 | - | P | - | D/U | D/U | P/D |
| OP77A | - | - | - | D/U | D/U | P/D |
| OP77B | P | - | D/U | - | - | P/D |
| TP177A | - | - | - | D/U | D/U | P/D |
| TP177B | P [1] | - | - | D/U | - | P/D |
| TP177B 4" | P [1] | - | D | D | - | P/D |
| OP177B | P [1] | - | - | D/U | - | P/D |
| TP277-6 | P [1] | - | - | D/U | - | P/D |
| OP277-6 | P [1] | - | - | D/U | - | P/D |
| MP177-6 T | P [1] | - | - | D/U | - | P/D |
| MP277-8 T | P [1] | - | - | D/U | - | P/D |
| MP277-10 T | P [1] | - | - | D/U | - | P/D |
| MP377-12 T | P [1] | - | - | D | - | P/D |
| MP377-15 T | P [1] | - | - | D | - | P/D |
| MP377-19 T | P [1] | - | - | D | - | P/D |

[1] Only in conjunction with the RS 422/232 converter

| | DP PtP | DP Standard | DP (Mobile Panel) | PN (cross cable) [1]<br>Point-to-point | PN (standard cable) [1] | PN (Mobile Panel) | RS 422 to RS 232 converter | RS 232 to TTY converter (20 mA) | 90° angular (9-pin 1:1) |
|---|---|---|---|---|---|---|---|---|---|
| | 6XV1830-0Axxx | Standard PROFIBUS (2-pin) | 6XV1440-4Axxx | 6XV1870-3RH20 | Standard Ethernet CAT5 | 6XV1440-4Bxxx | 6AV6671-8XE00-0AX0 | 6ES5734-1BD20 | 6AV6671-8XD00-0AX0 |
| Key Panel KP8/KP8F, KP32F | - | - | - | P/D | P/D | - | - | - | - |
| PP7, PP17-I, PP17-II | P | P | - | - | - | - | - | - | - |
| KTP400 Basic mono PN | - | - | - | P/D/U | P/D/U | - | - | - | - |

## **Overview** (continued)

| | DP PtP | DP Standard | DP (Mobile Panel) | PN (cross cable) [1] Point-to-point | PN (standard cable) [1] | PN (Mobile Panel) | RS 422 to RS 232 converter | RS 232 to TTY converter (20 mA) | 90° angular (9-pin 1:1) |
|---|---|---|---|---|---|---|---|---|---|
| KTP600 Basic mono PN | - | - | - | P/D/U | P/D/U | - | - | - | - |
| KTP600 Basic color DP | P/D | P/D | - | - | - | - | - | - | P/D/U |
| KTP600 Basic color PN | - | - | - | P/D/U | P/D/U | - | - | - | - |
| KTP1000 Basic color DP | P/D | P/D | - | - | - | - | - | - | P/D/U |
| KTP1000 Basic color PN | - | - | - | P/D/U | P/D/U | - | - | - | - |
| KTP1500 Basic color PN | - | - | - | P/D/U | P/D/U | - | - | - | - |
| K(T)P400 Comfort | P/D | P/D | - | P/D/U | P/D/U | - | - | - | P/D/U |
| K(T)P700 - TP1500 Comfort | P/D | P/D | - | P/D/U | P/D/U | - | - | - | P/D/U |
| TP700 -TP2200 Comfort | P/D | P/D | - | P/D/U | P/D/U | - | - | - | P/D/U |
| MBP 177 DP | P/D | P/D | P/D | - | - | - | - | - | - |
| MBP 177 PN | - | - | - | - | - | P/D | - | - | - |
| MBP 277 | P/D | P/D | P/D | - | - | P/D | - | - | - |
| TD200 | - | - | - | - | - | - | - | - | - |
| TD400C | - | - | - | - | - | - | - | - | - |
| OP73micro | P | - | - | - | - | - | - | - | - |
| TP177micro | P | P | - | - | - | - | - | - | P/D/U |
| OP73 | P | P | - | - | - | - | - | - | - |
| OP77A | P | P | - | - | - | - | - | - | P/D/U |
| OP77B | P/D | P/D | - | - | - | - | - | P | P/D/U |
| TP177A | P | P | - | - | - | - | - | - | P/D/U |
| TP177B DP | P/D | P/D | - | - | - | - | P | P [2] | P/D/U |
| TP177B PN/DP | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| TP177B 4" | P/D | P/D | - | P/D/U | P/D/U | - | P | P [2] | P/D/U |
| OP177B DP | P/D | P/D | - | - | - | - | P | P [2] | P/D/U |
| OP177B PN/DP | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| TP277-6 | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| OP277-6 | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP177-6 T | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP277-8 T | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP277-8 K | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP277-10 T | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP277-10 K | P/D | P/D | - | P/D | P/D | - | P | P [2] | P/D/U |
| MP377-12 T | P/D | P/D | - | P/D/U | P/D/U | - | P | P [2] | P/D |
| MP377-12 K | P/D | P/D | - | P/D/U | P/D/U | - | P | P [2] | P/D |
| MP377-15 T | P/D | P/D | - | P/D/U | P/D/U | - | P | P [2] | P/D |
| MP377-19 T | P/D | P/D | - | P/D/U | P/D/U | - | P | P [2] | P/D |

[1] PROFINET IRT (isochronous runtime); isochronous mode only possible with IRT-enabled switch

[2] WinCC flexible 2008 SP2 and higher

Note:
This table is for basic orientation only. Technical characteristics are described in the communication manual or the respective user manual.

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## Technical specifications

| Article number | **6XV1440-4BH20**<br>Conn. cable PN for MOBILE PANELS, 2M | **6XV1440-4BH50**<br>Conn. cable PN for MOBILE PANELS, 5M | **6XV1440-4BH80**<br>Conn. cable PN for MOBILE PANELS, 8M |
|---|---|---|---|
| **General information** | | | |
| Product type designation | PN connecting cable | PN connecting cable | PN connecting cable |
| **Supply voltage** | | | |
| Rated value (DC) | 24 V | 24 V | 24 V |
| **Degree and class of protection** | | | |
| IP (at the front) | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 |
| **Standards, approvals, certificates** | | | |
| CE mark | Yes | Yes | Yes |
| **Ambient conditions** | | | |
| **Ambient temperature during operation** | | | |
| • min. | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | |
| • Operation, max. | 85 % | 85 % | 85 % |
| **Cables** | | | |
| Cable length | 2 m | 5 m | 8 m |
| smallest bending radius | 45 mm | 45 mm | 45 mm |
| Color of cable sheath | green | green | green |
| Oil resistance of outer sheath | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils |
| Resistance to MEK, xylene, toluene, isopropanol | Yes | Yes | Yes |
| **Mechanics/material** | | | |
| Material of cable sheath | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 |
| **Dimensions** | | | |
| Thickness | 9 mm | 9 mm | 9 mm |
| **Scope of supply** | | | |
| Delivery quantity in pieces | 1 | 1 | 1 |
| **Other** | | | |
| Merchandise | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |

## Technical specifications (continued)

| Article number | **6XV1440-4BN10**<br>Conn. cable PN for MOBILE PANELS,10M | **6XV1440-4BN15**<br>Conn. cable PN for MOBILE PANELS,15M | **6XV1440-4BN20**<br>Conn. cable PN for MOBILE PANELS,20M | **6XV1440-4BN25**<br>Conn. cable PN for MOBILE PANELS,25M |
|---|---|---|---|---|
| **General information** | | | | |
| Product type designation | PN connecting cable | PN connecting cable | PN connecting cable | PN connecting cable |
| **Supply voltage** | | | | |
| Rated value (DC) | 24 V | 24 V | 24 V | 24 V |
| **Degree and class of protection** | | | | |
| IP (at the front) | IP65 | IP65 | IP65 | IP65 |
| IP (rear) | IP65 | IP65 | IP65 | IP65 |
| **Standards, approvals, certificates** | | | | |
| CE mark | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | |
| **Ambient temperature during operation** | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C | 55 °C |
| **Relative humidity** | | | | |
| • Operation, max. | 85 % | 85 % | 85 % | 85 % |
| **Cables** | | | | |
| Cable length | 10 m | 15 m | 20 m | 25 m |
| smallest bending radius | 45 mm | 45 mm | 45 mm | 45 mm |
| Color of cable sheath | green | green | green | green |
| Oil resistance of outer sheath | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils | Yes; Hydrolysis-resistant and oil-resistant acc. to VDE 0472 Part 803/B, also resistant to commercially available lubricants and hydraulic oils |
| Resistance to MEK, xylene, toluene, isopropanol | Yes | Yes | Yes | Yes |
| **Mechanics/material** | | | | |
| Material of cable sheath | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 | Special PUR, flame-resistant acc. to VDE 0472 Part 804 Test Type B, Shore A 88 Flame-Retardant UR Style 20963 |
| **Dimensions** | | | | |
| Thickness | 9 mm | 9 mm | 9 mm | 9 mm |
| **Scope of supply** | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 |
| **Other** | | | | |
| Merchandise | Yes | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | Gleiwitzerstraße 555, 90475 Nuremberg, Germany |

| Article number | **6ES7901-0BF00-0AA0**<br>S7 MPI Cable, 5m | **6ES7901-1BF00-0XA0**<br>RS232 / zero Modem Cable, 6 M |
|---|---|---|
| **General information** | | |
| Product type designation | MPI | RS 232/null modem |
| **Cables** | | |
| Cable length | 5 m | 6 m |
| **Weights** | | |
| Weight, approx. | 293 g | 272 g |

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## Technical specifications (continued)

| Article number | **6AV2181-5AF02-0AX0**<br>Connecting Cable 2 M KTP Mobile | **6AV2181-5AF05-0AX0**<br>Connecting Cable 5 M KTP Mobile | **6AV2181-5AF08-0AX0**<br>Connecting Cable 8 M KTP Mobile | **6AV2181-5AF10-0AX0**<br>Connecting Cable 10 M KTP Mobile | **6AV2181-5AF15-0AX0**<br>Connecting Cable 15 M KTP Mobile | **6AV2181-5AF20-0AX0**<br>Connecting Cable 20 M KTP Mobile | **6AV2181-5AF25-0AX0**<br>Connecting Cable 25 M KTP Mobile |
|---|---|---|---|---|---|---|---|
| **Standards, approvals, certificates** | | | | | | | |
| CE mark | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| cULus | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| RCM (formerly C-TICK) | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Ambient conditions** | | | | | | | |
| **Ambient temperature during operation** | | | | | | | |
| • min. | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C | 0 °C |
| • max. | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C | 55 °C |
| **Cables** | | | | | | | |
| Cable length | 2 m | 5 m | 8 m | 10 m | 15 m | 20 m | 25 m |
| Maximum tensile load | 300 N | 300 N | 300 N | 300 N | 300 N | 300 N | 300 N |
| Color of cable sheath | | | | | | | |
| • green | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Scope of supply** | | | | | | | |
| Delivery quantity in pieces | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Other** | | | | | | | |
| Merchandise | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Manufacturer name | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG | SIEMENS AG |
| Manufacturer's address | Gleiwitzerstraße 555, 90475 Nuremberg, Germany | | | | | | |

## Ordering data

| | Article No. |
|---|---|
| Connecting cables | |
| **SIMATIC S7 connecting cables** | |
| **MPI cable**<br>between SIMATIC S7 and programming device via MPI max. 187.5 kBaud, standard length 5.0 m | **6ES7901-0BF00-0AA0** |
| **Connecting cable**<br>between HMI adapter and PC/TS Adapter (RS 232 cable/null-modem cable) for OP 77B, TP 177A/B, OP 177B, standard length 5.0 m | **6ES7901-1BF00-0XA0** |
| **Connecting cables 6XV1440-2A** [2]<br>Connecting cable between TD/TP/OP and AG S5 95U to -155U, 1 000 m max. | **6XV1440-2A...** |
| **PROFIBUS connecting cable 830-1T**<br>For connection of data terminals, pre-assembled with two sub-D connectors, 9-pin terminated at both ends<br>for PP, OP 73micro, OP 73, TP 177micro, OP 77A/B, TP 177A, TP/OP 177B | |
| • 1.5 m | **6XV1830-1CH15** |
| • 3.0 m | **6XV1830-1CH30** |
| **USB/PPI multi-master cable**<br>For connecting the S7-200 to a serial PC/OP interface<br>Standard length 5 m | **6ES7901-3DB30-0XA0** |

| | Article No. |
|---|---|
| **PROFIBUS FC Standard Cable** [2]<br>For connection to PPI; standard type with special design for quick mounting, 2-wire, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m | **6XV1830-0E...** |
| **Industrial Ethernet TP XP Cord RJ45/RJ45**<br>Crossed TP cable 4 x 2, pre-assembled with 2 x RJ45 connectors | |
| • 1.0 m | **6XV1870-3RH10** |
| • 6.0 m | **6XV1870-3RH60** |
| • 10.0 m | **6XV1870-3RN10** |
| **DP connecting cable (MPI/PROFIBUS)**<br>For wired Mobile Panels 177, Mobile Panels 277, standard lengths | |
| • 2 m | **6XV1440-4AH20** |
| • 5 m | **6XV1440-4AH50** |
| • 8 m | **6XV1440-4AH80** |
| • 10 m | **6XV1440-4AN10** |
| • 15 m | **6XV1440-4AN15** |
| • 20 m | **6XV1440-4AN20** |
| • 25 m [1] | **6XV1440-4AN25** |

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## Ordering data

| Ordering data | Article No. |
|---|---|
| **PN connecting cable (PROFINET)**<br>For wired Mobile Panels 177, Mobile Panels 277, standard lengths | |
| • 2 m | **6XV1440-4BH20** |
| • 5 m | **6XV1440-4BH50** |
| • 8 m | **6XV1440-4BH80** |
| • 10 m | **6XV1440-4BN10** |
| • 15 m | **6XV1440-4BN15** |
| • 20 m | **6XV1440-4BN20** |
| • 25 m [1] | **6XV1440-4BN25** |
| **Connecting cable for KTP Mobile Panels** | |
| • 2 m | **6AV2181-5AF02-0AX0** |
| • 5 m | **6AV2181-5AF05-0AX0** |
| • 8 m | **6AV2181-5AF08-0AX0** |
| • 10 m | **6AV2181-5AF10-0AX0** |
| • 15 m | **6AV2181-5AF15-0AX0** |
| • 20 m | **6AV2181-5AF20-0AX0** |
| • 25 m | **6AV2181-5AF25-0AX0** |
| **USB connecting cable** | **6GT2891-0UE50** |
| Optional 0.5 m USB cable (type A connector) female to male, can be used as extension for USB cable with type "A" connector | |

[1] Instead of using longer cables, we recommend that you use additional connection boxes.

[2] See length code.

Ordering example:

The 6XV1404-0A… connecting cable must be 16 m long. Multiplier 1.0 m (N) x length digit 16 (16) gives a length of 16 m. The Article No. supplement is N16. Enter this in the blank spaces of the Article No.
The complete Article No. for the 16-m-long connecting cable is then: **6XV1404-0AN16**.

### *Length key for connecting cables*

With connecting cables whose length is freely selectable according to the following lists, the blanks (…) in the Article No. must be completed in accordance with the length codes given. The different length keys must be taken into account here! Other lengths on request.

Length key for 6XV connecting cables

| **6XV. ... connecting cables** | |
|---|---|
| **Length of the connecting cable = Multiplier x length key** | **Article No. supplement of the connecting cable**<br>**6XV....-.....** |
| **Multiplier** | |
| • 0.01 m | **6XV....-..E..** |
| • 0.1 m | **6XV....-..H..** |
| • 1.0 m | **6XV....-..N..** |
| • 10.0 m | **6XV....-..T..** |
| • 100.0 m | **6XV....-..U..** |
| **Length digit** | |
| • 10 | **6XV....-...10** |
| • 12 | **6XV....-...12** |
| • 15 | **6XV....-...15** |
| • 16 | **6XV....-...16** |
| • 20 | **6XV....-...20** |
| • 25 | **6XV....-...25** |
| • 32 | **6XV....-...32** |
| • 40 | **6XV....-...40** |
| • 50 | **6XV....-...50** |
| • 60 | **6XV....-...60** |
| • 63 | **6XV....-...63** |

## More information

Note:

Cable pin assignments can be found on the Internet in the Online Help of WinCC flexible and under FAQs.

http://support.automation.siemens.com

Photos and product images may differ from the actual product.

Detailed technical specifications, content information, quantities and compatible core products are listed online in the technical specifications of the respective accessory.
Industry Mall:

https://mall.industry.siemens.com

If you use the TIA Selection Tool (selection guide) to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

http://www.siemens.com/tia-selection-tool

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

http://support.automation.siemens.com

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## Overview

- Used for connecting PROFIBUS nodes to the PROFIBUS bus cable
- Easy installation
- FastConnect plugs ensure extremely short assembly times due to their insulation-displacement technology
- Integrated terminating resistors (not in the case of 6ES7972-0BA30-0XA0)
- Connectors with D-sub sockets permit PG connection without the additional installation of network nodes

## Ordering data

| Ordering data | Article No. |
|---|---|
| **RS 485 bus connector with axial cable outlet (180°)**<br>For industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbps | **6GK1500-0EA02** |
| **SIPLUS DP PB RS 485 connector with axial cable outlet (180°)**<br>For exposure to media; Based-on 6GK1 500-0EA02 | **6AG1500-0EA02-2AA0** |
| **RS 485 bus connector with cable outlet (90°)**<br>With screw-terminals, max. transmission rate 12 Mbps | |
| • Without PG interface | **6ES7972-0BA12-0XA0** |
| • With PG interface | **6ES7972-0BB12-0XA0** |
| **SIPLUS DP PB RS 485 connector with 90° cable outlet**<br>For extended temperature range -25 … +60 °C | |
| • Without PG interface<br>Based on 6ES7 972-0BA12-0XA0 | **6AG1972-0BA12-2XA0** |
| • With PG interface<br>Based on 6ES7 972-0BB12-0XA0 | **6AG1972-0BB12-2XA0** |
| **RS 485 bus connector with angled cable outlet (35°)**<br>With screw-terminals, max. transmission rate 12 Mbps | |
| • Without PG interface | **6ES7972-0BA42-0XA0** |
| • With PG interface | **6ES7972-0BB42-0XA0** |
| **SIPLUS DP PB RS 485 connector with angled cable outlet (35°)**<br>For extended temperature range -25 … +60 °C | |
| • Without PG interface<br>Based on 6ES7 942-0BA42-0XA0 | **6AG1972-0BA42-7XA0** |
| • With PG interface<br>Based on 6ES7 942-0BB42-0XA0 | **6AG1972-0BB42-7XA0** |
| **RS 485 bus connector with cable outlet (30°)**<br>With screw-terminals, low-cost variant, max. transmission rate 1.5 Mbps | **6ES7972-0BA30-0XA0** |
| ***PROFIBUS RS 485 bus connector with FastConnect technology*** | |
| **PROFIBUS FastConnect RS 485 bus connector with 90° cable outlet**<br>With insulation displacement, max. transmission rate 12 Mbps | |
| Without PG interface | |
| • 1 unit | **6ES7972-0BA52-0XA0** |
| • 100 units | **6ES7972-0BA52-0XB0** |
| With PG interface | |
| • 1 unit | **6ES7972-0BB52-0XA0** |
| • 100 units | **6ES7972-0BB52-0XB0** |
| Without PG interface, grounding via control cabinet cover | |
| • 1 unit | **6ES7972-0BA70-0XA0** |
| With PG interface, grounding via control cabinet cover | |
| • 1 unit | **6ES7972-0BB70-0XA0** |
| **PROFIBUS FastConnect RS 485 bus connector with angled cable outlet (35°)**<br>With insulation displacement, max. transmission rate 12 Mbps | |
| • Without PG interface | **6ES7972-0BA61-0XA0** |
| • With PG interface | **6ES7972-0BB61-0XA0** |
| **PROFIBUS FastConnect RS 485 bus connector Plug 180**<br>With insulation displacement terminals, with 180° cable outlet, for industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbps | **6GK1500-0FC10** |
| **SIMATIC S5/S7 connecting cable for PROFIBUS**<br>Pre-assembled with two 9-pin sub D connectors; max. transmission rate 12 Mbps; 3 m | **6ES7901-4BD00-0XA0** |
| **SIMATIC NET Manual Collection**<br>Electronic manuals for communication systems, communication protocols, and communication products; on DVD; English/German | **6GK1975-1AA00-3AA0** |

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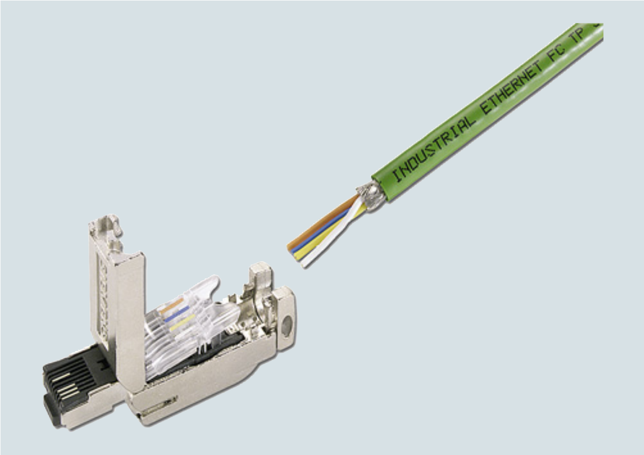
## IE FC RJ45 plug 2 x 2, Cat5e

### Overview



- Implementation of direct device connections of up to 100 m with Industrial Ethernet FC installation cable 2 x 2 without using patch technology
- Easy connection (insulation displacement contacts) for 4-wire Twisted Pair installation cables (100 Mbps) without the need for special tools
- Error-minimizing connection technique thanks to visible connection area as well as colored insulation displacement termination
- Industrial design (rugged metal enclosure, no easily lost small parts)
- Excellent EMI shielding and deflection (metal enclosure)
- Integrated strain-relief for installation cables
- Compatible with the EN 50173 (RJ45)/ISO IEC 11801 standard
- Additional strain and bending relief of plug-in connection possible through latching of plug on device enclosure, e.g. with SCALANCE X, SCALANCE S, SCALANCE M, SIMATIC CPs, SIMATIC S7-1500.

### Ordering data

| | Article No. |
|---|---|
| *IE FC RJ45 plugs* | |
| RJ45 plug connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables | |
| **IE FC RJ45 Plug 180** | |
| 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface | |
| • 1 pack = 1 unit | **6GK1901-1BB10-2AA0** |
| • 1 pack = 10 units | **6GK1901-1BB10-2AB0** |
| • 1 pack = 50 units | **6GK1901-1BB10-2AE0** |
| **IE FC RJ45 Plug 90** | |
| 90° cable outlet; e.g. for ET 200S | |
| • 1 pack = 1 unit | **6GK1901-1BB20-2AA0** |
| • 1 pack = 10 units | **6GK1901-1BB20-2AB0** |
| • 1 pack = 50 units | **6GK1901-1BB20-2AE0** |
| **IE FC RJ45 Plug 145** | |
| 145° cable outlet; e.g. for SIMOTION and SINAMICS | |
| • 1 pack = 1 unit | **6GK1901-1BB30-0AA0** |
| • 1 pack = 10 units | **6GK1901-1BB30-0AB0** |
| • 1 pack = 50 units | **6GK1901-1BB30-0AE0** |
| **IE RJ45 Port Lock** | |
| RJ45 Port Lock for network components and data terminal equipment with RJ45 Industrial Ethernet interface | |
| • 1 pack = 1 unit + key | **6GK1901-1BB50-0AA0** |
| **IE FC Stripping Tool** | **6GK1901-1GA00** |
| Pre-adjusted stripping tool for fast stripping of Industrial Ethernet FC cables | |

| | Article No. |
|---|---|
| **IE FC TP standard cable GP 2 x 2 (Type A)** | |
| 4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug; PROFINET-compatible; with UL approval; | |
| Sold by the meter | |
| max. length 1 000 m; minimum order quantity 20 m | **6XV1840-2AH10** |
| Preferred length | |
| • 20 m | **6XV1840-2AN20** |
| • 50 m | **6XV1840-2AN50** |
| • 100 m | **6XV1840-2AT10** |
| • 200 m | **6XV1840-2AT20** |
| • 500 m | **6XV1840-2AT50** |
| • 1 000 m | **6XV1840-2AU10** |
| **IE FC TP flexible cable GP 2 x 2 (Type B)** | **6XV1870-2B** |
| 4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug for occasional movement; PROFINET-compatible; with UL approval; sold by the meter; max. length 1 000 m, minimum order quantity 20 m | |
| **IE FC TP trailing cable GP 2 x 2 (Type C)** | **6XV1870-2D** |
| 4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug for use as trailing cable; PROFINET-compatible; with UL approval; sold by the meter; max. length 1 000 m, minimum order quantity 20 m | |

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## Ordering data

| | Article No. |
|---|---|
| **IE FC TP trailing cable 2 x 2 (Type C)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug 180/90 for use in trailing cables;<br>PROFINET-compatible;<br>without UL approval;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1840-3AH10** |
| **IE TP torsion cable GP 2 x 2 (Type C)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug for use with robots;<br>PROFINET-compatible;<br>with UL approval;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1870-2F** |
| **IE FC TP marine cable 2 x 2 (Type B)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug 180/90;<br>marine approval;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1840-4AH10** |
| **IE FC TP FRNC cable GP 2 x 2 (Type B)**<br>4-wire, shielded, halogen-free TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug for occasional movement;<br>PROFINET-compliant;<br>with UL approval;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1871-2F** |

| | Article No. |
|---|---|
| **IE FC TP festoon cable GP 2 x 2 (Type B)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/IE FC RJ45 plug 180/90 for use in festoon applications;<br>PROFINET-compatible;<br>with UL approval;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1871-2S** |
| **IE FC TP food cable GP 2 x 2 (Type C)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug 180/90 for the food and beverages industry; PROFINET-compatible;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1871-2L** |
| **IE TP ground cable 2x2 (Type C)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/ IE FC RJ45 plug 180/90 (after removal of additional outer sheath) for laying in soil;<br>PROFINET-compatible;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1871-2G** |
| **IE TP train cable GP 2x2 (Type C)**<br>4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/IE FC RJ45 plug 180/90 for railway applications;<br>PROFINET-compatible;<br>sold by the meter;<br>max. length 1 000 m,<br>minimum order quantity 20 m | **6XV1871-2T** |
| **IE FC blade cassettes (5 mm)**<br>Replacement blade cassette for the Industrial Ethernet stripping tool; for use with IE FC RJ45 plugs and modular outlet, 5 units | **6GK1901-1GB01** |

### *More information*

You can order supplementary components for the SIMATIC NET cabling range from your local contact. Technical advice on this subject is available from:

J. Hertlein
DI PA CI PRM 4
Tel.: +49 (172) 3172810
Email: juergen.hertlein@siemens.com

**Selection Tool:**

The TIA Selection Tool is available to assist you in selecting cabling systems for SIMATIC NET at:

http://www.siemens.com/tst

**Ordering overview:**

You can find more information on the FastConnect range in the ordering overview https://support.industry.siemens.com/cs/document/109766358/ordering-overview-cabling-technology-for-communication-networks-in-industry?dti=0&lc=en-DE

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## Notes

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# Appendix

7

**7/2** **SITRAIN – Digital Industry Academy**
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7/15 Online Support for Siemens Industry Products
**7/16** **Software licenses**
**7/19** **Conditions of sale and delivery**

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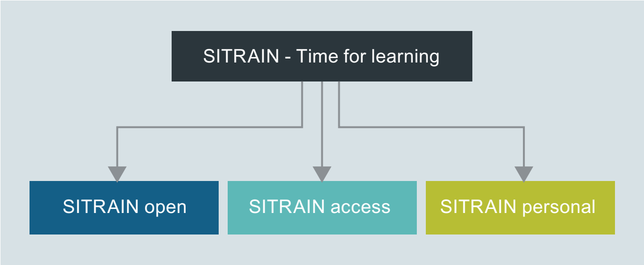
### *Time for learning*

Today's demands on our knowledge are every bit as diverse and dynamic as our profession itself. We keep learning more and longer – for our work, for our career and for ourselves. Advancing digitalization entails new topics and is also changing the way we absorb and process knowledge. SITRAIN – Digital Industry Academy offers the right source of knowledge here, which we can use anytime in just the way we need it. The time for learning is now.



Knowledge for every need

With its three areas – SITRAIN open, SITRAIN access and SITRAIN personal – SITRAIN offers you an all-encompassing range of options for an ongoing expansion of your knowledge and skills, suited for every type of learner. And SITRAIN uses advancing digitalization to continuously expand content and offer new training methods.

Find
your local
offer here

***SITRAIN – Digital Industry Academy***
***Customer Support Germany***

Tel.: +49 911 895-7575
Email: sitrain.digital.industry.academy.de@siemens.com

Knowledge you can always find

SITRAIN open bundles useful information, worthwhile data and up-to-date expert knowledge about Siemens products for industry. Search it anytime, find anything – and always the right stuff.

Knowledge that gets you ahead

SITRAIN access is learning in the digital age. It offers you individualized ways to build your knowledge and access to exclusive digital training courses. Take advantage of sustainable learning success with a wide range of learning methods. Improve your skills – whether working in groups with others, or by yourself. Whenever, wherever and however you need to.

Knowledge you can experience

We all want to learn from the best. And SITRAIN personal's training courses let you benefit from our well-practiced trainers' expert knowledge, along with direct access to our training equipment. That's the best way to convey knowledge – whether at your company or in our training classrooms.

***SITRAIN – Digital Industry Academy***

www.siemens.com/sitrain

- SITRAIN open:
  www.siemens.com/sitrain-open
- SITRAIN access:
  www.siemens.com/sitrain-access
- SITRAIN personal:
  www.siemens.com/sitrain-personal

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## Training for SIMATIC HMI

This page contains an overview of the SITRAIN training offer for SIMATIC HMI operator control and monitoring systems.

Depending on your demands we'll make you fit for specific applications or teach you important background knowledge about products and systems.

All courses contain the largest possible share of practical exercises so that training can be carried out very intensively in very small groups.

Further information regarding course contents, dates and prices can be found in the Internet at:

www.siemens.com/sitrain-simatic-hmi

| Title | | Course suitable for | | | Duration/ Medium | Order code |
|---|---|---|---|---|---|---|
| | | **Planning** | **Implementation** | **Operation** | | |
| **SIMATIC Unified Comfort Panels and WinCC Unified in the TIA Portal** | | | | | | |
| SIMATIC WinCC Unified & Unified Comfort Panels System Course | TIA | | ✔ | ✔ | 3 days | TIA-UWCCM |
| SIMATIC WinCC Unified for PC-Systems, Advanced Course | TIA | | ✔ | ✔ | 2 days | TIA-UWCCPC |
| **SIMATIC WinCC in the TIA Portal** | | | | | | |
| SIMATIC WinCC on the machine level in the TIA Portal, System Course | TIA | | ✔ | ✔ | 3 days | TIA-WCCM |
| SIMATIC WinCC SCADA in the TIA Portal | TIA | | ✔ | ✔ | 5 days | TIA-WCCS |
| SiVArc – Options of Automatic Visualization Generation | TIA | | ✔ | | 1 day | TIA-SIVARC |
| BRAUMAT / SISTAR | TIA | | ✔ | ✔ | 5 days | TIA-BRAU |
| **SIMATIC WinCC V7.x** | | | | | | |
| SIMATIC WinCC, System Course | | | ✔ | ✔ | 5 days | ST-BWINCCS |
| SIMATIC WinCC, Advanced Course | | | ✔ | ✔ | 5 days | ST-BWINOND |
| ANSI-C in the SIMATIC World, Introduction | | | ✔ | | 5 days | ST-SIMACE |
| Visual Basic Script in the SIMATIC World | | | ✔ | | 3 days | ST-VBSCR |

TIA These courses are based on the TIA Portal.

## Operating system licenses for SIMATIC PC/PG

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC/PG.

Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

## Standards UL (U) and CSA (C)

All HMI products comply with the standards UL (U) and CSA (C), or the approval procedure has been applied for.

Products which have no approval are specially marked (see ordering data of the products).

## CE marking

The electronic products described in this catalog comply with the requirements and protection objectives of the following EC-directives insofar as they relate to the product concerned. They also comply with the corresponding harmonized European standards (EN) published for these products in the Official Journals of the European Community.

- Directive 2004/108/EC of the European Parliament and Council on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive)
- Directive 2006/95/EC of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits (Low Voltage Directive)
- Directive 94/9/EC of the European Parliament and the Council on approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres (ATEX Directive)
- Directive 1999/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (RTTE Directive)

The originals of the declarations of conformity are kept available for the responsible supervisory authorities at:

SIMATIC PLC / HMI:

Siemens Aktiengesellschaft
DF FA MF QM
Postfach 4848
90327 Nürnberg
Germany

SIMATIC IPC:

Siemens Aktiengesellschaft
DF FA AS DH KHE
Oestliche Rheinbrueckenstr. 50
76187 Karlsruhe
Germany

SIMATIC NET:

Siemens Aktiengesellschaft
Industry Sector
PD PA CI
Postfach 4848
90327 Nürnberg
Germany

***Note on the EMC Directive:***

The installation instructions in the manuals must be adhered to when installing and operating the products described in this catalog. These contain, for example, important information on installation in cabinets and on the use of shielded cables.

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## Overview

The WinCC Competence Centers are Siemens-internal partners. They offer a wide range of products and services designed to make optimal economic and system-oriented use of the openness and integration capability of WinCC.

In addition to the development of standard solutions/add-on products, they are authorized to implement customized/industry-specific solutions in the areas of application development and system integration on the basis of WinCC.

The portfolio is rounded off with consulting services, project-related training, and workshops for decision-makers and users.

Sector competence in addition to automation expertise and WinCC system know-how ensure professional and efficient solutions. The software is, of course, developed in compliance with recognized standards on the basis of certified quality management in accordance with ISO 9001.

You can find more information on the Internet at:
www.siemens.com/process-management

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## Teaching made easy - Comprehensive support on the way to Industry 4.0

### Knowledge & technology – the keystones to success in digitalization

***Digitalization is quickly and radically changing our world. What does this mean for education?***

In the world of Industry 4.0, companies can expect a host of new opportunities and challenges. New systems are verified on the spot through simulations. Automated mass production processes can make every product on the conveyor belt a unique product.

New products are now market-ready much faster. Siemens is shaping this transformation as a technology leader in the field of automation and process lifecycle management (PLM).

These new digitalization processes are changing the know-how requirements for employees. Many educational institutions are facing the challenge of conveying Industry 4.0 know-how as part of their teaching and training. The Siemens Automation Cooperates with Education (SCE) program is supporting educators on the way to Industry 4.0.

### The SCE digitalization concept for educators

***The SCE digitalization concept presented here shows how digitalization can be implemented in educational institutions – from vocational schools to universities.***

Digitalization (or Industry 4.0) know-how is now introduced through CAx and cloud technologies. It is founded on the basics of automation, such as digital technologies, PLC and information technologies, and on advanced automation and industrial communication technologies.

The level of digitalization knowledge can be weighted, depending on the vocational field or branch of study – e.g. mechanical engineering, automation engineering or computer science.

SIMULATION

AUTOMATION

CLOUD

**CAx and cloud technologies**

**Computer-assisted technologies (CAx)**
Virtual commissioning using simulation models

**Cloud technologies**
Connection and data analysis with smart data, manufacturing execution system (MES) and enterprise resource planning (ERP)

**Automation and industrial communication technologies**

**Industrial automation**
e.g. distributed IO, HMI, RFID, IO-Link, drive systems, safety technologies

**Industrial IT technologies**
e.g. Industrial Ethernet, interlace with software of third-party providers (OPC UA), security, communication networks

**Basics of automation technologies**

**Digital technologies**
Boolean functions

**PLC technologies**
PLC programming according to IEC 61131

**IT technologies**
Ethernet and high-level programming languages, e.g. Python, Node-RED, C/C++, Linux

## **The SCE digitalization concept for educators** (continued)

As part of their project work, students at Vocational School 2 in Wolfsburg, Germany, have implemented the three levels of the SCE Industry 4.0 concept. A virtual twin created with the Siemens NX Mechatronics Designer (MCD) CAD software was used for the design and virtual commissioning. This enables fast and efficient assembly of the real automation system, e.g. with SIMATIC S7-1500/ET 200SP/RFID, for use in classes. Production data, such as the number of bottles filled, production date and system parameters, are uploaded to a cloud using SIMATIC IOT2000.

siemens.com/iot2020

siemens.com/nx

### *The SCE offers*

### *Learning and training documents*

More than 100 didactically prepared learning and training documents are available through SCE and incorporate the digitalization concept. They are designed for use in classes, but can also be customized or used for individual study. These documents are available for free download, most of them in 7 languages.

siemens.com/sce/documents

### *Educator courses*

Excellent teaching content is needed to introduce students to digitalization. For this purpose, SCE holds educator courses in certain regions. Based on our learning and training documents and through practical exercises, educators acquire the latest Industry 4.0 know-how.

siemens.com/sce/courses

SIEMENS
SIEMENS
SOFTW
CERTIFICATE OF LICENSE

### *Trainer packages*

The 90 SCE trainer packages help educators teaching and implementing the SCE digitalization concept. Trainer packages comprise specially compiled, genuine Siemens hardware and software products. The trainer packages are based on the learning and training documents and are offered to schools, colleges and universities at special terms.

siemens.com/sce/tp

### *Support for your projects / textbooks*

We support you on selected projects with advice and assistance from SCE contact partners.

As a special service, we support textbook authors. We maintain a list of textbooks on the SCE website.

siemens.com/sce/contact

siemens.com/sce/books

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## Teaching made easy - Comprehensive support on the way to Industry 4.0

### Partnerships for proliferation of Industry 4.0 in education

WORLDSKILLS
COMPETITOR

#### *Partnership with WorldSkills*

As a technology powerhouse, we support vocational training of students around the world. Since 2010, we have partnered with WorldSkills as a Global Industry Partner in order to amplify this cause.

WorldSkills is an international organization whose mission is to raise the profile and recognition of skilled people, and show how important vocational skills are in achieving economic growth and personal success. Every two years, WorldSkills hosts the world championships of skills.

Siemens provides the competitors with automation products, such as SIMATIC S7-1500 and LOGO!, for the disciplines: industrial control, electrical installations, Polymechanics/Automation and manufacturing technology.

The next international skill competitions are scheduled for Kazan/Russia, in 2019 and Shanghai/China, in 2021. Additionally, we support selected continental and regional competitions.

siemens.com/worldskills

#### *Partnerships with educators*

We provide support to educators and educational organizations in the form of one-on-one advice through SCE contact partners and Siemens experts as well as long-term cooperation.

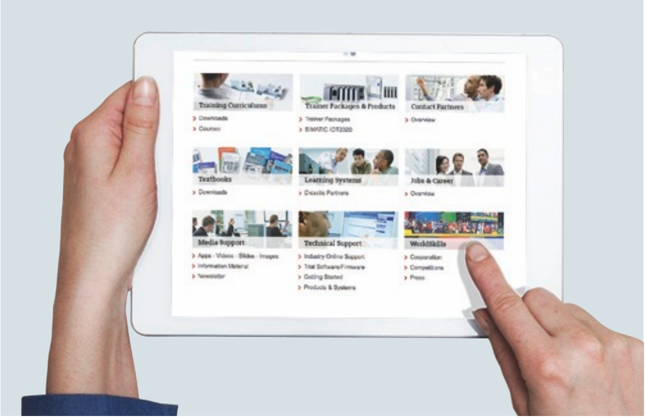
siemens.com/sce/contact

#### *Partnerships with producers of learning systems*

For practical training in classrooms and labs, numerous producers of learning systems offer a wide range of complete didactic solutions based on SCE trainer packages.

siemens.com/sce/partner

### Information portal


Training Curriculums
Downloads
Courses
Trainer Packages & Products
Trainer Packages
SIMATIC IOT2020
Contact Partners
Overview
Textbooks
Downloads
Learning Systems
Didactic Partners
Jobs & Career
Overview
Media Support
Apps · Videos · Slides · Images
Information Material
Newsletter
Technical Support
Industry Online Support
Trial Software/Firmware
Getting Started
Products & Systems
WorldSkills
Cooperation
Competitions
Press

To facilitate your teaching assignment and/or for selfstudy, we offer educators and students a comprehensive SCE information portal. At this portal you have quick access to all SCE offers, e.g. learning and training documents including projects, Getting Started information, videos, manuals, trial software and newsletters.

siemens.com/sce

SIEMENS

Global Industry
Partner of
WorldSkills
International

worldskills

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## Overview

### *Siemens Solution Partners and Approved Partners for your success*

Solution Partner
Automation Drives
SIEMENS

Approved Partner
Industry Services
SIEMENS

Approved Partner
Value Added Reseller
SIEMENS

Highest competence in automation and drive technology

Siemens works closely together with selected partner companies around the world in order to ensure that customer requirements for all aspects of automation and drives are fulfilled as best as possible – wherever you are, and whatever the time.

We place great value on our customers acting in accordance with the same ideals which characterize Siemens as a whole: Competence, professionalism and quality. That is why continuous development through qualification and certification measures in line with global standards is a central aspect of our Partner Program. This means that with our partners, you benefit from the same high quality standards all over the world.
The partner emblem is the symbol for tried and tested quality.

The partner network for industry

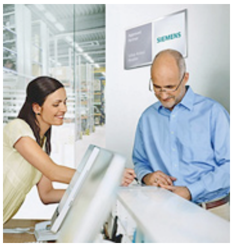
The Siemens Partner Program offers you expertise and experience close at hand.

Within our global network, we distinguish between Solution Partners and Approved Partners. We currently work with more than 1,500 Solution Partners around the world. Our network of over 150 Approved Partners continues to grow. In more than 80 countries worldwide

Siemens Solution Partners – Automation Drives

At present we are working with more than 1,500 Solution Partners worldwide. They are characterized by extensive application, system and sector knowledge, as well as proven project experience, and are able to implement future-proof tailored solutions of the highest quality, based on our product and system portfolio.

Siemens Approved Partners – Value Added Resellers



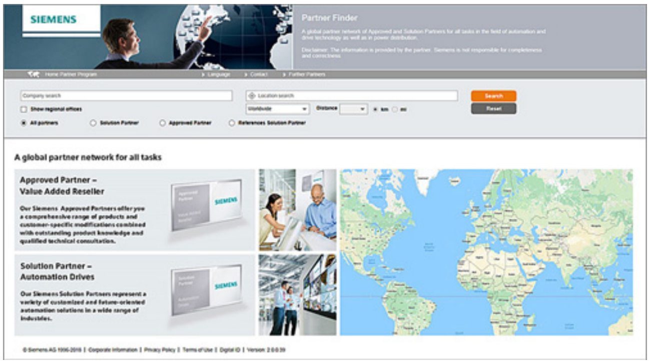
With their detailed technical knowledge, Siemens Approved Partners – Value Added Resellers offer a combination of products and services that range from specialist technologies and customized modifications to the provision of high-quality system and product packages. They also provide qualified technical support and assistance.

Siemens Approved Partners – Industry Services

Siemens Approved Partners – Industry Services put their unique expertise entirely at the service of enhancing your productivity and can be instrumental in ensuring the availability of your plants.

### *Partner Finder*

The ideal partner for your task is just a mouse click away!



Partner Finder

A global partner network of Approved and Solution Partners for all tasks in the field of automation and drive technology as well as in power distribution.

Disclaimer: The information is provided by the partner. Siemens is not responsible for completeness and correctness.

☐ Show regional offices

● All partners ○ Solution Partner ○ Approved Partner ○ References Solution Partner

A global partner network for all tasks

Approved Partner – Value Added Reseller

Our Siemens Approved Partners offer you a comprehensive range of products and customer-specific modifications combined with outstanding product knowledge and qualified technical consultation.

Solution Partner – Automation Drives

Our Siemens Solution Partners represent a variety of customized and future-oriented automation solutions in a wide range of industries.

In the Siemens global Solution Partner Program, customers are certain to find the optimum partner for their specific requirements – with no great effort. The Partner Finder is basically a comprehensive database that showcases the profiles of all our partners.

Easy selection:
Set filters in the search screen form according to the criteria that are relevant to you. You can also directly enter the name of an existing partner.

Skills at a glance:
Gain a quick insight into the specific competencies of any particular partner with the reference reports.

Direct contact option:
Use our electronic query form:

www.siemens.com/partnerfinder

Additional information of the Siemens Parners for industry is available online at:

www.siemens.com/partnerprogram

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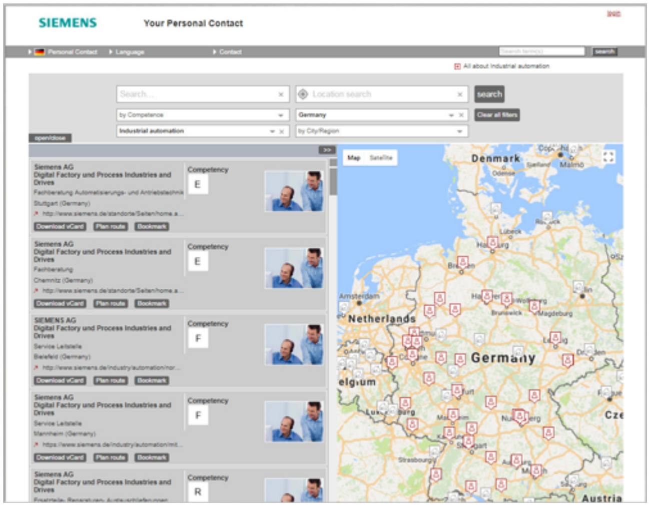
## Partners at Siemens


SIEMENS
Your Personal Contact
search
Clear all filters
by Competence
Germany
Industrial automation
by City/Region
open/close
Competency
Download vCard
Plan route
Bookmark
Map
Satellite
Denmark
Netherlands
Germany
Belgium
Austria

At your service locally, around the globe for consulting, sales, training, service, support, spare parts on the entire portfolio of Digital Industries.

Your partner can be found in our Personal Contacts Database at:
www.siemens.com/automation-contact

You start by selecting

- the required competence,
- products and branches,
- a country and a city

or by a

- location search or free text search.

## Siemens Service Option for SIMATIC IPC

### *The expanded hardware service for SIMATIC IPC products*

Purchasing and registering this additional agreement for a SIMATIC IPC extends the time period for free repairs of this device to 36 or 48 months after delivery.

Scope of services of the service option within the period of service (36/48 months):

- Free[1] repair during the period of service at one of our authorized repair centers near you
  The addresses of our worldwide partners can be found on the Internet at www.siemens.com/asis
- Within the agreed contractual period, Siemens will bear the costs that are incurred in the repair center (labor and materials/replacement parts), which are needed to restore the functions[2] of the hardware
- Siemens will also assume the return shipping costs of the repaired device from the repair center to the customer

| Product family | Article No.<br>Service Option | Article designation |
|---|---|---|
| **SIMATIC Rack PC** | **6ES7648-4AB36-0AA0** | **36** or |
| • SIMATIC IPC347 | **6ES7648-4AB48-0AA0** | **48** months<br>service option for SIMATIC Rack PCs and Box PCs |
| • SIMATIC IPC547 | | |
| • SIMATIC IPC647 | | |
| • SIMATIC IPC847 | | |
| **SIMATIC Box PC** | | |
| • SIMATIC IPC227 | | |
| • SIMATIC IPC327 | | |
| • SIMATIC IPC427 | | |
| • SIMATIC IPC627 | | |
| • SIMATIC IPC827 | | |
| **SIMATIC Panel PC** | **6ES7648-4AP36-0AA0** | **36** or |
| • SIMATIC IPC277 | **6ES7648-4AP48-0AA0** | **48** months<br>service option for SIMATIC Panel PC |
| • SIMATIC IPC377 | | |
| • SIMATIC IPC477 | | |
| • SIMATIC IPC577 | | |
| • SIMATIC IPC677 | | |

### *Ordering and registering the additional agreement:*

- Select the appropriate article number for the optional package based on the family of products and place your order
- Scope of supply:
  Description of services in 4 languages + service device label with a license number for identifying the additional agreement on the device
- Activation of the service license number for a SIMATIC PC/ SIMATIC PG via the Internet (www.siemens.com/ped):
  The registration must be completed within the first 90 days after initial delivery of the device!

---

[1] Wear and tear as well as problems that arise due to improper handling of the devices are not included.

[2] For hard disk defects that require the system to be restored, the repair service will only cover restoring the installation to its original condition exworks. The uploading of additional application software, drivers and setting up the operating software are not covered by the free repair service.

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## Expertise and services relating to all aspects of PC-based Automation

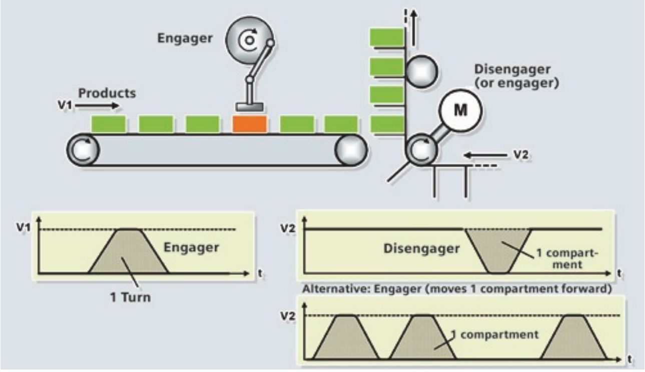
### Overview

*Expertise and services relating to all aspects of PC-based Automation*

Do you require support with the dimensioning and options of a PC-based Automation project, or even engineering support?

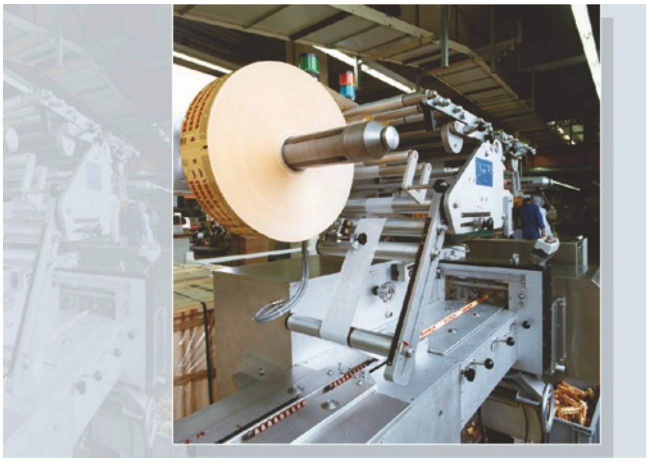
Specifically for this purpose, Siemens has established a team of specialists in Cologne and Milan who work closely with Development and Product Marketing and can thus provide our sales departments worldwide with competent support in PC-based Automation.

### Our core competencies



- Design of PC-based Automation systems from Siemens
- Integrated, customer-specific technology (add-ons) using high-level languages (C++) in Windows or real-time environments
- Knowledge transfer/workshops for the integration of third-party components, as well as for applications using the Open Development Kit (ODK)
- Technology and application know-how
- Development of add-ons for WinAC and WinCC flexible

### Reference applications



- Fast recording of measured values
- Software blocks for drives library
- Customer-specific communications via Ethernet (OPC/ActiveX, TCP socket)
- Synchronous operation, flying shear, table interpolation for electric and hydraulic axes
- Integration of PCI cards into PC-based Automation applications (e.g. WinAC and ASi-Bus)
- Customer-specific development and integration of C++ programs
- Database connections
- Integration of complex control algorithms

### Contacts

Activation of the Competence Centers for your application via your regional contact.

If you do not yet have a contact person in your region, just go to:
http://www.siemens.com/automation/partner

The latest information about the workshops offered can be found on the Internet:
http://www.siemens.com/pc-based

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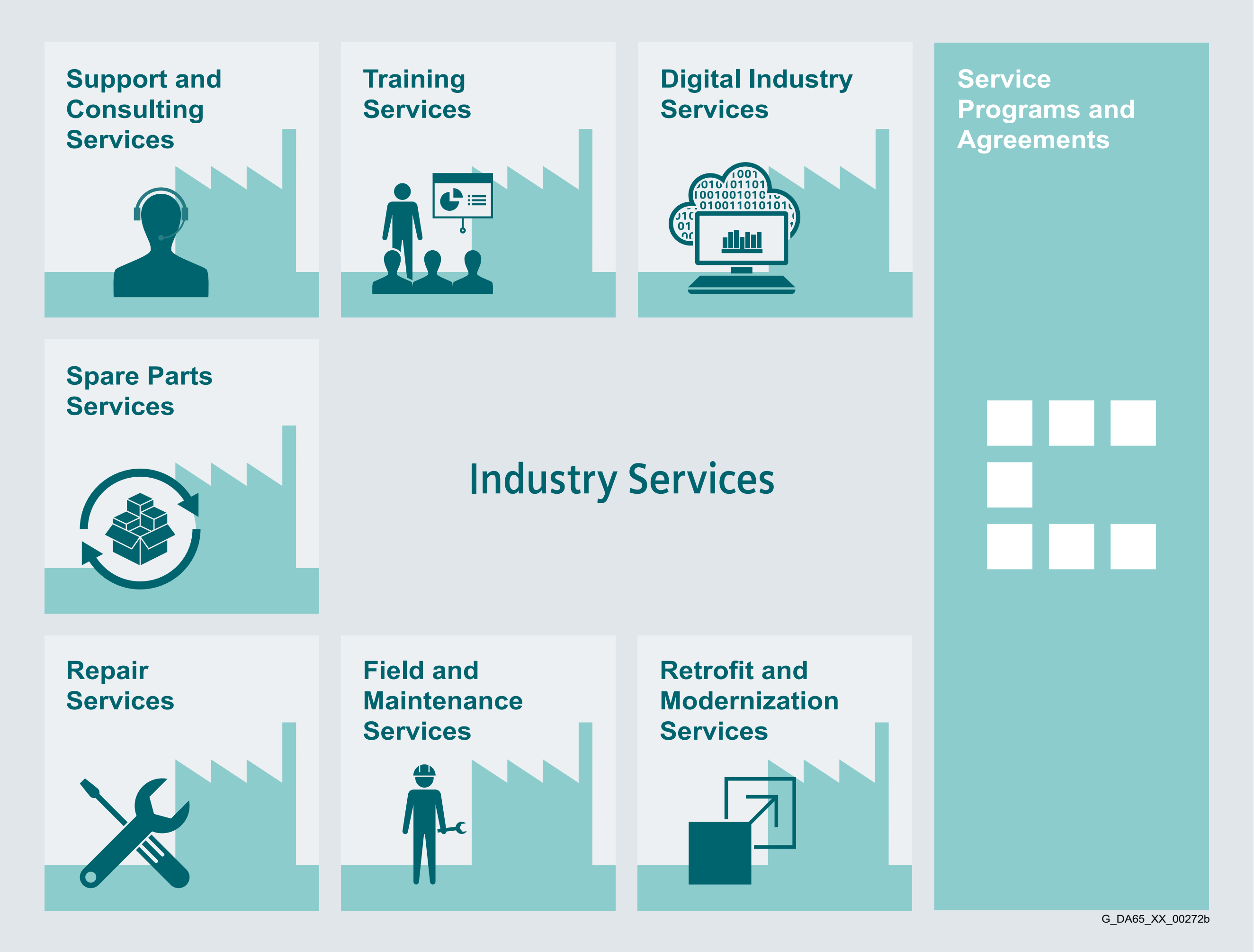
## Overview


Support and Consulting Services
Training Services
Digital Industry Services
Service Programs and Agreements
Spare Parts Services
Industry Services
Repair Services
Field and Maintenance Services
Retrofit and Modernization Services
G_DA65_XX_00272b

***Keep your business running and shape your digital future – with Industry Services***

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

www.siemens.com/industryservices

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## Industry Services – Portfolio overview

### Overview

#### *Digital Industry Services*

Digital Industry Services make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber-attack threats.
www.siemens.com/global/en/products/services/industry/digital-industry-services.html

#### *Training Services*

From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

Worldwide, SITRAIN courses are available wherever you need a training course in more than 170 locations in over 60 countries.
https://support.industry.siemens.com/cs/ww/en/sc/2226

#### *Support and Consulting Services*

**Industry Online Support** site for comprehensive information, application examples, FAQs and support requests.

**Technical and Engineering Support** for advice and answers for all inquiries about functionality, handling, and fault clearance. The Service Card as prepaid support for value added services such as Priority Call Back or Extended Support offers the clear advantage of quick and easy purchasing.

**Information & Consulting Services**, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or life cycle Information Services; transparency on the life cycle of the products in your plants.
https://support.industry.siemens.com/cs/ww/en/sc/2235

#### *Spare Parts*

Spare Parts Services are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistics experts take care of procurement, transport, custom clearance, storage and order management. Reliable logistics processes ensure that components reach their destination as needed.

Since not all spare parts can be kept in stock at all times, Siemens offers a preventive measure for spare parts provisioning on the customer's premises with optimized **Spare Parts Packages** for individual products, custom-assembled drive components and entire integrated drive trains – including risk consulting.

**Asset Optimization Services** help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.
https://support.industry.siemens.com/cs/ww/en/sc/2110

#### *Repair Services*

Repair Services are offered on-site and in regional repair centers for fast restoration of faulty devices' functionality.

Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.
https://support.industry.siemens.com/cs/ww/en/sc/2154

#### *Field and Maintenance Services*

Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance.

All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.
https://support.industry.siemens.com/cs/ww/en/sc/2265

#### *Retrofit and Modernization Services*

Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants.
https://support.industry.siemens.com/cs/ww/en/sc/2286

#### *Service Programs and Agreements*

A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.

Programs and agreements can be customized as KPI-based and/or performance-based contracts.
https://support.industry.siemens.com/cs/ww/en/sc/2275

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## Overview

Web
support.industry.siemens.com
App
SIEMENS
Google Play
App Store
Microsoft
75%
50%

Online Support – fast, intuitive, whenever you want, wherever you need

Scan the QR code for information on our Online Support app.

**FAQ / Application examples**
Information about industrial products, programming and configuration as well as application examples

**Technical information**
Videos, documentation, manuals, updates, product notes, compatibility tool, certificates, planning data such as dimensional drawings, product data, 3D models

**Forum**
Exchange information and experience with other users and experts

**Online Support for Siemens Industry Products**

Siemens Industry and Online Support with some 1.7 million visitors per month is one of the most popular web services provided by Siemens. It is the central access point for comprehensive technical know-how about products, systems and services for automation and drives applications as well as for process industries.

In connection with the challenges and opportunities related to digitalization you can look forward to continued support with innovative offerings.

## Overview

### Software types

Software requiring a license is categorized into types.
The following software types have been defined:

- Engineering software
- Runtime software

### Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

### Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of supply can be found in the readme file supplied with the relevant product(s).

### License types

Siemens Industry Automation & Drive Technologies offers various types of software license:

- Floating license
- Single license
- Rental license
- Rental floating license
- Trial license
- Demo license
- Demo floating license

### Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started.
A license is required for each concurrent user.

### Single license

Unlike the floating license, a single license permits only one installation of the software per license.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per instance, per axis, per channel, etc.

One single license is required for each type of use defined.

### Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific period of time (the operating hours do not have to be consecutive).
One license is required for each installation of the software.

### Rental floating license

The rental floating license corresponds to the rental license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

### Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes.
It can be transferred to another license.

### Demo license

The demo license support the "sporadic use" of engineering software in a non-productive context, for example, use for testing and evaluation purposes. It can be transferred to another license. After the installation of the license key, the software can be operated for a specific period of time, whereby usage can be interrupted as often as required.

One license is required per installation of the software.

### Demo floating license

The demo floating license corresponds to the demo license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

### Certificate of License (CoL)

The CoL is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

### Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

### Delivery versions

Software is constantly being updated.
The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

### PowerPack

PowerPacks can be used to upgrade to more powerful software.
The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.
A separate PowerPack must be purchased for each original license of the software to be replaced.

### Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.
The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.
A separate upgrade must be purchased for each original license of the software to be upgraded.

## Overview

### *ServicePack*

ServicePacks are used to debug existing products. ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

### *License key*

Siemens Industry Automation & Drive Technologies supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

### *Software Update Service (SUS)*

As part of the SUS contract, all software updates for the respective product are made available to you free of charge for a period of one year from the invoice date. The contract will automatically be extended for one year if it is not canceled three months before it expires.

The possession of the current version of the respective software is a basic condition for entering into an SUS contract.

You can download explanations concerning license conditions from https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

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## Notes

## 1. General Provisions

By using this catalog you can purchase products (hardware, software and services) described therein from Siemens Aktiengesellschaft subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

### *1.1 For customers with a seat or registered office in Germany*

For customers with a seat or registered office in Germany, the following terms and conditions apply subordinate to T&C:

- for products, which include specific terms and conditions in the description text, these specific terms and conditions shall apply and subordinate thereto,
- for installation work the "General Conditions for Erection Works – Germany"1) ("Allgemeine Montagebedingungen – Deutschland" (currently only available in German)) and/or
- for stand-alone software products and software products forming a part of a product or project, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany"1) and/or
- for consulting services the "General Terms and Conditions for Consulting Services of the Division DF – Germany"1) and/or
- for other supplies and/or services the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"1).
  In case such supplies and/or services should contain Open Source Software, the conditions of which shall prevail over the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"1), a notice will be contained in the scope of delivery in which the applicable conditions for Open Source Software are specified. This shall apply mutatis mutandis for notices referring to other third party software components.

### *1.2 For customers with a seat or registered office outside Germany*

For customers with a seat or registered office outside Germany, the following terms and conditions apply subordinate to T&C:

- for products, which include specific terms and conditions in the description text, these specific terms and conditions shall apply and subordinate thereto,
- for services the "International Terms & Conditions for Services"1) supplemented by "Software Licensing Conditions"1) and/or
- for consulting services the "General Terms and Conditions for Consulting Services of the Division DF – Germany"1) and/or
- for other supplies of hard- and software the "International Terms & Conditions for Products"1) supplemented by "Software Licensing Conditions"1)

### *1.3 For customers with master or framework agreement*

To the extent our supplies and/or services offered are covered by an existing master or framework agreement, the terms and conditions of that agreement shall apply instead of T&C.

## 2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charge the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at:

https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

## 3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog – especially with regard to data, dimensions and weights given – these are subject to change without prior notice.

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1) The text of the Terms and Conditions of Siemens AG can be downloaded at https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

### 4. Export Regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export may be subject to license. We shall indicate in the delivery details whether licenses are required under German, European and US export lists.

Our products are controlled by the U.S. Government (when labeled with "ECCN" unequal "N") and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Products labeled with "AL" unequal "N" are subject to European / national export authorization. Products without label, with label "AL:N" / "ECCN:N", or label "AL:9X9999" / "ECCN: 9X9999" may require authorization from responsible authorities depending on the final end-use, or the destination.

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The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

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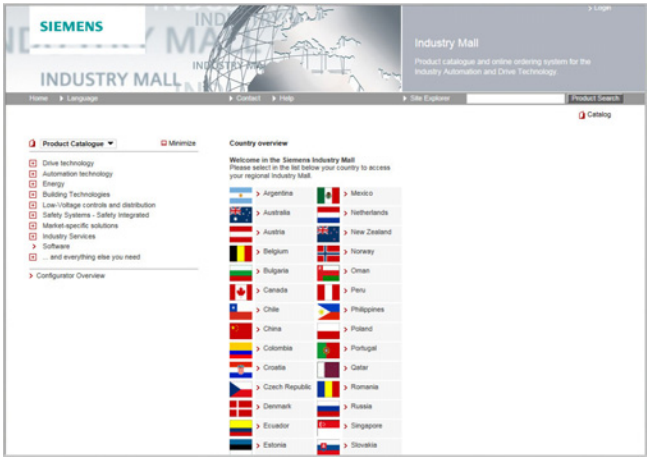
## *Easy product selection and ordering: Industry Mall*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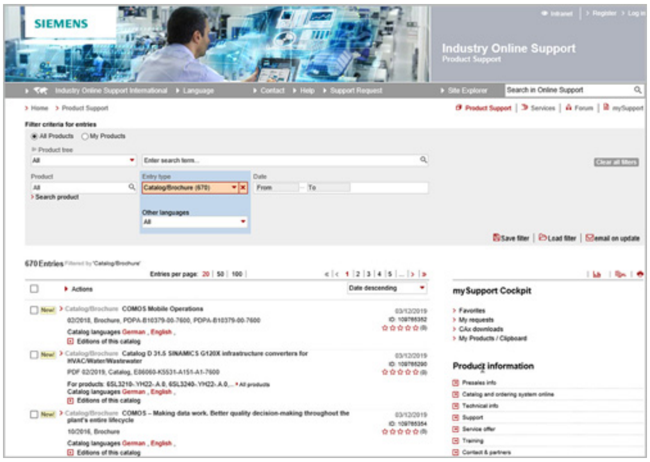
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Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

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Siemens' products and solutions undergo continuous development to make them more secure.
Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

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