SIEMENS

Human Machine Interface Systems/ PC-based Automation

SIMATIC HMI / PC-based Automation

Catalog ST 80/ ST PC

Edition 2015
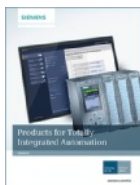
siemens.com/simatic

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Operator control and monitoring systems/
PC-based Automation

Catalog ST 80 / ST PC · 2015

Supersedes:
Catalog ST 80 / ST PC · 2014

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The products contained in this catalog can also be found
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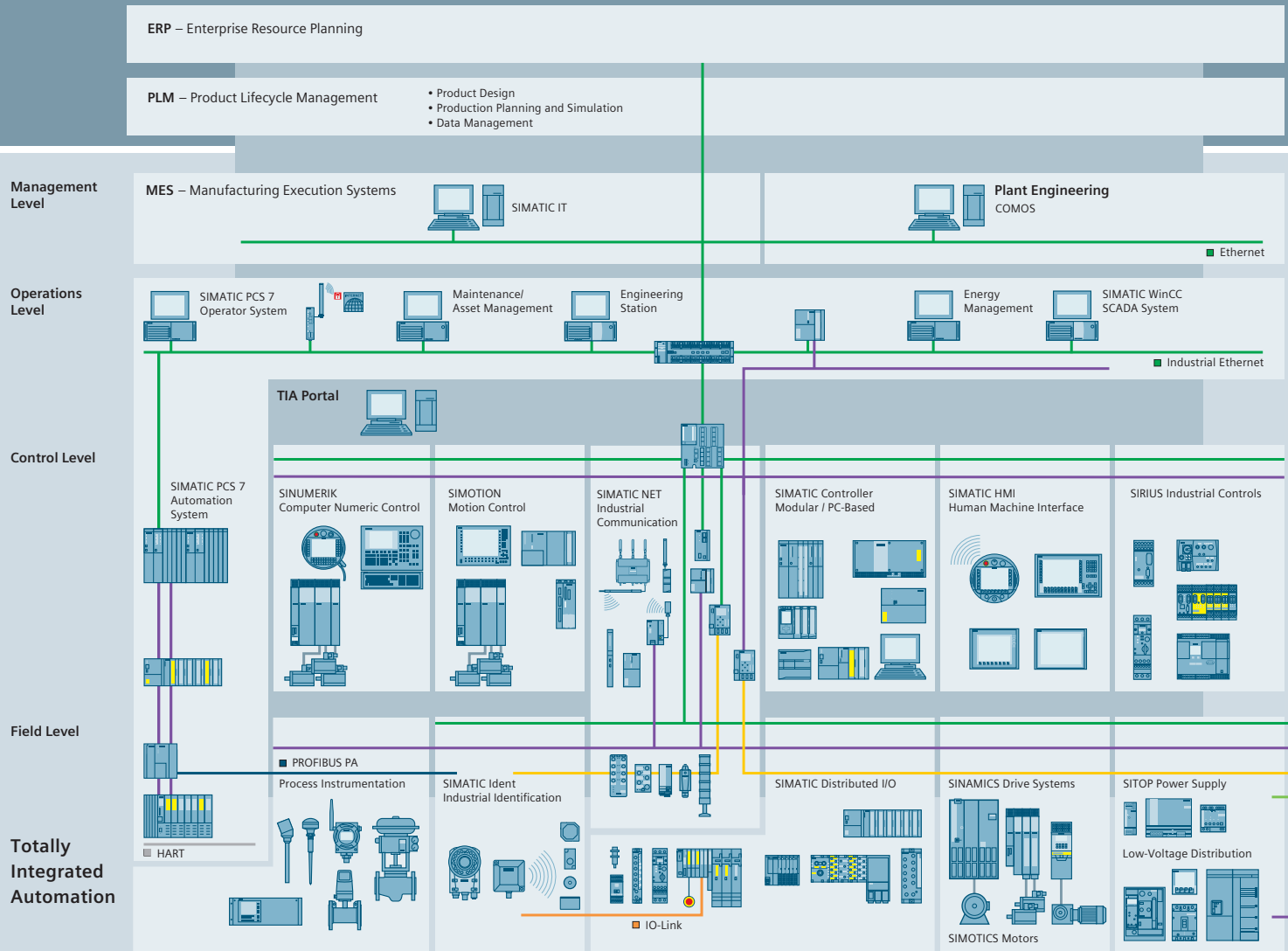No. 2613-05). The certificate is recognized
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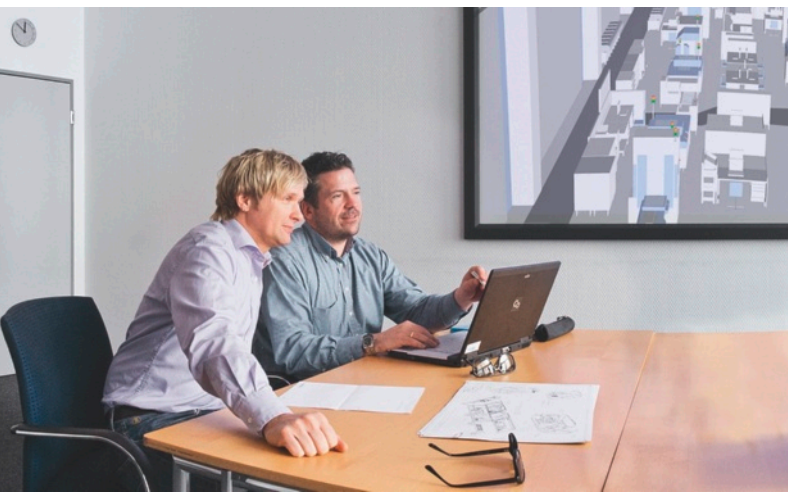
Answers for industry.

Integrated technologies, vertical market expertise and services for greater productivity, energy efficiency, and flexibility.

Siemens is the world's leading supplier of innovative and environmentally friendly products and solutions for industrial companies. End-to-end automation technology and industrial software, solid market expertise, and technology-based services are the levers we use to increase our customers' productivity, efficiency and flexibility.

We consistently rely on integrated technologies and, thanks to our bundled portfolio, we can respond more quickly and flexibly to our customers' wishes. With our globally unmatched range of automation technology, industrial control and drive technology as well as industrial software, we equip companies with exactly what they need over their entire value chain – from product design and development to production, sales and service. Our industrial customers benefit from our comprehensive portfolio, which is tailored to their market and their needs.

Market launch times can be reduced by up to 50% due to the combination of powerful automation technology and industrial software. At the same time, the costs for energy or waste water for a manufacturing company can be reduced significantly. In this way, we increase our customers' competitive strength and make an important contribution to environmental protection with our energy-efficient products and solutions.

ERP – Enterprise Resource Planning

PLM – Product Lifecycle Management
- Product Design
- Production Planning and Simulation
- Data Management

Management Level

MES – Manufacturing Execution Systems   SIMATIC IT

Plant Engineering COMOS

■ Ethernet

Operations Level

SIMATIC PCS 7 Operator System

Maintenance/ Asset Management

Engineering Station

Energy Management

SIMATIC WinCC SCADA System

■ Industrial Ethernet

TIA Portal

Control Level

SIMATIC PCS 7 Automation System

SINUMERIK Computer Numeric Control

SIMOTION Motion Control

SIMATIC NET Industrial Communication

SIMATIC Controller Modular / PC-Based

SIMATIC HMI Human Machine Interface

SIRIUS Industrial Controls

Field Level

■ PROFIBUS PA

Process Instrumentation

SIMATIC Ident Industrial Identification

SIMATIC Distributed I/O

SINAMICS Drive Systems

SITOP Power Supply

Low-Voltage Distribution

■ HART

■ IO-Link

SIMOTICS Motors

Totally Integrated Automation

Efficient automation starts with efficient engineering.

Totally Integrated Automation: Efficiency driving productivity.

Efficient engineering is the first step toward better production that is faster, more flexible, and more intelligent. With all components interacting efficiently, Totally Integrated Automation (TIA) delivers enormous time savings right from the engineering phase. The result is lower costs, faster time-to-market, and greater flexibility.
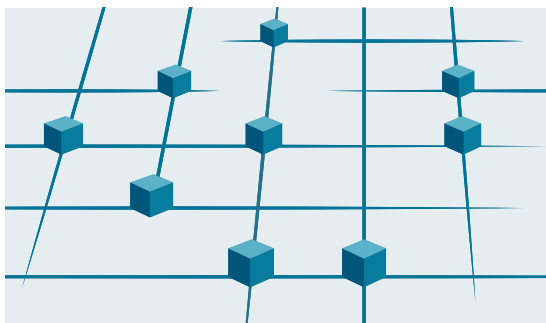
Totally Integrated Automation
Efficient interoperability of all automation components

- PROFINET
- Industrial Ethernet
- PROFIBUS
- AS-Interface
- KNX GAMMA instabus

Totally Integrated Power
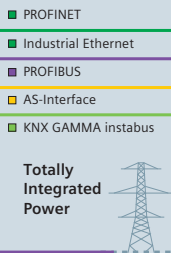
A unique complete approach for all industries

As one of the world's leading automation suppliers, Siemens provides an integrated, comprehensive portfolio for all requirements in process and manufacturing industries. All components are mutually compatible and system-tested. This ensures that they reliably perform their tasks in industrial use and interact efficiently, and that each automation solution can be implemented with little time and effort based on standard products. The integration of many separate individual engineering tasks into a single engineering environment, for example, provides enormous time and cost savings.

With its comprehensive technology and industry-specific expertise, Siemens is continuously driving progress in manufacturing industries – and Totally Integrated Automation plays a key role.

Totally Integrated Automation creates real value added in all automation tasks, especially for:

- **Integrated engineering**
  Consistent, comprehensive engineering throughout the entire product development and production process
- **Industrial data management**
  Access to all important data occurring in productive operation – along the entire value chain and across all levels
- **Industrial communication**
  Integrated communication based on international cross-vendor standards that are mutually compatible
- **Industrial security**
  Systematic minimization of the risk of an internal or external attack on plants and networks
- **Safety Integrated**
  Reliable protection of personnel, machinery, and the environment thanks to seamless integration of safety technologies into the standard automation

Making things right with Totally Integrated Automation

Totally Integrated Automation, industrial automation from Siemens, stands for the efficient interoperability of all automation components. The open system architecture covers the entire production process and is based on end-to-end shared characteristics: consistent data management, global standards, and uniform hardware and software interfaces.

Totally Integrated Automation lays the foundation for comprehensive optimization of the production process:
- Time and cost savings due to efficient engineering
- Minimized downtime due to integrated diagnostic functions
- Simplified implementation of automation solutions due to global standards
- Better performance due to interoperability of system-tested components

Totally Integrated Power
We bring power to the point –
safely and reliably.

Comprehensive answers for power distribution in complex energy systems – from Siemens

Efficient, reliable, safe: These are the demands placed on electrification and especially power distribution. And our answer – for all application areas of the energy system – is Totally Integrated Power (TIP). It's based on our comprehensive range of products, systems, and solutions for low and medium voltage, rounded out by our support throughout the entire lifecycle – from planning with our own software tools to installation, operation, and services.
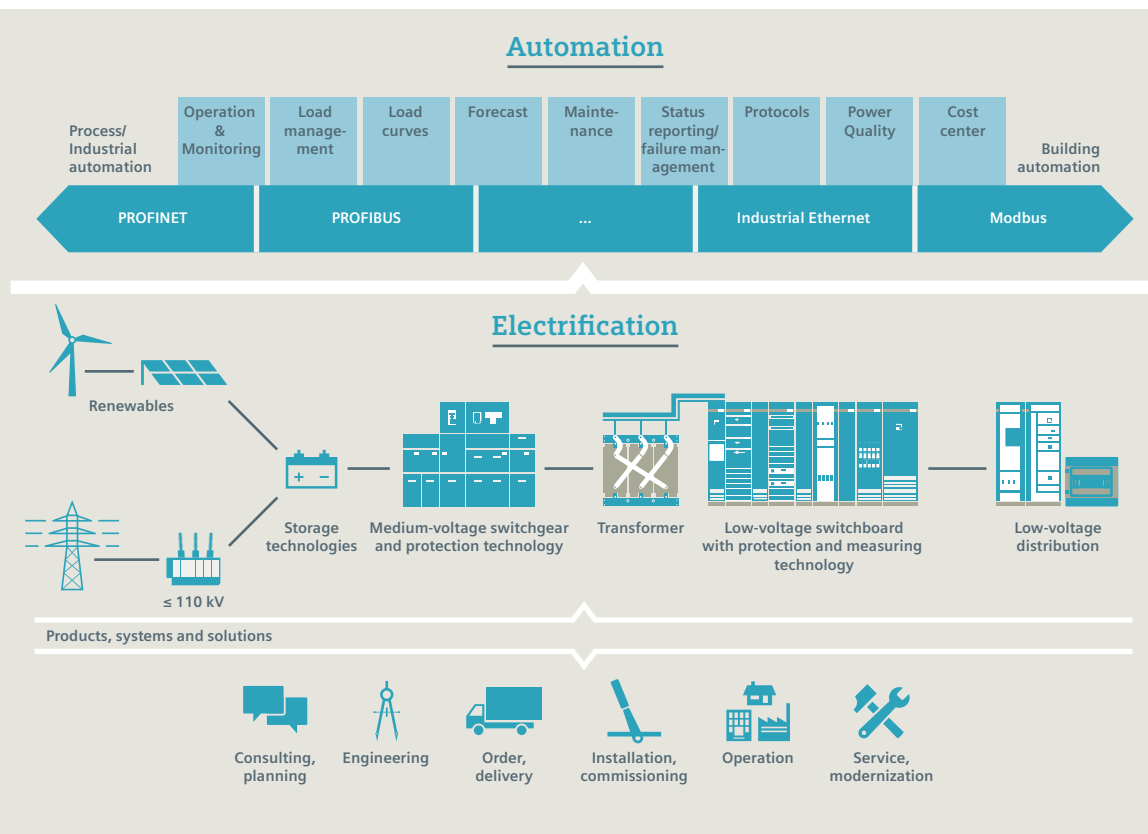
Smart interfaces allow linking to industrial or building automation, making it possible to fully exploit all the optimization potential of an integrated solution. This is how we provide our customers around the world with answers to their challenges. With highly efficient, reliable, and safe power distribution, we lay the foundation for sustainable infrastructure and cities, buildings, and industrial plants. We bring power to the point – wherever and whenever it is needed.

More information: www.siemens.com/tip

Totally Integrated Power offers more:

- **Consistency**:
  For simplified plant engineering and commissioning as well as smooth integration into automation solutions for building or production processes
- **One-stop-shop**:
  A reliable partner with a complete portfolio for the entire process and lifecycle – from the initial idea to after-sales service
- **Safety**:
  A comprehensive range of protection components for personnel safety and line and fire protection, safety by means of type testing
- **Reliability**:
  A reliable partner who works with customers to develop long-lasting solutions that meet the highest quality standards
- **Efficiency**:
  Bringing power to the point means greater plant availability and maximum energy efficiency in power distribution
- **Flexibility**:
  End-to-end consistency and modular design of Totally Integrated Power for any desired expansions and adaptation to future requirements
- **Advanced technology**:
  Reliable power distribution especially for applications in which supply is critical, continuous refinement of the technology

Challenges are our speciality

Automation

Process/ Industrial automation	Operation & Monitoring	Load manage-ment	Load curves	Forecast	Mainte-nance	Status reporting/ failure man-agement	Protocols	Power Quality	Cost center	Building automation
PROFINET		PROFIBUS		...			Industrial Ethernet		Modbus	

Electrification

Renewables

Storage technologies

Medium-voltage switchgear and protection technology

Transformer

Low-voltage switchboard with protection and measuring technology

Low-voltage distribution

≤ 110 kV

Products, systems and solutions

Consulting, planning

Engineering

Order, delivery

Installation, commissioning

Operation

Service, modernization

Introduction

SIMATIC HMI operator control and monitoring systems

1

■ Overview

SIMATIC HMI operator control and monitoring systems – Efficient to a new level

With the innovative human machine interface products, HMI solutions in the machine-level area and SCADA solutions can be implemented even faster, more cost-effectively, and more efficiently.

Efficiency at a new level is ensured by the complete range of engineering and visualization software, with SIMATIC WinCC (TIA Portal), SIMATIC WinCC and SIMATIC WinCC Open Architecture, as well as the high-luminance, rugged operator panel families of SIMATIC HMI and SIMATIC IPC, for panel-based visualization as well as for PC-based single-user and multi-user solutions.

http://www.siemens.com/hmi

Efficient solutions for the plant floor

With the perfectly matched combination of efficient engineering with SIMATIC WinCC in the TIA Portal and the rugged operator panel series of the SIMATIC HMI Panels, machine-level solutions and value added can be implemented quickly and cost effectively.

Efficient engineering – visualization can be generated faster and easier than ever with minimum effort:

- Common data management and the intelligent graphics editor avoid multiple inputs and errors.
- The library concept and simple device replacement reduce the configuration effort to a minimum.

Innovation in design and operation – to serve as the automation solution "calling card" and with a unique level of flexibility that pays dividends, SIMATIC HMI offers:

- Styles and design that allow you to respond individually to customer requirements.
- Intuitive gesture and multi-touch operation offer excellent usability.

High-luminance HMI devices – the perfect standard for maximum quality solutions for every application:

- High-resolution displays in widescreen format offer an extremely wide viewing angle with optimal readability.
- Rugged industrial quality including maintenance-free, long-term availability.
- Universal use thanks to industry-wide standards and customer-specific operator panels.

Security – for investments, know-how and operation:

- Problem-free generational change offers maximum investment protection.
- Security Integrated, the system-wide security concept for protecting the solution.
- Safety Integrated protects personnel, machinery and the environment.

Commissioning in the fast lane – no time lost in testing and servicing:

- Visualization can be simulated for detecting errors in advance.
- Automatic backup saves manual data backup and time-consuming device replacement.
- Intelligent system diagnostics and remote access enable fast error correction and secure, worldwide access.

SIMATIC WinCC in the TIA Portal (Totally Integrated Automation Portal)

SIMATIC WinCC in the TIA Portal (Totally Integrated Automation Portal) is part of the integrated engineering framework which offers a uniform engineering environment for programming and configuration of control, visualization and drive solutions.

SIMATIC WinCC (TIA Portal), the successor to SIMATIC WinCC flexible, is the software for all HMI applications.

Almost the entire range of SIMATIC HMI devices can be configured with this software.

The functionality covers both visualization tasks on the machine level and SCADA applications on PC-based multi-user systems.

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

■ **Overview** (continued)

SIMATIC SCADA systems – Efficient to a new level

Siemens SCADA systems redefine efficiency – in factory automation as well as in infrastructure applications

SIMATIC WinCC V7 for operational management, and SIMATIC WinCC Open Architecture for applications requiring a high level of customization both support international standards and platforms.

This enables simple integration of existing hardware, and seamless integration into the IT world.

Mobile solutions and innovative operator concepts secure simple and fast access to plant information, with extensive safety standards preventing operator errors. Siemens SCADA systems are scalable over the entire life cycle, so that existing plants can be expanded at any time. This means security of investment.

Whether you have a single-user, multi-user or even a widely distributed system: Siemens SCADA systems enable you to visualize machines, production lines and entire plants, thereby ensuring greater transparency. In this way, you can identify potential for optimization, minimize downtimes and ensure a short time-to-market.

* *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. To this end we have applied more than 15 years of SCADA know-how from all areas of industry. 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. Multitouch gesture operation in the industrial environment opens the door for modern operating concepts. Openness: Since international standards and system-internal script and programming interfaces are supported, special requests can also be easily implemented.

* *Openness*
  Since international standards and system-internal script and programming interfaces are supported, special requests can also be easily implemented.

www.siemens.com/scada

SIMATIC WinCC SCADA system

With its SIMATIC WinCC SCADA software, Siemens offers an innovative and scalable process visualization system that features numerous functions for monitoring complex automated processes. Whether you have a single-user system or a distributed multi-user system with redundant servers, long-term archive servers, or Web solutions: WinCC V7 offers full SCADA functionality for all industries, and is characterized by maximum openness.

http://www.siemens.com/wincc

SIMATIC WinCC Open Architecture SCADA system

As part of the SIMATIC HMI family, SIMATIC WinCC Open Architecture addresses applications requiring a high level of customization, large and/or complex applications and projects with special function or system requirements - even on non-Windows platforms.

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

Introduction

SIMATIC HMI operator control and monitoring systems

SIMATIC HMI - High-luminance and rugged HMI devices

HMI devices

SIMATIC HMI Key Panels – Pre-assembled and ready for installation, for conventional operator panels.

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

SIMATIC HMI Basic Panels – The entry level series for simple HMI applications.

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

SIMATIC HMI Comfort Panels – High-end functionality for demanding HMI applications.

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

SIMATIC HMI Mobile Panels – Portable HMI devices for mobile deployment on site.

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

HMI devices for special requirements and application areas

Fully enclosed HMI devices for SIMATIC

The fully-enclosed SIMATIC HMI devices (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/stand.

http://www.siemens.com/ip65-hmi-geraete

Devices with stainless steel fronts

SIMATIC HMI offers industry-specific versions for smooth use in accordance with regulations – with modified standard devices. For the food and beverages industry we supply, for example, devices with stainless steel fronts, and for industries facing particularly harsh environmental conditions, we offer fully enclosed devices with dust and splashwater protection in a rugged aluminum enclosure with high degree of protection IP65. Panels and Panel PCs with touch screens and stainless steel fronts are designed for machine-level operator control and monitoring in the food, beverages and tobacco industry.

http://www.siemens.com/inox-hmi-devices

HMI devices for hazardous areas

Intrinsically safe Panel PCs and Thin Clients that were specifically developed for hazardous areas.

http://www.siemens.com/simatic-hmi-ex

Individual HMI devices in customized versions

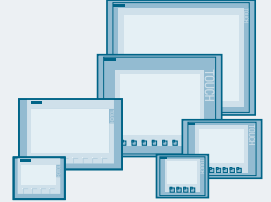http://www.siemens.com/customized-automation

Process visualization

Single-user PC

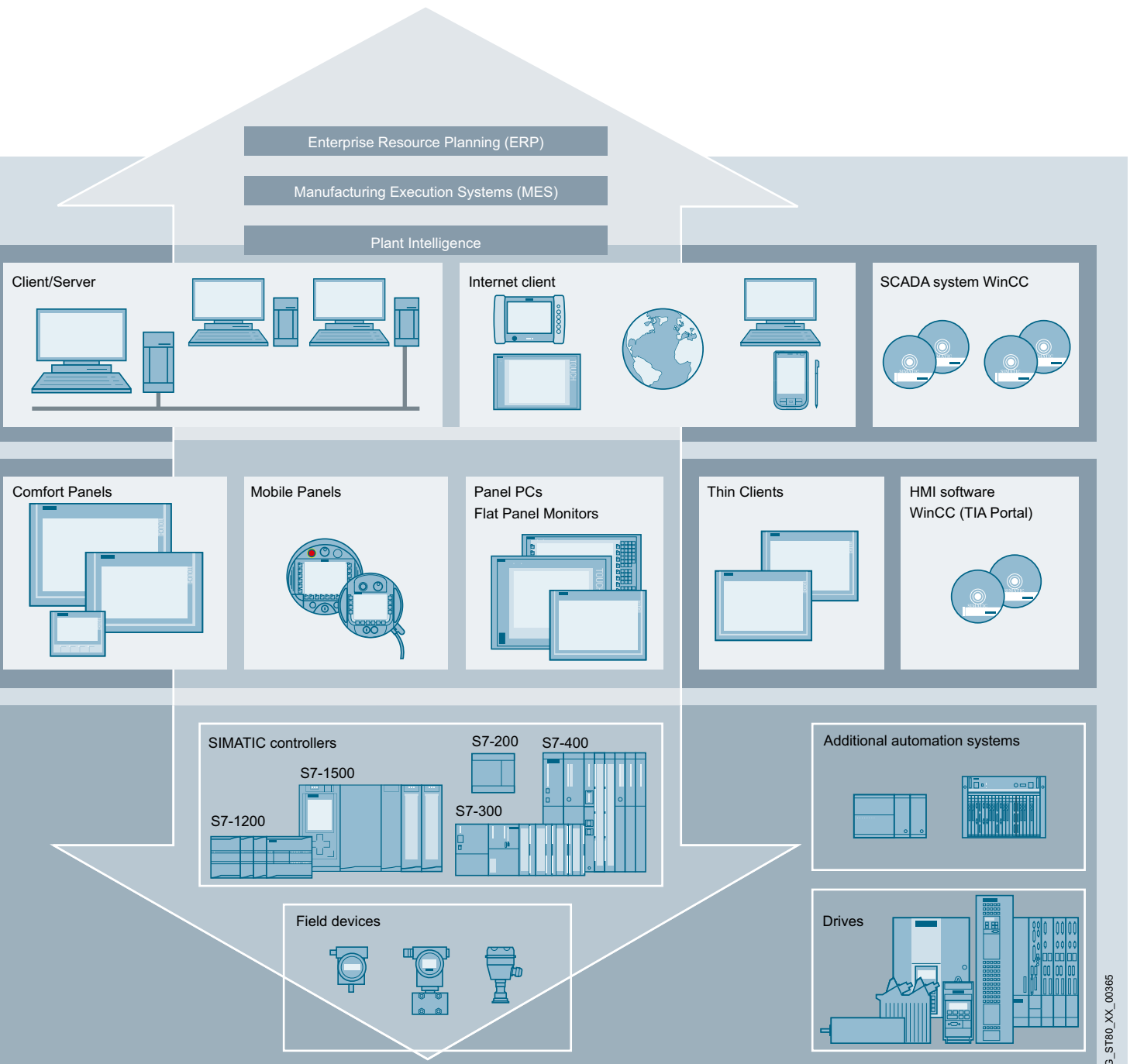Operator control and monitoring directly at the machine

Key Panels

Basic Panels
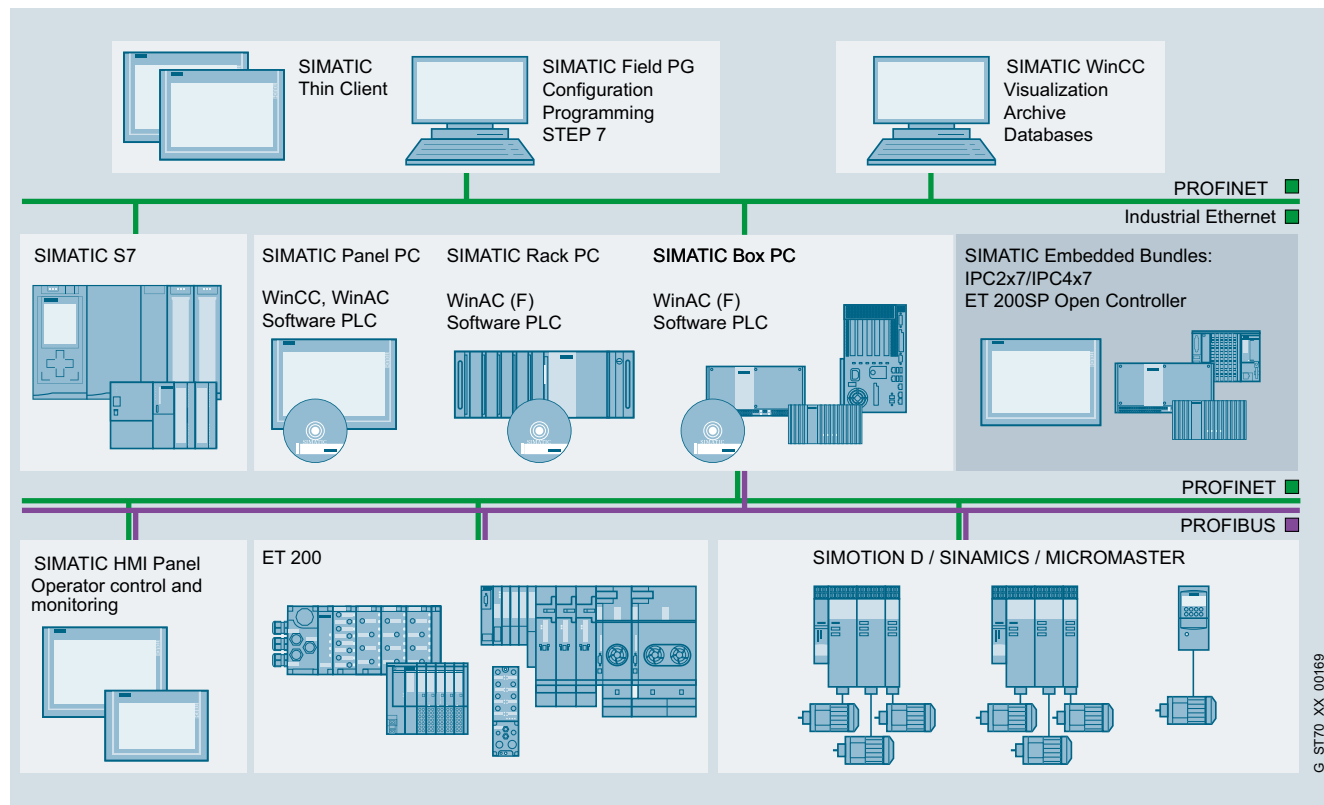
SIMOTION
Motion Control

Actuators/Sensors

Introduction

PC-based Automation

Overview

Overview (continued)

SIMATIC PC-based Automation

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

Industrial PCs

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

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

PC-based controllers

Siemens has developed a wide range of coordinated hardware and software components for PC-based Automation. Focal point: SIMATIC PC-based Control with SIMATIC WinAC, the open, flexible and reliable software controller for your PC-based automation solution, also approved by the German Technical Inspectorate and fail-safe.

http://www.siemens.com/winac

ET 200SP Open Controller

As the first controller of its type, the SIMATIC ET 200SP Open Controller combines the functions of a PC-based software controller with visualization, PC applications and central I/O (inputs/outputs) in a single, compact device. For control purposes, the already installed and preconfigured SIMATIC S7-1500 Software Controller, the PC-based version of the SIMATIC S7-1500, is used.

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

Embedded bundles with industrial PCs

Embedded bundles based on the embedded industrial PCs are extremely compact, robust, and maintenance-free systems for use at machine level. The functions PC-based Control (also failsafe) and/or visualization are already pre-installed and ready to use.

http://www.siemens.com/simatic-embedded-bundles

Software packages for SIMATIC IPCs

SIMATIC industrial PCs are offered with low-cost software packages. For the runtime versions with the visualization software products SIMATIC WinCC or WinCC Professional, WinCC flexible or WinCC Advanced, as well as the software controller SIMATIC WinAC RTX (F). The simultaneous purchase of industrial PC and software package results in the price advantage.

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

Industrial monitors and thin clients

Flexible distributed operating concepts can be implemented via Flat Panel monitors and thin clients. These are industry-standard LCD monitors with high-luminance displays that are placed up to 30 m away from the PC, or high-performance industrial thin clients. SIMATIC ITC, for one or even several operator stations, can be placed as far away as required via Industrial Ethernet.

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

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

Introduction

PC-based Automation

■ Overview (continued)

Application examples

Unit-type cogeneration unit

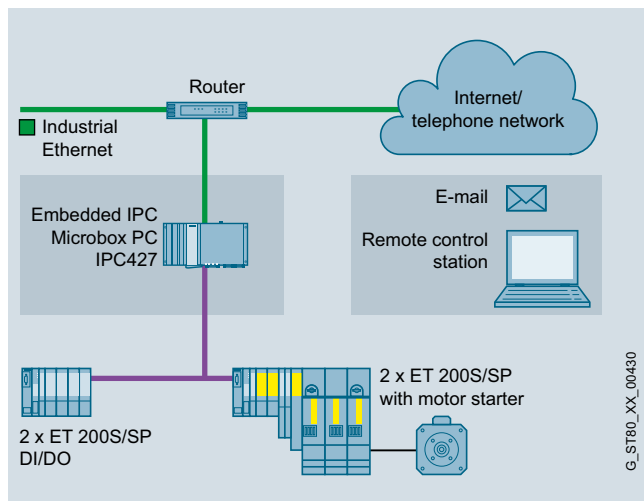When redesigning unit-type cogeneration units, the automation approach should also be restructured.

The objective was to execute all control, visualization and archiving tasks which were previously handled by a PLC and a PC on a compact unit.

Space was to be saved in the control cabinet, and the administration and training requirements reduced.

At the same time a rugged, maintenance-free device was required which can also be easily connected over the Internet.

The advantages of the solution with SIMATIC PC-based Automation:

- Microbox PC as a rugged, compact embedded system
  - Control, visualization and archiving of the process parameters in one device
  - Space and cost savings thanks to integration of several tasks on a single embedded industrial PC
    Previously: one PLC and one visualization PC
- Easy and quick access to the embedded IPC over the Internet

Measurement of foil thickness

During the manufacture of plastic films, a highly accurate and uniform foil thickness over the entire width is a decisive quality criterion.

For this purpose, a measuring head with radioactive source moves back and forth above the film and perpendicular to the continuously transported reel, and a sensor moves underneath the foil.

From the attenuation of the radiation, the foil thickness can be determined exactly at each position by extensive mathematical calculations, and deviations from the reference thickness can be compensated.

The advantages of the solution with SIMATIC PC-based Automation:

- Visualization is performed using WinCC, and control using WinAC RTX on a PC.
- Complex mathematical algorithms are required for evaluation of the extensive measured data.
- These are meaningfully implemented in the high-level language C++. Seamless and high-performance integration of these algorithms into the STEP 7 program is via the ODK (Open Development Kit).
- Data exchange between WinAC RTX and WinCC, for visualization of the extensive measured curves, takes place very quickly via the hard drive cache. This functionality was also implemented via the ODK.
- Interconnection of the standardized technology function is via CFC (Continuous Function Chart).
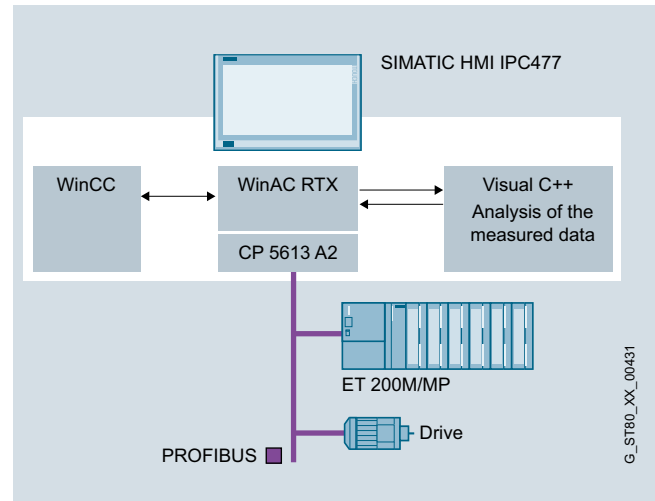
The plant concept

The plant concept

▪ **Overview** (continued)

PC-based control of paint shops for plastic automotive parts

For reasons of quality assurance and product liability, paint shop manufacturers are obliged to use a host computer for archiving the process data of a paint shop for flat parts, but this quickly developed into a PC-based automation system with control tasks.

The advantages of the solution with SIMATIC PC-based Automation:

- Performance of the SIMATIC WinAC PC-based control
- Coupling to Linux servers through an Industrial Ethernet fiber-optic network
- Open and flexible for expansions
- Possibility of integration into the existing automation concept
- Archiving and backup of process data, as well as production data acquisition

Innovative PC-based solution with safety for solar panel production

For a new plant for the production of solar panels, the existing highly heterogeneous concept is to be replaced by a new, state-of-the-art automation solution which can cover the comprehensive demands in a compact and integrated way. There are increased performance and memory requirements due to the increased complexity of the system.

The PLC should also be able to provide the specified safety functions (emergency stop, access protection to hazardous areas).

Various bus systems must be linked in plant 3. Also a customer-specific Windows application is to be used on the selected systems and therefore the connection to a higher-level MES system has to be implemented.

The system is designed for high throughput and three-shift operation.

The advantages of the solution with SIMATIC PC-based Automation:

- Very high performance and available memory with the SIMATIC Modular Embedded Controller EC31-RTX F. In the RTX F version (worldwide the first software PLC with safety functionality), the EC31 offers full coverage of all safety requirements in the plant. This system is integrated seamlessly in Totally Integrated Automation and enables effective, plant-wide engineering.
- Thanks to its openness (Open Development Kit), WinAC RTX on the host SCADA industrial PC offers the possibility for integrating a Windows customer application with very little effort, and is thus used as a data concentrator (process quality/diagnostic data), and communication with the host MES system is also implemented in combination with WinCC (SCADA).
- Industry-standard products from the SIMATIC range offer maximum quality for 24/7 round the clock operation.
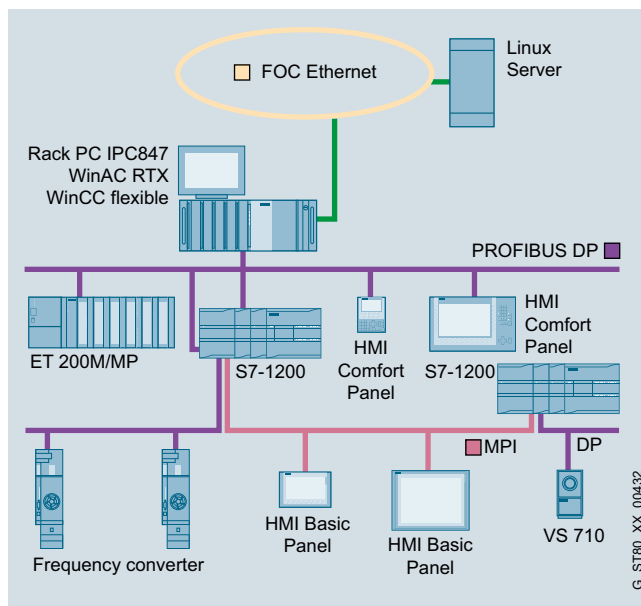
The plant concept

Introduction

PC-based Automation

■ **Overview** (continued)

Safe transfer at sea

For transferring persons at sea to wind energy plants or oil platforms, a Dutch company has developed a six-legged platform on hydraulic cylinders.

This platform is basically an upside-down flight simulator, and allows safe transfer from a ship even in bad weather.

A SIMATIC S7 modular embedded controller (S7-mEC) with fast I/O cards measures the movements of the ship and controls the extending or retracting of the cylinders so that all movements are compensated.

The advantages of the solution with SIMATIC PC-based Automation:

• Fault-tolerant SIMATIC S7-400H in redundant design for general control tasks

• Two lower-level SIMATIC S7 modular embedded controllers which meet the requirements for high speeds, integration of fast I/O cards, and a flexible, modular and rugged design.

• An integrated programming environment with SIMATIC STEP 7

• Automation products from Siemens comply with the stringent requirements of the offshore sector

PC-based machine data acquisition optimizes the production of farming machinery

To introduce more efficient, resource-saving and therefore cost-effective production processes in the factory, a leading farming machinery manufacturer has integrated a central, plant-wide machine data acquisition system using Panel PCs. Due to the need for retrofitting in the existing environment, flexible and space-saving installation of the Panel PCs was paramount.

More than 200 fully-enclosed SIMATIC HMI IPC477 PRO Panel PCs for central machine data acquisition, with communications interfacing to the production machinery and the production planning computer. Mounting of the Panel PCs directly at the machine without additional control boxes on stand-alone columns.

The advantages of the solution with SIMATIC PC-based Automation:

• Enhanced efficiency by optimizing the complete production organization through a high degree of uniformity.

• Minimized use of resources (less paper is required in production)

• Simple, low-cost retrofitting of the Panel PC directly in production on a stand, without the installation of an additional operator console.

■ **Overview** (continued)

PC-based control in automotive test rigs

Test rigs in the automotive industry require trouble-free operation and high quality.

A high-performance system is required in the control, processing, archiving and visualization of measured data which can also provide openness and flexibility for connection to different bus systems and for the use of software.

The advantages of the solution with SIMATIC PC-based Automation:

• Flexible, easy-to-service and maintenance-friendly system with Windows in conjunction with SIMATIC WinAC

• Reduction in integration overhead thanks to integral interfaces such as PROFINET, PROFIBUS, Ethernet, CAN, and the flexibility when using modules for different bus systems, e.g. PC/104

• System availability concept ensures round-the-clock operation and reduced downtime costs

• Fan-free, temperature-resistant operation up to 50°C saves additional cooling measures

• High investment security through long-term availability of the components
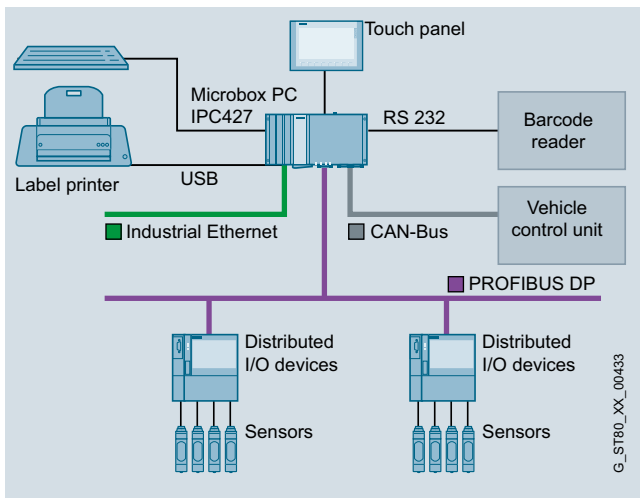
PC-based control in the semiconductor industry

In the semiconductor industry, high quality and fault-free operation round-the-clock are decisive criteria. A high-performance system that guarantees fast and precise production of the semiconductors is required for controlling the machines, monitoring the production system, and processing the production data.

High flexibility and openness are also required for connecting to the production control system and machine engineering system.

The advantages of the solution with SIMATIC PC-based Automation:

• Compact, rugged industrial PCs with powerful processors and the latest technology enable high processing performance

• Pre-installed systems save time and costs when integrated into the overall system

• WinCC ToolLink-EDA (equipment data acquisition) enables diagnostics of process and machine data in real time

• System availability concept with integral RAID1 functionality and remote monitoring with SIMATIC PC DiagMonitor ensures fault-free 24-hour operation

• High investment security through long-term availability of the components

• International certification and worldwide support guarantee global use
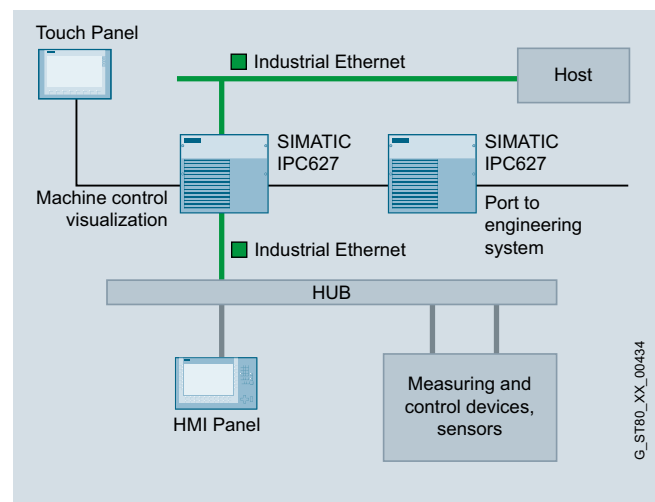
The plant concept

The plant concept

Introduction

1

■ **Overview** (continued)

Track & trace line controller for tobacco industry

In order to comply with new legal regulations, a track & trace system in an existing plant has been extended. The requirement is to test 100 cartons per minute in three-shift operation and to save the data in an SQL database for traceability reasons.

The automation system should be characterized by high ruggedness, but also offer the openness required to connect additional components such as printers and the Machine Vision system.

The advantages of the solution with SIMATIC PC-based Automation:

• Compact automation solution consisting of Microbox PC embedded industrial PC, PLC with preinstalled and ready-to-use WinAC RTX software controller, and visualization with WinCC flexible

• Control of the entire track & trace system and interfacing to the control system

• Open solution with the help of the WinAC ODK (Open Development Kit) thanks to a link to an SQL database for managing the serial numbers and other data

• Additional openness and flexibility by connecting printers and vision system

Retrofit of a woodworking machine – safe!

In the past, machines and plants for wood-working were equipped with specially developed, proprietary controllers. Today, future-oriented standard components are used for retrofit projects. The customer decided in favor of integrating standard automation and safety technology in a single unit with the SIMATIC WinAC RTX F software controller in a fan-free and maintenance-free IPC, the Microbox PC. PROFINET as an innovative fieldbus connects distributed I/O, safety and operator panels quickly and easily.

The advantages of the solution with SIMATIC PC-based Automation:

• The compact PC-based automation solution multiplies the performance and precision of the plant.

• Implementation of PROFINET resulted in a series of additional advantages such as the diagnostics capability.

• Integration of standard and fail-safe automation in a single unit achieved component savings. The size of the cabinet was reduced by 20 percent and the wiring by 50 percent. The customer benefited from a high level of operating convenience and minimized machine downtimes.

■ **Overview** (continued)

Image processing with data backup

In image processing applications, high performance computers are required due to the large volume of data to be processed.

The image data must be recorded, processed and saved quickly. Frame grabber cards with a high data throughput, for example, are used for recording image data.

The interfaces for the expansion cards must not become bottlenecks in this case. To ensure continued problem-free processing of the acquired data, you need a state-of-the-art system with up-to-date processor and memory technology.

Lots of data is produced again during the subsequent data backup. Thus the available storage medium must be fast and fail-safe at the same time. An open system is required for connecting to existing plants.

The advantages of the solution with SIMATIC PC-based Automation:

• Rugged SIMATIC PC with state-of-the-art processor performance and the latest technology

• Current interfaces such as PCI Express for applications with a high data throughput rate, e.g. frame grabber cards for recording image data

• Visualization on up to two monitors with an optional, high-performance graphics card

• Onboard communication interfaces such as Ethernet and PROFINET, e.g. for connecting to EPS systems or integration in existing systems

• International certifications and global support facilitate the worldwide use of the image processing solution
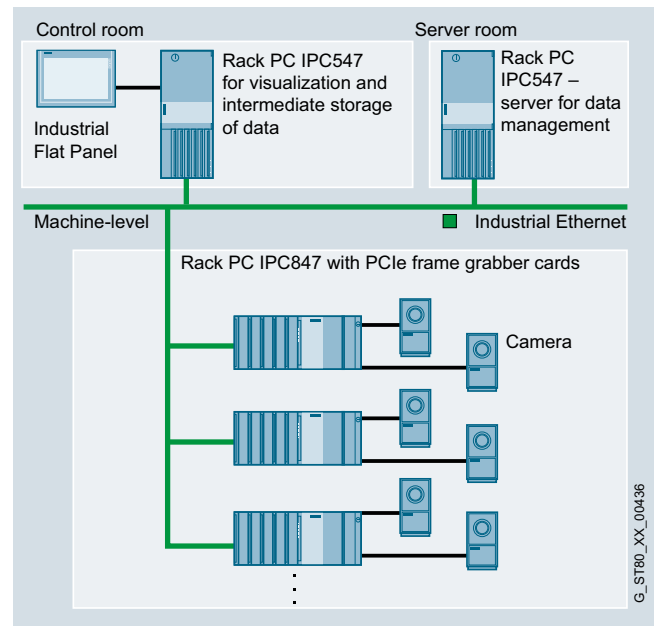
The plant concept

Introduction

PC-based Automation

■ **Overview** (continued)

High-performance industrial PC for reliable control and monitoring of wind power plants

All Siemens turbines for offshore wind power plants feature special technical characteristics that ensure long-term, low-maintenance operation. In contrast to sites on land, offshore wind farms are not always accessible to service teams.

The basic quality requirements and standards for all components used in terms of absolute fail-safety and reliability, are therefore extremely high.

The SIMATIC Box PC of the 627 series that has been implemented matches the requirements of the solution provider all the way down the line.

The rugged industrial PC is designed for 24-hour continuous duty at ambient temperatures up to 55 °C. For reliable operation, the Box PC is installed in a solid metal enclosure that is resistant to shock and vibration and that demonstrates a high degree of of electromagnetic compatibility (EMC). For a high level of data security, the option of a mirror disk system with two hard disks (RAID1) was selected.

The RAID1 controller is already onboard, and does not occupy a PCI slot.

The rugged, reliable hardware with extremely compact dimensions in durable industrial design also stands up to the demands of continuous operation in a harsh environment.

The advantages of the solution with SIMATIC PC-based Automation:

• The mounting dimensions of Box PCs remain identical over several device generations and mounting solutions can be simply reused for the next generation.

• Furthermore, when a new device generation is used, any front-accessible interfaces and function elements can be retained. For example, the Siemens Wind division already utilized a complete lifecycle of a Box PC generation and no adjustments to a new hardware platform were required when the successor product was introduced.

• Through compliance with international standards, such as CE and UL, and worldwide service, the Box PC can be implemented round the globe.

Operator panels

■ **Overview**

SIMATIC Panels overview

SIMATIC HMI Panels – high-luminance HMI devices for efficient machine-level HMI

A complete range of powerful and innovative HMI 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.

Key Panels – innovative operator panels – pre-assembled and ready to use

Key Panels (KP) are the innovative alternative to conventionally wired operator keypads. The pre-assembled and ready-to-use bus-enabled operator panels ensure time savings of up to 60 % during installation, and reductions in material costs of more than 30 %.

Basic Panels – Basic functions for simple HMI applications

The 2nd generation Basic Panels are optimized for small machines and applications.

The device family offers panels with high-resolution widescreen displays in sizes from 4" to 12", as well as combined key and touch operation. Variants can be selected for connection to PROFINET/Ethernet or PROFIBUS DP/MPI. (The 1st-generation devices remain available.)

Comfort Panels – the first choice for demanding HMI tasks

Comfort Panels offer high-end functionality for demanding applications. They are especially powerful and equipped with high-resolution widescreen displays in sizes from 4" to 22", with a choice of touch screen (TP) or key operation (KP). In size 4" also with touch screen and additional keys (KTP).

The Comfort Panels are equipped with PROFINET/Ethernet as well as PROFIBUS DP/MPI interfaces.

■ **Overview** (continued)

Mobile Panels – Power and safety in your hands

The 2nd-generation Mobile Panels are portable, cable operator panels with high performance for demanding mobile applications and human machine interfacing with direct access and line of sight to the process.

They offer a choice of high-resolution 7" and 9" widescreen displays with a unique illuminated emergency stop button, flexible evaluation options for the safety operator elements, and connection point detection.

The Mobile Panel 277(F) IWLAN is available for wireless freedom with optional safety functionality (the cable-connected Mobile Panels 177, 277, 277-10" continue to be available).

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 HMI devices 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.

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 vendors. 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, 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.

2

Operator panels

Introduction

■ Overview (continued)

Configuration at a glance

	WinCC (TIA Portal) engineering software			
	Basic	Comfort	Advanced	Professional
Basic Panels 2nd generation [1]	•	•	•	•
Basic Panels 1st generation	•	•	•	•
Comfort Panels	-	•	•	•
Mobile Panels 2nd generation	-	• [2]	• [2]	• [2]
Mobile Panels 1st generation	-	•	•	•
Panels – 70 series				
OP73	-	•	•	•
OP77A	-	•	•	•
OP77B	-	•	•	•
Panels – 170 series				
TP 177A	-	•	•	•
TP 177B/OP 177B	-	•	•	•
Panels – 270 series				
TP 277/OP 277	-	•	•	•
Multi Panels – 170 series				
MP 177	-	•	•	•
Multi Panels – 270 series				
MP 277	-	•	•	•
Multi Panels – 370 series				
MP 377	-	•	•	•
WinAC MP				
WinAC MP 177	-	•	•	•
WinAC MP 277	-	•	•	•
WinAC MP 377	-	•	•	•

• Possible

[1] As of WinCC (TIA Portal) V13
[2] As of WinCC (TIA Portal) V13 SP1

2

■ **Overview**
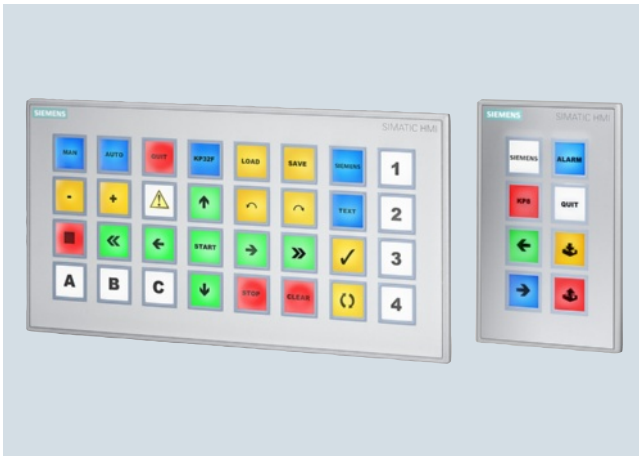
SIMATIC HMI KP32F and HMI KP8

Empty front

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

Operator panels
SIMATIC HMI Key Panels

SIMATIC HMI KP8/KP8F/32F

Technical specifications

Article number	6AV3688-3AY36-0AX0	6AV3688-3AF37-0AX0	6AV3688-3EH47-0AX0
	SIMATIC HMI KP8 PN	SIMATIC HMI KP8F PN	SIMATIC HMI KP32F PN
Product type designation			
Control elements			
With parameterizable keys	Yes	Yes	Yes
With key and signal lamp test	Yes; Automatically when switching on	Yes; Automatically when switching on	Yes; Automatically when switching on
Keyboard			
• Membrane keyboard			
- user-definable label membrane keys	Yes	Yes	Yes
• 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	8	8
• 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			
Rack mounting possible	No	No	No
Front installation possible	Yes; Compatible with extension unit dimensions	Yes; Compatible with extension unit dimensions	Yes
Rail mounting possible	No	No	No
Wall mounting/direct mounting possible	No	No	No
Mounting in portrait format possible	Yes	Yes	Yes
Mounting in landscape format possible	Yes	Yes	Yes
Mounting position	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	30°; To the front/rear	30°; To the front/rear	30°; To the front/rear
Mounting technology	Clamp terminals	Clamp terminals	Clamp terminals
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 looped through at connector, no interruption on pulling	24 V; 24 V can be looped through at 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
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; Max. 8 inputs and outputs (total)	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
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)
Load "resistive"	100 mA	100 mA	100 mA
Number of additional outputs			
• Output current (per output), max.	100 mA	100 mA	100 mA
• Total current (per group), max.	800 mA	800 mA	800 mA
• short-circuit protection	Yes	Yes	Yes
Output voltage			
• Rated value (DC)	24 V; Non-isolated	24 V; Non-isolated	24 V; Non-isolated

2

◼ Technical specifications (continued)

Article number	6AV3688-3AY36-0AX0	6AV3688-3AF37-0AX0	6AV3688-3EH47-0AX0
	SIMATIC HMI KP8 PN	SIMATIC HMI KP8F PN	SIMATIC HMI KP32F PN
Interfaces			
PROFINET IO			
• Number of PROFINET interfaces	2; Incl. switch	2; Incl. switch	2; Incl. switch
Industrial Ethernet			
• 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
• 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
PROFINET IO	Yes	Yes	Yes
PROFINET CBA	No	No	No
IRT	Yes	Yes	Yes
MRP	Yes	Yes	Yes
PROFIsafe	No	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 2x SIL 2 (two-channel) or 4x SIL 3 (single channel) emergency stop sensor
PROFIBUS	No	No	No
Test commissioning functions			
Illuminant test	Yes; During switch on	Yes; During switch on	Yes; During switch on
Pushbutton and lamp test	Yes; During switch on	Yes; During switch on	Yes; During switch 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
Enclosure Type 4x at the front	Yes; Incl. NEMA12	Yes; Incl. NEMA12	Yes; Incl. NEMA12
IP (rear)	IP20	IP20	IP20
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	Yes	Yes	Yes
Suitable for safety functions	No	Yes	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
• Lloyds Register of Shipping (LRS)	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No
Use in hazardous areas			
• ATEX Zone 2	Yes	Yes	No; On request
• ATEX Zone 22	Yes	Yes	No; On request
• cULus Class I Zone 1	No	No	No
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes; Available soon	Yes

Operator panels
SIMATIC HMI Key Panels

SIMATIC HMI KP8/KP8F/32F

◼ **Technical specifications** (continued)

Article number	6AV3688-3AY36-0AX0	6AV3688-3AF37-0AX0	6AV3688-3EH47-0AX0
	SIMATIC HMI KP8 PN	SIMATIC HMI KP8F PN	SIMATIC HMI KP32F PN
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
- 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.	45 °C	45 °C	45 °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; STEP 7 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

■ **Technical specifications** (continued)

Article number	**6AV3688-3AY36-0AX0**	**6AV3688-3AF37-0AX0**	**6AV3688-3EH47-0AX0**
	SIMATIC HMI KP8 PN	SIMATIC HMI KP8F PN	SIMATIC HMI KP32F PN
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	No
• aluminum	No	No	Yes
Lifetime, typ.			
• 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; Incl. angled SIMATIC Ethernet connector	49 mm; Incl. angled SIMATIC Ethernet connector	69 mm; Incl. angled SIMATIC Ethernet connector
Weights			
Without packaging	270 g	280 g	1 220 g

Article number	**6AV3688-3XY38-3AX0**
	KP8 DESIGN BLANK FRONT
Product type designation	
Control elements	
With parameterizable keys	No
With key and signal lamp test	No
Keyboard	
• Function keys	
- Number of function keys	0
Installation type/mounting	
Rack mounting possible	No
Front installation possible	Yes; Compatible with extension unit dimensions
Rail mounting possible	No
Wall mounting/direct mounting possible	No
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
Mounting position	Any
maximum permissible angle of inclination without external ventilation	180°; To the front/rear
Mounting technology	Clamp terminals
Number of slots for command devices and signaling units	5; Max. 5 possible
Supply voltage	
Type of supply voltage	external
Type of output	
LED colors	
• red	No
• Yellow	No
• Green	No
• white	No
• blue	No
Interfaces	
Number of USB interfaces	0

Article number	**6AV3688-3XY38-3AX0**
	KP8 DESIGN BLANK FRONT
Test commissioning functions	
Illuminant test	No
Pushbutton and lamp test	No
EMC	
Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	No
• Limit class B, for use in residential areas	No
Degree and class of protection	
IP (at the front)	IP65
Enclosure Type 4 at the front	No
Enclosure Type 4x at the front	No
IP (rear)	IP20
Standards, approvals, certificates	
CE mark	Yes
cULus	No
RCM (formerly C-TICK)	No
KC approval	No
Suitable for safety functions	Yes; e.g. installation of emergency stop
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
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

Operator panels
SIMATIC HMI Key Panels

SIMATIC HMI KP8/KP8F/32F

■ Technical specifications (continued)

Article number	**6AV3688-3XY38-3AX0**
	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	
Type of housing (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	
Without packaging	240 g

■ Ordering data

	Article No.
SIMATIC HMI KP8 PN Key Panel, 8 short-stroke keys with multicolored LEDs, PROFINET interfaces, 2 x parameterizable with STEP 7 V5.5 or higher	**6AV3688-3AY36-0AX0**
SIMATIC HMI KP8F PN 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	**6AV3688-3AF37-0AX0**
SIMATIC HMI KP32F PN 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	**6AV3688-3EH47-0AX0**
Empty front design for standard 22.5 mm operator controls, same mounting dimensions as KP8	**6AV3688-3XY38-3AX0**

Demo case SIMATIC HMI Key Panel – low-cost demo and experiment case
• Includes:
  - 1x case
  - 1x KP8 PN
  - 1x CPU1211C
  - 1x stand, permanently wired, including program
• Power supply possible with a standard laptop mains adapter (not included in scope of supply)
	A5E31477788
	 Only by fax to Siemens AG, Mr. Michael Christ Industry Sector, I IA CE SE MF RS FDS Würzburger Str. 121, 90766 Fürth, Germany Tel.: +49 911 750-4128 Fax: +49 911 750-2411

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, chapter 7

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.
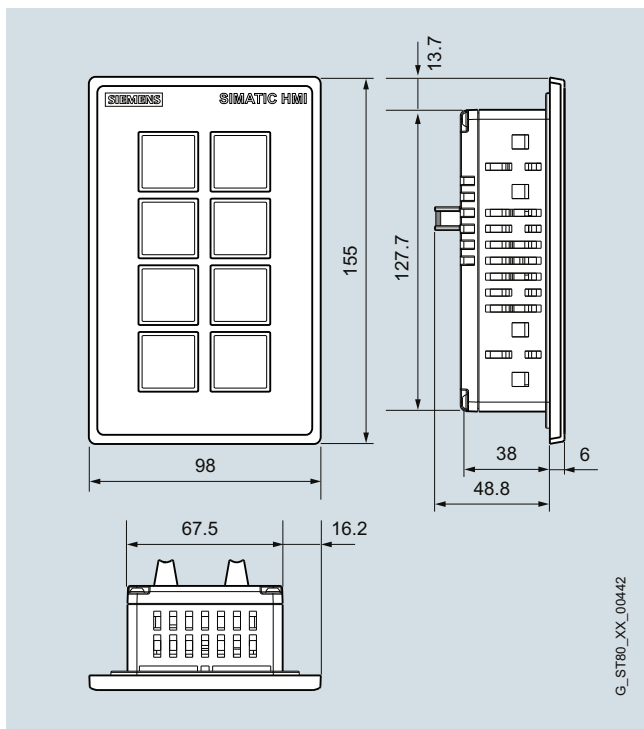
SIMATIC HMI Key Panel KP8; installation dimensions also valid for empty front design
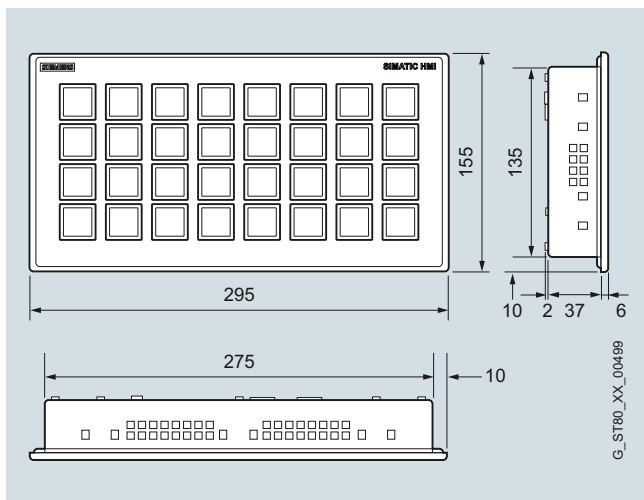
SIMATIC HMI Key Panel KP32F

■ More information

Additional information is available on the Internet at:

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

For accessories, please refer to SIMATIC HMI accessories.

Note:

Do you need a specific modification or extension to the products described here? If so, 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.

2

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (2nd Generation)

■ **Overview**

SIMATIC HMI Basic Panels, 2nd generation

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

The device family offers panels with 4", 7", 9" and 12" widescreen 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 stick.

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

■ **Technical specifications**

Article number	6AV2123-2DB03-0AX0	6AV2123-2GB03-0AX0	6AV2123-2GA03-0AX0
	SIMATIC HMI KTP400 BASIC	SIMATIC HMI KTP700 BASIC	SIMATIC HMI KTP700 BASIC DP
Product type designation			
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
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			
• Function keys			
- Number of function keys	4	8	8
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	24 V DC
Rated value (DC)	24 V	24 V	24 V
Memory			
usable memory for user data	10 Mbyte	10 Mbyte	10 Mbyte
Type of output			
Acoustics			
• Buzzer	Yes	Yes	Yes
Time of day			
Clock			
• Software clock	Yes	Yes	Yes
• battery-backed	Yes	Yes	Yes
• synchronizable	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
Interfaces			
Number of RS 485 interfaces	0	0	1
Number of USB interfaces	1; Up to 16 GB	1; Up to 16 GB	1; Up to 16 GB
Number of SD card slots	0	0	0
Industrial Ethernet			
• Number of industrial Ethernet interfaces	1	1	0
Protocols			
PROFINET	Yes	Yes	No
IRT	No	No	No
MRP	No	No	No
PROFIBUS	No	No	Yes
MPI	No	No	Yes
Degree and class of protection			
IP (at the front)	65	65	65
Enclosure Type 4x at the front	Yes	Yes	Yes
IP (rear)	20	20	20
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	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
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	90 %; no condensation
Configuration			
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)
• WinCC flexible Compact	No	No	No
• WinCC Basic (TIA Portal)	Yes	Yes	Yes
Languages			
Online languages			
• Number of online/runtime languages	10	10	10

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (2nd Generation)

■ **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
Functionality under WinCC (TIA Portal)			
Applications/options			
• Web browser	Yes	Yes	Yes
Number of Visual Basic Scripts	No	No	No
Task planner	Yes	Yes	Yes
• time-controlled	No	No	No
• task-controlled	Yes	Yes	Yes
Message system			
• 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, 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
• Message buffer			
- Number of entries	256	256	256
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
Recipe administration			
• Number of recipes	50	50	50
• 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
Images			
• Number of configurable images	250	250	100
Archiving			
• Number of archives per device	2	2	2
• 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 users	50	50	50
Transfer (upload/download)			
• MPI/PROFIBUS DP	No	No	Yes
• Ethernet	Yes	Yes	No

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■ **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
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	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			
Peripherals			
• Printer	No	No	No
• MultiMediaCard	No	No	No
• SD card	No	No	No
• USB memory	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	Yes
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			
Without packaging	360 g	780 g	800 g

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (2nd Generation)

■ **Technical specifications** (continued)

Article number	6AV2123-2JB03-0AX0	6AV2123-2MB03-0AX0	6AV2123-2MA03-0AX0
	SIMATIC HMI KTP900 BASIC	SIMATIC HMI KTP1200 BASIC	SIMATIC HMI KTP1200 BASIC DP
Product type designation			
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
Number of colors	65 536	65 536	65 536
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
Control elements			
Keyboard			
• Function keys			
- Number of function keys	8	10	10
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	24 V DC	24 V DC
Rated value (DC)	24 V	24 V	24 V
Memory			
usable memory for user data	10 Mbyte		10 Mbyte
Type of output			
Acoustics			
• Buzzer	Yes	Yes	Yes
Time of day			
Clock			
• Software clock	Yes	Yes	Yes
• battery-backed	Yes	Yes	Yes
• synchronizable	Yes	Yes	Yes
Interfaces			
Number of RS 485 interfaces	0	0	1
Number of USB interfaces	1; Up to 16 GB	1; Up to 16 GB	1; Up to 16 GB
Number of SD card slots	0	0	0
Industrial Ethernet			
• Number of industrial Ethernet interfaces	1	1	0
Protocols			
PROFINET	Yes	Yes	No
IRT	No	No	No
MRP	No	No	No
PROFIBUS	No	No	Yes
MPI	No	No	Yes
Degree and class of protection			
IP (at the front)	65	65	65
Enclosure Type 4x at the front	Yes	Yes	Yes
IP (rear)	20	20	20

■ **Technical specifications** (continued)

Article number	6AV2123-2JB03-0AX0	6AV2123-2MB03-0AX0	6AV2123-2MA03-0AX0
	SIMATIC HMI KTP900 BASIC	SIMATIC HMI KTP1200 BASIC	SIMATIC HMI KTP1200 BASIC DP
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	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
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	90 %; no condensation
Configuration			
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)
• WinCC flexible Compact	No	No	No
• WinCC Basic (TIA Portal)	Yes	Yes	Yes
Languages			
Online languages			
• Number of online/runtime languages	10	10	10
Functionality under WinCC (TIA Portal)			
Applications/options			
• Web browser	Yes		
Number of Visual Basic Scripts	No	No	No
Task planner	Yes	Yes	Yes
• time-controlled	No	No	No
• task-controlled	Yes	Yes	Yes
Message system			
• 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, 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
• Message buffer			
- Number of entries	256	256	256
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
Recipe administration			
• Number of recipes	50	50	50
• 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
Images			
• Number of configurable images	250	100	100

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (2nd Generation)
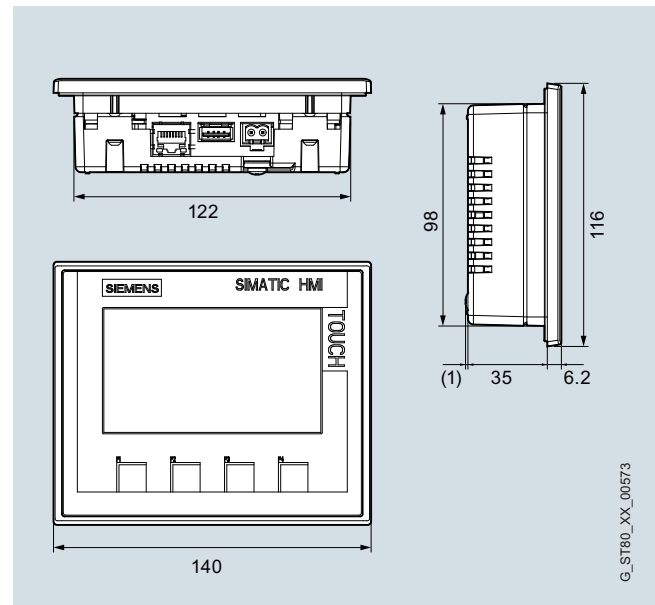
■ **Technical specifications** (continued)

Article number	6AV2123-2JB03-0AX0	6AV2123-2MB03-0AX0	6AV2123-2MA03-0AX0
	SIMATIC HMI KTP900 BASIC	SIMATIC HMI KTP1200 BASIC	SIMATIC HMI KTP1200 BASIC DP
Archiving			
• Number of archives per device	2	2	2
• 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	Yes	Yes
- TXT	Yes	No	No
- RDB	No	No	No
Security			
• Number of user groups	50	50	50
• Number of users	50	50	50
Transfer (upload/download)			
• MPI/PROFIBUS DP	No	No	Yes
• Ethernet	Yes	Yes	No
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	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			
Peripherals			
• Printer	No	No	No
• MultiMediaCard	No	No	No
• SD card	No	No	No
• USB memory	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	Yes
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			
Without packaging	1 130 g	1 710 g	1 710 g

2

Ordering data	Article No.
SIMATIC HMI Basic Panels, Key and Touch	
SIMATIC HMI KTP400 Basic	**6AV2123-2DB03-0AX0**
Key/touch-screen operation; 4" TFT widescreen display, 65 536 colors, PROFINET interface	
SIMATIC HMI KTP700 Basic	**6AV2123-2GB03-0AX0**
Key/touch-screen operation; 7" TFT display, 65 536 colors, PROFINET interface	
SIMATIC HMI KTP700 Basic DP	**6AV2123-2GA03-0AX0**
Key/touch-screen operation; 7" TFT display, 65 536 colors, PROFIBUS interface	
SIMATIC HMI KTP900 Basic	**6AV2123-2JB03-0AX0**
Key/touch-screen operation; 9" TFT display, 65 536 colors, PROFINET interface	
SIMATIC HMI KTP1200 Basic	**6AV2123-2MB03-0AX0**
Key/touch-screen operation; 12" TFT display, 65 536 colors, PROFINET interface	
SIMATIC HMI KTP1200 Basic DP	**6AV2123-2MA03-0AX0**
Key/touch-screen operation; 12" TFT display, 65 536 colors, PROFIBUS interface	
Starter kits	
Starter kit SIMATIC S7-1200 + KP300 Basic mono PN	**6AV6651-7HA01-3AA4**
Starter Kit SIMATIC S7-1200 + KTP400 Basic	**6AV6651-7KA01-3AA4**
Starter Kit SIMATIC S7-1200 + KTP700 Basic	**6AV6651-7DA01-3AA4**
Starter kits with an S7-1200 consist of: • the respective SIMATIC HMI Basic Panel SIMATIC HMI KP300 Basic mono PN SIMATIC HMI KTP400 Basic SIMATIC HMI KTP700 Basic • SIMATIC S7-1200 CPU 1212C AC/DC/Rly • SIMATIC S7-1200 Simulator Module SIM 12 • SIMATIC STEP 7 BASIC CD • SIMATIC S7-1200 HMI Manual Collection CD • 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**
Starter kits with a LOGO! consist of: • the respective SIMATIC HMI Basic Panel SIMATIC HMI KP300 Basic mono PN SIMATIC HMI KTP400 Basic SIMATIC HMI KTP700 Basic • LOGO! 12/24 RCE • LOGO! POWER 24 V 1.3 A • LOGO! SOFT COMFORT V7 • WINCC BASIC (TIA Portal) • Ethernet CAT5 cable, 2 m	
Documentation	
You can find the manual for the Basic Panels on the Internet at:	http://support.automation.siemens.com
Accessories	See SIMATIC HMI accessories, chapter 7

Dimensional drawings

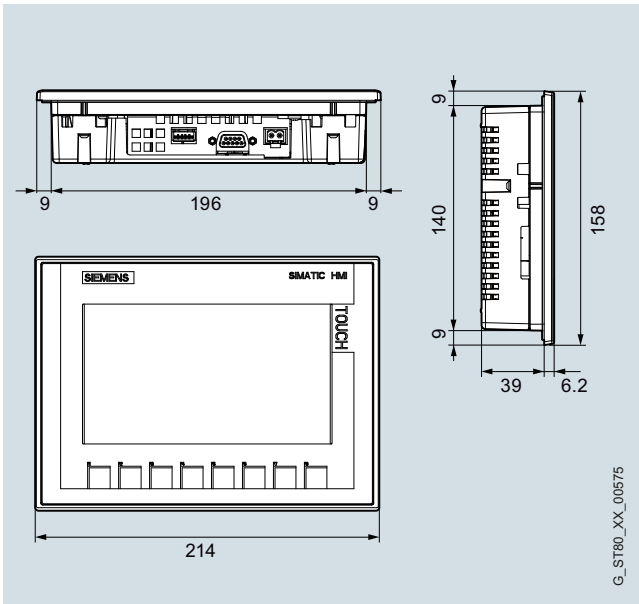All dimensions in mm. For installation cutout, see technical specifications.

KTP400 Basic, Basic Panel 2nd generation
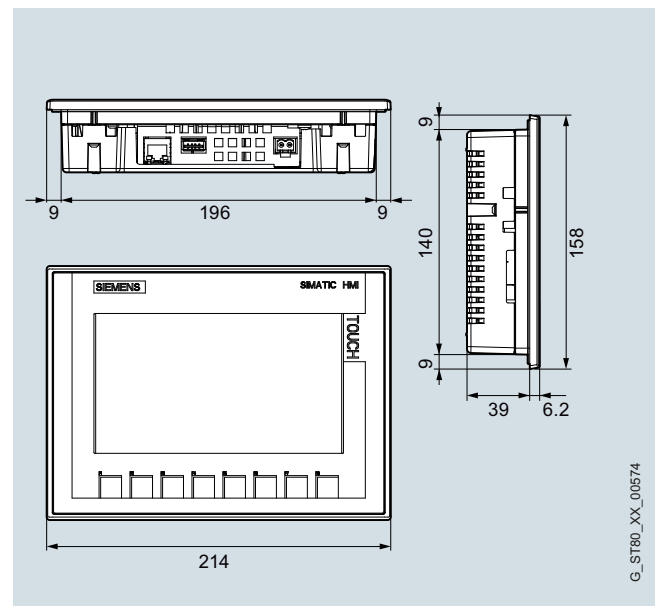
KTP700 Basic, Basic Panel 2nd Generation

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (2nd Generation)

■ Dimensional drawings (continued)

KTP700 Basic DP, Basic Panel 2nd Generation
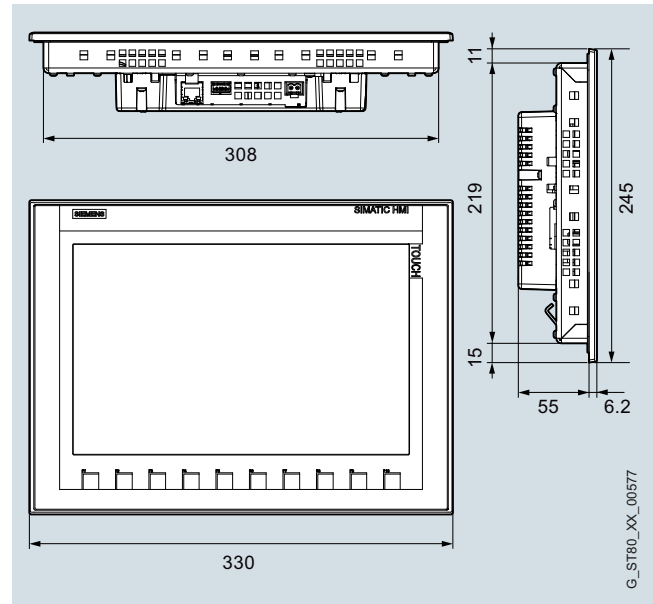
KTP1200 Basic, Basic Panel 2nd Generation
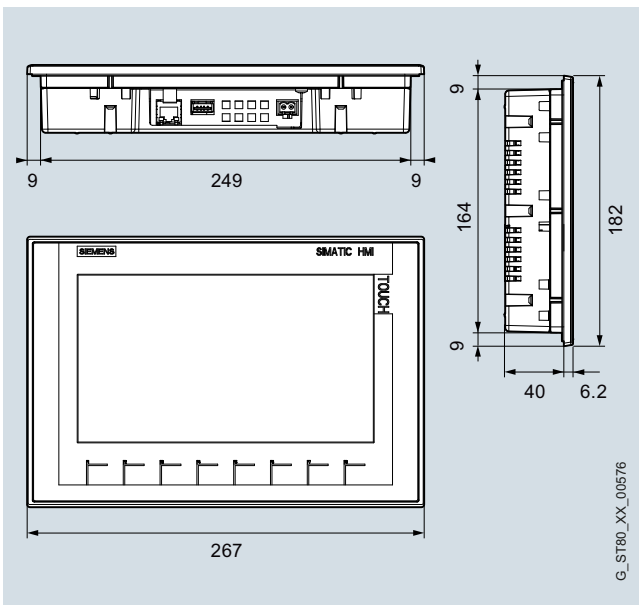
KTP900 Basic, Basic Panel 2nd Generation
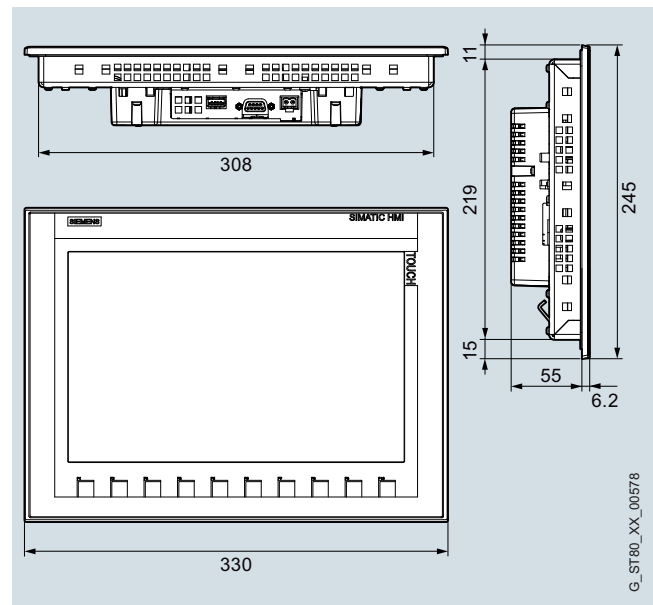
KTP1200 Basic DP, Basic Panel 2nd Generation

■ More information

Additional information is available on the Internet at:

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

Note:

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

2

Overview

- Ideal entry-level series from 3" to 15" for operating and monitoring compact machines and systems
- Clear process representation thanks to use of pixel-graphics displays
- Intuitive operation using Touch and tactile function keys
- Equipped with all the necessary basic functions such as alarm logging, recipe management, plots, vector graphics, and language switching
- Simple connection to the controller via integral Ethernet interface or separate version with RS 485/422
- Faster commissioning thanks to integrated diagnostics viewer and IP setting for SIMATIC S7-1200 and S7-1500 PLCs

Technical specifications

Article number	6AV6647-0AA11-3AX0	6AV6647-0AK11-3AX0	6AV6647-0AB11-3AX0	6AV6647-0AC11-3AX0
	SIMATIC HMI KTP400 BASIC MONO PN	SIMATIC HMI KTP400 BASIC COLOR PN	SIMATIC HMI KTP600 BASIC MONO PN	SIMATIC HMI KTP600 BASIC COLOR DP
Product type designation				
Display				
Design of display	STN	TFT	STN	TFT
Screen diagonal	3.8 in	4.3 in	5.7 in	5.7 in
Number of colors	4; Grayscales	256	4; Grayscales	256
Resolution (pixels)				
• Horizontal image resolution	320 Pixel	480 Pixel	320 Pixel	320 Pixel
• Vertical image resolution	240 Pixel	272 Pixel	240 Pixel	240 Pixel
Backlighting				
• MTBF backlighting (at 25 °C)	30 000 h	50 000 h	50 000 h	50 000 h
• Backlight dimmable	No	No	No	No
Control elements				
Keyboard				
• Function keys				
- Number of function keys	4	4	6	6
Touch operation				
• Design as touch screen	Yes	Yes	Yes	Yes
Installation type/mounting				
Mounting in portrait format possible	Yes	Yes	Yes	Yes
Supply voltage				
Type of supply voltage	DC	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V	24 V
Memory				
usable memory for user data	1 Mbyte	1 Mbyte	1 Mbyte	1 Mbyte
Type of output				
Acoustics				
• Buzzer	Yes	Yes	Yes	Yes
Time of day				
Clock				
• Software clock	Yes	Yes	Yes	Yes
• battery-backed	No	No	No	No
• synchronizable	Yes	Yes	Yes	Yes

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

■ **Technical specifications** (continued)

Article number	**6AV6647-0AA11-3AX0**	**6AV6647-0AK11-3AX0**	**6AV6647-0AB11-3AX0**	**6AV6647-0AC11-3AX0**
	SIMATIC HMI KTP400 BASIC MONO PN	SIMATIC HMI KTP400 BASIC COLOR PN	SIMATIC HMI KTP600 BASIC MONO PN	SIMATIC HMI KTP600 BASIC COLOR DP
Interfaces				
Number of RS 485 interfaces	0	0	0	1
Number of USB interfaces	0	0	0	0
Number of SD card slots	0	0	0	0
Industrial Ethernet				
• Number of industrial Ethernet interfaces	1	1	1	0
Protocols				
PROFINET	Yes	Yes	Yes	No
IRT	No	No	No	No
PROFIBUS	No	No	No	Yes
MPI	No	No	No	Yes
Degree and class of protection				
IP (at the front)	IP65	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20	IP20
Standards, approvals, certificates				
CE mark	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
Marine approval				
• Germanischer Lloyd (GL)	Yes	Yes	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes
• Bureau Veritas (BV)	Yes	Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes
• Polski Rejestr Statkow (PRS)	Yes	Yes	Yes	Yes
Use in hazardous areas				
• ATEX Zone 2	No	No	No	No
• ATEX Zone 22	No	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No	No
• FM Class I Division 2	No	No	No	No
Ambient conditions				
Ambient temperature during operation				
• Operation (vertical installation)				
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C
Relative humidity				
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
Configuration				
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)	Yes; via integrated WinCC Basic (TIA Portal)
• WinCC flexible Compact	Yes	No	Yes	Yes
• WinCC Basic (TIA Portal)	Yes	Yes	Yes	Yes
Languages				
Online languages				
• Number of online/runtime languages	5	5	5	5
Functionality under WinCC (TIA Portal)				
Task planner				
• time-controlled	No	No	No	No
• task-controlled	Yes	Yes	Yes	Yes

■ **Technical specifications** (continued)

Article number	6AV6647-0AA11-3AX0	6AV6647-0AK11-3AX0	6AV6647-0AB11-3AX0	6AV6647-0AC11-3AX0
	SIMATIC HMI KTP400 BASIC MONO PN	SIMATIC HMI KTP400 BASIC COLOR PN	SIMATIC HMI KTP600 BASIC MONO PN	SIMATIC HMI KTP600 BASIC COLOR DP
Message system				
• Bit messages				
- Number of bit messages	200	200	200	200
• Analog messages				
- Number of analog messages	15	15	15	15
• Message buffer				
- Number of entries	256	256	256	256
- Circulating buffer	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes
Recipe administration				
• Number of recipes	5	5	5	5
• Size of internal recipe memory	40 kbyte	40 kbyte	40 kbyte	40 kbyte
• Recipe memory expandable	No	No	No	No
Variables				
• Number of variables per device	250	500	500	500
• Number of variables per screen	30	30	30	30
Images				
• Number of configurable images	50	50	50	50
Archiving				
• Number of archives per device	0	0	0	0
Security				
• Number of user groups	50	50	50	50
• Number of users	50	50	50	50
Transfer (upload/download)				
• MPI/PROFIBUS DP	No	No	No	Yes
• Ethernet	Yes	Yes	Yes	No
Process coupling				
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes
• WinAC	Yes	No	Yes	Yes
• SIMOTION	No	No	No	No
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	No
• Allen Bradley (DF1)	No	No	No	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	No
• Mitsubishi (FX)	No	No	No	Yes
• OMRON (FINS TCP)	No	No	No	No
• OMRON (LINK/Multilink)	No	No	No	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	No
• Modicon (Modbus)	No	No	No	Yes
Peripherals/Options				
Peripherals				
• Printer	No	No	No	No
• MultiMediaCard	No	No	No	No
• SD card	No	No	No	No
• USB memory	No	No	No	No
Mechanics/material				
Type of housing (front)				
• plastic	Yes	Yes	Yes	Yes
Dimensions				
Width of the housing front	140 mm	140 mm	214 mm	214 mm
Height of housing front	116 mm	116 mm	158 mm	158 mm
Mounting cutout, width	123 mm	123 mm	197 mm	197 mm
Mounting cutout, height	99 mm	99 mm	141 mm	141 mm
Overall depth	40 mm	33 mm	44 mm	44 mm
Weights				
Without packaging	0.32 kg	0.34 kg	1.07 kg	1.07 kg

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

▪ Technical specifications (continued)

Article number	6AV6647-0AD11-3AX0	6AV6647-0AE11-3AX0	6AV6647-0AF11-3AX0
	SIMATIC HMI KTP600 BASIC COLOR PN	SIMATIC HMI KTP1000 BASIC COLOR DP	SIMATIC HMI KTP1000 BASIC COLOR PN
Product type designation			
Display			
Design of display	TFT	TFT	TFT
Screen diagonal	5.7 in	10.4 in	10.4 in
Number of colors	256	256	256
Resolution (pixels)			
• Horizontal image resolution	320 Pixel	640 Pixel	640 Pixel
• Vertical image resolution	240 Pixel	480 Pixel	480 Pixel
Backlighting			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
• Backlight dimmable	No	No	No
Control elements			
Keyboard			
• Function keys			
- Number of function keys	6	8	8
Touch operation			
• Design as touch screen	Yes	Yes	Yes
Installation type/mounting			
Mounting in portrait format possible	Yes	No	No
Supply voltage			
Type of supply voltage	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V
Memory			
usable memory for user data	1 Mbyte	2 Mbyte	2 Mbyte
Type of output			
Acoustics			
• Buzzer	Yes	Yes	Yes
Time of day			
Clock			
• Software clock	Yes	Yes	Yes
• battery-backed	No	No	No
• synchronizable	Yes	Yes	Yes
Interfaces			
Number of RS 485 interfaces	0	1	0
Number of USB interfaces	0	0	0
Number of SD card slots	0	0	0
Industrial Ethernet			
• Number of industrial Ethernet interfaces	1	0	1
Protocols			
PROFINET	Yes	No	Yes
IRT	No	No	No
PROFIBUS	No	Yes	No
MPI	No	Yes	No
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20

■ **Technical specifications** (continued)

Article number	**6AV6647-0AD11-3AX0**	**6AV6647-0AE11-3AX0**	**6AV6647-0AF11-3AX0**
	SIMATIC HMI KTP600 BASIC COLOR PN	SIMATIC HMI KTP1000 BASIC COLOR DP	SIMATIC HMI KTP1000 BASIC COLOR PN
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
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)	Yes	No	No
Use in hazardous areas			
• ATEX Zone 2	No	No	No
• ATEX Zone 22	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No
• FM Class I Division 2	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	90 %; no condensation
Configuration			
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)
• WinCC flexible Compact	Yes	Yes	Yes
• WinCC Basic (TIA Portal)	Yes	Yes	Yes
Languages			
Online languages			
• Number of online/runtime languages	5	5	5
Functionality under WinCC (TIA Portal)			
Task planner			
• time-controlled	No	No	No
• task-controlled	Yes	Yes	Yes
Message system			
• Bit messages			
- Number of bit messages	200	200	200
• Analog messages			
- Number of analog messages	15	15	15
• Message buffer			
- Number of entries	256	256	256
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
Recipe administration			
• Number of recipes	5	5	5
• Size of internal recipe memory	40 kbyte	40 kbyte	40 kbyte
• Recipe memory expandable	No	No	No
Variables			
• Number of variables per device	500	500	500
• Number of variables per screen	30	30	30
Images			
• Number of configurable images	50	50	50
Archiving			
• Number of archives per device	0	0	0

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

■ **Technical specifications** (continued)

Article number	6AV6647-0AD11-3AX0	6AV6647-0AE11-3AX0	6AV6647-0AF11-3AX0
	SIMATIC HMI KTP600 BASIC COLOR PN	SIMATIC HMI KTP1000 BASIC COLOR DP	SIMATIC HMI KTP1000 BASIC COLOR PN
Security			
• Number of user groups	50	50	50
• Number of users	50	50	50
Transfer (upload/download)			
• MPI/PROFIBUS DP	No	Yes	No
• Ethernet	Yes	No	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	No	No	No
• Allen Bradley (EtherNet/IP)	Yes	No	Yes
• Allen Bradley (DF1)	No	Yes	No
• Mitsubishi (MC TCP/IP)	Yes	No	Yes
• Mitsubishi (FX)	No	Yes	No
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	No	Yes	No
• Modicon (Modbus TCP/IP)	Yes	No	Yes
• Modicon (Modbus)	No	Yes	Yes
Peripherals/Options			
Peripherals			
• Printer	No	No	No
• MultiMediaCard	No	No	No
• SD card	No	No	No
• USB memory	No	No	No
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	Yes
Dimensions			
Width of the housing front	214 mm	335 mm	335 mm
Height of housing front	158 mm	275 mm	275 mm
Mounting cutout, width	197 mm	310 mm	310 mm
Mounting cutout, height	141 mm	248 mm	248 mm
Overall depth	44 mm	60 mm	60 mm
Weights			
Without packaging	1.07 kg	2.65 kg	2.65 kg

■ **Technical specifications** (continued)

Article number	6AV6647-0AH11-3AX0	6AV6647-0AJ11-3AX0	6AV6647-0AG11-3AX0
	SIMATIC HMI KP300 BASIC MONO PN	SIMATIC HMI KP400 BASIC COLOR PN	SIMATIC HMI TP1500 BASIC COLOR PN
Product type designation			
Display			
Design of display	FSTN	TFT	TFT
Screen diagonal	3.6 in	4.3 in	15 in
Number of colors	4; Backlit display only (white, red, green, yellow)	256	256
Resolution (pixels)			
• Horizontal image resolution	240 Pixel	480 Pixel	1 024 Pixel
• Vertical image resolution	80 Pixel	272 Pixel	768 Pixel
Backlighting			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
• Backlight dimmable	No	No	No
Control elements			
Keyboard			
• Function keys			
- Number of function keys	10	8	0
Touch operation			
• Design as touch screen	No	No	Yes
Installation type/mounting			
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			
usable memory for user data	1 Mbyte	1 Mbyte	2 Mbyte
Type of output			
Acoustics			
• Buzzer	No	No	Yes
Time of day			
Clock			
• Software clock	Yes	Yes	Yes
• battery-backed	No	No	No
• synchronizable	Yes	Yes	Yes
Interfaces			
Number of RS 485 interfaces	0	0	0
Number of USB interfaces	0	0	0
Number of SD card slots	0	0	0
Industrial Ethernet			
• Number of industrial Ethernet interfaces	1	1	1
Protocols			
PROFINET	Yes	Yes	Yes
IRT	No	No	No
PROFIBUS	No	No	No
MPI	No	No	No
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

■ **Technical specifications** (continued)

Article number	**6AV6647-0AH11-3AX0** SIMATIC HMI KP300 BASIC MONO PN	**6AV6647-0AJ11-3AX0** SIMATIC HMI KP400 BASIC COLOR PN	**6AV6647-0AG11-3AX0** SIMATIC HMI TP1500 BASIC COLOR PN
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
Marine approval			
• Germanischer Lloyd (GL)	Yes	No	No
• American Bureau of Shipping (ABS)	Yes	No	No
• Bureau Veritas (BV)	Yes	No	No
• Det Norske Veritas (DNV)	Yes	No	No
• Lloyds Register of Shipping (LRS)	Yes	No	No
• Nippon Kaiji Kyokai (Class NK)	Yes	No	No
• Polski Rejestr Statkow (PRS)	No	No	No
Use in hazardous areas			
• ATEX Zone 2	No	No	No
• ATEX Zone 22	No	No	No
• cULus Class I Zone 2, Division 2	Yes	No	No
• FM Class I Division 2	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	90 %; no condensation
Configuration			
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)
• WinCC flexible Compact	No	No	Yes
• WinCC Basic (TIA Portal)	Yes	Yes	Yes
Languages			
Online languages			
• Number of online/runtime languages	5	5	5
Functionality under WinCC (TIA Portal)			
Task planner			
• time-controlled	No	No	No
• task-controlled	Yes	Yes	Yes
Message system			
• Bit messages			
- Number of bit messages	200	200	200
• Analog messages			
- Number of analog messages	15	15	15
• Message buffer			
- Number of entries	256	256	256
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
Recipe administration			
• Number of recipes	5	5	5
• Size of internal recipe memory	40 kbyte	40 kbyte	40 kbyte
• Recipe memory expandable	No	No	No
Variables			
• Number of variables per device	250	500	500
• Number of variables per screen	30	30	30
Images			
• Number of configurable images	50	50	50
Archiving			
• Number of archives per device	0	0	0

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Technical specifications (continued)

Article number	**6AV6647-0AH11-3AX0**	**6AV6647-0AJ11-3AX0**	**6AV6647-0AG11-3AX0**
	SIMATIC HMI KP300 BASIC MONO PN	SIMATIC HMI KP400 BASIC COLOR PN	SIMATIC HMI TP1500 BASIC COLOR PN
Security			
• Number of user groups	50	50	50
• Number of users	50	50	50
Transfer (upload/download)			
• MPI/PROFIBUS DP	No	No	No
• 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	No	Yes
• SIMOTION	No	No	No
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	No	No	No
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	No	No	No
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	No	No	No
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	No	No	Yes
Peripherals/Options			
Peripherals			
• Printer	No	No	No
• MultiMediaCard	No	No	No
• SD card	No	No	No
• USB memory	No	No	No
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	Yes
Dimensions			
Width of the housing front	165 mm	162 mm	400 mm
Height of housing front	97 mm	189 mm	310 mm
Mounting cutout, width	149 mm	135 mm	367 mm
Mounting cutout, height	82 mm	171 mm	289 mm
Overall depth	30 mm	33 mm	60 mm
Weights			
Without packaging	0.25 kg	0.51 kg	4.2 kg

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

Ordering data

Ordering data	Article No.
SIMATIC HMI Basic Panels (1st Generation)	
Key and Touch devices	
SIMATIC HMI KTP400 Basic mono PN	**6AV6647-0AA11-3AX0**
Key/touch-screen operation; 4" STN display; 4 gray levels; PROFINET interface	
SIMATIC HMI KTP400 Basic color PN	**6AV6647-0AK11-3AX0**
Key/touch-screen operation; 4" widescreen TFT display, 256 colors, PROFINET interface	
SIMATIC HMI KTP600 Basic mono PN	**6AV6647-0AB11-3AX0**
Key/touch-screen operation; 6" STN display, 4 gray levels, PROFINET interface	
SIMATIC HMI KTP600 Basic color DP	**6AV6647-0AC11-3AX0**
Key/touch-screen operation; 6" TFT display, 256 colors, MPI/PROFIBUS DP interface	
SIMATIC HMI KTP600 Basic color PN	**6AV6647-0AD11-3AX0**
Key/touch-screen operation; 6" TFT display, 256 colors, PROFINET interface	
SIMATIC HMI KTP1000 Basic color DP	**6AV6647-0AE11-3AX0**
Key/touch-screen operation; 10" TFT display, 256 colors, MPI/PROFIBUS DP interface	
SIMATIC HMI KTP1000 Basic color PN	**6AV6647-0AF11-3AX0**
Key/touch-screen operation; 10" TFT display, 256 colors, PROFINET interface	
Key devices	
SIMATIC HMI KP300 Basic mono PN	**6AV6647-0AH11-3AX0**
Key operation; 3" FSTN LCD display, black and white, PROFINET interface	
SIMATIC HMI KP400 Basic color PN	**6AV6647-0AJ11-3AX0**
Key operation; 4" widescreen TFT display, 256 colors, PROFINET interface	
Touch devices	
SIMATIC HMI TP1500 Basic color PN	**6AV6647-0AG11-3AX0**
Touch-screen operation; 15" TFT display, 256 colors, PROFINET interface	
Documentation	
You can find the manual for the Basic Panels on the Internet at:	http://support.automation.siemens.com
Accessories	See SIMATIC HMI accessories, Chap. 7

Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.
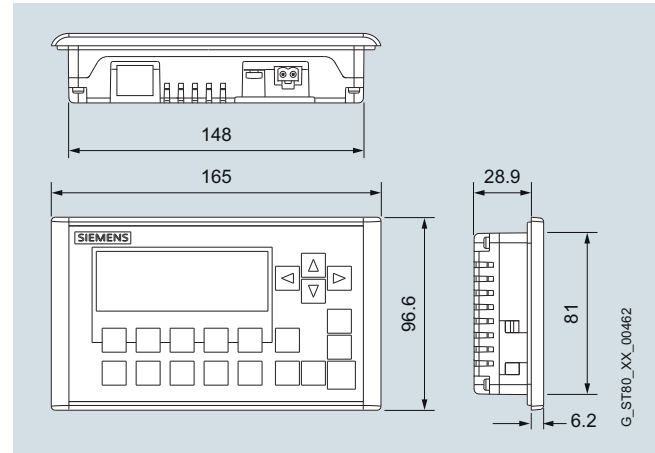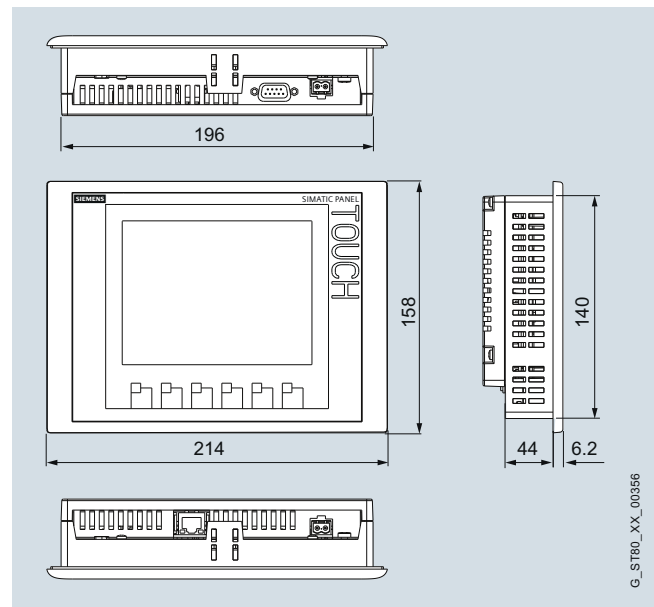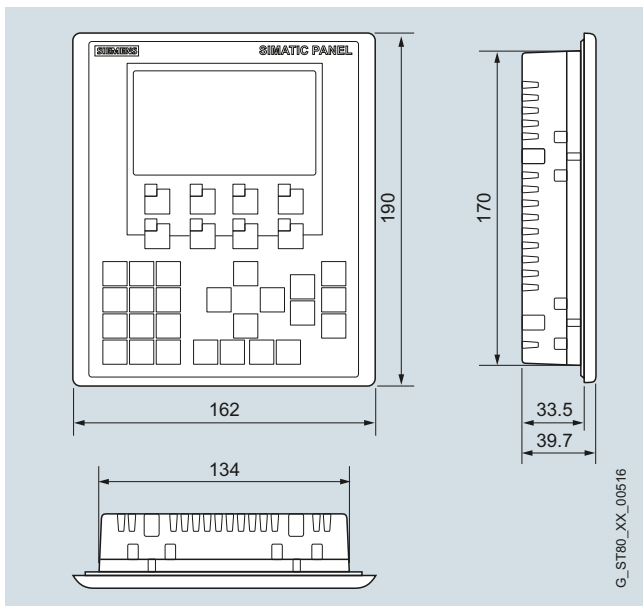

KP300 Basic
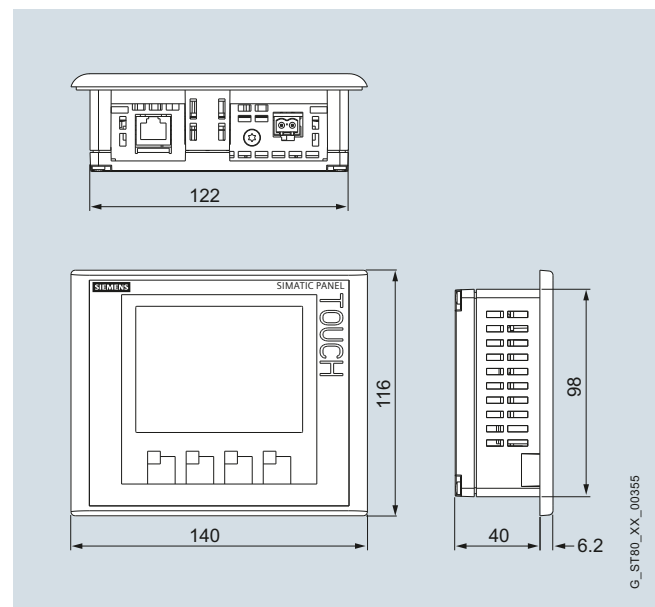
KTP400 Basic mono PN
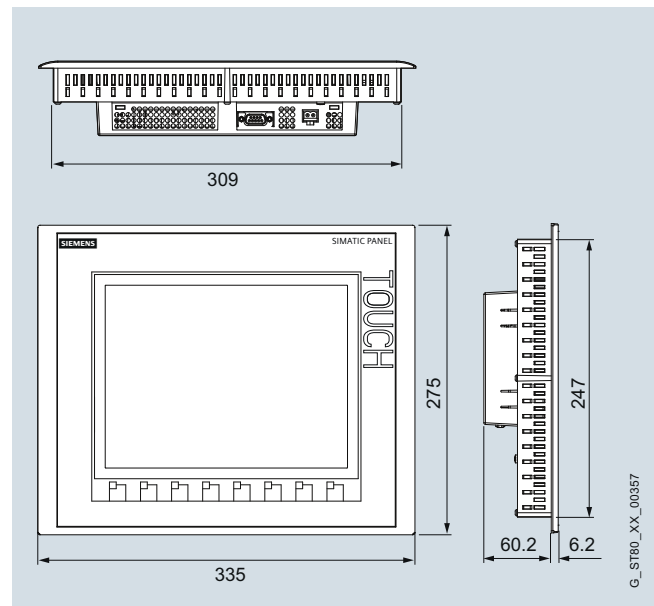
■ **Dimensional drawings** (continued)
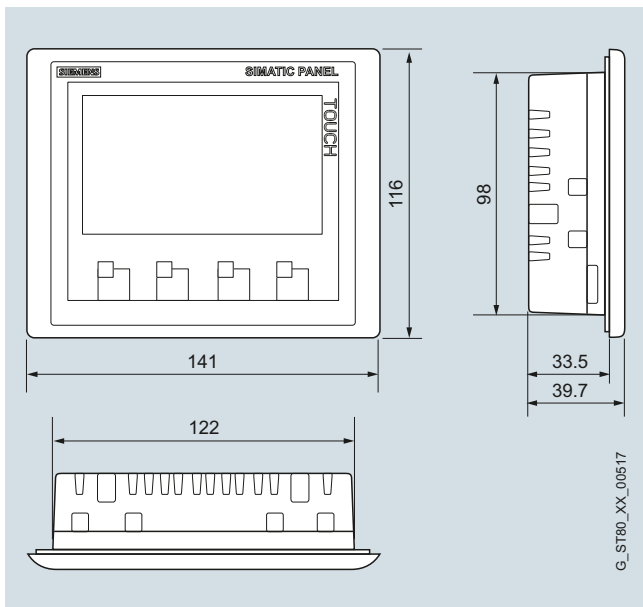
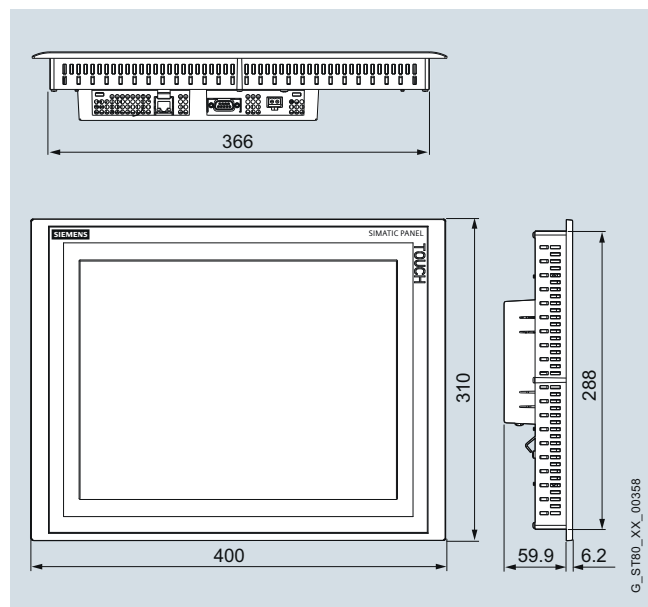KTP400 Basic color PN

KTP600 Basic

KP400 Basic

KTP1000 Basic

Operator panels
SIMATIC HMI Basic Panels

SIMATIC HMI Basic Panels (1st Generation)

■ **Dimensional drawings** (continued)

TP1500 Basic

■ **More information**

Additional information is available on the Internet at:

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

Note:

Do you require a specific modification to or supplement for the products described here? Look under "Customized products". We provide information there about additional and generally available sector products, and about the customer-specific modification and adaptation options.

Overview

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 stick.

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.

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

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

Technical specifications

Article number	**6AG1123-2DB03-2AX0**	**6AG1123-2GB03-2AX0**	**6AG1123-2JB03-2AX0**
	SIPLUS HMI KTP400 BASIC	SIPLUS HMI KTP700 BASIC	SIPLUS HMI KTP900 BASIC
Ambient conditions			
Ambient temperature during operation			
• Operation (vertical installation)			
- For vertical installation, min.	-20 °C	-20 °C	-20 °C
- For vertical installation, max.	50 °C	50 °C	50 °C
Extended ambient conditions			
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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			
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!		
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!		
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!		

Operator panels
SIPLUS Basic Panels

SIPLUS Basic Panels (2nd Generation)

■ Ordering data

Ordering data	Article No.
SIMATIC HMI Basic Panels, Key and Touch	
SIMATIC HMI KTP400 Basic	**6AG1123-2DB03-2AX0**
For areas subject to exceptional medial exposure (conformal coating); ambient temperature -25 ... +50 °C	
SIMATIC HMI KTP700 Basic	**6AG1123-2GB03-2AX0**
For areas subject to exceptional medial exposure (conformal coating); ambient temperature -25 ... +50 °C	
SIMATIC HMI KTP900 Basic	**6AG1123-2JB03-2AX0**
For areas subject to exceptional medial exposure (conformal coating); ambient temperature -25 ... +50 °C	
Accessories	See SIMATIC HMI accessories, chapter 7

■ More information

Additional information is available on the Internet at:

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

Note:

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

Overview

- Ideal entry-level series of 3.8 inches to 15 inches for operating and monitoring compact machines and systems
- Clear process representation through the use of full-graphic displays
- Intuitive operation via touch and tactile function keys
- Equipped with all the necessary basic functions such as reporting, recipe management, curve representation, vector graphics, and language selection
- Easy connection to the controller via integrated Ethernet interface or a separate version with RS 485/422

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	6AG1647-0AH11-2AX0	6AG1647-0AA11-2AX0	6AG1647-0AD11-2AX0
	SIPLUS HMI KP300 BASIC MONO PN 3,6"	SIPLUS KTP400 BASIC MONO PN	SIPLUS KTP600 BASIC COLOR PN
Ambient conditions			
Ambient temperature during operation			
• Operation (vertical installation)			
- For vertical installation, min.	-25 °C	-10 °C	-25 °C
- For vertical installation, max.	60 °C	50 °C	60 °C
Extended ambient conditions			
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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			
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!		
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!		
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!		

Operator panels
SIPLUS Basic Panels

SIPLUS Basic Panels (1st Generation)

■ **Technical specifications** (continued)

Article number	6AG1647-0AE11-4AX0	6AG1647-0AF11-4AX0	6AG1647-0AG11-4AX0
	SIPLUS HMI KTP1000 BASIC COLOR DP	SIPLUS KTP1000 BASIC COLOR PN	SIPLUS HMI TP1500 BASIC COLOR PN
Ambient conditions			
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	50 °C	50 °C
Extended ambient conditions			
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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			
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!		
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 incl. salt spray. The supplied connector covers must remain on the unused interfaces during operation!		
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!		

■ **Ordering data**

	Article No.		Article No.
SIPLUS HMI KP300 Basic mono PN For areas with extreme medial exposure (conformal coating); ambient temperature -25 ... +60 °C	6AG1647-0AH11-2AX0	**SIPLUS HMI KTP1000 Basic color DP** For areas with extreme medial exposure (conformal coating); ambient temperature 0 ... +50 °C	6AG1647-0AE11-4AX0
SIPLUS HMI KTP400 Basic mono PN For areas with extreme medial exposure (conformal coating); ambient temperature -10 ... +60 °C	6AG1647-0AA11-2AX0	**SIPLUS HMI KTP1000 Basic color PN** For areas with extreme medial exposure (conformal coating); ambient temperature 0 ... +50 °C	6AG1647-0AF11-4AX0
SIPLUS HMI KTP600 Basic color PN For areas with extreme medial exposure (conformal coating); ambient temperature -25 ... +60 °C	6AG1647-0AD11-2AX0	**SIPLUS HMI TP1500 Basic color PN** For areas with extreme medial exposure (conformal coating); ambient temperature 0 ... +50 °C	6AG1647-0AG11-4AX0
		Accessories	See SIMATIC HMI Accessories, chapter 7

■ **More information**

Additional information is available in the Internet under:

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

Note:

Do you require a specific modification to or supplement for the products described here? Look under "Customized products". We provide information there about additional and generally available sector products, and about the customer-specific modification and adaptation options.

■ **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 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
- 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)
- 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
- Wide range of communication options: PROFIBUS and PROFINET onboard; 2 x PROFINET with integrated switch for 7" models or larger; plus 1 x PROFINET with Gigabit support for 15" models or larger
- All versions 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
- All keys have a service life of 2 million operations
- Configuring with the WinCC engineering software of the TIA Portal

Note:

A 7" and 15" Comfort Outdoor version will be available soon. For further information, please go to:

http://www.siemens.com/hmi

Operator panels
SIMATIC HMI Comfort Panels

SIMATIC HMI Comfort Panels – Standard

■ **Technical specifications**

Article number	**6AV2124-2DC01-0AX0**	**6AV2124-0GC01-0AX0**	**6AV2124-0JC01-0AX0**	**6AV2124-0MC01-0AX0**
	SIMATIC HMI KTP400 COMFORT	SIMATIC HMI TP700 COMFORT	SIMATIC HMI TP900 COMFORT	SIMATIC HMI TP1200 COMFORT
Product type designation				
Display				
Design of display	TFT	TFT	TFT	TFT
Screen diagonal	4.3 in	7 in	9 in	12.1 in
Number of colors	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
• Vertical image resolution	272 Pixel	480 Pixel	480 Pixel	800 Pixel
Backlighting				
• MTBF backlighting (at 25 °C)	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 %
Control elements				
Keyboard				
• Function keys				
- Number of function keys	4	0	0	0
Touch operation				
• Design as touch screen	Yes	Yes	Yes	Yes
Installation type/mounting				
Mounting in portrait format possible	Yes	Yes	Yes	Yes
Supply voltage				
Type of supply voltage	DC	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V	24 V
Memory				
usable memory for user data	4 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte
Type of output				
Acoustics				
• Speaker	No	Yes	Yes	Yes
Time of day				
Clock				
• Hardware clock (real-time clock)	Yes	Yes	Yes	Yes
• battery-backed	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
Interfaces				
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
Number of USB interfaces	1; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of USB Mini B interfaces	1; 5-pole	1; 5-pole	1; 5-pole	1; 5-pole
Number of SD card slots	2	2	2	2
Industrial Ethernet				
• Number of industrial Ethernet interfaces	1	2	2	2
• Number of ports of the integrated switch	1	2	2	2
Protocols				
PROFINET	Yes	Yes	Yes	Yes
IRT	No	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12
MRP	No	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12
PROFIBUS	Yes	Yes	Yes	Yes
MPI	Yes	Yes	Yes	Yes
Degree and class of protection				
IP (at the front)	IP65	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20	IP20
Standards, approvals, certificates				
CE mark	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes

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■ **Technical specifications** (continued)

Article number	6AV2124-2DC01-0AX0	6AV2124-0GC01-0AX0	6AV2124-0JC01-0AX0	6AV2124-0MC01-0AX0
	SIMATIC HMI KTP400 COMFORT	SIMATIC HMI TP700 COMFORT	SIMATIC HMI TP900 COMFORT	SIMATIC HMI TP1200 COMFORT
Marine approval				
• Germanischer Lloyd (GL)	Yes	Yes	Yes	Yes; As of product version: 10
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes; As of product version: 10
• Bureau Veritas (BV)	Yes	Yes	Yes	Yes; As of product version: 10
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes; As of product version: 10
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes; As of product version: 10
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes; As of product version: 10
• Polski Rejestr Statkow (PRS)	No	No	No	No
Use in hazardous areas				
• ATEX Zone 2	Yes	Yes	Yes	Yes
• ATEX Zone 22	Yes	Yes	Yes	Yes
• IECEx Zone 2	Yes	Yes	Yes	Yes
• IECEx Zone 22	Yes	Yes	Yes	Yes
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes	Yes	Yes
Ambient conditions				
Ambient temperature during operation				
• Operation (vertical installation)				
- For vertical installation, min.	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)
Relative humidity				
• Operation, max.	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; from V11
Languages				
Online languages				
• Number of online/runtime languages	32	32	32	32
Functionality under WinCC (TIA Portal)				
Applications/options				
• Web browser	Yes	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes	Yes
Task planner				
• time-controlled	Yes	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes	Yes
Message system				
• Bit messages				
- Number of bit messages	2 000	4 000	4 000	4 000
• Analog messages				
- Number of analog messages	50	200	200	200
• Message buffer				
- Number of entries	256	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes
Recipe administration				
• Number of recipes	100	300	300	300
• Size of internal recipe memory	512 kbyte	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes

Operator panels
SIMATIC HMI Comfort Panels

SIMATIC HMI Comfort Panels – Standard

Technical specifications (continued)

Article number	6AV2124-2DC01-0AX0 SIMATIC HMI KTP400 COMFORT	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 COMFORT	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 COMFORT	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 COMFORT
Variables				
• Number of variables per device	1 024	2 048	2 048	2 048
• Number of variables per screen	50	400	400	400
Images				
• Number of configurable images	500	500	500	500
Archiving				
• Number of archives per device	10	50	50	50
Security				
• Number of user groups	50	50	50	50
• Number of users	50	50	50	50
• SIMATIC Logon	Yes	Yes	Yes	Yes
Logging through printer				
• Alarms	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes	Yes
• Electronic print to file	Yes; pdf, html	Yes; pdf, html	Yes; pdf, html	Yes; pdf, html
Transfer (upload/download)				
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes
• USB	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes
Process coupling				
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes
Peripherals/Options				
Peripherals				
• Printer	Yes	Yes	Yes	Yes
• MultiMediaCard	Yes	Yes	Yes	Yes
• SD card	Yes	Yes	Yes	Yes
• USB memory	Yes	Yes	Yes	Yes
• Network camera	Yes	Yes	Yes	Yes
Mechanics/material				
Type of housing (front)				
• plastic	Yes	No	No	No
• aluminum	No	Yes	Yes	Yes
Dimensions				
Width of the housing front	140 mm	214 mm	274 mm	330 mm
Height of housing front	116 mm	158 mm	190 mm	241 mm
Mounting cutout, width	123 mm	197 mm	251 mm	310 mm
Mounting cutout, height	99 mm	141 mm	166 mm	221 mm
Overall depth	49 mm	63 mm	63 mm	65 mm
Weights				
Without packaging	0.6 kg	1.4 kg	1.9 kg	2.8 kg

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■ **Technical specifications** (continued)

Article number	6AV2124-1DC01-0AX0	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX0
	SIMATIC HMI KP400 COMFORT	SIMATIC HMI KP700 COMFORT	SIMATIC HMI KP900 COMFORT	SIMATIC HMI KP1200 COMFORT	SIMATIC HMI KP1500 COMFORT
Product type designation					
Display					
Design of display	TFT	TFT	TFT	TFT	TFT
Screen diagonal	4.3 in	7 in	9 in	12.1 in	15.4 in
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; 0-100 %
Control elements					
Keyboard					
• 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
Memory					
usable memory 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 clock)	Yes	Yes	Yes	Yes	Yes
• battery-backed	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
Interfaces					
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
Number of USB interfaces	1; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of USB Mini B interfaces	1; 5-pole	1; 5-pole	1; 5-pole	1; 5-pole	1; 5-pole
Number of SD card slots	2	2	2	2	2
Industrial Ethernet					
• Number of industrial Ethernet interfaces	1	2	2	2	3
• Number of ports of the integrated switch	1	2	2	2	2
Protocols					
PROFINET	Yes	Yes	Yes	Yes	Yes
IRT	No	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12
MRP	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
Degree and class of protection					
IP (at the front)	IP65	IP65	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20	IP20	IP20
Standards, approvals, certificates					
CE mark	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes

Operator panels
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■ Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX0
	SIMATIC HMI KP400 COMFORT	SIMATIC HMI KP700 COMFORT	SIMATIC HMI KP900 COMFORT	SIMATIC HMI KP1200 COMFORT	SIMATIC HMI KP1500 COMFORT
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
• 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
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 2, Division 2	Yes	Yes	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes	Yes	Yes	Yes
Ambient conditions					
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
Configuration					
Configuration software					
• WinCC Comfort (TIA Portal)	Yes; from V11	Yes; from V11	Yes; from V11	Yes; from V11	Yes; V11 SP2 or higher
Languages					
Online languages					
• Number of online/runtime languages	32	32	32	32	32
Functionality under WinCC (TIA Portal)					
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
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
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
Recipe administration					
• 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

■ Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX0
	SIMATIC HMI KP400 COMFORT	SIMATIC HMI KP700 COMFORT	SIMATIC HMI KP900 COMFORT	SIMATIC HMI KP1200 COMFORT	SIMATIC HMI KP1500 COMFORT
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
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
• 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					
Peripherals					
• Printer	Yes	Yes	Yes	Yes	Yes
• MultiMediaCard	Yes	Yes	Yes	Yes	Yes
• SD card	Yes	Yes	Yes	Yes	Yes
• USB memory	Yes	Yes	Yes	Yes	Yes
• Network camera	Yes	Yes	Yes	Yes	Yes
Mechanics/material					
Type of housing (front)					
• plastic	Yes	No	No	No	No
• aluminum	No	Yes	Yes	Yes	Yes
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					
Without packaging	0.8 kg	2.2 kg	2.7 kg	4.4 kg	5.4 kg

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Operator panels
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■ **Technical specifications** (continued)

Article number	**6AV2124-0QC02-0AX0**	**6AV2124-0UC02-0AX0**	**6AV2124-0XC02-0AX0**
	SIMATIC HMI TP1500 COMFORT	SIMATIC HMI TP1900 COMFORT	SIMATIC HMI TP2200 COMFORT
Product type designation			
Display			
Design of display	TFT	TFT	TFT
Screen diagonal	15.4 in	18.5 in	21.5 in
Number of colors	16 777 216	16 777 216	16 777 216
Resolution (pixels)			
• Horizontal image resolution	1 280 Pixel	1 366 Pixel	1 920 Pixel
• Vertical image resolution	800 Pixel	768 Pixel	1 080 Pixel
Backlighting			
• MTBF backlighting (at 25 °C)	80 000 h	50 000 h	30 000 h
• Backlight dimmable	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %
Control elements			
Keyboard			
• 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
Memory			
usable memory 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 clock)	Yes	Yes	Yes
• battery-backed	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 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 USB Mini B interfaces	1; 5-pole	1; 5-pole	1; 5-pole
Number of SD card slots	2	2	2
Industrial Ethernet			
• Number of industrial Ethernet interfaces	3	3	3
• Number of ports of the integrated switch	2	2	2
Protocols			
PROFINET	Yes	Yes	Yes
IRT	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12
MRP	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
Enclosure Type 4x at the front	Yes	Yes	Yes
IP (rear)	IP20	IP20	IP20
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes

■ **Technical specifications** (continued)

Article number	6AV2124-0QC02-0AX0	6AV2124-0UC02-0AX0	6AV2124-0XC02-0AX0
	SIMATIC HMI TP1500 COMFORT	SIMATIC HMI TP1900 COMFORT	SIMATIC HMI TP2200 COMFORT
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
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	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes	Yes
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; (55 °C, see entry ID:64847814)	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; V11 SP2 or higher	Yes; V11 SP2 or higher	Yes; V11 SP2 or higher
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	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
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 administration			
• 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

Operator panels
SIMATIC HMI Comfort Panels

SIMATIC HMI Comfort Panels – Standard

■ Technical specifications (continued)

Article number	6AV2124-0QC02-0AX0	6AV2124-0UC02-0AX0	6AV2124-0XC02-0AX0
	SIMATIC HMI TP1500 COMFORT	SIMATIC HMI TP1900 COMFORT	SIMATIC HMI TP2200 COMFORT
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
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			
Peripherals			
• Printer	Yes	Yes	Yes
• MultiMediaCard	Yes	Yes	Yes
• SD card	Yes	Yes	Yes
• USB memory	Yes	Yes	Yes
• Network camera	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)			
• plastic	No	No	No
• aluminum	Yes	Yes	Yes
Dimensions			
Width of the housing front	415 mm	483 mm	560 mm
Height of housing front	310 mm	337 mm	380 mm
Mounting cutout, width	396 mm	465 mm	542 mm
Mounting cutout, height	291 mm	319 mm	362 mm
Overall depth	75 mm	75 mm	75 mm
Weights			
Without packaging	5.2 kg	6.5 kg	7.1 kg

■ Ordering data

SIMATIC HMI Comfort Panels	Article No.
Key and touch devices	
SIMATIC HMI KTP400 Comfort Key/touch-screen operation; 4" widescreen display	**6AV2124-2DC01-0AX0**
Touch devices	
SIMATIC HMI TP700 Comfort Touch-screen operation; 7" widescreen display	**6AV2124-0GC01-0AX0**
SIMATIC HMI TP900 Comfort Touch-screen operation; 9" widescreen display	**6AV2124-0JC01-0AX0**
SIMATIC HMI TP1200 Comfort Touch-screen operation; 12" widescreen display	**6AV2124-0MC01-0AX0**
SIMATIC HMI TP1500 Comfort Touch-screen operation; 15" widescreen display	**6AV2124-0QC02-0AX0**
SIMATIC HMI TP1900 Comfort Touch-screen operation; 19" widescreen display	**6AV2124-0UC02-0AX0**
SIMATIC HMI TP2200 Comfort Touch-screen operation; 22" widescreen display	**6AV2124-0XC02-0AX0**
Key devices	
SIMATIC HMI KP400 Comfort Key operation; 4" widescreen display	**6AV2124-1DC01-0AX0**
SIMATIC HMI KP700 Comfort Key operation; 7" widescreen display	**6AV2124-1GC01-0AX0**
SIMATIC HMI KP900 Comfort Key operation; 9" widescreen display	**6AV2124-1JC01-0AX0**
SIMATIC HMI KP1200 Comfort Key operation; 12" widescreen display	**6AV2124-1MC01-0AX0**
SIMATIC HMI KP1500 Comfort Key operation; 15" widescreen display	**6AV2124-1QC02-0AX0**
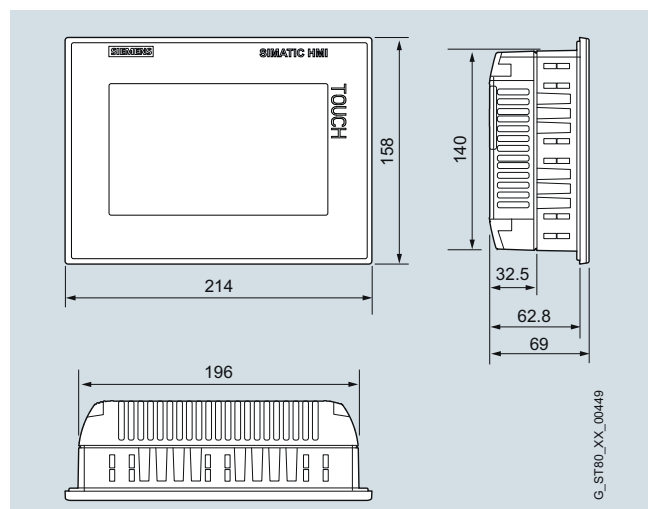
	Article No.
Starter kits for SIMATIC HMI Comfort Panels Consisting of: the respective SIMATIC HMI Comfort Panel, SIMATIC WinCC Comfort, Ethernet cable, 2 m; SIMATIC HMI memory card 2 GB, 10 protective films for touch screen devices	
Starter kit for SIMATIC HMI KTP400 Comfort, Key and Touch	**6AV2181-4DB20-0AX0**
Starter kit for SIMATIC HMI TP700 Comfort, Touch	**6AV2181-4GB00-0AX0**
Starter kit for SIMATIC HMI TP900 Comfort, Touch	**6AV2181-4JB00-0AX0**
Starter kit for SIMATIC HMI TP1200 Comfort, Touch	**6AV2181-4MB00-0AX0**
Starter kit for SIMATIC HMI TP1500 Comfort, Touch	**6AV2181-4QB00-0AX0**
Starter kit for SIMATIC HMI TP1900 Comfort, Touch	**6AV2181-4UB00-0AX0**
Starter kit for SIMATIC HMI TP2200 Comfort, Touch	**6AV2181-4XB00-0AX0**
Starter kit for SIMATIC HMI KP400 Comfort, Key	**6AV2181-4DB10-0AX0**
Starter kit for SIMATIC HMI KP700 Comfort, Key	**6AV2181-4GB10-0AX0**
Starter kit for SIMATIC HMI KP900 Comfort, Key	**6AV2181-4JB10-0AX0**
Starter kit for SIMATIC HMI KP1200 Comfort, Key	**6AV2181-4MB10-0AX0**
Starter kit for SIMATIC HMI KP1500 Comfort, Key	**6AV2181-4QB10-0AX0**
Accessories	See SIMATIC HMI accessories, Chap. 7

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.

TP700 Comfort

TP900 Comfort

Operator panels
SIMATIC HMI Comfort Panels

■ **Dimensional drawings** (continued)

TP1200 Comfort

TP1900 Comfort
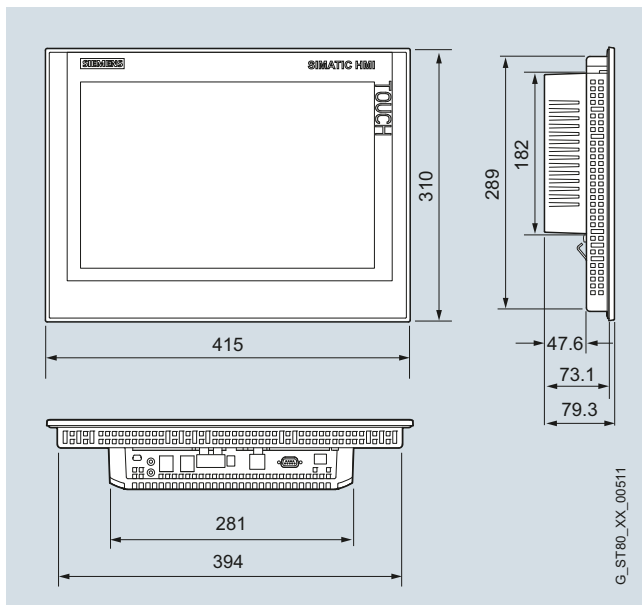
TP1500 Comfort

TP2200 Comfort

2
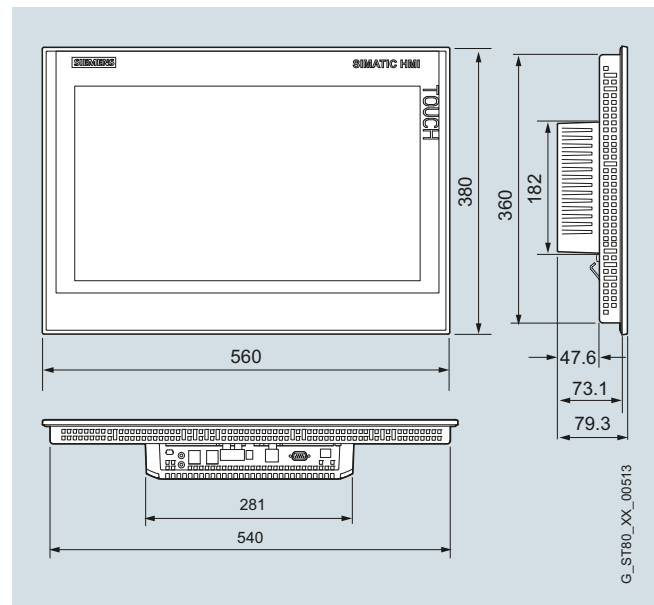
■ **Dimensional drawings** (continued)
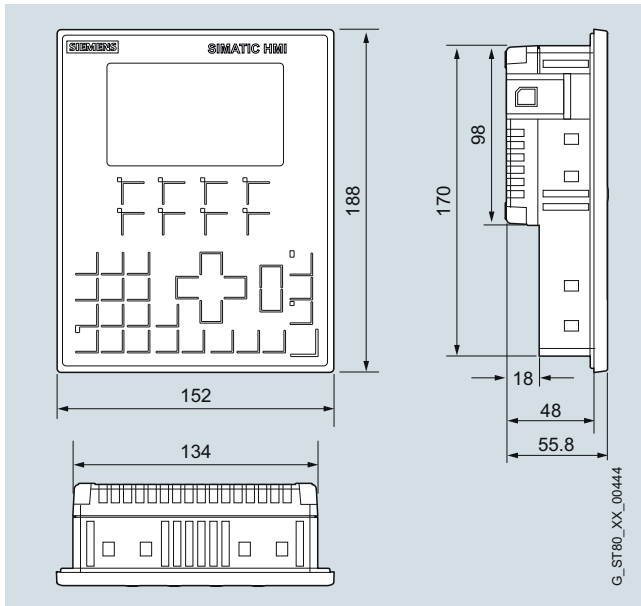
KP400 Comfort
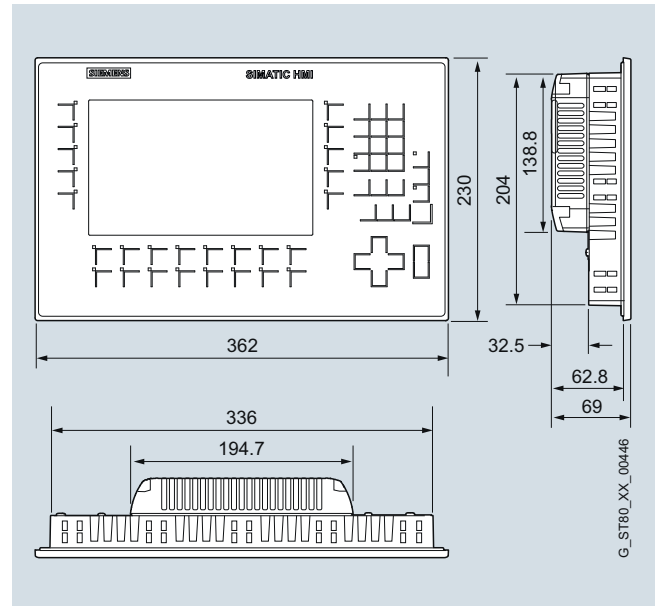
KP900 Comfort
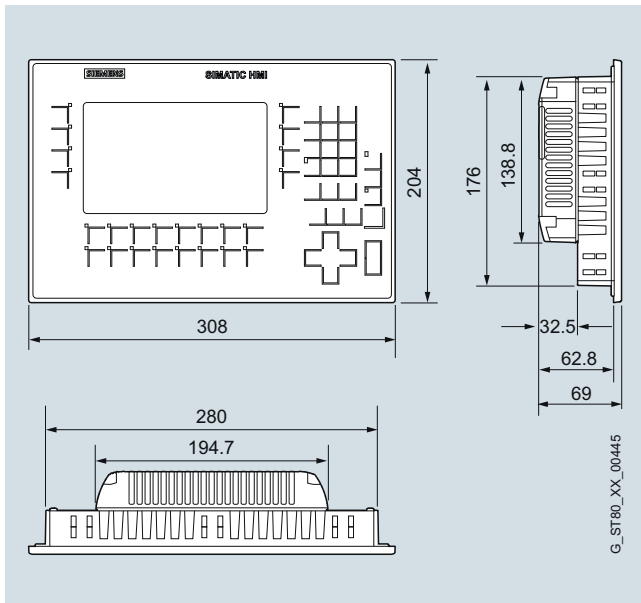
KP700 Comfort
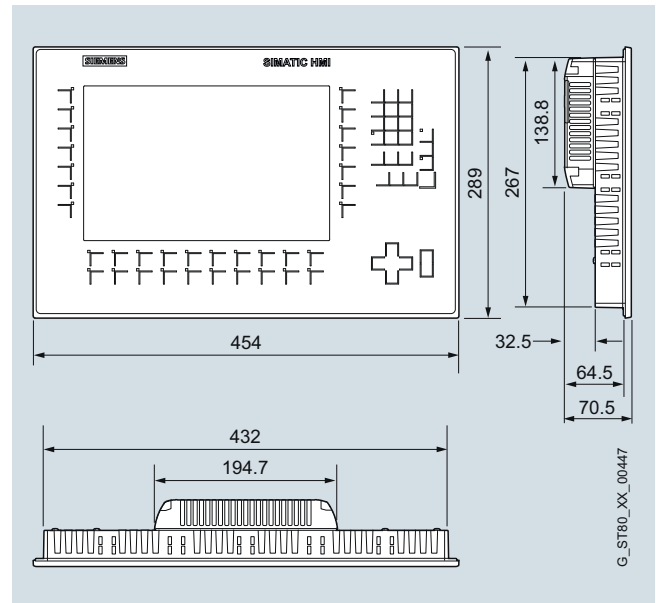
KP1200 Comfort

Operator panels

SIMATIC HMI Comfort Panels

SIMATIC HMI Comfort Panels – Standard

■ **Dimensional drawings** (continued)
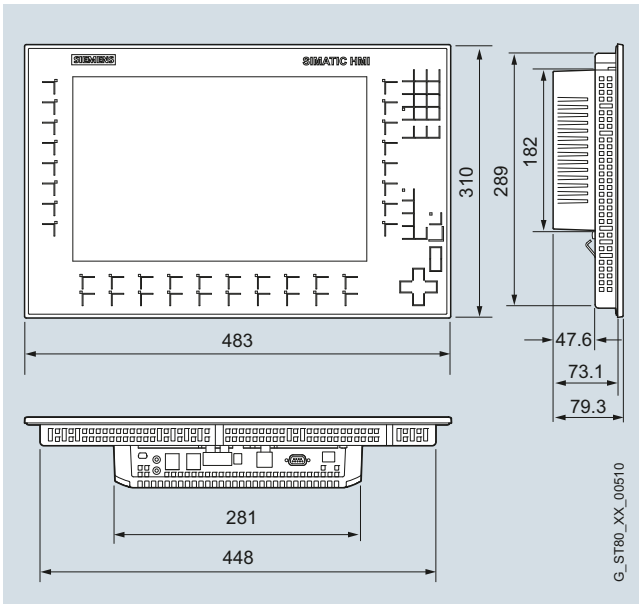
KP1500 Comfort
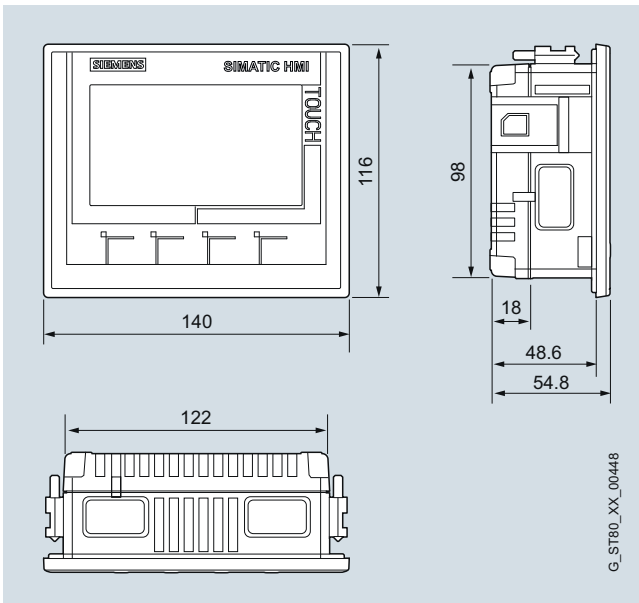
KTP400 Comfort

■ **More information**

Additional information is available on the Internet at:

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

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

http://support.automation.siemens.com/WW/view/en/11376409

Note:

Do you need a specific modification or extension to the products described here? If so, 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.

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.

Technical specifications

Article number	**6AG1124-2DC01-4AX0**	**6AG1124-0GC01-4AX0**	**6AG1124-0JC01-4AX0**	**6AG1124-0MC01-4AX0**
	SIPLUS HMI KTP400 COMFORT	SIPLUS HMI TP700 COMFORT	SIPLUS HMI TP900 COMFORT	SIPLUS HMI TP1200 COMFORT
Ambient conditions				
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
Extended ambient conditions				
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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				
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!			
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!			
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!			

Operator panels
SIPLUS Comfort Panels

SIPLUS Comfort Panels

■ **Technical specifications** (continued)

Article number	6AG1124-1DC01-4AX0	6AG1124-1GC01-4AX0	6AG1124-1JC01-4AX0	6AG1124-1MC01-4AX0	6AG1124-1QC02-4AX0
	SIPLUS HMI KP400 COMFORT	SIPLUS HMI KP700 COMFORT	SIPLUS HMI KP900 COMFORT	SIPLUS HMI KP1200 COMFORT	SIPLUS HMI KP1500 COMFORT
Ambient conditions					
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; = Tmin
- For vertical installation, max.	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax
Extended ambient conditions					
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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					
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!				
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!				
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!				

Article number	6AG1124-0QC02-4AX0	6AG1124-0UC02-4AX0	6AG1124-0XC02-4AX0
	SIPLUS HMI TP1500 COMFORT	SIPLUS HMI TP1900 COMFORT	SIPLUS HMI TP2200 COMFORT
Ambient conditions			
Ambient temperature during operation			
• Operation (vertical installation)			
- For vertical installation, min.	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin
- For vertical installation, max.	50 °C; = Tmax	45 °C; = Tmax	45 °C; = Tmax
Extended ambient conditions			
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 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			
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!		
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!		
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!		

■ **Ordering data**

	Article No.
SIPLUS HMI Comfort Panels, Keys and Touch	
SIPLUS HMI KP400 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	**6AG1124-0QC02-4AX0**
SIPLUS HMI TP1900 Comfort	**6AG1124-0UC02-4AX0**
SIPLUS HMI TP2200 Comfort	**6AG1124-0XC02-4AX0**
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	**6AG1124-1QC02-4AX0**
Accessories	See SIMATIC HMI accessories, chapter 7

■ **More information**

Additional information is available on the Internet at:

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

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

http://support.automation.siemens.com/WW/view/en/11376409

Note:

Do you need a specific modification or extension to the products described here? If so, 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.

2

Operator panels
Mobile Panels

Mobile Panels

■ **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" and 9" displays, each of which is available with or without safety operating elements.

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

* *SIMATIC HMI KTP700 Mobile*
* *SIMATIC HMI KTP700F Mobile*
* *SIMATIC HMI KTP900 Mobile*
* *SIMATIC HMI KTP900F Mobile*

SIMATIC Mobile Panels x77 series

SIMATIC Mobile Panel 277(F) IWLAN

The SIMATIC Mobile Panels 277(F) IWLAN with 8" displays feature wireless communications and offer optional safety engineering.

The highlights:
* Complete freedom in mobile HMI by means of Industrial Wireless LAN (IWLAN) as specified in IEEE 802.11 (a/b/g/h)
* Integrated security according to SIL 3 or PLe in interaction with the SIMATIC failsafe controllers
* Powerful batteries and flexible concept for changing permit battery replacement "on the fly" without interrupting operation

The following devices are also available:
* *SIMATIC Mobile Panel 277 IWLAN V2 without operator controls*
* *SIMATIC Mobile Panel 277 IWLAN V2 with operator controls*
* *SIMATIC Mobile Panel 277F IWLAN V2 without operator controls*
* *SIMATIC Mobile Panel 277F IWLAN V2 with operator controls*
* *SIMATIC Mobile Panel 277F IWLAN RF with operator controls*

SIMATIC Mobile Panel 177/277

SIMATIC x77 Mobile Panels offer full graphics with 6", 8" and 10" displays.

The devices support both PROFINET and PROFIBUS communication. Depending on the application, different expansion versions are available.

* *SIMATIC Mobile Panel 177 DP*
* *SIMATIC Mobile Panel 177 PN*
* *SIMATIC Mobile Panel 277 8"*
* *SIMATIC Mobile Panel 277 10"*

2

Overview

KTP700F and KTP900F Mobile 2nd Generation

- SIMATIC HMI KTP700 Mobile
- SIMATIC HMI KTP700F Mobile
- SIMATIC HMI KTP900 Mobile
- SIMATIC HMI KTP900F Mobile

Ordering data

	Article No.
SIMATIC Mobile Panels [1] 2nd Generation	
KTP700 Mobile	**6AV2125-2GB03-0AX0**
KTP700F Mobile	**6AV2125-2GB23-0AX0**
KTP900 Mobile	**6AV2125-2JB03-0AX0**
KTP900F Mobile	**6AV2125-2JB23-0AX0**
System components for Mobile Panels	
Connection Box	
• Compact	**6AV2125-2AE03-0AX0**
• Standard	**6AV2125-2AE13-0AX0**
• Advanced	**6AV2125-2AE23-0AX0**
Connecting cable and accessories for Mobile Panels	See SIMATIC HMI accessories, chapter 7

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

More information

Additional information is available on the Internet at:

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

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 additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277(F) IWLAN

Overview

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications

Article number	6AV6645-0DD01-0AX1	6AV6645-0DE01-0AX1	6AV6645-0EB01-0AX1	6AV6645-0EC01-0AX1	6AV6645-0EF01-0AX1
	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2 (RFID TAG)
Product type designation					
Display					
Design of display	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7.5 in	7.5 in	7.5 in	7.5 in	7.5 in
Resolution (pixels)					
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting					
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h
Control elements					
Control elements	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Keyboard					
• Function keys	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
- Number of function keys	18	18	18	18	18
Touch operation					
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive
Connection type					
• Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Special operator controls					
• Stop button	No	No			
• Emergency stop button (forced blocking)			Yes	Yes	Yes
• Acknowledgement button	No	No	Yes	Yes	Yes
• Key-operated switch	No	Yes	No	Yes	Yes
• Illuminated pushbutton	No	Yes	No	Yes	Yes
• Handwheel	No	Yes	No	Yes	Yes
Supply voltage					
Description	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply
Type of supply voltage	DC	DC	DC	DC	DC
Processor					
Processor type	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz

2

■ Technical specifications (continued)

Article number	6AV6645-0DD01-0AX1	6AV6645-0DE01-0AX1	6AV6645-0EB01-0AX1	6AV6645-0EC01-0AX1	6AV6645-0EF01-0AX1
	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2 (RFID TAG)
Memory					
Type of memory	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
usable memory for user data	6 Mbyte	6 Mbyte	6 Mbyte	6 Mbyte	6 Mbyte
Battery					
Main battery					
• Rated voltage	7.2 V	7.2 V	7.2 V	7.2 V	7.2 V
• Capacity	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h
• Number of loading cycles, min	500	500	500	500	500
• Charging time, typ.	4 h	4 h	4 h	4 h	4 h
• Operating time, typ.	4 h	4 h	4 h	4 h	4 h
• Display for battery capacity	Yes	Yes	Yes	Yes	Yes
• Energy-saving mode	Yes	Yes	Yes	Yes	Yes
• Battery replacement during operation	Yes	Yes	Yes	Yes	Yes
Type of output					
Status LEDs	Yes	Yes	Yes	Yes	Yes
LED for safe			Yes	Yes	Yes
LED for communication	Yes	Yes	Yes	Yes	Yes
LED for battery	Yes	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes	Yes
Time of day					
Clock					
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
• Hardware clock (real-time clock)	Yes	Yes	Yes	Yes	Yes
• battery-backed	Yes	Yes	Yes	Yes	Yes
• synchronizable	Yes	Yes	Yes	Yes	Yes
Interfaces					
Interfaces/bus type	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Number of USB interfaces	1	1	1	1	1
USB port	1 x USB	1 x USB	1 x USB	1 x USB	1 x USB
Multimedia Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot
Industrial Ethernet					
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
WLAN					
• Wireless LAN	Yes	Yes	Yes	Yes	Yes
• Supports rapid roaming	Yes	Yes	Yes	Yes	Yes
Protocols					
PROFINET	Yes	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes	Yes
PROFIsafe	No	No	Yes	Yes	Yes
EMC					
Emission of radio interference acc. to EN 55 011					
• Limit class A, for use in industrial areas	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation
Degree and class of protection					
Enclosure according to EN 60529	IP65	IP65	IP65	IP65	IP65

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277(F) IWLAN

■ **Technical specifications** (continued)

Article number	6AV6645-0DD01-0AX1	6AV6645-0DE01-0AX1	6AV6645-0EB01-0AX1	6AV6645-0EC01-0AX1	6AV6645-0EF01-0AX1
	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2 (RFID TAG)
Standards, approvals, certificates					
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
CE mark	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes
TÜV safety certification			Yes	Yes	Yes
Highest safety class achievable in safety mode					
• Performance level according to EN ISO 13849-1:2008			e	e	e
• SIL acc. to IEC 61508			SIL 3	SIL 3	SIL 3
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.	40 °C	40 °C	40 °C	40 °C	40 °C
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.	80 %	80 %	80 %	80 %	80 %
Operating systems					
Operating system	Windows CE	Windows CE	Windows CE	Windows CE	Windows CE
Languages					
Online languages					
• Number of online/runtime languages	16	16	16	16	16
Functionality under WinCC (TIA Portal)					
Libraries	Yes	Yes	Yes	Yes	Yes
Task planner	Yes	Yes	Yes	Yes	Yes
Message system					
• Number of messages	4 000	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes	Yes
Recipe administration					
• Number of recipes	300	300	300	300	300
• Data records per recipe	500	500	500	500	500
• Entries per data record	1 000	1 000	1 000	1 000	1 000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Variables					
• Number of variables per device	2 048	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes
Images					
• Number of configurable images	500	500	500	500	500
Image objects					
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
Complex image objects					
• Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons

Technical specifications (continued)

Article number	6AV6645-0DD01-0AX1	6AV6645-0DE01-0AX1	6AV6645-0EB01-0AX1	6AV6645-0EC01-0AX1	6AV6645-0EF01-0AX1
	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277 IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2	MOBILE PANEL 277F IWLAN V2 (RFID TAG)
Lists					
• Number of text lists per project	500	500	500	500	500
• Number of graphics lists per project	400	400	400	400	400
Archiving					
• Number of archives per device	20	20	20	20	20
• Number of measuring points per project	20	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000	10 000
Security					
• Number of user groups	50	50	50	50	50
• Number of user rights	32	32	32	32	32
• Password export/import	Yes	Yes	Yes	Yes	Yes
Logging through printer					
• Recording/Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET
Transfer (upload/download)					
• Transfer of configuration	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition
• Wireless LAN	Yes	Yes	Yes	Yes	Yes
Process coupling					
• Connection to controller	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"
• S7-1200	Yes	Yes	No	No	No
• S7-1500	Yes	Yes	No; Available soon	No; Available soon	No; Available soon
• Zones	Yes	Yes	Yes	Yes	
- Number of zones per project, max.	254	254	254	254	
- Number of transponders for zones per project, max.	255	255	255	255	
• Effective range			Yes	Yes	Yes
- Number of effective ranges per project, max.			127	127	127
- Number of transponders for effective ranges per project, max.			127	127	
• Transponder	Yes	Yes	Yes	Yes	
- Number of transponders per project, max.	256	256	256	256	
- adjustable distance range	Yes	Yes	Yes	Yes	
- adjustable distance, min.	2 m	2 m	2 m	2 m	
- adjustable distance, max.	8 m	8 m	8 m	8 m	
Peripherals/Options					
Peripherals	Barcode reader	Barcode reader	Barcode reader	Barcode reader	Barcode reader
• MultiMediaCard	Yes	Yes	Yes	Yes	Yes
Mechanics/material					
Type of housing (front)	plastic	plastic	plastic	plastic	plastic
Dimensions					
Housing diameter/depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm
Weights					
Weight (without packaging)	2.2 kg	2.2 kg	2.2 kg	2.2 kg	2.2 kg

Operator panels
Mobile Panels – x77 series

Technical specifications (continued)

Article number	6AV6645-0FD01-0AX1	6AV6645-0FE01-0AX1	6AV6645-0GB01-0AX1	6AV6645-0GC01-0AX1	6AV6645-0GF01-0AX1
	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN (RFID-TAG/USA)
Product type designation					
Display					
Design of display	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7.5 in	7.5 in	7.5 in	7.5 in	7.5 in
Resolution (pixels)					
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting					
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h
Control elements					
Control elements	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Keyboard					
• Function keys	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
- Number of function keys	18	18	18	18	18
Touch operation					
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive
Connection type					
• Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Special operator controls					
• Stop button	No	No			
• Emergency stop button (forced blocking)			Yes	Yes	Yes
• Acknowledgement button	No	No	Yes	Yes	Yes
• Key-operated switch	No	Yes	No	Yes	Yes
• Illuminated pushbutton	No	Yes	No	Yes	Yes
• Handwheel	No	Yes	No	Yes	Yes
Supply voltage					
Description	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply	Via charging station or table power supply
Type of supply voltage	DC	DC	DC	DC	DC
Processor					
Processor type	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Memory					
Type of memory	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
usable memory for user data	6 Mbyte	6 Mbyte	6 Mbyte	6 Mbyte	6 Mbyte
Battery					
Main battery					
• Rated voltage	7.2 V	7.2 V	7.2 V	7.2 V	7.2 V
• Capacity	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h
• Number of loading cycles, min	500	500	500	500	500
• Charging time, typ.	4 h	4 h	4 h	4 h	4 h
• Operating time, typ.	4 h	4 h	4 h	4 h	4 h
• Display for battery capacity	Yes	Yes	Yes	Yes	Yes
• Energy-saving mode	Yes	Yes	Yes	Yes	Yes
• Battery replacement during operation	Yes	Yes	Yes	Yes	Yes
Type of output					
Status LEDs	Yes	Yes	Yes	Yes	Yes
LED for safe			Yes	Yes	Yes
LED for communication	Yes	Yes	Yes	Yes	Yes
LED for battery	Yes	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes	Yes

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Technical specifications (continued)

Article number	6AV6645-0FD01-0AX1	6AV6645-0FE01-0AX1	6AV6645-0GB01-0AX1	6AV6645-0GC01-0AX1	6AV6645-0GF01-0AX1
	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN (RFID-TAG/USA)
Time of day					
Clock					
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
• Hardware clock (real-time clock)	Yes	Yes	Yes	Yes	Yes
• battery-backed	Yes	Yes	Yes	Yes	Yes; Via bypass battery
• synchronizable	Yes	Yes	Yes	Yes	Yes
Interfaces					
Interfaces/bus type	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Number of USB interfaces	1	1	1	1	1
USB port	1 x USB	1 x USB	1 x USB	1 x USB	1 x USB
Multimedia Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot
Industrial Ethernet					
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
WLAN					
• Wireless LAN	Yes	Yes	Yes	Yes	Yes
• Supports rapid roaming	Yes	Yes	Yes	Yes	Yes
Protocols					
PROFINET	Yes	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes	Yes
PROFIsafe	No	No	Yes	Yes	Yes
EMC					
Emission of radio interference acc. to EN 55 011					
• Limit class A, for use in industrial areas	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation				
Degree and class of protection					
Enclosure according to EN 60529	IP65	IP65	IP65	IP65	IP65
Standards, approvals, certificates					
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
CE mark	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes
TÜV safety certification			Yes	Yes	Yes
Highest safety class achievable in safety mode					
• Performance level according to EN ISO 13849-1:2008			e	e	e
• SIL acc. to IEC 61508			SIL 3	SIL 3	SIL 3
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.	40 °C	40 °C	40 °C	40 °C	40 °C
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.	80 %	80 %	80 %	80 %	80 %
Operating systems					
Operating system	Windows CE	Windows CE	Windows CE	Windows CE	Windows CE
Languages					
Online languages					
• Number of online/runtime languages	16	16	16	16	16

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277(F) IWLAN

◼ Technical specifications (continued)

Article number	6AV6645-0FD01-0AX1	6AV6645-0FE01-0AX1	6AV6645-0GB01-0AX1	6AV6645-0GC01-0AX1	6AV6645-0GF01-0AX1
	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN (RFID-TAG/USA)
Functionality under WinCC (TIA Portal)					
Libraries	Yes	Yes	Yes	Yes	Yes
Task planner	Yes	Yes	Yes	Yes	Yes
Message system					
• Number of messages	4 000	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes	Yes
Recipe administration					
• Number of recipes	300	300	300	300	300
• Data records per recipe	500	500	500	500	500
• Entries per data record	1 000	1 000	1 000	1 000	1 000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Variables					
• Number of variables per device	2 048	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes
Images					
• Number of configurable images	500	500	500	500	500
Image objects					
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
Complex image objects					
• Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists					
• Number of text lists per project	500	500	500	500	500
• Number of graphics lists per project	400	400	400	400	400
Archiving					
• Number of archives per device	20	20	20	20	20
• Number of measuring points per project	20	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000	10 000
Security					
• Number of user groups	50	50	50	50	50
• Number of user rights	32	32	32	32	32
• Password export/import	Yes	Yes	Yes	Yes	Yes
Logging through printer					
• Recording/Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET
Transfer (upload/download)					
• Transfer of configuration	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition
• Wireless LAN	Yes	Yes	Yes	Yes	Yes

◼ Technical specifications (continued)

Article number	6AV6645-0FD01-0AX1	6AV6645-0FE01-0AX1	6AV6645-0GB01-0AX1	6AV6645-0GC01-0AX1	6AV6645-0GF01-0AX1
	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277 IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN V2 (USA VERSION)	MOBILE PANEL 277F IWLAN (RFID-TAG/USA)
Process coupling					
• Connection to controller	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"	S7-200, S7- 300/400 see section on "System interfaces"
• S7-1200	Yes	Yes	No	No	No
• S7-1500	Yes	Yes	No; Available soon	No; Available soon	No; Available soon
• Zones	Yes	Yes	Yes	Yes	
- Number of zones per project, max.	254	254	254	254	
- Number of transponders for zones per project, max.	255	255	255	255	
• Effective range			Yes	Yes	Yes
- Number of effective ranges per project, max.			127	127	127
- Number of transponders for effective ranges per project, max.			127	127	
• Transponder	Yes	Yes	Yes	Yes	
- Number of transponders per project, max.	256	256	256	256	
- adjustable distance range	Yes	Yes	Yes	Yes	
- adjustable distance, min.	2 m	2 m	2 m	2 m	
- adjustable distance, max.	8 m	8 m	8 m	8 m	
Peripherals/Options					
Peripherals	Barcode reader	Barcode reader	Barcode reader	Barcode reader	Barcode reader
• MultiMediaCard	Yes	Yes	Yes	Yes	Yes
Mechanics/material					
Type of housing (front)	plastic	plastic	plastic	plastic	plastic
Dimensions					
Housing diameter/depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm
Weights					
Weight (without packaging)	2.2 kg	2.2 kg	2.2 kg	2.2 kg	2.2 kg

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277(F) IWLAN

Ordering data

Ordering data	Article No.
SIMATIC Mobile Panel 277 IWLAN V2 (RoW version [1])	
• Communication via WLAN (PROFINET)	**6AV6645-0DD01-0AX1**
• Communication via WLAN (PROFINET); with integrated handwheel, key-operated switch and two illuminated pushbuttons	**6AV6645-0DE01-0AX1**
SIMATIC Mobile Panel 277F IWLAN V2 PROFIsafe (RoW version [1])	
• Communication via WLAN (PROFINET); with acknowledgement button and emergency stop button	**6AV6645-0EB01-0AX1**
• Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	**6AV6645-0EC01-0AX1**
• RFID tag version: Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	**6AV6645-0EF01-0AX1**
SIMATIC Mobile Panel 277 IWLAN V2 (USA version)	
• Communication via WLAN (PROFINET)	**6AV6645-0FD01-0AX1**
• Communication via WLAN (PROFINET); with integrated handwheel, key-operated switch and two illuminated pushbuttons	**6AV6645-0FE01-0AX1**
SIMATIC Mobile Panel 277F IWLAN V2 PROFIsafe (USA version)	
• with acknowledgement button and emergency stop button	**6AV6645-0GB01-0AX1**
• with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	**6AV6645-0GC01-0AX1**
• with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons (tag version)	**6AV6645-0GF01-0AX1**
Starter kit SIMATIC Mobile Panel 277(F) IWLAN (RoW version [1]) for	
• Mobile Panel 277 IWLAN V2	**6AV6651-5GA01-0AA1**
• Mobile Panel 277F IWLAN V2	**6AV6651-5HA01-0AA1**
Accessories Note: Please order the table-top power supply or charging station as well. Required for charging the battery.	See SIMATIC HMI accessories, chapter 7
Documentation (to be ordered separately) You can find the manuals for the Mobile Panels on the Internet at:	http://support.automation.siemens.com/WW/view/en/11599011/133300
SIMATIC Manual Collection on DVD, 5 languages (German, English, French, Italian, Spanish); all manuals for S7-1200/200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP7, Engineering SW, RT SW,PCS7, SIMATIC HMI, SIMATIC NET, SIMATIC IDENT	**6ES7998-8XC01-8YE0**

[1] RoW version: "Rest of World" version: Version for worldwide sales except in the U.S.

Note:

The Function Manuals "Fail-Safe Operation of the Mobile Panel 277F IWLAN V1" are available for downloading in English, German, and Japanese.

http://support.automation.siemens.com/WW/view/en/31255853

Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.
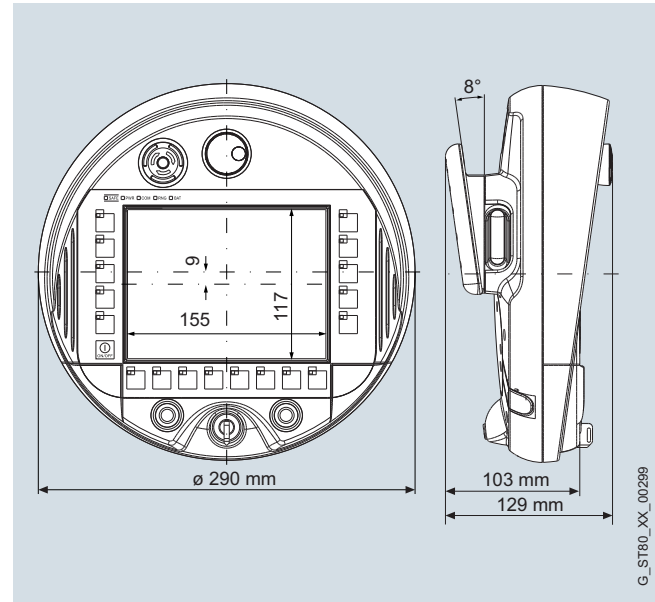
Mobile Panel 277(F) IWLAN, front and side view

More information

Additional information is available in the Internet under:

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

Note:

Do you need a specific modification or addition to the products described here? Then take a look under "Customer-specific products". There, you will find information on ordering additional and standard industry products as well as possibilities for customer-specific modifications and adjustments.

Overview

SIMATIC Mobile Panel 277 8"

SIMATIC Mobile Panel 277 10"

Technical specifications

Article number	6AV6645-0CA01-0AX0	6AV6645-0CB01-0AX0	6AV6645-0CC01-0AX0	6AV6645-0BE02-0AX0
	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277 10"
Product type designation				
Display				
Design of display	TFT	TFT	TFT	TFT
Screen diagonal	7.5 in	7.5 in	7.5 in	10.4 in
Resolution (pixels)				
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	800 x 600
Backlighting				
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h
Control elements				
Control elements	Keys and Touch	Keys and Touch	Keys and Touch	Touch
Keyboard				
• Function keys	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	none
- Number of function keys	18	18	18	0
Touch operation				
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive
Connection type				
• Connection for mouse/keyboard/ barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Special operator controls				
• Stop button	No	Yes	Yes	Yes
• Acknowledgement button	Yes	Yes	Yes	Yes
• Key-operated switch	No	No	Yes	No
• Illuminated pushbutton	No	No	Yes; Two illuminated pushbuttons	No
• Handwheel	No	No	Yes	No
Supply voltage				
Description	via connection box	via connection box	via connection box	via connection box
Type of supply voltage	DC	DC	DC	DC
Processor				
Processor type	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520
Memory				
Type of memory	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
usable memory for user data	6 Mbyte	6 Mbyte	6 Mbyte	6 Mbyte

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277

■ **Technical specifications** (continued)

Article number	**6AV6645-0CA01-0AX0**	**6AV6645-0CB01-0AX0**	**6AV6645-0CC01-0AX0**	**6AV6645-0BE02-0AX0**
	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277 10"
Backup battery				
• Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
- Charging duration				5 h
- Number of loading cycles, min				500
Time of day				
Clock				
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
• Hardware clock (real-time clock)	Yes	Yes	Yes	Yes
• Software clock	No	No		No
• battery-backed	Yes	Yes	Yes	Yes
• synchronizable	Yes	Yes	Yes	Yes
Interfaces				
Interfaces/bus type	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)
Number of USB interfaces	1	1	1	1
USB port	1 x USB	1 x USB	1 x USB	1 x USB
Multimedia card/SD card slot				combined
Multimedia Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	
Industrial Ethernet				
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Protocols				
PROFINET	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes
PROFIsafe	No	No	No	No
Degree and class of protection				
Enclosure according to EN 60529	IP65	IP65	IP65	IP65
Standards, approvals, certificates				
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
CE mark	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
Highest safety class achievable in safety mode				
• Performance level according to EN ISO 13849-1:2008	d	d	d	d
Ambient conditions				
Free fall				
• Fall height, max.	1.2 m	1.2 m	1.2 m	1 m
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	40 °C	40 °C	40 °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.	80 %	80 %	80 %	80 %
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Languages				
Online languages				
• Number of online/runtime languages	16	16	16	16

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■ Technical specifications (continued)

Article number	6AV6645-0CA01-0AX0	6AV6645-0CB01-0AX0	6AV6645-0CC01-0AX0	6AV6645-0BE02-0AX0
	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277 10"
Functionality under WinCC (TIA Portal)				
Libraries	Yes	Yes	Yes	Yes
Task planner	Yes	Yes	Yes	Yes
Message system				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
Recipe administration				
• Number of recipes	300	300	300	300
• Data records per recipe	500	500	500	500
• Entries per data record	1 000	1 000	1 000	1 000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Variables				
• Number of variables per device	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Images				
• Number of configurable images	500	500	500	500
Image objects				
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
Complex image objects				
• Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists				
• Number of text lists per project	500	500	500	500
• Number of graphics lists per project	400	400	400	400
Archiving				
• Number of archives per device	20	20	20	20
• Number of measuring points per project	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000
Security				
• Number of user groups	50	50	50	50
• Number of user rights	32	32	32	32
• Password export/import	Yes	Yes	Yes	Yes
Logging through printer				
• Recording/Printing	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy, PROFINET
Transfer (upload/download)				
• Transfer of configuration	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition
Process coupling				
• Connection to controller	S5, S7-200, S7-300/400, TI 505, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"	S5, S7-200, S7- 300/400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"	S5, S7-200, S7- 300/400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"	S5, S7-200, S7- 300/400, TI 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 277

Technical specifications (continued)

Article number	6AV6645-0CA01-0AX0	6AV6645-0CB01-0AX0	6AV6645-0CC01-0AX0	6AV6645-0BE02-0AX0
	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277	MOBILE PANEL 277 10"
Peripherals/Options				
Peripherals	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
• MultiMediaCard	Yes	Yes	Yes	Yes
Mechanics/material				
Type of housing (front)	plastic	plastic	plastic	plastic
Dimensions				
Housing diameter/depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	
Weights				
Weight (without packaging)	1.7 kg	1.7 kg	1.7 kg	2.3 kg

Ordering data

	Article No.
SIMATIC Mobile Panel 277 8" [1]	
• With integrated acknowledgement button	**6AV6645-0CA01-0AX0**
• With integrated acknowledgement button and STOP button	**6AV6645-0CB01-0AX0**
• With integrated acknowledgement button, STOP button, handwheel, key-operated switch and two illuminated pushbuttons	**6AV6645-0CC01-0AX0**
SIMATIC Mobile Panel 277 10"	
• With integrated acknowledgement button and STOP button	**6AV6645-0BE02-0AX0**
Documentation (to be ordered separately)	You can find the manuals for the Mobile Panels on the Internet at: http://support.automation.siemens.com//WW/view/en/11599011/133300

	Article No.
SIMATIC Manual Collection on DVD, 5 languages (German, English, French, Italian, Spanish); all manuals for S7-1200/200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP7, Engineering SW, RT SW,PCS7, SIMATIC HMI, SIMATIC NET, SIMATIC IDENT	**6ES7998-8XC01-8YE0**
System components	See System components for Mobile Panels
Connecting cable and accessories for Mobile Panels	See SIMATIC HMI accessories, chapter 7

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

■ **Dimensional drawings**

All dimensions in mm. For installation cutout, see technical specifications.
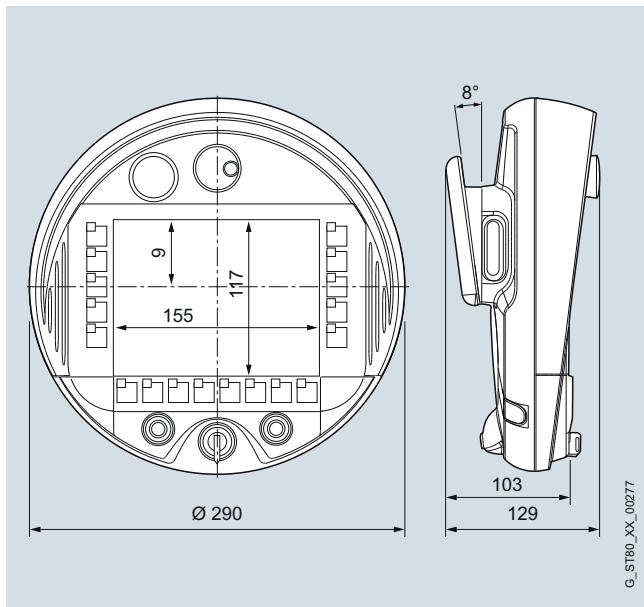
Mobile Panel 277 8", front and side view
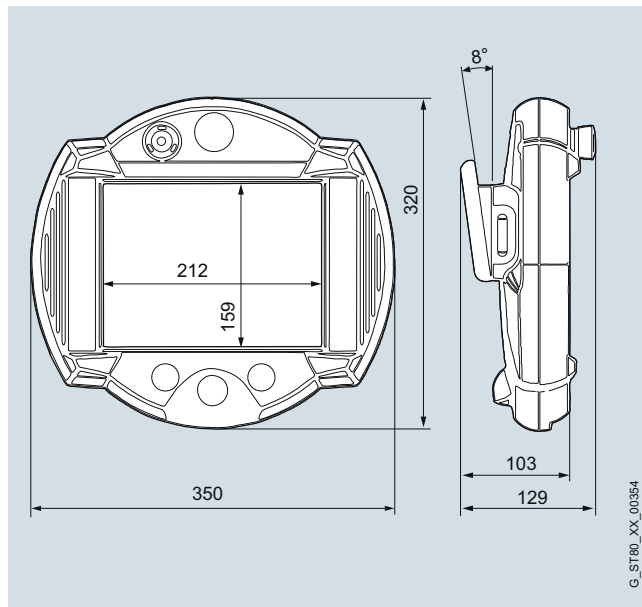
Mobile Panel 277 10", front and side view

■ **More information**

Additional information is available in the Internet under:

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

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 additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 177

Overview

SIMATIC Mobile Panel 177

Technical specifications

Article number	6AV6645-0BA01-0AX0	6AV6645-0BB01-0AX0	6AV6645-0BC01-0AX0
	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN
Product type designation			
Display			
Design of display	STN	STN	STN
Screen diagonal	5.7 in	5.7 in	5.7 in
Resolution (pixels)			
• Resolution (WxH in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
Control elements			
Control elements	Keys and Touch	Keys and Touch	Keys and Touch
Keyboard			
• Function keys	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
- Number of function keys	14	14	14
Touch operation			
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive
Special operator controls			
• Stop button	No	Yes	Yes
• Acknowledgement button	Yes	Yes	Yes
• Key-operated switch	No	No	Yes
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Supply voltage			
Description	via connection box	via connection box	via connection box
Type of supply voltage	DC	DC	DC
Processor			
Processor type	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Memory			
Type of memory	Flash / RAM	Flash / RAM	Flash / RAM
usable memory for user data	2 048 kbyte	2 048 kbyte	2 048 kbyte
Backup battery			
• Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min

■ **Technical specifications** (continued)

Article number	6AV6645-0BA01-0AX0	6AV6645-0BB01-0AX0	6AV6645-0BC01-0AX0
	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN
Interfaces			
Interfaces/bus type	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)
Number of USB interfaces	0	0	0
USB port	No	No	No
PC card slot	No	No	No
CF card slot	No	No	No
Multimedia card/SD card slot	combined	combined	combined
Industrial Ethernet			
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Protocols			
PROFINET	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes
PROFIsafe	No	No	No
Degree and class of protection			
Enclosure according to EN 60529	IP65	IP65	IP65
Standards, approvals, certificates			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
Highest safety class achievable in safety mode			
• Performance level according to EN ISO 13849-1:2008	d	d	d
Ambient conditions			
Free fall			
• Fall height, max.	1.5 m	1.5 m	1.5 m
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	40 °C	40 °C	40 °C
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	60 °C	60 °C	60 °C
Relative humidity			
• Operation, max.	80 %	80 %	80 %
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Languages			
Online languages			
• Number of online/runtime languages	5	5	5
Functionality under WinCC (TIA Portal)			
Libraries	Yes	Yes	Yes
Task planner	Yes	Yes	Yes
Message system			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
Recipe administration			
• Number of recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable

Operator panels
Mobile Panels – x77 series

■ Technical specifications (continued)

Article number	6AV6645-0BA01-0AX0	6AV6645-0BB01-0AX0	6AV6645-0BC01-0AX0
	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN	MOBILE PANEL 177 PN
Variables			
• Number of variables per device	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Images			
• Number of configurable images	500	500	500
Image objects			
• Text objects	2,500 text elements	2,500 text elements	2,500 text elements
• Graphics object	Bit maps, vector graphics	Bit maps, vector graphics	Bit maps, vector graphics
Complex image objects			
• Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons
Lists			
• Number of text lists per project	300	300	300
• Number of graphics lists per project	100	100	100
Archiving			
• Number of archives per device	0	0	0
Security			
• Number of user groups	50	50	50
• Number of user rights	32	32	32
• Password export/import	Yes	Yes	Yes
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
Transfer (upload/download)			
• Transfer of configuration	Serial, Ethernet, automatic transfer recognition	Serial, Ethernet, automatic transfer recognition	Serial, Ethernet, automatic transfer recognition
Process coupling			
• Connection to controller	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"
• S7-1200	Yes; with restrictions	Yes; with restrictions	Yes; with restrictions
• S7-1500	Yes; with restrictions	Yes; with restrictions	Yes; with restrictions
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Peripherals/Options			
Peripherals	Printer	Printer	Printer
• MultiMediaCard	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)	plastic	plastic	plastic
Dimensions			
Housing diameter/depth (mm)	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm
Weights			
Weight (without packaging)	1.3 kg	1.3 kg	1.3 kg

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▪ Technical specifications (continued)

Article number	6AV6645-0AA01-0AX0	6AV6645-0AB01-0AX0	6AV6645-0AC01-0AX0
	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP
Product type designation			
Display			
Design of display	STN	STN	STN
Screen diagonal	5.7 in	5.7 in	5.7 in
Resolution (pixels)			
• Resolution (WxH in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
Control elements			
Control elements	Keys and Touch	Keys and Touch	Keys and Touch
Keyboard			
• Function keys	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
- Number of function keys	14	14	14
Touch operation			
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive	Yes; analog, resistive
Special operator controls			
• Stop button	No	Yes	Yes
• Acknowledgement button	Yes	Yes	Yes
• Key-operated switch	No	No	Yes
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Supply voltage			
Description	via connection box	via connection box	via connection box
Type of supply voltage	DC	DC	DC
Processor			
Processor type	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Memory			
Type of memory	Flash / RAM	Flash / RAM	Flash / RAM
usable memory for user data	2 048 kbyte	2 048 kbyte	2 048 kbyte
Backup battery			
• Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Interfaces			
Interfaces/bus type	1 x RS422,1 x RS485 (max. 12 Mbit/s)	1 x RS422,1 x RS485 (max. 12 Mbit/s)	1 x RS422,1 x RS485 (max. 12 Mbit/s)
Number of USB interfaces	0	0	0
USB port	No	No	No
PC card slot	No	No	No
CF card slot	No	No	No
Multimedia card/SD card slot	combined	combined	combined
Industrial Ethernet			
• Industrial Ethernet interface	No	No	No
Protocols			
PROFINET	No	No	No
PROFINET IO	No	No	No
PROFIsafe	No	No	No
Degree and class of protection			
Enclosure according to EN 60529	IP65	IP65	IP65
Standards, approvals, certificates			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
Highest safety class achievable in safety mode			
• Performance level according to EN ISO 13849-1:2008	d	d	d

Operator panels
Mobile Panels – x77 series

SIMATIC Mobile Panel 177

Technical specifications (continued)

Article number	6AV6645-0AA01-0AX0	6AV6645-0AB01-0AX0	6AV6645-0AC01-0AX0
	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP
Ambient conditions			
Free fall			
• Fall height, max.	1.5 m	1.5 m	1.5 m
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	40 °C	40 °C	40 °C
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	60 °C	60 °C	60 °C
Relative humidity			
• Operation, max.	80 %	80 %	80 %
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Languages			
Online languages			
• Number of online/runtime languages	5	5	5
Functionality under WinCC (TIA Portal)			
Libraries	Yes	Yes	Yes
Task planner	Yes	Yes	Yes
Message system			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
Recipe administration			
• Number of recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Variables			
• Number of variables per device	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Images			
• Number of configurable images	500	500	500
Image objects			
• Text objects	2,500 text elements	2,500 text elements	2,500 text elements
• Graphics object	Bit maps, vector graphics	Bit maps, vector graphics	Bit maps, vector graphics
Complex image objects			
• Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons
Lists			
• Number of text lists per project	300	300	300
• Number of graphics lists per project	100	100	100
Archiving			
• Number of archives per device	0	0	0
Security			
• Number of user groups	50	50	50
• Number of user rights	32	32	32
• Password export/import	Yes	Yes	Yes
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
Transfer (upload/download)			
• Transfer of configuration	MPI/PROFIBUS DP, serial, automatic transfer recognition	MPI/PROFIBUS DP, serial, automatic transfer recognition	MPI/PROFIBUS DP, serial, automatic transfer recognition

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Technical specifications (continued)

Article number	**6AV6645-0AA01-0AX0**	**6AV6645-0AB01-0AX0**	**6AV6645-0AC01-0AX0**
	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP	MOBILE PANEL 177 DP
Process coupling			
• Connection to controller	S5, S7-200, S7- 300/400, TI 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus),further non-Siemens drivers, see chapter "System interfaces"	S5, S7-200, S7- 300/400, TI 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"	S5, S7-200, S7- 300/400, TI 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"
• S7-1200	Yes; with restrictions	Yes; with restrictions	Yes; with restrictions
• S7-1500	Yes; with restrictions	Yes; with restrictions	Yes; with restrictions
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Peripherals/Options			
Peripherals			
• MultiMediaCard	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)	plastic	plastic	plastic
Dimensions			
Housing diameter/depth (mm)	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm
Weights			
Weight (without packaging)	1.3 kg	1.3 kg	1.3 kg

Ordering data

	Article No.		Article No.
SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS) [1]		**SIMATIC Manual Collection** on DVD, 5 languages (German, English, French, Italian, Spanish); all manuals for S7-1200/200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP7, Engineering SW, RT SW,PCS7, SIMATIC HMI, SIMATIC NET, SIMATIC IDENT	**6ES7998-8XC01-8YE0**
• With integrated acknowledgement button	**6AV6645-0AA01-0AX0**		
• With integrated acknowledgement button and STOP button	**6AV6645-0AB01-0AX0**		
• With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton	**6AV6645-0AC01-0AX0**	**System components**	See System components for Mobile Panels
SIMATIC Mobile Panel 177 PN (PROFINET) [1]		**Connecting cable and accessories for Mobile Panels**	See SIMATIC HMI accessories, chapter 7
• With integrated acknowledgement button	**6AV6645-0BA01-0AX0**		
• With integrated acknowledgement button and STOP button	**6AV6645-0BB01-0AX0**		
• With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton	**6AV6645-0BC01-0AX0**		
Documentation (to be ordered separately)			
You can find the manuals for the Mobile Panels on the Internet at:	http://support.automation.siemens.com/WW/view/en/11599011/133300		

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

[2] Delivery time approximately 6 weeks

Operator panels

Mobile Panels – x77 series

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.
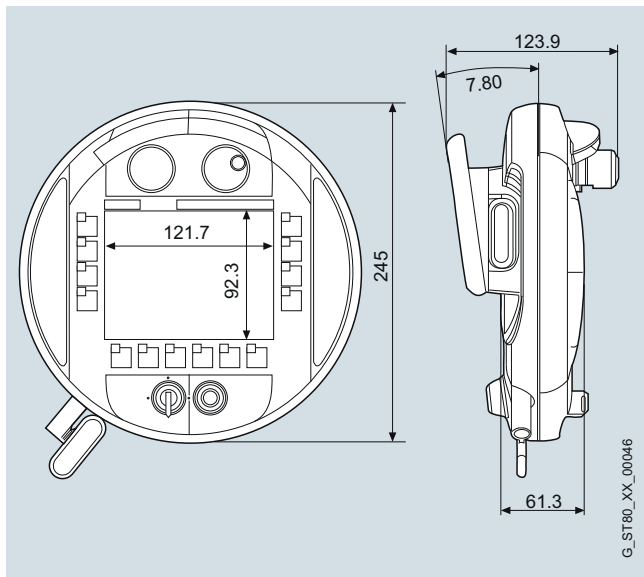
Mobile Panel 177, front and side view

■ More information

Additional information is available in the Internet under:

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

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 additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

■ **Overview**

Connection box, compact, front view
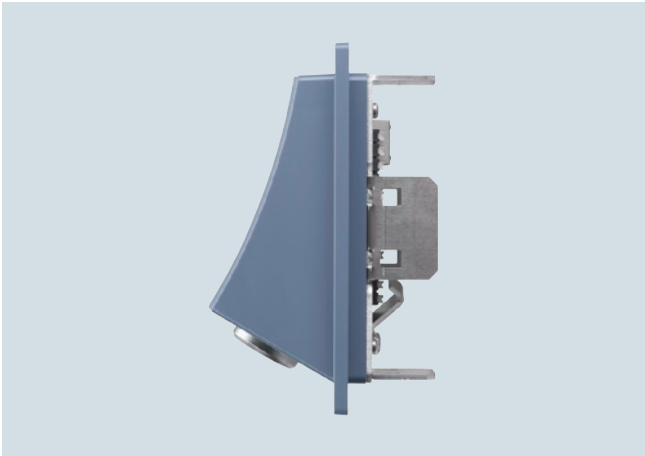
Connection box, compact, side view

■ **Ordering data** | **Article No.**

Connection boxes for 2nd generation SIMATIC Mobile Panels	
• 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 SIMATIC HMI accessories, chapter 7

■ **More information**

Additional information is available on the Internet at:

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

Operator panels

System components for Mobile Panels

Connection boxes for Mobile Panels x77 series

■ **Overview**

System components for SIMATIC Mobile Panels are perfectly matched to the SIMATIC Mobile Panels. Charging stations, transponders, and diverse connection boxes are available for various applications.

Accessories for SIMATIC Mobile Panels can be found under "SIMATIC HMI accessories".

Only the latest SIMATIC HMI accessories are listed in this section; the full range of SIMATIC HMI accessories is available in the Mall and in our other online media.

Overview

You can find Order Nos. for the junction boxes under Ordering data.

Technical specifications

Article number	6AV6671-5AE00-0AX0	6AV6671-5AE10-0AX0	6AV6671-5AE01-0AX0	6AV6671-5AE11-0AX0
	CONNECT. BOX DP BASIC FOR MOBILE PANEL	CONNECT. BOX DP PLUS FOR MOBILE PANEL	CONNECT. BOX PN BASIC FOR MOBILE PANEL	CONNECT. BOX PN PLUS FOR MOBILE PANEL
Product type designation				
Control elements				
Expansions for operator control of the process				
• Hot swapping	with emergency stop circuit interruption	without emergency stop circuit interruption	with emergency stop circuit interruption	without emergency stop circuit interruption
• Monitoring the STOP button	No	Yes	No	Yes
• Location identifier	Yes	Yes	Yes	Yes
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
Input current				
Current consumption (rated value)	0.4 A	0.5 A	0.4 A	0.5 A
Power				
Power consumption, typ.	10 W	12 W	10 W	12 W
Interfaces				
Interfaces/bus type	1 x RS232, 1 x RS422, 1 x RS485 (max. 12 Mbit/s)	1 x RS232, 1 x RS422, 1 x RS485 (max. 12 Mbit/s)	2 x Ethernet (RJ45)	2 x Ethernet (RJ45)
Number of 20 mA interfaces (TTY)	0	0		
Number of RS 232 interfaces	1	1		
Number of RS 422 interfaces	1	1		
Industrial Ethernet				
• Industrial Ethernet interface			2 x Ethernet (RJ45)	2 x Ethernet (RJ45)
• Industrial Ethernet status LED			6	6
Degree and class of protection				
Enclosure according to EN 60529	IP65	IP65	IP65	IP65

Operator panels

System components for Mobile Panels

Connection boxes for Mobile Panels x77 series

▪ Technical specifications (continued)

Article number	**6AV6671-5AE00-0AX0** CONNECT. BOX DP BASIC FOR MOBILE PANEL	**6AV6671-5AE10-0AX0** CONNECT. BOX DP PLUS FOR MOBILE PANEL	**6AV6671-5AE01-0AX0** CONNECT. BOX PN BASIC FOR MOBILE PANEL	**6AV6671-5AE11-0AX0** CONNECT. BOX PN PLUS FOR MOBILE PANEL
Standards, approvals, certificates				
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
CE mark	Yes	Yes	Yes	Yes
CSA approval	No	No	No	No
UL approval	No	No	No	No
cULus	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	No	No	No	No
Marine approval				
• Germanischer Lloyd (GL)	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No
Use in hazardous areas				
• EX zone 2	No	No	No	No
• EX zone 22	No	No	No	No
• FM Class I Division 2	No	No	No	No
Ambient conditions				
Ambient temperature during operation				
• Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C	0 to +50 °C
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C
Ambient temperature during storage/transportation				
• min.	-20 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C	70 °C
Relative humidity				
• Operation, max.	85 %	85 %	85 %	85 %
Functionality under WinCC (TIA Portal)				
Applications/options				
• Connection point identification	Yes	Yes	Yes	Yes
Dimensions				
Width	160 mm	160 mm	230 mm	230 mm
Height	120 mm	120 mm	120 mm	120 mm
Depth	70 mm	70 mm	80 mm	80 mm
Weights				
Weight (without packaging)	0.35 kg	0.4 kg	0.45 kg	0.5 kg
Other				
free hotline	Yes	Yes	Yes	Yes
Warranty period	1 y	1 y	1 y	1 y
Usable in the following products				
• Product 1	6AV6645-0A*	6AV6645-0A*	6AV6645-0BA01-0AX0	6AV6645-0BA01-0AX0
• Product 2	6AV6645-0C*	6AV6645-0C*	6AV6645-0BB01-0AX0	6AV6645-0BB01-0AX0
• Product 3	6AV6645-0BE02-0AX0	6AV6645-0BE02-0AX0	6AV6645-0BC01-0AX0	6AV6645-0BC01-0AX0
• Product 4			6AV6645-0BE02-0AX0	6AV6645-0BE02-0AX0
• Product 5			6AV6645-0C*	6AV6645-0C*

2

■ Ordering data	Article No.
DP connection box for SIMATIC Mobile Panels 177/277 (MPI/PROFIBUS)	
• Basic	**6AV6671-5AE00-0AX0**
• Plus	**6AV6671-5AE10-0AX0**
PN connection box for SIMATIC Mobile Panels 177/277 (PROFINET)	
• Basic	**6AV6671-5AE01-0AX0**
• Plus	**6AV6671-5AE11-0AX0**
RFID cards	
RFID cards for SIMATIC Mobile Panels 277 IWLAN	**6GT2600-0AD11**
Pack of 10	

■ **Dimensional drawings**

All dimensions in mm. For installation cutout, see technical specifications.
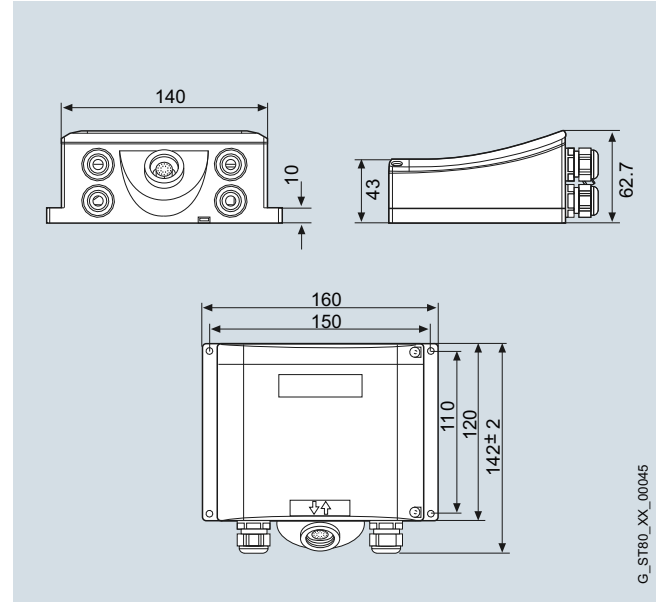
DP connection box for SIMATIC Mobile Panel
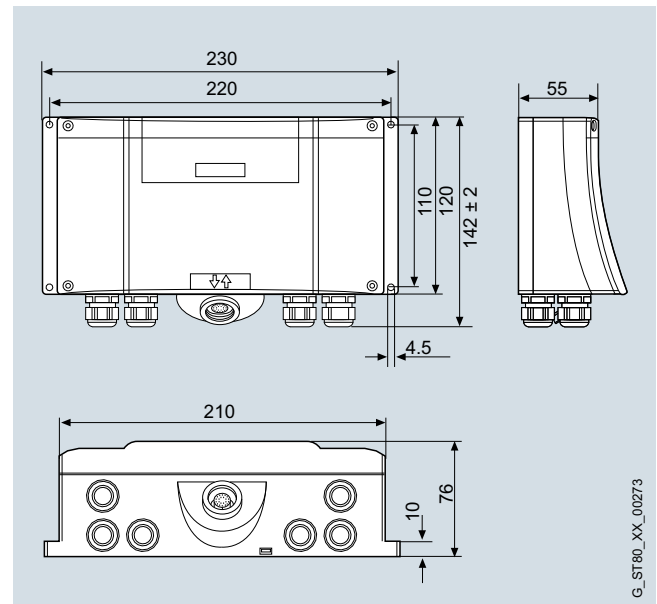
PN connection box for SIMATIC Mobile Panel

Operator panels
System components for Mobile Panels

SIPLUS connection boxes

Overview

Note:

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

Technical specifications

Article number	**6AG1671-5AE10-4AX0**
	SIPLUS_ANSCHLUSSBOX_MP170
Ambient conditions	
Ambient temperature during operation	
• Operation (vertical installation)	0 to +50 °C
- For vertical installation, min.	0 °C; = Tmin
- For vertical installation, max.	50 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	70 °C
Extended ambient conditions	
• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
- With condensation, tested in accordance with IEC 60068-2-38, max.	100 %
Resistance	
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

Ordering data | Article No.

SIPLUS connection box DP Plus for Mobile Panels 177/277 (MPI/PROFIBUS)	**6AG1671-5AE10-4AX0**

■ Overview

Article number	**6AV6671-5CE00-0AX1**
	CHARGING STATION MOBILE PANEL277(F) IWLAN V2
Other	
Usable in the following products	
• Product 1	6AV6645-0EB01-0AX1
• Product 2	6AV6645-0EC01-0AX1
• Product 3	6AV6645-0EF01-0AX1
• Product 4	6AV6645-0GB01-0AX1
• Product 5	6AV6645-0GC01-0AX1
• Product 6	6AV6645-0GF01-0AX1
• Product 7	6AV6645-0DD01-0AX1
• Product 8	6AV6645-0DE01-0AX1
• Product 9	6AV6645-0FD01-0AX1
• Product 10	6AV6645-0FE01-0AX1
• Product 11	6AV6645-0DB01-0AX0
• Product 12	6AV6645-0DC01-0AX0
• Product 13	6AV6645-0DD01-0AX0
• Product 14	6AV6645-0DE01-0AX0

■ Technical specifications

Article number	**6AV6671-5CE00-0AX1**
	CHARGING STATION MOBILE PANEL277(F) IWLAN V2
Product type designation	
Supply voltage	
Type of supply voltage	24 V DC
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	3.2 A
Power	
Power consumption, typ.	77 W
Degree and class of protection	
Enclosure according to EN 60529	IP65
Standards, approvals, certificates	
Certifications	CE, cULus, C-TICK
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
Ambient conditions	
Ambient temperature during operation	
• Operation (vertical installation)	0 to +40 °C
- For vertical installation, min.	0 °C
- For vertical installation, max.	40 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	85 %
Dimensions	
Width	208 mm
Height	333 mm
Depth	75 mm
Weights	
Weight (without packaging)	1.1 kg

■ Ordering data

	Article No.
Charging station for SIMATIC Mobile Panels	**6AV6671-5CE00-0AX1**

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.

G_ST80_XX_00297
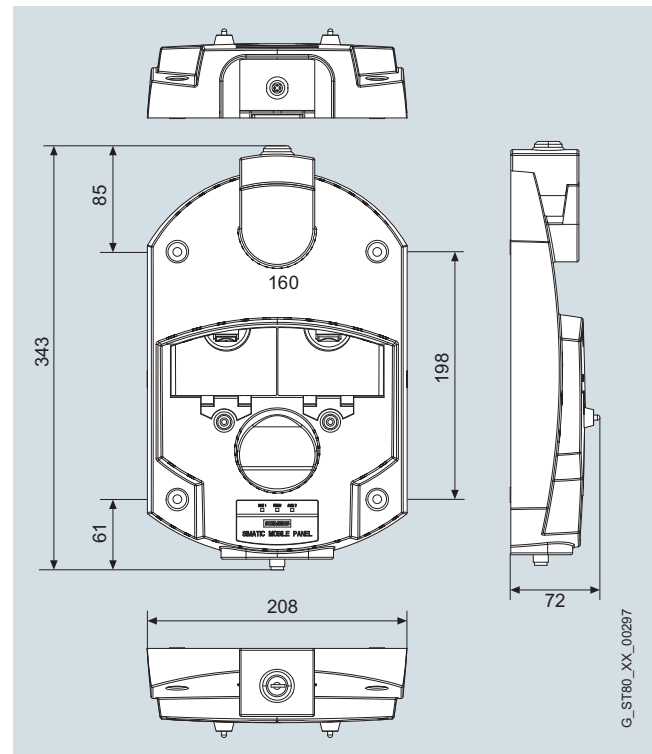
Operator panels

System components for Mobile Panels

Transponder

■ Overview

Transponder SIMATIC Mobile Panel 277F IWLAN

Article number	**6AV6671-5CM00-0AX1**
	TRANSP. F. MOBILE PANEL 277(F) IWLAN V2
Other	
Usable in the following products	
• Product 1	6AV6645-0DD01-0AX1
• Product 2	6AV6645-0DE01-0AX1
• Product 3	6AV6645-0EB01-0AX1
• Product 4	6AV6645-0EC01-0AX1
• Product 5	6AV6645-0FD01-0AX1
• Product 6	6AV6645-0FE01-0AX1
• Product 7	6AV6645-0GB01-0AX1
• Product 8	6AV6645-0GC01-0AX1

■ Ordering data

	Article No.
Transponder V2 for SIMATIC Mobile Panels 277(F) IWLAN V2	**6AV6671-5CM00-0AX1**
Other accessories for Mobile Panels	See SIMATIC HMI accessories, chapter 7

■ Technical specifications

Article number	**6AV6671-5CM00-0AX1**
	TRANSP. F. MOBILE PANEL 277(F) IWLAN V2
Product type designation	
Degree and class of protection	
Enclosure according to EN 60529	IP65
Enclosure according to NEMA	NEMA 4x, NEMA 12
Standards, approvals, certificates	
Certifications	CE, cULus, C-TICK, NEMA 4x, NEMA 12
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
Ambient conditions	
Ambient temperature during operation	
• Operation (vertical installation)	0 to +50 °C
- For vertical installation, min.	0 °C
- For vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	85 %
Dimensions	
Width	172 mm
Height	90 mm
Depth	38.5 mm
Weights	
Weight (without packaging)	0.3 kg

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.

G_ST80_XX_00298

■ **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 all 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 177 PN/ 277	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 tag exchange between SIMATIC HMI systems				
HTTP client	•	•	•	•
HTTP server	•	•	•	•

• System interface possible

– System interface not possible

Operator panels

System interfaces with WinCC (TIA Portal)

■ **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 SIMATIC Panel, the following restrictions apply:

- Basic Panel, Comfort Panel 4", Mobile Panel 177:
  max. 4 connections
- Comfort Panel 7" - 22", 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 communication interfaces of SIMATIC Panels and SIMATIC S7 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 a number of SIMATIC Panels (MPI master) and one or a number of 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.

The original format of a master/master link has been joined by a master/slave link, which has enabled integration of the S7-200 (except CPU 212).[1]

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.

[1] With regard to restricted baud transmission rates for S7-200, see Catalog ST 70.

■ **Overview** (continued)

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 junction box (see Mobile Panel), see Manual for cable layout

[2] Controllers can be combined as desired

[3] Basic Panel PN and Mobile Panel 177 PN only

[4] Basic Panel DP and Mobile Panel 177 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 5611 A2)

[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:

Detailed information regarding cable layout can be found in the online help for WinCC.

Operator panels
System interfaces with WinCC (TIA Portal)

Controllers from other manufacturers

■ **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	Mobile Panel 177 DP [1] Mobile Panel 177 PN [1]	Mobile Panel 277 [1]	KTPx00(F) Mobile	WinCC Runtime Advanced
Allen Bradley (Ethernet IP)						
via Ethernet TCP/IP network to max. 4 x controllers [2] • ControlLogix 1756-L6x, -L6xS with Ethernet module 1756-ENBT • Guard Logix System • CompactLogix 1769-L2xE, -L3xE • CompactLogix 1769-L4x with ETHERNET module 1768-ENBT • SLC 5/05 • MicroLogix 1100, 1400	● [3]	●	● [3]	●	●	●
Allen Bradley (DF1)						
to max. 1 x controller • SLC 5/03, /04, /05 • MicroLogix (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	● [6]
to max. 1 x controller • PLC5/11, /20, /30, /40, /60, /80 (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	● [7]
via KF2 gateway and DH+ network to max. 4 x controllers [2] • SLC 5/04 • PLC5/11, /20, /30, /40, /60, /80 (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	● [7] [8]
via KF2 gateway and DH+ network to max. 4 x controllers [2] • SLC 5/04 • PLC5/11, /20, /30, /40, /60, /80 (RS 422)	● [5]	●	● [5]	●	–	–
via KF3 gateway and DH485 network to max. 4 x controllers [2] • SLC 500 • MicroLogix (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	● [7] [8]

● System interface possible

– System interface not possible

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

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

[3] Basic Panel PN and Mobile Panel 177 PN only

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

[5] Basic Panel DP and Mobile Panel 177 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

■ **Overview** (continued)

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	**Basic Panel**	**Comfort Panel**	**Mobile Panel 177 DP [1] / 177 PN [1]**	**Mobile Panel 277 [1]**	**KTPx00(F) Mobile**	**WinCC Runtime Advanced**
Mitsubishi (MC TCP/IP)						
via Ethernet IP network to max. 4 x controllers [2] • FX series FX3G, FX3U, FX3UC with Ethernet module FX3U ENET, • Series Q with Ethernet module QJ71E71-100 • iQ series/QnUD QnUDEH	● [3]	●	● [3]	●	●	●
Mitsubishi FX (serial)						
to max. 1 x controller FX series FX1N, FX2N (RS 232)	● [4]	●	● [4]	●	–	● [5]

● System interface possible

- System interface not possible

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

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

[3] Basic Panel PN and Mobile Panel 177 PN only

[4] Basic Panel DP and Mobile Panel 177 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**	**Mobile Panel 177 DP [1] / 177 PN [1]**	**Mobile Panel 277 [1]**	**KTPx00(F) Mobile**	**WinCC Runtime Advanced**
Modicon (MODBUS TCP/IP)						
Via MODBUS TCP/IP network to max. 4 x controllers [2] • Concept Quantum, Unity Quantum • Momentum • Premium (TSX57) • TSX Micro (TSX37) • Modicon M340 20x0 (except 2010)	● [3]	●	● [3]	●	●	●
Via TCP/IP Modbus Plus Bridge 174 CEV 200 40 and MODBUS PLUS network to max. 4 x controllers [2] • Concept Quantum, Unity Quantum • Momentum • Compact	● [3]	●	● [3]	●	●	●
Modicon (MODBUS RTU)						
to max. 1 x controller • Concept Quantum • Momentum • Compact (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	●
Via bridge BM85-000 or PLC with bridge functionality and MODBUS PLUS network to max. 4 x controllers [2] • Concept Quantum • Compact (RS 232)	● [4] [5]	● [4]	● [4] [5]	● [4]	–	●

● System interface possible

- System interface not possible

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

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

[3] Basic Panel PN and Mobile Panel 177 PN only

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

[5] Basic Panel DP and Mobile Panel 177 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

Operator panels
System interfaces with WinCC (TIA Portal)

Controllers from other manufacturers

■ Overview (continued)

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	Basic Panel	Comfort Panel	Mobile Panel 177 DP [1] / 177 PN [1]	Mobile Panel 277 [1]	KTPx00(F) Mobile	WinCC Runtime Advanced
Omron (Link/Multi Link)						
to max. 1 x controller • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 232)	–	• [3]	• [3] [4]	• [3]	–	•
via converter NT-AL001 and RS 422 network to max. 4 x controllers [2] • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 232)	–	• [3]	• [3] [4]	• [3]	–	•
via RS 422 network to max. 4 x controllers [2] • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G (RS 422)	• [4]	•	• [4]	• [4]	–	–
Via RS422 network to max. 4 x controllers [2] • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 422)	–	–	• [4]	• [4]	–	–

• System interface possible

- System interface not possible

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

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

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

[4] Basic Panel DP and Mobile Panel 177 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

HMI devices for special requirements

Introduction

■ Overview

Fully enclosed HMI devices

The fully enclosed SIMATIC HMI devices (MP 377 PRO, HMI IPC477C PRO, Flat Panel PRO and Thin Client PRO) are specially designed for mounting on a support arm/stand.

Thanks to their extremely rugged design, the devices are ideal for industrial applications in harsh environments.

Devices with stainless steel front

For special requirements, SIMATIC HMI Comfort Panels and the HMI IPC677C INOX with stainless steel front for use in the food and beverages industry are offered.

HMI devices for hazardous areas

The SIMATIC HMI Ex devices (HMI Panel PC Ex and HMI Thin Client Ex) are intrinsically safe Panel PCs and Thin Clients that have been specially developed for hazardous areas "Zone 1" and "Zone 2".

Further SIMATIC HMI devices are also available for the hazardous area "Zone 2" and can be found in the chapter "Operator panels".

3

■ Overview

The SIMATIC HMI PRO (PRO = protected) devices have been designed for mounting on a support arm/pedestal.

Thanks to their rugged aluminum enclosures, the SIMATIC HMI PRO devices offer overall IP65 protection and are also suitable for use in harsh environments. The separation of HMI and control cabinet allows flexible design concepts.

The SIMATIC HMI PRO devices are used wherever the HMI device cannot be installed direct in the control cabinet due to restricted space, or whenever an operator control unit is required direct at the machine. All the devices are fan-free, and only standard connecting cables are used.

The SIMATIC HMI PRO devices can be mounted direct on the support arm head of the desired support arm system using the basic adapter supplied. The adapter set can be ordered separately. The basic adapter can be attached to the top or bottom of the device. The connecting cables are run through the support arm.

With the extension units, the range of possible on-site operations can be expanded.

The extension units can be mounted on the right and/or left side of the SIMATIC HMI PRO device and can be equipped individually with, for example, illuminated pushbuttons, emergency stop buttons, RFID readers, etc.

The following are available as SIMATIC fully enclosed HMI devices:

● *SIMATIC HMI IPC477C PRO 15"/19" Touch*
Compact, high-performance and maintenance-free embedded IPC

● *SIMATIC Flat Panel PRO 15"/19" Touch*
Industrial monitor with touch functionality, can be located up to 30 m from the operator control unit (as with Flat Panel Extended)

● *SIMATIC Thin Client PRO 15" Touch*
HMI device for terminal and web client applications

● *SIMATIC MP 377 PRO 15" Touch*
Multi Panel for operator control and monitoring of machines and plants

Next generation of PRO devices, estimated start of delivery from Q3/2015:

● SIMATIC IPC477D PRO

● SIMATIC IFP1900 PRO Extended (can be located at a distance of up to 30 m)
  - Narrow frame - slim, modern design
  - 19" display size (widescreen)
  - Capacitive multitouch with glass front
  - Can be mounted on a support arm and on a pedestal

3

HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC HMI IPC477C PRO

Overview

SIMATIC HMI IPC477C PRO 15" / 19"

SIMATIC HMI IPC477C PRO 19"

SIMATIC HMI IPC477C PRO 19" (rear view)

Technical specifications

Article number	6AV7883-6....-...0	6AV7883-7....-...0
	SIMATIC HMI IPC 477C PRO, 15" TOUCH	SIMATIC HMI IPC 477C PRO, 19" TOUCH
Product type designation		
Installation type/mounting		
maximum permissible installation angle +/-	20°	20°
Supply voltage		
Type of supply voltage	24 V DC	24 V DC
Processor		
Processor type	Intel Celeron M 1.2 GHz, Intel Core2Solo 1.2 GHz or Intel Core2Duo 1.2 GHz	Intel Celeron M 1.2 GHz, Intel Core2Solo 1.2 GHz or Intel Core2Duo 1.2 GHz
Drives		
Optical drives	possible as external drive via USB	possible as external drive via USB
Memory		
Type of memory	DDR3-SDRAM	DDR3-SDRAM
Main memory	512 Mbyte	512 Mbyte
Hardware configuration		
Slots		
• free slots	1 x slot for CF card; 1 x slot for SD/MMC	1 x slot for CF card; 1 x slot for SD/MMC
Interfaces		
PROFIBUS/MPI	1 X CP5611-comptable	1 X CP5611-comptable
serial interface	COM1: 1 x V.24 (RS232)	COM1: 1 x V.24 (RS232)
parallel interface	0	0
USB port	4 x High Current	4 x High Current
Connection for keyboard/mouse	USB / USB	USB / USB
Multimedia		
• Audio In/Out	No	No
Special interfaces		
• Microphone In	No	No
Video interfaces		
• Graphics interface	DVI-I usable for additional display unit (VGA via adapter); color depth 32 bits, 8 to 128 MB Shared Memory	DVI-I usable for additional display unit (VGA via adapter); color depth 32 bits, 8 to 128 MB Shared Memory
Industrial Ethernet		
• Industrial Ethernet interface	Onboard, 10/100/1000 Mbit/s, RJ45, no plug-in card necessary	Onboard, 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes	Yes
- 1000 Mbps	Yes	Yes

Technical specifications (continued)

Article number	6AV7883-6....-...0	6AV7883-7....-...0
	SIMATIC HMI IPC 477C PRO, 15" TOUCH	SIMATIC HMI IPC 477C PRO, 19" TOUCH
Monitoring functions		
Temperature	Yes	Yes
Watchdog	Yes	Yes
Status LEDs	No	No
Degree and class of protection		
IP (at the front)	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4
Standards, approvals, certificates		
Approval	CE, cULus (508)	CE, cULus (508)
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2	CE, EN 55011, EN 61000-6-4, EN 61000-6-2
EN 61000-6-2	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
• Lloyds Register of Shipping (LRS)	Yes	Yes
• Polski Rejestr Statkow (PRS)	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• Ambient temperature during operation	With full configuration: +5 °C to +45 °C or +5 °C to +50 °C in installation space, if max. 40 °C at front	With full configuration: +5 °C to +45 °C or +5 °C to +50 °C in installation space, if max. 40 °C at front
• min.	0 °C	0 °C
• max.	45 °C	45 °C
Relative humidity		
• Relative humidity	Tested to IEC 60068-2-3, IEC 60068-2-30, IEC 60068-2-56: 5% to 80% at 25 °C (no condensation)	Tested to IEC 60068-2-3, IEC 60068-2-30, IEC 60068-2-56: 5% to 80% at 25 °C (no condensation)
Vibrations		
• Vibration load in operation	Tested to IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s^2 (1 g)	Tested to IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s^2 (1 g)
Shock testing		
• Shock load during operation	Tested to IEC 60068-2-29: 50 m/s^2 (5g), 30 ms, 100 shocks	Tested to IEC 60068-2-29: 50 m/s^2 (5g), 30 ms, 100 shocks
Operating systems		
Operating system	Windows XP Prof. (Multi Language), Windows XP embedded, or optionally without operating system	Windows XP Prof. (Multi Language), Windows XP embedded, or optionally without operating system
Additional info on operating system	Language: EN/DE	Language: EN/DE
pre-installed operating system	Yes	Yes
• Windows XP Prof.	Yes	Yes
Software		
SIMATIC Software	Optionally with pre-installed software bundle SIMATIC WinCC flexible or WinCC flexible / WinAC RTX	Optionally with pre-installed software bundle SIMATIC WinCC flexible or WinCC flexible / WinAC RTX

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HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC HMI IPC477C PRO

■ Ordering data

	Article No.
SIMATIC HMI IPC477C PRO [1] **optional mit WinAC / WinCC RT Advanced**	6AV7883 - ■ A ■ ■ ■ - ■ ■ ■ 1

Embedded and fan-free, with IP65 housing with all-round protection; 5 x USB (500 mA), 1 of which on the front 24 V DC power supply with On/Off switch

Front panels	
• 15" TFT Touch (IP65 enclosure)	6
• 19" TFT Touch (IP65 enclosure)	7
Processors and fieldbus	
• Celeron M 1.2 GHz, 2 x PROFINET (IE)	A
• Celeron M 1.2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12	B
• Core2 Duo 1.2 GHz, 2 x PROFINET (IE)	G
• Core2 Duo 1.2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12	H
• Core2 Duo 1.2 GHz, 1 x PROFINET (IE), 1 x PROFINET (3 ports)	J
Main memory (DDR3 RAM), 1 database	
• 2 GB	2
• 4 GB	3
Mass storage, removable	
• None	0
• CompactFlash 2 GB (only with Windows Embedded Standard 2009)	2
• CompactFlash 4 GB	3
• CompactFlash 8 GB	4
• CompactFlash 16 GB	5
• 50 GB SSD (High Endurance)	6

	Article No.
SIMATIC HMI IPC477C PRO [1] **optional mit WinAC / WinCC RT Advanced**	6AV7883 - ■ A ■ ■ ■ - ■ ■ ■ 1

Mass storage, installed (Windows Embedded Standard 7 pre-installed and optionally with SIMATIC software)	
• CompactFlash 4 GB	3
• CompactFlash 8 GB	4
• CompactFlash 16 GB	5
• 50 GB SSD (High Endurance)	6
Operating system (pre-installed and activated)	
• Windows Embedded Standard 7, pre-installed on internal drive	E A
Software packages	
WinAC / WinCC RT Advanced	
• With WinAC RTX pre-installed and configured for PROFIBUS and with WinCC RT Advanced (incl. Logging & Recipes) pre-installed and configured	B
- Number of tags 128 PT	C
- Number of tags 512 PT	D
- Number of tags 2048 PT	E
- Number of tags 4096 PT	F
With WinAC RTX and WinCC RT Advanced (incl. Logging & Recipes) pre-installed and configured	
• Number of tags 128 PT	K
• Number of tags 512 PT	L
• Number of tags 2048 PT	M
• Number of tags 4096 PT	N
• With WinAC RTX F pre-installed and configured for PROFIBUS DP 12	P
With WinAC RTX F and WinCC RT Advanced (incl. Logging & Recipes) pre-installed and configured	
• Number of tags 128 PT	R
• Number of tags 512 PT	S
• Number of tags 2048 PT	T
• Number of tags 4096 PT	U

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully enclosed HMI devices".

■ **Dimensional drawings**

All dimensions in mm. For installation cutout, see technical specifications.
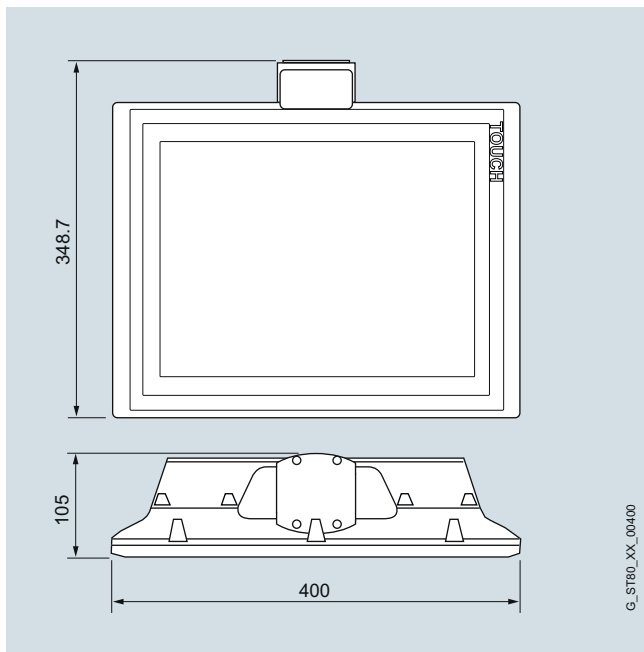
SIMATIC HMI IPC477C PRO 15" Touch version
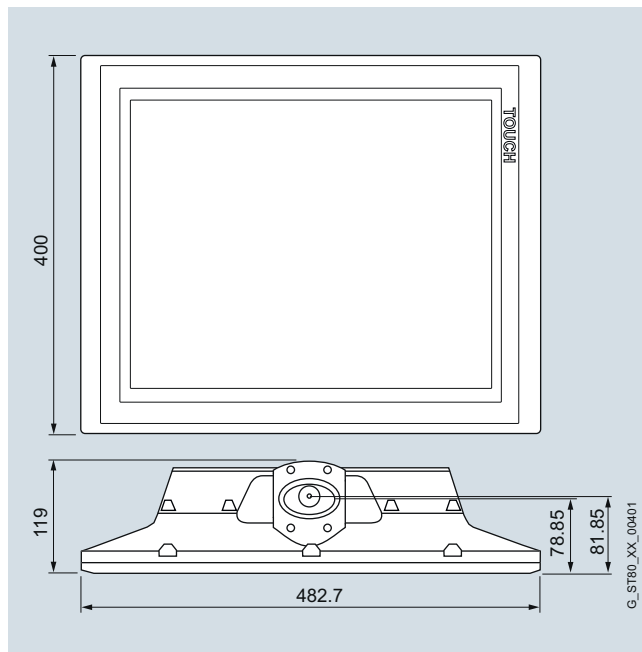
SIMATIC HMI IPC477C PRO 19" Touch version

■ **More information**

Additional 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? 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.

HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC Flat Panel PRO

■ Overview
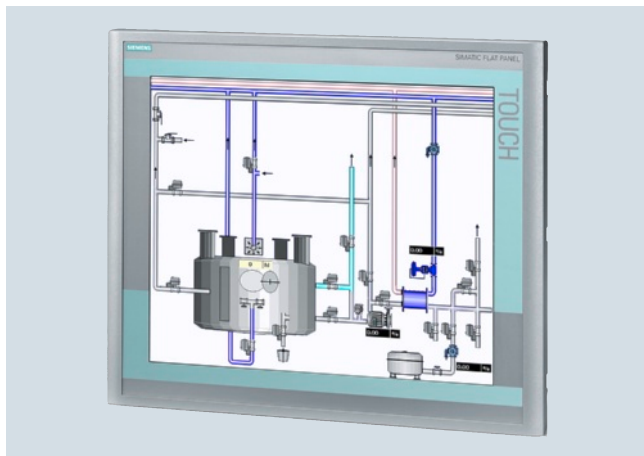
SIMATIC Flat Panel Monitor PRO 19"

SIMATIC Flat Panel Monitor PRO 15" with expansion unit (rear view)

■ Technical specifications

Article number	6AV7861-5TB10-1BA0	6AV7861-6TB10-1BA0
	SIMATIC FLAT PANEL PRO 15 AC/DC	SIMATIC FLAT PANEL PRO 19T
Product type designation		
Display		
Design of display	TFT	TFT
Screen diagonal	15 in	19 in
visible area (HxV) in mm	304 x 228	376 x 301
Viewing angle	160° x 160°	160° x 160°
On Screen Display (OSD) configuration	Yes	Yes
Number of colors (bit levels)	16.7 million	16.7 million
Resolution (pixels)		
• Resolution (WxH in pixel)	1024 x 768	1280 x 1024
General features		
• Brightness/contrast	> 260 cd/m² / 350:1	> 300 cd/m² / 300:1
Control elements		
Input device		
• integrated mouse cursor control	No	No
Keyboard		
• Function keys	No	No
- Number of function keys	0	0
Installation type/mounting		
Rack mounting possible	No	No
VESA mounting	Yes	Yes
Supply voltage		
Type of supply voltage	AC/DC	AC/DC
permissible range, lower limit (DC)	19.2 V	19.2 V
permissible range, upper limit (DC)	28.8 V	28.8 V
permissible range, lower limit (AC)	90 V	90 V
permissible range, upper limit (AC)	264 V	264 V
Interfaces		
Video interfaces		
• analog video signal (VGA)	Yes	Yes
Degree and class of protection		
IP20 at front	Yes	Yes
IP54 at front	Yes	Yes
IP65 at front	Yes	Yes
IP20 rear	Yes	Yes
IP54 rear	Yes	Yes
IP65 rear	Yes	Yes

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Technical specifications (continued)

Article number	6AV7861-5TB10-1BA0	6AV7861-6TB10-1BA0
	SIMATIC FLAT PANEL PRO 15 AC/DC	SIMATIC FLAT PANEL PRO 19T
Standards, approvals, certificates		
UL approval	Yes	Yes
EAC (formerly Gost-R)	No	No
SIBE safety certification	No	No
Marine approval		
• Germanischer Lloyd (GL)	No	No
• American Bureau of Shipping (ABS)	No	No
• Bureau Veritas (BV)	No	No
• Det Norske Veritas (DNV)	No	No
• Lloyds Register of Shipping (LRS)	No	No
• Polski Rejestr Statkow (PRS)	No	No
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	
• max.	45 °C	
Dimensions		
Width of the housing front	400 mm	483 mm
Height of housing front	310 mm	400 mm

Ordering data

	Article No.
SIMATIC Flat Panel PRO 15" Touch	**6AV7861-5TB10-1BA0**
SIMATIC Flat Panel PRO 19" Touch	**6AV7861-6TB10-1BA0**

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully enclosed HMI devices".

Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.
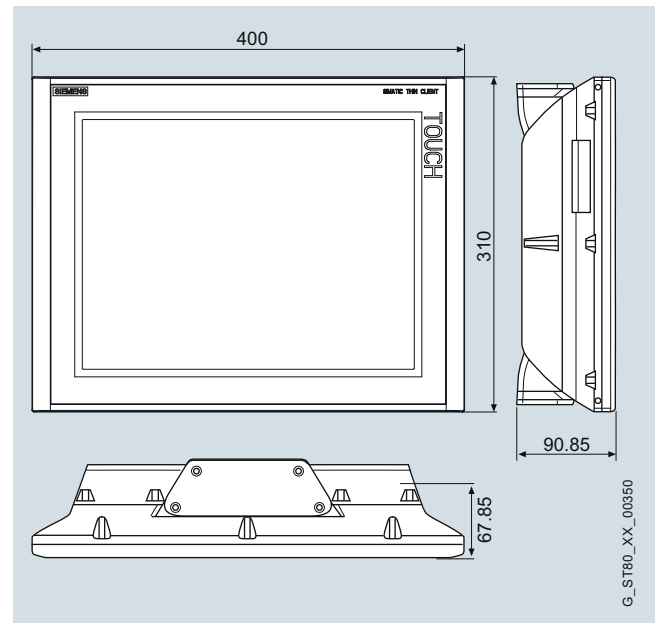
SIMATIC Flat Panel PRO 15" Touch
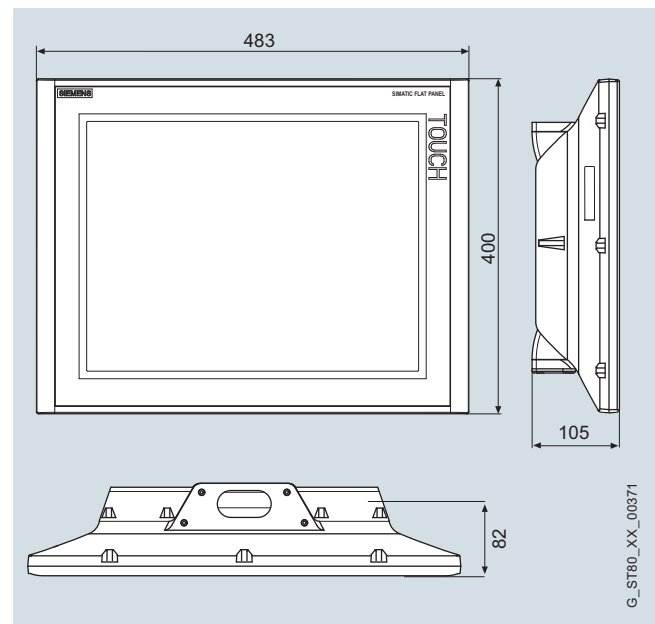
SIMATIC Flat Panel PRO 19" Touch

More information

Additional information is available on the Internet at:

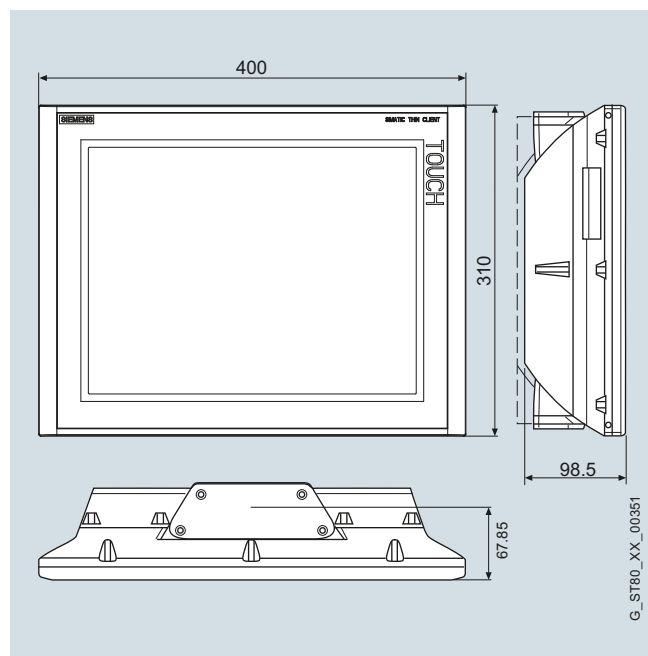http://www.siemens.com/ip65-hmi-devices

Note:

Do you require a specific modification or extension to the products described here? 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.

HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC Thin Client PRO

Overview

SIMATIC Thin Client PRO 15"

Technical specifications

Article number	**6AV6646-2AB21-2AX0**
	SIMATIC THIN CLIENT PRO 15 " TOUCH
Product type designation	
Display	
Design of display	TFT
Screen diagonal	15.1 in
Resolution (pixels)	
• Resolution (WxH in pixel)	1024 x 768
Backlighting	
• MTBF backlighting (at 25 °C)	50 000 h
Control elements	
Control elements	Touch screen
Keyboard	
• System keys	No
Touch operation	
• Design as touch screen	Yes; analog, resistive
Connection type	
• Connection for mouse/keyboard/ barcode reader	USB / USB
Installation type/mounting	
maximum permissible angle of inclination without external ventilation	45°
Supply voltage	
Type of supply voltage	DC
Processor	
Processor type	ARM, 266 MHz
Memory	
Type of memory	Flash / RAM
Interfaces	
Interfaces/bus type	1 x Ethernet (RJ45)
USB port	1 x USB
Industrial Ethernet	
• Industrial Ethernet interface	1 x Ethernet (RJ45)
Protocols	
WEB characteristics	
• HTTP	Yes
• HTML	Yes
• CSS	Yes
Protocols (terminal link)	
• Sm@rtServer	Yes
• RDP	Yes
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.
Degree and class of protection	
Front	IP65, NEMA 4x, NEMA 12 (when installed)
IP (rear)	IP65

Technical specifications (continued)

Article number	**6AV6646-2AB21-2AX0**
	SIMATIC THIN CLIENT PRO 15 " TOUCH
Standards, approvals, certificates	
Certifications	CE, cULus, C-TICK, NEMA 4x (Enclosure Type 4X, Type 12), NEMA 12
cULus	Yes
EMC	The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation
Suitable for safety functions	No
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.	85 %; Storage
Languages	
Online languages	
• Number of online/runtime languages	2
Dimensions	
Width of the housing front	400 mm
Height of housing front	310 mm
Weights	
Weight (without packaging)	6.5 kg

Ordering data

	Article No.
SIMATIC Thin Client PRO 15" Touch	**6AV6646-2AB21-2AX0**
Starter packages	
SIMATIC Thin Client with Sm@rtAccess	
• Touch device 15" PRO with Sm@rtAccess license (panels)	**6AV6653-6CA01-2AA0**
• Touch device 15" PRO with Sm@rtAccess license for WinCC flexible 2008 Runtime	**6AV6653-6FA01-2AA0**

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully enclosed HMI devices".

Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.

SIMATIC Thin Client PRO 15" Touch

More information

Additional 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? 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.

3

HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC MP 377 PRO

■ **Overview**
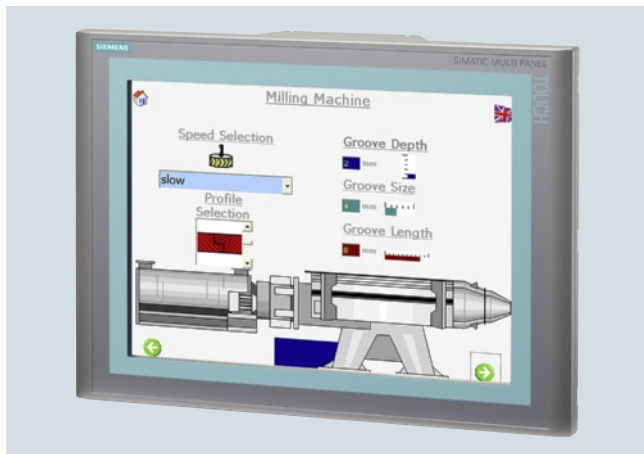
SIMATIC MP 377 PRO 15"

■ **Technical specifications**

Article number	**6AV6644-2AB01-2AX0**
	MP 377 PRO 15" TOUCH
Product type designation	
Display	
Design of display	TFT
Screen diagonal	15 in
Resolution (pixels)	
• Resolution (WxH in pixel)	1024 x 768
Backlighting	
• MTBF backlighting (at 25 °C)	50 000 h
Control elements	
Control elements	Touch screen
Keyboard	
• System keys	No
Touch operation	
• Design as touch screen	Yes; analog, resistive
Connection type	
• Connection for mouse/keyboard/ barcode reader	USB / USB / USB
Installation type/mounting	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	45°
Supply voltage	
Type of supply voltage	DC
Input current	
Current consumption (rated value)	1.8 A
Memory	
Type of memory	Flash / RAM
usable memory for user data	12 288 kbyte
Time of day	
Clock	
• Type	Hardware clock, battery backup, synchronizable
• Hardware clock (real-time clock)	Yes
• battery-backed	Yes; via Goldkap for at least 6 weeks
• synchronizable	Yes

Article number	**6AV6644-2AB01-2AX0**
	MP 377 PRO 15" TOUCH
Interfaces	
Interfaces/bus type	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)
USB port	2 x USB
CF card slot	1 x CF card slot
Multimedia Card slot	1x Multimedia Card slot, up to 128 MB
Industrial Ethernet	
• Industrial Ethernet interface	2 x Ethernet (RJ45)
Protocols (terminal link)	
• Sm@rtServer	Yes
Degree and class of protection	
Front	IP65, NEMA 4, (when installed)
IP (rear)	IP65
Standards, approvals, certificates	
Certifications	CE, cULus, C-TICK, NEMA 4
cULus	Yes
Suitable for safety functions	No
Use in hazardous areas	
• EX zone 22	No
• FM Class I Division 2	No
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.	85 %
Operating systems	
Operating system	Windows CE

▪ Technical specifications (continued)

Article number	6AV6644-2AB01-2AX0
	MP 377 PRO 15" TOUCH
Configuration	
Configuration software	
• Configuration tool	WinCC flexible Standard Version 2008 or higher (to be ordered separately)
Languages	
Online languages	
• Number of online/runtime languages	5
Functionality under WinCC (TIA Portal)	
Libraries	Yes
Task planner	Yes
Message system	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
Recipe administration	
• Number of recipes	500
• Data records per recipe	1 000
• Entries per data record	1 000
• Recipe memory	128 KB integrated Flash, expandable
Variables	
• Number of variables per device	4 096; Configuration with WinCC flexible 2008 and higher
• Limit values	Yes
• Multiplexing	Yes
Images	
• Number of configurable images	500
Image objects	
• Text objects	30000 text elements
• Graphics object	Bit maps, icons, vector graphics
Complex image objects	
• Status/control	With SIMATIC S7
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Number of text lists per project	500
• Number of graphics lists per project	500

Article number	6AV6644-2AB01-2AX0
	MP 377 PRO 15" TOUCH
Archiving	
• Number of archives per device	50
• Number of measuring points per project	50
• Number of entries per archive	50 000
• external evaluation	Readable, e.g. with MS Excel, MS Access, etc.
• Size of archive	depending on free memory on ext. card/stick or on free hard disk space via network drive
Security	
• Number of user groups	50
• Number of user rights	32
• Password export/import	Yes
Data carrier support	
• CF card	Yes
Logging through printer	
• Recording/Printing	Alarms, report (shift report), color print, hardcopy
Transfer (upload/download)	
• Transfer of configuration	MPI/PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition
Process coupling	
• Connection to controller	S5, S7-200, S7-300/400, TI 505, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), further non-Siemens drivers, see chapter "System interfaces"
• S7-1200	Yes
• S7-1500	Yes
Expandability/openness	
• Open Platform Program	Yes
Peripherals/Options	
Peripherals	Printer, card reader, barcode reader
• MultiMediaCard	Yes
Dimensions	
Width of the housing front	400 mm
Height of housing front	310 mm
Weights	
Weight (without packaging)	7.25 kg

3

HMI devices for special requirements
Fully enclosed HMI devices

SIMATIC MP 377 PRO

■ Ordering data

	Article No.
SIMATIC MP 377 PRO 15" Touch 15" color TFT display, 12 MB configuration memory, can be configured from WinCC Comfort (TIA Portal)	**6AV6644-2AB01-2AX0**

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully enclosed HMI devices".

■ Dimensional drawings

All dimensions in mm. For installation cutout, see technical specifications.

SIMATIC MP 377 PRO 15" Touch

■ More information

Additional 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? 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.

■ Overview

Adapter sets

The adapter sets are required for connecting the SIMATIC HMI PRO device with the support arm head of the respective support arm system

By directly connecting the support arm head 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 supporting bracket manufacturer:

- Bernstein, Rittal, Rose, Haseke, and Rolec

■ Ordering data

	Article No.
VESA 100 adapter set[1] for VESA 100, Rose GTN II	**6AV7674-0KD00-0AA0**
Adapter set VESA 75 for VESA 75	**6AV7674-0KE00-0AA0**
Replacement basic adapter, suitable for SIMATIC HMI PRO devices	**6AV7674-0KA00-0AA0**

[1] The VESA 100 adapter set cannot be used in combination with the 19" Flat Panel PRO.

Note:

The internal diameter of the 48 mm supporting bracket tubes is not suitable for passage of the standard DVI-D cable.

Scope of delivery:
- One basic adapter or one adapter plate
- Mounting hardware

■ 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.

3

HMI devices for special requirements
Accessories for fully enclosed HMI devices

Extension units

■ Overview

Extension Units

With the Extension Units, the range of possible on-site operations can be extended. They are mounted on the SIMATIC HMI PRO device and can be equipped individually, e.g. with Key Panel (KP8), 3SB elements, emergency stop buttons, key switches, RFID reader, etc.

- They can be mounted on the left or right side of the PRO device, as required
- Direct installation of up to 2 Key Panels KP8 / KP8F
- IP65 - cable routing
- Can be equipped individually
- For all 15"/19" PRO devices

The combination of HMI PRO device and KP8 PN offers the following advantages:

- No control cabinet required
- Low cabling overhead
- Optimally coordinated design

■ Ordering data

	Article No.
Extension Unit 15" For mounting on all 15" PRO devices	6AV7674-0KG00-0AA0
Extension Unit 15" KP8 For mounting on all 15" PRO devices for direct installation of up to 2 KP8 / KP8F	6AV7674-0KG01-0AA0
Starter package Extension Unit 15" with KP8 1 x Extension Unit 15" KP8, 1 x Key Panel 8 PN, 1 x blank front	6AV7674-0KG11-0AA0
Extension Unit 19" right • For support arm mounting from above Mounting of the Extension Unit on the right side of the 19" PRO device • For support arm mounting from below Mounting of the Extension Unit on the left side of the 19" PRO device	6AV7674-0KJ00-0AA0
Extension Unit 19" KP8 right For direct installation of up to 2 KP8 / KP8F • For support arm mounting from above Mounting of the Extension Unit on the right side of the 19" PRO device • For support arm mounting from below Mounting of the Extension Unit on the left side of the 19" PRO device	6AV7674-0KJ01-0AA0
Starter package Extension Unit 19" with KP8 right 1 x Extension Unit 19" KP8 right, 1 x Key Panel 8 PN, 1 x blank front	6AV7674-0KJ11-0AA0
Extension Unit 19" left • For support arm mounting from above Mounting of the Extension Unit on the left side of the 19" PRO device • For support arm mounting from below Mounting of the Extension Unit on the right side of the 19" PRO device	6AV7674-0KH00-0AA0
Starter package Extension Unit 19" with KP8 left 1 x Extension Unit 19" KP8 left, 1 x Key Panel 8 PN, 1 x blank front	6AV7674-0KH11-0AA0

■ Selection and ordering data (continued)

Extension Unit 19" KP8 left	**6AV7674-0KH01-0AA0**

For direct installation of up to 2 KP8 / KP8F
• For support arm mounting from above
  Mounting of the Extension Unit on the left side of the 19" PRO device
• For support arm mounting from below
  Mounting of the Extension Unit on the right side of the 19" PRO device	

KP8 front plate for the Extension Unit	**6AV7674-0KH30-0AB0**
For installing up to two KP8 in an Extension Unit Suitable for all 15" and 19" Extension Units	
Empty front KP8 design in combination with front panel KP8	**6AV3688-3XY38-3AX0**
Spare front plate for the Extension Unit	**6AV7674-0KH30-0AA0**
Suitable for all 15" and 19" Extension Units Required if the front plate supplied with the Extension Unit must be replaced	

Scope of delivery:
• 1 Extension Unit box
• 1 front plate for the Extension Unit
• 1 connecting tube
• Mounting accessories

■ 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.

3

HMI devices for special requirements
Accessories for fully enclosed HMI devices

Back covers

Overview
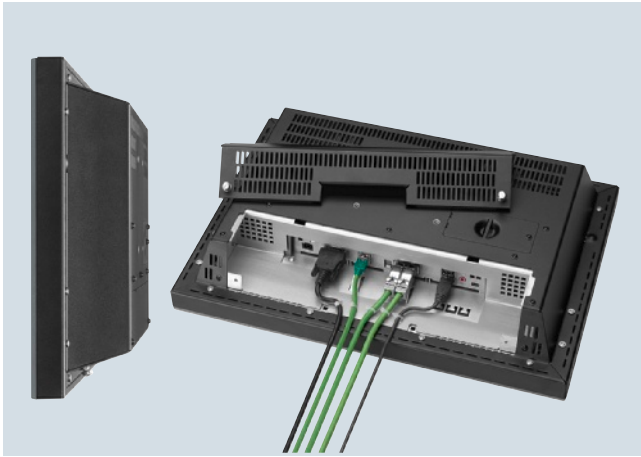
Back cover IP20, side view and partly installed

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.

Technical specifications

Back cover display diagonal	15"	19"	22"
General features			
Design/mounting			
• Vertical installation (portrait format) possible	No	No	No
• Horizontal mounting (landscape format) possible	Yes	Yes	Yes
Degree of protection and protection class			
IP (rear)	As installed device	As installed device	As installed device
Standards, approvals, certificates			
CE	Yes	Yes	Yes
Ambient conditions			
Operating temperature			
• Operating temperature, min.	As installed device	As installed device	As installed device
• Operating temperature, max.	40 °C	40 °C	40 °C
Storage/transport temperature			
• Min.	-20 °C	-20 °C	-20 °C
• Max.	60 °C	60 °C	60 °C
Relative humidity			
• Max.	95 % non-condensing	95 % non-condensing	95 % non-condensing
Mechanics/material			
Aluminum	Yes	Yes	Yes
Dimensions			
Width	415 mm	483 mm	560 mm
Height	310 mm	337 mm	380 mm
Depth (cover only)	90 mm	90 mm	90 mm
Weight	Approx. 1.6 kg	Approx. 1.9 kg	Approx. 2.2 kg
Scope of delivery	• 1 x back cover IP20 Suitably designed for the devices in the different display sizes, and provided with an interface adapter suitable for the device family • 1 x product information "IP20 back cover" • 1 x accessory kit Contains screws for mounting and an identification plate for labeling the interface. The plate is device-dependent and is enclosed with every Comfort Panel and Industrial Thin Client • 1 x packaging Also used for transporting and protecting the IPC installed in the back cover. Therefore, do not dispose of the packaging.		

■ Ordering data	Article No.
Backplane covers IP20	
15" devices	
• IPC277D 15"	**6AV7675-1RB00-0AA0**
• IPC477D 15" [1]	**6AV7675-2RB00-0AA0**
• IFP1500	**6AV7675-4RB00-0AA0**
• TP1500 / ITC1500	**6AV7675-8RB00-0AA0**
19" devices	
• IPC277D 19"	**6AV7675-1RD00-0AA0**
• IPC477D 19"	**6AV7675-2RD00-0AA0**
• IFP1900	**6AV7675-4RD00-0AA0**
• TP1900 / ITC1900	**6AV7675-8RD00-0AA0**
22" devices	
• IPC477D 22"	**6AV7675-2RE00-0AA0**
• IFP2200	**6AV7675-4RE00-0AA0**
• TP2200 / ITC2200	**6AV7675-8RE00-0AA0**

[1] IPC477D 15" is only available as a Single Touch version.

■ **More information**

Note:

This catalog only includes accessories for current products.

The complete range of accessories can be found in the Mall:

https://eb.automation.siemens.com

Or on our SIMATIC Support pages:

http://support.automation.siemens.com

3

HMI devices for special requirements
Devices with stainless steel front

Introduction

Overview

For special requirements, the following HMI devices with stainless steel front (DIN EN 1672-2), e.g. for use in the food, beverages and tobacco industries, are offered.

SIMATIC HMI Comfort Panels INOX

- 7" or 12" TFT widescreen display
- Optimized frame profile with a slight projection to the cabinet
- IP66K degree of protection at the front
- Stainless steel surface ground with 240 grit hairline finish
- Minimal grooves and gaps
- Decorative membrane tested against chemicals, over whole display
- Display splash protection
- Food-standard seals
- Rear clamping frame for even application pressure of the seal

SIMATIC TP 177B INOX

- Comprehensive functionality for operator control and monitoring of machines and plants
- Pixel-graphics display with analog touch screen
  - 5.7" STN Color
- All interfaces for communication with Siemens
- SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- PROFINET interface already on-board in color version
- Drivers are also available for non-Siemens controllers
- Content of message buffer is retained even if panel is disconnected without batteries

SIMATIC MP 277 INOX

Multi Panels (MP) are – like Operator Panels – used for machine operation and monitoring on-site.

- Content of message buffer is retained even when panel is disconnected, without batteries
- PLC functionality can be integrated directly into the MP 277 platform with Option
- Their functionality can be expanded by installing additional Windows CE applications (Multi Panel and Panel options)
- SIMATIC MP 277 devices on the basis of Windows CE combine the rugged construction of Operator Panels with the flexibility of PCs
- Pixel graphics 10.4" TFT display, color (64k colors)
- Touch screen (analog/resistive)
- All interfaces are on-board, e.g. MPI, PROFIBUS DP, USB,
- PROFINET (Ethernet TCP/IP)

SIMATIC MP 377 INOX

Multi Panels (MP) are – like Operator Panels – used for machine operation and monitoring on-site.

- Their functionality can be expanded by installing additional Windows CE applications (Multi Panel and Panel options)
- SIMATIC MP 377 INOX devices on the basis of Windows CE combine the rugged construction of Operator Panels with the flexibility of PCs
- PLC functionality can be integrated directly into the MP 377 platform as an option
- Pixel graphics 15" TFT display, color (64k colors)
- Touch screen (analog/resistive)
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

SIMATIC HMI IPC677C INOX

PC platform with high degree of industrial compatibility for demanding tasks in the area of PC-based automation.

Rugged construction:
The PC is resistant to the harshest mechanical stress and is reliable in operation.

- Compact design
- High degree of investment protection
- Fast integration capability
- 15" TFT Touch, stainless steel/INOX
- All interfaces such as PROFIBUS or PROFINET onboard

Further SIMATIC HMI Flat Panels INOX

You will find further INOX industry products, as well as customer-specific product variants, in the "Customized Automation" section, e.g.

- SIMATIC HMI Flat Panel 15" Touch INOX
- SIMATIC HMI Flat Panel 19" Touch INOX
- SIMATIC HMI Flat Panel 19" Touch INOX fully enclosed

Note:

Do you require a specific modification to or option for the products described here? Then look up "Customized products", where you will find information about additional generally-available industry-specific products that can be ordered, as well as about options for customer-specific modifications and adaptations.

■ Overview

SIMATIC HMI TP Comfort Panels INOX

Panels with touch screen and stainless steel front are designed for use in the food and beverage 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 DIN EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".

3

■ Technical specifications

	SIMATIC HMI TP700 Comfort INOX (the other specifications correspond to the SIMATIC HMI TP700 Comfort Panel)	SIMATIC HMI TP900 Comfort INOX (the other specifications correspond to the SIMATIC HMI TP7900 Comfort Panel)	SIMATIC HMI TP1200 Comfort INOX (the other specifications correspond to the SIMATIC HMI TP1200 Comfort Panel)	SIMATIC HMI TP1500 Comfort INOX (the other specifications correspond to the SIMATIC HMI TP1500 Comfort Panel)
General features				
Display	7" TFT widescreen display	9" TFT widescreen display	12" TFT widescreen display	15" TFT widescreen display
Resolution (pixels)	800 x 480	800 x 480	1 280 x 800	1 280 x 800
MTBF of backlighting (at 25 °C)	approx. 80 000 h	approx. 80 000 h	approx. 80 000 h	approx. 80 000 h
Power supply	24 V DC	24 V DC	24 V DC	24 V DC
Front				
Material	Stainless steel 1.4301, polyester-based membrane	Stainless steel 1.4301, polyester-based membrane	Stainless steel 1.4301, polyester-based membrane	Stainless steel 1.4301, polyester-based membrane
Surface	Hairline finish, 240 grit abrasive grain	Hairline finish, 240 grit abrasive grain	Hairline finish, 240 grit abrasive grain	Hairline finish, 240 grit abrasive grain
Device seal	EPDM, molded part	EPDM, molded part	EPDM, molded part	EPDM, molded part
Special features	Decorative membrane drawn across the display	Decorative membrane drawn across the display	Decorative membrane drawn across the display	Decorative membrane drawn across the display
Ambient conditions				
Degree of protection	on the front: IP66K, enclosure type 4 and 4x (indoor use only)	On the front: IP66K, enclosure type 4 and 4x (indoor use only)	On the front: IP66K, enclosure type 4 and 4x (indoor use only)	On the front: IP66K, enclosure type 4 and 4x (indoor use only)
	At the rear: IP20	At the rear: IP20	At the rear: IP20	At the rear: IP20
Ambient temperature during operation	0 ... 50 °C	0 ... 50 °C	0 ... 50 °C	0 ... 50 °C
Relative humidity	max. 85% (no condensation)	max. 85% (no condensation)	max. 85% (no condensation)	max. 85% (no condensation)
Transport/storage temperature	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C … +60 °C
Approvals	CE, C-Tick, KC, cUL, CFM, EX, HAZ.LOC.:CL.I,DIV.2	CE, C-Tick, KC, cUL, CFM	CE, C-Tick, KC, cUL, CFM	CE, C-Tick, KC, cUL, CFM
Sector	Food & beverages, pharmaceuticals industry, other hygiene areas	Food & beverages, pharmaceuticals industry, other hygiene areas	Food & beverages, pharmaceuticals industry, other hygiene areas	Food & beverages, pharmaceuticals industry, other hygiene areas
Dimensions				
External dimensions (W x H x D in mm)	214 x 158	274 x 190	330 x 241	415 x 310
Installation cutout (W x H x D in mm)	197 x 141	251 x 166	310 x 221	396 x 291
Mounting depth, in mm	67	68	68	75
Weight	approx. 1.88 kg	approx. 2.5 kg	Approx. 3.2 kg	approx 6.6 kg
Special features	INOX clamping frame, cast aluminum mounting clamp	INOX clamping frame, cast aluminum mounting clamp	INOX clamping frame, cast aluminum mounting clamp	INOX clamping frame, cast aluminum mounting clamp

HMI devices for special requirements
Devices with stainless steel front

SIMATIC HMI Comfort Panels INOX

Ordering data	Article No.
SIMATIC HMI TP700 Comfort INOX 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 INOX 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 INOX With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.	**6AV2144-8MC10-0AA0**
SIMATIC HMI TP1500 Comfort INOX With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.	**6AV2144-8QC10-0AA0**

More information

Customer-specific modifications
- Customized design (logo, type designation and membrane color)
- Protection against condensation and corrosive gases

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 customized article number.

■ Overview
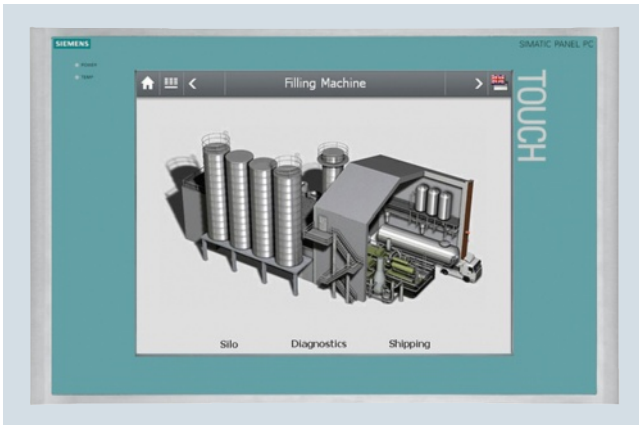
PC platform with high degree of industrial compatibility for demanding tasks in the area of PC-based automation.

Rugged design:
The PC is resistant to the harshest mechanical stress and is reliable in operation.

• Compact design
• High degree of investment protection
• Fast integration capability
• Front panel versions:
  - 15" TFT Touch, stainless steel/INOX

■ Technical specifications

	SIMATIC HMI IPC677C INOX 15" Touch
General features	
Front panel	15" TFT Touch
Display	
Screen diagonal	15"
Resolution (W x H in pixels)	1024 x 768
MTBF of backlighting (at 25 °C)	50 000 h at 24 h continuous operation, temperature-dependent
Type of operation	
Touch screen	Yes
Design	
Central design	Yes
Dimensions	
Installation cutout/device depth (W x H x D) in mm	450 x 290 x 142 (incl. optical drive)
Mounting dimensions in centralized configuration (W x H x D, without optical drive) in mm	450 x 290 x 121
Additional mounting depth (optical drive) in mm	21
Weight	
HMI IPC in a centralized configuration approx.	14 kg

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HMI devices for special requirements
Devices with stainless steel front

SIMATIC HMI IPC677C INOX

Ordering data

SIMATIC HMI IPC677C INOX	Article No. 6AV789■ - ■■■■ - ■■■■
Front panels	
• 15" TFT Touch	2
Front options	
• INOX front, without front USB, with 15" TFT Touch only	2
Power supply	
• 24 V DC	A
• 110/230 V AC, power cable for Europe	B
• 110/230 V AC, without power cable	C
• 110/230 V AC, power cable for UK	D
• 110/230 V AC, power cable for CH	E
• 110/230 V AC, power cable for the USA	F
• 110/230 V AC, power cable for Italy	G
• 110/230 V AC, power cable for China	H
Processor	
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache)	A
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache); PROFIBUS/MPI (CP5611-A2-compatible); 2 MB battery-backed SRAM	B
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache); PROFINET (3 x RJ45, CP1616-compatible), 2 MB battery-backed SRAM	C
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache)	D
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache); PROFIBUS/ MPI (CP5611-A2 compatible); 2 MB battery-backed SRAM	E
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache); PROFINET (3 x RJ45, CP1616 compatible); 2 MB battery-backed SRAM	F
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache)	G
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache); PROFIBUS/MPI (CP5611-A2 compatible); 2 MB battery-backed SRAM	H
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache); PROFINET (3 x RJ45, CP1616-compatible); 2 MB battery-backed SRAM	J

SIMATIC HMI IPC677C INOX	Article No. 6AV789■ - ■■■■ - ■■■■
Main memory	
• 1 GB DDR3	0
• 2 GB DDR3	1
• 3 GB DDR3	2
• 4 GB DDR3	3
• 8 GB DDR3	4
• 2 GB DDR3 with ECC	5
• 4 GB DDR3 with ECC	6
• 8 GB DDR3 with ECC	7
Mass storage	
• 250 GB SATA hard disk	0
• 500 GB SATA hard disk	1
• RAID1, 2 x 320 GB HDD SATA 2.5"	2
• 2 x 320 GB HDD SATA 2.5"	3
• CompactFlash drive No. 2 built-in (instead of HDD, without CF)	5
• 160 GB SATA solid-state drive	6
• Without mass storage	8
Optical drives	
• None	0
• DVD±RW±R	1
Communication interfaces	
• 2 x PCI free	A
• 1 x PCI, 1 x PCIe (x16) free	B
Operating system (pre-installed and activated)	
• Without operating system	A
• Windows XP Professional Multi-Language [1]	B
• Windows 7 Ultimate 32 bit Multi-Language [1]	C
• Windows Embedded Standard on 8 GB CF card [2]	D
• Windows 7 Ultimate 64-Bit Multi-Language [1]	E
Software expansion	
• None	0
• SIMATIC IPC DiagMonitor V4.5 enclosed	1
• SIMATIC IPC Image & Partition Creator V3.4 enclosed	2
• SIMATIC IPC DiagMonitor V4.5, Image & Partition Creator V3.4 enclosed	3

[1] Multi-language means: D/E/F/I/SP/CHIN traditional/CHIN simplified/ Korean/Japanese

[2] Without RAID 1 option only

Ordering data

Ordering data	Article No.
Accessories	
Memory expansion	
• 1 GB DDR3 DIMM	**6ES7648-2AJ40-0KA0**
• 2 GB DDR3 DIMM	**6ES7648-2AJ50-0KA0**
• 4 GB DDR3 DIMM	**6ES7648-2AJ60-0KA0**
• 1 GB DDR3 DIMM with ECC	**6ES7648-2AJ40-1KA0**
• 2 GB DDR3 DIMM with ECC	**6ES7648-2AJ50-1KA0**
• 4 GB DDR3 DIMM with ECC	**6ES7648-2AJ60-1KA0**
Non-heating apparatus cable for SIMATIC Box and Panel PC	
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	**6AV7672-1JB00-0AA0**
Captive pen for operation of the touch devices, mounting of the support on the control cabinet	
Expansion components	See expansion components
Communication components	See communication components

Dimensional drawings

All dimensions in mm.

Panel PC 677C INOX 15" Touch

Control units PC 677 INOX	G	H	J	K	L	M	N
Touch devices							
15"	289	271	138	11	24	367	42

More information

Additional information is available in the Internet under:

http://www.siemens.com/inox-hmi-devices

Note:

Do you require a specific modification or supplement to the products described here? Then refer to "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.

HMI devices for special requirements
HMI devices for hazardous areas

SIMATIC HMI Panel PC Ex

3

■ Overview

The SIMATIC HMI Ex devices are intrinsically-safe Panel PCs and Thin Clients which have been specially developed 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.

The following HMI devices are available for hazardous areas, "Zone 1/21" and "Zone 2/22":

- *SIMATIC HMI Panel PC Ex*
- *SIMATIC HMI Thin Client Ex*

Further SIMATIC HMI devices are also available for the hazardous area "Zone 2/22" and can be found in the chapter "Operator panels":

- *SIMATIC HMI Comfort Panels*

■ Overview SIMATIC HMI Panel PC Ex

SIMATIC HMI Panel PC Ex with international approvals for operation and monitoring in hazardous areas.

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 N270 with 1.6 GHz
Main memory	1 GB DDR2 SDRAM, 2 GB optional
Operating system, preinstalled and configured	Windows XP Professional, Windows XP Embedded, Windows 7 MUI
Mass storage	CompactFlash 4 GB / 16 GB, hard disk 100 GB
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 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 additional heating down to -30 °C
Relative humidity during operation	90 % at + 40 °C, no condensation
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 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 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 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 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 Class II, Division 1, Groups E, F, G, T80°C Ex ia tb [ia ib] IIIC T80°C Db, IP66
KGS	Ex d e ia ib mb [ia ib] IIC T4 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 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 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 Class 2, Division 2, Groups F, G Class 3, Hazardous Locations

	SIMATIC HMI Panel PC Ex
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 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 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 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 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 Class II, Division 2, Groups E, F, G, T80°C; 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 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 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 Class 2, Division 2, Groups F, G Class 3, Hazardous Locations
Dimensions	
Mounting dimensions (W x H x D)	15": 427.5 mm x 327.5 mm x 165 mm 19": 522.5 mm x 412.5 mm x 165 mm
Front dimensions (W x H)	15": 440 mm x 340 mm 19": 535 mm x 425 mm
Weight	15": 15 kg 19": 23 kg

3

HMI devices for special requirements
HMI devices for hazardous areas

SIMATIC HMI Panel PC Ex

■ Ordering data   **Article No.**   **Article No.**

	Article No.
SIMATIC HMI Panel PC Ex	6AV7200 - 1 ■ ■ ■ ■ - ■ ■ A 0 -Z

Design / display size
• Zone 2: 15" Touch with function keys	A
• Zone 2: 19" Touch with function keys	B
• Zone 1: 15" Touch with function keys	D
• Zone 1: 19" Touch with function keys	E
• UL Class 1, Division 2: 15" Touch with function keys	G
• UL Class 1, Division 2: 19" Touch with function keys	H
• Zone 2: 15" Touch, sunlight readable with 8 function keys	J
• Zone 1: 15" Touch, sunlight readable with 8 function keys	K

Communication interfaces
• 10/100 base Tx, Ex e	A
• 100 base Fx FOC (SC), Ex op is	B

Mass storage
• CF 4 GB, 1 GB RAM	1
• CF 16 GB, 1 GB RAM	2
• HDD 100 GB, 1 GB RAM	3
• CF 4 GB, 2 GB RAM	4
• CF 16 GB, 2 GB RAM	5
• HDD 100 GB, 2 GB RAM	6

Operating system (preinstalled)
• Windows XP Embedded on CF (language package 1) [1]	1
• Windows XP Professional MUI (only on HDD)	3
• Windows 7 Ultimate (only on HDD and 2 GB RAM)	4

Enclosure options
(device is delivered already fitted)
• without	0
• Stainless steel enclosure for:	
- Wall mounting	2
- Stand (incl. coupling, 300° rotation possible)	3
- Suspension bracket (incl. coupling, 300° rotation possible)	4
- Support arm (incl. coupling, 300° rotation possible)	5
- Swivel arm from above (incl. coupling, 300° rotation possible)	6

External keyboard for stainless steel enclosure
(incl. keyboard enclosure)
• without	A
• QWERTZ keyboard	B
• QWERTY keyboard	C
• AZERTY keyboard	D
• QWERTZ keyboard with trackball	E
• QWERTY keyboard with trackball	F
• AZERTY keyboard with trackball	G

Further options together with stainless steel enclosure
• Breather glands	A01
• Heating (requires breather glands)	B01
• Handles	C01
• Front USB (at bottom)	D01

[1] Package 1: upon initial startup, select the language from: English, German, French, Italian, Spanish, Portuguese, Brazilian, Dutch, Danish, Swedish, Norwegian, Finnish, Greek, Hungarian, Czech, Polish, Turkish, Russian, Hebrew, Arabic, Chinese, Japanese, Korean, Thai

Accessories	Article No.
Digital KVM for HMI Thin Client Ex	6AV7675-0EX00-0AA0
USB drive	
• Intrinsically safe, 8 GB	6AV7675-0FX00-0AA0
• Intrinsically safe, 8 GB with recovery function	6AV7675-0FX10-0AA0
Ethernet switch with FOC 4 x 100 Base Tx, 1 x 100 Base (MTRJ) Fx Ex op is	6AV7675-0PX00-0AA0

3

■ **Dimensional drawings**

Legend:

h = Mounting clamp (10 x)

i = Clamping frame

j = Control cabinet or enclosure

All dimensions in mm. For mounting cut-out see technical specifications.
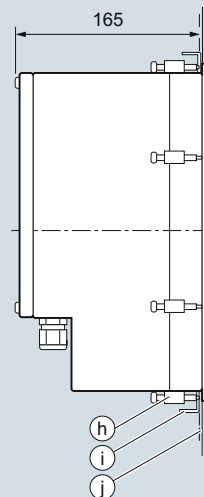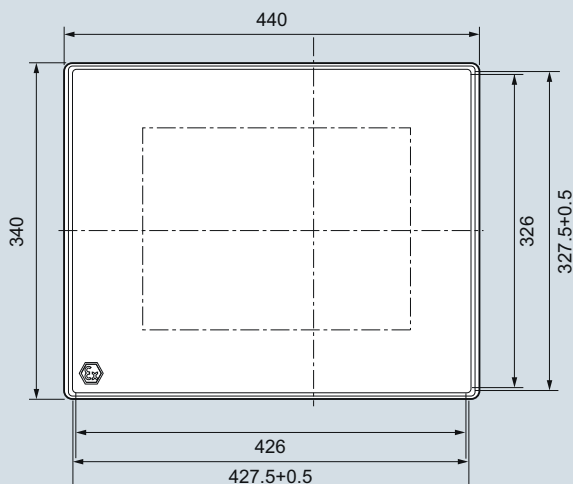
SIMATIC HMI Panel PC Ex 15"
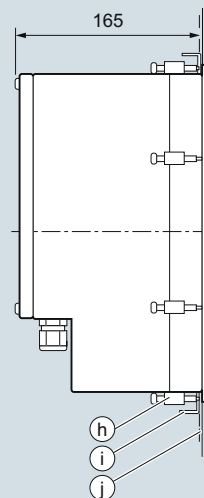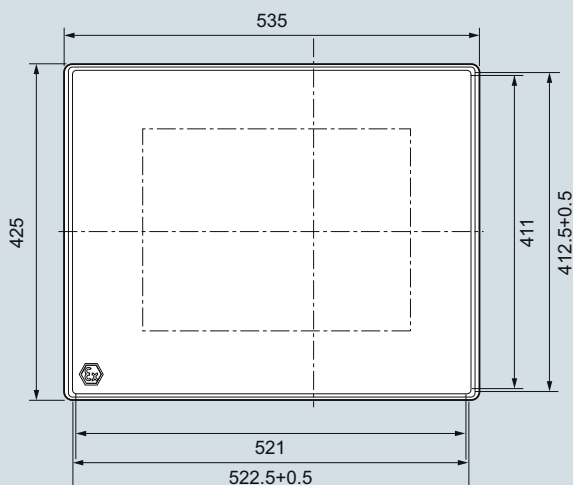
SIMATIC HMI Panel PC Ex 19"

■ **More information**

Additional information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

HMI devices for special requirements
HMI devices for hazardous areas

SIMATIC HMI Thin Client Ex

Overview

SIMATIC HMI Thin Client Ex with international approvals for operation and monitoring in hazardous areas.

Technical specifications

	SIMATIC HMI Thin Client Ex
General features	
Design	Thin Client built-in unit, available in protective enclosure as an option
Front	15", 19", and 15" sunlight readable display
Operation	Touch with 8 function keys
MTBF backlight	50 000 h
Operating system	Closed system on Windows XP Embedded basis
Mass storage	Integrated
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 additional heating 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 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 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 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 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 Class II, Division 1, Groups E, F, G, T80°C Ex ia tb [ia ib] IIIC T80°C Db, IP66
KGS	Ex d e ia ib mb [ia ib] IIC T4 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 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 Ex ia tb [ia ib op is] IIIC T80°C Db IP66

Technical specifications (continued)

	SIMATIC HMI Thin Client Ex
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 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 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 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 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
CSA	Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc, Type 4X, IP66 Class II, Division 2, Groups E, F, G, T80°C; 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 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 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 19": 522.5 x 412.5 x 165
Front dimensions in mm	15": 440 x 340 19": 535 x 425
Weight	15": 15 kg, 19": 23 kg

Ordering data

	Article No.

SIMATIC HMI Thin Client Ex	6AV7200- 0 ■ ■ 0 0 - ■ ■ A 0 -Z

Design / display size
• Zone 2: 15" Touch with function keys	A
• Zone 2: 19" Touch with function keys	B
• Zone 1: 15" Touch with function keys	D
• Zone 1: 19" Touch with function keys	E
• Zone 2: 15" Touch, sunlight readable with function keys	G
• Zone 1: 15" Touch, sunlight readable with function keys	H

Communication interfaces
• 10/100 base Tx, Ex e	A
• 100 base Fx FOC (SC), Ex op is	B

Enclosure options
(device is delivered already fitted)
• without	0
• Stainless steel enclosure for:	
- Wall mounting	2
- Stand (incl. coupling, 300° rotation possible)	3
- Suspension bracket (incl. coupling, 300° rotation possible)	4
- Support arm (incl. coupling, 300° rotation possible)	5
- Swivel arm from above (incl. coupling, 300° rotation possible)	6

External keyboard for enclosure
(incl. keyboard enclosure)
• without	A
• QWERTZ keyboard	B
• QWERTY keyboard	C
• AZERTY keyboard	D
• QWERTZ keyboard with trackball	E
• QWERTY keyboard with trackball	F
• AZERTY keyboard with trackball	G

Further options together with stainless steel enclosure
• Breather glands	A01
• Heating (requires breather glands)	B01
• Handles	C01
• Front USB (at bottom)	D01

Accessories

Digital KVM for HMI Thin Client Ex	6AV7675-0EX00-0AA0

USB drive	
• Intrinsically safe, 8 GB	6AV7675-0FX00-0AA0
• Intrinsically safe, 8 GB with recovery function	6AV7675-0FX10-0AA0

Ethernet switch	6AV7675-0PX00-0AA0
With FOC 4 x 100 Base Tx, 1 x 100 Base (MTRJ) Fx Ex op is	

3

HMI devices for special requirements

HMI devices for hazardous areas

SIMATIC HMI Thin Client Ex

Dimensional drawings

Legend: i = Clamping frame

h = Mounting clamp (10 x)   j = Control cabinet or enclosure

All dimensions in mm. For mounting cut-out see technical specifications.
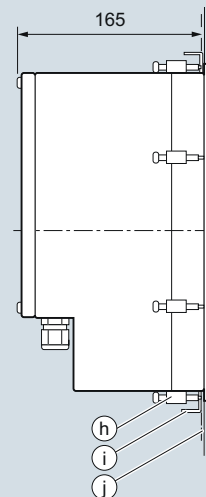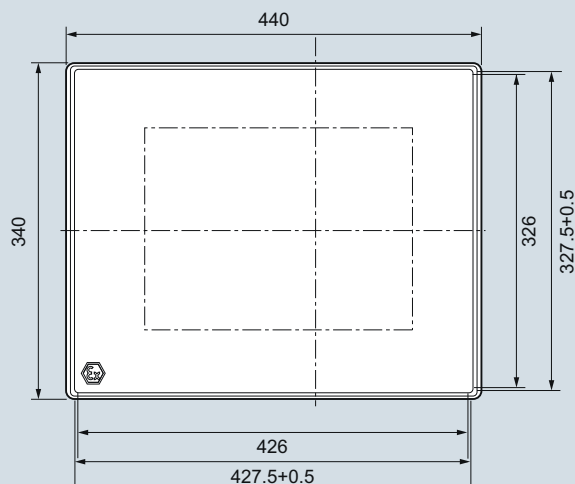
SIMATIC HMI Thin Client Ex 15"
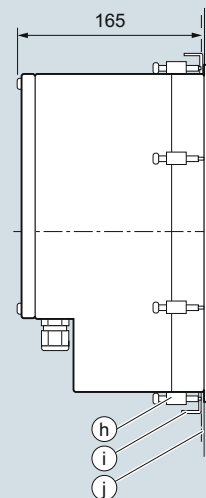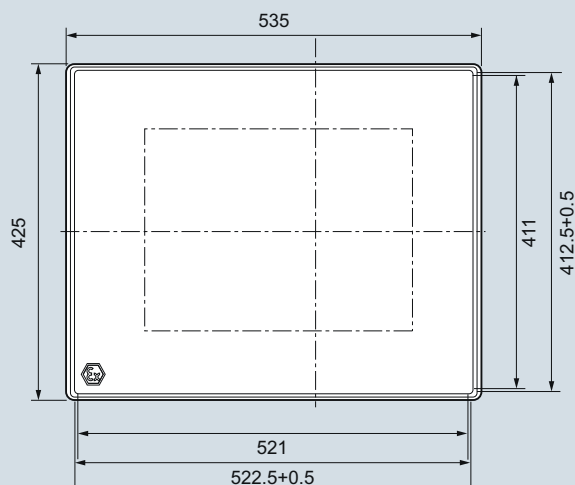
SIMATIC HMI Thin Client Ex 19"

15" touch front	Width in mm	Height in mm	Depth in mm
Operating unit	440	340	165
Installation cutout	427.5 ± 0.5	327.5 ± 0.5	-

19" touch front	Width in mm	Height in mm	Depth in mm
Operating unit	535	425	165
Installation cutout	522 ± 0.5	412.5 ± 0.5	-

More information

Additional information is available on the Internet at:

http://www.siemens.com/simatic-hmi-ex

HMI Software

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 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.

SIMATIC WinCC (TIA Portal)

G_ST80_XX_00461
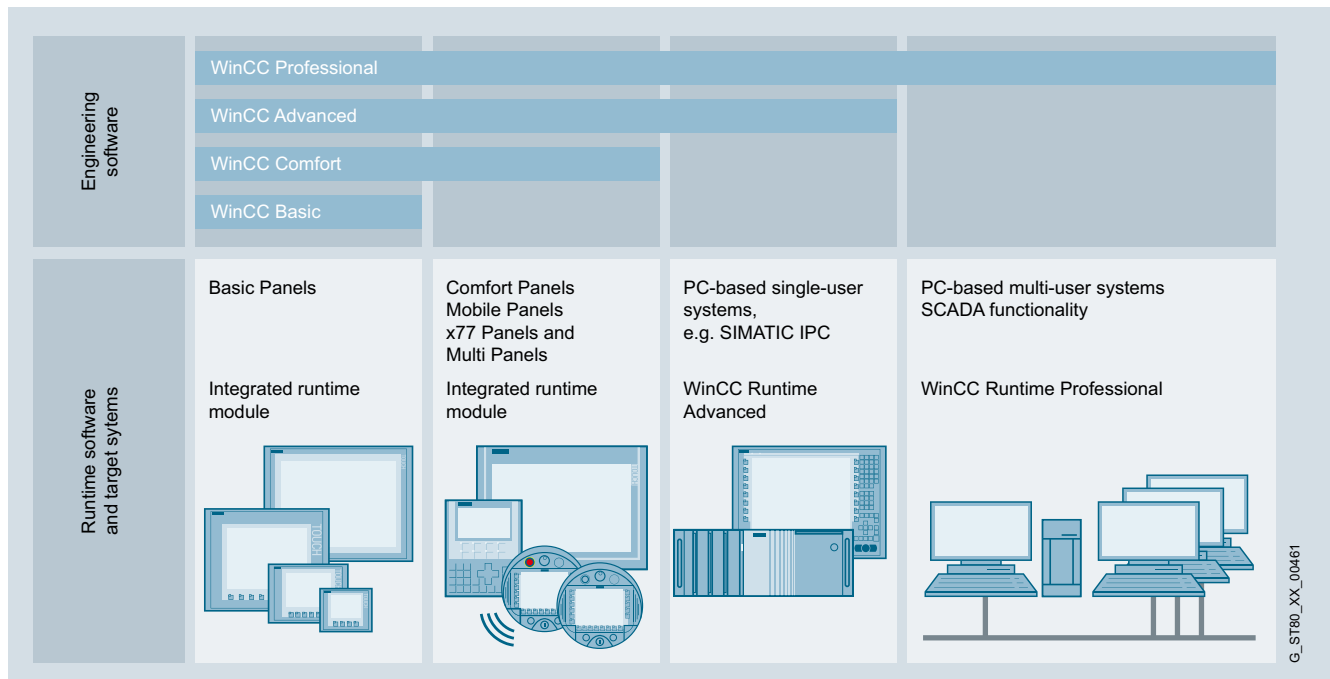
WinCC (TIA Portal) is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal) which offers users a niform, efficient and intuitive solution to all their automation tasks.

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 devices:

- SIMATIC Basic Panels
- 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

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

Due to the support of international standards and system-internal script and programming interfaces, special requests can also be easily implemented.

www.siemens.com/scada

SIMATIC WinCC 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.

4

HMI Software

Overview (continued)

SIMATIC WinCC Open Architecture SCADA system

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. 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 disaster recovery system and SIL3 certification, SIMATIC WinCC Open Architecture demonstrates its reliability in a wide range of critical applications. SIMATIC WinCC Open Architecture can be used on any platform and is available for Windows, Linux and Solaris.

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 2048 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 and Solaris
- 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 many others.
- Flexible logging of data either in file-based value archive or in a relational database (ORACLE)
- Modular expansion is possible 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

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.

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

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 PC-based visualization systems WinCC Runtime Advanced and WinCC Runtime Professional

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
- Integration of customer-specific ActiveX Controls created with WinCC ControlDevelopment
- 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

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
- Integration of customer-specific ActiveX Controls created with WinCC ControlDevelopment

4

HMI Software
HMI Software in the TIA Portal

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 V13 SP1
- SIMATIC WinCC Comfort V13 SP1
- SIMATIC WinCC Advanced V13 SP1
- SIMATIC WinCC Professional V13 SP1

■ 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 object, 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

- Investment protection due to
  - Import of the configuration from WinCC flexible 2008 SP2 and 2008 SP3
  - Transfer of the configuration from WinCC V7.0 SP3

■ 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): KP300 Basic, KTP400 Basic, KTP600 Basic, KTP1000 Basic, TP1500 Basic
- Basic Panels (2nd Generation): KTP400 Basic, KTP700 Basic, KTP900 Basic, KTP1200 Basic

WinCC Comfort

As WinCC Basic, plus:
- Comfort Panels
- Mobile Panels: Mobile Panel 177, Mobile Panel 277
- Panels of the 70 series: OP 73, OP 77A, OP 77B
- Panels of the 170 series: TP 177A, TP 177B, OP 177B
- Panels of the 270 series: TP 277, OP 277
- Multi Panels: MP 177, MP 277, MP 377

WinCC Advanced

As WinCC Comfort, plus:
- SIMATIC PCs with WinCC Runtime Advanced:
  - SIMATIC Rack PC: Rack PC 547B, IPC547C, IPC547D, Rack PC IPC647C, IPC647D, Rack PC IPC847C, IPC847D
  - SIMATIC Box PC: IPC227D, Box PC 427B, IPC427C, IPC427D, Box PC 627B, IPC627C, Box PC 827B, IPC827C
  - SIMATIC Panel PC: IPC277D, Panel PC 477B, IPC477C, IPC477D, Panel PC 577B, IPC577C, Panel PC 677B, IPC677C, IPC677D
  - SIMATIC modular Embedded Controller: EC31
  - Industrial Flat Panel (Multi-Touch)
- 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 PC: Rack PC 547B, IPC547C, IPC547D, IPC547E, Rack PC 647B, IPC647C, Rack PC 847B, IPC847C, IPC647D, IPC847D
  - SIMATIC Box PC: IPC427C, IPC427D, Box PC 627B, IPC627C, IPC827C, IPC627D
  - SIMATIC Panel PC: IPC477C, IPC477D, Panel PC 577B, IPC577C, Panel PC 677B, IPC677C, IPC677D
  - Industrial Flat Panel (Multi-Touch)
- Standard PC with WinCC Runtime Professional

4

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 controller
  - 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. alarm 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

4

HMI Software
HMI Software in the TIA Portal

SIMATIC WinCC (TIA Portal) Engineering

■ **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 delivery
- Size-scalable graphics for industrial applications are included in the scope of delivery
- 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)	Core i5; 3.3 GHz or comparable
RAM (recommended)	8 GB
Free hard disk space	2 GB on system drive "C:"
Operating systems	32-bit operating systems • Windows 7 Home Premium SP1 (only WinCC Basic) • Windows 7 Professional SP1 • Windows 7 Enterprise SP1 • Windows 7 Ultimate SP1 64-bit operating systems • Windows 7 Home Premium SP1 (only WinCC Basic) • Windows 7 Professional SP1 • Windows 7 Enterprise SP1 • Windows 7 Ultimate SP1 • Windows 8.1 (only WinCC Basic) • Windows 8.1 Professional • Windows 8.1 Enterprise • Windows Server 2008 R2 StdE SP1 (not WinCC Basic) • Windows Server 2012 R2 StdE
Screen resolution	1920 x 1080 recommended
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**

	Article No.		Article No.

SIMATIC WinCC Basic V13 SP1

Engineering software for the configuration and simulation of Basic Panels; electronic documentation in English, German, French, Italian, Spanish, Chinese
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2100-0AA03-0AA5**
- as download [1], software and license key download, floating license, e-mail address required for the delivery — **6AV2100-0AA03-0AH5**

SIMATIC WinCC Comfort V13 SP1

Engineering software for the configuration and simulation of SIMATIC Panels; electronic documentation in English, French, German, Italian, Spanish, simplified Chinese, traditional Chinese
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2101-0AA03-0AA5**
- as download [1], software and license key download, floating license, e-mail address required for the delivery — **6AV2101-0AA03-0AH5**

SIMATIC WinCC Advanced V13 SP1

Engineering software for the configuration and simulation of SIMATIC Panels; SIMATIC WinCC Runtime Advanced electronic documentation in English, German, French, Italian, Spanish, Chinese
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2102-0AA03-0AA5**
- as download [1], floating license, software and license key download, e-mail address required for the delivery — **6AV2102-0AA03-0AH5**

SIMATIC WinCC Professional V13 SP1

Engineering software for the configuration and simulation of SIMATIC Panels; SIMATIC WinCC Runtime Advanced, electronic documentation in English, German, French, Italian, Spanish, Chinese

SIMATIC WinCC Runtime Professional (with a maximum of 512 PowerTags)
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2103-0DA03-0AA5**
- as download [1], floating license, license key download, e-mail address required for the delivery — **6AV2103-0DA03-0AH5**

SIMATIC WinCC Runtime Professional (with a maximum of 4 096 PowerTags)
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2103-0HA03-0AA5**
- as download [1], floating license, license key download, e-mail address required for the delivery — **6AV2103-0HA03-0AH5**

SIMATIC WinCC Runtime Professional max. PowerTags (unlimited PowerTags)
- Software and documentation on DVD, floating license, license key on USB stick — **6AV2103-0XA03-0AA5**
- as download [1], floating license, license key download, e-mail address required for the delivery — **6AV2103-0XA03-0AH5**

SIMATIC WinCC V13 SP1 Engineering, Trial Licenses

on DVD, 21 day trial
- SIMATIC WinCC Basic — **6AV2100-0AA03-0AA7**
- SIMATIC WinCC Comfort/ Advanced — **6AV2102-0AA03-0AA7**
- SIMATIC WinCC Professional — **6AV2103-0AA03-0AA7**

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HMI Software
HMI Software in the TIA Portal

SIMATIC WinCC (TIA Portal) Engineering

Ordering data	Article No.
Powerpacks	
SIMATIC WinCC V13 Engineering Powerpacks (without version change)	
Floating license, license key only on USB stick	
• SIMATIC WinCC Basic to SIMATIC WinCC Comfort [2]	6AV2101-2AA03-0AC5
• SIMATIC WinCC Comfort to SIMATIC WinCC Advanced	6AV2102-2AA03-0BD5
• SIMATIC WinCC Advanced to SIMATIC WinCC Professional 512 PowerTags	6AV2103-2AD03-0AC5
• SIMATIC WinCC Professional Powerpack 512 PowerTags to 4 096 PowerTags	6AV2103-2DH03-0BD5
• SIMATIC WinCC Professional Powerpack 4 096 PowerTags to max. PowerTags	6AV2103-2HX03-0BD5
as download [1], floating license, license key download only, e-mail address required for the delivery	
• SIMATIC WinCC Basic to SIMATIC WinCC Comfort [2]	6AV2101-2AA03-0BJ5
• SIMATIC WinCC Comfort to SIMATIC WinCC Advanced	6AV2102-2AA03-0BJ5
• SIMATIC WinCC Advanced to SIMATIC WinCC Professional 512 PowerTags	6AV2103-2AD03-0BJ5
• SIMATIC WinCC Professional Powerpack 512 PowerTags to 4 096 PowerTags	6AV2103-2DH03-0BJ5
• SIMATIC WinCC Professional Powerpack 4 096 PowerTags to max. PowerTags	6AV2103-2HX03-0BJ5

Ordering data	Article No.
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. 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
Software Update Service (Compact Edition)	
The delivery items are combined. For several contracts, only 1 package with 1 data 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
Software Update Service (download) [1]	
E-mail address required for the 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

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

[2] Valid only for Article No.'s 6AV2100-0AA03-0AA5 and 6AV2100-0AA03-0AH5

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Ordering data

	Article No.
SIMATIC WinCC Engineering Upgrades	
WinCC V11..V12 -> WinCC V13 SP1	
Software and documentation on DVD, upgrade license, license key on USB stick	
• SIMATIC WinCC Basic	6AV2100-3AA03-0AE5
• SIMATIC WinCC Comfort	6AV2101-3AA03-0AE5
• SIMATIC WinCC Advanced	6AV2102-3AA03-0AE5
• SIMATIC WinCC Professional 512 PowerTags	6AV2103-3DA03-0AE5
• SIMATIC WinCC Professional 4 096 PowerTags	6AV2103-3HA03-0AE5
• SIMATIC WinCC Professional max. PowerTags	6AV2103-3XA03-0AE5
as download [1], floating license, software and license key download, e-mail address required for the delivery	
• SIMATIC WinCC Basic	6AV2100-3AA03-0AK5
• SIMATIC WinCC Comfort	6AV2101-3AA03-0AK5
• SIMATIC WinCC Advanced	6AV2102-3AA03-0AK5
• SIMATIC WinCC Professional 512 PowerTags	6AV2103-3DA03-0AK5
• SIMATIC WinCC Professional 4 096 PowerTags	6AV2103-3HA03-0AK5
• SIMATIC WinCC Professional max. PowerTags	6AV2103-3XA03-0AK5
WinCC flexible 2008 to WinCC V13 SP1	
Software and documentation on DVD, upgrade license, license key on USB stick	
• WinCC flexible Compact to WinCC Comfort	6AV2101-4AB03-0AE5
• WinCC flexible Standard to WinCC Comfort	6AV2101-4BB03-0AE5
• WinCC flexible Advanced to WinCC Advanced	6AV2102-4AA03-0AE5
as download [1] upgrade license, software and license key download, e-mail address required for the delivery	
• WinCC flexible Compact to WinCC Comfort	6AV2101-4AB03-0AK5
• WinCC flexible Standard to WinCC Comfort	6AV2101-4BB03-0AK5
• WinCC flexible Advanced to WinCC Advanced	6AV2102-4AA03-0AK5

	Article No.
WinCC V7.0 / V7.2 RC -> WinCC Prof. V13 SP1 and **WinCC Runtime Professional V13 SP1**	
Software and documentation on DVD, upgrade license, license key on USB stick	
• SIMATIC WinCC RC 128 -> WinCC Prof. 512 PowerTags and WinCC RT Prof. 128 PowerTags	6AV2103-4BD03-0AE5
• SIMATIC WinCC RC 512 -> WinCC Prof. 512 PowerTags and WinCC RT Prof. 512 PowerTags	6AV2103-4DD03-0AE5
• SIMATIC WinCC RC 2 048 -> WinCC Prof. 4 096 PowerTags and WinCC RT Prof. 2 048 PowerTags	6AV2103-4FH03-0AE5
• SIMATIC WinCC V7.0 RC 8 192 -> WinCC Prof. max. PowerTags and WinCC RT Prof. 8 192 PowerTags	6AV2103-4KX03-0AE5
• SIMATIC WinCC 65 536 -> WinCC Prof. max. PowerTags and WinCC RT Prof. 65 536 PowerTags	6AV2103-4MX03-0AE5
• SIMATIC WinCC RC 102 400 -> WinCC Prof. max. PowerTags and WinCC RT Professional 102 400 PowerTags	6AV2103-4PX03-0AE5
• SIMATIC WinCC RC 153 600 -> WinCC Prof. max. PowerTags and WinCC RT Professional 153 600 PowerTags	6AV2103-4RX03-0AE5
• SIMATIC WinCC RC 262 144 -> WinCC Prof. max. PowerTags and WinCC RT Professional 262 144 PowerTags	6AV2103-4TX03-0AE5
as download [1] upgrade license, software and license key download, e-mail address required for the delivery	
• SIMATIC WinCC RC 128 -> WinCC Prof. 512 PowerTags and WinCC RT Prof. 128 PowerTags	6AV2103-4BD03-0AK5
• SIMATIC WinCC RC 512 -> WinCC Prof. 512 PowerTags and WinCC RT Prof. 512 PowerTags	6AV2103-4DD03-0AK5
• SIMATIC WinCC RC 2 048 -> WinCC Prof. 4 096 PowerTags and WinCC RT Professional 2 048 PowerTags	6AV2103-4FH03-0AK5
• SIMATIC WinCC RC 8 192 -> WinCC Prof. max. PowerTags and WinCC RT Professional 8 192 PowerTags	6AV2103-4KX03-0AK5
• SIMATIC WinCC RC 65 536 -> WinCC Prof. max. PowerTags and WinCC RT Professional 65 536 PowerTags	6AV2103-4MX03-0AK5
• SIMATIC WinCC RC 102 400 -> WinCC Prof. max. PowerTags and WinCC RT Professional 102 400 PowerTags	6AV2103-4PX03-0AK5
• SIMATIC WinCC RC 153 600 -> WinCC Prof. max. PowerTags and WinCC RT Professional 153 600 PowerTags	6AV2103-4RX03-0AK5
• SIMATIC WinCC RC 262 144 -> WinCC Prof. max. PowerTags and WinCC RT Professional 262 144 PowerTags	6AV2103-4TX03-0AK5

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

More information

Further information can be found in the Internet at:

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

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

SIMATIC WinCC Runtime Advanced

Overview SIMATIC WinCC (TIA Portal) Runtime
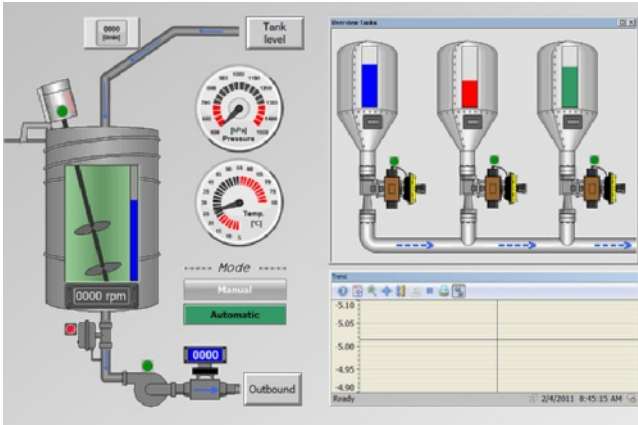
SIMATIC WinCC Runtime Advanced

- 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
- Integration of customer-specific ActiveX Controls created with WinCC ControlDevelopment
- 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

SIMATIC WinCC Runtime Professional

- 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
- Integration of customer-specific ActiveX Controls created with WinCC ControlDevelopment

Overview SIMATIC WinCC Runtime Advanced

PC-based HMI solution 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
- Innovative service concepts with remote operation, diagnostics and administration via intranet and Internet as well as e-mail communication to 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
  - 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 HMI devices:

- SIMATIC Panel PC: IPC277D, Panel PC 477B, HMI IPC477C, IPC477D, Panel PC 577B, HMI IPC577C, Panel PC 677B, HMI IPC677C
- SIMATIC Box PC: IPC227D, Box PC 427B, IPC427C, IPC427D, Box PC 627B, IPC627C, Box PC 827B, IPC827C
- SIMATIC Rack PC: Rack PC 547B, IPC547C, IPC547D, Rack PC 647B, IPC647C, Rack PC 847B, IPC847C
- SIMATIC modular Embedded Controller: EC31
- 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 or 8 192 PowerTags.

The term PowerTags is used to identify process variables and area pointers that have a process link to the controller. Variables without process link, constant limit values of variables, 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 alarm and diagnostics concept of the S7-1500 controller is also supported
- Freely-definable alarm 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)

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

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

SIMATIC WinCC Runtime Advanced

■ **Function** (continued)

Open communication between HMI systems and with higher-level systems

- OPC server
  - 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 (variables)

- Sending of e-mails on demand or event-driven
  - e.g. to maintenance personnel via SMTP server (Simple Mail Transfer Protocol)
  - The optional use of e-mail/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 or control room

WinCC ControlDevelopment for extending the functionality by adding own Controls [1]

- Development of proprietary VB.net or C# Controls for integration in SIMATIC WinCC Runtime Advanced

[1] Option for SIMATIC WinCC Runtime Advanced, runtime licenses must be purchased separately. For further information, refer to "WinCC options".

System prerequisites

	SIMATIC WinCC Runtime Advanced
Processor type (min.) [1]	At least Intel® Atom™ 1.3 GHz or comparable and all CPUs of SIMATIC IPC
RAM (min.) [2]	2 GB
Free hard disk space [3]	2 GB on system drive "C:"
Operating systems	32-bit operating systems • Windows 7 Professional SP1 • Windows 7 Enterprise SP1 • Windows 7 Ultimate SP1 64-bit operating systems • Windows 7 Professional SP1 　Windows 7 Enterprise SP1 　Windows 7 Ultimate SP1 • Windows 8.1 Professional 　Windows 8.1 Enterprise 　Windows Server 2008 R2 StdE SP1 　Windows Server 2012 R2 StdE • Windows 7 Home Premium SP1 　(only WinCC Basic) 　Windows 7 Professional SP1 　Windows 7 Enterprise SP1 　Windows 7 Ultimate SP1 • Windows 8.1 (only WinCC Basic) 　Windows 8.1 Professional 　Windows 8.1 Enterprise 　Windows Server 2008 R2 StdE SP1 　(not WinCC Basic) 　Windows Server 2012 R2 StdE
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.

4

■ **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 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	6 144
Number of PowerTags	128 –4 096
Number of elements per array	1 600
Number of local tags	2 048
Alarms	
Number of alarm classes	32
Number of discrete alarms	4 000
Number of analog alarms	500
Length of an alarm in characters	80
Number of process values per alarm	8
Size of the alarm buffer	1 024
Number of queued alarm events	500
Screens	
Number of screens	500
Number of fields per screen	400
Number of tags per screen	400
Number of complex objects per screen[1]	40
Recipes	
Number of recipes	999
Number of elements per recipe[2]	2 000
User data length in KB per data record	256
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	6 144
Trends	
Number of trends	800

	SIMATIC WinCC Runtime Advanced
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	2 000
Number of text elements	30 000
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	320
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.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

SIMATIC WinCC Runtime Advanced

■ **Ordering data**

	Article No.		Article No.
Basic packages		**SIMATIC WinCC Runtime Advanced V13 SP1 to SIMATIC WinCC Runtime Professional V13 SP1**	
SIMATIC WinCC Runtime Advanced V13 SP1		Single license, software and documentation on DVD, license key on USB stick for PowerTags from	
Software and documentation on DVD, including options software [1] Single license, license key on USB stick		• 128 PowerTags to 128 PowerTags	6AV2105-2BB03-0AC0
• 128 PowerTags	6AV2104-0BA03-0AA0	• 512 PowerTags to 512 PowerTags	6AV2105-2DD03-0AC0
• 512 PowerTags	6AV2104-0DA03-0AA0	• 2 048 PowerTags to 2 048 PowerTags	6AV2105-2FF03-0AC0
• 2 048 PowerTags	6AV2104-0FA03-0AA0	• 4 096 PowerTags to 4 096 PowerTags	6AV2105-2HH03-0AC0
• 4 096 PowerTags	6AV2104-0HA03-0AA0	• 8 192 PowerTags to 8 192 PowerTags	6AV2105-2KK03-0AC0
• 8 192 PowerTags	6AV2104-0KA03-0AA0		
as download [3]		as download [3]	
Single license, software and license key download. Email address required for the delivery.		Single license, software and license key download. Email address required for the delivery.	
• 128 PowerTags	6AV2104-0BA03-0AH0	• 128 PowerTags to 128 PowerTags	6AV2105-2BB03-0AJ0
• 512 PowerTags	6AV2104-0DA03-0AH0	• 512 PowerTags to 512 PowerTags	6AV2105-2DD03-0AJ0
• 2 048 PowerTags	6AV2104-0FA03-0AH0	• 2 048 PowerTags to 2 048 PowerTags	6AV2105-2FF03-0AJ0
• 4 096 PowerTags	6AV2104-0HA03-0AH0	• 4 096 PowerTags to 4 096 PowerTags	6AV2105-2HH03-0AJ0
• 8 192 PowerTags	6AV2104-0KA03-0AH0	• 8 192 PowerTags to 8 192 PowerTags	6AV2105-2KK03-0AJ0
Powerpacks		**SIMATIC WinCC Runtime Advanced V13 SP1 to SIMATIC WinCC Runtime Professional ASIA V13 SP1**	
SIMATIC WinCC Runtime Advanced V13 (without version change)		• 128 PowerTags to 128 PowerTags	6AV2105-2BB13-0AC0
Single license, license key only on USB stick for PowerTags from		• 512 PowerTags to 512 PowerTags	6AV2105-2DD13-0AC0
• 128 PowerTags to 512 PowerTags	6AV2104-2BD03-0BD0	• 2 048 PowerTags to 2 048 PowerTags	6AV2105-2FF13-0AC0
• 512 PowerTags to 2 048 PowerTags	6AV2104-2DF03-0BD0	• 4 096 PowerTags to 4 096 PowerTags	6AV2105-2HH13-0AC0
• 2 048 PowerTags to 4 096 PowerTags	6AV2104-2FH03-0BD0	• 8 192 PowerTags to 8 192 PowerTags	6AV2105-2KK13-0AC0
• 4 096 PowerTags to 8 192 PowerTags	6AV2104-2HK03-0BD0	**Update**	
as download [3]		**SIMATIC WinCC Runtime Advanced V13 to V13 SP1**	6AV2105-0XX03-0DU8
Single license, software and license key download. Email address required for the delivery.		Software and documentation on DVD, including options software (only DVD, without license key)	
• 128 PowerTags to 512 PowerTags	6AV2104-2BD03-0BJ0		
• 512 PowerTags to 2 048 PowerTags	6AV2104-2DF03-0BJ0		
• 2 048 PowerTags to 4 096 PowerTags	6AV2104-2FH03-0BJ0		
• 4 096 PowerTags to 8 192 PowerTags	6AV2104-2HK03-0BJ0		

4

Ordering data

	Article No.
Upgrades	
SIMATIC WinCC Runtime Advanced V11..12 to V13 SP1	
Software and documentation on DVD, including options software single license, license keys on USB stick for	
• 128 PowerTags	6AV2104-3BB03-0AE0
• 512 PowerTags	6AV2104-3DD03-0AE0
• 2 048 PowerTags	6AV2104-3FF03-0AE0
• 4 096 PowerTags	6AV2104-3HH03-0AE0
• 8 192 PowerTags	6AV2105-3KK03-0AE0
as download [3]	
Single license, software and license key download. Email address required for the delivery.	
• 128 PowerTags	6AV2104-3BB03-0AK0
• 512 PowerTags	6AV2104-3DD03-0AK0
• 2 048 PowerTags	6AV2104-3FF03-0AK0
• 4 096 PowerTags	6AV2104-3HH03-0AK0
• 8 192 PowerTags	6AV2104-3KK03-0AK0
SIMATIC WinCC flexible 2008 to SIMATIC WinCC Runtime Advanced V13 SP1	
Software and documentation on DVD, including options software single license, license keys on USB stick for	
• 128 PowerTags to 128 PowerTags [2]	6AV2104-4BB03-0AE0
• 512 PowerTags to 512 PowerTags [2]	6AV2104-4DD03-0AE0
• 2 048 PowerTags to 2 048 PowerTags [2]	6AV2104-4FF03-0AE0
• 4 096 PowerTags to 4 096 PowerTags [2]	6AV2104-4HH03-0AE0
• 8 000 PowerTags to 8 192 PowerTags [2]	6AV2104-4KK03-0AE0
as download [3]	
Single license, software and license key download. Email address required for the delivery.	
• 128 PowerTags to 128 PowerTags [2]	6AV2104-4BB03-0AK0
• 512 PowerTags to 512 PowerTags [2]	6AV2104-4DD03-0AK0
• 2 048 PowerTags to 2 048 PowerTags [2]	6AV2104-4FF03-0AK0
• 4 096 PowerTags to 4 096 PowerTags [2]	6AV2104-4HH03-0AK0
• 8 000 PowerTags to 8 192 PowerTags [2]	6AV2104-4KK03-0AK0

	Article No.
SIMATIC WinCC flexible Panel Options to **SIMATIC WinCC (TIA Portal) Panel Options**	6AV2107-4XP00-0BF0
• WinCC flexible /Audit for SIMATIC Panels to SIMATIC WinCC Audit for SIMATIC Panels	
• WinCC flexible /Sm@rtAccess for SIMATIC Panel to SIMATIC WinCC Sm@rtServer for SIMATIC Panels	
• WinCC flexible /Sm@rtService for SIMATIC Panels to SIMATIC WinCC Sm@rtServer for SIMATIC Panels	
as download [3]	6AV2107-4XP00-0BK0
Single license, license key download only. Email address required for the delivery.	
• WinCC flexible /Audit for SIMATIC Panels to SIMATIC WinCC Audit for SIMATIC Panels	
• WinCC flexible /Sm@rtAccess for SIMATIC Panel to SIMATIC WinCC Sm@rtServer for SIMATIC Panels	
• WinCC flexible /Sm@rtService for SIMATIC Panels to SIMATIC WinCC Sm@rtServer for SIMATIC Panels	

[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 delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

More information

Further information can be found in the Internet at:

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

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

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 alarm and diagnostics concept
  - Integrated diagnostic functions for increasing productivity

Application

SIMATIC WinCC Runtime Professional is designed for visualization and operation of processes, manufacturing cycles, 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 HMI devices:

SIMATIC PCs:

- SIMATIC Panel PC: HMI IPC477C (Client), IPC477D (Client), Panel PC 577B, HMI IPC577C (Client), Panel PC 677B, HMI IPC677C
- SIMATIC Box PC: IPC427C, IPC427D, Box PC 627B, IPC627C, IPC827C
- SIMATIC Rack PC: PC 547B, IPC547C, IPC547D, PC 647B, IPC647C, PC 847B, IPC827C
- 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.

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 alarm and diagnostics concept of the S7-1500 controller is also supported
- Freely-definable alarm classes for definition of acknowledgment response and display of alarm events

Logging of alarms 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

■ **Function** (continued)

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
  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 sector
  - 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-UA-DA Server: tags, e.g. process values
- OLE DB Server
  - Standardized and user-friendly access to WinCC log data (MS SQL Server 2005).
  - Access is 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 WebNavigator for Runtime Professional [1]
  - 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.

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 delivery)

WinCC ControlDevelopment for extending the functionality by adding own Controls [1]

- Development of proprietary VB.net or C# Controls for integration in WinCC Runtime Professional

[1] Option for SIMATIC WinCC Runtime Professional; runtime licenses must be purchased separately. For further information, refer to "WinCC options".

System prerequisites	SIMATIC WinCC Runtime Professional
Processor type (min.) [1]	• Windows 7 (32-bit): 3.5 GHz P4 or comparable, dual core • Windows Server 2008: 3 GHz P4 or comparable, dual/multi core
RAM (min.) [2]	2 GB
Free hard disk space [3]	2 GB on system drive "C:"
Operating systems	32-bit operating systems • Windows 7 Professional SP1 • Windows 7 Enterprise SP1 • Windows 7 Ultimate SP1 64-bit operating systems • Windows 7 Professional SP1 • Windows 7 Enterprise SP1 • Windows 7 Ultimate SP1 • Windows 8.1 Professional • Windows 8.1 Enterprise • Windows Server 2008 R2 StdE SP1 • Windows Server 2012 R2 StdE
Graphics card	32 MB RAM, 24 bit color depth
Network	Ethernet 10 Mbit/s 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.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

WinCC Runtime Professional

■ 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. ActiveX and .net Controls support technology and sector-specific expansions. 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 turntable in form of a company-wide Process Historian. Open interfaces form the basis for an effective IT and business integration.

■ 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	20 000
PowerTags per alarm line	10
User text blocks per alarm line	10
Alarm classes (incl. system alarm classes)	18
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]	3 000[5]
Levels per screen	32
Screens per project	1 000[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	1 000[5]
Number of recipe elements	500[6]
Number of recipe data records	3 000[6]
Number of views	Unlimited[5]

	SIMATIC WinCC Runtime Professional
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]	8 000
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	50[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 320,000.

[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.		Article No.

Basic software

| **Powerpacks** | |

SIMATIC WinCC Runtime Professional V13 SP1
For PC systems;
incl. software options [1],
language/script versions:
DE, EN, FR, IT, ES
Single License, on DVD
incl. licensing, on USB stick, for:

• 128 PowerTags	6AV2105-0BA03-0AA0
• 512 PowerTags	6AV2105-0DA03-0AA0
• 2 048 PowerTags	6AV2105-0FA03-0AA0
• 4 096 PowerTags	6AV2105-0HA03-0AA0
• 8 192 PowerTags	6AV2105-0KA03-0AA0
• 65 536 PowerTags	6AV2105-0MA03-0AA0
• 102 400 PowerTags	6AV2105-0PA03-0AA0
• 153 600 PowerTags	6AV2105-0RA03-0AA0
• 262 144 PowerTags	6AV2105-0TA03-0AA0
Incl. 500 archive tags each	

SIMATIC WinCC Runtime Professional V13 SP1 as download [3]
Single license, software and license key download.
Email address required for the delivery.

• 128 PowerTags	6AV2105-0BA03-0AH0
• 512 PowerTags	6AV2105-0DA03-0AH0
• 2 048 PowerTags	6AV2105-0FA03-0AH0
• 4 096 PowerTags	6AV2105-0HA03-0AH0
• 8 192 PowerTags	6AV2105-0KA03-0AH0
• 65 536 PowerTags	6AV2105-0MA03-0AH0
• 102 400 PowerTags	6AV2105-0PA03-0AH0
• 153 600 PowerTags	6AV2105-0RA03-0AH0
• 262 144 PowerTags	6AV2105-0TA03-0AH0
Incl. 500 archive tags each	

SIMATIC WinCC Runtime Professional ASIA V13 SP1
For PC systems;
incl. software options [1],
language/script versions:
EN, CHs, CHt, KOR, JPN
Single License, on DVD
incl. licensing, for:

• 128 PowerTags	6AV2105-0BA13-0AA0
• 512 PowerTags	6AV2105-0DA13-0AA0
• 2 048 PowerTags	6AV2105-0FA13-0AA0
• 4 096 PowerTags	6AV2105-0HA13-0AA0
• 8 192 PowerTags	6AV2105-0KA13-0AA0
• 65 536 PowerTags	6AV2105-0MA13-0AA0
• 102 400 PowerTags	6AV2105-0PA13-0AA0
• 153 600 PowerTags	6AV2105-0RA13-0AA0
• 262 144 PowerTags	6AV2105-0TA13-0AA0
Incl. 500 archive tags each	

SIMATIC WinCC Client for Runtime Professional V13 SP1

• WinCC Client for Runtime Professional	6AV2107-0DB03-0AA0
• WinCC Client for Runtime Professional (as download [3])	6AV2107-0DB03-0AH0
• WinCC Client for Runtime Professional ASIA	6AV2107-0DB13-0AA0

Powerpacks

SIMATIC WinCC Runtime Professional V13 and **SIMATIC WinCC Runtime Professional ASIA V13**
Single license, license key only on USB sticks for PowerTags from

• 128 to 512 PowerTags	6AV2105-2BD03-0BD0
• 512 to 2 048 PowerTags	6AV2105-2DF03-0BD0
• 2 048 to 4 096 PowerTags	6AV2105-2FH03-0BD0
• 4 096 to 8 192 PowerTags	6AV2105-2HK03-0BD0
• 8 192 to 65 536 PowerTags	6AV2105-2KM03-0BD0
• 65 536 to 102 400 PowerTags	6AV2105-2MP03-0BD0
• 102 400 to 153 600 PowerTags	6AV2105-2PR03-0BD0
• 153 600 to 262 144 PowerTags	6AV2105-2RT03-0BD0

as download [3]
Single license, license key download only.
Email address required for the delivery.

• 128 to 512 PowerTags	6AV2105-2BD03-0BJ0
• 512 to 2 048 PowerTags	6AV2105-2DF03-0BJ0
• 2 048 to 4 096 PowerTags	6AV2105-2FH03-0BJ0
• 4 096 to 8 192 PowerTags	6AV2105-2HK03-0BJ0
• 8 192 to 65 536 PowerTags	6AV2105-2KM03-0BJ0
• 65 536 to 102 400 PowerTags	6AV2105-2MP03-0BJ0
• 102 400 to 153 600 PowerTags	6AV2105-2PR03-0BJ0
• 153 600 to 262 144 PowerTags	6AV2105-2RT03-0BJ0

Upgrades

SIMATIC WinCC Runtime Professional V11..12 and

SIMATIC WinCC Runtime Professional ASIA V11..V12 to **V13 SP1**
Single license, on DVD
incl. licensing on USB stick

• SIMATIC WinCC Runtime Professional 128 PowerTags	6AV2105-3BB03-0AE0
• SIMATIC WinCC Runtime Professional 512 PowerTags	6AV2105-3DD03-0AE0
• SIMATIC WinCC Runtime Professional 2 048 PowerTags	6AV2105-3FF03-0AE0
• SIMATIC WinCC Runtime Professional 4 096 PowerTags	6AV2105-3HH03-0AE0
• SIMATIC WinCC Runtime Professional 8 192 PowerTags	6AV2105-3KK03-0AE0
• SIMATIC WinCC Runtime Professional 65 536 PowerTags	6AV2105-3MM03-0AE0

as download [3]
Single license, software and license key download.
Email address required for the delivery.

• SIMATIC WinCC Runtime Professional 128 PowerTags	6AV2105-3BB03-0AK0
• SIMATIC WinCC Runtime Professional 512 PowerTags	6AV2105-3DD03-0AK0
• SIMATIC WinCC Runtime Professional 2 048 PowerTags	6AV2105-3FF03-0AK0
• SIMATIC WinCC Runtime Professional 4 096 PowerTags	6AV2105-3HH03-0AK0
• SIMATIC WinCC Runtime Professional 8 192 PowerTags	6AV2105-3KK03-0AK0
• SIMATIC WinCC Runtime Professional 65 536 PowerTags	6AV2105-3MM03-0AK0

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HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

WinCC Runtime Professional

Ordering data	Article No.		Article No.
Upgrades (continued)		as download [3]	
SIMATIC WinCC Runtime V7.0/V7.2 to **SIMATIC WinCC Runtime Professional V13 SP1** and		Single license, software and license key download. Email address required for the delivery.	
SIMATIC WinCC Runtime V7.0/V7.2 ASIA to **SIMATIC WinCC Runtime Professional ASIA V13 SP1**		• WinCC Runtime 128 PowerTags to WinCC Runtime Professional 128 PowerTags [2]	6AV2105-4BB03-0AK0
Single license, on DVD incl. licensing on USB stick		• WinCC Runtime 512 PowerTags to WinCC Runtime Professional 512 PowerTags [2]	6AV2105-4DD03-0AK0
• WinCC Runtime 128 PowerTags to WinCC Runtime Professional 128 PowerTags [2]	6AV2105-4BB03-0AE0	• WinCC Runtime 2 048 PowerTags to WinCC Runtime Professional 2 048 PowerTags [2]	6AV2105-4FF03-0AK0
• WinCC Runtime 512 PowerTags to WinCC Runtime Professional 512 PowerTags [2]	6AV2105-4DD03-0AE0	• WinCC Runtime 8 192 PowerTags to WinCC Runtime Professional 8 192 PowerTags [2]	6AV2105-4KK03-0AK0
• WinCC Runtime 2 048 PowerTags to WinCC Runtime Professional 2 048 PowerTags [2]	6AV2105-4FF03-0AE0	• WinCC Runtime 65 536 PowerTags to WinCC Runtime Professional 65 536 PowerTags [2]	6AV2105-4MM03-0AK0
• WinCC Runtime 8 192 PowerTags to WinCC Runtime Professional 8 192 PowerTags [2]	6AV2105-4KK03-0AE0	• WinCC Runtime 102 400 PowerTags to WinCC Runtime Professional 102 400 [2]	6AV2105-4PP03-0AK0
• WinCC Runtime 65 536 PowerTags to WinCC Runtime Professional 65 536 PowerTags [2]	6AV2105-4MM03-0AE0	• WinCC Runtime 153 600 PowerTags to WinCC Runtime Professional 153 600 [2]	6AV2105-4RR03-0AK0
• WinCC Runtime 102 400 PowerTags to WinCC Runtime Professional 102 400 [2]	6AV2105-4PP03-0AE0	• WinCC Runtime 262 144 PowerTags to WinCC Runtime Professional 262 144 [2]	6AV2105-4TT03-0AK0
• WinCC Runtime 153 600 PowerTags to WinCC Runtime Professional 153 600 [2]	6AV2105-4RR03-0AE0	• WinCC V7.0 RC/RT128 / RC/RT Client to WinCC Client for Runtime Professional V13	6AV2107-4DB03-0AK0
• WinCC Runtime 262 144 PowerTags to WinCC Runtime Professional 262 144 [2]	6AV2105-4TT03-0AE0		
• WinCC RC/RT128 / RC/RT Client to WinCC Client for Runtime Professional	6AV2107-4DB03-0AE0		

[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 delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

More information

Further information can be found in the Internet at:

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

■ 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 "Coupling overview" table lists 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, S7-200 with CP 243-1	CP 1612 A2 CP 1613 A2 CP 1623
MPI, PROFIBUS (S7 communication)	Channel for communication via MPI, PROFIBUS with max. 8 x SIMATIC S7 controllers S7-1200 with CM 1243-5 (DP master), S7-1500 S7-300, S7-400, S7-200 (passive S7-200 only)	CP 5611 A2 CP 5612 CP 5621 CP 5622 CP 5711 CP 5613 A2 CP 5613 A3 CP 5623
PPI (PPI protocol)	Channel for communication via PPI with 1 x SIMATIC S7-200 (network operation, e.g. parallel PG possible)	CP 5611 A2 CP 5612 CP 5621 CP 5622 CP 5711 CP 5613 A2 CP 5613 A3 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 CP 1613 A2 CP 1623
MPI (S7 communication)	Channel for communication via MPI with SINUMERIK 840D sl	CP 5611 A2 CP 5612 CP 5621 CP 5622 CP 5711 CP 5613 A2 CP 5613 A3 CP 5623

Protocol	Description	PC interface
Third-party controllers (from WinCC V11.0) [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 The controllers ControlLogix / CompactLogix, SLC500 / MicroLogix and PLC5 are supported	CP 1612 A2
Allen Bradley DF1	Channel for communication with Allen Bradley controllers via DF1 protocol 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 The FX3, Q, and iQ/QnUD controller series are supported	CP 1612 A2
Mitsubishi FX	Channel for communication with Mitsubishi controllers via FX protocol 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 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 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 The CP1x, CJ1x, CJ2H, CS1x, and CP2MC controllers are supported	COM1/COM2
Cross-manufacturer		
OPC client [1] [4] for OPC DA, OPC UA DA, XML DA	Channel for OPC communication, WinCC can acquire data from OPC server applications	CP 1612 A2
OPC server for OPC DA	Server applications for OPC communication; 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 foundunder SIMATIC NET communications systems/SNMP OPC Server.
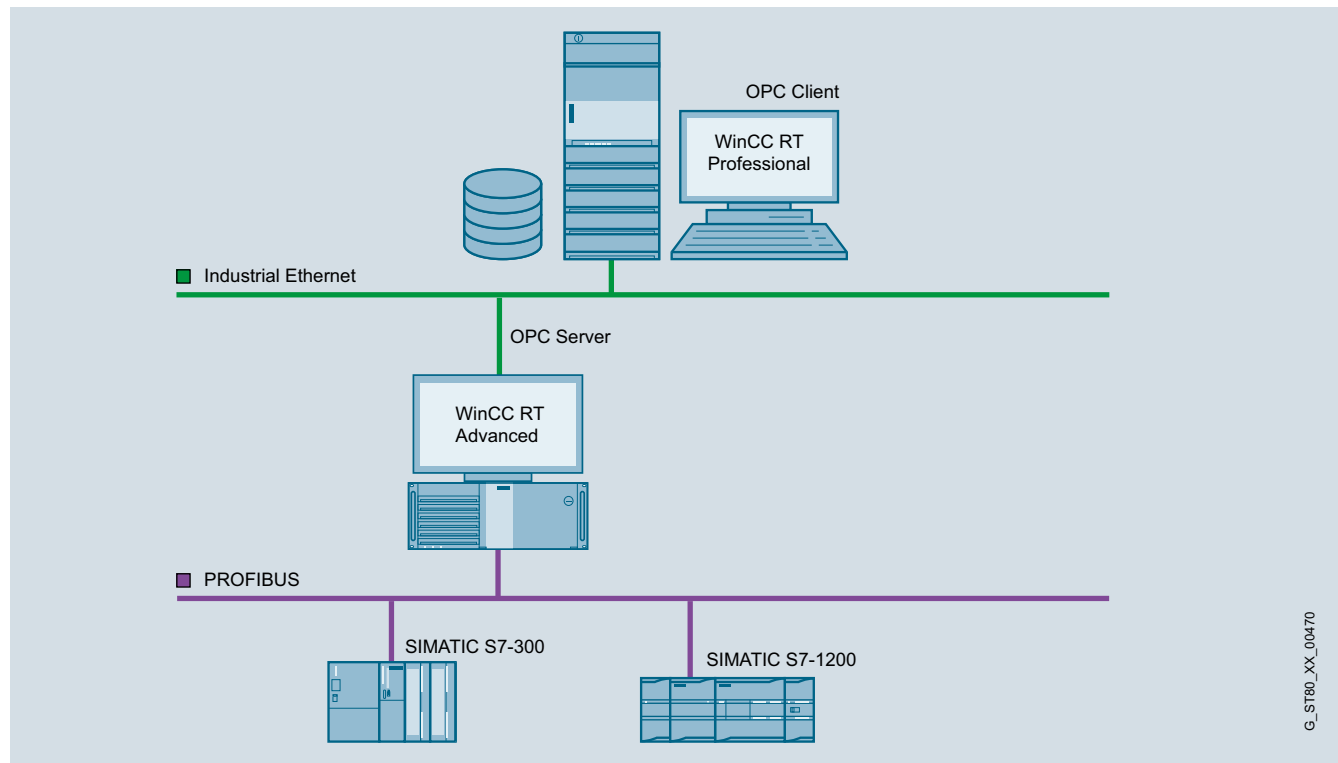
4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) Runtime

WinCC Runtime Communication

■ **Overview** (continued)

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/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 can be connected 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 "Coupling overview" table lists 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

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 • Ethernet TCP/IP (S7 communication) to S7-1200, S7-1500, S7-300, S7-400 • MPI, PROFIBUS (S7 communication) to S7-1200 with CM 1243-5 (DP master), S7-1500, S7-300, S7-400 • Software interface (S7 communication) to Win AC	CP 5611 A2 CP 5612 CP 5621 CP 5622 CP 5711 CP 5613 A2 CP 5623
Third-party controllers (from WinCC V11.0)		
Allen Bradley Ethernet IP	Channel for communication with Allen Bradley controllers via Ethernet TCP/IP with Ethernet IP protocol The controllers ControlLogix / CompactLogix, SLC500 / MicroLogix, and PLC5 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 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 The Quantum, Momentum, Premium, TSX Micro, Compact and M340 controllers are supported	CP 1612 A2
Cross-manufacturer		
OPC client [1] for OPC DA, OPC XML DA	Channel for OPC communication, 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; 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 foundunder SIMATIC NET communications systems/SNMP OPC Server.

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■ **Overview** (continued)

Communications examples
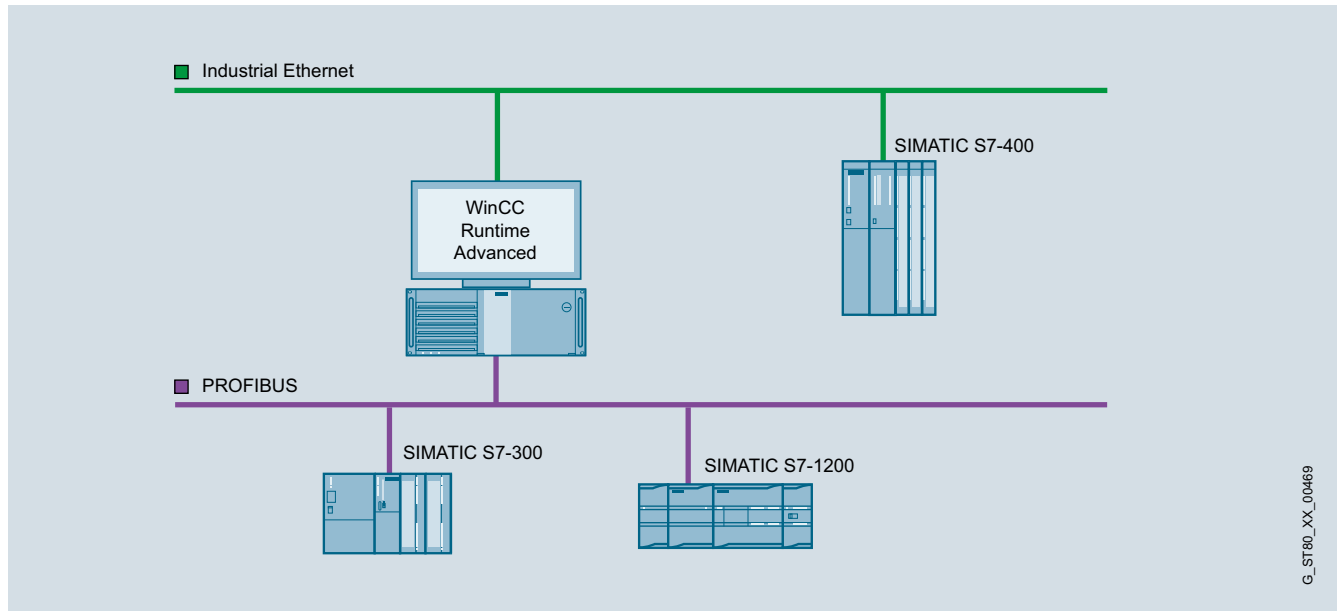
WinCC Runtime Advanced single-user system
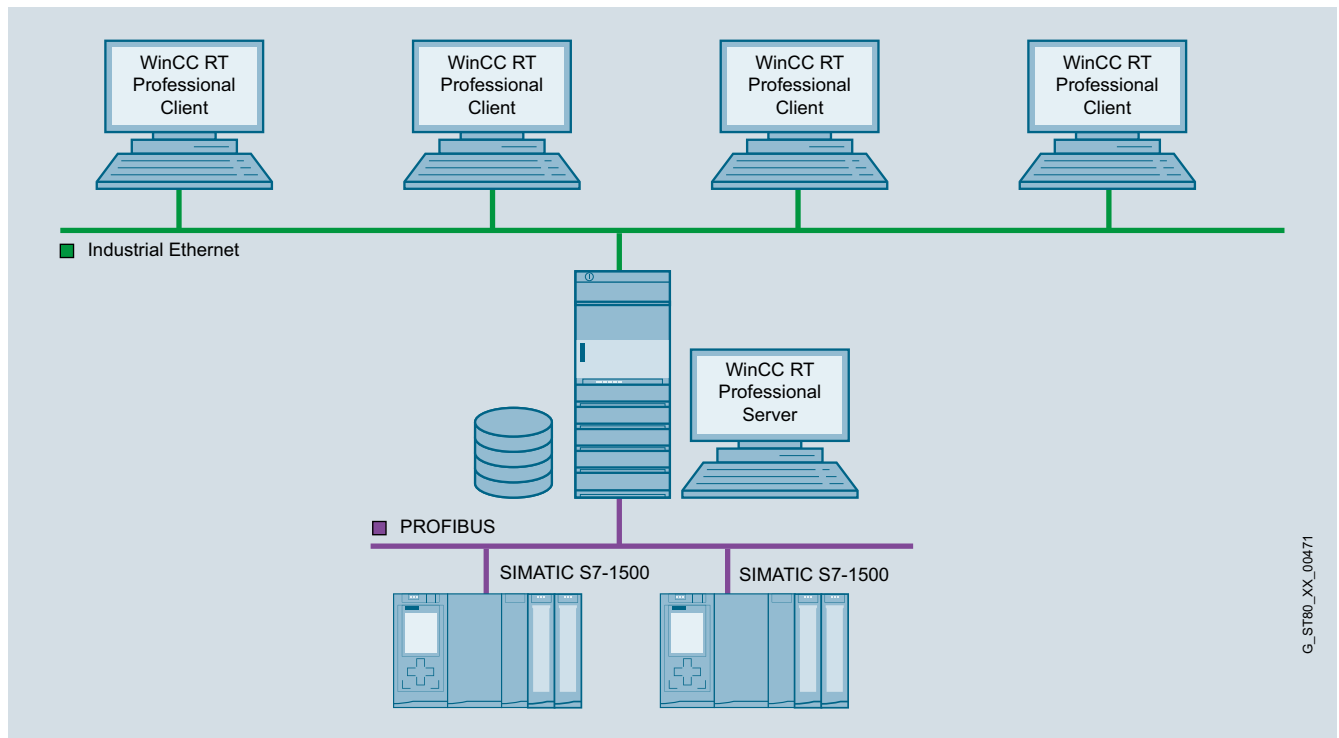
WinCC Runtime Professional multi-user system with operable Server

WinCC Runtime Communication

■ **Overview** (continued)

OPC coupling

■ Ordering data

	Article No.
SIMATIC WinCC (TIA Portal) Communication	
Communication via Industrial Ethernet TCP/IP	
CP 1612 A2	**6GK1161-2AA01**
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.	
Software requirement: WinCC Runtime Advanced: No further installation is required (SOFTNET-S7)	
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)	
SIMATIC NET SOFTNET-IE S7 V12	
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 stick, Class A	
• Single license for 1 installation	**6GK1704-1CW12-0AA0**
• Upgrade package for SIMATIC NET from Edition 2006	**6GK1704-1CW00-3AE0**
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	**6GK1704-1CW00-3AE1**
SIMATIC NET SOFTNET-IE S7 LEAN V12	
(included in the scope of delivery of WinCC Runtime Professional)	
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 stick; Class A	
• Single license for 1 installation	**6GK1704-1LW12-0AA0**
• Upgrade package for SIMATIC NET from Edition 2006	**6GK1704-1LW00-3AE0**
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	**6GK1704-1LW00-3AE1**
CP 1613 A2	**6GK1161-3AA01**
PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	
SIMATIC NET HARDNET-IE S7 V12	
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 stick; Class A	
• Single license for 1 installation	**6GK1716-1CB12-0AA0**
• Upgrade package for SIMATIC NET from Edition 2006	**6GK1716-1CB00-3AE0**
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	**6GK1716-1CB00-3AE1**

	Article No.
CP 1623	**6GK1162-3AA00**
PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)	
Communication via PROFIBUS	
USB A2 PC adapter	**6GK1571-0BA00-0AA0**
Can be used under Windows XP, Windows 7 32/64-bit	
CP 5612	**6GK1561-2AA00**
PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in the WinCC basic package)	
CP 5622	**6GK1562-2AA00**
PCI Express X1 card (32-bit) for connection of PG/PC to PROFIBUS (communications software included in WinCC basic package)	
CP 5622 MPI	**6GK1562-2AM00**
PCI Express X1 card (32-bit) for connection of PG/PC to PROFIBUS or MPI (communications software included in WinCC basic package)	
CP 5711	**6GK1571-1AA00**
USB adapter (USB V2.0) for connecting a PG/notebook to PROFIBUS or MPI (communications software included in WinCC basic package)	
CP 5613 A3	**6GK1561-3AA02**
PCI Card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	
CP 5623	**6GK1562-3AA00**
PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)	
S7-5613 Version 8.0 SP1 / Edition 2008 SP2 (V7.1)	
Software for S7 communication incl. PG/OP protocol, FDL, OPC server; runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A	
Version 8.0 SP1	
For (32-bit) Windows 7 Ultimate, Professional; for CP 5613 A2, CP 5623 German/English	
For (32-bit) Windows XP Professional, Windows 2003 Server, VISTA Ultimate/Business; for CP 5613 A2, CP 5623 German/English	
• Single license for 1 installation	**6GK1713-5CB80-3AA0**
• Upgrade package for SIMATIC NET from Edition 2006	**6GK1713-5CB00-3AE0**
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	**6GK1713-5CB00-3AE1**

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HMI Software
HMI Software in the TIA Portal

SIMATIC WinCC (TIA Portal) Options

Overview

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

SIMATIC WinCC Recipes for SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional

- 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 PLC
- Import/export of data records for further processing with other tools (e.g. MS Excel)

SIMATIC WinCC Logging for SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional

- Logging of alarms 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 Audit for SIMATIC Panels and SIMATIC WinCC Runtime Advanced

- 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 Logon for SIMATIC Panels, SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional

- Creates user administration on a central computer to which one or more 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 supports the user in combination with the Audit option in meeting requirements in accordance with FDA 21 CFR Part 11 and EU178.

SIMATIC WinCC Sm@rtServer for SIMATIC Panels and SIMATIC WinCC Runtime Advanced

- 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

SIMATIC WinCC Server and SIMATIC WinCC Client for SIMATIC WinCC Runtime Professional

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, alarms, screens and reports.

SIMATIC WinCC Redundancy for SIMATIC WinCC Runtime Professional

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

■ **Overview** (continued)

SIMATIC Information Server 2014
for SIMATIC WinCC Runtime Professional

- The SIMATIC Information Server 2014 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 numbers, see SCADA System SIMATIC WinCC.

SIMATIC Information Server 2014
for SIMATIC WinCC Runtime Professional

- 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 numbers, see SCADA System SIMATIC WinCC.

SIMATIC WinCC WebNavigator for SIMATIC WinCC Runtime Professional

- 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 DataMonitor for SIMATIC WinCC Runtime Professional

- 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

SIMATIC WinCC ControlDevelopment for SIMATIC WinCC Runtime Advanced and SIMATIC WinCC Runtime Professional

- Expansion of the basic functionality with proprietary controls
- Development of proprietary VB.net or C# controls for integration in WinCC Runtime Advanced and WinCC Runtime Professional

Overview of the individual options

Options	WinCC RT Advanced	WinCC RT Professional	SIMATIC Panels
WinCC Recipes	•	•	-
WinCC Logging	•	•	-
WinCC Audit	•	-	•
SIMATIC Logon	•	•	•
WinCC Sm@rtServer	•	-	•
WinCC Server/WinCC Client	-	•	-
WinCC Redundancy	-	•	-
SIMATIC Information Server	-	•	-
SIMATIC Process Historian	-	•	-
WinCC WebNavigator	-	•	-
WinCC DataMonitor	-	•	-
WinCC ControlDevelopment	•	•	-

- Possible

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC Recipes

Overview
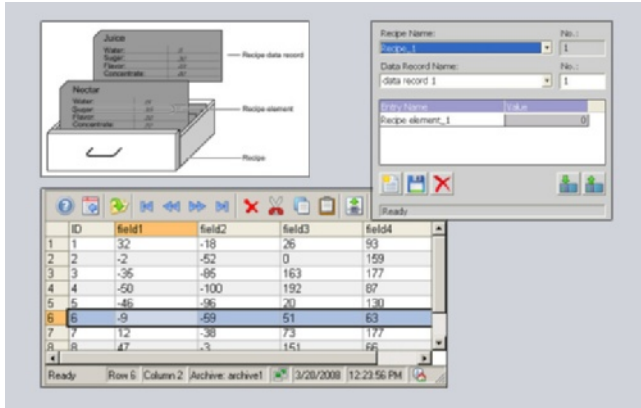
- Option for SIMATIC WinCC Runtime Advanced and WinCC Runtime Professional for managing data records in recipes that contain related machine or production data
- The data in a data set can be transferred, for example, from the control unit to the PLC to switch production to a different product variant
- 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	999
Number of elements per recipe [1]	2000
User data length in KB per data record	256
Number of data records per recipe	5000

[1] When using arrays, each array element represents a recipe element

	WinCC Recipes for Runtime Professional
	The values specified are maximum values
Number of recipes	1000 [2]
Number of elements per recipe [1]	500 [3]
User data length in KB per data record	3000 [3]
Number of data records per recipe	3000 [2]

[2] Limited by system resources.

[3] The sum of the number of recipe elements and number of data records must not exceed a value of 320,000.

Ordering data — Article No.

SIMATIC WinCC Recipes for Runtime Advanced [4]
- Single license, license key only on USB stick — 6AV2107-0JA00-0BB0
- as download [5] Single license, license key download only; E-mail address required for the delivery — 6AV2107-0JA00-0BH0

SIMATIC WinCC Recipes + Logging for Runtime Advanced [4]
Single license, license key only on USB stick — 6AV2107-0HA00-0BB0

SIMATIC WinCC Recipes for Runtime Professional [4]
- Single license, license key only on USB stick — 6AV2107-0JB00-0BB0
- as download [5] Single license, license key download only; E-mail address required for the 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 package can be found at: http://www.siemens.com/tia-online-software-delivery

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC Logging

■ Overview
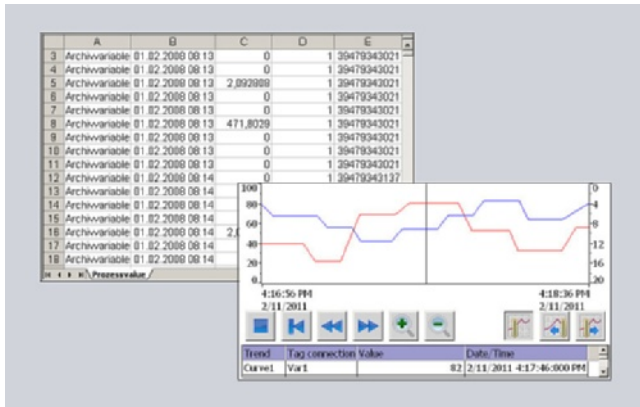
- Option for SIMATIC WinCC Runtime Advanced and WinCC Runtime Professional for logging process values and alarms
- Logging of process values and alarms supports the acquisition and processing of process data from an industrial plant or machine. Evaluation of the logged process data provides information 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 the quality standard
- 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, sequence logs (max. 400 per log)
Data storage format	CSV (Comma Separated Variable), RDB (Runtime Data Base), 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: 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

	Article No.
SIMATIC WinCC Logging for Runtime Advanced [3]	
• Single license, license key only on USB stick	**6AV2107-0GA00-0BB0**
• as download [4] Single license, license key download only, e-mail address required for the delivery	**6AV2107-0GA00-0BH0**
SIMATIC WinCC Recipes + Logging for Runtime Advanced [3] Single license per option, license key only on USB stick	**6AV2107-0HA00-0BB0**
SIMATIC WinCC Logging for Runtime Professional 1500 Logging Tags	
• Single license, license key only on USB stick	**6AV2107-0GB00-0BB0**
• as download [4] Single license, license key download only, e-mail address required for the delivery	**6AV2107-0GB00-0BH0**
SIMATIC WinCC Logging for Runtime Professional 5000 Logging Tags	
• Single license, license key only on USB stick	**6AV2107-0GD00-0BB0**
• as download [4] Single license, license key download only, e-mail address required for the delivery	**6AV2107-0GD00-0BH0**
WinCC Logging for Runtime Professional Powerpack 1500 -> 5000 Logging Tags	
• Single license, license key only on USB stick	**6AV2107-2GD00-0BD0**
• as download [4] Single license, license key download only, e-mail address required for the delivery	**6AV2107-2GD00-0BJ0**
WinCC Logging Upgrade for SIMATIC WinCC Archives V7.0 (10 licenses) Single license per option, license key only on USB stick	**6AV2107-4GX00-0BF0**

[3] One license is required for each operator console. A license is not required for the engineering system for configuring the runtime option.

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

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC Audit

Overview
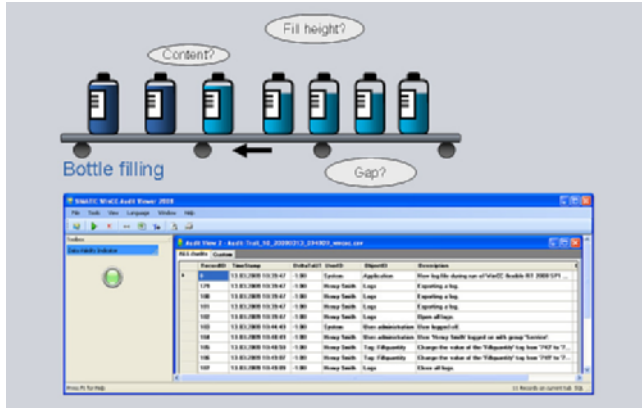
- Option for SIMATIC WinCC Runtime Advanced as well as SIMATIC Panels for recording operations in an audit trail, and electronic signature
- The audit trail is furnished with a security mechanism that displays subsequent manipulations
- A user-friendly configuration function, which is included as standard 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 execution time 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 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 via Ethernet in the higher-level PC
Storage location for Audit Trail when using WinCC Runtime Advanced	Local hard disk or 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   Article No.

SIMATIC WinCC Audit for SIMATIC Panels	
• Single license, license key only on USB stick	**6AV2107-0RP00-0BB0**
• as download [1] Single license, license key download only, e-mail address required for the delivery	**6AV2107-0RP00-0BH0**
SIMATIC WinCC Audit for Runtime Advanced	
• Single license, license key only on USB stick	**6AV2107-0RA00-0BB0**
• as download [1] Single license, license key download only, e-mail address required for the delivery	**6AV2107-0RA00-0BH0**

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

Overview
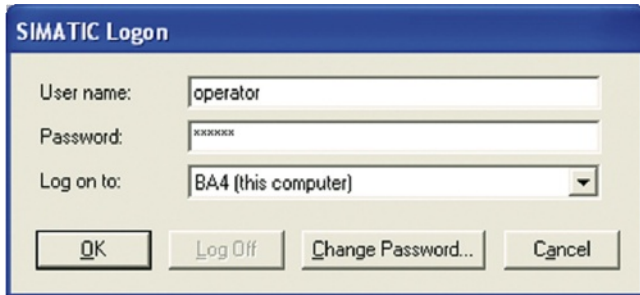
- Option for connecting SIMATIC Panels and PCs with SIMATIC WinCC Runtime Advanced as well as WinCC Runtime Professional to a central user administration.
- Creates user administration on a central computer to which one or more panels or WinCC stations can be connected over Ethernet.
- With each logging-on/off 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.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

SIMATIC Logon

Ordering data	Article No.
SIMATIC Logon V1.5 Basic license [1] For panels or WinCC Runtime Advanced stations, the corresponding number of additional SIMATIC Logon Remote Access licenses is required. No SIMATIC Logon Remote Access licenses are required for WinCC Runtime Professional	6ES7658-7BX51-0YA0
SIMATIC Logon Upgrade to V1.5	6ES7658-7BX51-0YE0
SIMATIC Logon Remote Access (3 clients) 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) 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.

Overview
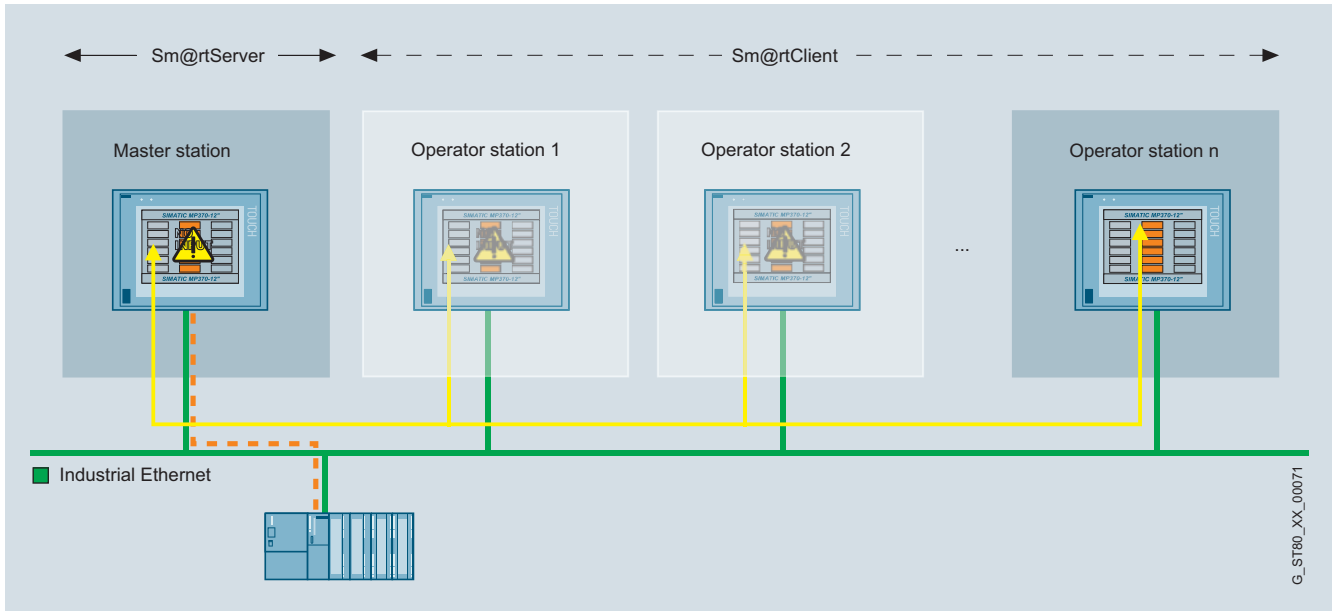
- Option for SIMATIC WinCC Runtime Advanced plus SIMATIC Panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - Comfort Panels
  - Mobile Panel 177 PN, Mobile Panel 277
  - TP 177B PN/DP, OP 177B PN/DP
  - TP 277, OP 277
  - MP 177, MP 277, 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 WinCC Runtime Advanced" license must be installed on the server HMI device. 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. You will find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

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.

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

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
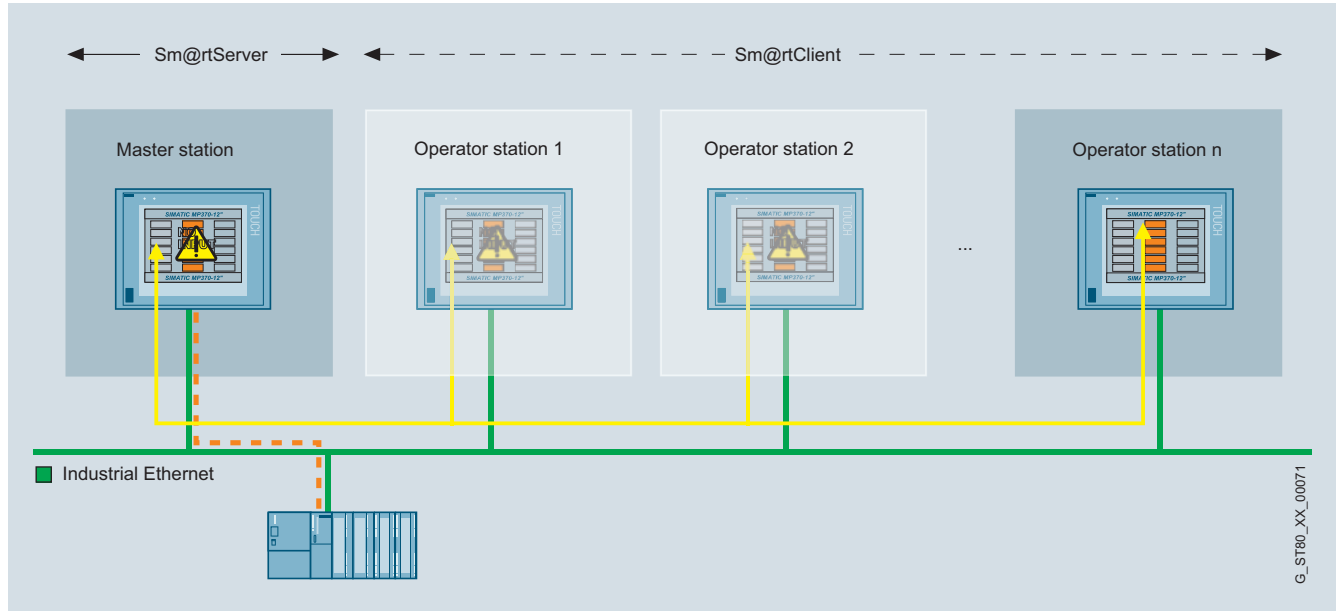
Application of the Sm@rtClient concept: Coordinated operation of several operator stations
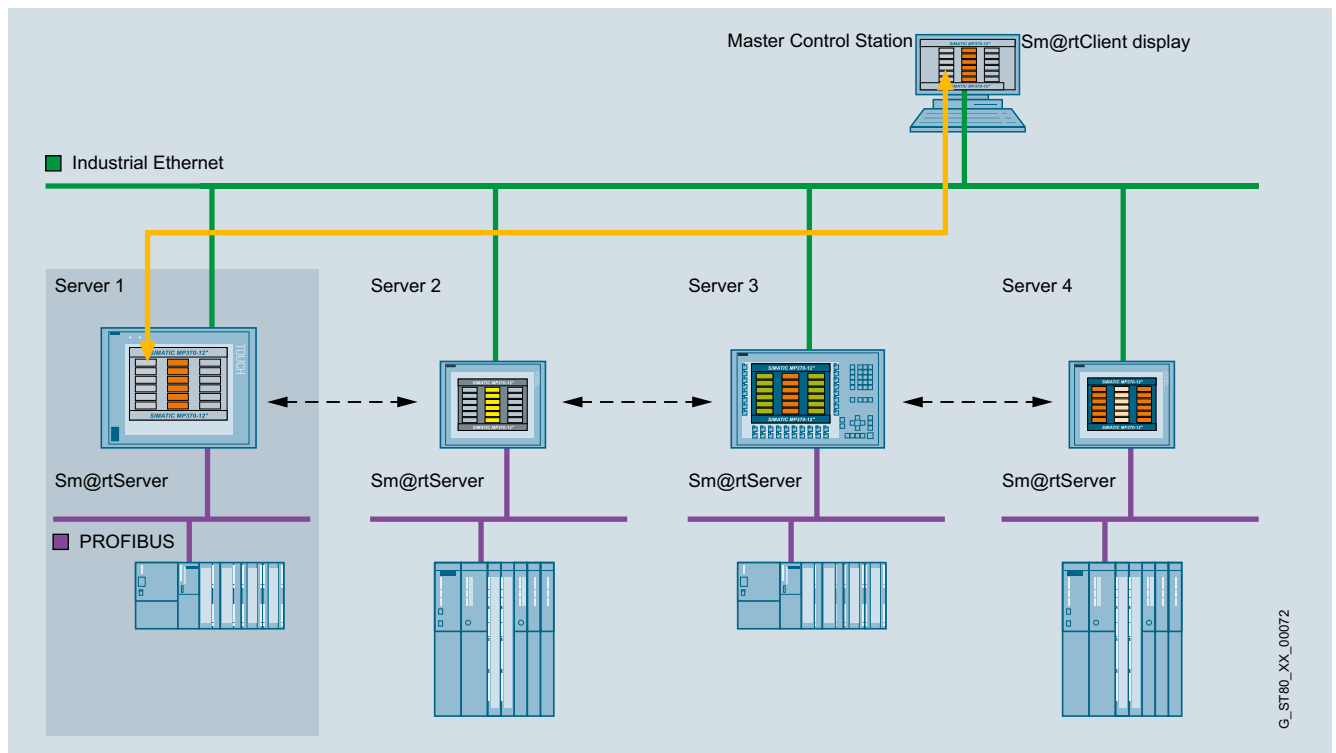
Use of the Sm@rtClient display: Operator control and monitoring of machine-level HMI systems from one central station

◼ Application (continued)
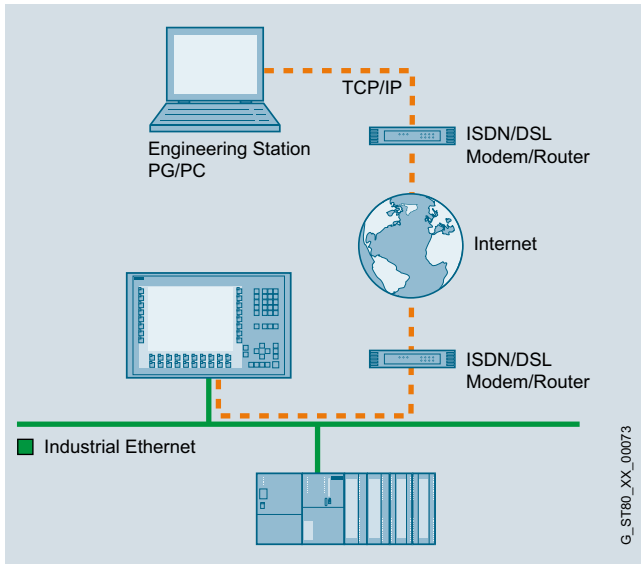
Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet
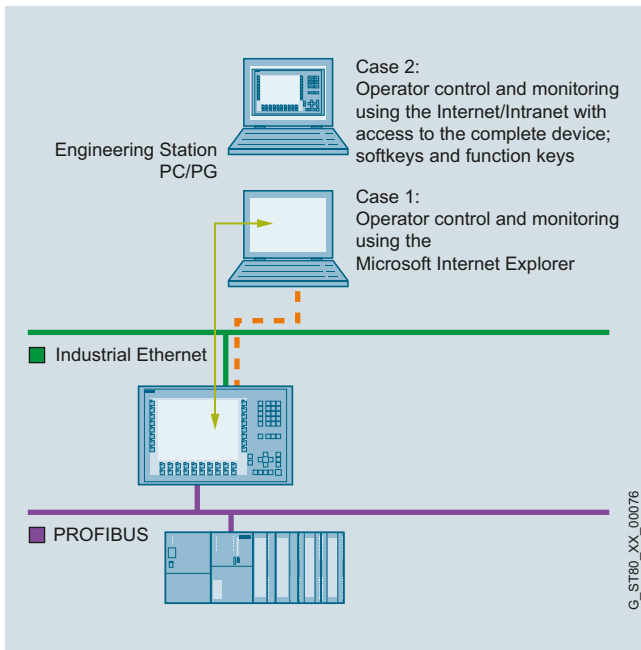
Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet

◼ 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 HMI devices. 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.

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC Sm@rtServer

■ Technical specifications

	WinCC Sm@rtServer
	The values specified are maximum values
Execution platform	
SIMATIC Comfort Panels	all
SIMATIC Panels	Mobile Panel 177 PN, Mobile Panel 277, TP/OP 177B PN/DP, 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	
Comfort Panel as Sm@rtServer	2 clients for 4" devices 3 clients for 7", 9", 12" and 15" devices 2 clients for 19" devices 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 2 clients for 8" and 10" devices
MP 377 as Sm@rtServer	3 clients for 12" devices 2 clients for 15" devices 1 client for 19" devices
WinCC Runtime Advanced as Sm@rtServer	5 clients

■ Ordering data | Article No.

WinCC Sm@rtServer for SIMATIC Panels [1]

- Single license, license key only on USB stick — **6AV2107-0CP00-0BB0**
- as download [2] Single license, license key download only, e-mail address required for the delivery — **6AV2107-0CP00-0BH0**

WinCC Sm@rtServer for Runtime Advanced [1]

- Single license, license key only on USB stick — **6AV2107-0CA00-0BB0**
- as download [2] Single license, license key download only, e-mail address required for the 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 package can be found at: http://www.siemens.com/tia-online-software-delivery

Overview
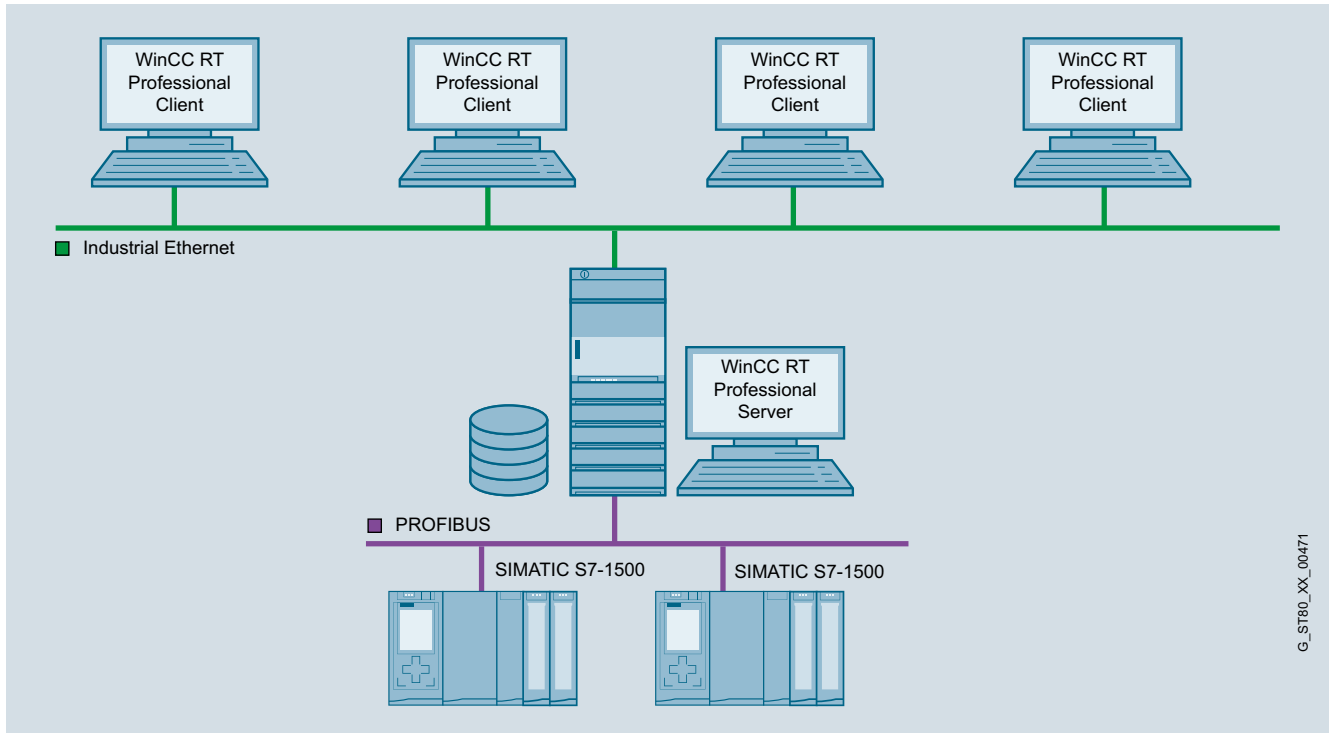
- Option for SIMATIC WinCC Runtime Professional, which permits the configuration of a powerful client/server system
- One of the following operating systems must be available to install the option on the server: Windows Server 2003 R2 SP2, Windows Server 2008 SP2 or Windows XP Professional. When using Windows XP Professional, max. 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 can supply 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 l"WinCC Client for RT Professional" license on the clients.

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

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC Server / WinCC Client

◾ 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

	Article No.
SIMATIC WinCC server for Runtime Professional	
• Single license, license key only on USB stick	**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 V13 SP1	
• Single license, license key on USB stick, software and documentation on DVD	**6AV2107-0DB03-0AA0**
• as download [1] Single license, software and license key download. Email address required for the delivery	**6AV2107-0DB03-0AH0**
SIMATIC WinCC Client for Runtime Professional ASIA V13 SP1 Single license, license key on USB stick, software and documentation on DVD	**6AV2107-0DB13-0AA0**

[1] Current information and availability regarding the new delivery package 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.

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 stick, software and documentation on DVD	**6AV2107-0FB00-0BB0**
as download [1]	**6AV2107-0FB00-0BH0**
Single license for 2 installations, license key download only, e-mail address required for delivery	

[1] Current information and availability regarding the new delivery package 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.

Note:

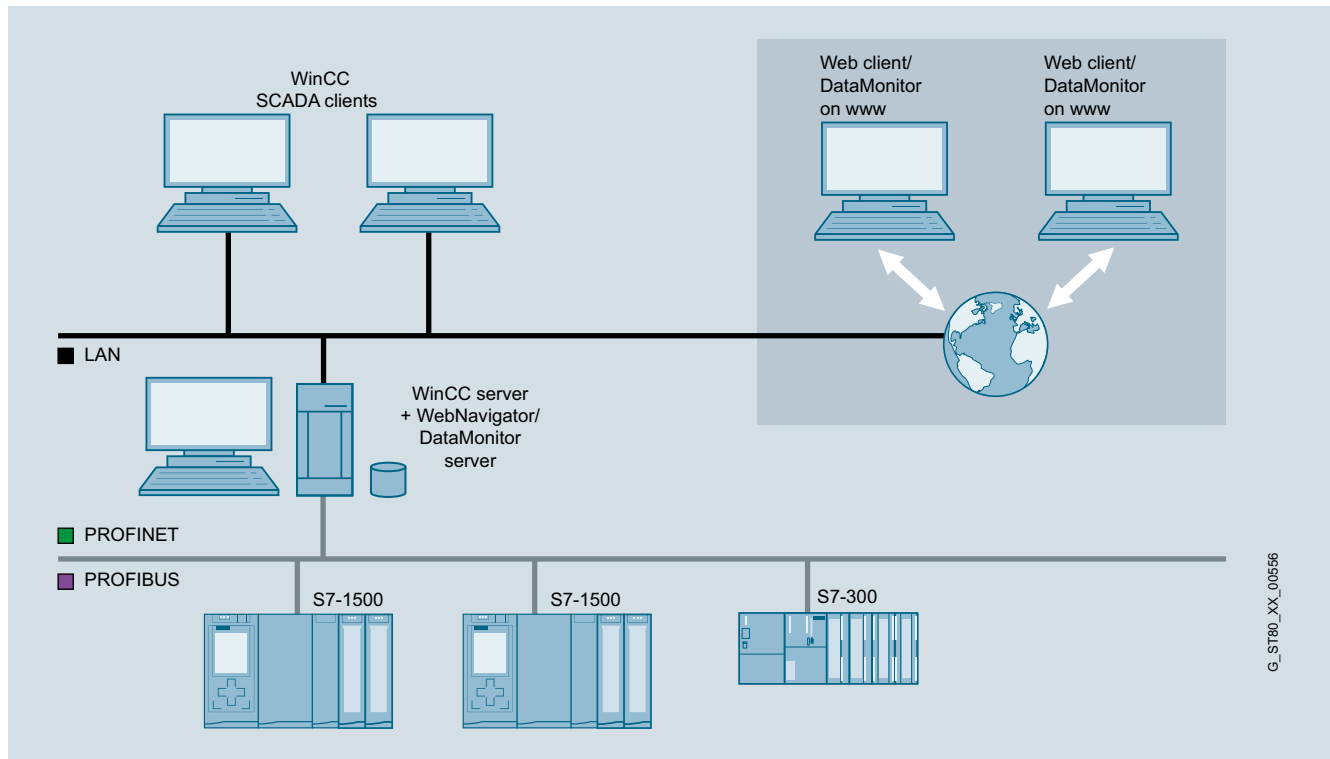For further information on the *SIMATIC Information Server* and the article numbers, see page 4/112.

For further information on the *SIMATIC Process Historian* and the article numbers, see page 4/115.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

■ **Overview**

- Option for SIMATIC WinCC Runtime Professional for operating and monitoring plants over the Internet, company Intranet or LAN.
- Configuration from:
  - A web server with SIMATIC WinCC Runtime Professional as single-user or server version and a web client that permits operator control and monitoring of a current WinCC Runtime Professional project using the Internet Explorer.
- Licensing:
  - A license is required for using the Web server.
  - Server-based licenses are available for access to the web server by 3, 10, 25 or 50 clients.
  - Client-based licenses are available for guaranteed access to the web server (Diagnostics Client).

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 50 operator stations
- Fast update rates due to event-driven communication
- 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
- High security standards and availability
  - Support for commonly used security mechanisms (routers, firewalls, proxy servers)
  - WinCC access authorizations and user administration
- Support of Microsoft Internet Explorer, including "tabbed browsing". A new license is not required for separate tabs.
- 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).
- Web server logins and logouts are recorded in the alarm and audit log.
- There is a gadget available for the Windows 7 operating system in which selected WinCC process screens can be displayed. No additional WebNavigator license is required for the gadget. The WebNavigator server can be selected directly via the gadget.
- Security is increased by adjustable automatic logout. If an automatic logout is to take place, an absolute or inactive time period can be set.

Highlights:

- Multiple Web servers can be accessed from a single Web client
- User-friendly services and tools for distributing customized objects (controls, files) to web clients can be supplied for use as an integration platform. These components can then also be integrated into cross-web/server navigation.
- Both Internet Explorer and the supplied, browser-independent WinCC Web Viewer (WinCC Viewer RT) can be used as a front end
- Access to WebNavigator Server of the WinCC V7.x series.

■ **Application**

In addition to the typical use of the WebNavigator in WANs (Wide Area Networks), the WebNavigator can also be used to implement especially low-cost applications. This especially includes applications that have a pronounced distributed structure (water/wastewater, oil and gas), or in which access to process information is only sporadic (building management).

The WebNavigator also permits vertical integration, i.e. a networked IT landscape with integrated data flow between the planning and operating level of a company. Only a standard browser is required for direct access to current process information.

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 Runtime Professional 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.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC WebNavigator

■ Design

Licenses for the WebNavigator

The WebNavigator Client software can be installed as many times as required without the need for a license.

- Server-based licensing
  - A license is required for using the WebNavigator Server.
  - Licenses are available for simultaneous access to the Web server by 3, 10, 25 or 50 clients.
- Diagnose Client licensing
  - For cost-optimized access by one or a small number of WebNavigator clients to numerous Web servers (e.g. for diagnostic purposes). This client license provides guaranteed access to Web servers at any time. In respect of function there is no difference compared with regular WebNavigator clients and the two can be mixed.

WebNavigator Clients are capable of accessing several different Web Servers.

Thin client solutions

The WebNavigator can also run under Windows Server 2003 or Windows Server 2008 terminal services. A Windows Server 2003 or Windows Server 2008 (or higher) operating system is required. This makes it possible to connect SIMATIC Thin Clients as visualization stations to WinCC Runtime Professional, for example.

For this purpose, the Windows terminal services must be installed on the PC on which the Web Client is installed. A Windows Server 2003 or Windows Server 2008 (or higher) operating system is required. Up to 25 thin clients can be connected to one terminal server.

Applications:
- Mobile devices
- Handhelds
- Rugged on-site visualizations

Hybrid configuration

System requirements: WinCC WebNavigator – Server V12
- Windows 7 SP1 (32- and 64-bit) Business, Enterprise and Ultimate (max. 3 Clients)
- Windows XP Professional Service Pack 3 (max. 3 clients)
- Windows Server 2003 SP2
- Windows Server 2008 SP2 32-bit
- Windows Server 2008 R2 SP1 64-bit
- Internet Explorer V7.0, V8.0, V9.0
- Microsoft SQL Server 2008 R2 SP1 32-bit (included in the WinCC product delivery)
- WinCC Basic System V12

System requirements: WinCC WebNavigator – Client V12
- Internet Explorer 7, IE 8, IE9

System requirements: WinCC WebNavigator – Server V11
- Windows 7 (32-bit) Business, Enterprise and Ultimate (max. 3 clients)
- Windows XP Professional Service Pack 2 (max. 3 clients)
- Windows Server 2003 SP2 and Windows Server R2 SP2
- Windows Server 2008
- Internet Explorer 7 as well as Internet Explorer 8
- Microsoft SQL Server 2005 SP2 (scope of supply of WinCC)
- WinCC Runtime Professional V11

System requirements: WinCC WebNavigator – Client V11
- Internet Explorer 7 as well as Internet Explorer 8

■ Function

WinCC Professional makes setting up and configuring a WebNavigator server very easy. WinCC process screens to be visualized via the Internet are created as usual in WinCC Professional and the web access is activated via a process screen option.

To display WinCC process screens on the web client, the Microsoft Internet Explorer or browser is used independent of the supplied WinCC Web Viewer (WinCC Viewer RT).

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

	Article No.
SIMATIC WinCC WebNavigator for Runtime Professional	
Single license, license key only on USB stick	
• 3 clients, runtime software	**6AV2107-0KD00-0BB0**
• 10 clients	**6AV2107-0KF00-0BB0**
• 25 clients	**6AV2107-0KH00-0BB0**
• 50 clients	**6AV2107-0KK00-0BB0**
• 100 clients	**6AV2107-0KM00-0BB0**
• 150 clients	**6AV2107-0KP00-0BB0**
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Single license, license key download only, e-mail address required for the delivery	
• 3 clients	**6AV2107-0KD00-0BH0**
• 10 clients	**6AV2107-0KF00-0BH0**
• 25 clients	**6AV2107-0KH00-0BH0**
• 50 clients	**6AV2107-0KK00-0BH0**
• 100 clients	**6AV2107-0KM00-0BH0**
• 150 clients	**6AV2107-0KP00-0BH0**
SIMATIC WinCC WebNavigator for Runtime Professional Powerpacks	
Single license, license key only on USB stick	
• From 3 to 10 clients	**6AV2107-2KF00-0BD0**
• From 10 to 25 clients	**6AV2107-2KH00-0BD0**
• From 25 to 50 clients	**6AV2107-2KK00-0BD0**
• From 50 to 100 clients	**6AV2107-2KM00-0BD0**
• From 100 to 150 clients	**6AV2107-2KP00-0BD0**
as download [1]	
Single license, license key download only, e-mail address required for the delivery	
• 3 to 10 clients	**6AV2107-2KF00-0BJ0**
• 10 to 25 clients	**6AV2107-2KH00-0BJ0**
• 25 to 50 clients	**6AV2107-2KK00-0BJ0**
• 50 to 100 clients	**6AV2107-2KM00-0BJ0**
• 100 to 150 clients	**6AV2107-2KP00-0BJ0**
SIMATIC WinCC WebNavigator Diagnose Server/Client	
Single license, license key only on USB stick	
• WinCC WebDiagnostics Server for Runtime Professional, Runtime software	**6AV2107-0KR00-0BB0**
• WinCC WebDiagnostics Client for Runtime Professional, Runtime software	**6AV2107-0KT00-0BB0**
as download [1]	
Single license, license key download only, e-mail address required for the delivery	
• WinCC Web Diagnostics Server for Runtime Professional	**6AV2107-0KR00-0BH0**
• WinCC Web Diagnostics Client for Runtime Professional	**6AV2107-0KT00-0BH0**

	Article No.
WinCC WebNavigator (WinCC V13 or higher)	
SIMATIC WinCC WebNavigator for Runtime Professional	
standard delivery	
• 1 client	**6AV2107-0KB00-0BB0**
• 5 clients	**6AV2107-0KE00-0BB0**
as download [1]	
• 1 client	**6AV2107-0KB00-0BH0**
• 5 clients	**6AV2107-0KE00-0BH0**
SIMATIC WinCC WebNavigator for Runtime Professional Powerpack	
standard delivery	
• 1 -> 3 clients	**6AV2107-2KD00-0BD0**
• 3 -> 5 clients	**6AV2107-2KE00-0BD0**
• 5 -> 10 clients	**6AV2107-2KG00-0BD0**
as download [1]	
• 1 -> 3 clients	**6AV2107-2KD00-0BJ0**
• 3 -> 5 clients	**6AV2107-2KE00-0BJ0**
• 5 -> 10 clients	**6AV2107-2KG00-0BJ0**

[1] Current information and availability regarding the new delivery package can be found at: http://www.siemens.com/tia-online-software-delivery
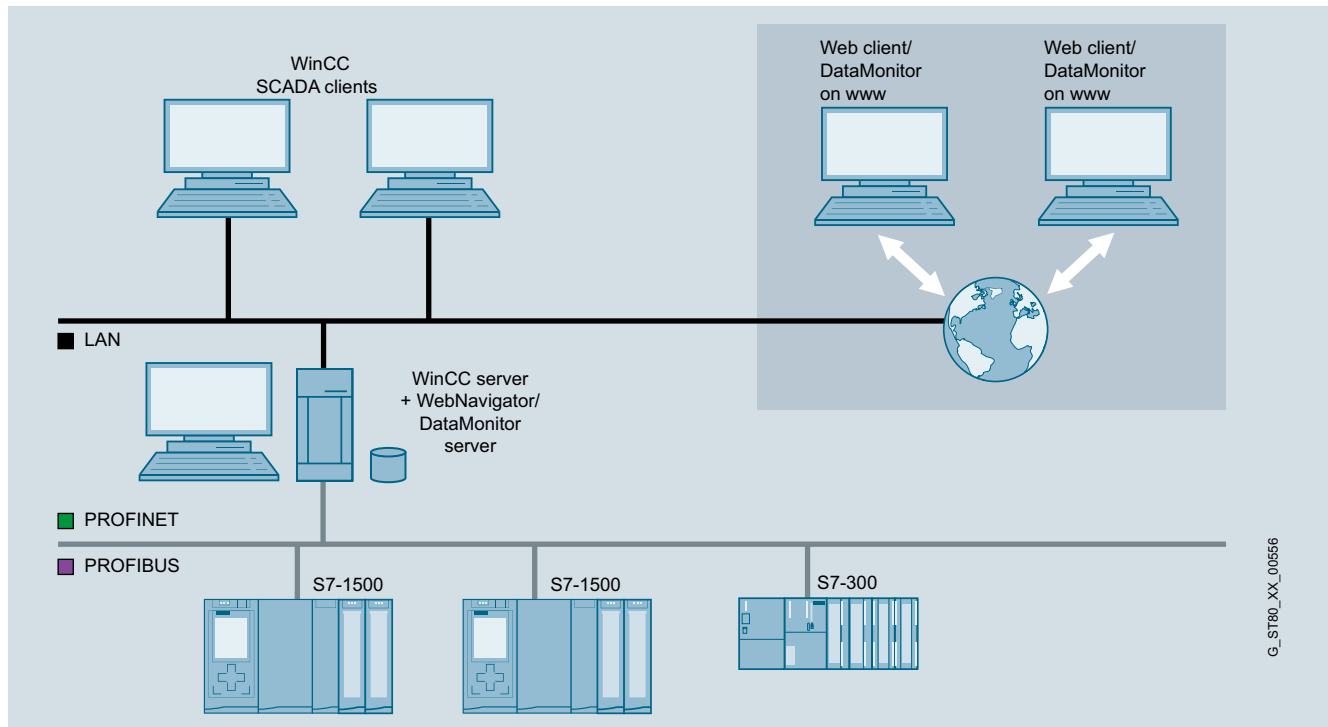
A license is not required for the engineering system for configuring the runtime option.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC DataMonitor

■ **Overview**

- 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. In doing so, the DataMonitor client is supplied 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.
- DataMonitor is a suite of Internet-capable tools:
  - *Process screens*
    Tool exclusively for monitoring and navigating via WinCC Runtime Professional screens using the WinCC Web Viewer (WinCCViewerRT) in the "view only" mode
  - *Excel Workbooks*
    Logging tool that integrates WinCC Runtime Professional Archive and online values into Microsoft Excel and supports online analysis
  - *Published Reports*
    Event or time-driven implementation of Excel or PDF reports for the output of process data and analysis results
  - *Webcenter*
    Individual configuration of Internet pages and summary of information within a portal with reference to WinCC Runtime Professional applications
  - *Trends and Alarms*
    (tables and graphs) are preconfigured Webcenter pages

- 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 and Trends and Alarms functions
- Licensing:
  - Licenses for access by 1, 3, 10, 25, or 50 DataMonitor clients are available
  - Any combination of DataMonitor and WebNavigator licenses can be used in an application

Note:

When accessing the operator stations via the WinCC DataMonitor 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

- Information can be compiled online individually during runtime via the Internet/Intranet.
- Efficiently monitor and analyze production lines.
  - Display and evaluation of current process states and historical data on remote office PCs with standard tools such as Microsoft Internet Explorer or Excel.
  - Easy access to production data via the Intranet or Internet
  - Quick ascertainment of the production situation
- Easily collect and distribute information.
  - Automated report creation
  - No additional configuration effort through direct use of screens from the WinCC project
  - No training required for standard products
  - Easy exchange of configuration data
- Substantiate decisions with reports.
  - Evaluation via ready-made templates for special analyses of the business processes (e.g. reports, statistics)
  - Display bottlenecks transparently
  - Individual views for user and situation
  - Relative and absolute timeframe for information generation
- View production status anywhere and anytime.
  - Individual views of information in production
  - View the process and system operation
  - Historical data can be compiled online individually

Highlights:

- With the Webcenter function, WinCC Runtime Professional 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, the following tools, which can be integrated in the Internet sites, are available.
  - Bar chart, pie chart, trend curve display
  - Process value table and statistics functions for the process values
  - Alarms, hit list for alarms
  - Message text display for individual message texts, message display, selection list of created reports,
  - Links to internal and external pages
  - Display of graphics in jpg format
  - Representation of the WinCC Runtime Professional process screens converted into jpg
- The analyses can be made with relative or absolute time specification. This enables comparisons of identical time periods on different days.
- Reports generated with Excel or with WinCC Professional can be made available on the DataMonitor server or e-mailed automatically to the relevant group of people based on time intervals or triggered by events.
- Connections to WinCC Runtime Professional and to swapped out archives can be established.
- 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 be compiled and executed online. Plot and tabular representation are supported for archive data already swapped out.
- Data can be automatically entered into created report templates and distributed by e-mail.
- Pre-made elements make the assembly of individual web pages easier for evaluating information.
- Individual information compilation on one or more Internet pages with the option of branching to other detail pages.
- Pre-made Internet pages for trend and alarm display enable an ad-hoc entry to Internet data evaluation.
- An higher-level navigation feature provides a common framework for the various tools.
- Enhanced user management for 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
- Swapped out archives can be connected and evaluated in the DataMonitor WebCenter.
- Excel reports created offline can be loaded onto the DataMonitor server and are thus made available to selected user groups or for automatic distribution.

4

HMI Software
HMI Software in the TIA Portal
SIMATIC WinCC (TIA Portal) options

WinCC DataMonitor

Ordering data	Article No.
SIMATIC WinCC DataMonitor for Runtime Professional Single license, license key only on USB stick	
• 1 client	**6AV2107-0LB00-0BB0**
• 3 clients	**6AV2107-0LD00-0BB0**
• 10 clients	**6AV2107-0LF00-0BB0**
• 25 clients	**6AV2107-0LH00-0BB0**
• 50 clients	**6AV2107-0LK00-0BB0**
as download [1] Single license, license key download only, e-mail address required for the delivery	
• 1 client	**6AV2107-0LB00-0BH0**
• 3 clients	**6AV2107-0LD00-0BH0**
• 10 clients	**6AV2107-0LF00-0BH0**
• 25 clients	**6AV2107-0LH00-0BH0**
• 50 clients	**6AV2107-0LK00-0BH0**
SIMATIC WinCC DataMonitor for Runtime Professional Powerpacks Single license, license key only on USB stick	
• From 1 to 3 Clients	**6AV2107-2LD00-0BD0**
• From 3 to 10 Clients	**6AV2107-2LF00-0BD0**
• From 10 to 25 Clients	**6AV2107-2LH00-0BD0**
• From 25 to 50 Clients	**6AV2107-2LK00-0BD0**
as download [1] Single license, license key download only, e-mail address required for the delivery	
• From 1 to 3 clients	**6AV2107-2LD00-0BJ0**
• From 3 to 10 clients	**6AV2107-2LF00-0BJ0**
• From 10 to 25 clients	**6AV2107-2LH00-0BJ0**
• From 25 to 50 clients	**6AV2107-2LK00-0BJ0**

[1] Current information and availability regarding the new delivery package 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.

Overview

You use the ControlDevelopment option to create your own .net controls for controlling and monitoring processes. You can use the controls in screens for WinCC Runtime Advanced and WinCC Runtime Professional. You create the controls based on the standard controls from Visual Studio 2005/2008 Professional .net.

Application examples:

• Special trend views
• Own recipe managements
• Complex display objects

Benefits

The ControlDevelopment option enables user-specific software solutions based on a proven building block principle:

• Lower development overhead by using standards (Visual Studio 2005/2008 Professional .net)
• Very short "Time-to-Market" resulting in a competitive advantage
• Utilization of tried components and proven industrial functionality

The development of proprietary controls for WinCC Runtime Advanced and WinCC Runtime Professional does not require expensive, special hardware.

Ordering data

	Article No.
WinCC ControlDevelopment V13	
• Runtime license, single license, software and documentation on CD	**6AV2107-0TA03-0DA8**
• Runtime software, single license, software download (e-mail address required for the delivery) [1]	**6AV2107-0TA03-0DG8**

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

More information

Further information can be found in the Internet at:

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

4

HMI Software
Software for energy management

## ◼ Overview

Software for energy management

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.

SIMATIC B.Data V6.0 SP1 Energy Management System

SIMATIC B.Data is a modular, cross-sector energy management system for industrial firms.
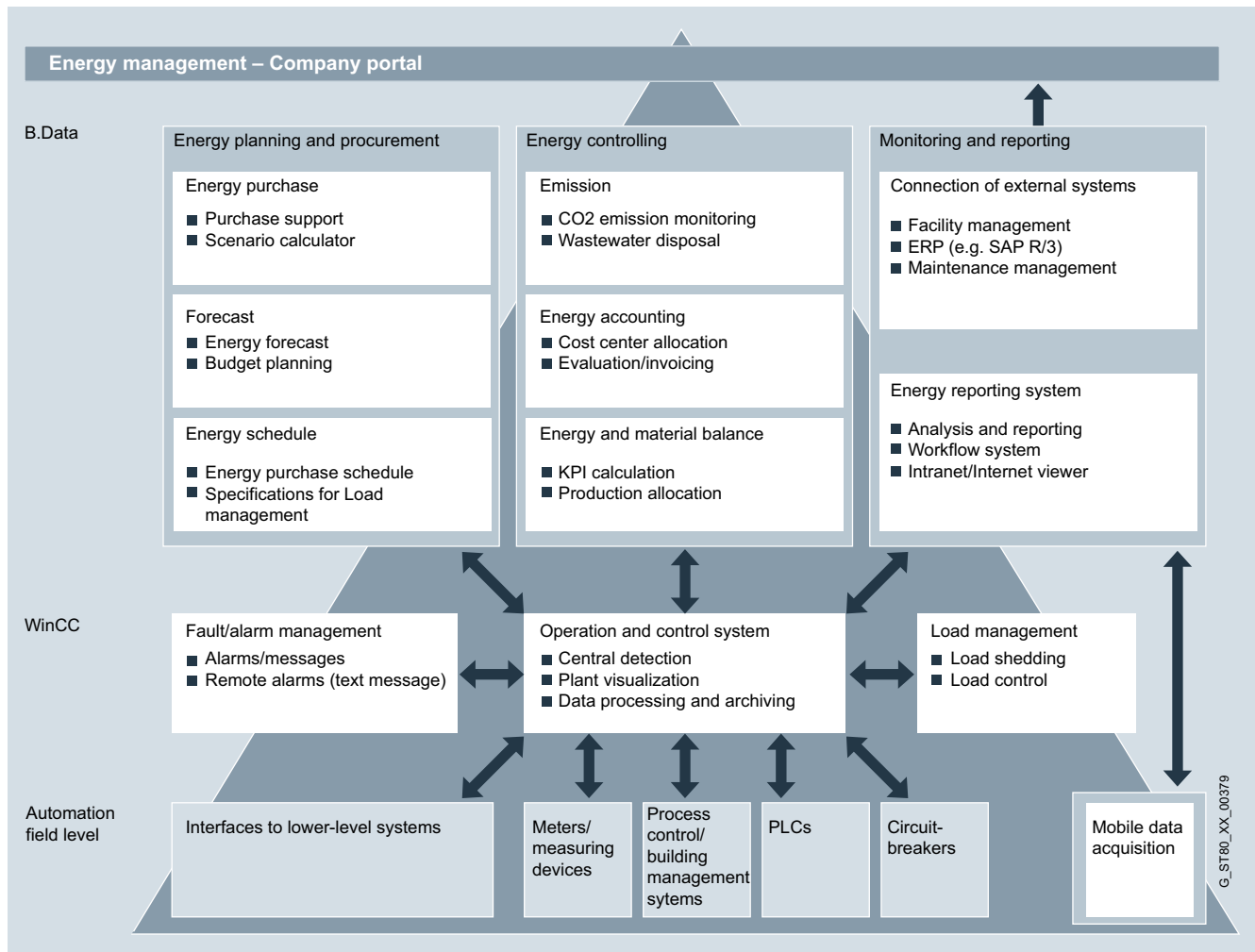
Benefits

The option SIMATIC B.Data forms the basis of a cost-effective energy management system for reducing energy costs and increasing energy efficiency, and it confers the following immediate benefits:

- It creates company-wide transparency, thanks to continuous energy balancing and materials balancing for the power generation systems and loads
- It allows energy costs to be allocated according to the costs-by-cause principle and permits transfer to the billing system (e.g. SAP R/3 CO)
- It generates characteristic values for well-informed suggestions for increasing the efficiency of power generation systems and loads
- It provides planning reliability thanks to production-related load and demand forecasts
- It supports purchasing with cost-optimized energy procurement
- It fulfills the legal obligations for monitoring and reporting on greenhouse gas emissions (CO_2 emissions)
- It relieves personnel of extra work through automatically updating internal and external energy reports
- It supports customers in the continuous improvement of energy efficiency (e.g. ISO 50001) by integrated project management for energy efficiency measures

Design

SIMATIC B.Data V6.0 SP1

SIMATIC B.Data is available in Professional and Enterprise editions:

- *Professional*
  - Incl. 50 tags, 1 B.Data acquisition component, 1 B.Data Client, 1 Web Client
  - Can be dynamically expanded with Tag Packages (50, 100, 250, 500, 1 000, 5 000)
  - Reporting, trender, dashboards, document management, matrix, KPI, profile
  - Recommended for systems with up to around 10 000 tags
  - May only be operated on a server with a maximum of 4 processor sockets or on 2 – 4 servers as a Real Application Cluster (RAC) with a maximum total of 4 processor sockets

- *Enterprise*
  - Available in versions for 30 000 tags and 60 000 tags
  - Incl. 1 B.Data acquisition component, 1 B.Data Client, 20 Web Clients
  - Database designed for the higher performance range
  - Reporting, trender, dashboards, document management, matrix, KPI, profile
  - Recommended for systems with more than 10 000 tags
  - No restrictions regarding processor sockets

SIMATIC B.Data Software Update Service (SUS)

For each B.Data System there is a corresponding SUS (Software Update Service) which is dependent on the number of tags.

The SUS is valid for 1 year. The contract is automatically extended by 1 more year unless canceled 3 months prior to expiration.

SIMATIC B.Data V6 expansions

The scope of B.Data can be extended by purchasing add-on packages:

- B.Data Web Client
- B.Data Client
- B.Data Acquisition Component
- B.Data Forecasting and Planning

Function

Acquisition and pre-processing of energy and operating data

- In addition to an interface to WinCC, SIMATIC B.Data also offers the latest interface standards such as OPC DA, OPC HDA, MODBUS TCP, ODBC, ASCII or XML
- 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.)
- B.Data Mobile for mobile recording of energy data including route planning for meter reading operations
- Management and analysis of energy data
- Automatic plausibility check and generation of simulated values
- Long-term archive with versioning, compression and consolidation functions
- Measured value editor for entering and processing energy and operating values
- Trender for presenting up-to-date (online) and historical load curves (trends), also for setpoint/actual value analyses
- Energy management dashboards for creating cross-company transparency through visualization of performance indicators and display of Sankey diagrams.

B.Data - Full Client

4
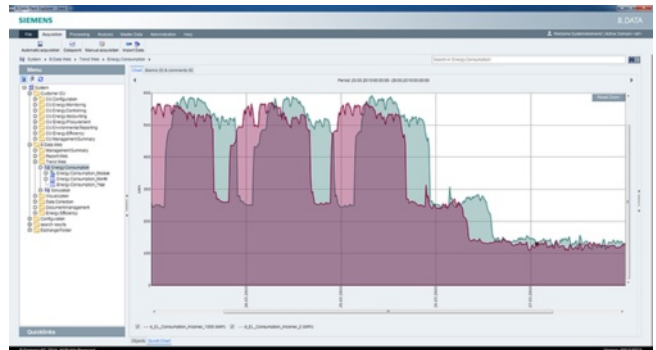
HMI Software
Software for energy management

SIMATIC B.Data

Function (continued)

Energy and material balance

Freely parameterizable balancing of the energy flows of various media such as electricity, heat, gas, steam, and emissions (CO_2) in the B.Data Plant Explorer

- Calculation of characteristic values (KPIs, efficiency coefficients, etc.) with direct reference to production (batches, quantities, etc.).


B.Data - Web Client

Energy accounting (costs and revenue accounting)

Calculation and allocation/assignment of energy costs to plants and/or customers/cost units in accordance with the costs-by-cause principle. The bottom up (measurement) and top down (allocation) procedures are supported here

- Flexible modeling of the hierarchic accounting structures in the Plant Explorer
- Tariff allocation of quantities, flexible price assessment with tariff and price time series
- Transfer of costs/revenues to the ERP system (e.g. SAP R/3 CO)
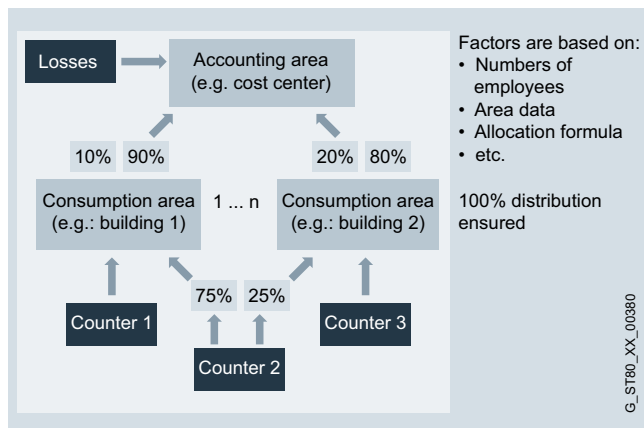
Energy planning

- Generation of requirement forecasts based on production-dependent factors (production planning) and basic load profiles (typical days)

Energy reporting

- Generation of energy schedules for registering with the energy suppliers. Energy reporting
- Freely parameterizable report generator for creating balances, protocols, shift logs, bills
- Fully automated reporting with task management, e-mail dispatch and document management
- B.Data Intranet/Internet viewer (web client) for company-wide viewing of reports and results
- Information about discrepancies from specified parameters through KPI warning system

Technical specifications

	SIMATIC B.Data V6.0 SP1
Operating system	• Windows Server 2008 R2 (German/English) • Windows Server 2012 R2 (German/English) • Windows 7 Professional/Ultimate SP1 (German/English) • Windows 8.1 Pro/Enterprise 64-bit (German/English) • Minimum of 4 GB RAM
Interface	In addition to an interface to WinCC and S7 controllers, B.Data 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 V7.0 SP3, V7.2, V7.3 SE • SIMATIC WinCC RT Professional V13
PCS 7 versions [2]	• SIMATIC PCS 7 V8 • SIMATIC PCS 7 V8.0 SP1 • SIMATIC PCS 7 V8.0 SP2

[1] If an acquisition computer is installed on a WinCC system, these requirements must also be complied with.

[2] The SIMATIC B.Data system for connection to the PCS 7 must always be installed on a separate PC.

Ordering data

	Article No.			Article No.

SIMATIC B.Data V6.0 SP1 Professional

• Professional Start Package (including 50 tags) [1]	**6AV6372-2DF06-0AX0**
• Tag Package 50 [2]	**6AV6372-2DF06-0CX0**
• Tag Package 100 [2]	**6AV6372-2DF06-0DX0**
• Tag Package 250 [2]	**6AV6372-2DF06-0EX0**
• Tag Package 500 [2]	**6AV6372-2DF06-0FX0**
• Tag Package 1 000 [2]	**6AV6372-2DF06-0GX0**
• Tag Package 5 000 [2]	**6AV6372-2DF06-0HX0**
• SUS up to 100 Tags [3] for max. additional 100 tags through tag packages	**6AV6372-2DF00-0DL0**
• SUS up to 500 Tags [3] for max. additional 500 tags through tag packages	**6AV6372-2DF00-0FL0**
• SUS up to 5 000 Tags [3] for max. additional 5 000 tags through tag packages	**6AV6372-2DF00-0HL0**

SIMATIC B.Data V6.0 SP1 Enterprise

• Enterprise 30 000 with database [4]	**6AV6372-2DF66-0BX0**
• Enterprise 30 000 without database [5]	**6AV6372-2DF66-0AX0**
• Enterprise 60 000 with database [4]	**6AV6372-2DF76-0BX0**
• Enterprise 60 000 without database [5]	**6AV6372-2DF76-0AX0**
• SUS Enterprise (more than 5 000 tags) [3] for complete Enterprise line or for Professional with more than 5 000 additional tags	**6AV6372-2DF70-0XL0**
• PowerPack Enterprise, upgrade from 30 000 to 60 000 tags	**6AV6372-2DF70-0XX0**

SIMATIC B.Data V6 expansions

• SIMATIC B.Data 3 Web Clients	**6AV6372-2DF20-0AX0**
• SIMATIC B.Data 20 Web Clients	**6AV6372-2DF20-0BX0**
• SIMATIC B.Data 60 Web Clients	**6AV6372-2DF20-0CX0**
• SIMATIC B.Data Client	**6AV6372-2DF30-0AX0**
• SIMATIC B.Data Prognosis & Planning	**6AV6372-2DF40-0AX0**
• SIMATIC B.Data Acquisition Component	**6AV6372-2DF50-0AX0**
SIMATIC B.Data Aquisition IPC V1.0 (EnergyBox, turn-key solution comprising IPC and acquisition component)	**6BK1000-2BD00-0AC0**

SIMATIC B.Data upgrades V5.2/V5.3 to V6.0 SP1

• Upgrade from systems with up to 100 tags [6]	**6AV6372-2DF06-0DX4**
• Upgrade from systems with up to 500 tags [6]	**6AV6372-2DF06-0FX4**
• Upgrade from systems with up to 5 000 tags [6]	**6AV6372-2DF06-0HX4**
• Upgrade from systems with more than 5 000 tags (Enterprise) [6]	**6AV6372-2DF76-0XX4**

[1] B.Data V6.0 SP1 Professional is supplied with an Oracle Database Standard Edition Embedded. For larger quantity structures (starting with approx. 250 million stored measured values), you need Oracle Database Enterprise Edition with the Partitioning Option.

[2] 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.

[3] The SUS contract runs for 1 year. The contract is automatically extended by a further year unless canceled 3 months prior to expiration.

[4] This version of SIMATIC B.Data V6.0 SP1 Enterprise is supplied with an Oracle Database Enterprise Edition Embedded. This is designed for larger quantity structures (starting with approx. 250 million saved measured values).

[5] This version of SIMATIC B.Data SP1 V6.0 Enterprise is supplied without a database. It is recommended to use the Oracle Database Enterprise Edition, which must be ordered separately from Oracle.

[6] The upgrades are supplied without Oracle Database Enterprise Edition Embedded.

More information
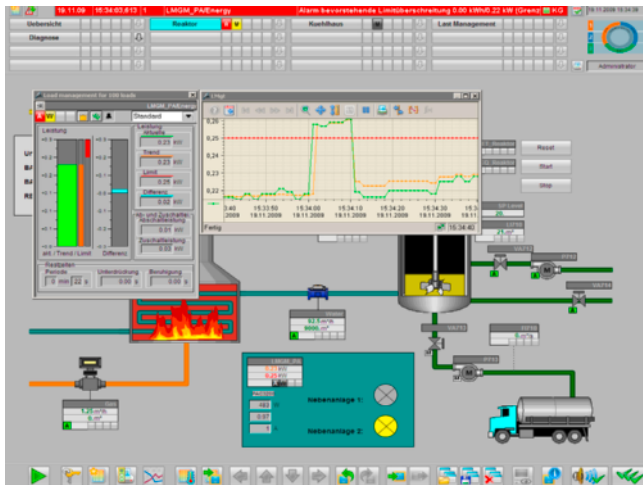
Further information can be found on the Internet at:

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

HMI Software
Software for energy management

SIMATIC powerrate

Overview

SIMATIC powerrate, as an option for WinCC / PCS 7, ensures transparency in energy consumption from the infeed to the load.

SIMATIC powerrate is used in all sectors in which WinCC or PCS 7 are deployed and energy efficiency considerations play a major role. Total integration into WinCC or PCS 7 means that there is no need for a special system environment. Predefined modules and symbols give you the assurance of building on tested product components, with interfaces that support customized expansion.

SIMATIC powerrate therefore provides a solution that you can use to obtain an overview of the energy consumption of a plant easily and cost-effectively through integration in an existing SIMATIC SCADA system.

Benefits

- Identification of energy-intensive equipment and processes to develop measures for improving energy efficiency.
- Comparison of consumption profiles for more efficient processes.
- Optimization of the company according to energy parameters, based on an evaluation of consumption and costs.
- Compliance with the contractually agreed power limits, thus preventing higher power supply costs or penalty payments.
- Integration of the 7KM PAC3200/4200 measuring devices for a clear overview of selected measured values and alarms.
- Integration of switches with an overview of the switch status and the switching possibilities.
- Accurate assignment and comparison of the consumption data of specific work processes or batches.

Design

SIMATIC powerrate comprises the following components:

- Blocks for acquiring and conditioning energy data
- Faceplates for displaying and editing energy data
- Blocks for implementing load management (calculating the trend, monitoring the limit, releasing/inhibiting loads), batch-related consumption recording and for integrating measuring instruments and switches
- Additional blocks – for example, for time synchronization, data backup, data exchange with archives
- Faceplates for displaying results and entering values (e.g. for configuration, or manually measured values)
- Excel-based reports for allocating energy data to cost centers, for batch-related evaluation and for determining and displaying the load duration curve
- Exporting data to Excel

Function

Acquiring and conditioning energy data

Using ready-to-use function blocks, energy data can be acquired by any PROFIBUS-capable devices. The data can be input to the function blocks in the form of counter pulses, count values or power values. Count values can also be entered manually.

From this data, the function block calculates the power averages and the work values for a predefined period. This calculated data is subsequently saved in the WinCC archive. In addition, a final value forecast is extrapolated for the power values for each period.

A sample function (heat calculation) that can be adapted to the needs of the customer at any time by means of open interfaces has been implemented for the purpose of visualizing customized calculations.

Data from manually read counters can be entered directly into the system and used for further analysis. Absolute numerical values (entry of an absolute value instead of the difference from the previous value) can also be recorded and used in further processing.

Displaying energy data

The up-to-date, acquired energy data is displayed as power averages/work values for each time interval (total value for the previous interval, current value of the current interval, extrapolated value for the end of the current interval). A load trend display enables analysis of archived energy data as well as its representation in tables.

4

■ **Function** (continued)

Further processing of data

The archived data can be exported to Excel directly from WinCC using the export functions. The exported energy data can also be included in further customized processing. WinCC tools can be used to access the data from the WinCC archive.

Reports

For this purpose, selected energy data is read from archives (Tag Logging archive, user archives) from the WinCC Runtime database; using Microsoft Excel the following reports can then be generated:

- Cost center report
  Here the consumption can be allocated to different cost centers and the costs can be calculated on the basis of predefined tariffs. The results can be output by means of 2 reports in the form of tables or diagrams.

- Load duration curve
  An analysis is carried out on the basis of the archived power averages to establish how often a certain power average has occurred in a given period. It can be quickly detected from this characteristic curve whether temporary power peaks exist which can represent a possible starting point for cost savings by means of load management.

- Batch report
  This is used to allocate consumption to batches, whereby the data can be presented in chronological order or in order of batch name.

The generation of exports or reports can be initiated manually or automatically time-controlled (daily, weekly or monthly).

Load management

Contractually agreed power limits (in the case of electricity, normally the 15-minute average power value) must be observed, otherwise significantly higher supply prices or even penalty payments may become due to the energy supply company. The load management feature of SIMATIC powerrate carries out cyclic trend calculations in order to issue warnings/alarms if violation of the limit is likely and to switch off loads in accordance with the given configuration should this be required. If a limit is exceeded despite this, the latest load management data is archived to enable future evaluation or analysis.

To prevent unnecessary switching operations, numerous parameters are available for adapting the load management to the current process conditions - and all this can be done conveniently via the faceplate.

For loads that are distributed over different PLCs, SIMATIC powerrate contains appropriate PLC-to-PLC communication blocks which can be used to integrate these loads into the load management system. Load management is scalable, according to the maximum number of loads to be integrated or monitored, for up to 10, 25, 50, 75 or 100 loads. Load management can be performed for different media (e.g. electricity, gas) simultaneously.

Batch-related consumption recording

A batch comprises all the units of a product that have been produced in one production cycle, i.e. under identical conditions.

Batch-related consumption recording allows accurate recording of energy consumption for each batch. Batch-related consumption recording is possible for five types of energy each with up to 10 loads. Appropriate reports can be generated for analysis of the data (see also the batch report).

Integration of measuring devices 7KM PAC3200/PAC4200

If the 7KM PAC3200/PAC4200 measuring devices are integrated, selected measured values can be displayed and alarms (current, voltage, pulse frequency too high) can be generated from the digital status information and displayed.

Integration of switches

Switch integration via digital inputs/outputs (DI/DO) supports display of the switch status (On, Off, tripped, unplugged).

With the appropriate authorization, switching is also possible via the faceplate. Switching takes place in a 2-step operation (switch command is issued, followed by a prompt for repeated confirmation; the switch command is not forwarded to the switch until confirmation has been received).

WinCC Web Navigator support

Makes the powerrate functionality available over the Web.

Special functions

To avoid data loss in the event of a communication fault, the data is stored temporarily in a circulating buffer on the S7.

4

HMI Software
Software for energy management

SIMATIC powerrate

■ Technical specifications

	SIMATIC powerrate V4.0 SP3
Hardware requirements	
SIMATIC powerrate can be used in the PCS 7 or WinCC SCADA environments. For installation, the respective hardware requirements of the following products apply	• PCS 7 • STEP 7 and WinCC SCADA
Released CPUs - SIMATIC powerrate is released in the PCS 7 environment for	• S7-400 CPUs supported by PCS 7 • WinAC RTX 2010 SP1 and SP2

Released CPUs - SIMATIC powerrate is released in the WinCC SCADA environment for:	• S7-400
	• S7-300
	  - SIMATIC S7 CPU 319-3 PN/DP V2.5 and higher
	  - SIMATIC S7 CPU 317-2 PN/DP V2.6 and higher
	  - SIMATIC S7 CPU 315-2 PN/DP V3.1 and higher
	• SIMATIC ET 200S IM151-8 PN/DP CPU V3.2 and higher

	Firmware version V3.x or later is recommended for S7-300 controllers. CPUs with firmware version V3.2 or higher must be used for the implementation of PROFIenergy I-device blocks PR3_PE_IDEV and PRx_PE_RD. • WinAC RTX 2010 SP1 and SP2
Software requirements	
You can use SIMATIC powerrate in the PCS 7 or WinCC SCADA environments. For installation, the respective software requirements of the following products apply:	• PCS 7 • STEP 7 and WinCC SCADA
The library is released for the following PCS 7 versions	• SIMATIC PCS 7 V8.1 • SIMATIC PCS 7 V8.0 SP2 • SIMATIC PCS 7 V7.1 SP4
The library is released for the following WinCC version with the corresponding versions of STEP 7	• SIMATIC WinCC V7.3 Second Edition • SIMATIC WinCC V7.2 Update 1 or higher (Update 2 is recommended)

For use with WinCC V7.3 or V7.2, the following installations are required:	• WinCC minimum installation
	  - Basic Process Control
	  - User archives for load management and batch-oriented energy acquisition
	• WinCC add-on "AS-OS Engineering"
	For the use of SIMATIC powerrate V4.0, WinCC must execute in integrated mode with STEP 7.
	• SIMATIC NET
	• STEP 7

powerrate Reports has been released for the following versions	• Microsoft Excel 2003 • Microsoft Excel 2007 • Microsoft Excel 2010 • Microsoft Excel 2013

■ Ordering data — Article No.

	Article No.
SIMATIC powerrate V4.0 SP3 ES + OS Runtime[1] Also includes: • License for WinCC/User Archive • Block library PAC3200 for WinCC • Block library PAC3200, 3WL/3VL for PCS 7	**6AV6372-1DE04-0AX0**
SIMATIC powerrate V4.0 SP3 Upgrade Upgrade V3.x to V 4.0 SP3, ES + OS-RT[1]	**6AV6372-1DE04-0AX4**
SIMATIC powerrate V4.0 SP3 Update Update V4.0 (SP1 or SP2) to V4.0 SP3	**6AV6372-1DE04-0AX3**
SIMATIC powerrate V4.0 SP3 Trial License Limited 30-day ES + OS Runtime license	**6AV6372-1DE04-0AX7**

[1] For operation on a WinCC/PCS 7 OS single-user workstation or server and any number of automation systems.
When using additional WinCC/PCS 7 OS single-user stations/servers, one license is required per WinCC/PCS 7 OS single-user station/server.

■ More information

Further information can be found on the Internet at:

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

Important information on the use of SIMATIC powerrate is available on the Internet at:

http://support.automation.siemens.com/WW/view/en/48204134

4

Overview

SIMATIC WinCC flexible ES engineering software

- Family of configuration systems with WinCC flexible Micro/Compact/Standard/Advanced for SIMATIC operator panels, the HMI part of SIMATIC C7 as well as for the PC-based visualization software WinCC flexible Runtime
- Runs under Windows XP Professional / Windows 7 Professional, Ultimate, Enterprise
- Can be expanded by the option "WinCC flexible/Change-Control" 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 under Windows XP Professional / Windows 7 Professional, Ultimate, 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

Overview SIMATIC WinCC flexible ES
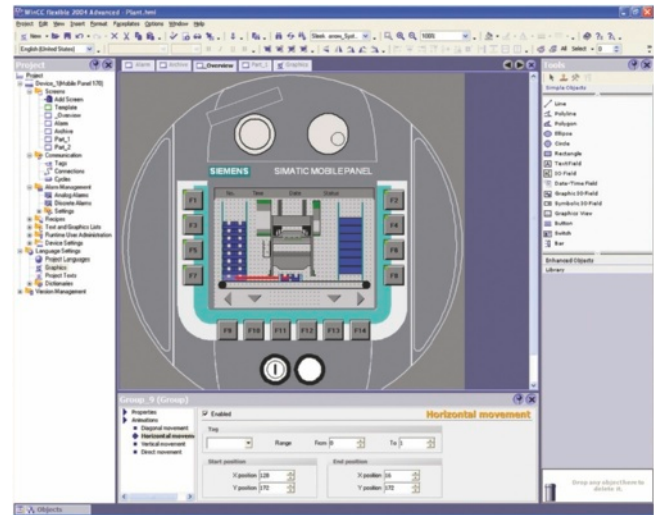
- Uniform family of engineering tools for configuration SIMATIC HMI Operator Panels, the operator control part of SIMATIC C7 units, SIMOTION/SINUMERIK Panel PCs as well as the PC-based visualization software WinCC flexible Runtime.
- Runs under Windows XP Professional / Windows 7 Professional, Ultimate, Enterprise
- Current version:
  - SIMATIC WinCC flexible 2008 SP3 Micro
  - SIMATIC WinCC flexible 2008 SP3 Compact
  - SIMATIC WinCC flexible 2008 SP3 Standard
  - SIMATIC WinCC flexible 2008 SP3 Advanced

4

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible ES

Benefits

- The integrated configuration software reduces training, maintenance and service overhead and protects the customer's investments
- Minimized configuration overhead due to reuse of scalable and dynamizable objects
- 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 object, 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

Application

SIMATIC WinCC flexible Micro/Compact/Standard/Advanced are engineering tools for configuring SIMATIC HMI devices, the operating component of SIMATIC C7 devices, the SIMOTION/SINUMERIK Panel PCs as well as the PC-based visualization system WinCC flexible Runtime.

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

WinCC flexible Micro

- Micro Panels: OP 73micro, TP 170micro, TP 177micro

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: Panel PC IL 70, Panel PC IL 77, Panel PC 477/477B, Panel PC 577/577B, Panel PC 670, Panel PC 677/677B, Panel PC 870, Panel PC 877
- SIMOTION Panel PC: P012K, P012T, P015K, P015T, PCR, PCR-Touch
- 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

Design

The engineering tools of the SIMATIC WinCC flexible range are based on one another. The available editors largely depend on the respectively configured target systems and their functions. A more comprehensive engineering tool such as WinCC flexible Standard also offers the facilities of the smaller engineering tools, e.g. WinCC flexible Compact or Micro.

Upgrading of a smaller engineering tool to a larger one is possible using a Powerpack. An exception is WinCC flexible Micro.

The scope of functions of the WinCC flexible engineering tools already includes project support for the Runtime options available for SIMATIC Panels or WinCC flexible Runtime, independent of the RT licenses purchased. Separate licensing is required for the target system in order to use the configured Runtime options.

4

■ **Function**

Integration into automation systems

- Integration into SIMATIC STEP 7 V5.x and Simotion
  - Management of HMI projects within the SIMATIC Manager
  - Shared use of communication settings and process point definitions, i.e., symbols and messages
  - Display of the HMI configuring objects in the SIMATIC Manager
  - Transfer of configuring data via MPI/PROFIBUS/Ethernet using routing

Configuration interface

- Comprehensive and fast access to editors and project data via Workbench applications
- Adaptive user interface of engineering tools depending on configured target system
- User-definable user interface settings, e.g., layout, toolbars, object defaults

Project handling

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

Screen editor with extensive 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
- Template for the definition of global screen objects and functions (comparable with the Slide Master in MS PowerPoint)
- User-friendly editor for the creation of image blocks 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 texts for translation
- of tags, links, text lists, and messages
- Generation of variable lists for importing from controller programming tools

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

- Cross-reference list with direct access to all objects, e.g. for editing or selection
- Search for objects in entire project
- Central reassignment of variables
- Text search and replace functions

Libraries for predefined/user-defined configuration objects

- Large number of scalable and dynamizable screen objects included in scope of delivery
- Size-scalable WMF-format graphics for industrial applications included in scope of delivery
- Preview function for library objects
- Storage of all engineering objects in library, e.g., blocks and even entire displays or variables;
  picture blocks can be created on a customer- or project-specific basis by combining simple screen objects. Changes to these picture blocks can be made centrally (block definition).

Language support

- Multilingual project creation (max. 32 languages) in editors thanks to selectable views
- Automatic translation on basis of system- and user-specific dictionaries in central text library
- Central management of language-specific texts and graphics in libraries
- Edit, export and import of texts for translation
- Language-specific graphics

Visual Basic Script support

- IntelliSense function for fast programming of access to runtime objects
- Simple creation of control sequences in script code;
- Script debugging in Simulator and WinCC flexible Runtime

Test and startup support

- Simulation of HMI projects on engineering PC
- Jump to error cause based on alarm messages in the Compiler
- Advanced ProSave service tool for all operating systems supported by WinCC flexible

ChangeControl (option)

- Version management of project versions with rollback
- Logging of configuration changes, e.g., for regulated industries

Note:

For further information, refer to "WinCC flexible options".

Default runtime data in engineering tools

- Users and passwords
- Recipe data records

4

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible ES

■ Technical specifications

System requirements (minimum requirements)	WinCC flexible Engineering Software
Operating system	Windows XP Professional SP3 (32 bit), Windows 7 Professional, Ultimate, Enterprise (32 and 64 bit)
	Additionally for SIMATIC WinCC flexible Micro: Windows XP Home SP3
Processor	Pentium 4 (or comparable) processor running at 1.6 GHz or faster
Resolution	1024 x 768 or higher
Main memory (RAM)	≥ 1 GB, ≥ 512 MB for WinCC flexible Micro
Hard disk (free memory space) [1]	≥ 2 GB [2] ≥ 1.2 GB for WinCC flexible Micro [3]
DVD drive	for software installation

[1] 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 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

	Article No.
WinCC flexible 2008 Micro incl. SP3 Engineering software for configuration of Micro Panels, electronic documentation (.pdf)	
• Single license and documentation on DVD, single license key without license key	**6AV6610-0AA01-3CA8**
• as download [1], software download, single license, without license key download, e-mail address required for the delivery	**6AV6610-0AA01-3CH8**
WinCC flexible 2008 Compact incl. SP3 Engineering software for configuring Micro Panels, Basic Panels and 70/170 series Panels incl. C7-635; software for engineering option WinCC flexible /ChangeControl [2]; simulation software for Micro Panels, Basic Panels and 70/170 series Panels incl. C7-635, native drivers; electronic documentation (.pdf)	
• Software and documentation on DVD, floating license, license key on USB stick	**6AV6611-0AA51-3CA5**
• as download [1], software and license key download, floating license, e-mail address required for the delivery	**6AV6611-0AA51-3CH5**
WinCC flexible 2008 Standard incl. SP3 Engineering software for configuring Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636; software for engineering option WinCC flexible /ChangeControl [2]; simulation software for Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636; native drivers; electronic documentation (.pdf)	
• Software and documentation on DVD, floating license, license key on USB stick	**6AV6612-0AA51-3CA5**
• as download [1], software and license key download, floating license, e-mail address required for the delivery	**6AV6612-0AA51-3CH5**

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

[2] A separate license for WinCC flexible/ChangeControl must be purchased for each engineering station

4

■ Ordering data

	Article No.
WinCC flexible 2008 Advanced incl. SP3	
Engineering software for configuring WinCC flexible Runtime on Basic Pcs/Panel PCs, and Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636; software for the engineering option WinCC flexible /ChangeControl [1]; simulation software for WinCC flexible Runtime and Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636; native drivers; electronic documentation (.pdf)	
• Software and documentation on DVD, floating license, license key on USB stick	6AV6613-0AA51-3CA5
• as download [4], software and license key download, floating license, e-mail address required for the delivery	6AV6613-0AA51-3CH5
WinCC flexible /ChangeControl for WinCC flexible 2008 Compact/Standard/Advanced [1] [2]	
• Floating license, option, license key only	6AV6613-6AA01-3AB5
• as download [4], only license key download, floating license, e-mail address required for the delivery	6AV6613-6AA01-3AH5
Powerpacks	
SIMATIC WinCC flexible Power Packs	
Floating license, license key only on USB stick	
• 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 [4], floating license, license key download only, e-mail address required for the 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 Micro Update 2008, 2008 SP1, 2008 SP2 -> 2008 SP3	6AV6610-0AA51-3CU8
WinCC flexible 2008 Compact/Standard/Advanced Update 2008, 2008 SP1, 2008 SP2 -> 2008 SP3	6AV6613-0AA51-3CU8
Upgrades	
SIMATIC WinCC flexible 2004/2005/2007 to SIMATIC WinCC flexible 2008 incl. SP3	
• Upgrade to WinCC flexible 2008 Micro [3]	6AV6610-0AA01-3CE8
• 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 [4]	
E-mail address required for the delivery	
• Upgrade to WinCC flexible 2008 Micro [3]	6AV6610-0AA01-3CK8
• 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
SIMATIC WinCC flexible ASIA 2004/2005/2007 to SIMATIC WinCC flexible ASIA 2008 incl. SP3	
• Upgrade to WinCC flexible 2008 ASIA Standard, incl. ChangeControl option [1]	6AV6612-0AA11-3CE5
• Upgrade to WinCC flexible 2008 ASIA Advanced, incl. ChangeControl option [1]	6AV6613-0AA11-3CE5

[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] Original delivery note or Certificate of License (CoL) from previous WinCC flexible Micro is required

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

4

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible ES

Ordering data	Article No.		Article No.

Versions for China/Taiwan/Korea/Japan

WinCC flexible 2008 ASIA Standard incl. SP3

Floating license, license key on USB stick, software and documentation on DVD, contains:

- Engineering software for configuring Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636
- Simulation software for Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636
- Native drivers
- Electronic documentation (.pdf)

6AV6612-0AA11-3CA5

WinCC flexible 2008 ASIA Advanced incl. SP3

Floating license, license key on USB stick, software and documentation on DVD, contains:

- Engineering software for configuring WinCC flexible Runtime as well as Micro Panels, Basic Panels and 70/170/270/370 series Panels incl. C7-635/636
- Software for WinCC flexible /ChangeControl engineering option [1]
- Simulation software for WinCC flexible Runtime as well as Micro Panels, Basic Panels, and 70/170/270/370 series Panels incl. C7-635/636
- Native drivers
- Electronic documentation (.pdf)

6AV6613-0AA11-3CA5

[1] A separate license for WinCC flexible/ChangeControl must be purchased for each engineering station

More information

Additional information is available in the Internet under:

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".

■ Overview
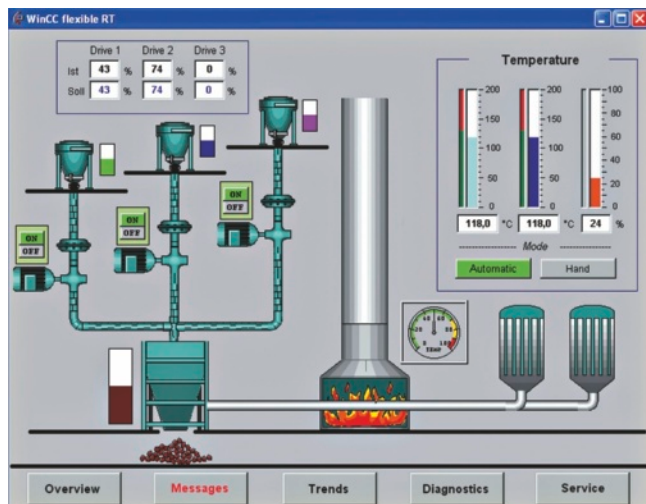
PC-based visualization software for single-user systems directly at the machine.

- Runs under Windows XP Professional and Windows 7 Professional, Ultimate, Enterprise
- Current version: SIMATIC WinCC flexible 2008 SP3 Runtime

SIMATIC WinCC flexible Runtime is configured with the SIMATIC WinCC flexible Advanced configuration software.

■ Benefits

- Optimum price/performance ratio thanks to individually scalable system functionality
- Functions for all visualization tasks:
  Operator functions, graphical and trend displays, signaling system, log system, archiving (option), recipe management (option), Audit Trail (option), process fault diagnostics (option)
- Flexible runtime functionality thanks to Visual Basic scripts
- Innovative service concepts with remote operation, diagnostics and administration via intranet and Internet as well as e-mail communication to increase availability (option)
- Support for simple distributed automation solutions based on TCP/IP networks at the machine level (option)

■ 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
- SIMOTION Panel PCs
  - P012, P015
  - PCR, PCR-Touch
- 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.

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible RT

■ Function

Visualization via Windows-compliant operator interface

made up of parameterizable screen objects and image blocks 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 image blocks created from system basic objects
- 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 and SIMOTION
- Freely-definable message classes for definition of acknowl-edgment response and display of message events

Logging of alarms and process values [1]

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

Recipes [1]

- Generation of data records for machine or production data
- Display or entry of data records via a configurable screen object or via process images when distributed within the project
- Transmission of data records from or to the PLC
- Import/export for data records from/to CSV files

Documentation of process data, alarm events and recipes

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

Flexible expansion of system function

- thanks to Visual Basic Script

Language support for multilingual projects

- Up to 16 online languages (incl. Asian and Cyrillic)
- 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]

PLC link for a wide variety of PLCs on-board

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

Open communication between HMI systems and with higher-level systems [1]

- OPC server
- Sm@rtAccess for communication between HMI systems based on Ethernet networks, or via the intranet/Internet
- Read and write access to variables; WinCC flexible Runtime or SIMATIC Panels make data (variables) available to other SIMATIC HMI systems or Office applications
- 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 headend or control room

Sm@rtService for remote control, diagnostics and administration via intranet and Internet [1]

- Display and control of process images on remote PC or Panel
- Sending of e-mails on demand or event-driven
- System diagnostics visualized via device-specific HTML pages

[1] Option for SIMATIC WinCC flexible Runtime; runtime licenses must be purchased separately. For further information, refer to "WinCC flexible options".

4

■ Function (continued)

System requirements	WinCC flexible Runtime
Operating system	Windows XP Professional SP3 (32 bit) Windows XP Embedded [1] Windows 7 Professional / Ultimate / Enterprise (32 bit and 64 bit)
Processor[4] • Minimum • Recommended	 Windows XP: 300 MHz Windows 7: 1 GHz Windows XP: ≥ Pentium III, 500 MHz Windows 7: ≥ 1 GHz
Graphics • Minimum • Resolution	 SVGA 640 x 480 to 1600 x 1200 or 800 x 480 to 1980 x 1080
RAM [2] • Minimum • Recommended	 Windows XP: 128 MB Windows 7: 1 GB Windows XP: ≥ 512 MB Windows 7: ≥ 1 GB
Hard disk (free memory space) [3]	≥ 250 MB

[1] Only for enabled platforms (e.g. Panel PC 477). You can get information from your Siemens contact.

[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

■ Integration

SIMATIC WinCC flexible Runtime supports linking to:

Protocol	PC interfaces
SIMATIC S5 via AS511 (TTY)	
S5-90U	COM1/COM2 [7]
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] CP 5611 A2 [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 5611 A2 [2] CP 5612 CP 5621 [1] CP 5622 CP 5613 A3 CP 5614 A3 CP 5623 CP 5624 CP 5711 PC/PPI adapter [3]
SIMATIC S7 via MPI	
S7-200 (except CPU 212) [4]	CP 5611 A2 [2] CP 5612 CP 5621 [1] CP 5622 CP 5613 A3 CP 5614 A3 CP 5623 CP 5624 CP 5711 PC adapter USB A2 [6] 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 5611 A2 [2] CP 5612 CP 5621 [1] CP 5622 CP 5613 A3 CP 5614 A3 CP 5623 CP 5624 CP 5711
S7-300 CPUs with integr. PROFIBUS interface	
S7-300 with CP 342-5	
S7-400 CPUs with integr. PROFIBUS interface	
S7-400 with CP 443-5 or IM 467	
WinAC Basis (V3.0 and higher)	
WinAC RTX	

[1] WinCC flexible Runtime is passive (DP slave); the function block required for the link is included in the scope of delivery 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] Via PC cable with integrated level converter RS 232/TTY; Article number: 6ES5734-1BD20

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HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible RT

■ **Integration** (continued)

SIMATIC S7 via Ethernet (TCP/IP)	
S7-200 with CP 243-1	CP 1612 A2 [2] CP 1613 A3
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 [1] CP 5622 [1]

SIMOTION [3]	
SINUMERIK [4]	
Third-party controllers	
Allen Bradley (DF1/DH485)	COM1/COM2
Allen Bradley (Ethernet)	CP 1612 A2 [2]
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 [2]
OMRON (Link/Multilink)	COM1/COM2
OPC [5] [7]	
Data Access V2.05a (client + server)	CP 1612 A2 [2]
Data Access XML V1.00 (client)	
HTTP communication for data exchange between SIMATIC HMI (client + server) [6] [7]	CP 1612 A2 [2]

[1] For Microbox 427 and Panel PC 477/577/677 via internal MPI/DP interface

[2] For Microbox 427 and Panel PC 477/577/677/877 via internal Ethernet interface

[3] For further information, see Catalog PM 10

[4] "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60

[5] OPC Client is included in scope of delivery, the "WinCC flexible/OPC Server for WinCC flexible Runtime" license is required for the OPC Server option

[6] "WinCC flexible/Sm@rtAccess for WinCC flexible Runtime" license required

[7] OPC and HTTP communication are additive, i.e. can be used in conjunction with the PLC links listed above

For information about SIMATIC Panels that support OPC/http communication, see the overview under "System interfaces".

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 "HMI devices/System interfaces".

■ **Integration** (continued)

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
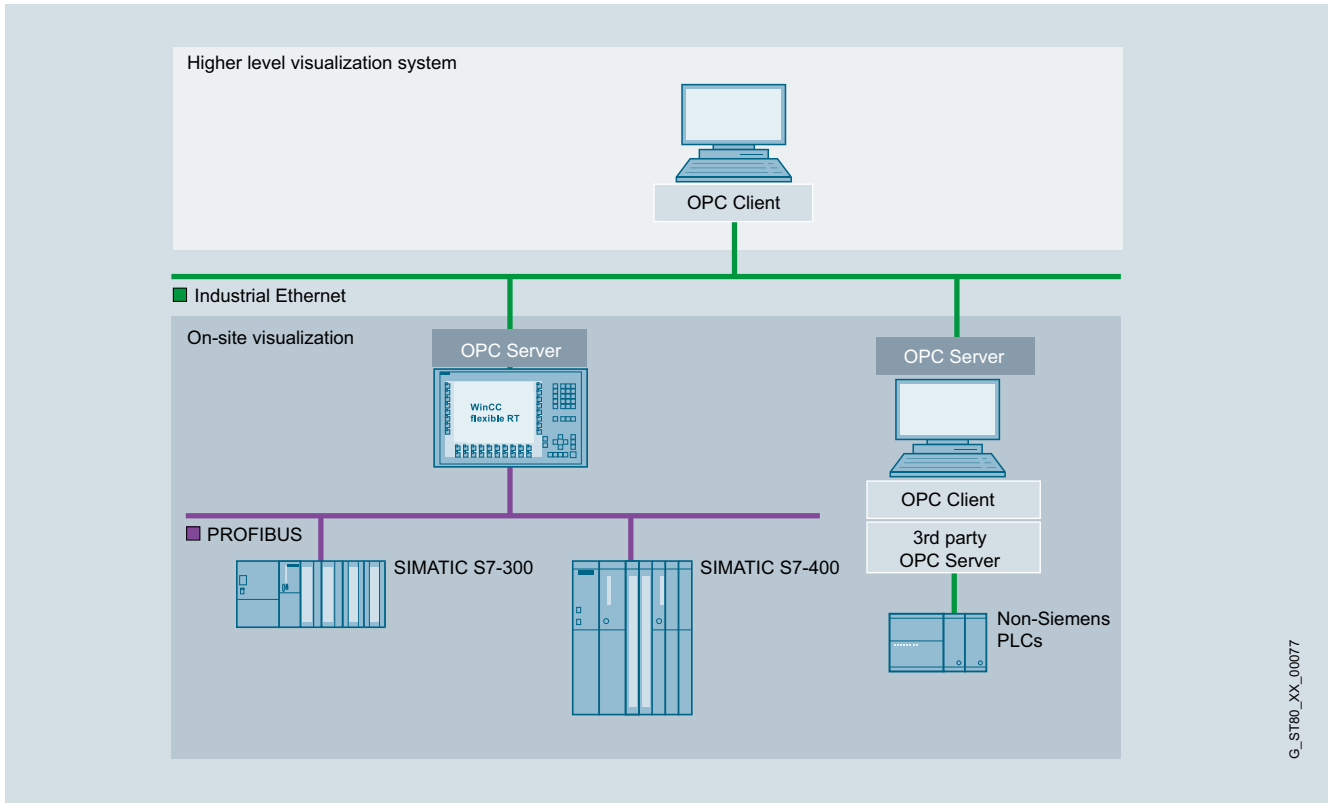
SIMATIC WinCC flexible Runtime application example

4

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible RT

■ 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 | Article No.

	Article No.
SIMATIC WinCC flexible 2008 Runtime	
for PC systems, software and documentation on DVD, including options software for PC systems [1] ;	
Single license, license key on USB stick 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]	
Single license, software and license key download. E-mail address required for the 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	
Single license, license key only on USB stick 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]	
Single license, license key download only. E-mail address required for the 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, 2008 SP2 -> 2008 SP3	**6AV6613-1XA51-3CU8**

[1] Runtime licenses for WinCC flexible Runtime options must be purchased separately for each target system

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

4

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 incl. Runtime options for: WinCC flexible /Archives; WinCC flexible /Recipes; WinCC flexible /Audit; WinCC flexible /Sm@rtAccess; WinCC flexible /OPC-Server; WinCC flexible /ProAgent	
• Software and documentation on DVD, single license, license key on USB stick	**6AV6613-1XA51-3CE0**
• as download [1], software and license key download, single license, e-mail address required for the delivery	**6AV6613-1XA51-3CK0**
Upgrade of the SIMATIC WinCC flexible Panel options:	
WinCC flexible /Audit for SIMATIC Panel; WinCC flexible /Sm@rtAccess for SIMATIC Panel; WinCC flexible /Sm@rtService for SIMATIC Panel; WinCC flexible /OPC-Server for SIMATIC Multi Panel; WinCC flexible /ProAgent for SIMATIC Multi Panel	
• only license key on USB stick, single license	**6AV6618-7XX01-3AF0**
• as download [1], only license key download, single license, e-mail address required for the delivery	**6AV6618-7XX01-3AK0**
Documentation (must be ordered separately)	
User Manual WinCC flexible Runtime	
• German	**6AV6691-1BA01-3AA0**
• English	**6AV6691-1BA01-3AB0**
• French	**6AV6691-1BA01-3AC0**
• Italian	**6AV6691-1BA01-3AD0**
• Spanish	**6AV6691-1BA01-3AE0**
User Manual WinCC flexible Communication	
• German	**6AV6691-1CA01-3AA0**
• English	**6AV6691-1CA01-3AB0**
• French	**6AV6691-1CA01-3AC0**
• Italian	**6AV6691-1CA01-3AD0**
• Spanish	**6AV6691-1CA01-3AE0**

	Article No.
Communication via Industrial Ethernet	
CP 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	**6GK1161-3AA01**
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**

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

HMI Software
SIMATIC WinCC flexible HMI system

SIMATIC WinCC flexible RT

■ **Ordering data**

	Article No.		Article No.
Communication via PROFIBUS		**CP 5612** PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC flexible basic package)	**6GK1561-2AA00**
CP 5613 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1561-3AA02**		
		CP 5622 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 5614 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1561-4AA02**		
		CP 5711 USB adapter (USB V2.0) for connecting a PG/notebook to PROFIBUS or MPI (communications software included in WinCC Basic package)	**6GK1571-1AA00**
SIMATIC NET PB S7-5613 V8.0 SP1 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;		**PC/PPI adapter** RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 kbps	**6ES7901-3CB30-0XA0**
• Single license for 1 installation	**6GK1713-5CB80-3AA0**		
• 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**		

■ **More information**

Additional information is available in the Internet under:

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

Note:

Do you need a specific modification or option for 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".

■ **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.

- Delivered customer projects, 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.

Options for SIMATIC Panels/Multi Panels and SIMATIC WinCC flexible Runtime

SIMATIC WinCC flexible /Archives

Archiving of alarms and process values

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

SIMATIC WinCC flexible /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 images when distributed within the project
- Transmission of data records from or to the controller
- Import/export of data sets as CSV files

SIMATIC WinCC flexible /Audit

Recording of operator actions in an Audit Trail

- Electronic signature for important operator actions relevant to production
- The ChangeControl option supports users in respect of tracking modifications to projects.
- 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.

- Creates user administration on a central computer to which one or more WinCC flexible 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 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.

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 plant via Internet/intranet
- Reduced downtimes for machines and plant with direct remote access
- 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
- Communication with applications from different vendors, e.g. MES, ERP or applications in the office sector

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
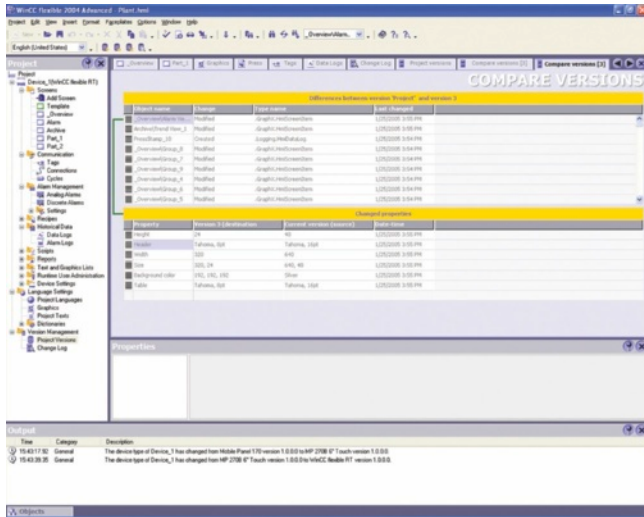- Frees up PLC capacity with regard to memory and program execution time

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /ChangeControl

Overview

- 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.

Application

- In machine/special machine construction for project management, e.g. delivered customer versions and their modifications
- For saving of intermediate states during complex new developments or expansions, with rollback facility
- During work for specific orders as basis for calculating costs for modifications
- In regulated sectors as proof of state of plants or machines and any modifications made to them

Function

- Integral GUI for management of project versions (version tree with main line and secondary lines for modified project versions)
- Modification log can be activated/deactivated and shows who carried out modifications, and when/which. Modification reasons can be entered as comments

Ordering data

	Article No.
WinCC flexible /ChangeControl for WinCC flexible 2008 Compact/Standard/Advanced [1]	
• Floating license, license key only on USB stick	**6AV6613-6AA01-3AB5**
• as download [2] Floating license, only license key download, e-mail address required for the 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 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.

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Archives

Overview
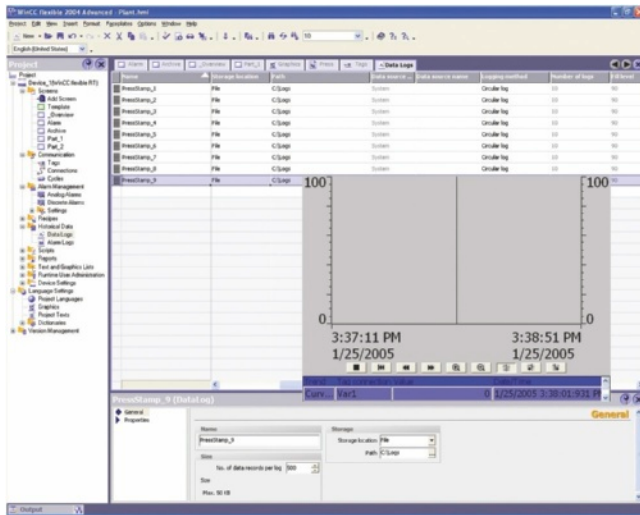
- Option for SIMATIC WinCC flexible Runtime for archiving process values and messages
- Archiving of process values and messages supports the acquisition and processing of process data from an industrial plant or machine. Evaluation of the archived process data provides information about the operating states of the plant or machine
- One license is required per operator station (no license is required for SIMATIC Panels/Multi Panels)

Benefits

- Message and process value archives permit foresighted diagnostics which prevents downtimes
- Early detection of danger or fault states
- Increase in product quality and productivity thanks to regular evaluation of process value and message archives

Application

- Further use of archives for evaluation and long-term archiving
- Record of repeated fault states
- Optimization of maintenance cycles
- Ensured quality standards
- Control of quality as well as production capacity utilization
- Documentation of process sequence

Function

- Time-controlled as well as manual or process-controlled swapping out of process data and messages for long-term archiving
- During runtime, swapped out data are read in and selectively analyzed using WinCC flexible Runtime
  - 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 archives
- External evaluation of the archives using MS standard tools
- Various archive types are supported: sequence and short-term archives
- Archiving of process values and messages on external, Windows-supported storage media
  - CSV files
  - RDB files
  - Microsoft SQL server via ODBC
- Power standard functions permit user-friendly and flexible utilization of the archives

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Archives

■ 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
	• 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 stick	**6AV6618-7ED01-3AB0**
• as download [2] Single license, license key download only, e-mail address required for the delivery	**6AV6618-7ED01-3AH0**
WinCC flexible /Archives + Recipes for WinCC flexible 2008 Runtime [1]	
• Single license per option, license key only on USB stick	**6AV6618-7GD01-3AB0**
• as download [2] Single license for each option, license key download only, 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.

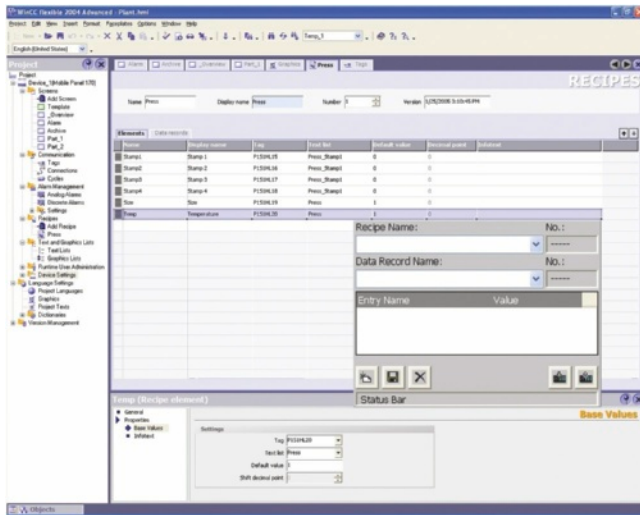[2] Current information and availability regarding the new delivery package can be found at: http://www.siemens.com/tia-online-software-delivery

■ 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.

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

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)

Benefits

- Generation and management of machine parameters and production data on the basis of data sets, and exchange with the automation equipment, e.g. with the machine
- Clear tabular representation of data elements with support of a configurable graphic object, or representation in technical relationships for several process graphics
- Simple operator prompting using standard functions
- Export/import of data sets for further processing with other tools (e.g. MS Excel)

Application

- Assignment of plant/machine parameters in the production industry
- Batch-oriented production, e.g. in the food or plastics industry

Function

- Input of data sets (e.g. operating parameters for a machine, production data for a plastics processing machine) in WinCC flexible Runtime, their storage, and passing on to the PLC
- Display and input of data sets using a configurable graphics object, or distributed among several process displays within the project
- Data set elements are coupled to the process using direct linking of the variables
- Transmission of data records from or to the PLC
- Powerful interfaces permit synchronized exchange of data with the PLC
- Saving of data sets on local media or on remote data servers via networks
- Import/export of data sets as CSV files
- Logging of data sets, e.g. as batch report/shift report
- Convenient and flexible management of data sets using powerful standard functions

WinCC flexible recipes and the associated data sets are conveniently created using a separate editor in the WinCC flexible Advanced engineering tool, and assigned default data. A configurable table object is used to display the data during runtime. Furthermore, the individual data set elements can also be directly output for several process displays on the basis of standard input/output boxes. The data can therefore be clearly presented for the operator in technological layers.

Technical specifications

Type	WinCC flexible /Recipes
	The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Recipes	1000
• Entries per recipe	2000 [1]
• Data records per recipe	5000 [2]
• User data length in bytes per data record	8000 KB [2]

[1] Dependent on number of licensed PowerTags

[2] Dependent on memory medium used

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Recipes

Ordering data	Article No.
WinCC flexible /Recipes for WinCC flexible 2008 Runtime [1]	
• Single license, license key only on USB stick	**6AV6618-7FD01-3AB0**
• as download [2] Single license, license key download only, e-mail address required for the delivery	**6AV6618-7FD01-3AH0**
WinCC flexible /Archives + Recipes for WinCC flexible 2008 Runtime [1]	
• Single license per option, license key only on USB stick	**6AV6618-7GD01-3AB0**
• as download [2] Single license for each option, license key download only, 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 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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HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Audit

■ **Overview**

- 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 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 [2]
  - in respect of traceability according to EU 175/2002 [3]
- Entries in the audit trail are allocated to individual users. This ensures that responsibilities can be clearly identified.
- The audit trail, stored as a CSV file [1], 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] CSV Comma Separated Values

[2] The FDA (Food and Drug Administration) is the American public health authority

[3] 21 CFR Part 11- law on plant validation

■ **Technical specifications**

	WinCC flexible /Audit
Archive for Audit Trail use on the Panel	• Plug-in flash memory card on the panel • 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

■ **Ordering data** — **Article No.**

WinCC flexible /Audit for SIMATIC Panels [1]	
• Single license, license key only on USB stick	**6AV6618-7HB01-3AB0**
• as download [2] Single license, license key download only, 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 stick	**6AV6618-7HD01-3AB0**
• as download [2] Single license, license key download only, 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

■ **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.
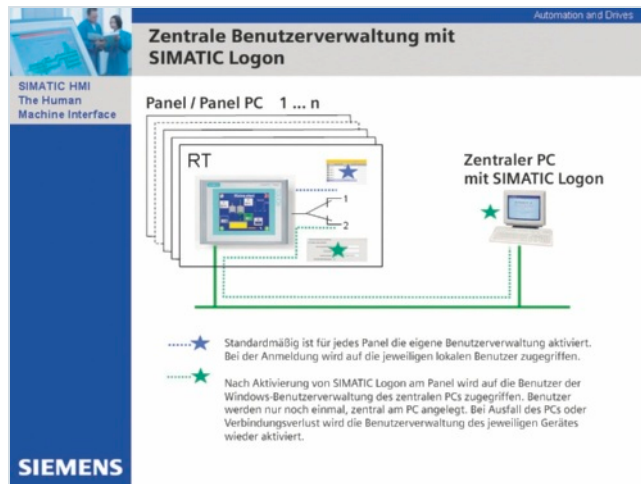
4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

SIMATIC Logon for WinCC flexible

Overview

- Option for connecting PCs with SIMATIC WinCC flexible Runtime and SIMATIC Panels to central user administration.
- Creates user administration on a central computer to which one or more WinCC flexible 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 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.
- Licensing:
  SIMATIC Logon (basic license) and SIMATIC Logon Remote Access (3-pack license) for connection of 3 WinCC flexible stations to a central user administration. Additional stations can be connected by using further SIMATIC Logon Remote Access licenses (3-pack/10-pack).

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 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 or 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.

Function

Configuration

In the first step, the following data must be saved in the user administration of WinCC flexible on every WinCC flexible station in the plant:

- Required user groups with associated user privileges
- IP address, port number, Windows domain of the central station on which the central user administration is stored.

All user groups are configured with the same names in the central user administration. All users are created here, and have automatic access to the connected WinCC flexible stations in accordance with the relevant user group.

If the connection fails between the central station with SIMATIC Logon and a WinCC flexible station, the operation is handled through an "emergency user" which must first be preconfigured locally.

Intervals for password aging and regulations for the structure of a password are defined according to the configuration on the central station and then also apply to all decentrally connected WinCC flexible stations or the respective users.

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

SIMATIC Logon for WinCC flexible

■ **Technical specifications**

	SIMATIC Logon for WinCC flexible
Execution platform	
SIMATIC Panels	Mobile Panel 177 PN; Mobile Panel 277, 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.

	Article No.
SIMATIC Logon V1.5 Basic license; for panels or WinCC flexible Runtime stations, 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) Remote access for 3 WinCC flexible 2008 clients; single license for 3 remote access clients; type of delivery: CD, license key disk, Certificate of License, Terms and Conditions 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) Remote access for 10 WinCC flexible 2008 clients; single license for 10 remote access clients; type of delivery: CD, license key disk, Certificate of License, Terms and Conditions 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 addition to the products described here? Then take a look under "Customer-specific products". There, we provide information on the Open Platform Program for creating your own functions or Controls for WinCC flexible.

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtAccess

■ **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 variables;
    WinCC flexible Runtime or SIMATIC Panels make data (variables) available to other SIMATIC HMI systems or Office applications.
  - 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 headend or control room.

- Local operation, visualization and data processing is as possible as plant-wide access to information or central archiving of process data. Integrated information flows ensure an overview of the status of all processes.

- 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. 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 SIMATIC HTTP protocol.
  No license is required on the client system for access to a Sm@rtServer using the application Sm@rtClient.EXE or the Microsoft Internet Explorer. A license is also not required for the engineering system for configuring the runtime option.

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:
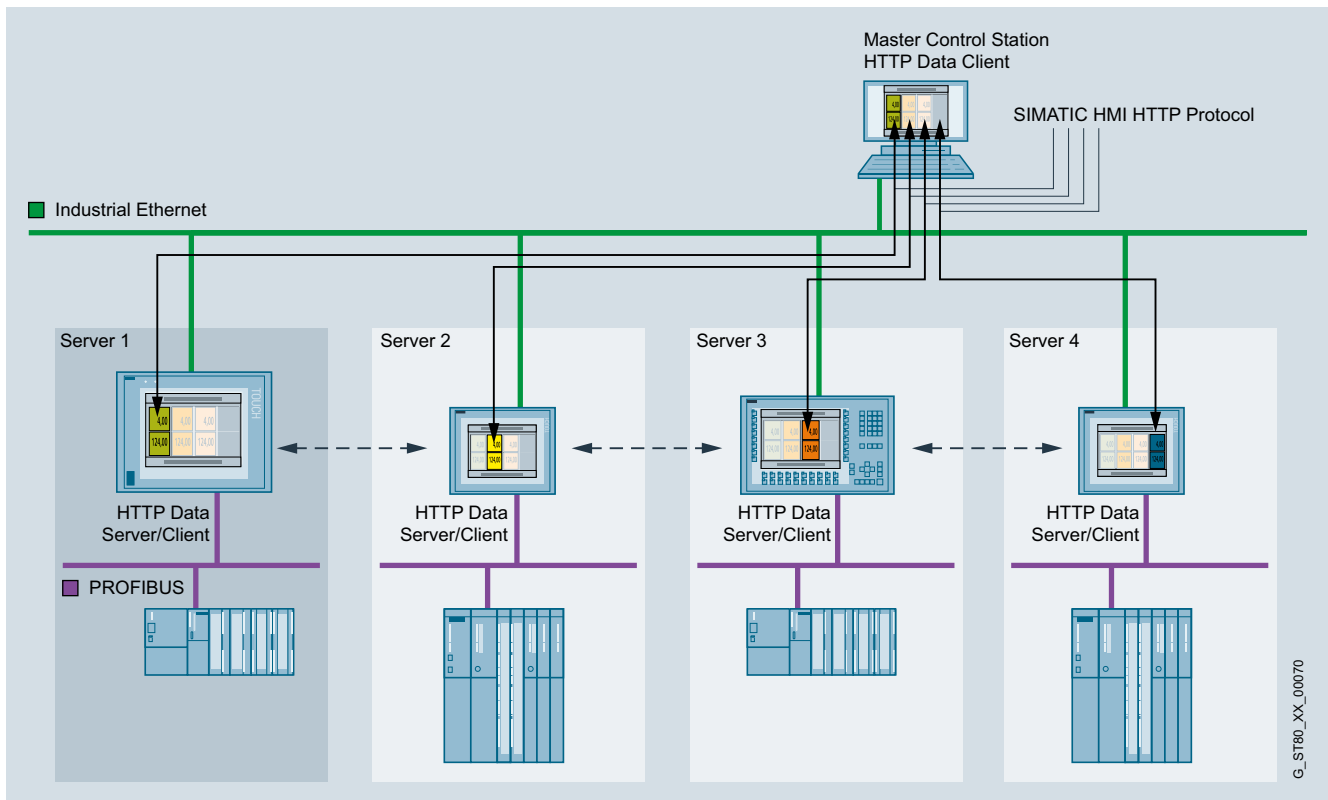
http://www.siemens.com/industrialsecurity

■ **Benefits**

- Flexible solution for location-independent access to HMI systems and process data

- Reduction in load on fieldbuses:
  WinCC flexible Runtime as well as SIMATIC Panels permit a control system, for example, to access the process data. The sensitive field level is not loaded by the control level as far as the communications requirements are concerned. The requirements are processed by WinCC flexible Runtime and the SIMATIC Panels.

- Simple, fast configuration of communications relationships using the WinCC flexible engineering software

■ **Application**

- Use of machine-level HMI systems as data servers for higher-level automation components such as control systems or office systems. Process values from different machines, for example, are displayed on a process screen.

- 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)

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtAccess

■ **Application** (continued)

Communication between HMI systems via Industrial Ethernet:
Use of machine-level HMI systems as data servers for higher-level automation components
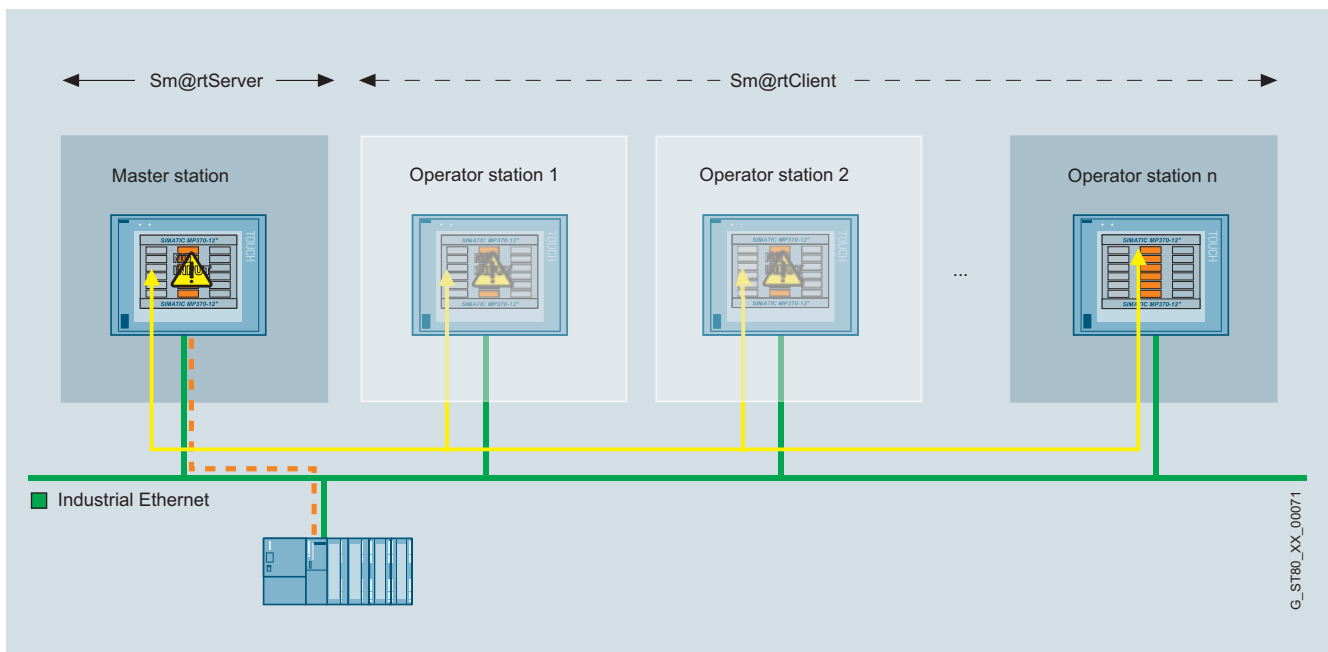
Application of the Sm@rtClient concept: Coordinated operation of several operator stations
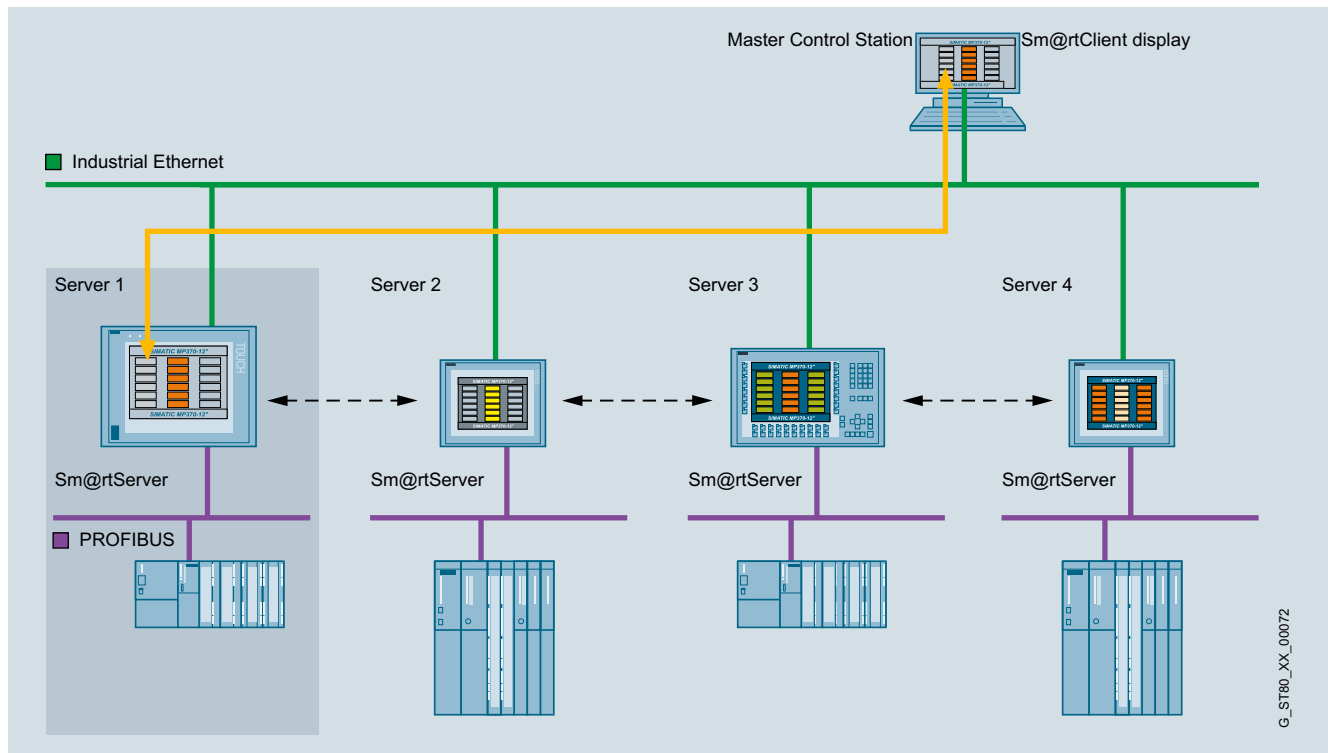
HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtAccess

■ **Application** (continued)

Use of the Sm@rtClient display: Operator control and monitoring of machine-level HMI systems from one central station

■ **Function**

Communication between different SIMATIC HMI systems or between the units of a machine or plant is carried out via Industrial Ethernet or intranet/Internet on the basis of Sm@rtAccess.

Possible communication relationships:

● Reading and writing the variables of a SIMATIC HMI system on the basis of an HTTP protocol
  - Reading and writing the variables of different HMI systems
  - Simple configuring of variables in the HMI client configuration using browsers in the WinCC flexible engineering tool
  - Reading and writing the variables of an HMI system using standard applications such as MS Excel. Communication is made possible by embedding a script in the application, on the basis of the SOAP protocol (Simple Object Access Protocol) superimposed by HTTP

● Remote control of an operator station;
  the HMI application and communication with the PLC are via the master station. In the case of spatially distributed machines/plants (which require a larger number of operator panels), so-called Sm@rtClients can be activated from here which are then assigned access to the master station and thus to the process. Access procedures guarantee that only one operator system can actively access the process at a time.
  - A configurable graphic object (Sm@rtClient display) embedded in process displays represents the screen of the associated HMI system (Sm@rtServers)
  - Powerful standard functions permit convenient and flexible operation of the display

Password protection can be optionally activated for access to variables or for remote operation of an HMI system.

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtAccess

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 2 clients for 8" and 10" devices
• MP 370, MP 377 as Sm@rtServer	3 clients for 12" devices 2 clients for 15" devices 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

	Article No.
WinCC flexible /Sm@rtAccess for SIMATIC Panel [1]	
• Single license, license key only on USB stick	**6AV6618-7AB01-3AB0**
• as download [2] Single license, license key download only, 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 stick	**6AV6618-7AD01-3AB0**
• as download [2] Single license, license key download only, 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.

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtService

■ **Overview**

- Option for SIMATIC WinCC flexible Runtime and SIMATIC Panels for remote maintenance and servicing of machines/plant 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.
  The remote service PC and engineering system do not require a license for configuration the runtime option.

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

■ **Benefits**

- Fast elimination of faults or downtimes and thus increased productivity by means of global access to machines/systems by the service and maintenance personnel
- Avoids the need for site visits

■ **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

■ **Function**

Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet

Microsoft Internet Explorer V6.0 SP1 or higher is sufficient for accessing an HMI system.

Remote control of an operating station

the HMI application and communication with the controller takes place via the HMI system. Using Sm@rtService, 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.

Integrated Web Server
to process standard HTML pages
The following functions can be accessed from the homepage:

- Starting and stopping the HMI runtime for maintenance
- Remote access to recipe data sets, passwords and information specific to the HMI system
- Access the HMI system files via a file explorer
- Download configuration data via the Intranet/Internet
- Supplement with own HTML pages

Sending e-mails
to maintenance personnel via SMTP server
(Simple Mail Transfer Protocol)

- Events that trigger an e-mail:
  - Reporting of a message class
  - Configurable standard functions: Changing the value of a variable, pressing a function key, scripts, etc.
- Possible e-mail content
  - Subject
  - Message text with process variables
  - Date/Time
- The optional use of e-mail/SMS gateways enables access to standard networks (external service provider required)

Standard functions make maintenance and service functionality easier. WinCC flexible allows you to quickly and easily configure maintenance and service functions.

Password protection can be activated as an option for accessing the HMI system. Different passwords may be configured for different functions.
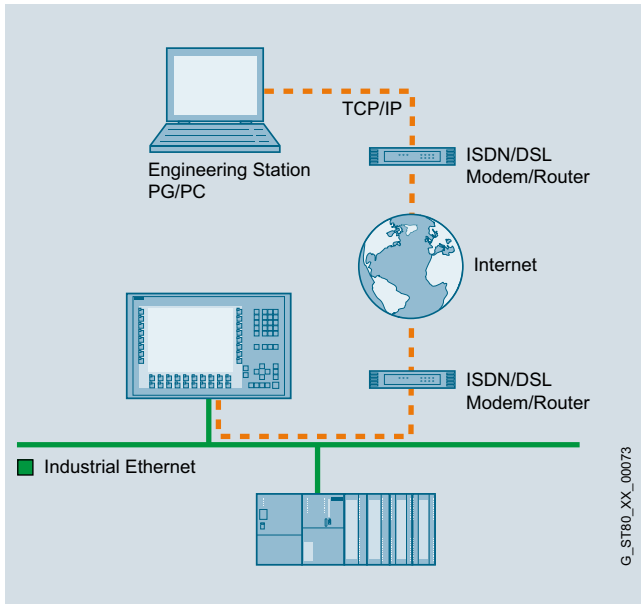
4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtService

■ **Function** (continued)

Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet
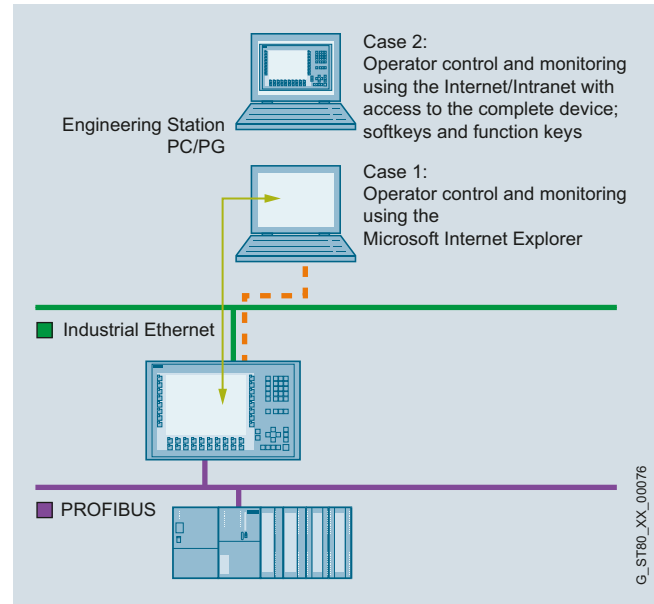
Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet

Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and/or via the Intranet/Internet

Sending e-mails to maintenance personnel via SMTP server (Simple Mail Transfer Protocol)

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /Sm@rtService

■ Technical specifications

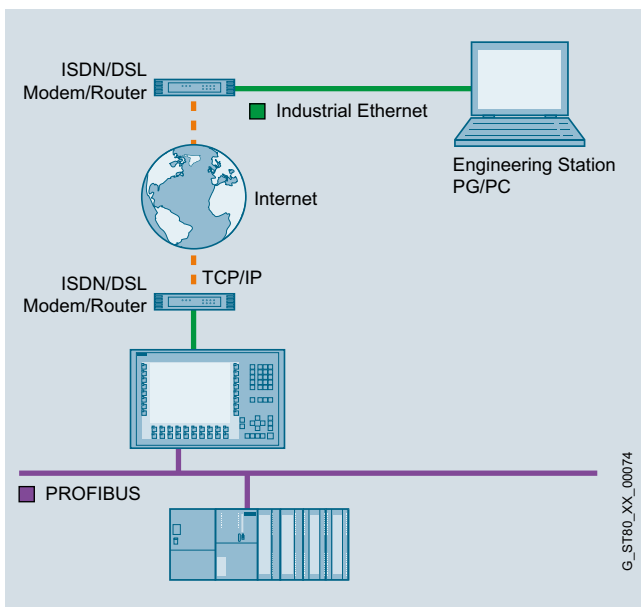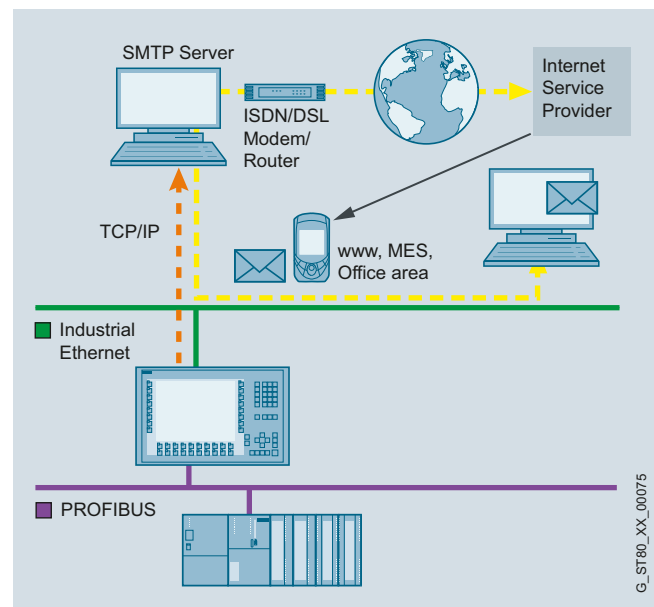| Type	WinCC flexible /Sm@rtService
Execution platform	
• SIMATIC Panels	Mobile Panel 177 PN, Mobile Panel 277, TP 177B PN/DP, OP 177B PN/DP, TP/OP 270, TP/OP 277
• SIMATIC Multi Panels	MP 177, MP 270B, MP 277, MP 370, MP 377
• PCs	SIMATIC WinCC flexible Runtime
Sm@rtService [1]	
Remote access via	Internet 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
	• 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 stick	**6AV6618-7BB01-3AB0**
• as download [2] Single license, license key download only, 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 stick	**6AV6618-7BD01-3AB0**
• as download [2] Single license, license key download only, 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 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.

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /OPC-Server

Overview

Higher level visualization system

OPC Client

■ Industrial Ethernet

On-site visualization

OPC Server
WinCC flexible RT

OPC Server

OPC Server
WinCC flexible RT
Multi Panel

OPC Client

3rd party OPC Server

■ PROFIBUS

SIMATIC S7-300

SIMATIC S7-400

3rd party PLCs
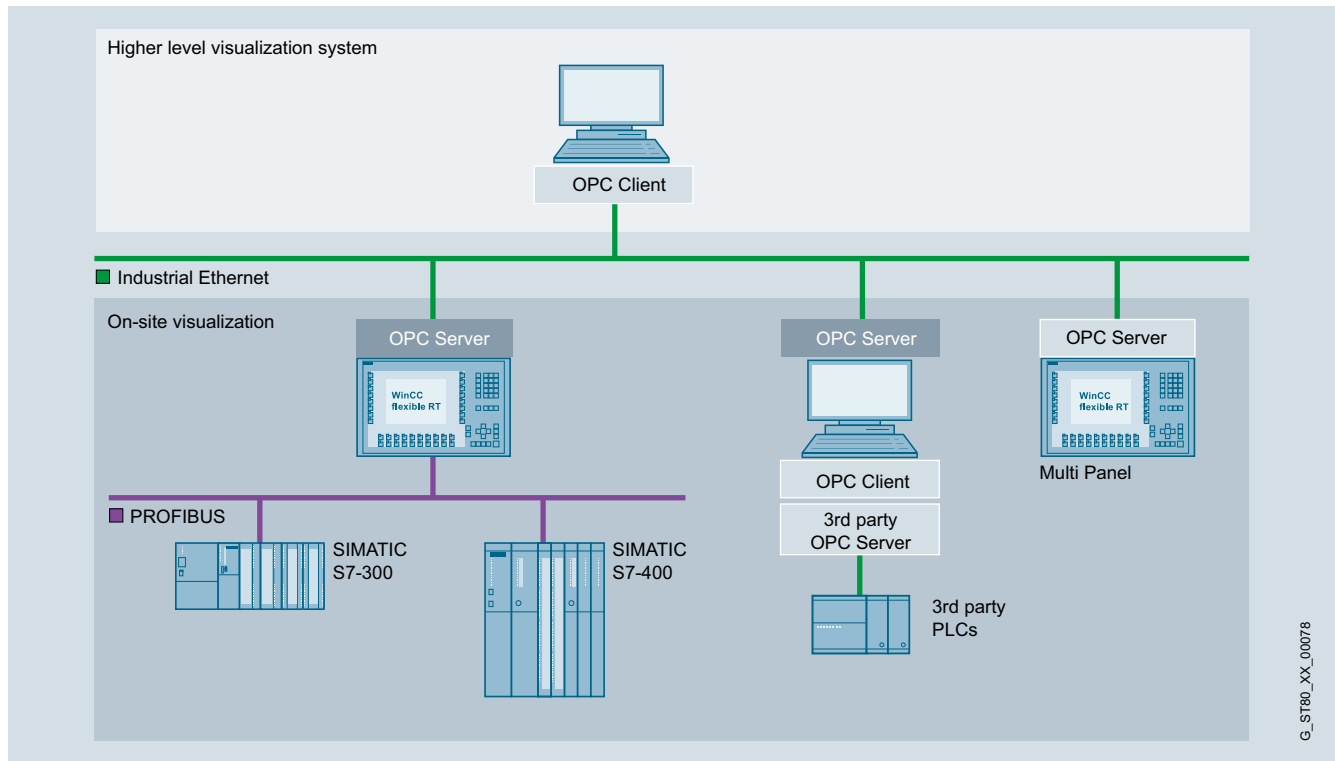
G_ST80_XX_00078

- Option for SIMATIC WinCC flexible Runtime as well as Multi Panels for communication with applications from different vendors (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

Benefits

- Incorporation of automation components from different vendors into an automation concept
- Saving of development costs through communication between automation systems based on a homogeneous, uniform protocol

- Reduction in load on fieldbuses:
  WinCC flexible Runtime as well as SIMATIC Panels permit a control system, for example, to access the process data. The sensitive field level is not loaded by the control level as far as the communications requirements are concerned. The requirements are processed by WinCC flexible Runtime and the SIMATIC Panels.

Application

OPC (OLE for Process Control) is a standardized, open, uniform and multi-vendor software interface. OPC is based on the Windows technology of COM (Component Object Model), DCOM (Distributed COM) or on XML.

Windows-based systems such as SIMATIC Panel PC or SIMATIC Multi Panels are used for tasks at the machine and process levels, and can communicate with all OPC-compatible applications via Ethernet using TCP/IP and OPC. WinCC flexible Runtime or the SIMATIC Multi Panel (OPC-Server) provide data for one or more OPC clients. As a result, local visualization and data processing are possible to the same extent as plant-wide calling of information or archiving of process data. Uniform flows of information guarantee an overview of the status of all processes.

Communication with OPC-compatible applications from different vendors (e.g. MES, ERP, or applications in the office sector) is possible.

OPC Foundation

http://www.opcfoundation.org

4

HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /OPC-Server

Function

- Use of a visualization system as a data server (OPC server) for higher-level automation components such as control systems or office systems
  - OPC-XML server for multi panels
  - OPC server (DCOM) for WinCC flexible Runtime
- The WinCC flexible engineering system can conveniently select a desired OPC item from the variables function of the OPC server using an OPC browser (component of the OPC server). To do this, the OPC server must be started and must be accessible for the engineering system.

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   Article No.

WinCC flexible /OPC-Server for SIMATIC Multi Panels [1]	
• Single license, license key only on USB stick	**6AV6618-7CC01-3AB0**
• as download [2] Single license, license key download only, 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 stick	**6AV6618-7CD01-3AB0**
• as download [2] Single license, license key download only, e-mail address required for the delivery	**6AV6618-7CD01-3AH0**

[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.

4

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HMI Software
SIMATIC WinCC flexible HMI system
SIMATIC WinCC flexible options

WinCC flexible /ProAgent

■ **Overview**

G_ST80_XX_00367

- 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 further information, refer to "SIMATIC ProAgent Process Diagnostics Software".

■ **Ordering data**   **Article No.**

WinCC flexible /ProAgent for SIMATIC Panels [1]	
Executable on Mobile Panel 277, TP/OP/MP 270/277 and MP 370/377	
• Single license, only license key on USB stick	**6AV6618-7DB01-3AB0**
• as download [2] single license, only license key download, e-mail address required for the delivery	**6AV6618-7DB01-3AH0**
WinCC flexible /ProAgent for WinCC flexible Runtime 2008 [1]	
• Single license, only license key on USB stick	**6AV6618-7DD01-3AB0**
• as download [2] Single license, only license key download, e-mail address required for the 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.

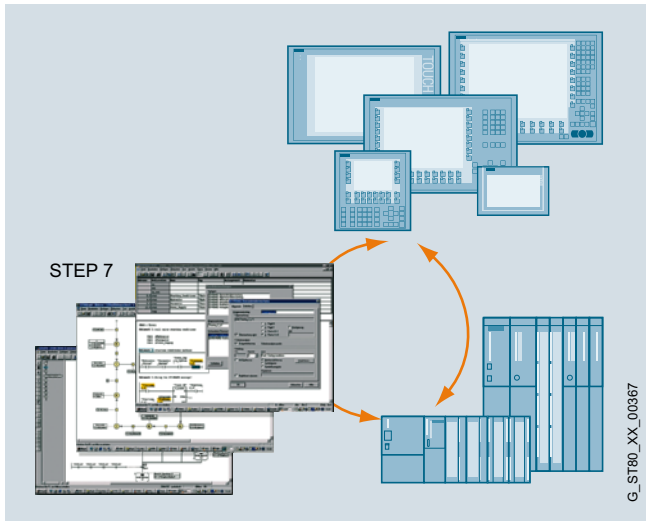[2] Current information and availability regarding the new form of delivery can be found at: http://www.siemens.com/tia-online-software-delivery

■ **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.

4

HMI Software
SCADA system SIMATIC WinCC

■ **Overview**

SCADA System SIMATIC WinCC

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, you can 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.
  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.

■ 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 V7.3

Executable with

- Windows 7 SP1 (32 / 64 bit) Professional, Enterprise, Ultimate
- Windows 8.1 (32 / 64 bit) Professional, Enterprise
- Windows Server 2008 SP2 (32 bit) Standard
- Windows 2008 Server R2 SP1 (64 bit) Standard
- Windows Server 2012 R2 (64 bit) Standard
- contains the Microsoft SQL Server 2008 R2 SP2 (32 bit)

SIMATIC WinCC V7.2

Executable with:

- Windows 7 SP1 (32 / 64 bit) Professional, Enterprise, Ultimate
- Windows XP Professional SP3
- Windows Server 2003 SP2, Standard
- Windows Server 2008 SP2 (32 bit) Standard
- Windows Server 2008 R2 SP1 (64 bit) Standard
- contains the Microsoft SQL Server 2008 R2 SP1 (32 bit)

Use in virtual environments – for more information see

WinCC/IndustrialDataBridge	
Provider (data sources)	**Consumer (data destinations)**
	csv, txt
	MS Excel 2003, 2007, 2010, 2013
MS Access 2003, 2007, 2010, 2013	MS Access 2003, 2007, 2010, 2013
MS SQL Server 2005, 2008, 2008 R2, 2012	MS SQL Server 2005, 2008, 2008 R2, 2012
My SQL 3.5, 5.1, 5.5, 5.6	My SQL 3.5, 5.1, 5.5, 5.6
Oracle 8i, 10g, 11g, 12c release 2	Oracle 8i, 10g, 11g, 12c release 2
OPC Data Access 3.0	OPC Data Access 3.0
OPC XML 1.0	OPC XML 1.0
	IDB OPC Server
Send/Receive	Send/Receive
WinCC V7.2, V7.3 (via OLE DB)	WinCC UserArchives V7.2, V7.3
WinCC UserArchives V7.2, V7.3	
WinCC RT Professional V13 SP1 (via OLE DB)	WinCC RT Professional V13 SP1 (via OLE DB)
	Configurable TXT/ HTML

4

HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

Benefits

- All-purpose
  - Solutions for all sectors
  - Multilingual for worldwide usage
  - Can be integrated into all automation solutions

- All HMI functions on board
  - User administration
  - Operator control and monitoring
  - Reporting, acknowledging, and archiving of events
  - Acquisition, compression and archiving of measured values (incl. 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 multilingual 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

- Open standards for simple integration
  - Powerful real-time database Microsoft SQL Server 2008 R2 SP2 (32 bit)
  - 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 high-performance Historian on the basis of the Microsoft SQL Server 2008 R2 SP1 (32 bit)
  - 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
  - Options for the use of telecontrol protocols

New in V7.3

- Expansion into Graphic Designer
  - Support of SVG image objects and Direct2D

- Expansion of WinCC Configuration Studio (configuration options as in Excel)
  - Alarm Logging
  - Tag Logging
  - User Archive
  - Text Library

- Expansion of communication channels
  - Communication channel to new CPU (S7-1200 / S7-1500) (support of symbolic address and CPU alarming)
  - OPC UA Server A&C (Alarm & Condition)

- Encrypted communication
  - SSL encryption for communication of terminal bus

- Multi-user engineering for integrated projects

and more ...

New in V7.2

- Expansion into Graphic Designer
  - Know-how protection by means of password protection for PDL images and image blocks

- Unicode support
  - WinCC SETUP in 5 languages / up to 9 installed languages
  - Individual language selection for engineering and runtime, regardless of the language settings in the operating system

- Simplified configuration of the Tag Management by means of the innovative WinCC Configuration Studio
  - Configuration options similar to those in Excel
  - Simplified tags / structure tag management

- New communication channels
  - Communication channel to new CPU (S7-1200 / S7-1500) (absolute address only, no CPU alarming support)
  - Introduction of the OPC UA server (DA, HDA)

- Expansion into archive system
  - New archive recording (day, weak, year)
  - New archiving methods (difference)

and more ...

4

Application

SIMATIC WinCC is designed for visualization and operation of processes, manufacturing cycles, 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, 2048, 8192, 65536, 102400, 153600, 262144 PowerTags [1]. 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. Individual 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 option WinCC/Server must be installed on the WinCC server. For the WinCC Clients, one RT128 or RT Client License is sufficient in the basic configuration [2]. In order to perform configuration on clients, an RC128 license is required. Remote configuration is possible if WinCC clients without their own project (UniClient) on the server project are configured.

[1] V6: 128, 256, 1024, 8192, 65536 PowerTags

[2] RT / RC Client License requires SQL Server Express Installation

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. Whoever is familiar with Microsoft Windows can also operate the WinCC Explorer, the central switching point of WinCC.

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 Alarm Logging	Signaling system for detecting and archiving events with display and control options according to DIN 19235; freely selectable message classes, message display and logging
WinCC Tag Logging	Process archiving for the acquisition, compression and storage of measured values, e.g., presentation in trend and table format as well as further processing
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 User Administrator	Tool for user-friendly administration of users and authorizations
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	For communication with subordinate controls (SIMATIC protocols, PROFIBUS DP, PROFIBUS FMS, DDE and OPC server included in the scope of delivery)
Standard interfaces	For the open integration of other Windows applications via WinCC, WinCC-OLE-DB, ActiveX, OLE, DDE, OPC, etc.)
Programming ports	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)

4

HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

■ **Integration**

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

WinCC is strictly based on Microsoft technology, which provides the greatest possible compatibility and integration ability. ActiveX and .net [1] controls support technology-specific and industry-specific expansions. Cross-manufacturer communication is also a simple exercise. The reason: WinCC 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, and OPC XML Data Access.

Just as important: Visual Basic for Applications (VBA) for user-specific expansions of the WinCC Graphics Designer and Visual Basic Scripting (VBS) as an easy-to-learn, open runtime language. If desired, professional application developers can also use ANSI-C. And access to the API programming interfaces is really simple with the Open Development Kit ODK.

WinCC integrates a powerful and scalable historian function based on Microsoft SQL Server 2005 into the basic system. As a result, users have every possibility: 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. With the help of the Central Archive Server option, this can be set up within the framework of a WinCC solution. 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.

If external networks are accessed, suitable protective measures (incl. IT security measures, such as network segmentation) should be taken in order to ensure safe operation of the system.

You can find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

[1] Only supported in WinCC V7.0 or higher

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

Only communication software with the listed product versions (or higher) should be used.

Corresponding SIMATIC NET upgrades are available for upgrading older versions.

Number of connectable controls

For the number of controls connectable 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

Via PROFIBUS, a maximum of 8 controls can be connected with CP 5611, and a maximum of 44 controls with CP 5613. With approx. 10 or more controls, the usage of Industrial Ethernet is recommended.

Mixed operation with different controls

With their multi-protocol stack, the CP 1613 and CP 5613 communication processors allow parallel operation of two protocols, such as for the mixed operation of different controls, via a 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; each CP 5613 max. 122 slaves). In addition to communication over industrial Ethernet CP 1613 or PROFIBUS CP 5613, one CP 5611 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 controls (DP/slave). This means that redundant operation of two WinCC stations is not possible using the PROFIBUS DP connection.

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■ Integration (continued)

Connection to controls from other manufacturers:

OPC (OLE for Process Control) is recommended for the connection of controls from other manufacturers.

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 XML Data Access 1.00
  (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 (WinCC 7.2 or higher)	
SIMATIC S7-1200, S7-1500 Channel [1]	Channel DLL for S7-1200 and S7-1500 communication

Protocol	Description
Controllers from other manufacturers (from WinCC V7.0 SP3)	
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 [2] [3] for DA, XML DA	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 FMS	Channel DLL for PROFIBUS FMS
PROFIBUS DP	Channel DLL for PROFIBUS DP
SIMOTION	Channel DLL for SIMOTION

[1] With WinCC version V7.3 or higher, the communication with S7-1200 / S7-1500 CPU supports the following functionalities: Symbolic address, CPU alarming. With WinCC V7.2, only the absolute address is supported.

[2] 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.

[3] WinCC V7.0 SP3 and higher supports OPC UA (United Architecture) Client for DA.

HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

■ **Integration** (continued)

Communication components for PG/PC for SIMATIC (for WinCC V7.3)

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 Channel DLL for S5 Layer 4 communication + TCP/IP	•	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions			•			Included in the basic package
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication				•		Included in the basic package
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication					•	Included in the basic package
Communication components for extension of the OS/OP						
CP 1612 A2 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
communication software for S7 functions (max. 64 connections)
• Version 12 SP2 [2][3]
  for Windows 7 SP1 (32/64 bit), Windows 8.1 (32/64 bit), Windows 2008 R2 SP1 Server and Server 2012 R2 (64 bit)
• Edition 2008 SP6 (V7.1) [2]
  for Windows XP/2003 Server/(32 bit) 2008 Server
		•	•			6GK1704-1CW12-0AA0
						
						6GK1704-1CW71-3AA0

SOFTNET-IE S7 Lean
communication software for S7 functions (max. 8 connections)
• Version 12 SP2 [2][3]
  for Windows 7 SP1 (32/64 bit), Windows 8.1 (32/64 bit), Windows 2008 R2 SP1 Server and Server 2012 R2 (64 bit)
• Edition 2008 SP6 (V7.1) [2]
  for Windows XP/2003 Server/(32 bit) 2008 Server
		•	•			6GK1704-1LW12-0AA0
						
						6GK1704-1LW71-3AA0

CP 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	6GK1161-3AA01
CP 1623 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	6GK1162-3AA00
CP 1628 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
communication software for S7 functions, OPC, PG/OP communication
• Version 12 SP2 [2][3]
  for Windows 7 SP1 (32/64 bit), Windows 8.1 (32/64 bit), Windows 2008 R2 SP1 Server and Server 2012 R2 (64 bit)
• Edition 2008 SP6 (V7.1) [2]
  for Windows XP/2003 Server/(32 bit) 2008 Server
	•	•	•	•		6GK1716-1CB12-0AA0
						
						6GK1716-1CB71-3AA0

• 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 V7.3

[4] SOFTNET-S7 Lean included in scope of supply of WinCC V7.3

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■ Integration (continued)

Communications components for PG/PC for SIMATIC (for WinCC V7.2)

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 Channel DLL for S5 Layer 4 communication + TCP/IP	•	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions			•			Included in the basic package
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication				•		Included in the basic package
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication					•	Included in the basic package
Communication components for extension of the OS/OP						
CP 1612 A2 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 communication software for S7 functions (max. 64 connections) • Version 8.2 SP1 [2][3] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) • Edition 2008 SP6 (V7.1) [2] for Windows XP/2003 Server/(32 bit) 2008 Server		•	•			**6GK1704-1CW08-2AA0** **6GK1704-1CW71-3AA0**
SOFTNET-IE S7 Lean communication software for S7 functions (max. 8 connections) • Version 8.2 SP1 [2][4] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) • Edition 2008 SP6 (V7.1) [2][4] for Windows XP/2003 Server / (32 bit) 2008 Server		•	•			**6GK1704-1LW08-2AA0** **6GK1704-1LW71-3AA0**
CP 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1161-3AA01**
CP 1623 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1162-3AA00**
CP 1628 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 communication software for S7 functions and S5/505 Layer 4 communication with TCP/IP • Version 8.2 SP1 [2][3] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) • Edition 2008 SP6 (V7.1) [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•	•	•	•		**6GK1716-1CB08-2AA0** **6GK1716-1CB71-3AA0**

• 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 8.2 SP1 is supplied together with WinCC V7.2

[4] SOFTNET-S7 Lean included in scope of supply of WinCC V7.2

HMI Software
SCADA system SIMATIC WinCC

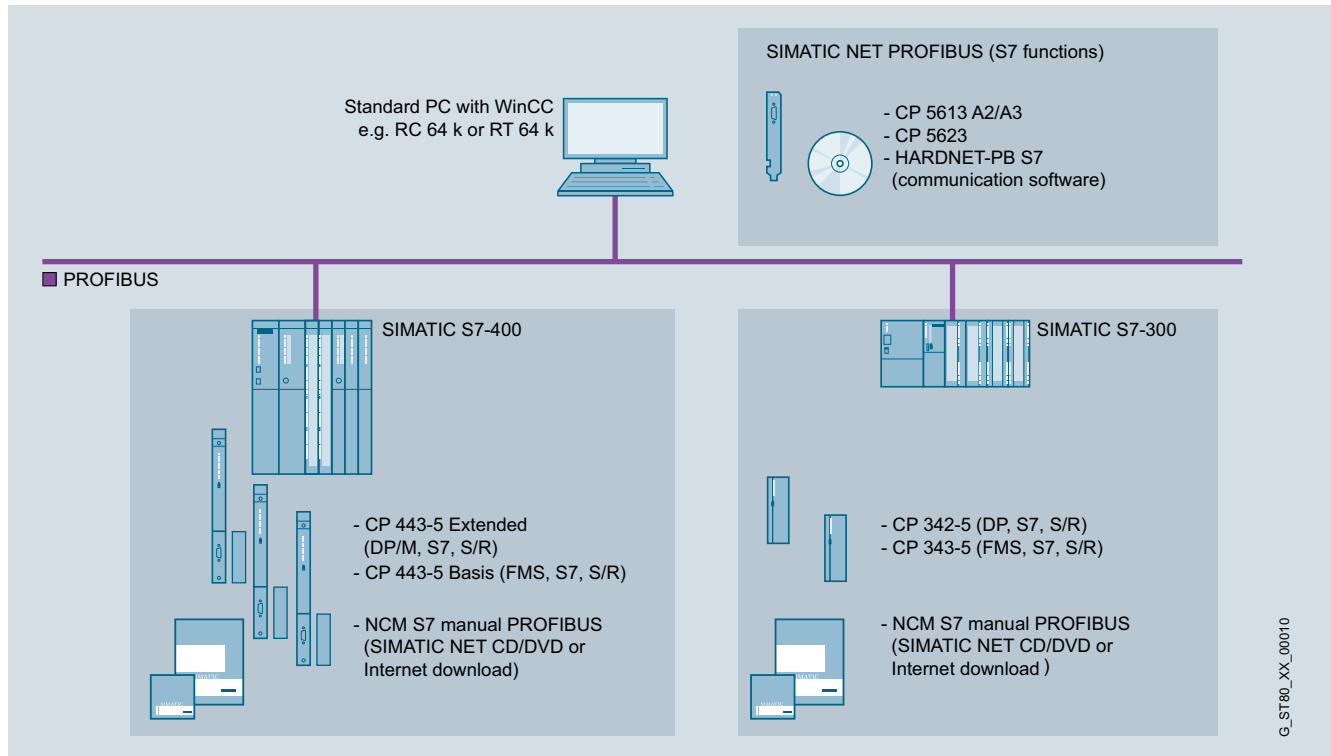**SIMATIC WinCC**

■ Integration (continued)

Communications components for PG/PC for SIMATIC (for WinCC V7.2)

PROFIBUS	SIMATIC S5 PROFIBUS FDL	SIMATIC S7 Protocol Suite	PROFIBUS DP	PROFIBUS FMS	Article No.
WinCC – channel DLL					
SIMATIC S5 PROFIBUS FDL Channel DLL for S5-FDL	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		•			Included in the basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			•		Included in the basic package
PROFIBUS FMS Channel DLL for PROFIBUS FMS				•	Included in the basic package
Communication components for extension of the OS/OP					
CP 5612 [2] PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			6GK1561-2AA00
CP 5622 [2] PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			6GK1562-2AA00
CP 5711 USB Adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		•			6GK1571-1AA00
CP 5613 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (S7-5613, DP-5613 or FMS-5613 communication software required)	•	•	•	•	6GK1561-3AA01
CP 5614 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (communication software must be ordered separately)	•	•	•	•	6GK1561-4AA01
CP 5623 PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (S7-5613 communication software or DP-5613 or FMS-5613 required)	•	•	•	•	6GK1562-3AA00
S7-5613 communication software for S7 functions + FDL • Version 8.2 SP1 [1][2] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) • Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•	•			6GK1713-5CB08-2AA0 6GK1713-5CB71-3AA0
DP-5613 communication software for DP master + FDL • Version 8.2. SP1 [1][2] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit) • Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•		•		6GK1713-5DB08-2AA0 6GK1713-5DB71-3AA0
FMS-5613 communication software for PROFIBUS-FMS + FDL • Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•			•	6GK1713-5FB71-3AA0

• System interface possible

[1] See ordering data for SIMATIC NET upgrade package
[2] SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.2

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■ **Integration** (continued)

Communication examples

SIMATIC NET PROFIBUS (S7 functions)

Standard PC with WinCC
e.g. RC 64 k or RT 64 k

- CP 5613 A2/A3
- CP 5623
- HARDNET-PB S7
  (communication software)

■ PROFIBUS

SIMATIC S7-400

- CP 443-5 Extended
  (DP/M, S7, S/R)
- CP 443-5 Basis (FMS, S7, S/R)

- NCM S7 manual PROFIBUS
  (SIMATIC NET CD/DVD or
  Internet download)

SIMATIC S7-300

- CP 342-5 (DP, S7, S/R)
- CP 343-5 (FMS, S7, S/R)

- NCM S7 manual PROFIBUS
  (SIMATIC NET CD/DVD or
  Internet download)

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WinCC single-user system: PROFIBUS with S7 communication

SIMATIC NET Industrial Ethernet (S7 functions)

Standard PC with WinCC
e.g. RC 64 k or RT 64 k

- CP 1613 A2
  6GK1161-3AA01
- CP 1623
  6GK1162-3AA00
- S7-1613
  (communication software)
  6GK1716-1CB80-3AA0

■ 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

4

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

■ **Integration** (continued)
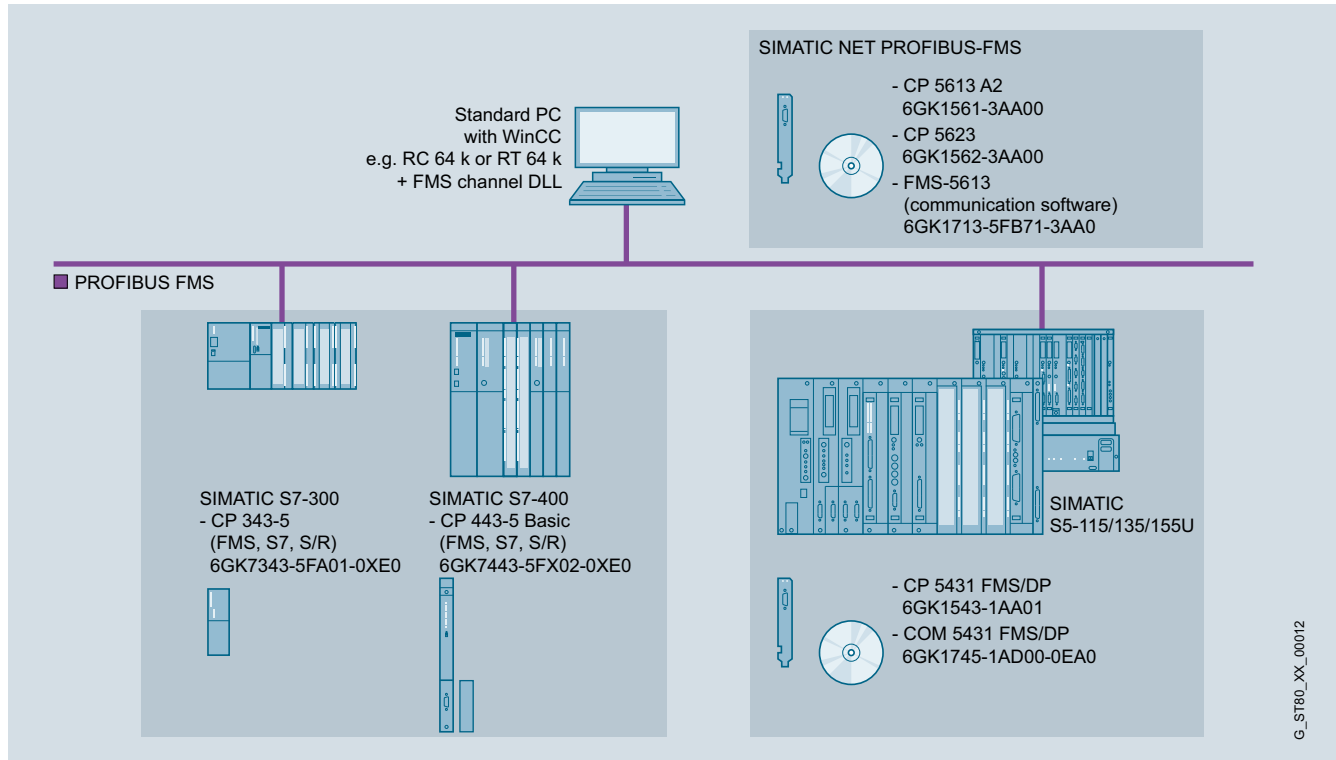
WinCC single-user system: PROFIBUS FMS

WinCC multi-user system with operable server

■ **Integration** (continued)

OPC link

HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

Technical specifications

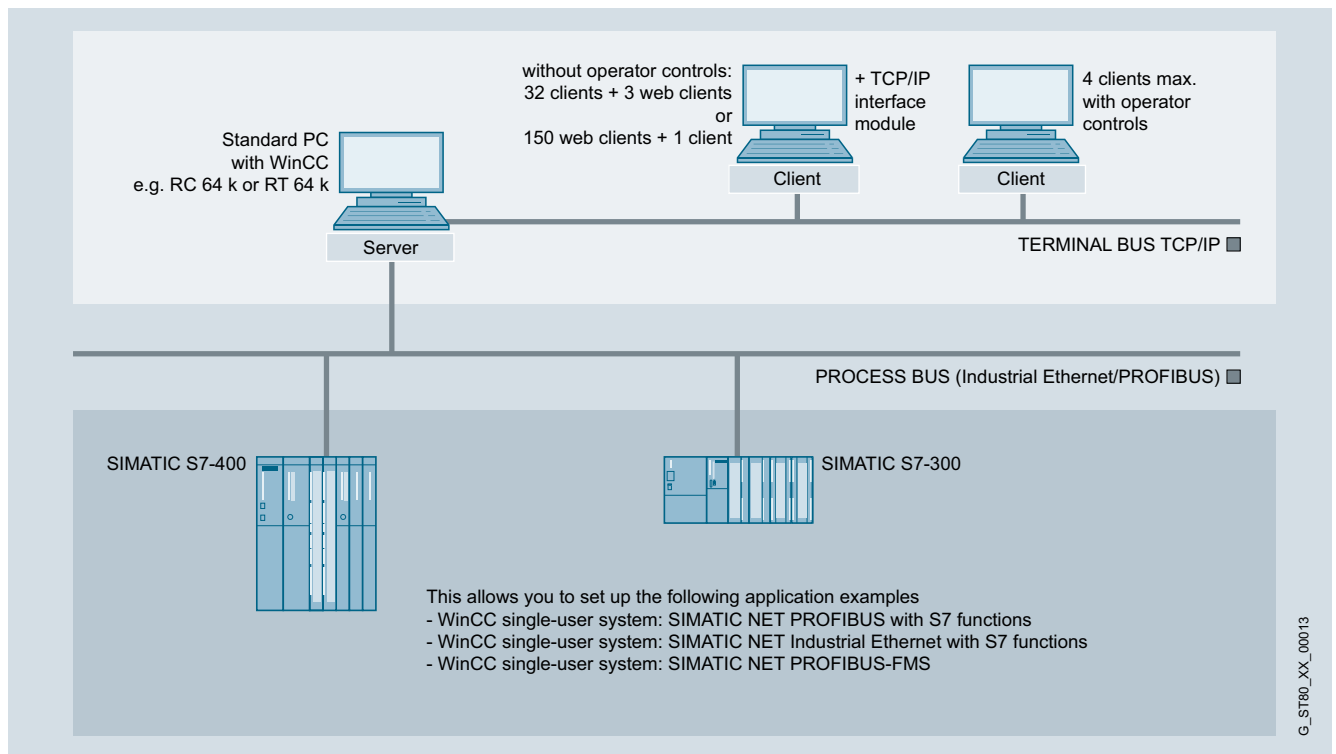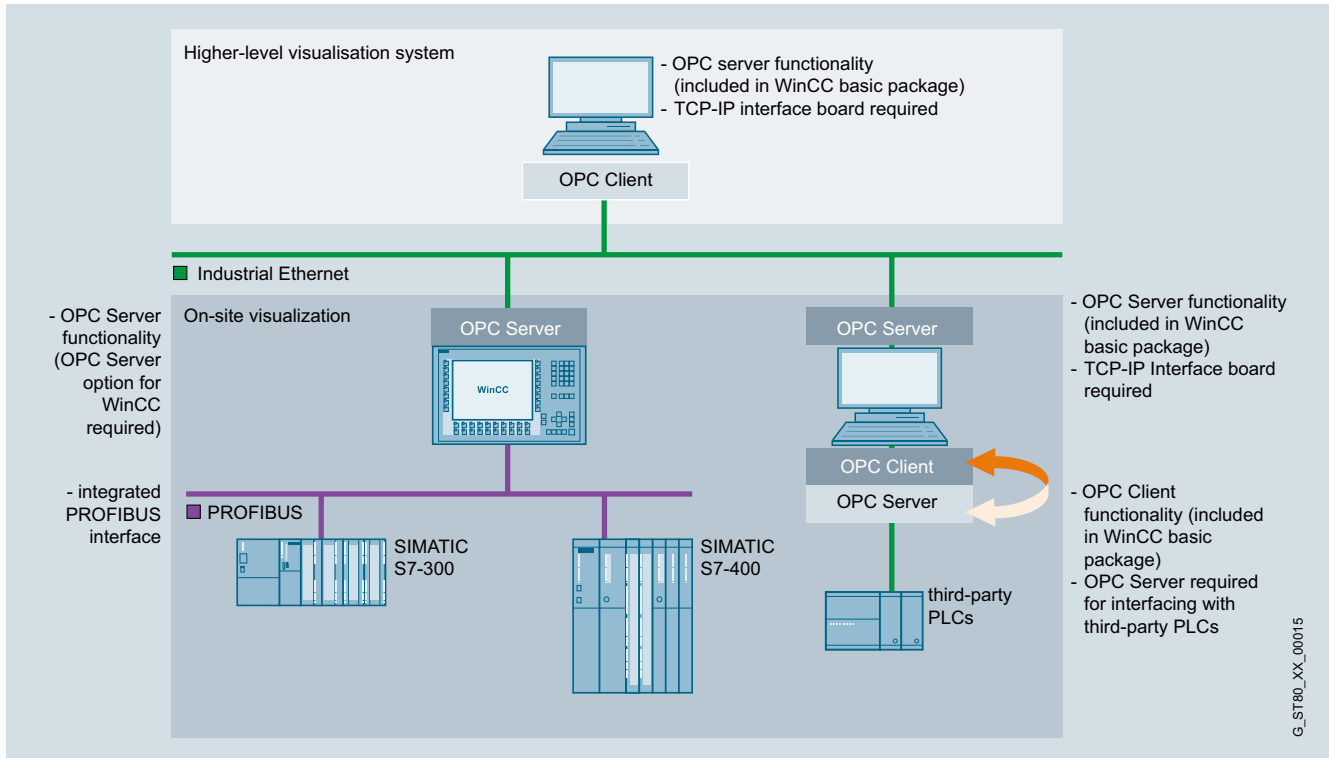| Type	SIMATIC WinCC V7.3	SIMATIC WinCC V7.2
Operating system	• Windows 7 (32 bit / 64 bit) Ultimate, Professional and Enterprise • Windows 8.1 (32 bit / 64 bit) Professional and Enterprise • Windows Server 2008 SP2 (32 bit) Standard • Windows 2008 Server R2 SP1 (64 bit) Standard • Windows Server 2012 R2 (64 bit) Standard	• Windows 7 (32 bit / 64 bit) Ultimate, Professional and Enterprise • Windows XP Professional SP3 • Windows 2003 Server SP2 and Windows 2003 Server R2 SP2 • Windows Server 2008 SP2 (32 bit) Standard • Windows Server 2008 R2 SP1 (64 bit) Standard
PC hardware requirements		
Processor type [1] • Minimum	Single-user station/server: Pentium 4, 2.5 GHz [2]	Single-user station/server: Pentium 4, 2.5 GHz [2]
	Client: Pentium 3, 1 GHz [2]	Client: Pentium 3, 1 GHz [2]
• Recommended	WebClient/DataMonitor Client: Pentium III, 600 MHz [2] Single-user station/server: Pentium 4 or Dual Core, 3 GHz [2]	WebClient/DataMonitor Client: Pentium III, 600 MHz [2] Single-user station/server: Pentium 4 or Dual Core, 3 GHz [2]
	Client: Pentium 4, 2 GHz [2]	Client: Pentium 4, 2 GHz [2]
	WebClient/DataMonitor Client: Pentium III, 1 GHz	WebClient/DataMonitor Client: Pentium III, 1 GHz
RAM • Minimum	Single-user station/server: 8 GB [2]	Single-user station/server: 8 GB [2]
	Client: 4 GB [2]	Client: 4 GB [2]
• Recommended	WebClient/DataMonitor Client: 512 MB [2] Single-user station/server: 16 GB [2]	WebClient/DataMonitor Client: 512 MB [2] Single-user station/server: 16 GB [2]
	Client: 8 GB [2]	Client: 8 GB [2]
	WebClient/DataMonitor Client: 1 GB [2]	WebClient/DataMonitor Client: 1 GB [2]
Graphics card • Minimum • Recommended	16 MB, 800 x 600 [2] 32 MB, 1280 x 1024 [2]	16 MB, 800 x 600 32 MB, 1280 x 1024
Hard disk • Minimum	Single-user station/server: 80 GB	Single-user station/server: 20 GB
	Client: 20 GB	Client: 5 GB
• Recommended	WebClient/DataMonitor Client: 5 GB Single-user station/server: 160 GB	WebClient/DataMonitor Client: 5 GB Single-user station/server: 80 GB
	Client: 40 GB	Client: 20 GB
• Hard disk (available memory for installation) - Minimum	WebClient/DataMonitor Client: 10 GB Server: > 1.5 GB	WebClient/DataMonitor Client: 10 GB Server: 1.5 GB
- Recommended	Client: 1.5 GB Server: > 10 GB	Client: 1 GB Server: > 10 GB
	Client: > 1.5 GB	Client: > 1.5 GB
CD-ROM/DVD-ROM/disk drive/USB port	For software installation	For software installation

[1] An AMD system with comparable performance can also be used

[2] Hardware requirements when using Microsoft XP Professional

■ Technical specifications (continued)

Type	SIMATIC WinCC
Functionality/ quantity structure	
Number of messages	150,000
• Message text (number of characters)	10 x 256
• Message archive	> 500,000 messages [1]
• Process values per message	10
• Constant load of messages, max.	Server/single-user station: 10/s
• Message burst, max.	Server/single-user station: 2,000/10 s every 5 min
Archives	
• 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 2008
• Measured values per second, max.	Server/single-user station: 5,000/s
User archive	
• Archives and views	500 each
• Product consisting of data record and column per user archive	320,000
• Fields per user archive	500
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]

Type	SIMATIC WinCC
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 (Eng., Fr., Ger., It., Sp.), 4 Asian (simpl.+trad. Chi/Kor/Jpn) [4]
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
• Variables per report	300 [5]
Multi-user system	
• Server	18
• Clients for server with operator station	4
• Clients for server without operator station	32 clients + 3 WebClients or 50 WebClients + 1 client

[1] Dependent on the available storage space

[2] Dependent on the number of licensed archive variables

[3] Dependent on number of licensed PowerTags

[4] Asian versions for Version 7 SP1 or higher

[5] The number of variables per report is dependent on process communication performance

■ Ordering data

	Article No.
SIMATIC WinCC system software V7.3 SE incl. Update 1	
Runtime packages on DVD	
Language/script versions: De, En, Fr, It, Es; with license for	
• WinCC RT Client	6AV6381-2CA07-3AX0
• 128 PowerTags (RT 128)	6AV6381-2BC07-3AX0
• 512 PowerTags (RT 512)	6AV6381-2BD07-3AX0
• 2 048 PowerTags (RT 2 048)	6AV6381-2BE07-3AX0
• 8 192 PowerTags (RT 8 192)	6AV6381-2BH07-3AX0
• 65 536 PowerTags (RT 65 536)	6AV6381-2BF07-3AX0
• 102 400 PowerTags (RT 102 400)	6AV6381-2BJ07-3AX0
• 153 600 PowerTags (RT 153 600)	6AV6381-2BK07-3AX0
• 262 144 PowerTags (RT 262 144)	6AV6381-2BL07-3AX0
Including 512 archive tags each	
Complete packages on DVD	
Language versions: De, En, Fr, It, Es; with license for	
• WinCC RC Client	6AV6381-2CB07-3AX0
• 128 PowerTags (RC 128)	6AV6381-2BM07-3AX0
• 512 PowerTags (RC 512)	6AV6381-2BN07-3AX0
• 2 048 PowerTags (RC 2 048)	6AV6381-2BP07-3AX0
• 8 192 PowerTags (RC 8 192)	6AV6381-2BS07-3AX0
• 65 536 PowerTags (RC 65 536)	6AV6381-2BQ07-3AX0
• 102 400 PowerTags (RC 102 400)	6AV6381-2BT07-3AX0
• 153 600 PowerTags (RC 153 600)	6AV6381-2BU07-3AX0
• 262 144 PowerTags (RC 262 144)	6AV6381-2BV07-3AX0

	Article No.
SIMATIC WinCC system software V7.3 ASIA SE incl. Update 1	
Runtime packages on DVD	
Language/script versions: EN, CHS, CHT, KOR, JPN; with license for	
• WinCC RT Client	6AV6381-2CA07-3AV0
• 128 PowerTags (RT 128)	6AV6381-2BC07-3AV0
• 512 PowerTags (RT 512)	6AV6381-2BD07-3AV0
• 2 048 PowerTags (RT 2 048)	6AV6381-2BE07-3AV0
• 8 192 PowerTags (RT 8 192)	6AV6381-2BH07-3AV0
• 65 536 PowerTags (RT 65 536)	6AV6381-2BF07-3AV0
• 102 400 PowerTags (RT 102 400)	6AV6381-2BJ07-3AV0
• 153 600 PowerTags (RT 153 600)	6AV6381-2BK07-3AV0
• 262 144 PowerTags (RT 262 144)	6AV6381-2BL07-3AV0
Including 512 archive tags each	
Complete packages on DVD	
Language versions: EN, CHS, CHT, KOR, JPN; with license for	
• WinCC RC Client	6AV6381-2CB07-3AV0
• 128 PowerTags (RC 128)	6AV6381-2BM07-3AV0
• 512 PowerTags (RC 512)	6AV6381-2BN07-3AV0
• 2 048 PowerTags (RC 2 048)	6AV6381-2BP07-3AV0
• 8 192 PowerTags (RC 8 192)	6AV6381-2BS07-3AV0
• 65 536 PowerTags (RC 65 536)	6AV6381-2BQ07-3AV0
• 102 400 PowerTags (RC 102 400)	6AV6381-2BT07-3AV0
• 153 600 PowerTags (RC 153 600)	6AV6381-2BU07-3AV0
• 262 144 PowerTags (RC 262 144)	6AV6381-2BV07-3AV0

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HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

■ Ordering data

	Article No.		Article No.
SIMATIC WinCC V7.3 Powerpacks		**SIMATIC WinCC system software V7.2**	
For upgrading from:		**Runtime packages on DVD**	
Runtime packages		Language/script versions: De, En, Fr, It, Es; with license for	
• 128 to 512 PowerTags	6AV6371-2BD07-3AX0	• WinCC RT Client	6AV6381-2CA07-2AX0
• 512 to 2 048 PowerTags	6AV6371-2BG07-3AX0	• 128 PowerTags (RT 128)	6AV6381-2BC07-2AX0
• 2 048 to 8 192 PowerTags	6AV6371-2BM07-3AX0	• 512 PowerTags (RT 512)	6AV6381-2BD07-2AX0
• 8 192 to 65 536 PowerTags	6AV6371-2BN07-3AX0	• 2 048 PowerTags (RT 2 048)	6AV6381-2BE07-2AX0
• 65 536 to 102 400 PowerTags	6AV6371-2BP07-3AX0	• 8 192 PowerTags (RT 8 192)	6AV6381-2BH07-2AX0
• 102 400 to 153 600 PowerTags	6AV6371-2BQ07-3AX0	• 65 536 PowerTags (RT 65 536)	6AV6381-2BF07-2AX0
• 153 600 to 262 144 PowerTags	6AV6371-2BR07-3AX0	• 102 400 PowerTags (RT 102 400)	6AV6381-2BJ07-2AX0
Complete packages		• 153 600 PowerTags (RT 153 600)	6AV6381-2BK07-2AX0
• 128 to 512 PowerTags	6AV6371-2BD17-3AX0	• 262 144 PowerTags (RT 262 144)	6AV6381-2BL07-2AX0
• 512 to 2 048 PowerTags	6AV6371-2BG17-3AX0	Including 512 archive tags each	
• 2 048 to 8 192 PowerTags	6AV6371-2BM17-3AX0	**Complete packages on DVD**	
• 8 192 to 65 536 PowerTags	6AV6371-2BN17-3AX0	Language versions: De, En, Fr, It, Es; with license for	
• 65 536 to 102 400 PowerTags	6AV6371-2BP17-3AX0	• WinCC RC Client	6AV6381-2CB07-2AX0
• 102 400 to 153 600 PowerTags	6AV6371-2BQ17-3AX0	• 128 PowerTags (RC 128)	6AV6381-2BM07-2AX0
• 153 600 to 262 144 PowerTags	6AV6371-2BR17-3AX0	• 512 PowerTags (RC 512)	6AV6381-2BN07-2AX0
SIMATIC WinCC V7.3 archives		• 2048 PowerTags (RC 2048)	6AV6381-2BP07-2AX0
• 1 500 archives	6AV6371-1DQ17-3AX0	• 8 192 PowerTags (RC 8192)	6AV6381-2BS07-2AX0
• 5 000 archives	6AV6371-1DQ17-3BX0	• 65 536 PowerTags (RC 65536)	6AV6381-2BQ07-2AX0
• 10 000 archives	6AV6371-1DQ17-3CX0	• 102 400 PowerTags (RC 102400)	6AV6381-2BT07-2AX0
• 30 000 archives	6AV6371-1DQ17-3EX0	• 153 600 PowerTags (RC 153600)	6AV6381-2BU07-2AX0
• 80 000 archives	6AV6371-1DQ17-3GX0	• 262 144 PowerTags (RC 262144)	6AV6381-2BV07-2AX0
SIMATIC WinCC V7.3 Archive Powerpacks		**SIMATIC WinCC system software V7.2 ASIA**	
For upgrading archiving from		**Runtime packages on DVD**	
• 1 500 to 5 000 archive tags	6AV6371-1DQ17-3AB0	Language/script versions: EN, CHS, CHT, KOR, JPN; with license for	
• 5 000 to 10 000 archive tags	6AV6371-1DQ17-3BC0	• WinCC RT Client	6AV6381-2CA07-2AV0
• 10 000 to 30 000 archive tags	6AV6371-1DQ17-3CE0	• 128 PowerTags (RT 128)	6AV6381-2BC07-2AV0
• 30 000 to 80 000 archive tags	6AV6371-1DQ17-3EG0	• 512 PowerTags (RT 512)	6AV6381-2BD07-2AV0
SIMATIC WinCC Upgrade/ Software Update Service		• 2048 PowerTags (RT 2048)	6AV6381-2BE07-2AV0
SIMATIC WinCC V7.3 upgrade [1]		• 8 192 PowerTags (RT 8192)	6AV6381-2BH07-2AV0
For upgrading the RT version		• 65 536 PowerTags (RT 65536)	6AV6381-2BF07-2AV0
• from V6.2/7.0 to V7.3	6AV6381-2AA07-3AX4	• 102 400 PowerTags (RT 102400)	6AV6381-2BJ07-2AV0
• from V7.2 to V7.3	6AV6381-2AA07-3AX3	• 153 600 PowerTags (RT 153600)	6AV6381-2BK07-2AV0
• from V6.2 ASIA to V7.3 ASIA [2]	6AV6381-2AA07-3AV4	• 262 144 PowerTags (RT 262144)	6AV6381-2BL07-2AV0
• from V7.2 ASIA to V7.3 ASIA	6AV6381-2AA07-3AV3	Including 512 archive tags each	
For upgrading the RC version		**Complete packages on DVD**	
• from V6.2/7.0 to V7.3	6AV6381-2AB07-3AX4	Language versions: EN, CHS, CHT, KOR, JPN; with license for	
• from V7.2 to V7.3	6AV6381-2AB07-3AX3	• WinCC RC Client	6AV6381-2CB07-2AV0
• from V6.2 ASIA to V7.3 ASIA [2]	6AV6381-2AB07-3AV4	• 128 PowerTags (RC 128)	6AV6381-2BM07-2AV0
• from V7.2 ASIA to V7.3 ASIA	6AV6381-2AB07-3AV3	• 512 PowerTags (RC 512)	6AV6381-2BN07-2AV0
SIMATIC WinCC Software Update Service (SUS) [3] [4] [5]		• 2048 PowerTags (RC 2048)	6AV6381-2BP07-2AV0
SIMATIC WinCC V7 Update		• 8 192 PowerTags (RC 8192)	6AV6381-2BS07-2AV0
Software Update Service for WinCC basic software and options:		• 65 536 PowerTags (RC 65536)	6AV6381-2BQ07-2AV0
• 1 license	6AV6381-1AA00-0AX5	• 102 400 PowerTags (RC 102400)	6AV6381-2BT07-2AV0
• 3 licenses	6AV6381-1AA00-0BX5	• 153 600 PowerTags (RC 153600)	6AV6381-2BU07-2AV0
• 10 licenses	6AV6381-1AA00-0CX5	• 262 144 PowerTags (RC 262144)	6AV6381-2BV07-2AV0
SIMATIC WinCC V7.3 SE incl. Update 1	S79220-B5964-P		
DVD WinCC V7.3 SE incl. Update 1			

[1] According to licensing provisions, 1 upgrade package must be ordered for each WinCC station

[2] Upgrading from V7.0 RT/RC ASIA to V7.3 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

■ Ordering data

	Article No.		Article No.

SIMATIC WinCC V7.2 Powerpacks

For upgrading from:

Runtime packages
	Article No.
• 128 to 512 PowerTags	**6AV6371-2BD07-2AX0**
• 512 to 2048 PowerTags	**6AV6371-2BG07-2AX0**
• 2048 to 8192 PowerTags	**6AV6371-2BM07-2AX0**
• 8192 to 65536 PowerTags	**6AV6371-2BN07-2AX0**
• 65536 to 102400 PowerTags	**6AV6371-2BP07-2AX0**
• 102400 to 153600 PowerTags	**6AV6371-2BQ07-2AX0**
• 153600 to 262144 PowerTags	**6AV6371-2BR07-2AX0**

Complete packages
	Article No.
• 128 to 512 PowerTags	**6AV6371-2BD17-2AX0**
• 512 to 2048 PowerTags	**6AV6371-2BG17-2AX0**
• 2048 to 8192 PowerTags	**6AV6371-2BM17-2AX0**
• 8192 to 65536 PowerTags	**6AV6371-2BN17-2AX0**
• 65536 to 102400 PowerTags	**6AV6371-2BP17-2AX0**
• 102400 to 153600 PowerTags	**6AV6371-2BQ17-2AX0**
• 153600 to 262144 PowerTags	**6AV6371-2BR17-2AX0**

SIMATIC WinCC V7.2 archives
	Article No.
• 1500 archives	**6AV6371-1DQ17-2AX0**
• 5000 archives	**6AV6371-1DQ17-2BX0**
• 10000 archives	**6AV6371-1DQ17-2CX0**
• 30000 archives	**6AV6371-1DQ17-2EX0**
• 80000 archives	**6AV6371-1DQ17-2GX0**

SIMATIC WinCC V7.2 Archive Powerpacks

For upgrading archiving from
	Article No.
• 1500 to 5000 archive tags	**6AV6371-1DQ17-2AB0**
• 5000 to 10000 archive tags	**6AV6371-1DQ17-2BC0**
• 10000 to 30000 archive tags	**6AV6371-1DQ17-2CE0**
• 30000 to 80000 archive tags	**6AV6371-1DQ17-2EG0**

SIMATIC WinCC Upgrade/Software Update Service

SIMATIC WinCC V7.2 upgrade [1]

For upgrading the RT version
	Article No.
• from V6.2 to V7.2	**6AV6381-2AA07-2AX4**
• from V7.0 to V7.2	**6AV6381-2AA07-2AX3**
• from V6.2 ASIA to V7.2 ASIA	**6AV6381-2AA07-2AV4**
• from V7.0 ASIA to V7.2 ASIA	**6AV6381-2AA07-2AV3**

For upgrading the RC version
	Article No.
• from V6.2 to V7.2	**6AV6381-2AB07-2AX4**
• from V7.0 to V7.2	**6AV6381-2AB07-2AX3**
• from V6.2 ASIA to V7.2 ASIA	**6AV6381-2AB07-2AV4**
• from V7.0 ASIA to V7.2 ASIA	**6AV6381-2AB07-2AV3**

SIMATIC WinCC Software Update Service (SUS) [2] [3] [4]

SIMATIC WinCC V7 Update

Software Update Service for WinCC basic software and options:
	Article No.
• 1 license	**6AV6381-1AA00-0AX5**
• 3 licenses	**6AV6381-1AA00-0BX5**
• 10 licenses	**6AV6381-1AA00-0CX5**

[1] According to licensing provisions, 1 upgrade package must be ordered for each WinCC station

[2] 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.

[3] Requires the current software version

[4] SUS is available as download (http://support.automation.siemens.com/WW/view/en/75731349)

SIMATIC WinCC V7.3 SE communication

Communication via Industrial Ethernet / PROFIBUS

CP 1612 A2
PCI card (32-bit) for connection of a programming device or PC to Industrial Ethernet (10/100/1000 Mbps) with RJ45 connection via SOFTNET S7 and SOFTNET PG. Windows 8.1 and Windows 2012 Server are not supported.
	Article No.
	6GK1161-2AA01

SOFTNET-IE S7 Version 12 SP2 [1]
Software for S7-compatible 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 stick; Class A for CP 1612-A2 English/German
	Article No.
• Single license for 1 installation	**6GK1704-1CW12-0AA0**
• 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 12 SP2 (license included in scope of delivery of WinCC V7.3)
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 stick, Class A, for CP 1612-A2, English/German
	Article No.
• Single license for 1 installation	**6GK1704-1LW12-0AA0**
• 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 1613 A2
PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)
	Article No.
	6GK1161-3AA01

CP 1623
PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)
	Article No.
	6GK1162-3AA00

CP 1628
PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)
	Article No.
	6GK1162-8AA00

HARDNET-IE S7 V12 SP2 [1]
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 stick, Class A, for CP 1613-A2, CP 1623, CP 1628; English/German
	Article No.
• Single license for 1 installation	**6GK1716-1CB12-0AA0**
• 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**

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HMI Software
SCADA system SIMATIC WinCC

SIMATIC WinCC

■ Ordering data | **Article No.** | | **Article No.**

Item	Article No.
SIMATIC WinCC V7.3 SE communication	
Communication via PROFIBUS	
CP 5612 PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in the WinCC basic package).	6GK1561-2AA00
CP 5622 PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC Basic package)	6GK1562-2AA00
CP 5711 USB adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in WinCC Basic package)	6GK1571-1AA00
CP 5613 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1561-3AA02
CP 5614 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1561-4AA02
CP 5623 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 Software for S7 communication incl. PG/OP communication, FDL, OPC server, Runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for CP 5613-A2, CP 5614-A2, 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 V12 SP2 Software for S7 communication incl. PG/OP communication, FDL, OPC server, Runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for CP 5613-A2, CP 5614-A2, CP 5623, English/German	
• Single license for 1 installation	6GK1713-5CB12-0AA0
• 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

Item	Article No.
HARDNET-PB DP V12 SP2 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 stick, Class A, for CP 5613-A2, CP 5614-A2, CP 5623; English/German	
• Single license for 1 installation	6GK1713-5DB12-0AA0
• 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) Software for FMS protocol incl. PG/OP communication, FDL, OPC server, Runtime software, software and electronic manual on CD-ROM, license key on USB stick, 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
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	6GK1713-5FB00-3AE1

■ Ordering data

	Article No.
SIMATIC WinCC V7.2 communication	
Communication via Industrial Ethernet / PROFIBUS	
CP 1612 A2 PCI card (32-bit) for connection of a programming device or PC to Industrial Ethernet (10/100/1000 Mbps) with RJ45 connection via SOFTNET S7 and SOFTNET PG. Windows 8.1 and Windows 2012 Server are not supported.	6GK1161-2AA01
SOFTNET-IE S7 Version 8.2 SP1 [1] Software for S7-compatible 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 stick; Class A for CP 1612-A2 English/German	
• Single license for 1 installation	6GK1704-1CW08-2AA0
• 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 8.2 SP1 (license included in scope of delivery of WinCC V7.2) 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 stick, Class A, for CP 1612-A2, English/German	
• Single license for 1 installation	6GK1704-1LW08-2AA0
• 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 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	6GK1161-3AA01
CP 1623 PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)	6GK1162-3AA00
CP 1628 PCI Express X1 card (32-bit) for connection of PG/PC to Industrial Ethernet (communications software must be ordered separately)	6GK1162-8AA00
HARDNET-IE S7 V8.2 SP1 [1] 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 stick, Class A for CP 1613-A2, CP 1623, CP 1628; English/German	
• Single license for 1 installation	6GK1716-1CB08-2AA0
• 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

	Article No.
Communication via PROFIBUS	
CP 5622 [2] PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC Basic package)	6GK1562-2AA00
CP 5711 USB adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in WinCC Basic package)	6GK1571-1AA00
CP 5623 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 [1] Software for S7 communication incl. PG/OP communication, FDL, OPC server, Runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A for CP 5613-A2, CP 5614-A2, 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 DP V8.2 SP1 [1] 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 stick, Class A, for CP 5613-A2, CP 5614-A2, CP 5623; English/German	
• Single license for 1 installation	6GK1713-5DB08-2AA0
• 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) [1] Software for FMS protocol incl. PG/OP communication, FDL, OPC server, Runtime software, software and electronic manual on CD ROM, License Key on USB stick, 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
• Upgrade package for SIMATIC NET V6.0, V6.1, V6.2 and Edition 2005	6GK1713-5FB00-3AE1

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[1] The SIMATIC NET PC software delivered with SIMATIC WinCC V7.3 must always be used. The scope of supply for WinCC V7.3 includes the SIMATIC NET PC software V12 SP2 / supported operating systems: 32/64-bit Windows 7 SP1 Professional, Ultimate, 32/64-bit Windows 8.1, 64-bit Windows 2008 Server R2 SP2, 64-bit Windows 2012 Server R2 and SIMATIC NET PC Software V7.1 SP6 (Edition 2008+SP6) / supported operating systems: Windows 2012 Server R2 (64-bit), Windows 7 SP1 (32-bit/64-bit) Professional, Enterprise, Ultimate, Windows Server 2008 Standard. Only use the license from the product package of the above listed SIMATIC NET PC software products. Licenses supplied with SIMATIC NET V12 SP2 are valid for all older versions as of Edition 2006. Windows 2003, Windows XP and VISTA are no longer supported.

[2] Only for WinCC single-user system / supported operating systems: 32/64-bit Windows 7 Professional, Ultimate

HMI Software
SCADA system SIMATIC WinCC

Ordering data	Article No.
Hardware for process control functions	
DCF-77 receiver for time synchronization • DCF77 (Europe)	**2XV9450-1AR14**

Note:

For further information on control technology options see Catalog ST PCS7.

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

Separate configurators are available for PC hardware:
- SIMATIC Rack PCs
  - IPC547D / IPC 547E
  - IPC647C / IPC 647D
  - IPC847C / IPC 847D
- SIMATIC Box PCs
  - IPC427C
  - IPC427D
  - IPC627D / 827D
  - IPC627C / 827C
- SIMATIC Panel PCs
  - IPC477C (PRO)
  - IPC477D
  - IPC577C
  - IPC677C / IPC677D

Software packages for WinCC and SUS as download (WinCC V7.2 and higher)

You can access all automation software already on the day of publication at any time and depending on the location.

You should preferably switch to Online Software Delivery (OSD) right away to obtain packages via download!

Additional information on Online Software Delivery is available at this link:

http://www.automation.siemens.com/mcms/topics/en/simatic/online-software-delivery/Pages/default.aspx

■ 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

- *SIMATIC Process Historian*
  Central, scalable long-term archive for the whole plant
- *WinCC/Redundancy*
  For increasing system availability through redundancy
- *WinCC/Server*
  For configuring a powerful client/server system
- *WinCC/TeleControl*
  For connecting outlying stations (remote terminal units = RTUs) via telecontrol protocols in a WinCC SCADA system
- *WinCC/Web Navigator*
  For controlling and monitoring plants via the Internet, in-house intranet or LAN
- *WinCC/WebUX*
  For controlling and monitoring plants, independent of platforms and browsers, via the Internet, in-house intranet or LAN

Options for greater efficiency in operations management

- *SIMATIC Information Server*
  Web-based, integrated reporting from production to management, based on archived data
- *WinCC/Calendar Scheduler*
  Calendar-based planning of events
- *WinCC/ChangeControl*
  - Change and version management
  - Generation of audit trails for engineering
- *WinCC/Audit*
  - Change management
  - Generation of audit trails for engineering and runtime
- *WinCC/DataMonitor*
  For displaying and evaluating current process states and historical data on office PCs with standard tools
- *WinCC/Event Notifier*
  For sending of notifications triggered by specific events in the WinCC message system
- *WinCC/PerformanceMonitor*
  Analysis and optimization of production on the basis of individual performance indicators
- *WinCC/SES* (*S*equence *E*xecution *S*ystem)
  Scalable sequence control for sequence-based processes
- *WinCC/User Archives*
  For managing data records in user archives

Options for openness and individual system expansions

- *WinCC/Connectivity Pack*
  Access to WinCC archives via OPC HDA, OPC A&E, OPC XML Server and WinCC OLE-DB /OLE-DB
- *WinCC/Connectivity Station*
  Gateway to WinCC server data over OPC HDA, OPC A&E, OPC XML server and WinCC OLE-DB /OLE-DB from independent computers
- *WinCC/IndustrialDataBridge*
  Configurable connection to databases and IT systems
- *WinCC/ODK* (*O*pen *D*evelopment *K*it)
  For the use of open programming interfaces and the generation of customer-specific WinCC ActiveX objects
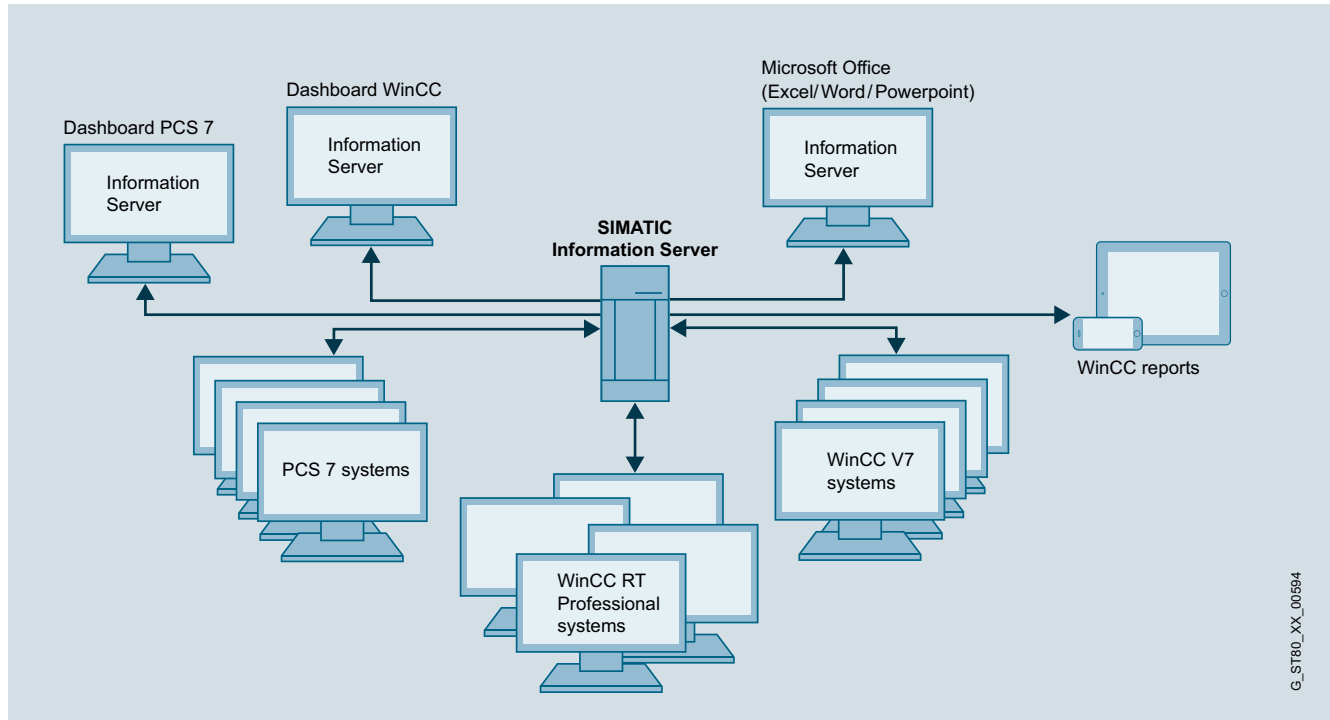
■ More information

WinCC options

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

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

SIMATIC Information Server

■ Overview

Information Server 2014 SP1

Information Server 2014 SP1 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).
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 SP1.

- Access to archived process values and messages from:
  - WinCC V7.0 SP3 UD 6, WinCC V7.2 UD 4 and V7.3 Second Edition UD 1
  - WinCC/PerformanceMonitor V7.3
  - WinCC RT Professional V13 SP1
  - PCS7 V8.0 SP1, V8.0 SP2 and V8.1
- Process Historian 2014 SP1
- Open reporting system with report templates for both interactive online reports (Web-based) and printed documents (PDF)
- Thanks to the add-in technology for Microsoft Office environments, simple and direct access is established to the archived Process Historian database
- 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 cyclic report generation including e-mail service

- Performance increase through automatic aggregation
- Web-based creation and provision of reports
- 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 e-mail
- Data security thanks to access protection, user administration, SSL encryption and SMTP authentication

Overview (continued)

Operating systems, browsers, MS Office, virtualization

- Windows 2003 Server R2 Standard Edition (32-bit)
- Windows 2008 Server R2 SP1 Standard Edition (64-bit)
- Windows 7 SP1 (32-bit/64-bit) Professional, Enterprise, Ultimate
- Windows 8.1
- Windows Server 2012 R2

The browsers to be used must have HTML5 capability

- Internet Explorer as of Version 11.0
- Mozilla Firefox (current version)
- Google Chrome (current version)
- Office add-ins for Microsoft Excel, PowerPoint and Word, for the following 32-bit Office versions: 2007 SP2, 2010 SP1 and 2013

SIMATIC Information Server 2014 SP1 has been released for the following virtual environments:

- VMWare vSphere Hyper Visor (ESXi) V5.5
- Microsoft Hyper-Server 2012

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
- Automatic transmission of reports by e-mail
- 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"

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HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

SIMATIC Information Server

■ Function

- Easy creation and individual design of own web pages
- No web page programming knowledge (html, asp) is necessary
- Creation of meaningful reports with Office knowledge
- Easy parameterization of predefined report templates
- Creation of your own report templates based on the Microsoft Reporting Services
- High flexibility due to access to numerous WinCC projects and the SIMATIC Process Historian
- Use of Microsoft Word and Excel for individual reports
- Consistent configuration of the access protection
- Installation-free in HTML5-enabled browsers on Web client or tablet > 10.5"

■ Ordering data

	Article No.
SIMATIC Information Server 2014 SP1 "Basic Package"	**6AV6361-2AA01-4AA0**
• Information Server	
• Information Server - Client access (3)	
• Information Server - Data source access (1)	
as download	**6AV6361-2AA01-4AH0**
• Information Server	
• Information Server - Client access (3)	
• Information Server - Data source access (1)	
SIMATIC Information Server	
Client and data source license, version-independent	
• 1 Client access	**6AV6361-2BD00-0AD0**
• 3 Client access	**6AV6361-2ED00-0AD0**
• 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	**6AV6361-2ED00-0AJ0**
• 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 SP1	**6AV6361-2AA01-4AE0**
as download	
Upgrade Information Server 2013 to Information Server 2014 SP1	**6AV6361-2AA01-4AK0**
Packages	
SIMATIC WinCC Analyze and Reporting Starter Package	
• Comprising: WinCC Performance Monitor V7.3, SIMATIC Information Server 2014 SP1 Basic Package	**6AV6372-2DG77-3AA0**
• Comprising: WinCC Performance Monitor V7.2, SIMATIC Information Server 2013 Basic Package	**6AV6372-2DG77-2AA0**

4

■ **Overview**

The Process Historian 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).

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 SP1

- Central, plant-wide long-term archive as corporate information hub
- Real-time archiving of process values and messages from:
  - WinCC V7.0 SP3, V7.2, V7.3
  - Data migration, WinCC V 6.2 SP 3 and higher
  - WinCC/Performance Monitor V7.3
  - WinCC RT Professional, V13 SP1 and higher
  - PCS7 V8.0, V8.1
  - SIMATIC BATCH
- 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 integrity
- 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"
- Backup & Restore for PCS 7 Batch

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

SIMATIC Process Historian

■ Overview (continued)

Operating systems, virtualization

- Windows Server 2012 R2 (64-bit Standard / Enterprise)
- Windows Server 2008 R2 SP1 (64-bit Standard / Enterprise)
- MS SQL Server 2008 R2 SP2

Process Historian 2014 has been released for the following virtual environments:

- VMWare vSphere Hyper Visor (ESXi) V5.5
- Microsoft Hyper-V Server 2012

■ 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

■ Function

- Real-time storage of the WinCC archive data (process values and messages) from any number of WinCC stations
- Visualization of the archive data on WinCC clients or WinCC single stations either directly or using the SIMATIC Information Server.
  Process Historian configuration tool for quick and easy engineering
- The redundant Process Historian is based on Microsoft SQL Server Mirroring (3rd system for monitoring redundancy availability)
- High degree of security due to integrated complete backup and restore of all segments
- During the initial configuration the database and the segmentation are set up
- The PH-Ready component is installed on the WinCC server for the process of archiving to the PH
- The PH automatically detects all connected WinCC server projects (via the PH-Ready component)
- The Process Historian Management "Dashboard" enables simple and fast management and diagnostics

■ Ordering data

|	Article No.
SIMATIC Process Historian 2014 SP1	
• Single License	**6AV6361-1AA01-4AA0**
• Single License (Redundancy Complete) 2 x Process Historian Server 2 x Process Historian Server Redundancy	**6AV6361-1BA01-4AA0**
• Single License Redundancy	**6AV6361-1CA00-3AD0**
Process Historian OPC UA Server	**6AV6361-1HA01-4AB0**
Upgrades	
Upgrade from CAS (Central Archive Server) V7.0 SP3 or **Process Historian 2013** to **Process Historian 2014 SP1**	**6AV6361-1AA01-4AE0**
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**

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Overview
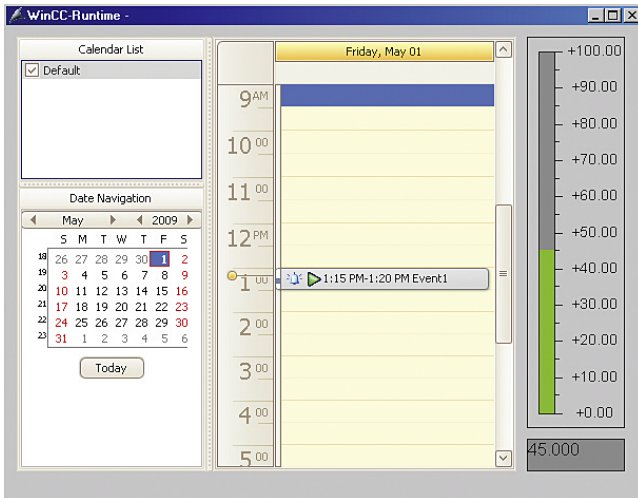
- Option for SIMATIC WinCC for managing events in a calendar.
- Setting WinCC variables or starting global scripts at defined times.
- A license is only necessary on the server (or single user system).

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

	Article No.
WinCC/Calendar Scheduler	
• for WinCC V7.3	**6AV6372-1DC07-3AX0**
• for WinCC V7.2	**6AV6372-1DC07-2AX0**
• for WinCC V7.0 SP3	**6AV6372-1DC07-0AX0**

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/ChangeControl & WinCC/Audit

Overview

- *WinCC/ChangeControl* is used to *trace engineering changes* in a tamper-proof long-term audit trail database, called the audit trail for short. All changes are automatically entered in the engineering system in the audit trail. This enables all the changes to be traced that have been made, to deduce the causes and minimize downtimes on the system. 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 status for system graphics, reports or user files and stores change information of the user. An audit viewer with helpful filter functions can be used for quickly and simply evaluating the audit trail, exporting it to an Excel sheet or printing it 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.

- *Licensing*:
To configure which change information from the project should be recorded in the audit trail, the WinCC/ChangeControl RC or WinCC/Audit RC package is required. "RC" stands for Runtime and Configuration. It is required on the station that is to be configured and also includes an RT license. For recording an audit trail, one WinCC/Audit RT license is required per WinCC station (client/server).

- The WinCC/Audit or WinCC/ChangeControl and SIMATIC Logon options support users in respect of plant validation and meet the requirements of FDA CFR 21 Part 11. A declaration of conformity (White Paper) offers proof of this.

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.

4

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 administration.

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 status 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. At specific objects or events, such as function buttons or sliders, the user can also record activities of an individual nature such as e.g., pressing a function button, moving sliders and other actions with a so-called audit entry function 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

	Article No.
WinCC/ChangeControl For the configuration of the audit trail incl. RT	
• WinCC V7.3	**6AV6371-1DV27-3AX0**
• WinCC V7.2	**6AV6371-1DV27-2AX0**
• WinCC V7.0 SP3	**6AV6371-1DV27-0AX0**
WinCC/Audit RC For the configuration of the audit trail incl. RT	
• WinCC V7.3	**6AV6371-1DV17-3AX0**
• WinCC V7.2	**6AV6371-1DV17-2AX0**
• WinCC V7.0 SP3	**6AV6371-1DV17-0AX0**
WinCC/Audit RT Creation of audit trails in RT	
• WinCC V7.3	**6AV6371-1DV07-3AX0**
• WinCC V7.2	**6AV6371-1DV07-2AX0**
• WinCC V7.0 SP3	**6AV6371-1DV07-0AX0**
Upgrades V7.x to V7.3	
• for WinCC/Audit RT	**6AV6371-1DV07-3BX3**
• for WinCC/Audit RC or WinCC/ChangeControl	**6AV6371-1DV17-3BX3**
V6.x to V7.3	
• for WinCC/Audit RT	**6AV6371-1DV07-3BX4**
• for WinCC/Audit RC or WinCC/ChangeControl	**6AV6371-1DV17-3BX4**

More information

Information about FDA can be found in a White Paper: Declaration of conformity of SIMATIC WinCC to FDA21 CFR Part 11.

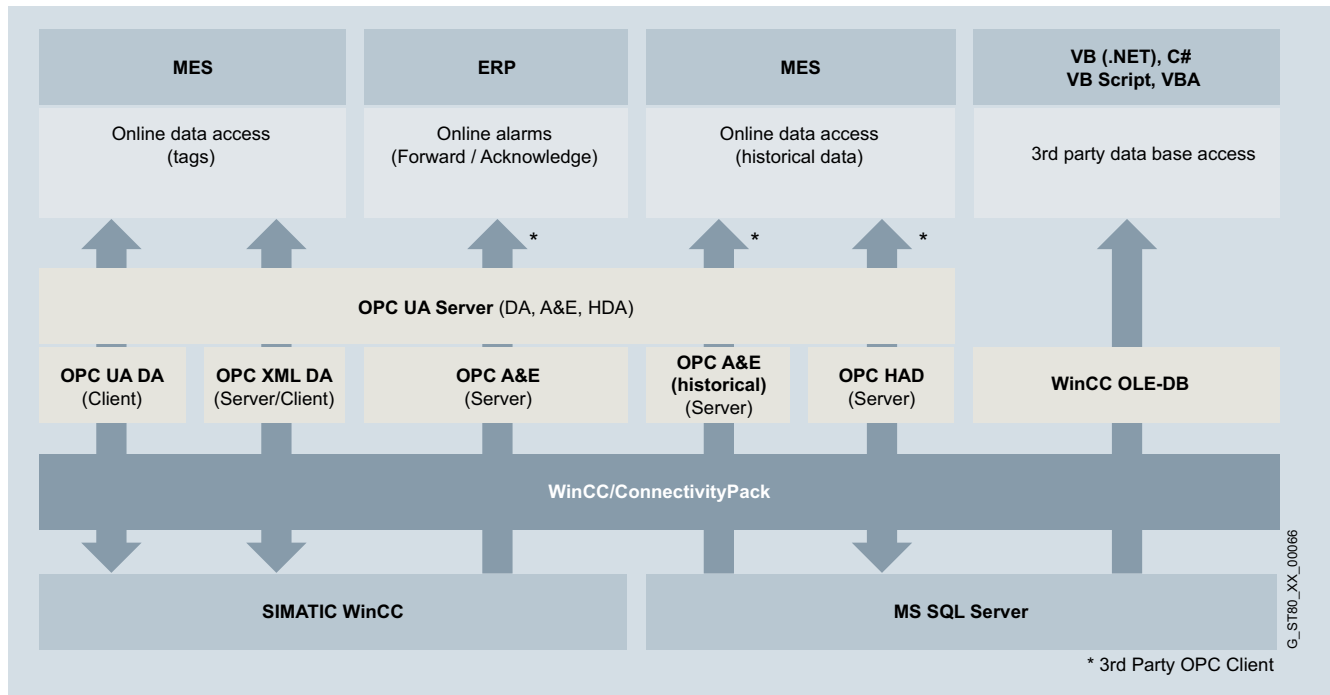http://www.siemens.com/automation/hmi/html_76/products/software/wincc/fda01.htm

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/Connectivity Pack & WinCC Connectivity Station

■ Overview

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.
- A Connectivity Pack license is required for every WinCC system to be accessed.
- If the Connectivity Station is used, an additional Connectivity Pack license does not have to be installed on the WinCC systems that are accessed. The Connectivity Station functions autonomously and does not require a WinCC installation on the computer.
- For versions below V7.0
  Access to WinCC archive and alarm data from a computer without installed WinCC basic system license or WinCC option via the interfaces of the Connectivity Pack or Connectivity Station requires a WinCC/Client Access license on the client side (see also "WinCC/Client Access License").
- Connectivity Station Option for WinCC V6.2 and higher

■ **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. The OPC HDA server also supports 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 2005). 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.

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

Licensing

You require the "WinCC Connectivity Station" license in order to utilize the OPC interfaces of the Connectivity Station on a computer without WinCC installed.

If you only use the OPC interfaces of a WinCC installation, you only need the "Connectivity Pack" license.

The following table shows the combinations:

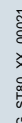|	**New: WinCC-independent installation with Connectivity Station**	**Standard installation: OPC with WinCC**
OPC DA	"WinCC Connectivity Station" license	No license required
OPC HDA	"WinCC Connectivity Station" license	"WinCC Connectivity Pack" license
OPC A&E	"WinCC Connectivity Station" license	"WinCC 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 the versions 7.0 and higher, the Connectivity Station does not run as a service.

■ **Ordering data**   **Article No.**

WinCC/Connectivity Pack & WinCC/Connectivity Station	
V7.3; for WinCC V7.3	
Basic packages	
• WinCC/Connectivity Pack V7.3 [1]	6AV6371-1DR07-3AX0
• WinCC/Connectivity Station V7.3 [1]	6AV6371-1DR17-3AX0
V7.2; for WinCC V7.2	
Basic packages	
• WinCC/Connectivity Pack V7.2 [1]	6AV6371-1DR07-2AX0
• WinCC/Connectivity Station V7.2 [1]	6AV6371-1DR17-2AX0

[1] Upgrades from V6.x to V7.x are included in the WinCC V7.x upgrades

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/DataMonitor

Overview

- The WinCC/DataMonitor is a component of WinCC Plant Intelligence and is used for displaying and evaluating current process statuses and historical data on office PCs with standard tools such as Microsoft Internet Explorer or Microsoft Excel. The DataMonitor client is provided with current and historic process data and alarms by a DataMonitor server. All staff ranging from machine operators to corporate managers can use the DataMonitor to obtain information.

- DataMonitor is a suite of Internet-capable tools:
  - Process Builder - Tool for simple visualization and navigation with WinCC screens using WinCC Web Viewer (WinCC Viewer RT) in "view only" mode
  - Excel Workbooks - Protocol tool that integrates WinCC archives and online values into MS 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 related to WinCC applications.
  - Trends and alarms are preconfigured Web Center pages

- 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 for simultaneous access by 1, 3, 10, 25 or 50 DataMonitor clients. Any combination of DataMonitor and Web Navigator licenses can be used for an application.
- Preconfigured Web Center pages permit ad hoc entry

Benefits

- Information can be compiled online individually during runtime via the Internet/intranet.
- Efficiently monitor and analyze production lines.
  - Display and evaluation of current process states and historical data on remote office PCs with standard tools such as Microsoft Internet Explorer or Excel
  - Easy access to production data via the intranet or Internet
  - Quick ascertainment of the production situation
  - Use of standard products
- Easily collect and distribute information.
  - Automated report creation
  - No additional configuration effort through direct use of images from the WinCC project
  - No training required for standard products
  - Easy exchange of configuration data
- Substantiate decisions with reports.
  - Evaluation via ready-made templates for special analyses of the business processes (e.g. reports, statistics)
  - Make bottlenecks transparent
  - Individual views for user and situation
  - Relative and absolute timeframe for information generation
- View production status anywhere and anytime.
  - Individual views of information in production
  - View the process and system operation
  - Historical data can be compiled online individually

Highlights

- Access to the lower-level servers when installing the DataMonitor server on a WinCC Client with separate project (RT128 license)
- Tag logging archive tags can be accessed by means of the web center function without changing the WinCC configuration system.
- Installation of the DataMonitor web center function on a WinCC file server
- Dedicated Internet pages can be created for displaying data with the Webcenter. For this purpose, the following tools which can be integrated in the Internet sites are available.
  - Bar diagram, pie chart, trend curve display
  - Process value table and statistics functions for the process values
  - Alarms, hit list for alarms
  - Message text display for individual message texts, message display, selection list of created reports
  - Links to internal and external pages
  - Display of graphics in converted jpg format
  - Display of the WinCC process images
- The analyses can be made with relative or absolute time specification. This enables comparisons of identical time periods on different days.
- Reports generated with Excel or the WinCC Report Designer can be made available on the DataMonitor server or emailed automatically to the relevant group of people based on time intervals or triggered by events.
  - Connections can be established to WinCC Runtime, the central archive server, and the swapped-out archives.

New in DataMonitor V7.3

- Excel Workbook Wizard
  - Settings for the properties can be saved in templates
  - For the display of messages, the time span can be configured in a relative or absolute time format
  - Log File for logging events which have arisen during reporting
- WebCenter
  - Language-specific display of static process images in the WebCenter
  - Execution of time-triggered reports
  - Configuring of different start times for reporting
    The starting and ending times can be before the report creation time. For example, a report is created at 5 PM which contains values for the time between 8 AM and 4 PM

New in DataMonitor V7.2

- With V7.2 and higher, the upgrade license is included in the corresponding WinCC version
- Supports Internet Explorer V7.0, V8.0 and V9.0, including tabbed browsing
- Excel reports can be generated with Microsoft Excel version 2003 / 2007 / 2010

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HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/DataMonitor

■ 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 be compiled and executed online. Plot and tabular representation are supported for archive data already swapped out.
- Data can be automatically entered into created report templates and distributed by e-mail or saved on the server.
- Pre-made elements make the assembly of individual web pages easier for evaluating information.
- Individual information compilation on one or more Internet pages with the option of branching to other detail pages.
- Pre-made Internet pages for trend and alarm display enable an ad-hoc entry to Internet data evaluation.
- An higher-level navigation feature provides a common framework for the various tools.
- The screens are displayed in the WinCC Web Viewer or in the Internet Explorer in the view only mode of the Web Navigator.
- Enhanced user management for the web center in order to assign individual Internet pages and created reports to specific user groups.
- Integrating WinCC process screens on Internet pages without installation download
- A search function facilitates the management of connections to the WinCC Server.
- Swapped out archives can be connected and evaluated in the DataMonitor Web center. Expansion of the display area in the Web center (Menu Hide function)
- Excel reports created offline can be loaded onto the DataMonitor server and are thus made available to selected user groups or for automatic distribution.

■ Ordering data

	Article No.
WinCC/DataMonitor V7.3 for **WinCC V7.3 and WinCC V7.3 ASIA**	
• 1 client license	**6AV6371-1DN07-3LX0**
• 3 client licenses	**6AV6371-1DN07-3AX0**
• 10 client licenses	**6AV6371-1DN07-3BX0**
• 25 client licenses	**6AV6371-1DN07-3CX0**
• 50 client licenses	**6AV6371-1DN07-3DX0**
WinCC/DataMonitor Powerpacks V7.0	
• From 1 to 3 clients	**6AV6371-1DN07-3LA0**
• From 3 to 10 clients	**6AV6371-1DN07-3AB0**
• From 10 to 25 clients	**6AV6371-1DN07-3BC0**
• From 25 to 50 clients	**6AV6371-1DN07-3CD0**
WinCC/DataMonitor V7.2 for **WinCC V7.2 and WinCC V7.2 ASIA**	
• 1 client license	**6AV6371-1DN07-2LX0**
• 3 client licenses	**6AV6371-1DN07-2AX0**
• 10 client licenses	**6AV6371-1DN07-2BX0**
• 25 client licenses	**6AV6371-1DN07-2CX0**
• 50 client licenses	**6AV6371-1DN07-2DX0**
WinCC/DataMonitor Powerpacks V7.2	
• From 1 to 3 clients	**6AV6371-1DN07-2LA0**
• From 3 to 10 clients	**6AV6371-1DN07-2AB0**
• From 10 to 25 clients	**6AV6371-1DN07-2BC0**
• From 25 to 50 clients	**6AV6371-1DN07-2CD0**

4

Overview
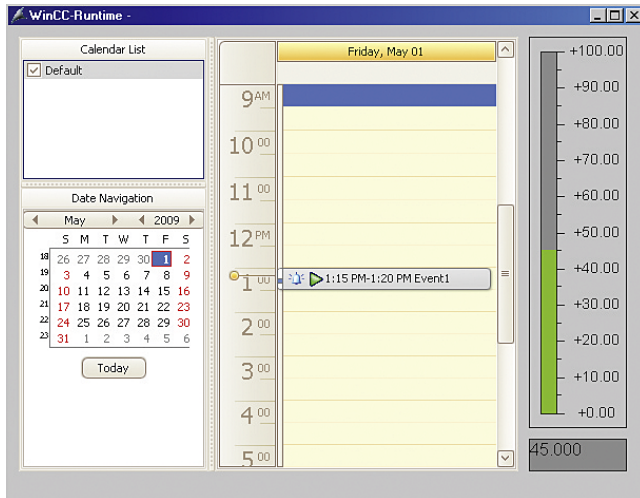
- Option for SIMATIC WinCC for notifying selected persons by e-mail in specified time slots
- Notification depends on events occurring in the WinCC Alarm System
- Escalation levels, i.e. Group 2 is only notified when nobody "on site" or from Group 1 has reacted within a specified time
- Final notification of all persons previously notified in connection with the specific event about the reaction that has taken place

A license is only necessary on the server (or single user system).

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 Alarm 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 Alarm 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 in 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 Alarm 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

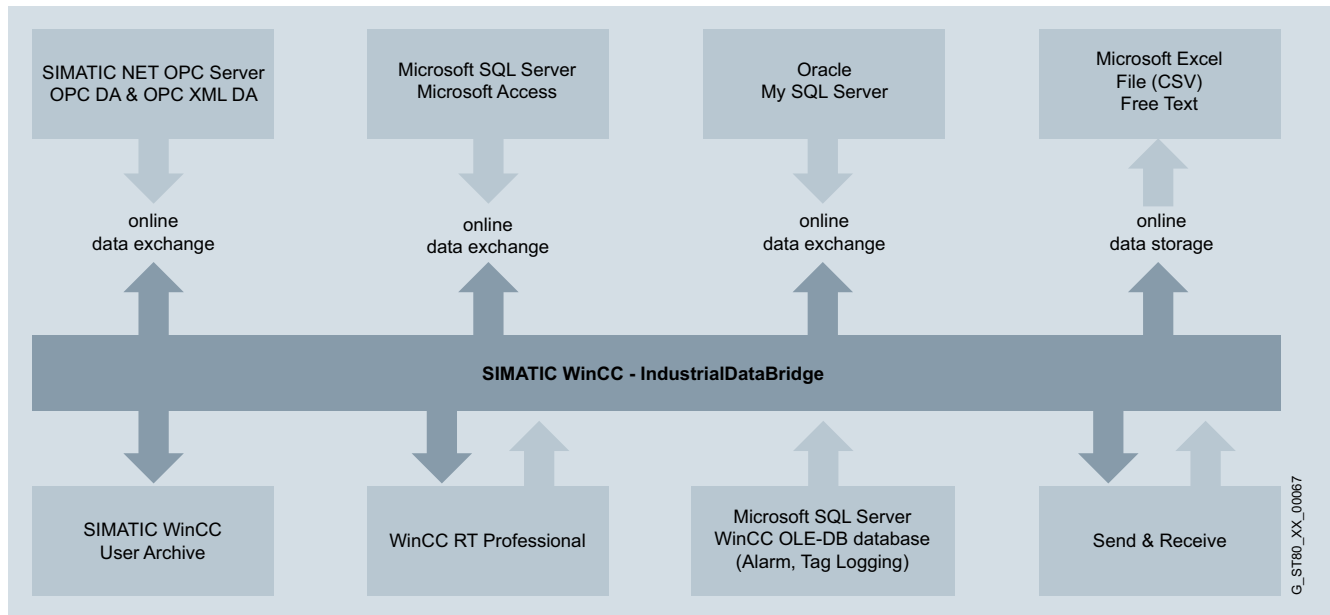| Ordering data	Article No.
WinCC/Event Notifier for WinCC V7.3 SE	
• for WinCC V7.3 SE	**6AV6372-1DD07-3AX0**
• for WinCC V7.2	**6AV6372-1DD07-2AX0**
• for WinCC V7.0 SP3	**6AV6372-1DD07-0AX0**

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/IndustrialDataBridge

■ Overview

- The WinCC/IndustrialDataBridge option uses standard inter-faces in order to connect the automation world with the world of IT and ensure two-way information flow. Typical examples of such interfaces are OPC in the field of automation and SQL database interfaces in the world of IT.
- Using the SIMATIC WinCC/IndustrialDataBridge, communication links between different data sources and data targets can be created by means of simple configuration/programming. The IndustrialDataBridge can either be integrated into WinCC or used in stand-alone mode (not in conjunction with WinCC).
- For example, SIMATIC WinCC with its OPC DA server interface is the data source and an external database is the data destination.
  - Very flexible, due to the support of different database formats and standard interfaces
  - Fast and safe due to configuration instead of programming

- In addition to access to WinCC variables, access to messages, process values and user archive data (in the WinCC database) is also supported.
- WinCC/IndustrialDataBridge can be used as a standalone application with its standard interfaces.
- Option from WinCC V6.
- For versions below V7.0.
  On a computer without a license for the WinCC basic system or a WinCC option, which is to be accessed in read/write mode by the option WinCC/IndustrialDataBridge, a WinCC Client Access License is required (see also "WinCC/Client Access License").

Benefits

- Connection of the automation level to the IT world
- Integration of systems from different manufacturers via numerous standard interfaces (including OPC, OLE-DB, office formats, etc.)
- Simple configuration using standard software without programming which reduces costs
- 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)
- OPC XML DA Provider / Consumer (data exchange over the Internet using http and SOAP)
- Web Navigator; support of the IndustrialDataBridge controls in WinCC images
- IndustrialDataBridge runs as system service or as an application in connection with WinCC or as a standalone application

Design

The software comprises a configuration environment and a runtime environment. The different data interfaces are integrated via software modules. In each case, one module is required as the data source and one module as the data destination. The different modules can be combined in any way.

The connections between data source and data destination are created in the configuration environment. In the runtime environment, the IndustrialDataBridge establishes the connection autonomously and transfers the data of the linked variables.

Function
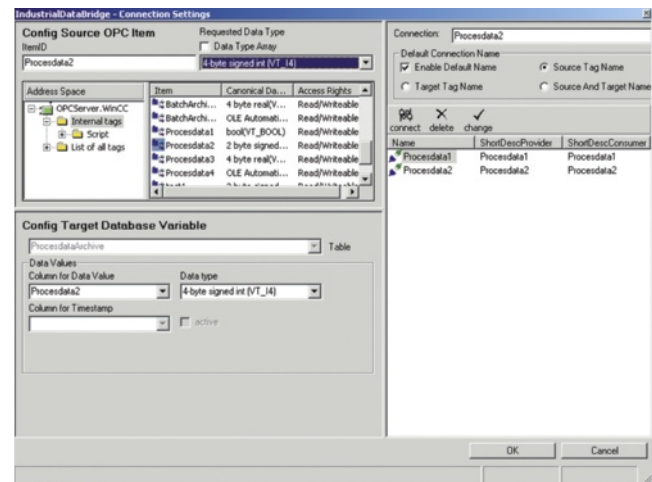
- IndustrialDataBridge establishes a link between the source and destination interfaces and transfers data on the basis of a change in value, once a configurable period of time has elapsed or when a specific event occurs.
- IndustrialDataBridge exchanges data between automation systems from different vendors, e.g., via OPC. The connection of OPC servers via IndustrialDataBridge enables communication between a variety of devices, data sources and data destinations. The OPC international interface standard is the key to open systems both now and in the future. Thanks to IndustrialDataBridge, OPC data exchange can already be supported.
- WinCC supports access to variables, tag logging, alarm logging and user archive data.
- Storage of process data in Office formats such as Excel or Access. Databases can also be integrated for the archiving of larger aggregates.
- One of the features of IndustrialDataBridge is a Send/Receive interface supporting data transfer to SIMATIC S5/S7 stations or other Send/Receive-compatible devices.
- IndustrialDataBridge enables SCADA and control systems from different vendors to be linked via the OPC interface. Communication via RFC1006 or Send/Receive is also supported.
- SQL databases are available as data destinations for production data acquisition. Data can be transferred from the data source on an event-driven basis with the OPC module or sent directly from the PLC with the Send/Receive module.
- Cyclic data archiving can be implemented via the OPC Data Access, WinAC ODK or Send/Receive data sources and the SQL database data destinations. On the database side, various transmission mechanisms are supported. Individual control during the runtime for every Industrial Databridge connection (Start, Stop, Connect and Disconnect).
- Integration of the IndustrialDatabridge runtime control into WinCC screens when installing the IDB on a WinCC station.
- Independent CSV files are created on reaching a programmable number of entries or if the value of a WinCC tag changes.
- Block transfer for databases through the support of the operators "<" and ">" in the Select instruction.
- Available providers (data sources) can be connected to any consumers (data targets) (see Table below)

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HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/IndustrialDataBridge

■ **Function** (continued)

New functions in Version 7.3

- Copy & Paste in the project navigation
- Adding of new links in the project navigation
- Creation of new lines in the CSV consumer
- WinCC Professional V13 SP1 (via OLE DB provider and consumer)
- Freely-editable text and HTML consumer
  Provider data can be inserted at any text positions of the consumer.
  Therefore optional TXT or HTML pages can be produced for archiving or visualization via HTML pages.

New functions in Version 7.2

- Faster configuration thanks to new configuration interface
- OPC XML DA provider / consumer (data exchange over the Internet using HTTP and SOAP)
- Support of Asian languages (Simplified Chinese, Japanese)
- Unicode support
- Getting Started for the data exchange between User Archive and Microsoft Access
- When installed in combination with the WebNavigator Server, the IndustrialDatabridge can be controlled over the Internet.

Interfaces:

The table below shows the possible data sources and destinations

Provider (data sources)	Consumer (data destinations)
	• csv, txt
	• MS Excel 2003, 2007, 2010, 2013
• MS Access 2003, 2007, 2010, 2013	• MS Access 2003, 2007, 2010, 2013
• MS SQL Server 2005, 2008, 2008 R2, 2012	• MS SQL Server 2005, 2008, 2008 R2, 2012
• MySQL 3.5, 5.1, 5.5, 5.6	• MySQL 3.5, 5.1, 5.5, 5.6
• Oracle 8i, 10g, 11g, 12c release 2	• Oracle 8i, 10g, 11g, 12c release 2
• OPC Data Access 3.0, OPC XML 1.0	• OPC Data Access 3.0, OPC XML 1.0
	• IDB OPC Server
• Send/Receive	• Send/Receive
• WinCC V7.2, V7.3 (via OLE DB) • WinCC UserArchives V7.2, V7.3	• WinCC UserArchives V7.2, V7.3
• WinCC RT Professional V13 SP1 (via OLE DB)	• WinCC RT Professional V13 SP1 (via OLE DB)
	• Configurable TXT/ HTML

■ **Ordering data** | **Article No.**

WinCC/IndustrialDataBridge	
V7.3, option for WinCC 7.3 SE	
For data exchange with databases and OPC servers; language versions: German, English, Simplified Chinese, Japanese	
• with 128 tags	**6AV6371-1DX07-3AX0**
• with 512 tags	**6AV6371-1DX07-3BX0**
• with 2 048 tags	**6AV6371-1DX07-3CX0**
• with 10 000 tags	**6AV6371-1DX07-3DX0**
WinCC/IndustrialDataBridge V7.3 Powerpack	
• from 128 to 512 tags	**6AV6371-1DX07-3AB0**
• from 512 to 2 048 tags	**6AV6371-1DX07-3BC0**
• from 2 048 to 10 000 tags	**6AV6371-1DX07-3CD0**
V7.2, option for WinCC 7.2	
For data exchange with databases and OPC servers; language versions: German, English, Simplified Chinese, Japanese	
• with 128 tags	**6AV6371-1DX07-2AX0**
• with 512 tags	**6AV6371-1DX07-2BX0**
• with 2 048 tags	**6AV6371-1DX07-2CX0**
• with 10 000 tags	**6AV6371-1DX07-2DX0**
WinCC/IndustrialDataBridge V7.2 Powerpack	
• from 128 to 512 tags	**6AV6371-1DX07-2AB0**
• from 512 to 2 048 tags	**6AV6371-1DX07-2BC0**
• from 2 048 to 10 000 tags	**6AV6371-1DX07-2CD0**
WinCC/IndustrialDataBridge, Upgrade	
• from V7.x to V7.3	**6AV6371-1DX07-3XX3**
• from V6.2 to V7.3	**6AV6371-1DX07-3XX4**

4

■ 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)
- Scope of delivery:
  - CD-ROM with examples
  - Voucher for a one-day intensive workshop

■ 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

New in V7.2
- UNICODE support
- Support for Visual Studio 2008, 2012

■ Function

The API functions are configuration and runtime functions, and include:

- MSRTCreateMsg: Creates a message
- DMGetValue: Gets the value of a variable
- PDLRTSetProp: Sets the object properties in a display

They can be used in the following places:

- Within WinCC, for example in global scripts or as part of C actions in the Graphics Designer
- In Windows applications in the programming language C (the current version of Microsoft Visual C++ is necessary as a development environment for WinCC)

■ Ordering data

	Article No.
SIMATIC WinCC/ODK	
Open Development Kit, option for SIMATIC WinCC V7.x, V6.x, V5.x. For C programming.	
• V7.3 SE; for WinCC V7.x	**6AV6371-1CC07-3AX0**
• V7.2; for WinCC V7.x	**6AV6371-1CC07-2AX0**

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/PerformanceMonitor

■ Overview
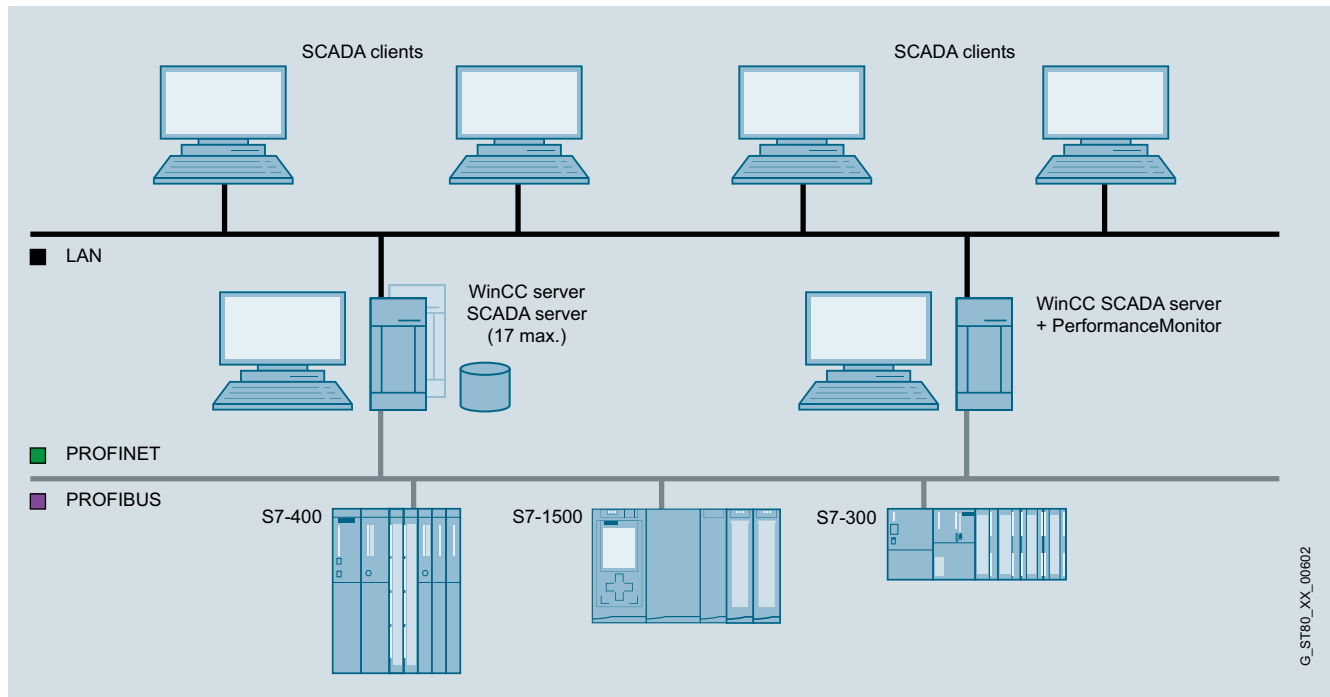
Analysis and optimization of production on the basis of individual performance indicators

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, and display in WinCC images, for example.

■ Overview (continued)

The PerformanceMonitor can be combined with the WebNavigator 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 (RT 128 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 intra- or Internet, the controls of the WinCC/PerformanceMonitor are available when using the WinCC/WebNavigators.
- The SIMATIC Information Server can be used for generating plant-specific, Web-based reports (predefined, expandable exports).
- The archived values (operands, context) form the foundation for the analysis and are one-by-one licensing relevant on an additive basis.
- 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 archive values can be increased in steps of 30, 100, 300 or 1 000.

■ 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.

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.

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/PerformanceMonitor

◾ 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.

Performance indicators in the on-site WinCC system 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

◾ Ordering data — Article No.

|	Article No.
WinCC/PerformanceMonitor V7.2 and V7.3 for WinCC V7.3 SE	
WinCC/PerformanceMonitor V7.3 for WinCC V7.3	6AV6372-2DG07-3AA0
WinCC/PerformanceMonitor V7.2 for WinCC V7.2	6AV6372-2DG07-2AA0
Option for WinCC/PerformanceMonitor V7.2 and V7.3	
Basic package including 30 PerformanceMonitor Archive Tags	
• 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
WinCC/PerformanceMonitor Upgrade	
Upgrade WinCC/DowntimeMonitor 7.2 and 7.3 to WinCC/PerformanceMonitor including 30 PerformanceMonitor Archive Tags	6AV6372-2DG87-3AA0
Packages	
SIMATIC WinCC Analyze and Reporting Starter Package Comprising: WinCC Performance Monitor V7.3, SIMATIC Information Server 2014 Basic Package	6AV6372-2DG77-3AA0

■ **Overview**

G_ST80_XX_00082

G_ST80_XX_00084

G_ST80_XX_00083
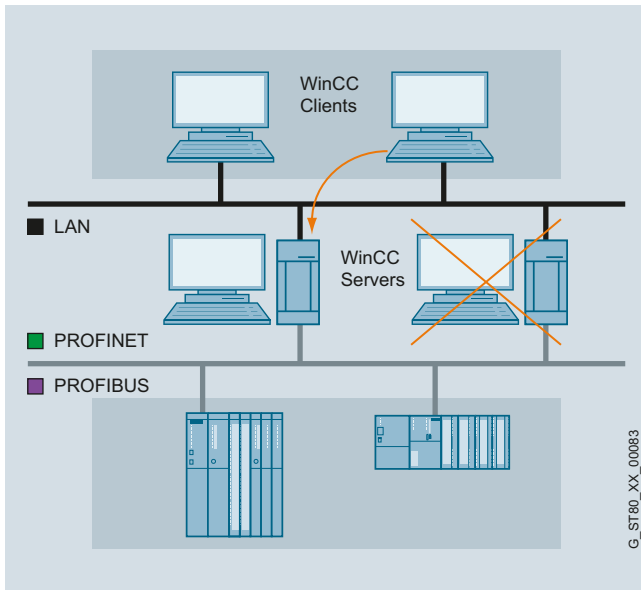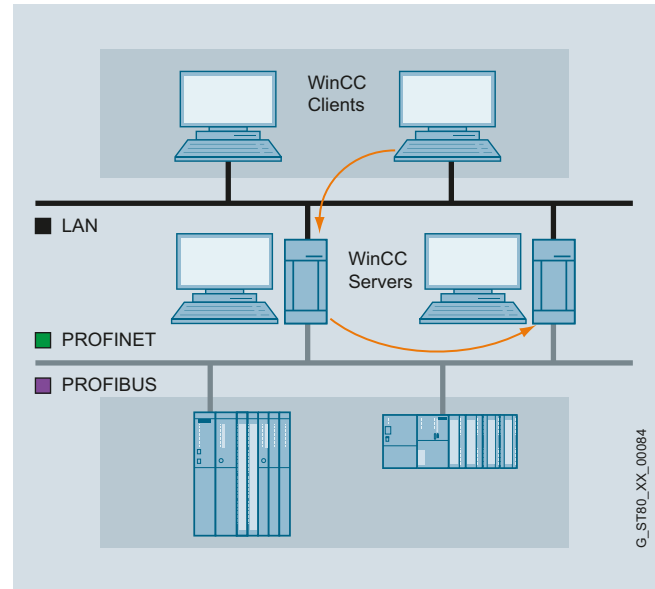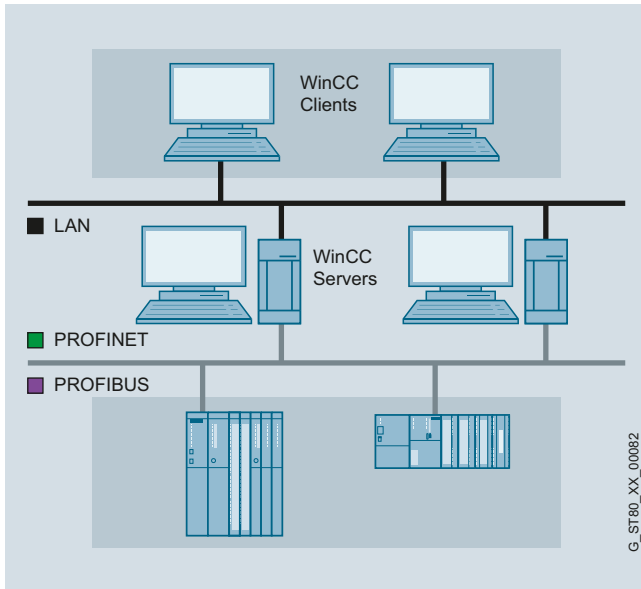
- Option for SIMATIC WinCC, supporting the parallel operation of two interfaced WinCC single-user systems or process data servers for mutual monitoring.
- If one of the two server PCs or one of the two WinCC stations fails, the second one will take over control of the entire system. Once the failed server or station is restored to operation, the content 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 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

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HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/Redundancy

■ 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
- Option for SIMATIC WinCC V7.3, Runtime software, single license for 2 installations — **6AV6371-1CF07-3AX0**
- Option for SIMATIC WinCC V7.2, Runtime software, single license for 2 installations — **6AV6371-1CF07-2AX0**

Overview
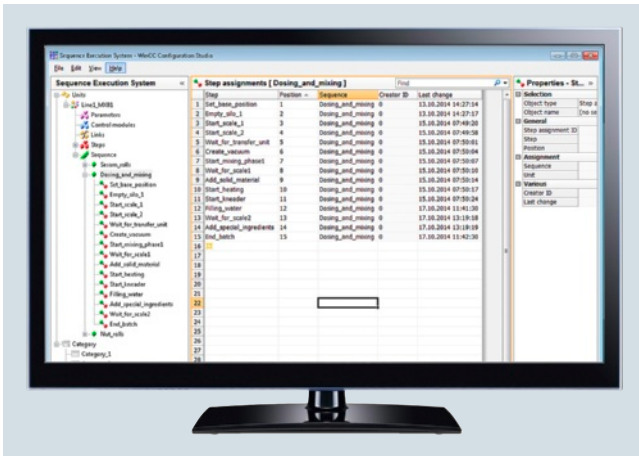
WinCC/SES 7.3

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 engineering 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.

Ordering data

	Article No.
SIMATIC WinCC/SES Sequence Execution System for WinCC V7.3 SE 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	
WinCC/SES (Sequence Execution System)	
• WinCC/SES V7.3 Sequence Execution System Basic Package, for configuration of the Sequence Execution System incl. 2 units [1]	**6AV6372-2DJ07-3AA0**
• WinCC/SES V7.3 Sequence Execution System, Extension 5 units, for increasing the number of units [1]	**6AV6372-2BJ07-3BA0**

[1] Also requires the WinCC/User Archives option, STEP 7 V5.5 including CFC V8 SP1. Based on SIMATIC S7-300 S7-315 or higher. Redundancy, WebNavigator, S7-1200/1500 are not supported.
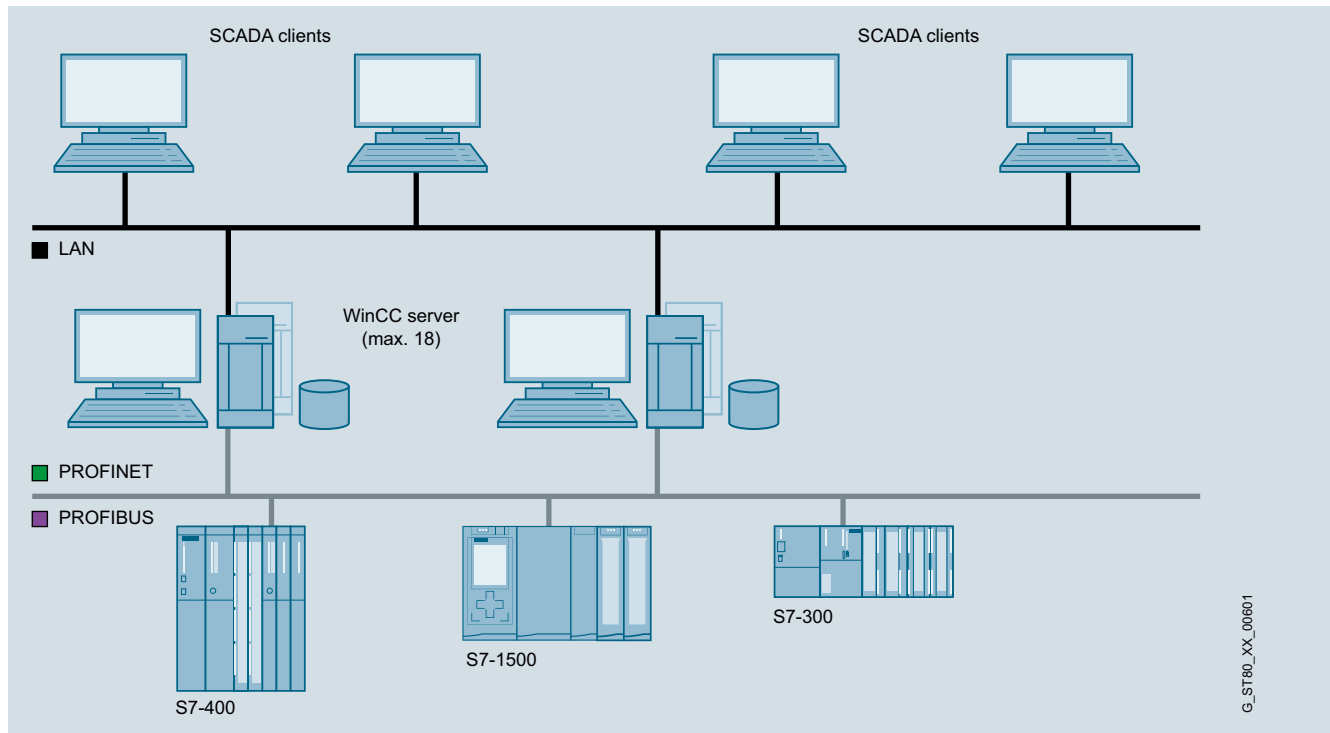
4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/Server

■ Overview

- Option for SIMATIC WinCC, 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 2003 (for V6) or Windows Server 2003 R2 (for V6.2 / V7.0 / V7.2) or Windows Server 2008 (for V7.0 with SP2 and higher or V7.2). When using Windows XP Professional and Windows 7 SP1, no more than 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 can supply up to 32 connected clients with process and archive data, messages, images and reports
  - Depending on the size of the plant, up to 12 servers (or up to 18 in version 7.2 or higher) can be used
  - 32 clients (max. 12 or 18 redundant WinCC servers) possible per system
- Requirement:
  Network connection (TCP/IP) between the server PC and the connected clients [1]
- One license is required for each server

[1] One of the following operating systems is installed on one WinCC server: Windows Server 2003, Windows Server 2003 R2 or Windows Server 2008. Max. 3 clients with Windows XP Professional and Windows 7 SP1.

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 RT128 is required. In order to also configure on WinCC clients, the smallest complete license RC128 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 · Article No.

SIMATIC WinCC/Server

• Option for SIMATIC WinCC V7.3, Runtime software, single license	**6AV6371-1CA07-3AX0**
• Option for SIMATIC WinCC V7.2, Runtime software, single license	**6AV6371-1CA07-2AX0**

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/TeleControl

■ **Overview**

SIMATIC TeleControl for WinCC supports connection to outlying stations (Remote Terminal Units = RTUs) via telecontrol protocols.

- SIMATIC TeleControl V7.0 SP3 Update 1
  has been released for use with WinCC V7.2 Update 3.
- SIMATIC TeleControl V7.0 SP3 Update 2
  has been released for use with WinCC V7.3 Update 1 (SE).

■ **Benefits**

In addition to integrating newly configured RTUs, SIMATIC TeleControl for WinCC V7.0 SP3 can also integrate units which already exist in outlying areas by means of DNP3 or IEC 870-5-101/104 drivers.

For communication with remote stations, SIMATIC TeleControl for WinCC V7.0 SP3 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, Modbus (not released for WinCC TC), 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 870-5-101/-104 telecontrol protocols

Detailed information for implementing telecontrol applications with the IEC 870-5-101/-104 telecontrol protocols via the Industry Mall.

DNP3 telecontrol protocol

SIMATIC TeleControl for WinCC V7.0 SP3 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 WinCC TeleControl into the SCADA system acts as the master during telecontrol communication. The slaves are represented by the remote stations. SIMATIC S7-300/S7-300F and S7-400/S7-400F/S7-400H/S7-400FH controllers as well as 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 S612 and S613 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
- Mobile radio network GSM

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

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 TeleControl for WinCC V7.0 SP3 into the WinCC SCADA system offers particular advantages for the water and wastewater sectors, as well as oil and gas sectors, 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 TeleControl for WinCC V7.0 SP3 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 TeleControl for WinCC V7.0 SP3 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

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

■ Integration (continued)

Outstations/remote terminal units

SIMATIC TeleControl for WinCC V7.0 SP3 supports the following preferred outstations for 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
- S7-300/S7-300F controller
  (SINAUT ST7, DNP3, IEC 870-5-101/104 telecontrol protocols);
  for extremely flexible configuration, up to 100 I/O signals or approx. 2000 data points

- S7-400/S7-400F controller
  (SINAUT ST7, DNP3, IEC 870-5-101/104 telecontrol protocols);
  up to 500 I/O signals or approx. 5000 data points
- S7-400/S7-400F redundant controller
  (IEC 870-5-101/104 and DNP3 telecontrol protocols);
  up to 500 I/O signals or approx. 5000 data points
- Third-party station with the IEC 870-5-101/104 and DNP3 telecontrol protocols (depending on type of station)

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 870-5-01**	**IEC 870-5-04**
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 (corresponding 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
	S7-300/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 integr. 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		•	•	•	•	• [1]	• [1]
Routing with SIMATIC PDM		•	•	-	-	-	•
International standard		-	-	•	•	•	•

[1] Data buffering is limited to two SIMATIC S7 data blocks. Depending on the SIMATIC CPU, this corresponds to approx. 800 to 3200 buffered frames.

4

Ordering data	**Article No.**		**Article No.**
SIMATIC TeleControl 7.0 SP3 for WinCC Basic Engineering Software package with SIMATIC TeleControl for WinCC 7.0 SP3 Engineering Software, 2 languages (English, German), executable with Windows XP Professional/Server 2003, Floating License for one user; electronic documentation on CD/DVD, 2 languages (English, German) Type of delivery: License key memory stick, certificate of license incl. terms and conditions, SIMATIC WinCC Data Medium Package V7.0 + SP3 and CD "WinCC TeleControl Option V7.0 + SP3"	6DL5000-7AA07-0XA5	**SIMATIC TeleControl 7.0 SP3 for Server Runtime (unlimited stations)** Software package with SIMATIC TeleControl for WinCC 7.0 SP3 Runtime Software, 2 languages (English, German), executable with Windows Server 2003, Single License for one user; electronic documentation on CD/DVD, 2 languages (English, German) Type of delivery: License key memory stick, certificate of license incl. terms and conditions, SIMATIC WinCC Data Medium Package V7.0 + SP3 and CD "WinCC TeleControl Option V7.0 + SP3"	6DL5002-7AF07-0XA0
SIMATIC TeleControl 7.0 SP3 for Server Runtime (6 stations) Software package with SIMATIC TeleControl for WinCC 7.0 SP3 Runtime Software, 2 languages (English, German), executable with Windows Server 2003, Single License for one user; electronic documentation on CD/DVD, 2 languages (English, German) Type of delivery: License key memory stick, certificate of license incl. terms and conditions, SIMATIC WinCC Data Medium Package V7.0 + SP3 and CD "WinCC TeleControl Option V7.0 + SP3"	6DL5002-7AA07-0XA0	**Driver software for telecontrol protocols TeleControl SINAUT Driver** Runtime license for one WinCC Single Station or one WinCC server, single license for 1 installation Requirement: Software SIMATIC TeleControl 7.0 SP3 for WinCC Server Runtime (6, 12, 256 stations) Type of delivery: License key memory stick, certificate of license incl. terms and conditions	6DL5101-8AX00-0XB0
SIMATIC TeleControl 7.0 SP3 for Server Runtime (12 stations) Software package with SIMATIC TeleControl for WinCC 7.0 SP3 Runtime Software, 2 languages (English, German), executable with Windows Server 2003, Single License for one user; electronic documentation on CD/DVD, 2 languages (English, German) Type of delivery: License key memory stick, certificate of license incl. terms and conditions, SIMATIC WinCC Data Medium Package V7.0 + SP3 and CD "WinCC TeleControl Option V7.0 + SP3"	6DL5002-7AB07-0XA0	**TeleControl DNP3 Driver** Runtime license for one WinCC Single Station or one WinCC server, single license for 1 installation Requirement: Software SIMATIC TeleControl 7.0 SP3 for WinCC Server Runtime (6, 12, 256 stations) Type of delivery: License key memory stick, certificate of license incl. terms and conditions	6DL5101-8EX00-0XB0
		TeleControl IEC 870-5-101/-104 Driver Runtime license for one WinCC Single Station or one WinCC server, single license for 1 installation Requirement: Software SIMATIC TeleControl 7.0 SP3 for WinCC Server Runtime (6, 12, 256 stations) Type of delivery: License key memory stick, certificate of license incl. terms and conditions	6DL5101-8CX00-0XB0
SIMATIC TeleControl 7.0 SP3 for Server Runtime (256 stations) Software package with SIMATIC TeleControl for WinCC 7.0 SP3 Runtime Software, 2 languages (English, German), executable with Windows Server 2003, Single License for one user; electronic documentation on CD/DVD, 2 languages (English, German) Type of delivery: License key memory stick, certificate of license incl. terms and conditions, SIMATIC WinCC Data Medium Package V7.0 + SP3 and CD "WinCC TeleControl Option V7.0 + SP3"	6DL5002-7AE07-0XA0		

4

■ **More information**

For an overview of the complete performance range on the Internet, visit Service & Support:

https://support.industry.siemens.com/cs/?lc=en-DE

Technical Support (Hotline):

https://support.industry.siemens.com/My/ww/en/requests
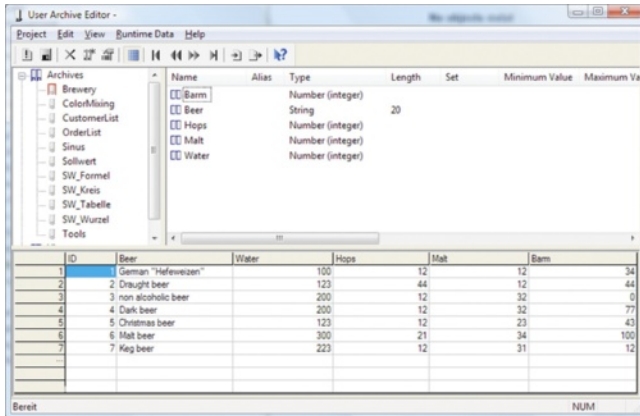
HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/User Archives

Overview

- 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.
- A license is only required for the server (or single-user system).

The WinCC/User Archives option can also be used in the context of the WinCC/Web Navigator (see also WinCC/Web Navigator option).

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.
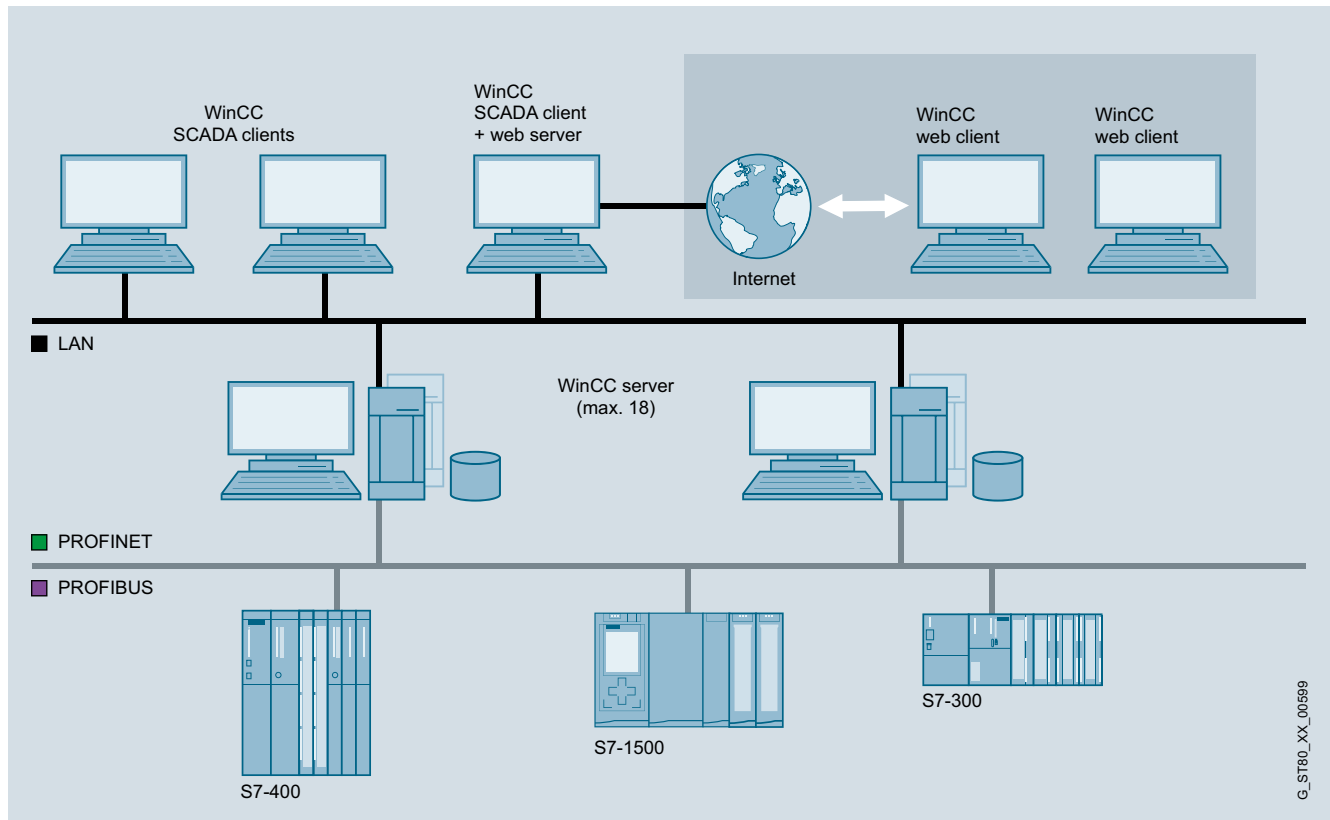
Ordering data — Article No.

SIMATIC WinCC/User Archives	
Option for SIMATIC WinCC V7.3, Runtime software, single license	6AV6371-1CB07-3AX0
Option for SIMATIC WinCC V7.2, Runtime software, single license	6AV6371-1CB07-2AX0

■ **Overview**

- Option for SIMATIC WinCC for operator control and monitoring of plants via the Internet, in-house intranet or LAN
- Configuration from:
  - a Web server with the SIMATIC WinCC software as a single-user, client or server version and a Web client that enables operator control and monitoring of a current WinCC project via an Internet browser with ActiveX support. The WinCC basic system does not have to be installed on the client computer. It is also possible to use the Web client without Microsoft Internet Explorer.
- Licensing:
  - A license is required in order to use the Web server.
  - Licenses are available for access to the Web server by 1, 3, 5, 10, 25, 50, 100 or 150 clients.
  - Low-priced WebNavigator diagnostics licenses are available for the remote diagnostics via multiple, distributed Web servers.

Highlights:
- Installation of the Web server - in distributed systems - also on a WinCC Client
  - Access to as many as 18 subordinate WinCC stations (servers) possible
  - Web clients offer common views of data on various WinCC servers
  - If you are using WinCC/Redundancy, the Web clients will also transfer via the subordinate WinCC servers (requires WebNavigator server to be installed on the WinCC Client (RT128))
  - Separating the Web functionality from the WinCC data servers makes the overall system safer and more scalable in respect of load. Integrated user management with WinCC: The configured WinCC operator authorizations are taken into account on the Web client.
- Access to WebNavigator server from the WebNavigator TIA Portal series of products
- Access to user archives
- VB scripts are supported in the same way as the new objects and RT functions in WinCC V7.x

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/Web Navigator

■ **Overview** (continued)

- User-friendly services and tools for distributing customized objects (controls, files) to Web clients can be supplied for use as an integration platform. These components can then also be integrated into cross-Web/Server navigation.
- Distribution of load across a number of Web servers in order to run several hundred Web clients in a single system; Web clients are distributed across Web servers automatically.
- Version 7.2 supports Microsoft Internet Explorer Version 8.0 and 9.0, including tabbed browsing. A new license is not required for separate tabs.
- With the WinCC Web Viewer, 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 Microsoft Terminal Service.
- From version 7 on, the WebNavigator can also be operated in "view only" mode and is thus used as tool for operating and navigating only via WinCC screens by means of the Internet Explorer.
- The cursor for View only mode can be selected according to individual requirements.
- Web server logins and logouts are recorded in the alarm and audit archive.
- There is a gadget available for the Windows 7 operating system in which selected WinCC process screens can be displayed. The gadget does not require any additional WebNavigator license. The WebNavigator server can be selected direct using the gadget.
- Security is increased by adjustable automatic logout. If an automatic logout is to take place, an absolute or inactive time period can be set.
- Runtime in the Web client can be terminated by means of scripting.

■ **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
- Fast updating rates thanks to event-driven communication
- Optimally tailored clients for operating and monitoring, analysis, service and diagnostics
- Acceptance of configuration data for the Web, generally without changes
- Minimum maintenance costs thanks to centralized software administration
- High security standards and availability
  - Increased security due to separation of WinCC server and Web server (Web server in secure environment)
  - Support for commonly used security mechanisms (routers, firewalls, proxy servers)
  - Access authorization and user administration

New in V7.3
- Printing from WinCC Controls in the Web Navigator Client and WinCC RT Viewer.
  The printer can be defined using the settings in the Web Navigator GUI or WinCC RT Viewer.

New in V7.2
- New license stages for 1, 5, 100, 150 clients and associated powerpacks 1/3, 3/5, 50/100, 100/150
- Unicode support
- PDL password protection with Web Navigator PDL Pad
- Login / logout / register:
- Manual logout in the Internet Explorer by means of ODK C-Script (PWRTLogout function)
- Configurable logout/login in the WinCC RT Viewer

■ **Application**

In addition to the typical use of the Web Navigator in WANs (**W**ide **A**rea **N**etwork), the Web Navigator is also suitable for solving especially low-cost applications. This especially includes applications that have a pronounced distributed structure (water/wastewater, oil & gas), or in which access to process information is only sporadic (building management).

The Web Navigator also permits vertical integration, i.e. a networked IT landscape with integrated data flow between the planning and operating levels within a company. Only a standard browser is required for direct access to current process information.

The Web Server can have its own dedicated direct process connection. An alternative is coupling via OPC or the use of a remote Web Server to a WinCC Client. This simultaneously increases security and reduces the communication load of the plant.

In addition to the Standard Web Navigator licensing there is the so-called Diagnostics Client, with identical functions in principle, but which is especially suitable for the following applications:
- Remote diagnostics/operation of several unmanned WinCC stations
- Central control rooms which monitor multiple Web Servers on one user interface
- Power Users that always require guaranteed access to the server regardless of the number of users already logged on to the server.

4

■ **Design**

Licenses for the Web Navigator

The Web Navigator Client software can be installed as many times as required without the need for a license.

- Server-based licensing;
  a license is required in order to use the Web Navigator Server. Licenses are available for simultaneous access to the Web server by 1, 3, 5, 10, 25, 50, 100 or 150 clients.

- Diagnostics client licensing;
  for optimum-cost access by one or a small number of Web Navigator Clients to numerous Web servers (e.g., for the purpose of diagnostics). This client license provides guaranteed access to Web servers at any time. In respect of function there is no difference compared with regular Web Navigator Clients and the two can be mixed.

Web Navigator Clients can:

- Access a number of different web servers or
- Access data on a number of higher-level WinCC stations simultaneously via a remote Web server

On the server side, only one Web Navigator Diagnostics Server license or, alternatively, one Standard Web Navigator license is required.

Alternatively, a number of Web Navigator Servers with the same WinCC project can be combined to create a "server farm". This means that it is possible for several hundred Web clients to have access to the same database. The service ensures that the clients accessing are distributed evenly across all servers. If a server fails the Web client is automatically forwarded to the next available server.

In order to use this functionality you will need to install a Web Load Balancing license on the Web servers involved. Each Load Balance package contains 2 licenses.

An inexpensive expansion option for Web Load Balancing is available for redundant WinCC stations on which the Web Navigator is also installed. For this purpose, you need to install a Web Load Balancing Step Up license on the web servers involved. Each Step Up package contains 2 licenses.

Thin Client solutions

The Web Navigator can also run under Windows Server 2003 or Windows Server 2008 terminal services. A Windows Server 2003 or Windows Server 2008 (or higher) operating system is required. This makes it possible to connect SIMATIC Thin Clients as visualization stations to WinCC, for example.

For this purpose, the Windows terminal services must be installed on the PC on which the Web client is installed. A Windows Server 2003 or Windows Server 2008 (or higher) operating system is required. Up to 25 ThinClients can be connected to one terminal server.

Applications:
- Mobile devices
- Handhelds
- Rugged on-site visualizations

Hybrid configuration

Web Navigator and DataMonitor clients can be mixed in a single system.

■ **Function**

The Web Configurator (Wizard) makes setting up and configuring a Web Navigator Server very easy. WinCC process screens to be visualized via the Internet are created as usual using WinCC Graphics Designer. Under normal circumstances the project can be worked on locally without modification. The Web Publishing Wizard optimizes the screens for transmission and display on the Internet. A standard browser is all that is required to display WinCC process screens on the Web Client. The MS Internet Explorer is used depending on the Web Navigator version used (tip: start the Internet Explorer in full-screen mode with the start parameter "-k").

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 Web Navigator supports all standard security mechanisms that can be used for applications on the Internet, e.g. routers, firewalls and proxy servers.

4

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/Web Navigator

| Ordering data	Article No.		Article No.
WinCC/Web Navigator V7.3		**WinCC/Web Navigator V7.2**	
V7.3; for WinCC V7.3 and WinCC V7.3 ASIA		**V7.2; for WinCC V7.2 and WinCC V7.2 ASIA**	
• 1 client license	6AV6371-1DH07-3LX0	• 1 client license	6AV6371-1DH07-2LX0
• 3 client licenses	6AV6371-1DH07-3AX0	• 3 client licenses	6AV6371-1DH07-2AX0
• 5 client licenses	6AV6371-1DH07-3MX0	• 5 client licenses	6AV6371-1DH07-2MX0
• 10 client licenses	6AV6371-1DH07-3BX0	• 10 client licenses	6AV6371-1DH07-2BX0
• 25 client licenses	6AV6371-1DH07-3CX0	• 25 client licenses	6AV6371-1DH07-2CX0
• 50 client licenses	6AV6371-1DH07-3DX0	• 50 client licenses	6AV6371-1DH07-2DX0
• 100 client licenses	6AV6371-1DH07-3GX0	• 100 client licenses	6AV6371-1DH07-2GX0
• 150 client licenses	6AV6371-1DH07-3HX0	• 150 client licenses	6AV6371-1DH07-2HX0
as download RT-SW, single license, license key download. E-mail address mandatory.		as download RT-SW, single license, license key download. E-mail address mandatory.	
• 1 client license	6AV6371-1HH07-3LX0	• 1 client license	6AV6371-1HH07-2LX0
• 3 client licenses	6AV6371-1HH07-3AX0	• 3 client licenses	6AV6371-1HH07-2AX0
• 5 client licenses	6AV6371-1HH07-3MX0	• 5 client licenses	6AV6371-1HH07-2MX0
• 10 client licenses	6AV6371-1HH07-3BX0	• 10 client licenses	6AV6371-1HH07-2BX0
• 25 client licenses	6AV6371-1HH07-3CX0	• 25 client licenses	6AV6371-1HH07-2CX0
• 50 client licenses	6AV6371-1HH07-3DX0	• 50 client licenses	6AV6371-1HH07-2DX0
• 100 client licenses	6AV6371-1HH07-3GX0	• 100 client licenses	6AV6371-1HH07-2GX0
• 150 client licenses	6AV6371-1HH07-3HX0	• 150 client licenses	6AV6371-1HH07-2HX0
Powerpacks V7.3		**Powerpacks V7.2**	
• From 1 to 3 clients	6AV6371-1DH07-3LA0	• From 1 to 3 clients	6AV6371-1DH07-2LA0
• From 3 to 5 clients	6AV6371-1DH07-3AM0	• From 3 to 5 clients	6AV6371-1DH07-2AM0
• From 5 to 10 clients	6AV6371-1DH07-3MB0	• From 5 to 10 clients	6AV6371-1DH07-2MB0
• From 10 to 25 clients	6AV6371-1DH07-3BC0	• From 10 to 25 clients	6AV6371-1DH07-2BC0
• From 25 to 50 clients	6AV6371-1DH07-3CD0	• From 25 to 50 clients	6AV6371-1DH07-2CD0
• From 50 to 100 clients	6AV9681-1DH07-3DG0	• From 50 to 100 clients	6AV9681-1DH07-2DG0
• From 100 to 150 clients	6AV9681-1DH07-3GH0	• From 100 to 150 clients	6AV9681-1DH07-2GH0
as download RT-SW, single license, license key download. E-mail address mandatory		as download RT-SW, single license, license key download. E-mail address mandatory	
• From 1 to 3 clients	6AV6371-1JH07-3LA0	• From 1 to 3 clients	6AV6371-1JH07-2LA0
• From 3 to 5 clients	6AV6371-1JH07-3AM0	• From 3 to 5 clients	6AV6371-1JH07-2AM0
• From 5 to 10 clients	6AV6371-1JH07-3MB0	• From 5 to 10 clients	6AV6371-1JH07-2MB0
• From 10 to 25 clients	6AV6371-1JH07-3BC0	• From 10 to 25 clients	6AV6371-1JH07-2BC0
• From 25 to 50 clients	6AV6371-1JH07-3CD0	• From 25 to 50 clients	6AV6371-1JH07-2CD0
• From 50 to 100 clients	6AV9681-1JH07-3DG0	• From 50 to 100 clients	6AV9681-1JH07-2DG0
• From 100 to 150 clients	6AV9681-1JH07-3GH0	• From 100 to 150 clients	6AV9681-1JH07-2GH0
Diagnostics Client for WinCC V7.3		**Diagnostics Client for WinCC V7.2**	
• For WinCC V7.3	6AV6371-1DH07-3EX0	• For WinCC V7.2	6AV6371-1DH07-2EX0
• For WinCC V7.3 as download	6AV6371-1HH07-3EX0	• For WinCC V7.2 license key download. E-mail address mandatory.	6AV6371-1HH07-2EX0
Diagnostics Server		**Diagnostics Server**	
• For WinCC V7.3	6AV6371-1DH07-3FX0	• For WinCC V7.2	6AV6371-1DH07-2FX0
• For WinCC V7.3 as download	6AV6371-1HH07-3FX0	• As download	6AV6371-1HH07-2FX0
WinCC/Web Navigator Upgrade Is included in the corresponding WinCC upgrade from WinCC 6.2 and higher		**WinCC/Web Navigator upgrade**	Included in corresponding WinCC upgrade
• Load Balancing	6AV6371-1DH07-3JX0	**WinCC/Web Load Balancing V7.2**	
• Load Balancing Step Up	6AV6371-1DH07-3FJ0	• WinCC/Web Load Balancing V7.2, license for 2 Web servers, single license, license key download. E-mail address mandatory.	6AV6371-1HH07-2JX0
as download license key download. E-mail address mandatory.		• Powerpack from WinCC Redundancy V7.2 to WinCC/Web Load Balancing V7.2, License for 2 Web servers, single license, license key download. E-mail address mandatory.	6AV6371-1HH07-2FJ0
• Load Balancing	6AV6371-1HH07-3JX0		
• Load Balancing Step Up	6AV6371-1HH07-3FJ0	**WinCC/Web Load Balancing V7.0**	
		• Load Balancing	6AV6371-1DH07-2JX0
		• Load Balancing Step Up	6AV6371-1DH07-2FJ0

■ **Overview**
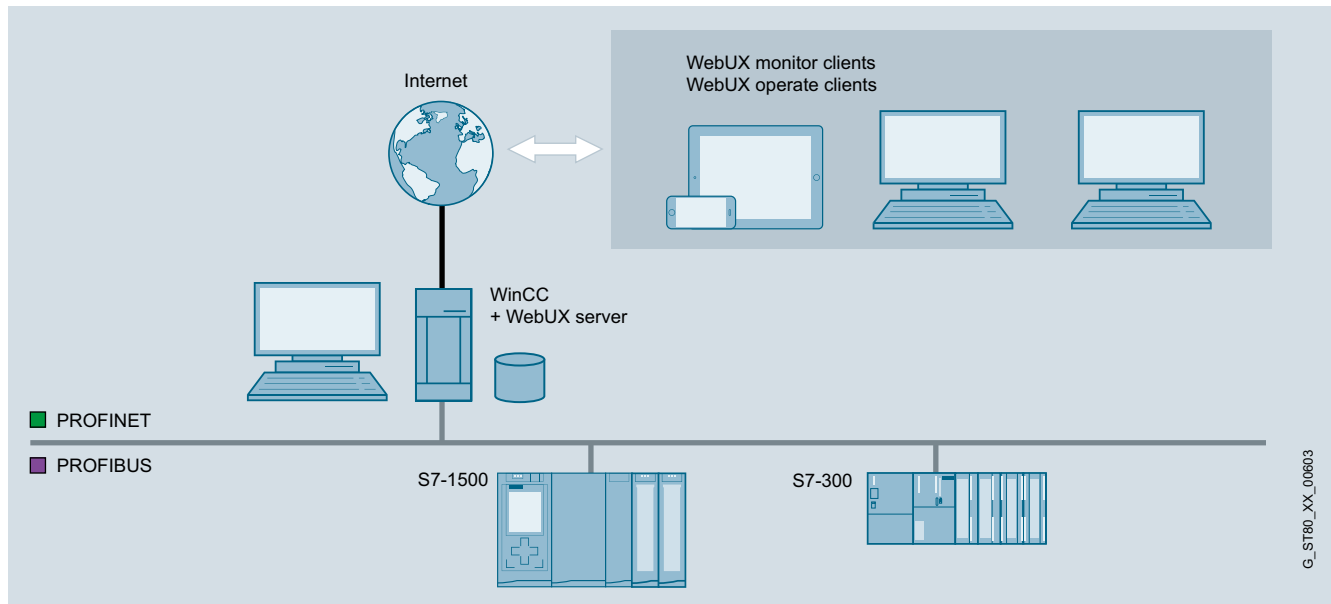
The option WinCC/WebUX permits mobile, *platform and browser-independent* operator control and monitoringvia the Internet or the in-house intranet or LAN.

WinCC/WebUX is delivered with the WinCC Basic system. Following installation, the WinCC basic system operates as WinCC/WebUX server.

The pictures for the WinCC/WebUX are created using the WinCC Graphic Designer. The WinCC picture is stored in the corresponding format in the project through the picture property "Web-capable". Using the service platform IIS (Internet Information Server), the files are provided 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 (only reading) 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 Basic package.

■ **Benefits**

WinCC Engineering

- Fast configuration with WinCC Graphics Designer
- No expensive training 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 und SSL certificates
- No entry costs since the Monitoring client is included in the WinCC basic 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

HMI Software
SCADA system SIMATIC WinCC
SIMATIC WinCC options

WinCC/WebUX

■ **Function**

- Configuration via direct connection
- Language selection be setting the Web language in the User Administrator
- Use of the WinCC Classic design
- The following WinCC objects are supported
- WinCC standard objects except "Connector"
- WinCC Smart objects (picture window, I/O field, graphic object, status display, text list, multi-line text, combo box, list box)
- WinCC Windows objects
- WinCC pipe objects

The WinCC AlarmControl can run as a WinCC Alarm Web control in WebUX, with the following functional scope:

- Message lists: Message list, short-term archive list, and long-term archive list
- Message blocks with a few exceptions
- Standard sorting
- Configuration dialog: some of the properties are available
- Filter settings in the configuration dialog are supported during runtime
- Properties dialog with reduced selection of supported properties

The WinCC OnlineTrendControl can run as a WinCC OnlineTrend Web Control in WebUX, with the following functional scope:

- Data source: Archive tags and online tags
- Multiple trend windows
- Multiple value axes and time axes
- Properties dialog with reduced selection of supported properties

Note:

Browser-dependent display is occasionally possible Minor differences in display and behavior are possible for the different browser versions.

■ **Ordering data**   **Article No.**

WinCC/WebUX 7.3 for WinCC V7.3

Monitor client
- 1 client   **6AV6372-2CH00-0BA0**
- 5 clients   **6AV6372-2CH00-0CA0**
- 10 clients   **6AV6372-2CH00-0DA0**
- 50 clients   **6AV6372-2CH00-0EA0**
- 100 clients   **6AV6372-2CH00-0FA0**

Operate clients
- 1 client   **6AV6372-2CH10-0BA0**
- 5 clients   **6AV6372-2CH10-0CA0**
- 10 clients   **6AV6372-2CH10-0DA0**
- 50 clients   **6AV6372-2CH10-0EA0**
- 100 clients   **6AV6372-2CH10-0FA0**

Note:

One Monitor Client License is included in the WinCC Basic Package. Die licenses are additive, i.e. one 10 Client license and one 5 Client license permit access by 15 clients.
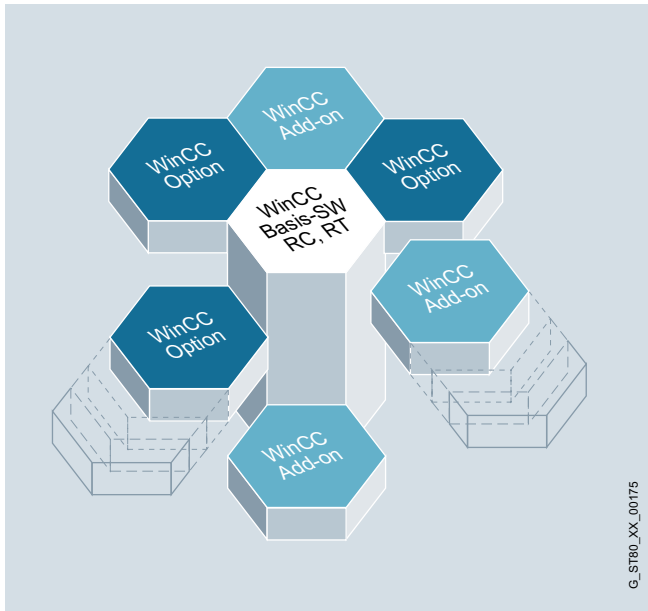
Operate licenses cannot be used as Monitor licenses.

■ Overview

G_ST80_XX_00175

WinCC Premium Add-ons – 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 specifc 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 Further Information) and in the "Online WinCC Premium Add-on Catalog".

Premium Add-ons for Connectivity:

- ***PM OPEN IMPORT system software***
  Importing WinCC / Comfort / Advanced archives into the WinCC / WinCC Professional system.
- ***PM OPEN EXPORT system software***
  for exporting WinCC data to local storage media or storage media released in the network.
- ***PM OPEN TCP/IP system software***
  permits bidirectional exchange of WinCC data (tags, messages) with one or more computers that communicate using the TCP/IP protocol.
- ***Historian CONNECT ALARM system software***
  permits importing of messages and alarms from WinCC and WinCC / Comfort / Advanced into the SIMATIC IT Historian.
- ***TOP Server/TOP Server UCON***
  expands the connection capability for WinCC (TIA Portal), WinCC and WinCC Runtime Advanced / Professional on an OPC basis.
- ***IEC 61850 communication channel***
  makes it possible to operate and monitor IEC 61850-enabled devices with WinCC.
  This means the automation of a production plant can be expanded by the addition of support for IEC 61850 devices for the electrical system.

Premium Add-on for process management:

- ***PM CONTROL system software***
  is a recipe system for user-friendly generation and modifi-cation of recipes.
- ***PM QUALITY system software***
  is an archive system for the administration of job and batch-related production and process data.

Premium Add-on for sector products:

- ***ACRON 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 from the areas of process industry, HVAC, pharmaceuticals and energy.

Premium Add-on for configuration tools:

- ***DCC TranslationEditor***
  for translating multilingual projects with in-built security, convenience and globalization features.

Premium Add-on for diagnostics and maintenance:

- ***Alarm Management***
  for transmitting alarm messages via various communication paths, such as GSM, LAN, e-mail.
- ***PM MAINT system software***
  is a tool for the maintenance of production plants.
- ***PM-ANALYZE***
  used for locating sources of error or weak spots in the plant through the analysis of messages and process values.

4

HMI Software
WinCC add-ons and partner management

Introduction

■ Overview (continued)

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
Emphasis on process management

- Sector-independent solutions and products in the fields: Production, environmental protection, maintenance and diagnostics
- Connectivity tools, system integration, connection to SAP R/3
- Support of FDA validation and WinCC ODK
- Support for advanced users with application of ODK and VBA
- Customer-specific software development for panels, PCs/IPCs and servers
- Advice on web technologies, Web Server/Thin Client, DataMonitor
- Customer-specific workshops, e.g. VBS, VBA and all WinCC options, e.g. Process Historian, Information Server and additional WinCC topics as required by customer

Stuttgart
Emphasis on production technology

- Solutions for maintenance management
- Web-based solutions with WinCC

Nuremberg
Solutions in the Oil & Gas, Metal & Mining, Pulp & Paper sectors

- Network and security
- Microsoft Certified
- Migration from COROS to WinCC
- Customized expansions also for WinCC flexible
- Web solutions
- Customer-specific workshops, e.g. training courses for VBS, VBA, web technologies à Web Server/Thin Client, DataMonitor à Webcenter Reports, Excell Workbook, and all WinCC topics as required by the customer (the latter with lead time)

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

More information is available on the Internet at
http://www.siemens.com/wincc-coc

Siemens Solution Partner Automation

More information is available on the Internet at
http://www.siemens.com/automation/solutionpartner

WinCC Specialists

More information is available on the Internet at
http:/www.siemens.com/wincc-specialists

WinCC Premium Add-on

More information is available on the Internet at
http://www.siemens.com/siplus-extreme

4

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 Open Architecture

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 V3.13*
  Runs under:
  - Windows 8.1 Enterprise (64-bit)
  - Windows 7 Ultimate/Enterprise/Professional SP1 (64-bit)
  - Windows Server 2012 (64-bit)
  - Windows Server 2008 R2 (64-bit)
  - Red Hat Enterprise Linux 7 (64-bit)
  - OpenSUSE 13.1 (64-bit)
  - Oracle Solaris 11 x 86 (on request)
  - VMWare ESXi Version 5.5 and ESXi 5.5, Update 1

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 and Solaris
- 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
  - SIL3 certification according to IEC 61508
- Platform for customized solutions
  - Quick and easy implementation of new processes
  - 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), SSI driver, IEC 60870-5-101, -104, DNP3, SINAUT, IEC 61850, RK512, TLS, Teleperm M, API, Cerberus
- 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

4

HMI Software
SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture

■ **Benefits** (continued)

- Expandable by means of add-ons and solution frameworks:
  - Add-on for integration of video management systems (VIDEO)
  - Add-on for increasing the availability (DRS, etc.)
  - Add-on for clarity in distributed systems (GIS Viewer, etc.)
  - Add-on for efficient maintenance management (AMS, Scheduler, etc.)
  - Add-on for mobile operability (Web Client, Ultralight Client, etc.)
  - Add-on for efficient building automation technology (BacNet, etc.)
- Mobile App SIMATIC WinCC OA Operator

■ **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), 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.
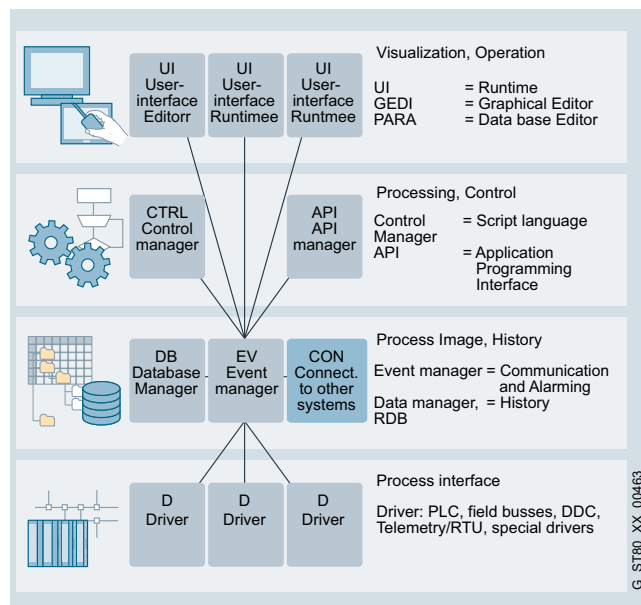
■ **Function**

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. 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.

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■ **Function** (continued)

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. 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). 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.

A WinCC OA System consists of function-specific units, the managers

For special tasks such as redundancy, management for distributed systems, web server, reporting, simulation, COM etc., further managers are available.

The powerful configuration functions contribute to a reduction of engineering and training overheads and lead to increased flexibility and operational reliability.

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HMI Software
SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture

■ **Function** (continued)

Special functions	Task
Access to external databases	The database interfaces offer the possibility of access to external databases. 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. 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 means a program that communicates with the system by 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. 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, 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.

Special functions	Task
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.
SMS	Allows the sending and receiving of text messages with WinCC OA.
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.
Distributed systems (see the diagram below)	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-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)
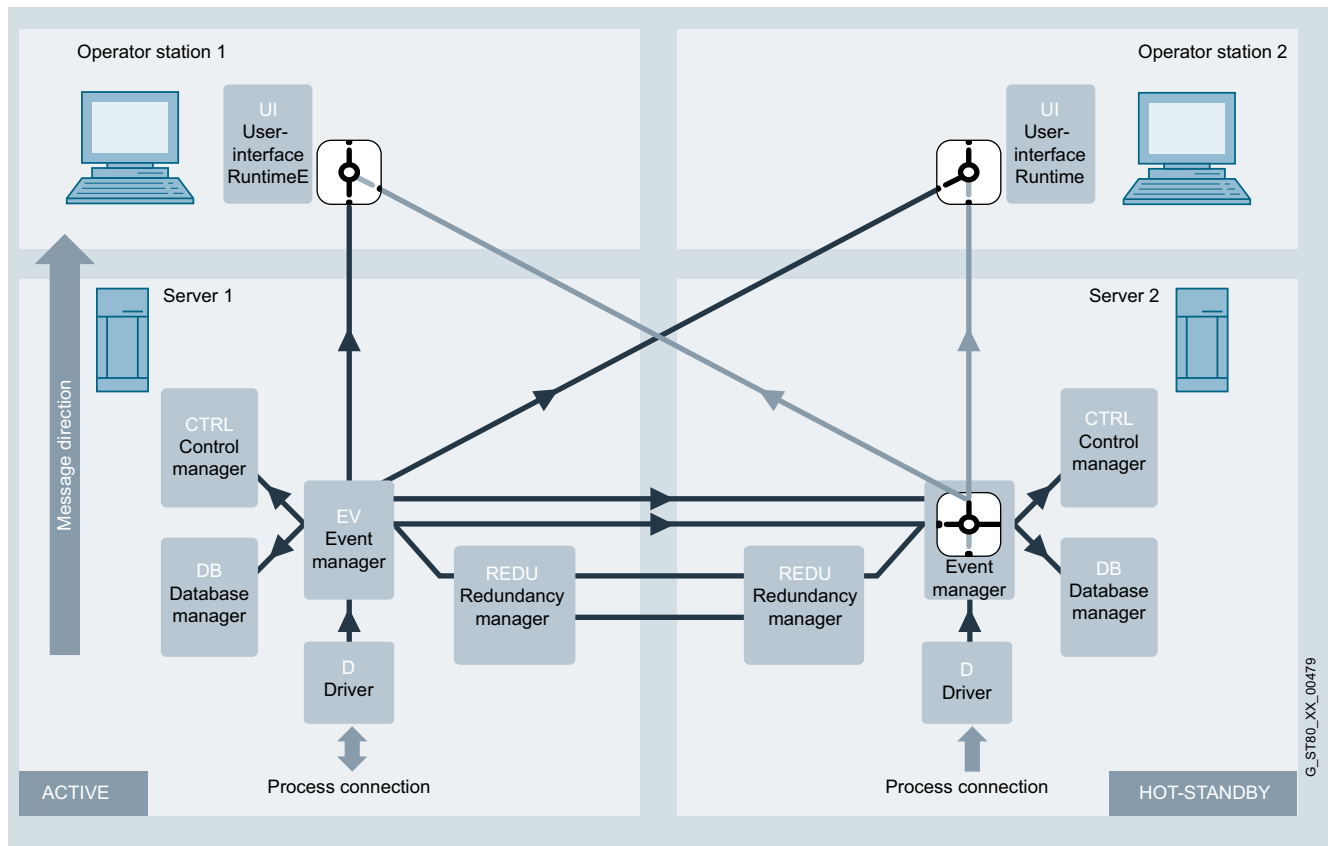
The diagram shows a detailed representation of the two computers Server 1 and Server 2. Server 1 is in the management mode (active) and Server 2 is in hot standby mode (passive).

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).

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SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture

■ **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 physics used, specific drivers are used in each case:

- Serial protocols: RK512, 3964R, etc.
- Ethernet: Industrial Ethernet (S7), Modbus TCP (OpenModbus), Ethernet IP (AB), etc.
- Telecontrol systems: SINAUT, SSI (Ethernet), IEC 61850, IEC 60870-5-101, IEC 60870-5-104, ...
- 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.

Coupling overview

Protocol	Description
SIMATIC S7	via TCP/IP and MPI
OPC Client (Data Access)	• Compatibility with specifications DA 1.0 and 2.05a • Connection to inproc, local or remote server • Connection with up to 20 servers at the same time • Monitoring of the connection to the server and automatic reconnection if the connection is interrupted • Address browsing if supported by the server. • 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). • Is to be started as a manager just like other drivers. • The provided DPEs (server -> client) can be easily and quickly defined via data point groups. • DPEs can be declared as readable (read-only access is permitted; Group OPCRead) or as writable items (Group OPCWrite). • 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 UA (Unified Architecture)	• The OPC UA client supports the OPC UA standards Data Access and Alarms & Conditions. • The OPC UA Server supports the OPC UA standards Data Access and Alarms & Conditions.
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.

Protocol	Description
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.
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 a fire, gas or intruder alarm.
SSI	Is used for the interfacing of SAT remote control 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. • IEC 60870-5-104 for data exchange via TCP/IP • IEC 60870-5-101 for serial connection
IEC 61850/61400	IEC 61850 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.
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. • SNMP Manager supports SNMP V1, V2, and V3 • 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. The BACnet Standard 2004 is supported in accordance with the PIC list (see product documentation)

Further drivers on request or via C++ API

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■ Technical specifications

Type	SIMATIC WinCC Open Architecture V3.13
Operating system	• Windows 8.1 Enterprise (64-bit)
	• Windows 7 Ultimate/Enterprise/Professional with SP1 (64-bit)
	• Windows Server 2012 R2 (64-bit)
	• Windows Server 2008 R2 (64-bit)
	• Red Hat Enterprise Linux 7.1 (64-bit)
	• openSUSE 31.1 (64-bit)
	• Sun Solaris 11 x 86 (on request)
	• VMWare ESXi Version 5.5 & 5.5 Update 1
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]
	• Server: Intel Core i3 CPU Dual, 3 GHz[2]
	• Server large system[4]: Intel(R) Core(TM) i5/i7 CPU Dual / Quad, 3 GHz[2][3]
RAM	
Minimum	2 GB [2]
Recommended	• Client: 2 GB [2][3]
	• Server: 8 GB [2][3]
	• 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	for software installation
Local power user rights	• for installation
	• for operation

Type	SIMATIC WinCC Open Architecture
Functionality/quantity structure	
Number of messages	150,000 [6]
Message text (number of characters)	System-limited [5]
Message archive	System-limited [5]
Process values per message	1 process value + up to 32 alarm associated values per message
Constant load of messages, max.	500/s [6]
Message burst, max.	15,000/10 s every 5 min [6]
Archives	
Archive data points	Max. 250,000 per server [6]
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 [6] [7]
User archive	
Archives	system-limited [5]
Type	SIMATIC WinCC Open Architecture
Table size	System-limited by ORACLE database
Graphics system	
Number of screens	System-limited [5]
Number of objects per screen	System-limited [5]
Number of controllable fields per screen	system-limited [5]
PowerTags	< 750,000 per server [6]
User administration	
User accounts	< 4096
Configuration languages	2 (De, En)
Runtime languages	40 (of which 8 Asian)
Multi-user system	
Server	< 2048 [6] [8]
Number of clients	< 244 per server [6] [9]

[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 3.11 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.

[5] Dependent on the available storage space

[6] 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)

[7] 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

[8] Physical limit: <2048, in practice systems have already been implemented with up to 550 distributed systems

[9] Physical limit: < 244 clients per server, recommended: max. 100 clients per server

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Ordering data	Article No.		Article No.
SIMATIC WinCC Open Architecture System Software V3.13		**SIMATIC WinCC Open Architecture System Software V3.13**	
WinCC OA core components WinCC OA Server Language/script versions: De, En; with license for:		**WinCC OA dongle V3.13** Hardware dongle on the 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.	6AV6351-1AH31-3AA0
WinCC OA single-user station 500 I/O V3.13 License for single-user station with up to 500 I/Os of any type (bit, integer), alerting, extended trend, historical recording, not expandable to more than one operator station, not expandable by means of add-ons, including S7 driver, OPC client, OPC server, and OPC UA client.	6AV6351-1HA31-3AA0	**WinCC OA on data medium** WinCC OA Software DVD – current version on disk	6AV6351-1AX31-3AA0
WinCC OA Server I/O V3.13 License for server (without operator station licenses), alerting, extended trend, historical recording, including S7 driver, OPC client, OPC server, and OPC UA client.		**WinCC OA for Nanobox 128 I/O** Runtime License for SIMATIC Nanobox with max. 128 I/O, including 1 user interface, distributed systems option, S7 driver, SSL encryption, OPC client, OPC server, OPC UA client and HTTP server. Further options and drivers are available. The use of this license is exclusively restricted to the approved Nanoboxes. (Hardware restrictions can be found in the online help.)	6AV6351-1KA31-3AA0
• **WinCC OA Server 1,000 I/O2 V3.13** With a max. of 1,000 I/Os of any type	6AV6351-1HB31-3AA0		
• **WinCC OA Server 3,000 I/O V3.13** With a max. of 3,000 I/Os of any type	6AV6351-1HC31-3AA0		
• **WinCC OA Server 5,000 I/O V3.13** With a max. of 5,000 I/Os of any type	6AV6351-1HD31-3AA0	**WinCC OA for Nanobox 512 I/O** Runtime License for SIMATIC Nanobox with max. 512 I/Os, including 1 user interface, distributed systems option, S7 driver, SSL encryption, OPC client, OPC server, OPC UA client and HTTP server. Further options and drivers are available. The use of this license is exclusively restricted to the approved Nanoboxes. (Hardware restrictions can be found in the online help.)	6AV6351-1KB31-3AA0
• **WinCC OA Server 10,000 I/O V3.13** With a max. of 10,000 I/Os of any type	6AV6351-1HE31-3AA0		
• **WinCC OA Server 15,000 I/O V3.13** With a max. of 15,000 I/Os of any type	6AV6351-1HF31-3AA0		
• **WinCC OA Server 25,000 I/O V3.13** With a max. of 25,000 I/Os of any type	6AV6351-1HG31-3AA0		
• **WinCC OA Server 50,000 I/O V3.13** With a max. of 50,000 I/Os of any type	6AV6351-1HH31-3AA0	**WinCC OA for Nanobox 2048 I/O** Runtime license for SIMATIC Nanobox with max. 2 048 I/Os, including 1 user interface, distributed systems option, S7 driver, SSL encryption, OPC client, OPC server, OPC UA client and HTTP server. Further options and drivers are available. The use of this license is exclusively restricted to the approved Nanoboxes. (Hardware restrictions can be found in the online help.)	6AV6351-1KC31-3AA0
• **WinCC OA Server 75,000 I/O V3.13** With a max. of 75,000 I/Os of any type	6AV6351-1HJ31-3AA0		
• **WinCC OA Server 100,000 I/O V3.13** With a max. of 100,000 I/Os of any type	6AV6351-1HK31-3AA0		
• **WinCC OA Server 150,000 I/O V3.13** With a max. of 150,000 I/Os of any type	6AV6351-1HL31-3AA0		
• **WinCC OA Server 200,000 I/O V3.13** With a max. of 200,000 I/Os of any type	6AV6351-1HM31-3AA0	**WinCC OA for Nanobox 3072 I/O** Runtime License for SIMATIC Nanobox with max. 3 072 I/O, including 1 user interface, distributed systems option, S7 driver, SSL encryption, OPC client, OPC server, OPC UA client and HTTP server. Further options and drivers are available. The use of this license is exclusively restricted to the approved Nanoboxes. (Hardware restrictions can be found in the online help)	6AV6351-1KD31-3AA0
• **WinCC OA Server 250,000 I/O V3.13** With a max. of 250,000 I/Os of any type	6AV6351-1HN31-3AA0		
WinCC OA Server unlimited V3.13 License for server and one single-user station (expandable to several operator stations by means of clients) with unlimited number of I/O, alerting, extended trend, historical recording, including S7 driver, OPC client, OPC server, and OPC UA client.	6AV6351-1HP31-3AA0		

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■ Ordering data

	Article No.
SIMATIC WinCC Open Architecture System Software V3.13	
WinCC OA Client floating	
Language/script versions: De, En; with license for:	
WinCC OA Client V3.13	6AV6351-1CP31-3AA0
Additional operator station license with all server operator station functionalities. The client license can be installed on more than one PC – only the number of simultaneously active clients is counted.	
WinCC OA Web User Interface	
Language versions: De, En; with license for:	
WinCC OA Web client V3.13	6AV6351-1DP31-3AA0
Web client license for WinCC OA Server. Only the number of simultaneously active web clients is counted.	
WinCC OA Ultralight Client	
WinCC OA Ultralight PC Client	
The Ultralight Client enables an operator terminal to be executed in a web browser without installation of a plug-in. The Ultralight Client can be executed on PCs, internet-capable cell phones and tablets. The functionality is restricted compared to a standard operator station. Please note restrictions of the ultralight client according to the online help.	
• WinCC OA 1 Ultralight PC Client License for one ultralight client	6AV6351-1JA31-3AA0
• WinCC OA 3 Ultralight PC Clients License for 3 ultralight clients	6AV6351-1JB31-3AA0
• WinCC OA 10 Ultralight PC Clients License for 10 ultralight clients	6AV6351-1JC31-3AA0
WinCC OA Ultralight Tablet Client	
Licenses for one or several ultralight clients running on a smartphone or tablet PC. Only the number of simultaneously active ultralight clients is counted. Supports a subset of the standard client-functionality. Please note restrictions of the ultralight client according to the online help.	
• WinCC OA 1 Ultralight Mobile Client License for one ultralight client	6AV6351-1JG31-3AA0
• WinCC OA 3 Ultralight Mobile Clients License for 3 ultralight clients	6AV6351-1JH31-3AA0
• WinCC OA 10 Ultralight Mobile Clients License for 10 ultralight clients	6AV6351-1JJ31-3AA0

	Article No.
SIMATIC WinCC Open Architecture System Software V3.13	
License for mobile App WinCC OA Operator	
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. The configuration is carried out in an intuitive wizard. Each device must be assigned its own, fixed license.	
• WinCC OA OPERATOR 1 Device License for 1 device	6AV6352-1DK31-3AA0
• WinCC OA OPERATOR 3 Devices License for 3 devices	6AV6352-1DL31-3AA0
• WinCC OA OPERATOR 10 Devices License for 10 devices	6AV6352-1DM31-3AA0
• WinCC OA OPERATOR 25 Devices License for 25 devices	6AV6352-1DN31-3AA0
• WinCC OA OPERATOR 50 Devices License for 50 devices	6AV6352-1DP31-3AA0
WinCC OA parameter assignment and development license	
WinCC OA Para for single-user station V3.13	6AV6351-1EA31-3AA0
Parameterization and development license for single-user station, graphic editor with symbol catalog and ActiveX Controls, user-friendly script development language, alerting, extended trend, historical recording. Requires a corresponding single-user station license.	
WinCC OA Para V3.13	6AV6351-1EP31-3AA0
Client, parameterization and development license for server, graphic editor with symbol catalog and ActiveX Controls, user-friendly script development language, alerting, extended trend, historical recording. Requires corresponding server license.	
WinCC OA API interface gen. V3.13	6AV6351-1EK31-3AA0
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.	

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Ordering data	Article No.		Article No.
SIMATIC WinCC Open Architecture System Software V3.13		**SIMATIC WinCC Open Architecture V3.13 communication**	
WinCC OA Custom Driver V3.13 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.	6AV6351-1EL31-3AA0	**WinCC OA TLS driver** Driver in accordance with TLS regulations via TCP/IP, serial in conjunction with Siemens Commbox (see separate data sheet).	6AV6352-1BA31-3AA0
WinCC OA Custom Manager V3.13 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	6AV6351-1EM31-3AA0	**WinCC OA Teleperm M** Driver for Teleperm M Bus C275 (requires an Ako-Tec Bridge)	6AV6352-1BB31-3AA0
WinCC OA redundancy		**WinCC OA S7 TCP/IP driver** TCP/IP for Siemens Industrial Ethernet	6AV6352-1BC31-3AA0
WinCC OA Redundancy V3.13 Extends a WinCC OA Server with the option of bumpless switchover to a hot standby server. In the case of redundant servers, two server licenses and two WinCC OA redundancy options are required for each server pair.	6AV6351-1FP31-3AA0	**WinCC OA Modbus TCP/IP driver** TCP/IP for Schneider Modbus	6AV6352-1BD31-3AA0
		WinCC OA Ethernet/IP Driver for Allen Bradley - Rockwell EtherNet/IP	6AV6352-1CK31-3AA0
WinCC OA distributed systems		**WinCC OA SAIA S-Bus** Driver for SAIA controllers	6AV6352-1BW31-3AA0
WinCC OA distributed systems V3.13 Extends a WinCC OA Server to include the Multiserver option.	6AV6351-1GP31-3AA0	**WinCC OA SSI driver** Driver for SAT telecontrol components	6AV6352-1BF31-3AA0
WinCC OA Disaster Recovery System		**WinCC OA SNMP** Driver SNMP – network monitoring (V2&V3)	6AV6352-1BG31-3AA0
WinCC OA Disaster Recovery Center V3.13 Allows configuration of a remote backup control center. A disaster recovery center comprises two distributed systems. Each system can be redundant or non-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.	6AV6352-1AA31-3AA0	**WinCC OA BACnet Driver + Diagnostics** Driver for BACnet devices	6AV6352-1DA31-3AA0
		WinCC OA BACnet Engineering 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).	6AV6352-1DB31-3AA0

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Ordering data

	Article No.		Article No.
SIMATIC WinCC Open Architecture V3.13 communication		**SIMATIC WinCC Open Architecture V3.13 communication**	
WinCC OA IEC 104 Driver IEC 60870-5-104	6AV6352-1BH31-3AA0	**WinCC OA RK512** Driver for connection via 3964R / RK512 protocol	6AV6352-1CA31-3AA0
WinCC OA IEC 101 Driver IEC 60870-5-101	6AV6352-1BJ31-3AA0	**WinCC OA PROFIBUS DP** Driver PROFIBUS DP, an Applicom card is required	6AV6352-1CB31-3AA0
WinCC OA IEC 61850/61400 IEC 61850/61400 driver	6AV6352-1BV31-3AA0	**WinCC OA PROFIBUS S7** Driver PROFIBUS S7 + MPI, an Applicom card is required	6AV6352-1CC31-3AA0
WinCC OA DNP3 10 devices Driver DNP3 for connecting up to 10 DNP3 devices	6AV6352-1BK31-3AA0	**WinCC OA Omron FINS TCP-IP** Driver Omron FINSTCP-IP, an Applicom card is required	6AV6352-1CE31-3AA0
WinCC OA DNP3 25 devices Driver DNP3 for connecting up to 25 DNP3 devices	6AV6352-1BL31-3AA0	**WinCC OA GE Fanuc SRTP** Driver GE Fanuc SRTP, an Applicom card is required	6AV6352-1CF31-3AA0
WinCC OA DNP3 50 devices Driver DNP3 for connecting up to 50 DNP3 devices	6AV6352-1BM31-3AA0	**WinCC OA Cerberus** 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).	6AV6352-1CH31-3AA0
WinCC OA DNP3 250 devices Driver DNP3 for connecting up to 250 DNP3 devices	6AV6352-1BN31-3AA0		
WinCC OA DNP3 unlimited Driver DNP3 – unlimited license	6AV6352-1BP31-3AA0	**WinCC OA OPC HDA server** 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))	6AV6352-1CL31-3AA0
WinCC OA SINAUT 10 devices SINAUT driver for connecting up to 10 controllers	6AV6352-1BQ31-3AA0		
WinCC OA SINAUT 25 devices SINAUT driver for connecting up to 25 controllers	6AV6352-1BR31-3AA0	**WinCC OA OPC UA Server** Driver for OPC UA DA and OPC UA AC Server	6AV6352-1CJ31-3AA0
WinCC OA SINAUT 50 devices SINAUT driver for connecting up to 50 controllers	6AV6352-1BS31-3AA0		
WinCC OA SINAUT 250 devices SINAUT driver for connecting up to 250 controllers	6AV6352-1BT31-3AA0		
WinCC OA SINAUT unlimited SINAUT driver – unlimited license	6AV6352-1BU31-3AA0		

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More information

Further information can be found in the Internet at:

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

HMI Software
SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture 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 2048 autonomous SIMATIC WinCC Open Architecture systems via one 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 V3.13 Executable under:
  - Windows 8.1 Enterprise (64-bit)
  - Windows 7 Ultimate/Enterprise/Professional SP1 (64-bit)
  - Windows Server 2012 R2 (64-bit)
  - Windows Server 2008 R2 (64-bit)
  - Red Hat Enterprise Linux 7.1 (64-bit)
  - OpenSUSE 13.1 (64-bit)
  - Oracle Solaris 11 x 86 (on request)
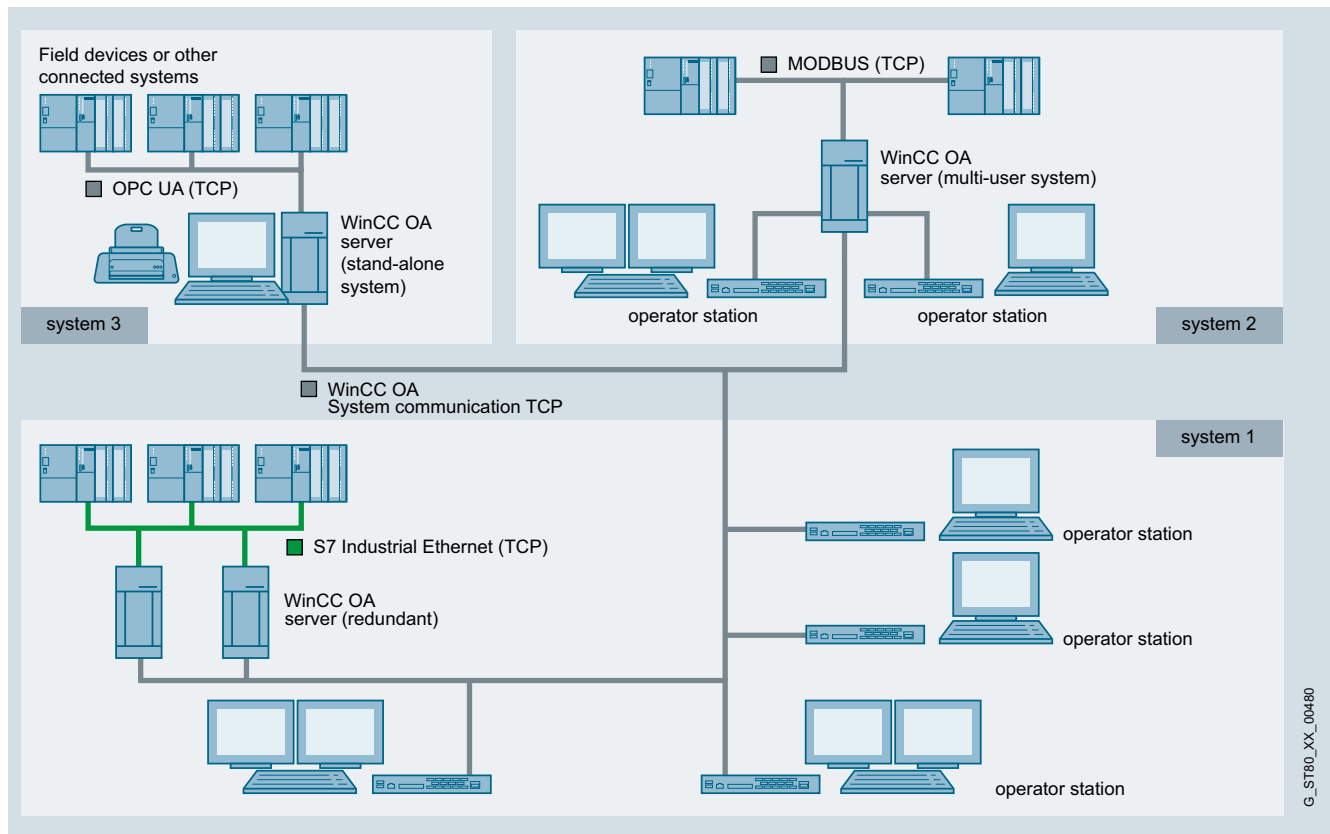 - VMWare ESXi Version 5.5 & 5.5 Update 1

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.

Distributed systems with WinCC OA

■ **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 with a standardized SOAP (Simple Object Access Protocol) reporting interface has been implemented. This means that reporting tools from third parties can be used without any additional overhead. The BIRT templates provided along with the predefined reporting data simply reporting even further.
	• Web-enabled reporting interface (SOAP):
	  - ECLIPSE BIRT (large number of reporting templates for ECLIPSE BIRT also supplied)
	  - Crystal Reports
	  - SIMATIC Information Server
	  - Microsoft Excel
	• Online values, history
	• Support for compressed data, SQL, interrupts
	• Diagnostic tools
	• 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. The Excel Report fully supports compression structures (AC - archive compression) of WinCC OA.

Add-ons	Task
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.
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.
AMS (Advanced Maintenance Suite)	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.
Web client	From a technical standpoint, the WinCC OA Web Client is a plug-in that is downloaded via the web browser (which is used on the client computer) and a WinCC OA UI Manager is then displayed embedded in the HTML page. No WinCC OA installation on the client computer is required, except for the required web client plug-ins.
Ultralight Client	A "thin client" that supports access to the plant via a mobile device (such as a mobile telephone or tablet) in addition to a PC workstation. Access is possible via a standard Web browser using native Web technologies (Javascript, SVG) without the need for any additional installations. It provides a user interface even at those locations with Internet connections offering very low bandwidth, as only the most essential data is transferred.
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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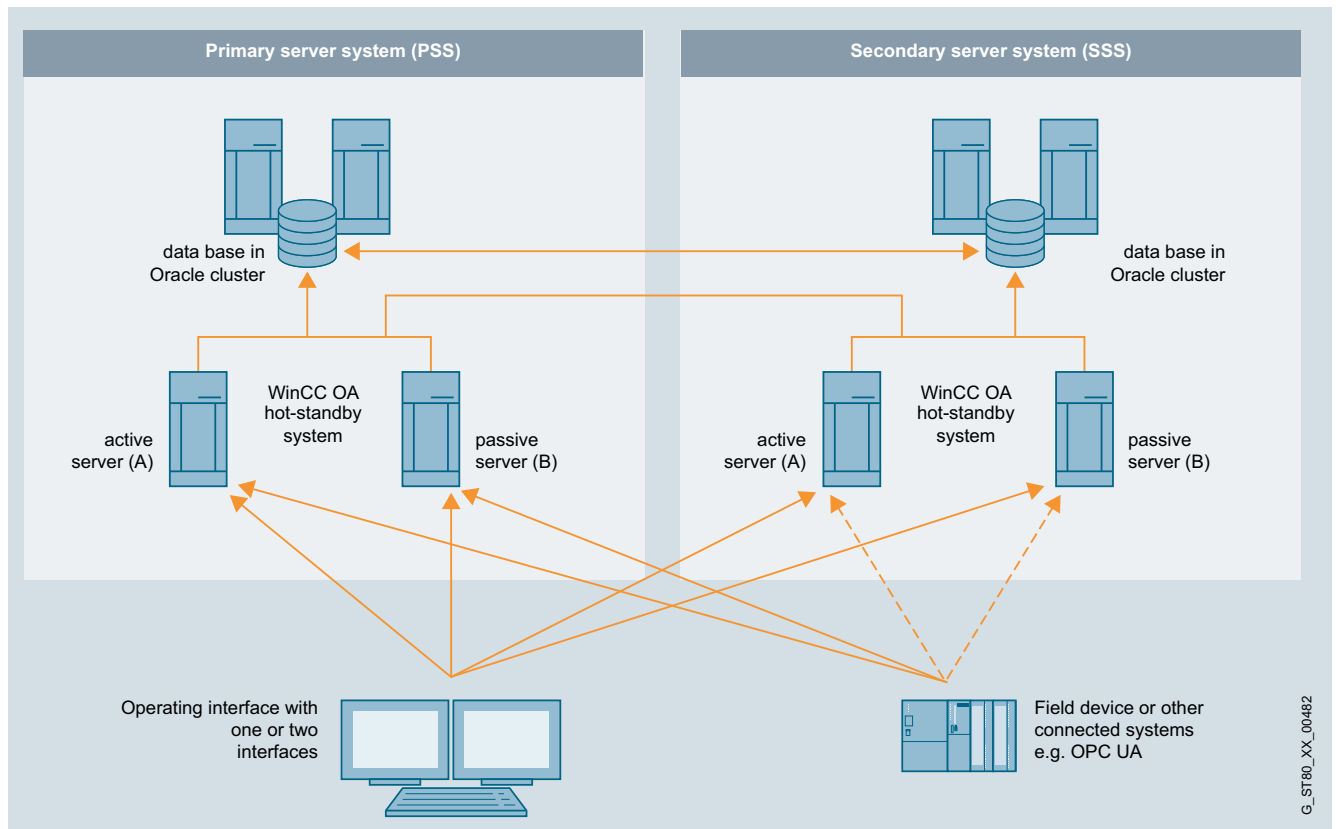# HMI Software
SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture Add-ons

■ **Function** (continued)
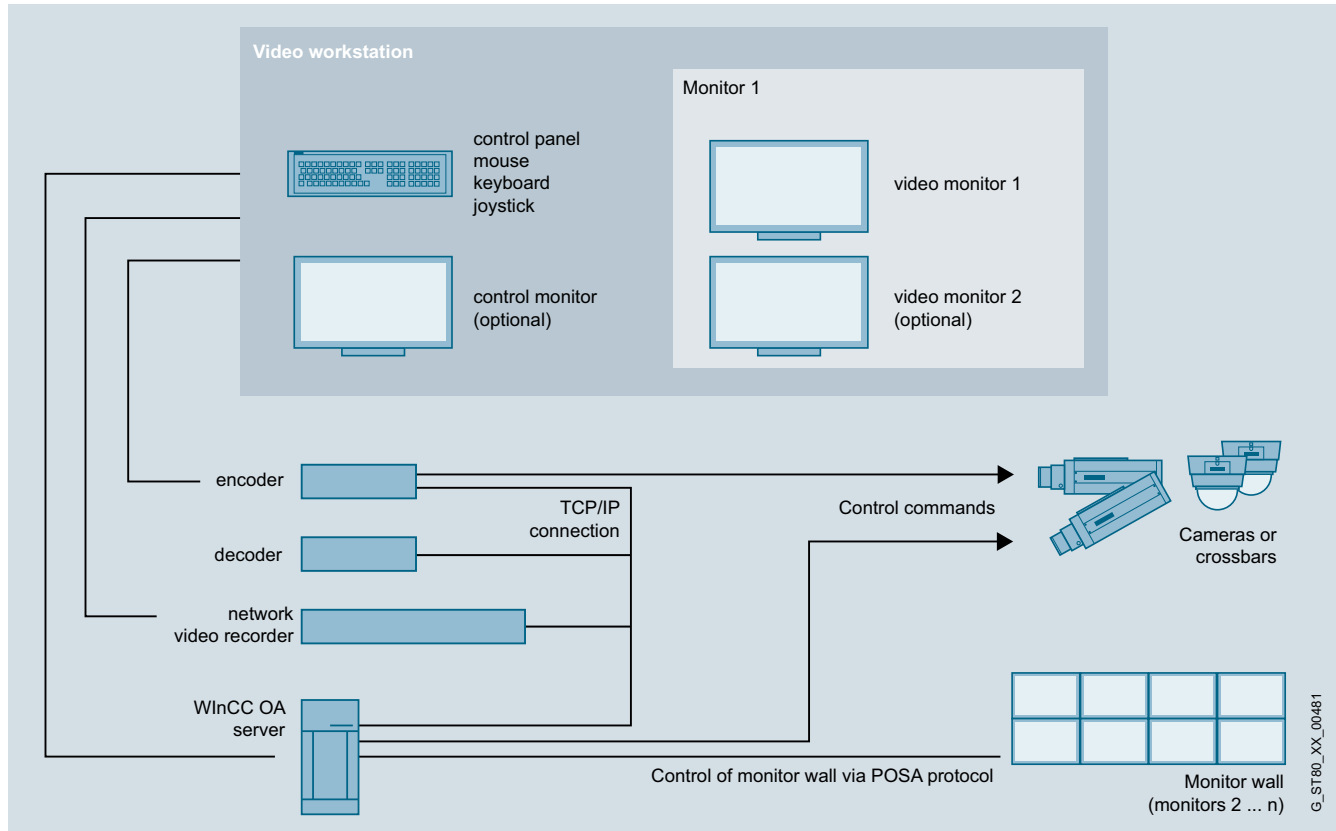
Network topology Video

Disaster Recovery System architecture with WinCC OA

■ Ordering data

	Article No.		Article No.
SIMATIC WinCC Open Architecture add-ons		**SIMATIC WinCC Open Architecture add-ons**	
WinCC OA BACnet driver + diagnostics 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).	6AV6352-1DA31-3AA0	**WinCC OA DB Logger** The WinCC OA DB Logger permits freely configured data records from WinCC OA to be written to an external relational database, such as MsSQL. For archiving large volumes of data and/or for a high data throughput, we recommend the use of RDB or ValArchs.	6AV6352-1DJ31-3AA0
		Solution Frameworks	
WinCC OA BACnet Engineering 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).	6AV6352-1DB31-3AA0	**WinCC OA PMS** Application framework for the implementation of production management systems. The framework offers functions for recording and evaluating production and batch-related quality data. This item is not available as a product but only in combination with consulting and additional testing overhead.	6AV6352-1EA31-3AA0
WinCC OA GIS GIS viewer for displaying ESRI Shapes Files. One license is required for each UI. Can be used in WinCC OA Client and Web Client. Maps are not included. Dynamization performed using Ctrl scripting.	6AV6352-1DC31-3AA0	**WinCC OA topology package** The topology package is an application framework enabling the topological coloring of network views. A qualitative statement is made regarding which parts of a network are directly connected to which infeed units in a connection established by switching elements. Only available in combination with consulting and additional testing overhead.	6AV6352-1EB31-3AA0
WinCC OA S7 AdvancedLib 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.	6AV6352-1DD31-3AA0	**WinCC OA ACAS** 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. This item is not available as a sole product, only in combination with consulting and additional testing overhead.	6AV6352-1EC31-3AA0
WinCC OA Maintenance Maintenance management for recording operating hours, switching cycles, alarm handling and notepad function. License required for each server.	6AV6352-1DE31-3AA0		
WinCC OA Scheduler 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.	6AV6352-1DF31-3AA0	**WinCC OA APM** 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. 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.	6AV6352-1ED31-3AA0
WinCC OA Recipe 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.	6AV6352-1DG31-3AA0		
WinCC OA RDB RDB Oracle connection for WinCC OA Server S-UL. Oracle licenses are not included. License required for each server.	6AV6352-1DH31-3AA0		

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HMI Software
SCADA System SIMATIC WinCC Open Architecture

SIMATIC WinCC Open Architecture Add-ons

■ **Ordering data** | Article No. | | Article No.

SIMATIC WinCC Open Architecture add-ons

Reporting

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 3.13 the existing Excel Report is still supported and is automatically supplied along with the WinCC OA Reporting Option.) Licenses for third-party tools are not supplied.

	Article No.
WinCC OA Reporting 1 client Extends a WinCC OA Server to include a reporting interface for an active connection (client).	6AV6352-1FE31-3AA0
WinCC OA Reporting 2 clients Extends a WinCC OA Server to include two reporting interfaces for two active connections (clients).	6AV6352-1FF31-3AA0
WinCC OA Reporting 5 clients Extends a WinCC OA Server to include five reporting interfaces for five active connections (clients).	6AV6352-1FG31-3AA0
WinCC OA Reporting 10 clients Extends a WinCC OA Server to include 10 reporting interfaces for 10 active connections (clients).	6AV6352-1FH31-3AA0

Communication Center

	Article No.
WinCC OA CommCenter 1 Basic package for 25 alarms. Output as text message or e-mail is possible. Price per WinCC OA Server.	6AV6352-1GA31-3AA0
WinCC OA CommCenter 2 Basic package for 250 alarms. Output as text message or e-mail is possible. Price per WinCC OA Server.	6AV6352-1GB31-3AA0
WinCC OA CommCenter 3 Basic package for 2 500 alarms. Output as text message or e-mail is possible. Price per WinCC OA Server.	6AV6352-1GC31-3AA0
WinCC OA CommCenter 4 Basic package for unlimited alarms. Output as text message or e-mail is possible. Price per WinCC OA Server.	6AV6352-1GD31-3AA0

SIMATIC WinCC Open Architecture add-ons

Video management

Permits the display of video streams in the client UI and Web client, 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 require no additional I/Os. Two licenses are required for one redundant server pair.

	Article No.
WinCC OA Video Light Permits connection of 16 video inputs (cameras) and simultaneous display of 4 video outputs (streams). This package cannot be expanded.	6AV6352-1JA31-3AA0
WinCC OA Video Basic Permits connection of 32 video inputs (cameras) and simultaneous display of 8 video outputs (streams). An expansion with additional video inputs and outputs is possible, as well as video recording and video export functions.	6AV6352-1JB31-3AA0
WinCC OA Video Inputs WinCC OA Video Inputs expand the WinCC OA Video Package Basic by 8 additional video inputs (cameras)	6AV6 352-1JD31-3AA0
WinCC OA Video Output WinCC OA Video Outputs expand the WinCC OA Video Package Basic by 1 additional video output (stream)	6AV6 352-1JE31-3AA0
WinCC OA Video Recording WinCC OA Video Recording expands a WinCC OA Video Basic Package by 8 streams that can be recorded on hard disk.	6AV6352-1JF31-3AA0
WinCC OA Video Export WinCC OA Video Export expands a WinCC OA Video Basic Package with one Video Export operator station.	6AV6352-1JG31-3AA0

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Ordering data

	Article No.
SIMATIC WinCC Open Architecture add-ons	
HTTP Server	
The HTTP server contains only the license for the HTTP server. HTTP clients represent interrupts, events and other WinCC OA information on HTML pages. The pages can be created in corresponding external tools. Simple example pages are also supplied.	
WinCC OA HTTP Server	6AV6352-1KA31-3AA0
Forwarding of alarms, events and WinCC OA information to the Internet in HTML format including 1 HTTP connection.	
WinCC OA HTTP Server Extension5	6AV6352-1KB31-3AA0
Extends the WinCC OA HTTP server by 5 HTTP connections.	
WinCC OA HTTP Server Extension10	6AV6352-1KC31-3AA0
Extends the WinCC OA HTTP server by 10 HTTP connections.	
WinCC OA HTTP Server Extension25	6AV6352-1KD31-3AA0
Extends the WinCC OA HTTP server by 25 HTTP connections.	
Kerberos	
WinCC OA Secure	6AV6352-1LA31-3AA0
Extends a WinCC OA Server to include protection by Kerberos. Each WinCC OA Server requires a separate WinCC OA Secure license.	
AMS (Advanced Maintenance Suite)	
AMS Starter Package 20A/E	6AV6352-1MA31-3AA0
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)]	
AMS Entry 20 A/E	6AV6352-1MB31-3AA0
The license includes the AMS application as well as up to 20 A/E = 20 checklists assigned to alarm/event DP. [1)2)3)]	
AMS Small 100 A/E	6AV6352-1MC31-3AA0
The license includes the AMS application as well as up to 100 A/E = 100 checklists assigned to alarm/event DP. [1)2)3)]	
AMS Medium 1,000 A/E	6AV6352-1MD31-3AA0
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)]	
AMS Large 5,000 A/E	6AV6352-1ME31-3AA0
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)]	

	Article No.
SIMATIC WinCC Open Architecture add-ons	
AMS Upgrade Large	6AV6352-1MF31-3AA0
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.	
AMS UL A/E	6AV6352-1MG31-3AA0
The license includes the AMS application as well as an unlimited number of alarm/event DP checklist assignments. [1)2)3)]	
AMS Client 2 UI	6AV6352-1MH31-3AA0
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.	
AMS Client 5 UI	6AV6352-1MJ31-3AA0
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.	
AMS Client 10 UI	6AV6352-1MK31-3AA0
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.	

[1)] The basic price also includes the AMS Reports packages.

[2)] AMS importer as well as 1 day of consulting for initial design 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 (not incl. travel costs). This license does not include any support and cannot be expanded or extended.

More information

Additional information is available on the Internet at:

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

HMI Software
SIMATIC ProAgent process diagnostics software

SIMATIC ProAgent

Overview

- Process error diagnosis software for quick and precise diagnosis 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
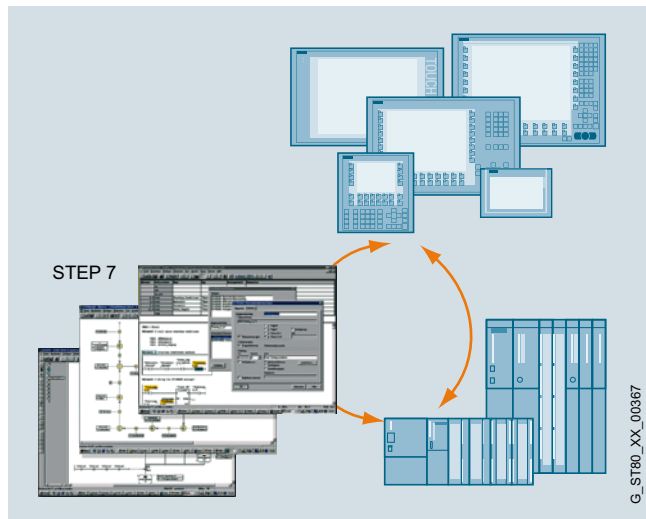
Process error diagnostics with ProAgent for WinCC flexible/ProAgent and with the STEP 7 engineering tools
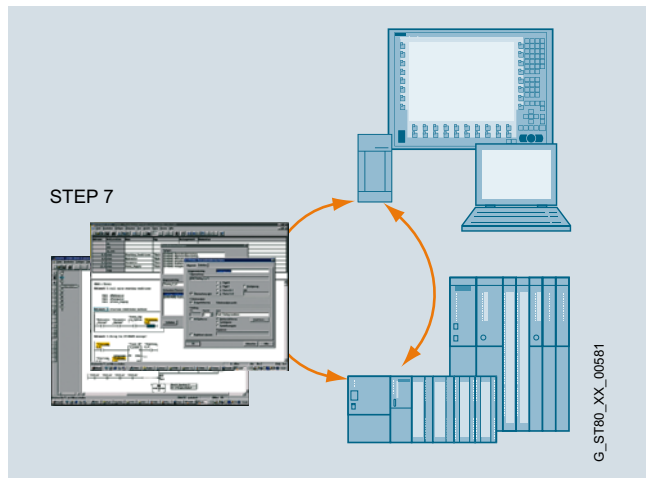
WinCC/ProAgent – Process error diagnostics

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 diagnosis 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.

■ **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/FD 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]

[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.
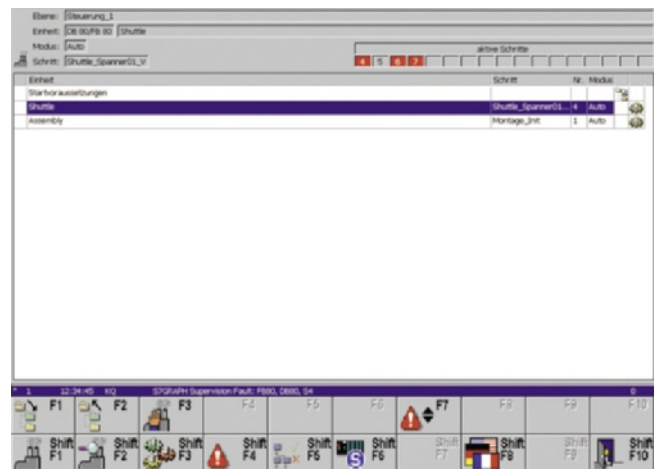
Unit overview

The units 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.
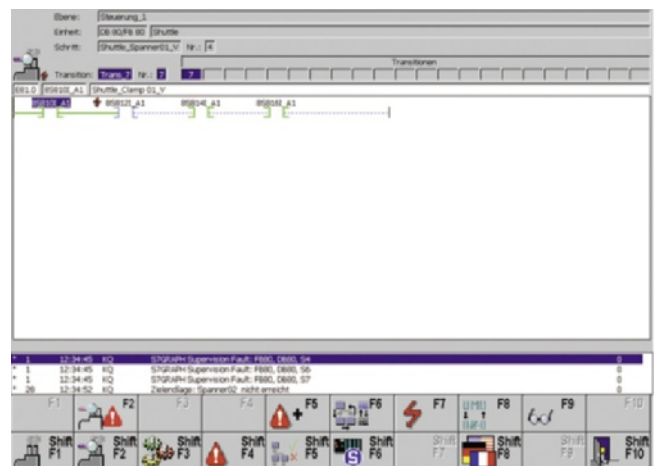
HMI Software
SIMATIC ProAgent process diagnostics software

SIMATIC ProAgent

■ **Function** (continued)

Diagnostics detail display

The diagnostic 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.
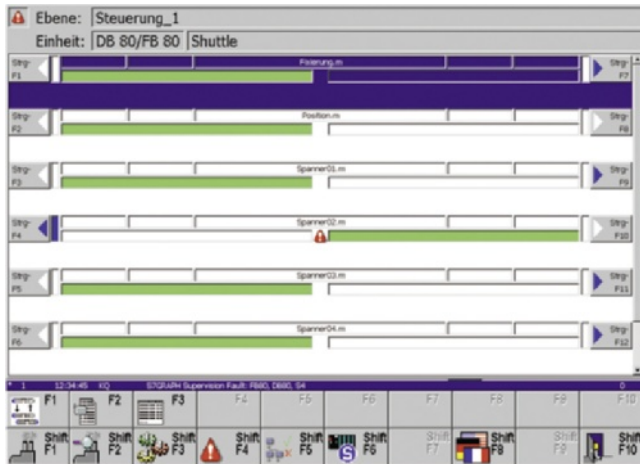
Motion display

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).
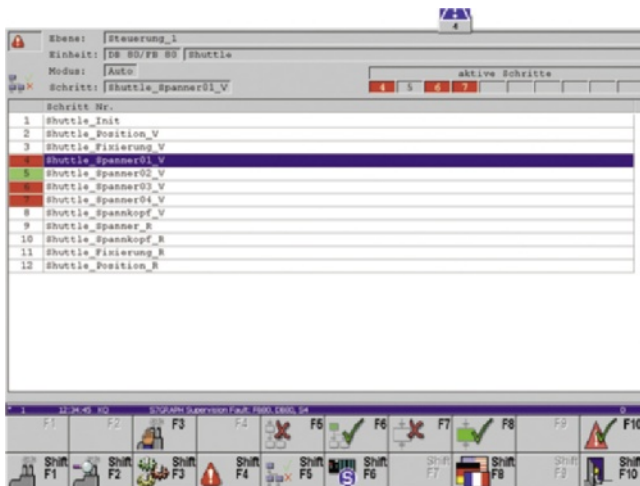
Sequencer operating display

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.
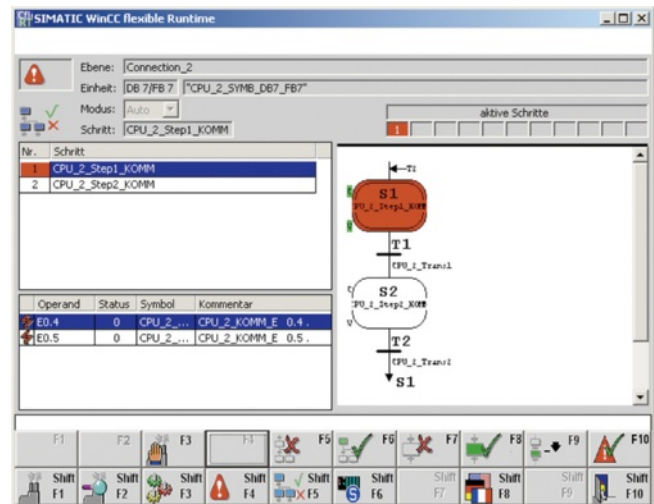
Sequencer diagnostic display

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.

[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)

■ **Technical specifications**

	WinCC/ProAgent	WinCC flexible /ProAgent
Interfaces • Can be used in conjunction with programmable controllers: • Types of connection	SIMATIC S7: S7-300/S7-400; WinAC SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP, Industrial Ethernet, TCP/IP	SIMATIC S7: S7-300/S7-400; WinAC SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP, PROFINET IO, Industrial Ethernet, TCP/IP
Display units		
Standard images for:		Standard displays for easy embedding in user displays, example project for MP 377
Number of languages for online language selection	3 (de/en/fr)	5 (de/en/fr/it/es)
Functionality		
Modification of HMI diagnostics data management in RT	WinCC/ProAgent V6.0 and higher	No
Unit overview	Yes	Yes
Message display	Yes	Yes
Sequencer operating display	Yes	Yes
Diagnostics detail display • Display STL/LAD/signal list • Display of operands with symbol and comment	Yes Yes/Yes/Yes Yes	Yes Yes/Yes/Yes Yes
Criteria analysis	When fault occurs/current status/can be archived	When fault occurs/current status
Motion display • Number of viewable movements • Directions of motion • Number of viewable end positions per movement	6 2 16	6 2 16
Documentation		
In electronic format	de/en/fr; included in scope of delivery	de/en/fr/it/es; included in scope of delivery
Requirements		
HMI software	WinCC V7.0 SP3 (ProAgent V7.0 SP3)	WinCC flexible 2008
Operating system: Configuration	WinCC/ProAgent V7.0 + SP2: Windows Professional SP3, Windows 7 (32 bit) Ultimate, Business, and Enterprise	WinCC flexible / ProAgent 2008 + SP2: Windows XP SP3, Windows 7 Professional, Ultimate, Enterprise
Operating system Runtime	WinCC/ProAgent V7.0 + SP2: Windows XP Professional SP3, Windows 7 (32 bit) Ultimate, Business and Enterprise, Windows 2003 Server SP2, Windows 2008 Server SP2	WinCC flexible/ProAgent for SIMATIC Panels: WinCC flexible / ProAgent for WinCC flexible Runtime: Windows XP SP3, Windows 7 Professional, Ultimate, Enterprise
STEP 7 • S7-GRAPH • S7-PDIAG • S7-HiGraph	V5.4 SP4 and higher V5.3 SP6 and higher V5.3 SP3 and higher No	V5.3 and higher V5.2 + SP3 and higher V5.1 and higher V5.3 and higher
Type of delivery (one license is required for each target hardware)	CD-ROM / Runtime license	Runtime license

4

HMI Software
SIMATIC ProAgent process diagnostics software

SIMATIC ProAgent

Ordering data	Article No.
SIMATIC WinCC/ProAgent Software option package for process error diagnostics 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 pixel) and Panel PC 577/677/877 15" (resolution 1024 x 768 pixel) in English, French and German, Runtime license (single license) WinCC version:	
• V7.3; for WinCC V7.3 [1]	**6AV6371-1DG07-3AX0**
• V7.2; for WinCC V7.2 [1]	**6AV6371-1DG07-2AX0**
Upgrade	
• V6.x to V7.3 [1]	**6AV6371-1DG07-3AX4**
• V7.x to V7.3 [1]	**6AV6371-1DG07-3AX3**
• V6.x to V7.2 [1]	**6AV6371-1DG07-2AX4**
• V7.0 to V7.2 [1]	**6AV6371-1DG07-2AX3**
SIMATIC WinCC flexible /ProAgent Software option package for process error 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** 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** Runtime license (single license)	**6AV6618-7DD01-3AB0**

[1] Not multi-station-capable

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.

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 up to 30 m away from the PC, or low-cost, rugged thin clients that offer HMI functionality over the network in larger plants spread over wide areas.

Ruggedness and industrial compatibility for 24-hour continuous use in an industrial environment

- Compact, space-saving enclosure (Box PC and Panel PC)
- Suitable for installing in space-saving control cabinets, only 500 mm deep (Rack PC)
- All-metal enclosure with a high degree of electromagnetic compatibility for use in industrial areas and in domestic, business and commercial environments and for a degree of protection up to IP65/NEMA 4
- The mounting position of the devices can be varied by means of wall, portrait or control cabinet mounting (Box PC), rail mounting (SIMATIC IPC427D or IPC227D only) and horizontal or vertical mounting position in the 19" cabinet or with the appropriate kit as an industrial tower PC (Rack PC)
- High resistance to shock/vibration thanks to special hard disk mountings, locked connectors, and card retainers
- Maintenance-free due to design without hard disk or fans using SIMATIC CFast memory cards or solid-state drive (SIMATIC IPC427D/IPC477D and SIMATIC IPC227D/IPC277D)
- Service-friendly, modular device design for replacement of defective components
- Integral industrial power supplies (according to NAMUR) for safe power supplies protected against system disturbances
- Attractive product design with dirt-repelling fronts and coated surfaces
- Dust protection thanks to a pressurized cooling concept, front-mounted fans and dust filters (Rack PC)

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 Windows Embedded)
- Restore DVD (hard disk image) for fast and very easy restoration of the PC delivery status
- SIMATIC IPC Documentation and Drivers DVD
- Compact Operating Instructions (German/English/French/Spanish/Italian/Chinese)
- Electronic manual on IPC Documentation and Drivers DVD (German/English)

Further information can be found in the Internet at:

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

Information material for ordering and for downloading is available on the Internet:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
Rack PC

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 – maximum performance at an attractive price

SIMATIC IPC647 – maximum compactness combined with maximum industrial functionality

SIMATIC IPC847 – maximum expandability and industrial functionality

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 drive bays
- Hard disks with capacities up to 1 TB for large volumes of data
- SSD (solid-state drive), 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 panel or front door
- Service-friendly equipment design due to prepared telescopic rail mounting
- Universal implementation as an industrial workstation or server
- Operating system preinstalled and activated for fast startup
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- High flexibility and expandability of components
- PCI and PCI Express expansion slots
- Independent industrial product design

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■ **Overview** (continued)

SIMATIC IPC347D – high performance at an optimized price

- Intel Core i processors 3rd generation
- Lockable front flap
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- PCI and PCI Express expansion slots
- 4 configurations available ex stock at short notice

SIMATIC IPC547E – maximum performance at an attractive price

- Intel Core i processors 4th generation
- 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 drive bays
- RAID1 and RAID5 configurations with additional hot spare hard disk, optional
- Low noise output thanks to controlled fans
- Status and alarm LEDs at the front for signaling critical system states
- Availability for at least 1.5 years
- Guaranteed spare parts availability for at least 3 years

SIMATIC IPC647D – 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 4th generation and Xeon
- ECC memory, optional
- Hardware RAID PCIe x8 controller incl. ZMM and SAS hard disks in hot-swap removable drive bay
- 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
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or the status display for Ethernet, PROFINET and PROFIBUS
- Integrated PROFIBUS DP/MPI or PROFINET interface (optional)
- High component/design continuity
- Mainboard developed and manufactured by Siemens
- Availability for up to 6 years
- Guaranteed spare parts availability for at least 5 years

SIMATIC IPC847D – 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 4th generation and Xeon
- Optional RAID5 configuration (striping with parity) in hot swap drive bays
- RAID1 and RAID5 configurations with additional hot spare hard disk or SSD, optional
- ECC memory, optional
- Hardware RAID PCIe x8 controller incl. ZMM and SAS hard disks in hot-swap removable drive bay
- AC power supply with UPS (**U**ninterruptible **P**ower **S**upply) functionality incl. maintenance-free lead-tin battery
- 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
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or status displays for Ethernet, PROFINET and PROFIBUS
- Integrated PROFIBUS DP/MPI or PROFINET interface (optional)
- High component/design continuity
- Mainboard developed and manufactured by Siemens
- Availability for up to 6 years
- Guaranteed spare parts availability for at least 5 years

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PC-based Automation
Rack PC

Technical specifications

Rack PC	SIMATIC IPC347D	SIMATIC IPC547E	SIMATIC IPC547E	SIMATIC IPC647D	SIMATIC IPC847D
Design					
19" rack	4HE Enclosure depth 463 mm	4 U (short) Enclosure depth 356 mm	4HE Enclosure depth 446 mm	2HE Enclosure depth 445 mm	4HE Enclosure depth 448 mm
Prepared for telescopic rails	•	•	•	•	•
Horizontal/vertical installation	• / -	• / •	• / •	• / -	• / •
19" mounting bracket can be removed from outside	•	•	•	•	•
Tower Kit (optional)	-	-	•	-	•
General features					
Processor	• Intel Core i5-3340S (4C/4T, 2.8 (3.3) GHz) • Intel Pentium G2010 (2C/2T, 2.8 GHz)	• Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz) • Intel Pentium G1820 (2C/2T, 2.7 GHz)	• Intel Core i7-4770S (4C/8T, 3.1 (3.9) GHz) • Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz • Intel Pentium G3420 (2C/2T, 3.2 GHz)	• Intel Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz) • Intel Core i5-4570TE (2C/4T, 2.7 (3.3) GHz) • Intel Core i3-4330TE (2C/4T, 2.4 GHz)	• Intel Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz) • Intel Core i5-4570TE (2C/4T, 2.7 (3.3) GHz) • Intel Core i3-4330TE (2C/4T, 2.4 GHz)
Main memory	• 2 GB or 4 GB, expandable up to 16 GB	• 2 GB, expandable up to 16 GB	• 2 GB, expandable up to 32 GB	• 2 GB, expandable up to 32 GB • ECC optional	• 2 GB, expandable up to 32 GB • ECC optional
Slots for expansions (all long, up to 312 mm)	• 4 x PCI • 1 x PCI Express x16 • 1 x PCI-Express x8 (1 lane) • 1 x PCI-Express x1	• 4 x PCI • 1 x PCI-Express x16 • 1 x PCI-Express x16 (2 lanes) • 1 x PCI-Express x8 (1 lane)	• 4 x PCI • 1 x PCI Express x16 • 1 x PCI Express x16 (4 lanes) • 1 x PCI-Express x8 (1 lane)	• 2 x PCI • 2 x PCI-Express x16 (8 lanes) or • 3 x PCI-Express x16 (4 lanes) • 1 x PCI-Express x16 (8 lanes) or • 2 x PCI-Express x16 (4 lanes)	• 7 x PCI • 1 x PCI-Express x16 • 3 x PCI-Express x4 (1 lane) or • 3 x PCI • 1 x PCI-Express x16 (8 lanes) • 4 x PCI-Express x16 (4 lanes) • 3 x PCI Express x4
Onboard graphics	• 1 x DVI-D • 1 x VGA	• 1 x DisplayPort • 1 x DVI-I • 1 x VGA (via adapter cable, optional)	• 2 x DisplayPort • 1 x DVI-I • 1 x VGA (via adapter cable, optional)	• 2 x DisplayPort • 1 x DVI-I • 1 x VGA (via adapter cable, optional)	• 2 x DisplayPort • 1 x DVI-I • 1 x VGA (via adapter cable, optional)
Graphics card (optional)	-	• PCI-Express x16 (2 x VGA or 2 x DVI-D)	• PCI Express x16 (2 x VGA or 2 x DVI-D)	• PCI Express x16 (2 x VGA or 2 x DVI-D)	• PCI Express x 16 (2 x VGA or 2 x DVI-D)
Operating system					
without	•	•	•	•	•
Preinstalled and activated, supplied on restore DVD	• Windows 7 Ultimate Multi-Language (64-bit)	• Windows 7 Ultimate Multi-Language (32/64-bit)	• Windows 7 Ultimate Multi-Language (32/64-bit) • Windows Server 2008 R2 incl. 5 Clients Multi-Language (64-bit)	• Windows 7 Ultimate Multi-Language (32/64-bit) • Windows Server 2008 R2 incl. 5 Clients Multi-Language (64-bit) • Windows Server 2012 R2 incl. 5 Clients Multi-Language (64-bit)	• Windows 7 Ultimate Multi-Language (32/64-bit) • Windows Server 2008 R2 incl. 5 Clients Multi-Language (64-bit) • Windows Server 2012 R2 incl. 5 Clients Multi-Language (64-bit)
Project-specific on request	-	• Linux [1] • Other	• Linux [1] • Other	• Linux [1] • VxWorks (Support Package) • Other	• Linux [1] • VxWorks (Support Package) • Other

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Technical specifications (continued)

Rack PC	SIMATIC IPC347D	SIMATIC IPC547E	SIMATIC IPC547E	SIMATIC IPC647D	SIMATIC IPC847D
Interfaces					
PROFIBUS/MPI	-	-	-	12 Mbit/s (compatible with CP 5622), optional	12 Mbit/s (compatible with CP 5622), optional
PROFINET	-	-	-	3 x RJ45 (compatible with CP 1616), optional	3 x RJ45 (compatible with CP 1616), optional
Ethernet	2 x Realtek 10/100/1000 Mbps (RJ45)	1 x Intel 10/100/1000 Mbps (RJ45)	2 x Intel 10/100/1000 Mbps (RJ45, teaming-capable)	2 x Intel 10/100/1000 Mbps (RJ45, teaming-capable)	2 x Intel 10/100/1000 Mbps (RJ45, teaming-capable)
USB 3.0 (high current)	-	2 x at front	4 x, 2 of which at front	4 x, 1 of which at front, 1 x internal, e.g. for USB dongle with optional interlock	4 x, 1 of which at front, 1 x internal, e.g. for USB dongle with optional interlock
USB 2.0 (high current)	6 x, 2 of which at front	6 x at the rear	6 x at the rear 1 x internal, e.g. for USB dongle with optional interlock	3 x, 1 of which at front	3 x, 1 of which at front
VGA	•	• optionally via adapter cable	• optionally via adapter cable	• optionally via adapter cable	• optionally via adapter cable
DVI	•	•	•	•	•
DisplayPort	-	•		•	•
Drives					
SATA hard disks					
• Internal installation	•	•	•	-	•
• Installation at the front in the removable drive bay	-	-	•	•	•
• Internal installation in drive holder (shock and vibration-damped)	-	-	-	•	•
RAID1/5 configuration with onboard RAID with SATA hard disks	-	-	• / •	• / -	• / •
RAID1/5 configuration with HW-RAID and ZMM with SAS hard disks	-	-	-	• / -	• / •
RAID configuration with additional hot spare hard disk	-	-	•	-	•
SSD (solid-state drive)	-	•	•	•	•
Optical drives					
DVD-ROM	•	-	-	-	-
DVD±R/RW	•	• (Slim)	• (Slim)	• (Slim)	• (Slim)
AC power supply	•	•	•	•	•
Redundant (optional)	-	-	•	•	•
UPS internal (optional)	-	-	-	-	•
Ambient conditions [2]					
Vibration load shock load during operation	- / -	0.2 g / 1 g	0.2 g / 1 g	0.5 g / 5 g	0.5 g / 5 g
Ambient temperature during operation	5 ... 40 °C	With maximum configuration: 5 ... 40 °C	With maximum configuration: 5 ... 40 °C	With maximum configuration: 5 ... 50 °C	With maximum configuration: 5 ... 50 °C

• available

- not available

[1] Suitable for specific Linux versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for Linux", see http://support.automation.siemens.com/WW/view/en/10805661/134200 (Linux is a brand name of Linus Torvalds)

[2] Restrictions when using DVD±R/RW and hard disks in removable drive bay.

More information

Further information can be found in the Internet under:

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

Information material can be ordered or downloaded from the Internet:

http://www.siemens.com/simatic/printmaterial

PC-based Automation
Rack PC

SIMATIC IPC347D

Overview

SIMATIC IPC347D

The SIMATIC IPC347D is a rugged industrial PC in 19" rack design (4 U).

It offers:

- Optimized price
- High performance
- Intel Core i technology of the 3rd generation

Technical specifications

	SIMATIC IPC347D
General features	
Design	19" rack, 4 U, painted on the front
Processor	• Intel Core i5-3340S (4C/4T, 2.8 (3.3) GHz, 6 MB Cache, Turbo Boost 2.0, EM64T, VT-x/-d) • Intel Pentium Dual Core G2010 (2C/2T, 2.8 GHz, 3 MB Cache, EM64T, VT)
Chipset	• Intel H61
Main memory	• from 2 GB and 4 GB DDR3 1600 SDRAM • Dual channel support • 2 DIMM base • Expandable up to 16 GB [1]
Spare slots for expansions (all long)	• 4 x PCI • 1 x PCI-Express x16 • 1 x PCI-Express x8 (1 lane) • 1 x PCI-Express x1
Graphics	Onboard Intel HD graphics / Intel HD 2500 graphics integrated into the processor; Shared Video Memory up to 1.7 GB; up to 1 920 x 1 200 pixels at 60 Hz image refresh rate and 32-bit colors
Operating system	• Without Preinstalled and activated (supplied on restore DVD): • Windows 7 Ultimate MUI (64-bit) MUI (Multilanguage User Interface, 5 languages): English, German, French, Italian, Spanish
Power supply	• 100 ... 240 V AC, 50 ... 60 Hz, with bridging of short-term power failures: max. 17 ms at 0.85 % rated voltage

■ **Technical specifications** (continued)

	SIMATIC IPC347D
Drives	
3.5" SATA hard disk	Installation in internal drive support: • 500 GB
DVD-ROM, 5.25", SATA	• 16 x (DVD media) • 48 x (CD media)
DVD±R/RW, 5.25", SATA	• 16 x 24 x 8 x (DVD media) • 48 x 48 x 24 x (CD media)
Slots for drives	Front: • 3 x 5.25" Internal: • 1 x 3.5"
Interfaces	
Ethernet	2 x Realtek Gbit Ethernet (RJ45)
USB 2.0	• 2 x front (high current) • 4 x rear (high current)
Serial	9-pole COM1 (V.24); COM2 (V.24)
VGA	1 x
DVI-D	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line In; 1 x Line Out; 1 x Mic.
Monitoring functions	
Front LEDs	• POWER (PC switched on) • HDD (access to hard disk)
Ambient conditions	
Degree of protection	IP20 according to EN 60529
Dust protection	Yes
Protection class	Protection class I according to IEC 61140
Vibration load during operation	-
Shock loading during operation	-

	SIMATIC IPC347D
Electromagnetic compatibility (EMC)	
Emitted interference	EN 61000-6-4; CISPR 22; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3
Immunity to conducted interference on the supply lines	• ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ±2 kV (IEC 61000-4-5, surge asymm.)
Noise immunity on signal lines	• ±2 kV (IEC 61000-4-4, burst, length > 30 m) • ± 1 kV (IEC 61000-4-4, burst, length < 30 m) • ± 2 kV (IEC 61000-4-5, Surge, Length > 30 m)
Immunity to static discharge	• ± 4 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)
Immunity to high radio frequency interference	• 1 V/m 80% AM; 2 ... 2.7 GHz (IEC 61000-4-3) • 3 V/m 80 % AM; 1.4 … 2 GHz (IEC 61000-4-3) • 10 V/m 80 % AM; 80 MHz ... 1 GHz (IEC 61000-4-3); • 10 V, 150 kHz ... 80 MHz (IEC 61000-4-6)
Immunity to magnetic fields	30 A/m, 50/60 Hz (IEC 61000-4-8)
Ambient temperature during operation	5 ... 40 °C Note: Limitations for operation of DVD±R/RW
Humidity during operation	5 ... 80 % at 25 °C (no condensation)
Approvals and safety regulations	
Safety regulations	IEC 60950-1; CSA
Approvals	cULus 60950
CE mark	Use in industry: • Emitted interference: IEC 61000-6-4:2011 • Noise immunity: IEC 61000-6-2:2005
Dimensions and weights	
Installation dimensions (W x H x D) in mm	430 x 177 x 463
Weight, approx.	15 kg

[1] Memory information: In order to use a memory with more than 4 GB, a 64-bit operating system is required. In the case of configurations with 4 GB, the visible memory can be reduced to about 3.5 GB or less (with 32-bit operating systems).

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the respective supplied SIMATIC IPC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

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PC-based Automation
Rack PC

SIMATIC IPC347D

Ordering data | Article No.

Configurations

SIMATIC IPC347D
- **Configuration 1** — 6AG4012-0AA11-0XX0
  Pentium Dual Core G2010 (2C/2T, 2.8 GHz, 3 MB cache, EM64T, VT); 500 GB HDD SATA, internal; 2 GB DDR3 SDRAM (1 x 2 GB), DVD-ROM; without operating system; 100/240 V industrial power supply; interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, Audio

- **Configuration 2** — 6AG4012-0AA22-0XX0
  Pentium Dual Core G2010 (2C/2T, 2.8 GHz, 3 MB cache, EM64T, VT); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V industrial power supply; interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, Audio

- **Configuration 3** — 6AG4012-0CA22-0XX0
  Core i5-3340S (4C/4T, 2.8 (3.3) GHz, 6 MB cache, Turbo Boost 2.0, EM64T, VT-x/-d); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V industrial power supply; interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, Audio

- **Configuration 4** — 6AG4012-0CA22-0BX0
  Core i5-3340S (4C/4T, 2.8 (3.3) GHz, 6 MB cache, Turbo Boost 2.0, EM64T, VT-x/-d); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V industrial power supply; interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, Audio

Accessories

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

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".

Dimensional drawings
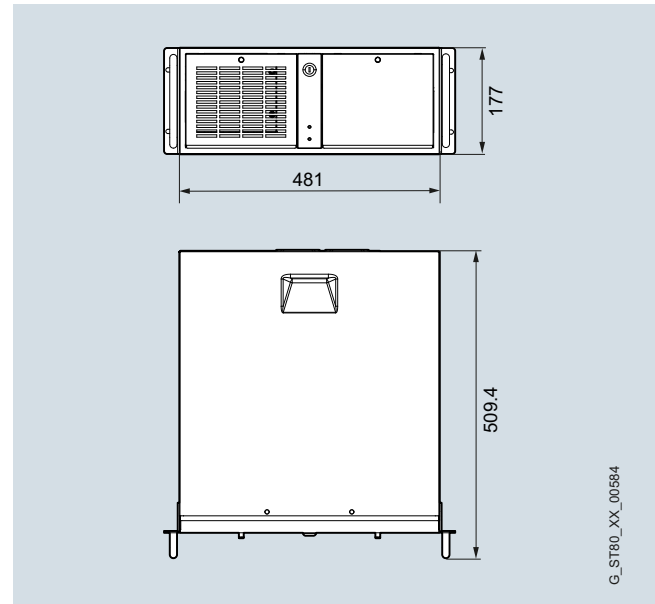
SIMATIC IPC347D

More information

Further information can be found in the Internet at:

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

Overview

IPC547E long and short enclosure design

SIMATIC IPC547E

The SIMATIC IPC547E is a rugged industrial PC in 19" rack design (4 U).

It offers:
- Maximum performance
- Attractive price
- Intel Core i technology 4th generation

Technical specifications

	IPC547E (enclosure depth 356 mm)	IPC547E (enclosure depth 446 mm)
General features		
Design	19" rack PC, 4 U	
Processors	• Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache) • Intel Celeron G1820 (2C/2T, 2.7 GHz, 2 MB cache)	• Intel Core i7-4770S (4C/8T, 3.1 (3.9) GHz, 8 MB cache, iAMT) • Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB cache, iAMT) • Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache)
Chipset	• Intel H81	• Intel Q87
Main memory	• From 2 GB DDR3-1600 SDRAM • Dual channel support • 2 DIMM base • Expandable up to 16 GB [1]	• From 2 GB DDR3-1600 SDRAM • Dual channel support • 4 DIMM base • Expandable up to 32 GB [1]
Spare slots for expansions (all long)	• 1 x PCI Express x16 • 1 x PCI-Express x16 (2 lanes) • 1 x PCI-Express x8 (1 lane) • 4 x PCI	• 1 x PCI Express x16 • 1 x PCI-Express x16 (4 lanes) • 1 x PCI-Express x8 (1 lane) • 4 x PCI
Graphics	• Onboard Intel HD / Intel HD Graphics 4600 graphics controller integrated into the processor Dynamic video memory up to 1.7 GB; up to 3840 x 2160 pixels at 60 Hz image refresh rate and 32-bit colors • PCI Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot (optional), 512 MB; up to 2048 x 1536 pixels at 60 Hz image refresh rate and 32-bit colors	
Operating systems	• None Preinstalled and activated (supplied on restore DVD): • Windows 7 Ultimate MUI (32/64-bit) MUI (Multi-Language User Interface, 5 languages): English, German, French, Italian, Spanish Project-specific on request: • Linux [2] • Other	• None Preinstalled and activated (supplied on restore DVD): • Windows 7 Ultimate MUI (32/64-bit) • Windows Server 2008 R2 incl. 5 Client MUI (64-bit) MUI (Multi-Language User Interface, 5 languages): English, German, French, Italian, Spanish Project-specific on request: • Linux [2] • Other
Power supplies	• 100 ... 240 V AC, 50 ... 60 Hz, with bridging of short-term power failures: max. 20 ms at 0.85 % rated voltage	• 100 ... 240 V AC, 50 ... 60 Hz, with bridging of short-term power failures: max. 20 ms at 0.85 % rated voltage • Redundant 2 x 100 ... 240 V AC, 50 ... 60 Hz

[1] Memory information: In order to use a memory expansion with more than 4 GB, a 64-bit operating system is required. In the case of configurations with 4 GB, the visible memory can be reduced to about 3.5 GB or less (with 32-bit operating systems).

[2] Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see http://support.automation.siemens.com/WW/view/en/10805661/134200 (LINUX is a brand name of Linus Torvalds)

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PC-based Automation
Rack PC

◾ Technical specifications (continued)

	IPC547E (enclosure depth 356 mm)	IPC547E (enclosure depth 446 mm)
Drives		

Hard disks, SATA 3.5" with NCQ technology
 	
Solid-state drives, SATA 2.5" with MLC technology
	Internal installation
	• 1 x 500 GB HDD
	• 1 x 1 TB HDD
	• 2 x 1 TB HDD
		Internal installation
		• 1 x 500 GB HDD
		• 1 x 1 TB HDD
		• 2 x 1 TB HDD
		• 1 x 240 GB SSD
		• RAID1, 1 TB (2 x 1 TB HDD, mirror disks) [3]
		
		Installation at the front in removable drive bay (low-profile)
		• 1 x 500 GB HDD
		• 1 x 1 TB HDD
		• 2 x 1 TB HDD
		• 1 x 240 GB SSD
		• RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap" [3]
		• RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap" [3]
		  + 1 x 1 TB HDD as hot spare
		• RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap" [3]
		  + 1 x 240 GB SSD (operating system installed on SSD if configured)
		• RAID5, 2 TB (3 x 1 TB HDD, striping with parity), "hot swap" [3]
		• RAID5, 2 TB (3 x 1 TB HDD, striping with parity), "hot swap" [3]
		  + 1 x 1 TB HDD as hot spare

DVD±R/RW, 5.25" (slim), SATA	-	• 8 x 8 x 6 (DVD media) • 24 x 10 x 16 (CD media)
Slots for drives	Internal: • 2 x 3.5"	Front: • 3 x 5.25" / 4 x low-profile removable drive bay • 1 x 5.25" (slimline) Internal: • 2 x 3.5"
Interfaces		
Ethernet	1 x Intel Gigabit Ethernet (RJ45)	2 x Intel Gigabit Ethernet (RJ45, teaming-capable)
USB 3.0	• 2 x front (high current)	• 2 x front (high current) • 2 x rear (high current)
USB 2.0	• 6 x rear (high current)	• 6 x rear (high current) • 1 x internal (high current), e.g. for USB dongle with optional interlocking
Serial	9-pin COM2 (V.24) (optional)	9-pole COM1 (V.24); COM2 (V.24) (optional)
Parallel	LPT (optional)	
VGA	Optionally via adapter cable	
DVI-I	1 x	
DisplayPort V1.2	1 x	2 x
PS/2	2 x (keyboard, mouse)	
Audio	1 x line in; 1 x line out; 1 x mic.	
Monitoring functions		
Basic functionality	Message locally via DiagBase software	
Temperature	When permitted operating temperature range is exceeded	
Fans	Speed monitoring • 1 x front fan • 1 x CPU fan • 1 x power supply fan	
Watchdog	• Monitoring of program execution • Monitoring time can be parameterized in software	

[3] SATA RAID controller onboard in Intel Q87 chipset

■ Technical specifications (continued)

	IPC547E (enclosure depth 356 mm)	IPC547E (enclosure depth 446 mm)
Monitoring functions via the network	SIMATIC IPC DiagMonitor Version V4.4.x.x or higher (optional)	
	Remote monitoring capability for: • Watchdog • Temperature • Fan speed • Battery • Hard disks (SMART) • System/Ethernet	
	Communication: • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architectures • Structure of log files	
Front LEDs	• POWER (PC switched on) • HDD (access to hard disk) • TEMP (temperature monitoring) • FAN (fan monitoring)	
Environmental conditions		
Degree of protection	IP30 front, IP20 rear according to EN 60529	
Dust protection	With the front door closed according to IEC 60529 filter class G2 EN 779, 99% of particles > 0.5 mm are filtered	
Protection class	Protection class I compliant with IEC 61140	
Vibration load during operation [4]	IEC 60068-2-6, 10 cycles • 20 ... 58 Hz: 0.015 mm • 58 ... 200 Hz: 2 m/s^2 (approx. 0.2 g)	
Shock load in operation [4]	IEC 60068-2-27 • Half sine: 9.8 m/s^2, 20 ms (approx. 1 g), 100 shocks per axis	
Electromagnetic compatibility (EMC)		
Emitted interference	EN 61000-6-3; EN 61000-6-4; CISPR 22 / EN 55022 Class B; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3	
Immunity to conducted interference on supply lines	• ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ± 2 kV (IEC 61000-4-5, asymm. surge)	
Noise immunity on signal lines	• ± 2 kV (IEC 61000-4-4, burst, length > 30 m) • ± 1 kV (IEC 61000-4-4, burst, length < 30 m) • ± 2 kV (IEC 61000-4-5, surge, length > 30 m)	
Immunity to static discharge	• ±4 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)	
Immunity to high-frequency radiation	• 10 V/m; 80 to 1000 MHz, 80 % AM (IEC 61000-4-3) • 3 V/m; 1.4 to 2 GHz, 80 % AM (IEC 61000-4-3) • 1 V/m, 2 to 2.7 GHz, 80 % AM (IEC 61000-4-3) • 10 V, 150 kHz to 80 MHz, 80 % AM (IEC 61000-4-6)	
Immunity to magnetic fields	30 A/m, 50/60 Hz (IEC 61000-4-8)	
Ambient temperature during operation	5 ... 40 °C	5 ... 40 °C Note: Limitations for operation of DVD±R/RW
Humidity during operation	5 ... 80 % at 25 °C (no condensation)	
Approvals and safety regulations		
Safety directives	IEC 60950-1; UL60950; CSA	
Approvals	cULus 60950	
CE marking	For use in industrial areas as well as domestic, business and commercial environments: • Emitted interference: EN 61000-6-3:2007 • Noise immunity: EN 61000-6-2:2005	
Dimensions and weights		
Installation dimensions (W x H x D) in mm	434 x 177 x 356	434 x 177 x 446
Weight, approx.	15 kg	19 kg

[4] Restrictions with operation of optical drives and hard disks in removable drive bays

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the SIMATIC IPC supplied in each case. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

PC-based Automation
Rack PC

SIMATIC IPC547E

◼ Ordering data

	Article No.			Article No.

SIMATIC IPC547E [1]

Interfaces:
2 x USB 3.0 at the front,
1 x DVI-I, 6 x USB 2.0 at the rear,
2 x PS/2, audio;
7 slots: 2 x PCIe x16, 1 x PCIe x8,
4 x PCI;
temperature and fan monitoring;
watchdog; card retainer

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Processors and mainboards
- Celeron G1820
  (2C/2T, 2.7 GHz, 2 MB cache);
  1 x Gigabit Ethernet (IE/PN),
  1 x DisplayPort V1.2 (only in
  combination with short enclosure) — **A**
- Pentium Dual Core G3420
  (2C/2T, 3.2 GHz, 3 MB cache);
  1 x Gigabit Ethernet (IE/PN),
  1 x DisplayPort V1.2 (only in
  combination with short enclosure) — **C**
- Pentium Dual Core G3420
  (2C/2T, 3.2 GHz, 3 MB cache);
  2 x Gigabit Ethernet (IE/PN),
  2 x DisplayPort V1.2,
  2 x USB 3.0 at rear,
  1 x USB 2.0 internal, 1 x COM1 — **D**
- Core i5-4570S
  (4C/4T, 2.9 (3.6) GHz,
  6 MB cache, iAMT);
  2 x Gigabit Ethernet (IE/PN),
  2 x DisplayPort V1.2,
  2 x USB 3.0 at rear,
  1 x USB 2.0 internal, 1 x COM1 — **H**
- Core i7-4770S
  (4C/8T, 3.1 (3.9) GHz,
  8 MB cache, iAMT);
  2 x Gigabit Ethernet (IE/PN),
  2 x DisplayPort V1.2.
  2 x USB 3.0 rear-mounted,
  1 x USB 2.0 internal, 1 x COM1 — **K**

Drives (SATA)
- 1 x 500 GB HDD, internal — **A**
- 1 x 1 TB HDD, internal — **B**
- 2 x 1 TB HDD, internal — **D**
- 1 x 240 GB SSD, internal — **E**
- RAID1, 1 TB (2 x 1 TB HDD, mirror disks), internal — **G**
- 1 x 500 GB HDD in removable drive bay, at the front — **H**
- 1 x 1 TB HDD in removable drive bay, at the front — **K**
- 2 x 1 TB HDD in removable drive bay, at the front — **M**
- 1 x 240 GB SSD in removable drive bay, at the front — **N**
- RAID1, 1 TB (2 x 1 TB HDD, mirror disks) in removable drive bay, hot swap, at the front — **P**
- RAID1, 1 TB (2 x 1 TB HDD, mirror disks) in removable drive bay, hot swap + 1 x 1 TB HDD as hot spare in removable drive bay, at the front — **Q**
- RAID1, 1 TB (2 x 1 TB HDD, mirror disks) in removable drive bay, hot swap + 240 GB SSD in removable drive bay, at the front (operating system installed on SSD if configured) — **R**
- RAID5, 2 TB (3 x 1 TB HDD, striping with parity) in removable drive bay, hot swap, at the front — **S**
- RAID5, 2 TB (3 x 1 TB HDD, striping with parity) in removable drive bay, hot swap + 1 x 1 TB HDD as hot spare in removable drive bay, at the front — **T**

SIMATIC IPC547E [1]

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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] (2 x 4 GB), dual channel — **3**
- 16 GB DDR3 SDRAM [2] (2 x 8 GB), dual channel — **4**
- 32 GB DDR3 SDRAM [2] (4 x 8 GB), dual channel — **5**

Type of enclosure and swap media
- Enclosure (short), painted on the front, no removable media — **0**
- Enclosure, painted on the front, no removable media — **1**
- Enclosure, painted on the front, + DVD±RW (slimline) — **2**
- Unpainted enclosure, no removable media — **3**
- Painted enclosure, + DVD±RW (slimline) — **4**

Expansions (hardware)
- Without expansions (hardware), onboard graphics — **0**
- Without expansions (hardware), onboard graphics; DVI-I VGA-compliant adapter cable for onboard graphics — **1**
- Serial (COM2) & parallel (LPT), onboard graphics — **2**
- Serial (COM2) and parallel (LPT), onboard graphics; DVI-I VGA-compliant adapter cable for on-board graphics — **3**
- Serial (COM2) & parallel (LPT) + PCIe x16 graphics card (Dual Head: 2 x VGA or 2 x DVI-D), 512 MB — **4**

Operating System (preinstalled and activated)
- Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP1 — **A**
- Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1 — **B**
- Windows Server 2008 R2 Standard Edition incl. 5 Clients, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1 — **F**
- Windows Server 2012 R2 Standard Edition incl. 5 Clients, MUI (Eng, Fr, Ger, It, Sp), 64-bit — **G**
- Without operating system — **X**

Expansions (software)
- SIMATIC IPC DiagMonitor V4.x software enclosed — **A**
- SIMATIC IPC Image & Partition Creator V3.x software enclosed — **B**
- SIMATIC IPC DiagMonitor V4.x + Image & Partition Creator V3.x software enclosed — **C**
- Without expansions (software) — **X**
- Without expansions (software) / TPM (not for China and Russia) — **Y**

Country-spec. versions/power supplies:
- 100/240 V AC industrial power supply, power cable for Europe — **0**
- 100/240 V AC industrial power supply; power cable for USA — **4**
- 100/240 V AC industrial power supply; power cable for China — **5**
- 2 x 100/240 V AC redundant industrial power supply; without power cable — **6**

[1] For an up-to-date overview, see the SIMATIC PC Online Configurator at:
https://www.siemens.com/ipc-configurator

[2] Can only be used on 64-bit operating systems

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Ordering data

	Article No.
Preferred variants (ex-stock)	
SIMATIC IPC547E	
• Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache); 2x USB 3.0 on front, 6x USB 2.0 at the rear, 1x Gbit Ethernet, 1x DisplayPort V1.2, 1x DVI-I, 2x PS/2, audio; unpainted enclosure (short), no removable media; 1x 1 TB HDD, internal (0.2 g vibration, 1 g shock); 2 GB DDR3 SDRAM (1x 2 GB), single-channel; serial (COM2) + parallel (LPT), onboard graphics, DVI-I adapter cable VGA-compliant for onboard graphics; without operating system; without expansions (software); 100/240 V AC industrial power supply, power cable for Europe	6AG4104-3CB10-3XX0
• Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache); 2 x USB 3.0 on front, 2 x USB 3.0 and 6 x USB 2.0 at the rear, 1 x USB 2.0 internal, 2x Gbit Ethernet, 2x DisplayPort V1.2, 1 x DVI-I, 1 x COM1, 2 x PS/2, audio; painted enclosure + DVD±RW (slimline); 1 x 1 TB HDD, internal, 4 GB DDR3 SDRAM (2 x 2 GB), dual-channel; serial (COM2) + parallel (LPT), onboard graphics, DVI-I adapter cable VGA-compliant for onboard graphics; without operating system; without expansions (software); 100/240 V AC industrial power supply, power cable for Europe	6AG4104-3DB24-3XX0
• Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache, iAMT); 2 x USB 3.0 on front, 2 x USB 3.0 and 6 x USB 2.0 at the rear, 1 x USB 2.0 internal, 2 x Gbit Ethernet, 2 x DisplayPort V1.2, 1 x DVI-I, 1 x COM1, 2 x PS/2, audio; painted enclosure + DVD±RW (slimline); RAID1, 1 TB (2 x 1 TB HDD, mirror disks) in removable drive bay, hot-swap, on front; 4 GB DDR3 SDRAM (2 x 2 GB), dual-channel; serial (COM2) + parallel (LPT), onboard graphics, DVI-I adapter cable VGA-compliant for onboard graphics; Windows 7 Ultimate, Multi Language (Eng, Ger, Fr, It, Sp), 32-bit, SP1; without expansions (software); 100/240 V AC industrial power supply, power cable for Europe	6AG4104-3HP24-3AX0

	Article No.
SIMATIC IPC547E	
• Core i7-4770S (4C/8T, 3.1 (3.9) GHz, 8 MB Cache, iAMT); 2 x USB 3.0 on front, 2 x USB 3.0 and 6 x USB 2.0 at the rear, 1 x USB 2.0 internal, 2 x Gbit Ethernet, 2 x DisplayPort V1.2, 1 x DVI-I, 1 x COM1, 2 x PS/2, audio; painted enclosure + DVD±RW (slimline); RAID1, 1 TB (2 x 1 TB HDD, mirror disks) in removable drive bay, hot-swap, on front; 8 GB DDR3 SDRAM (2 x 4 GB), dual-channel; serial (COM2) + parallel (LPT) + PCIe x16 graphics card (Dual Head: 2 x VGA or 2 x DVI-D), 512 MB; Windows 7 Ultimate, multi-language (Eng, Ger, Fr, It, Sp), 64-bit, SP1; without expansions (software); 2 x 100/240 V AC redundant industrial power supply, without power cable	6AG4104-3KP34-4BX6
Accessories	
Memory expansion	
• 2 GB DDR3 SDRAM (1 x 2 GB)	6ES7648-2AJ50-0MA0
• 4 GB DDR3 SDRAM (1 x 4 GB)	6ES7648-2AJ60-0MA0
• 8 GB DDR3 SDRAM (1 x 8 GB)	6ES7648-2AJ70-0MA0
Tower Kit For converting the computer into an industrial tower PC	6ES7648-1AA00-0XC0
Retainer for 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
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
Rack unit for low-profile removable drive bay for 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive	6ES7648-0EG01-1BA0
Expansion components	See Expansion components

Note:

Software Packages with SIMATIC WinCC flexible, SIMATIC WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

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SIMATIC IPC547E

■ Dimensional drawings

All dimensions in mm. For mounting cut-out, see Technical Specifications.

SIMATIC IPC547E, Rack PC
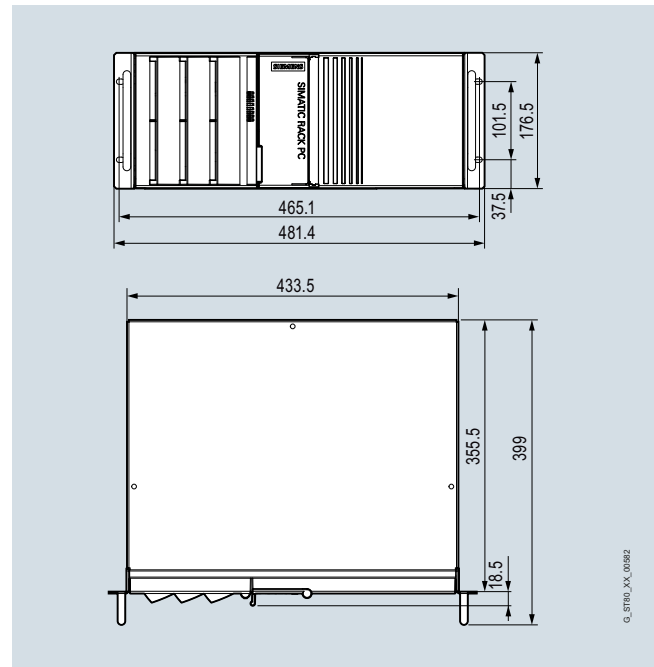
SIMATIC IPC547E, Rack PC, short enclosure

Technical data of the telescopic rails	
Carrying capacity per pair, min.	30 kg
Full extension length, min.	470 mm
Rail thickness, max.	9.7 mm
Mounting screws	M5 x 6 mm

The fixing screws of the telescopic rails should 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

Further information can be found in the Internet at:

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

Overview

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

	SIMATIC IPC647D
General features	
Design	19" rack, 2 U, external coating
Processor	• Intel® Xeon™ E3-1268L v3 4C/8T, 2.3 (3.3) GHz, 8 MB cache, Turbo Boost 2.0, Extended Memory 64 (EM64) and virtualization technology (VT-x/-d), iAMT 9.0 • Intel® Core™ i5-4570TE 2C/4T, 2.7 (3.3) GHz, 4 MB cache, turbo-boost 2.0, Extended Memory 64 (EM64) and virtualization technology (VT-x/-d), iAMT 9.0 • Intel® Core™ i3-4330TE 2C/4T, 2.4 GHz, 4 MB cache, Extended Memory 64 (EM64) and virtualization technology (VT-x)
Chipset	Intel C226
Main memory	• From 2 GB DDR3 1600 SDRAM • Dual channel support • 4 DIMM bases expandable up to 32 GB [1] • ECC memory (optional)
Spare slots for expansions (all long)	PCI slots (2 PCI, 2 PCI-Express): • 2 x PCI • 2 x PCI-Express x16 (8 lanes) Gen 3 or PCI-Express slots (4 PCI-Express): • 1 x PCI-Express x16 (4 lanes) Gen 3 • 1 x PCI-Express x16 (4 lanes) Gen 2 • 1 x PCI-Express x16 (4 lanes) Gen 3 • 1 x PCI-Express x16 (8 lanes) Gen 3
Graphics	• Onboard Intel HD 4600 graphics controller integrated into the processor Dynamic Video Memory up to 1.7 GB; up to 3840 x 2160 pixels at 60 Hz image refresh rate and 32-bit colors • PCI Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot (optional), 512 MB; up to 2048 x 1536 pixels at 60 Hz image refresh rate and 32-bit colors
Operating system	• None • Pre-installed, activated, and supplied on Restore DVD • Windows 7 Ultimate MUI, 32/64-bit • Windows Server 2008 R2 incl. 5 client MUI, 64-bit (MUI: Multi-Language User Interface; 5 languages (English, French, German, Italian, Spanish) • Project-specific on request Linux [2] • VxWorks (Support Package) • Other
Power supply	• 100 ... 240 V AC, 50 ... 60 Hz; with bridging of temporary power failures in accordance with NAMUR: max. 20 ms at 0.85 % rated voltage • Redundant 100 ... 240 V AC, 50 ... 60 Hz

[1] Memory information: in order to use a memory with more than 4 GB, a 64-bit operating system is required. In the case of configurations with at least 4 GB, the visible memory can be reduced to around 3.5 GB or less (with 32-bit operating systems).

[2] Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration, see http://support.automation.siemens.com/WW/view/en/10805661/134200 (LINUX is a brand name of Linus Torvalds)

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SIMATIC IPC647D

■ **Technical specifications** (continued)

	SIMATIC IPC647D
Drives	
SATA or SAS 3.5" hard disks (HDD) with NCQ technology and Solid-state drive (SSD) SATA 2.5'' in MLC technology	Mounted internally on the permanent hard disk support: • 1x 240 GB SSD Mounted internally in vibration/shock-absorbing hard disk support • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) Installed on the front in the low-profile removable drive bay (hot swapping in RAID configurations): • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • 1 x 240 GB SSD • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) • RAID1, 1 TB (2x 1 TB HDD SAS, mirror disks); PCIe x8 RAID controller incl. ZMCP module
DVD±R/RW, 5.25", SATA	• 8 x 8 x 6 x (DVD media) • 24 x 10 x 16 x (CD media)
Slots for drives	Front: • 2 x low-profile removable drive bay (for 3.5" HDD or 2.5" SSD) • 1 x 12.7 mm slimline (for ODD or 2.5" SSD) Internal: • 2 x 3.5" HDD as an alternative to removable drive bays (in the optional, shock and vibration-damped drive cage)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible), optional
PROFIBUS/MPI	12 Mbit/s (isolated, compatible with CP 5622), optional
Ethernet	2 x 10/100/1000 Mbps (RJ45, with teaming function)
USB 3.0	• 1 x front (high current) • 2 x rear (high current) • 1 x internal (high current), e.g. for USB dongle
USB 2.0	• 1 x front (high current), can be used with door closed • 2 x rear; (high current)
Serial	• 9-pin COM1 (V.24) • 9-pin COM2 (V.24) optional
Parallel	LPT1 (optional)
VGA	Optionally via adapter cable
DVI-I	1 x
DisplayPort V1.2	2 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x line out; 1 x micro

	SIMATIC IPC647D
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	• Overshoot/undershoot of permissible operating temperature range • Messages can be evaluated by the application program
Fans	• Speed monitoring • 2 x enclosure fans • 1 x fan power supply
Watchdog	• Monitoring of program execution • Monitoring time can be parameterized in software • Restart can be parameterized in the event of a fault • Messages can be evaluated by the application program
Monitoring functions via the network	SIMATIC PC DiagMonitor (optional) Remote monitoring capability for: • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System/Ethernet monitoring (Heartbeat) Communication: • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Configuration of client/server architectures, log files
Front LEDs	• POWER (internal power supply unit, PC switched On) • HDD (access to hard disk) • ETHERNET1 (Ethernet status, "Heartbeat") • ETHERNET2 (Ethernet status, "Heartbeat") • PROFIBUS/MPI (PROFIBUS status) • SF PROFINET (PROFINET status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD0 ALARM [4] • HDD1 ALARM [4]

[3] SATA RAID controller on board in Intel chipset

[4] Hard disk alarm in conjunction with RAID and monitoring software

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■ **Technical specifications** (continued)

	SIMATIC IPC647D
Environmental conditions	
Degree of protection	IP41 at the front, IP20 at the rear acc. to EN 60529
Dust protection	with front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Protection class	Protection class I compliant with IEC 61140
Vibration load during operation	DIN EN 60068-2-6, 10 cycles Internal mounting of the hard disk drives in optional, internal drive cage: • 10 ... 58 Hz: 0.0375 mm; • 58 ... 500 Hz: 5 m/s2 (approx. 0.5 g) Note: There are limitations when DVD+/-RW and HDD are operated in a removable drive bay
Shock loading during operation	DIN EN 60068-2-27, IEC 60068-2-29 Internal mounting of the hard disk drives in optional, internal drive cage: • Half sine: 50 m/s^2, 30 ms (approx. 5 g), 100 shocks per axis Note: There are limitations when DVD+/-RW and HDD are operated in a removable drive bay
Electromagnetic compatibility (EMC)	
Emitted interference (AC)	• 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
Immunity to conducted interference on the supply lines	• ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ±2 kV (IEC 61000-4-5, asymm. surge)
Noise immunity on signal lines	• ± 1 kV (IEC 61000-4-4, burst, length < 30 m) • ± 2 kV (IEC 61000-4-4, symm. surge, length > 30 m) • ± 2 kV (IEC 61000-4-5, asymm. surge, length > 30 m)
Immunity to static discharge	• ± 6 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)
Immunity to high-frequency radiation	• 10 V/m, 80 to 1000 MHz and 1.4 to 2 GHz, 80% AM (according to IEC 61000-4-3) • 3 V/m, 2 to 2.7 GHz, 80% AM (to IEC 61000-4-3) • 10 V, 10 kHz to 80 MHz, 80% AM (according to IEC 61000-4-6)
Immunity to magnetic fields	100 A/m, 50/60 Hz (IEC 61000-4-8)
Ambient temperature during operation	5 ... 50 °C Note: Limitations for operation of DVD+/-RW
Relative humidity during operation	5 ... 85 % at 30 °C (no condensation)

	SIMATIC IPC647D
Approvals and safety regulations	
Safety directives	• IEC 60950-1 • EN 60950-1 • UL 60950-1 • CSA C22.2 No. 60950-1-07
Approvals	cULus 60950, KCC
CE marking	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
Dimensions and weights	
Installation dimensions (W x H x D) in mm	430 x 88 x 445

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the respective supplied SIMATIC IPC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

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PC-based Automation
Rack PC

SIMATIC IPC647D

■ **Ordering data** — Article No. | | Article No.

SIMATIC IPC647D	6AG4112 - 2 ■ ■ ■ ■ - ■ ■ ■ ■
Interfaces: RACK PC, 19", 2 U 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 / Mainboard	
• 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

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 SAT in removable drive bay; 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 (2x 1 TB HDD SAS, mirror disks) in removable drive bay, hot-swap, front; PCIe x8 RAID controller incl. ZMCP-Modul; (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 / swap media / 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), 512 MB, (1 slot reserved)	4
• PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 512 MB, (1 slot occupied)	5
Operating system (preinstalled and activated)	
• Windows 7 Ultimate, 32-bit MUI (Eng, Ger, Fr, It, Sp), SP1	A
• Windows 7 Ultimate, 64-bit MUI (Eng, Ger, Fr, It, Sp), SP1	B
• Windows Server 2008 R2 Standard Edition incl. 5 Clients, 64-bit, MUI (Eng, Ger, Fr, It, Sp), SP1	F
• Windows Server 2012 R2 Standard Edition inkl. 5 Clients, MUI (Eng, Fr, Ger, It, Sp), 64-bit	G
• Without operating system	X

Article No.

SIMATIC IPC647D	6AG4112 - 2 ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪
Expansions (software) / Security	
• SIMATIC IPC DiagMonitor software V4.x enclosed	A
• SIMATIC IPC Image Creator Software 3.x enclosed	B
• SIMATIC IPC DiagMonitor 4.x and Image Creator Software 3.x enclosed	C
• Without software	X
• Without expansions (software) / TPM (not for China and Russia)	Y
Power supply, with country-specific cable	
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Europe	0
• 110 / 240 V industrial power supply unit with NAMUR; power cable for United Kingdom	1
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Switzerland	2
• 110 / 240 V industrial power supply unit with NAMUR; power cable for USA	3
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Italy	4
• 110 / 240 V industrial power supply unit with NAMUR; power cable for China	5
• 2 x 110 / 240 V redundant power supply; without power cable	6

For an up-to-date overview, see the SIMATIC IPC online configurator at: https://www.siemens.com/ipc-configurator

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PC-based Automation
Rack PC

SIMATIC IPC647D

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	
Rack unit for low-profile removable drive bay	**6ES7648-0EG01-1BA0**
For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive	
Filter mats	**A5E02396171**
for SIMATIC IPC647D (packing unit: 10 units)	
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**
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	**6ES7648-1AA00-0XK0**
For locking the internal USB port	
Expansion components	See Expansion components
Communication products	See Expansion components
VxWorks real-time operating system	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".

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

SIMATIC IPC647D, Rack PC

Technical data of the telescopic rails	
Carrying capacity per pair, min.	30 kg
Full extension length, min.	470 mm
Rail thickness, max.	9.7 mm
Fixing screws	M5 x 6 mm

The fixing screws of the telescopic rails should 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

■ Overview

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

	SIMATIC IPC847D
General features	
Design	19" rack, 4 U, external coating
Processor	• Intel® Xeon™ E3-1268L v3 4C/8T, 2.3 (3.3) GHz, 8 MB cache, Turbo Boost 2.0, Extended Memory 64 (EM64) and virtualization technology (VT-x/-d), iAMT 9.0 • Intel® Core™ i5-4570TE 2C/4T, 2.7 (3.3) GHz, 4 MB cache, Turbo Boost 2.0, Extended Memory 64 (EM64) and virtualization technology (VT-x/-d), iAMT 9.0 • Intel® Core™ i3-4330TE 2C/4T, 2.4 GHz, 4 MB cache, Extended Memory 64 (EM64) and virtualization technology (VT-x)
Chipset	Intel C226
Main memory	• From 2 GB DDR3 1600 SDRAM • Dual channel support • 4 DIMM base • Expandable up to 32 GB [1] • ECC memory (optional)
Spare slots for expansions (all 312 mm long)	More PCI slots (7 PCI, 4 PCI-Express): • 7 x PCI • 1 x PCI-Express x16 (16 lanes) Gen 3 • 3 x PCI-Express x4 (1 lane) Gen 2 or More PCI-Express slots (8 PCI-Express, 3 PCI): • 3 x PCI • 1 x PCI-Express x16 (8 lanes) Gen 3 • 2 x PCI-Express x16 (4 lanes) Gen 3 • 2 x PCI-Express x16 (4 lanes) Gen 2 • 3 x PCI-Express x4 (4 lanes) Gen 2
Graphics	Onboard Intel HD 4600 graphics controller integrated into the processor Dynamic Video Memory up to 1.7 GB Up to 3840 x 2160 pixels at 60 Hz image refresh rate and 32-bit colors PCI Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot (optional) 512 MB, up to 2048 x 1536 pixels at 60 Hz image refresh rate and 32-bit colors
Operating system	• None • Preinstalled and activated/supplied on restore DVD • Windows 7 Ultimate MUI, 32/64-bit • Windows Server 2008 R2 incl. 5 client MUI, 64-bit MUI: Multi-Language User Interface; 5 languages (English, French, German, Italian, Spanish) • Project-specific on request • Linux [2] • VxWorks (Support Package) • Other

[1] Memory information: in order to use a memory with more than 4 GB, a 64-bit operating system is required. In the case of configurations with at least 4 GB, the visible memory can be reduced to about 3.5 GB or less (with 32-bit operating systems).

[2] Suitable for specific LINUX versions in accordance with the s pecifications of the Siemens manufacturer's declaration, see
http://support.automation.siemens.com/WW/view/en/10805661/134200 (LINUX is a brand name of Linus Torvalds).

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Rack PC

SIMATIC IPC847D

Technical specifications (continued)

	SIMATIC IPC847D
Power supply	• 100 ... 240 V AC, 50 ... 60 Hz with bridging of temporary power failures in accordance with NAMUR: max. 20 ms at 0.85 % rated voltage • Redundant 100 ... 240 V AC, 50 ... 60 Hz • 100...240 V AC, 50...60 Hz with UPS functionality incl. maintenance-free lead-tin battery
Drives	
SATA or SAS 3.5" hard disks (HDD) with NCQ technology and Solid-state drive (SSD) SATA 2.5" in MLC technology	Mounted internally on a permanent hard disk support: • 1 x 500 GB HDD • 1 x 240 GB SSD Can be installed in internal shock and vibration-damped drive cage (optional) • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) + 1 x 240 GB SSD (for operating system) in removable drive bay Installed on the front in the low-profile removable drive bay (hot swapping in RAID configurations): • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • 1 x 240 GB SSD • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) + 1 x 1 TB HDD as hot spare • RAID1[3], 1 TB (2 x 1 TB HDD, mirror disks) + 1 x 240 GB SSD (for operating system) • RAID5[3], 2 TB (3 x 1 TB HDD, striping with parity) • RAID5[3], 2 TB (3 x 1 TB HDD, striping with parity) + 1 x 1 TB HDD as hot spare • RAID1, 1 TB (2x 1 TB HDD SAS, mirror disks); PCIe x8 RAID controller incl. ZMCP module • RAID1, 1 TB (2x 1 TB HDD SAS, mirror disks); PCIe x8 RAID controller incl. ZMCP module; + 1x 240 GB SSD (for operating system) • RAID5, 2 TB (3x 1 TB HDD SAS, striping with parity); PCIe x8 RAID controller incl. ZMCP module • RAID5, 2 TB (3x 1 TB HDD SAS, striping with parity); PCIe x8 RAID controller incl. ZMCP module; +1x 1 TB HDD SAS as hot spare
DVD+/-R/RW, slim, SATA	• 8 x 8 x 6 x (DVD media) • 24 x 10 x 16 x (CD media)
Slots for drives	Front: • 3 x 5.25" / 4 x low-profile removable drive bay • 1 x slim (ODD) Internal: • 2 x 3.5" or • 2 x 3.5" (in the optional, vibration-damping drive cage)

	SIMATIC IPC847D
Interfaces	
PROFINET	3x RJ45 (CP 1616-compatible), optional
PROFIBUS/MPI	12 Mbit/s (isolated, compatible with CP 5622), optional
Ethernet	2 x 10/100/1000 Mbit/s (RJ45, teaming-capable)
USB 3.0	• 1 x front (high current) • 2 x rear (high current) • 1 x internal (high current), e.g. for USB dongle
USB 2.0	• 1 x front (high current), can be used with door closed • 2 x rear (high current)
Serial	• 9-pin COM1 (V.24) • 9-pin COM2 (V.24) (optional)
Parallel	• LPT1 (optional)
VGA	Optionally via adapter cable
DVI-I	• 1 x
DisplayPort V1.2	• 2 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line Out; 1 x Micro
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	• Overshoot/undershoot of permissible operating temperature range • Messages can be evaluated by the application program
Fans	• Speed monitoring • 2 x enclosure fans • 1 x fan power supply
Watchdog	• Monitoring of program execution • Monitoring time can be parameterized in software • Restart can be parameterized in the event of a fault • Messages can be evaluated by the application program
Monitoring functions via the network	SIMATIC PC DiagMonitor (optional) Remote monitoring capability for: • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System/Ethernet monitoring (heartbeat) Communication: • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Configuration of client/server architectures • Structure of log files

[3] SATA RAID controller on board in Intel chipset
[4] Hard disk alarm in conjunction with RAID and monitoring software

■ **Technical specifications** (continued)

	SIMATIC IPC847D
Front LEDs	• POWER (internal power supply unit, PC switched On) • ETHERNET1 (Ethernet status, "Heartbeat") • ETHERNET2 (Ethernet status, "Heartbeat") • PN / MPI/DP (PROFINET/PROFIBUS status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD0 ALARM [4] • HDD1 ALARM [4] • HDD2 ALARM [4] • HDD (access to hard disk) / HDD3 ALARM [4]
Environmental conditions	
Degree of protection	IP41 at the front, IP20 at the rear acc. to EN 60529
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Protection class	Protection class I according to IEC 61140
Vibration load during operation	DIN EN 60068-2-6, 10 cycles
	Internal mounting of the hard disk drives in optional, internal drive cage: • 10 ... 58 Hz: 0.0375 mm; • 58 ... 500 Hz: 5 m/s2 (approx. 0.5 g)
	Permanently installed internal hard disk drives: • 10 ... 58 Hz: 0.019 mm; • 58 ... 500 Hz: 3 m/s2 (approx. 0.3 g)
	Note: There are limitations when DVD+/-RW and HDD are operated in a removable drive bay
Shock load during operation	DIN EN 60068-2-27, IEC 60068-2-29
	Internal mounting of the hard disk drives in optional, internal drive cage: • Half sine: 50 m/s2, 30 ms (approx. 5 g), 100 shocks per axis • Permanently installed internal hard disk drives: 30 m/s2, 30 ms (approx. 3 g)
	Note: There are limitations when DVD+/-RW and HDD are operated in a removable drive bay

	SIMATIC IPC847D
Electromagnetic compatibility (EMC)	
Emitted interference (AC)	• 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
Immunity to conducted interference on the supply lines	• ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ±2 kV (IEC 61000-4-5, asymm. surge)
Noise immunity on signal lines	• ± 1 kV (IEC 61000-4-4, burst, length < 30 m) • ± 2 kV (IEC 61000-4-4, symm. surge, length > 30 m) • ± 2 kV (IEC 61000-4-5, asymm. surge, length > 30 m)
Immunity to static discharge	• ± 6 kV, contact discharge (IEC 61000-4-2) • ± 8 kV, air discharge (IEC 61000-4-2)
Immunity to high-frequency radiation	• 10 V/m, 80 to 1000 MHz and 1.4 to 2 GHz, 80% AM (according to IEC 61000-4-3) • 3 V/m, 2 to 2.7 GHz, 80% AM (to IEC 61000-4-3) • 10 V, 10 kHz to 80 MHz, 80% AM (according to IEC 61000-4-6)
Immunity to magnetic fields	100 A/m, 50/60 Hz (IEC 61000-4-8)
Ambient temperature during operation	5 ... 50 °C
	Note: Limitations for operation of DVD+/-RW
Relative humidity during operation	5 ... 80 % at 25 °C (no condensation)
Approvals and safety regulations	
Safety directives	• IEC 60950-1 • EN 60950-1 • UL 60950-1 • CSA C22.2 No 60950-1-07
Approvals	cULus 60950-1 Second Edition, KCC
CE marking	• Emitted interference: EN 61000-6-3: 2007 +A1:2011 • Noise immunity: EN 61000-6-2:2005
Dimensions and weights	
Installation dimensions (W x H x D) in mm	430 x 177 x 448

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the SIMATIC IPC supplied in each case. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

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PC-based Automation
Rack PC

SIMATIC IPC847D

Ordering data	Article No.		SIMATIC IPC847D	Article No.

SIMATIC IPC847D — Article No. 6AG4114 - 2 ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪

Interfaces:
RACK PC, 19", 4 U
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 / Mainboard

Description	Code
• 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 161-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

SIMATIC IPC847D — Article No. 6AG4114 - 2 ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪

Drives

Description	Code
• 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 swap + 1 TB SATA HDD as hot spare in removable drive bay, 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 GByte 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) i+ 240 GByte SSD SATA (for operating system) in removable drive bay, hot-swap; front	R
• RAID1, 1 TB (2x 1 TB HDD SAS, mirror disks) in removable drive bay, hot-swap, front; PCIe x8 RAID controller incl. ZMCP-Modul (2 slots occupied)	S
• RAID1, 1 TB (2x 1 TB HDD SAS, mirror disks) in removable drive bay; PCIe x8 RAID controller incl. ZMCP module (2 slots occupied) + 240 GB SSD SATA (for operating system) in removable drive bay, front	T
• RAID5, 2 TB (3x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swap, front; PCIe x8 RAID controller incl. ZMCP-Modul (2 slots occupied)	U
• RAID5, 2 TB (3x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swap, front; PCIe x8 RAID controller incl. ZMCP module (2 slots occupied) + 1 TB SATA HDD as hot spare in removable drive bay, front	V
• RAID1, 240 GB (2 x 240 GB SSD SATA, mirror disks), in removable drive bay, hot swap, at the front	W

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■ 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 / swap media
• Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; without swap media	0
• Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; without swap 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 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), 512 MB, (1 slot reserved)	4

Operating system (preinstalled and activated)
• Windows 7 Ultimate, 32-bit MUI (Eng, Ger, Fr, It, Sp), SP1	A
• Windows 7 Ultimate, 64-bit MUI (Eng, Ger, Fr, It, Sp), SP1	B
• Windows Server 2008 R2 Standard Edition incl. 5 Clients, 64-bit, MUI (Eng, Ger, Fr, It, Sp), SP1	F
• Windows Server 2012 R2 Standard Edition incl. 5 Clients, MUI (Eng, Fr, Ger, It, Sp), 64-bit	G
• Without operating system	X

SIMATIC IPC847D	Article No.
	6AG4114 - 2 ■ ■ ■ ■ - ■ ■ ■ ■

Expansions (software) / Security
• SIMATIC IPC DiagMonitor software V4.x enclosed	A
• SIMATIC IPC Image Creator Software 3.x enclosed	B
• SIMATIC IPC DiagMonitor 4.x and Image Creator Software 3.x enclosed	C
• Without software (software)	X
• Without expansions (software) / TPM (not for China and Russia)	Y

Power supply, with country-specific cable
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Europe	0
• 110 / 240 V industrial power supply unit with NAMUR; power cable for United Kingdom	1
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Switzerland	2
• 110 / 240 V industrial power supply unit with NAMUR; power cable for USA	3
• 110 / 240 V industrial power supply unit with NAMUR; power cable for Italy	4
• 110 / 240 V industrial power supply unit with NAMUR; power cable for China	5
• 2 x 110 / 240 V redundant power supply; without power cable	6
• 110 / 240 V UPS V industrial power supply incl. maintenance-free lead-tin battery; without power supply cable	7

For an up-to-date overview, see the SIMATIC IPC online configurator at: https://www.siemens.com/ipc-configurator

PC-based Automation
Rack PC

SIMATIC IPC847D

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	
Rack unit for low-profile removable drive bay For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive	**6ES7648-0EG01-1BA0**
Filter mats 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 for converting the computer into an industrial tower PC	**6ES7648-1AA00-0XD0**
USB retainer for interlocking the internal USB port	**6ES7648-1AA00-0XK0**
Expansion components	See Expansion components
Communication products	See Expansion components
VxWorks real-time operating system	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".

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.
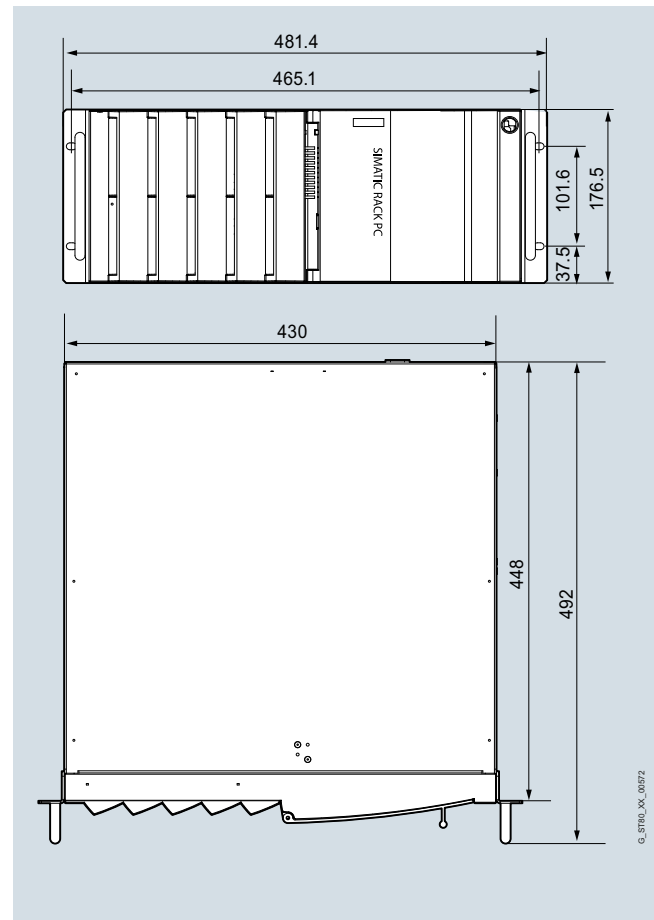
SIMATIC IPC847D, Rack PC

Technical data of the telescopic rails	
Carrying capacity per pair, min.	30 kg
Full extension length, min.	470 mm
Rail thickness, max.	9.7 mm
Fixing screws	M5 x 6 mm

The fixing screws of the telescopic rails should 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

Overview

SIMATIC IPC647C

The SIMATIC IPC647C 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 technology

Technical specifications

Article number	6AG4112-1....-....
	SIMATIC IPC647C
Product type designation	
Supply voltage	
Type of supply voltage	100 - 240 V AC
Processor	
Processor type	Core i7-610E (2.53 GHz 2C/4T, 4 MB Cache, TB, VT-x, VT-d, EM64T); Core i5-520E (2.4 GHz, 2C/4T, 3 MB Cache, TB, VT-x, VT-d, EM64T); Core i3-330E (2.13 GHz, 2C/4T, 3 MB Cache, VT-x, EM64T)
Drives	
Hard disk	250 GB or 500 GB SATA HDD, RAID1 HDD, 32 GB SATA SSD, installed internally in the shock and vibration-damped drive rack, or on the front drive support in the swap frame
Memory	
Type of memory	DDR3-SDRAM
Main memory	1 GB to 8 GB, ECC optional
Hardware configuration	
Slots	
• free slots	2x PCI, 1x PCIe x16 or 1x PCI, 1x PCIe x8 (4 lane), 1x PCIe x16; all modules up to 312 mm in length are supported
Interfaces	
Interfaces/bus type	2 x COM, 1 x LPT, 1 x DVI-I, 2 x PS/2, audio (Microphone In, Line Out), 7 x USB 2.0, 2 x Gigabit Ethernet, PROFIBUS or PROFINET optional
PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible
serial interface	COM1: 1 x V.24 (RS232), COM2: 1 x V.24 (RS232C)
parallel interface	LPT1 (EPP/ECP)
USB port	2x USB 2.0 on front, 4x USB 2.0 on rear, 1x USB 2.0 internal
Connection for keyboard/mouse	2x PS/2
Video interfaces	
• Graphics interface	1 x DVI-I or 1 x VGA (via adapter) optional

Article number	6AG4112-1....-....
	SIMATIC IPC647C
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	POWER; HARD DISK; ETHERNET 1; ETHERNET 2; PROFIBUS/MPI; SF PROFINET; WATCHDOG; TEMP; HDD1 ALARM; HDD2 ALARM
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+ 5 °C to + 35 °C without restrictions; + 5 °C to + 45 °C no burner operation; + 5 °C to + 50 °C no ODD operation; power dissipation of the expansion modules in total less than 30 W
• min.	5 °C
• max.	50 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	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/s² (0.5 g)
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
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX

PC-based Automation
Rack PC

SIMATIC IPC647C

■ **Ordering data** | **Article No.** | | **Article No.**

SIMATIC IPC647C [1]	6AG4112 - 1 ■ ■ ■ ■ - ■ ■ ■ ■

Interfaces:
2 x 10/100/1000 Mbps Ethernet (RJ45); 1 x graphic (DVI-I);
2 x COM; 1 x LPT; 2 x PS/2;
4 x USB 2.0 at rear, 2 x USB 2.0 at front; 1 x USB 2.0 internal; audio; temperature and fan monitoring, watchdog; card retainer

Processor/mainboard
• Core i3-330E (2C/4T, 2.13 GHz, 3 MB cache), mainboard without fieldbus	G
• Core i3-330E (2C/4T, 2.13 GHz, 3 MB cache), mainboard with PROFIBUS/MPI	H
• Core i3-330E (2C/4T; 2.13 GHz, 3 MB cache), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2]	J
• Core i5-520E (2C/4T, 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard without fieldbus	K
• Core i5-520E (2C/4T, 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard with PROFIBUS/MPI	L
• Core i5-520E (2C/4T; 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2]	M
• Core i7-610E (2C/4T, 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard without field bus	N
• Core i7-610E (2C/4T, 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard with PROFIBUS/MPI	P
• Core i7-610E (2C/4T, 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2]	R

Hard disks:
• 250 GB HDD SATA; 0.5 g vibration, 5 g shock, internal	A
• 500 GB HDD SATA; 0.5 g vibration, 5 g shock, internal	B
• 2 x 500 GB HDD SATA; 0.5 g vibration, 5 g shock, internal	C
• RAID1 500 GB (2 x 250 GB HDD SATA, mirror disks); 0.5 g vibration, 5 g shock, internal	D
• 250 GB HDD SATA in removable drive bay; front	H
• 500 GB HDD SATA in removable drive bay; front	K
• 2 x 500 GB HDD SATA in removable drive bay; front	M
• RAID1 500 GB (2 x 250 GB HDD SATA) in removable drive bay, for hot swapping; front	P
• 50 GB SSD (SLC) SATA, internal	S
• 50 GB SSD (SLC) SATA in removable drive bay; front	T
• RAID1 1 TB (2 x 1 TB HDD SAS) in removable drive bay, for hot-swapping, front; PCIe x8 RAID controller with zero-maintenance cache protection module in PCIe x16 slot [3]	U

SIMATIC IPC647C [1]	6AG4112 - 1 ■ ■ ■ ■ - ■ ■ ■ ■

Memory configuration:
• 1 GB DDR3 SDRAM (1 x 1 GB), single channel	0
• 2 GB DDR3 SDRAM (1 x 2 GB), single channel	1
• 4 GB DDR3 SDRAM (2 x 2 GB), dual channel	2
• 6 GB DDR3 SDRAM (1 x 2 GB, 1 x 4 GB), dual channel	3
• 8 GB DDR3 SDRAM (2 x 4 GB), dual channel	4
• 2 GB DDR3 SDRAM (2 x 1 GB), dual channel	5
• 4 GB DDR3 SDRAM (2 x 2 GB), dual channel	6
• 8 GB DDR3 SDRAM (2 x 4 GB), dual channel	7

Swap media:
• CompactFlash drive, at front	0
• DVD±RW	1
• without swap medium	8

Bus module / expansion hardware
• Bus modules 3 slots: 2 x PCI; 1 x PCIe x16; without hardware expansions	0
• Bus modules 3 slots: 2 x PCI; 1 x PCIe x16; DVI-VGA adapter (1 x VGA) for onboard graphics	1
• Bus modules 3 slots: 2 x PCI; 1 x PCIe x16 assigned; + graphics card PCIe x16, 2 x DP (2 x DVI-D via 2 x DP-DVI adapters)	2
• Bus modules 3 slots: 2 x PCI; 1 x PCIe x16 assigned; + graphics card PCIe x16, 2 x DP (2 x VGA via 2 x DP-VGA adapters)	3
• Bus modules 3 slots: 1 x PCI, 1 x PCIe x8 (4-lane); 1 x PCIe x16; without HW expansions	4
• Bus modules 3 slots: 1 x PCI; 1 x PCIe x8 (4-lane); 1 x PCIe x16; DVI-VGA adapter (1 x VGA) for onboard graphics	5
• Bus modules 3 slots: 1 x PCI; 1 x PCIe x8 (4-lane); 1 x PCIe x16 assigned; + graphics card PCIe x16, 2 x DP (2x DVI-D via 2x DP-DVI adapters)	6
• Bus modules 3 slots: 1 x PCI; 1 x PCIe x8 (4-lane); 1 x PCIe x16 assigned; + graphics card PCIe x16, 2 x DP (2x VGA via 2x DP-VGA adapters)	7

[1] For an up-to-date overview, see the SIMATIC PC online configurator at:
http://www.siemens.com/ipc-configurator

[2] Not in combination with Windows Server operating systems.

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Ordering data

SIMATIC IPC647C [1]	Article No.
	6AG4112 - 1 ▢ ▢ ▢ ▢ - ▢ ▢ ▢ ▢

Operating system
(preinstalled and activated)

• Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP3	B
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP1	E
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1	F
• Windows Server 2003 R2 Standard Edition incl. 5 clients, MUI (Eng, Fr, Ger, It, Sp), 32-bit, SP2	N
• Windows Server 2008 Standard Edition incl. 5 clients, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP2	P
• Windows Server 2008 R2 Standard Edition incl. 5 Clients, MUI (Eng, Ger, Fr, It, Sp), 64-Bit, SP1	Q
• Without operating system	X

Expansion (software)

• SIMATIC IPC DiagMonitor 4.x enclosed	A
• SIMATIC IPC Image Creator Software 3.x enclosed	B
• SIMATIC IPC DiagMonitor 4.x and Image Creator Software 3.x enclosed	C
• Without software	X

Power supply,
with country-specific cable:

• 100/240 V AC industrial power supply with Namur; power cable for Europe	0
• 100/240 V AC industrial power supply with Namur; power cable for United Kingdom	1
• 100/240 V AC industrial power supply with Namur; power cable for Switzerland	2
• 100/240 V AC industrial power supply with Namur; power cable for USA	3
• 100/240 V AC industrial power supply with Namur; power cable for Italy	4
• 100/240 V AC industrial power supply with Namur; power cable for China	5
• 100/240 V AC redundant power supply with Namur; without power cable	6

[1] For an up-to-date overview, see the SIMATIC PC online configurator at:
http://www.siemens.com/ipc-configurator

[2] Not in combination with Windows Server operating systems.

[3] Not in combination with graphics card, Windows XP, Windows 7 (32-bit), without removable media.

Accessories	Article No.
Memory expansion	
• 1 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ40-0KA0**
• 2 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ50-0KA0**
• 4 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ60-0KA0**
• 1 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ40-1KA0**
• 2 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ50-1KA0**
• 4 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ60-1KA0**
Hard disk slide-in unit for removable drive bay SIMATIC PC accessories, slide-in HDD removable drive bay, low-profile, for 3.5" hard disk, serial ATA / SAS (without hard disk)	**6ES7648-0EG00-1BA0**
Filter mats for SIMATIC IPC647C (packing unit: 10 units)	**A5E02396171**
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 for pin assignment of the internal USB port	**6ES7648-1AA00-0XK0**
Expansion components	See expansion components
Communication products	See expansion components
RMOS real-time operating system	See RMOS

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 favorable prices. More information under "Embedded bundles / Packages for industrial PCs":

PC-based Automation
Rack PC

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

Technical data of the telescopic rails	
Carrying capacity per pair, min.	30 kg
Full extension length, min.	470 mm
Rail thickness, max.	9.7 mm
Fixing screws	M5 x 6 mm

The fixing screws of the telescopic rails should 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

More information

Further information can be found in the Internet under:

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

Overview

SIMATIC IPC847C

The SIMATIC IPC847C 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 technology

Technical specifications

Article number	6AG4114-1....-....
	SIMATIC IPC847C
Product type designation	
Supply voltage	
Type of supply voltage	100 - 240 V AC
Processor	
Processor type	Core i7-610E (2.53 GHz 2C/4T, 4 MB Cache, TB, VT-x, VT-d, EM64T); Core i5-520E (2.4 GHz, 2C/4T, 3 MB Cache, TB, VT-x, VT-d, EM64T); Core i3-330E (2.13 GHz, 2C/4T, 3 MB Cache, VT-x, EM64T)
Drives	
Hard disk	250 GB or 500 GB SATA HDD, RAID1/RAID5 HDD, 32 GB SATA SSD, installed internally on the drive carrier, in the shock and vibration-damped drive rack, or on the front drive support in the swap frame
Memory	
Type of memory	DDR3-SDRAM
Main memory	1 GB to 8 GB, ECC optional
Hardware configuration	
Slots	
• free slots	7x PCI, 1x PCIe x16 or 7 x PCI, 3x PCIe x4, 1x PCIe x16; all modules up to 312 mm in length are supported
Interfaces	
Interfaces/bus type	2 x COM, 1 x LPT, 1 x DVI-I, 2 x PS/2, audio (Microphone In, Line Out), 7 x USB 2.0, 2 x Gigabit Ethernet, PROFIBUS or PROFINET optional
PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible
serial interface	COM1: 1 x V.24 (RS232), COM2: 1 x V.24 (RS232C)
parallel interface	LPT1 (EPP/ECP)
USB port	2x USB 2.0 on front, 4x USB 2.0 on rear, 1x USB 2.0 internal
Connection for keyboard/mouse	2x PS/2
Multimedia	
• Audio In/Out	Yes
Special interfaces	
• Microphone In	Yes
Video interfaces	
• Graphics interface	1 x DVI-I or 1 x VGA (via adapter) optional

Article number	6AG4114-1....-....
	SIMATIC IPC847C
Industrial Ethernet	
• Industrial Ethernet interface	2 x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	POWER; HARD DISK; ETHERNET 1; ETHERNET 2; PN I MPI/DP; WATCHDOG; TEMP; HDD1 ALARM; HDD2 ALARM; HDD3 ALARM
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+ 5 °C to + 35 °C without restrictions; + 5 °C to + 45 °C no burner operation; + 5 °C to + 50 °C no ODD operation; power dissipation of the expansion modules in total less than 30 W
• min.	5 °C
• max.	50 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	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/s² (0.5 g)
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	
Operating system	Windows XP Professional, 32-bit, MUI; Windows 7 Ultimate, 32-bit, MUI; Windows Server 2008 Standard Edition incl. 5 Clients, 32-bit, MUI
Additional info on operating system	Multi Language User Interface (MUI): 5 languages: English, German, French, Spanish, Italian
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX

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PC-based Automation
Rack PC

SIMATIC IPC847C

Ordering data

	Article No.		Article No.

SIMATIC IPC847C [1]   —   6AG4114 - 1 ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪

Interfaces: 2 x 10/100/1000 Mbps Ethernet (RJ45);
1 x graphic (DVI-I); 2 x COM;
1 x LPT; 2 x PS/2;
4 x USB 2.0 at rear, 2 x USB 2.0 at front,
1 x USB 2.0 internal; audio;
temperature and fan monitoring, watchdog

Processor, mainboard:
- Core i3-330E (2C/4T, 2.13 GHz, 3 MB cache), mainboard without fieldbus — **G**
- Core i3-330E (2C/4T, 2.13 GHz, 3 MB cache), mainboard with PROFIBUS/MPI — **H**
- Core i3-330E (2C/4T; 2.13 GHz, 3 MB cache), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2] — **J**
- Core i5-520E (2C/4T, 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard without fieldbus — **K**
- Core i5-520E (2C/4T, 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard with PROFIBUS/MPI — **L**
- Core i5-520E (2C/4T; 2.4 GHz, 3 MB cache, TB, iAMT, VT), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2] — **M**
- Core i7-610E (2C/4T, 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard without field bus — **N**
- Core i7-610E (2C/4T, 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard with PROFIBUS/MPI — **P**
- Core i7-610E (2C/4T; 2.53 GHz, 4 MB cache, TB, iAMT, VT), mainboard with PROFINET (3 x RJ45, CP 1616-compatible) [2] — **R**

Hard disks:
- 250 GB HDD SATA; 0.5 g vibration, 5 g shock, internal — **A**
- 500 GB HDD SATA; 0.5 g vibration, 5 g shock, internal — **B**
- 2 x 500 GB HDD SATA; 0.5 g vibration, 5 g shock, internal — **C**
- RAID1 500 GB (2 x 500 GB HDD SATA, mirror disks); 0.5 g vibration, 5 g shock, internal — **D**
- 250 GB HDD SATA; 0.3 g vibration, 3 g shock, internal — **G**
- 250 GB HDD SATA in removable drive bay; front — **H**
- 500 GB HDD SATA in removable drive bay; front — **K**
- 2 x 500 GB HDD SATA in removable drive bay; front — **M**
- RAID1 500 GB (2 x 500 GB HDD SATA) in removable drive bay, for hot swapping; front — **P**
- RAID5 1 TB (3 x 500 GB HDD SATA) in removable drive bay, for hot swapping; front — **R**
- 50 GB SSD (SLC) SATA, internal — **S**
- 50 GB SSD (SLC) SATA in removable drive bay; front — **T**
- RAID1 1 TB (2 x 1 TB HDD SAS) in removable drive bay, for hot-swapping, front; PCIe x8 RAID controller with zero-maintenance cache protection module in PCIe x16 slot [3] — **U**
- RAID5 1.8 TB (3 x 1 TB HDD SAS) in removable drive bay, for hot-swapping, front; PCIe x8 RAID controller with zero-maintenance cache protection module in PCIe x16 slot [3] — **V**

SIMATIC IPC847C [1]   —   6AG4114 - 1 ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪

Memory configuration:
- 1 GB DDR3 SDRAM (1 x 1 GB), single channel — **0**
- 2 GB DDR3 SDRAM (1 x 2 GB), single channel — **1**
- 4 GB DDR3 SDRAM (2 x 2 GB), dual channel — **2**
- 6 GB DDR3 SDRAM (1 x 2 GB, 1 x 4 GB), dual channel — **3**
- 8 GB DDR3 SDRAM (2 x 4 GB), dual channel — **4**
- 2 GB DDR3 SDRAM (2 x 1 GB), dual channel — **5**
- 4 GB DDR3 SDRAM (2 x 2 GB), dual channel — **6**
- 8 GB DDR3 SDRAM (2 x 4 GB), dual channel — **7**

Swap media:
- DVD-ROM — **1**
- DVD+/-RW — **2**
- Without swap medium — **8**

Bus module / hardware expansion
- Bus module, 8 slots: 7 x PCI, 1 x PCIe x16; without hardware expansions — **0**
- Bus module, 8 slots: 7x PCI, 1 x PCIe x16; DVI-VGA adapter (1 x VGA) for onboard graphics — **1**
- Bus module, 8 slots: 7 x PCI; 1 x PCIe x16 occupied; + graphics card PCIe x16, 2 x DP (2 x DVI-D via 2 x DP-DVI adapter) — **2**
- Bus module, 8 slots: 7 x PCI; 1 x PCIe x16 occupied; + graphics card PCIe x16, 2 x DP (2x VGA via 2 x DP-VGA adapters) — **3**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16, 3 x PCIe x4; without HW expansions — **4**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16, 3 x PCIe x4; + DVI-VGA adapter (VGA) for on-board graphics — **5**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16 occupied, 3 x PCIe x4; + graphics card PCIe x16, 2 x DP (2 x DVI-D via 2x DP-DVI adapter) — **6**
- Bus module, 11 slots: 7 x PCI, 1x PCIe x16 occupied, 3 x PCIe x4; + graphics card PCIe x16, 2 x DP (2 x VGA via 2 x DP-VGA adapter) — **7**

[1] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

[2] Not in combination with Windows Server 2008 R2, Windows Server 2008 and Windows Server 2003 R2.

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Ordering data

	Article No.
SIMATIC IPC847C [1]	**6AG4114 - 1 ▨ ▨ ▨ ▨ - ▨ ▨ ▨ ▨**
Operating system (preinstalled and activated)	
• Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP3	B
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP1	E
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1	F
• Windows Server 2003 R2 Standard Edition incl. 5 clients, MUI (Eng, Fr, Ger, It, Sp), 32-bit, SP2	N
• Windows Server 2008 Standard Edition incl. 5 clients, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP2	P
• Windows Server 2008 R2 Standard Edition incl. 5 clients, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1 enclosed	Q
• Without operating system	X
Expansion software	
• SIMATIC IPC DiagMonitor 4.x enclosed	A
• SIMATIC IPC Image Creator Software 3.x enclosed	B
• SIMATIC IPC DiagMonitor 4.x & Image Creator Software 3.x enclosed	C
• Without software	X
Power supply, with country-specific cable	
• 100/240 V AC industrial power supply with Namur; power cable for Europe	0
• 100/240 V AC industrial power supply with Namur; power cable for United Kingdom	1
• 100/240 V AC industrial power supply with Namur; power cable for Switzerland	2
• 100/240 V AC industrial power supply with Namur; power cable for USA	3
• 100/240 V AC industrial power supply with Namur; power cable for Italy	4
• 100/240 V AC industrial power supply with Namur; power cable for China	5
• 100/240 V AC industrial redundant power supply unit with Namur; without power cable	6

[1] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

[2] Not in combination with Windows Server 2008 R2, Windows Server 2008 and Windows Server 2003 R2

[3] Not in combination with graphics card, Windows XP, Windows 7 (32-bit), without removable media

	Article No.
Accessories	
Memory expansion	
• 1 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ40-0KA0**
• 2 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ50-0KA0**
• 4 GB DDR3 1066 SDRAM, DIMM	**6ES7648-2AJ60-0KA0**
• 1 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ40-1KA0**
• 2 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ50-1KA0**
• 4 GB DDR3 1066 SDRAM, DIMM, ECC	**6ES7648-2AJ60-1KA0**
Hard disk slide-in unit for removable drive bay SIMATIC PC accessories, slide-in unit for low-profile HDD removable drive bay, for 3.5" hard disk, SATA / SAS (without hard disk)	**6ES7648-0EG00-1BA0**
Filter mats For Rack PC 847B and IPC847C Packing unit 10 units	**A5E01064980**
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 for converting the computer into an industrial tower PC	**6ES7648-1AA00-0XD0**
Retainer for pin assignment of the internal USB port	**6ES7648-1AA00-0XK0**
Expansion components	See expansion components
Communication products	See expansion components
RMOS real-time operating system	See RMOS

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 favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

PC-based Automation
Rack PC

SIMATIC IPC847C

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

G_ST80_XX_00454

Technical data of the telescopic rails	
Carrying capacity per pair, min.	30 kg
Full extension length, min.	470 mm
Rail thickness, max.	9.7 mm
Fixing screws	M5 x 6 mm

The fixing screws of the telescopic rails should 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

Further information can be found in the Internet under:

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

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■ Overview

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 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

<u>Shared industrial functionality:</u>

- 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 preinstalled and activated for fast startup
- Mainboard 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 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 due to DIN rail/wall/front upright mounting, even outside a control cabinet
- 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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PC-based Automation
Box PC

Introduction

■ **Technical specifications**

	SIMATIC IPC227E (Nanobox PC)	SIMATIC IPC227D (Nanobox PC)	SIMATIC IPC427D (Microbox PC)	SIMATIC IPC627D (Box PC)	SIMATIC IPC827D (Box PC)
Design					
Rail or wall mounting	•	•	•	-	-
Wall or portrait mounting	•	• Also: Side mounting	•	•	•
General features					
Processor	• Intel Celeron N2930, 1.83 GHz, Quad Core • Intel Celeron N2807, 1.58 GHz, Dual Core	• Intel Atom E660 1.3 GHz • Intel Atom E640 1.0 GHz • Intel Atom E620 600 MHz	• Intel Celeron 827E 1.4 GHz, 1.5 MB SLC • Intel Core i3-3217UE (3 MB cache, 1.60 GHz) • Intel Core i7-3517UE (4 MB cache, up to 2.80 GHz)	• Intel Xeon E3-1268L v3 (4 cores/8 threads, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT) • Intel Core i3-4330TE (2 cores/4 threads, 2.4 GHz, 4 MB cache, VT-x) • Intel Celeron G1820TE (2 cores/2 threads, 2.2 GHz, 2 MB cache)	• Intel Xeon E3-1268L v3 (4 cores/8 threads, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT) • Intel Core i3-4330TE (2 cores/4 threads, 2.4 GHz, 4 MB cache, VT-x) • Intel Celeron G1820TE (2 cores/2 threads, 2.2 GHz, 2 MB cache)
Main memory	2 GB, 4 GB, 8 GB	512 MB, 1 GB, 2 GB	1 GB, 2 GB, 4 GB, 8 GB, optional ECC	2 GB, expandable up to 16 GB DDR3 1600 DIMM, optional ECC	2 GB, expandable up to 16 GB DDR3 1600 DIMM, optional ECC
Static RAM (NVRAM)	512 KB (optional, available soon)	512 KB (optional)	512 KB (optional)	2 MB	2 MB
Free slots for expansions	1 x PCIe with PCIe enclosure option	1 x PCIe with PCIe enclosure option	Up to 2 x PCIe (enclosure option)	2 x PCI or 1 x PCIe x16 / 1 x PCI 2 x PCIe (x16/x4)	2 x PCI (240 mm) 1 x PCI (185 mm) 1 PCIe x4 (185 mm) 1 x PCIe x16 (185 mm)
Graphics	Onboard	Onboard	Onboard	Onboard	Onboard
Operating system					
None	•	•	•	•	•
Pre-installed and activated / supplied on Restore CD	• Windows Embedded Standard 7 E (P available soon), 32 bit or 64 bit • Windows 7 Ultimate, Multi-Language, 32 bit or 64 bit	• Windows Embedded Standard 2009 (CF card ≥ 2 GB, SSD, hard disk) • Windows XP Professional MUI (SSD, hard disk) • Windows Embedded Standard 7, 32-bit (CF card ≥ 4 GB, SSD, hard disk) • Windows 7 Ultimate MUI, 32-bit (SSD, hard disk)	• Windows 7 Ultimate 32-bit MUI • Windows 7 Ultimate 64-bit MUI • Windows Embedded Standard 7, 32-bit (CFast >= 4 GB, SSD, hard disk) • Windows Embedded Standard 7 Professional, 32-bit, MUI (CFast >= 8 GB, SSD, hard disk)	• Windows 7 Ultimate 32-bit MUI • Windows 7 Ultimate 64-bit MUI • Windows Embedded Standard 7 Professional, 32-bit, MUI on 80 GB SSD	• Windows 7 Ultimate 32-bit MUI • Windows 7 Ultimate 64-bit MUI • Windows Embedded Standard 7 Professional, 32-bit, MUI on 80 GB SSD
Order separately		RMOS3 V3.50	RMOS3 V3.50	-	-
Project-specific on request	• Linux [1] • VxWorks • Other	• Linux [1] • Other	• Linux [1] • VxWorks • Other	• Linux [1] • VxWorks • Other	• Linux [1] • VxWorks • Other
Interfaces					
PROFINET onboard	-	-	3 x RJ45 (CP 1616 compatible) onboard, optional	3 x RJ45 (CP 1616 compatible) onboard, optional	3 x RJ45 (CP 1616-compatible) onboard, optional
PROFIBUS / MPI	-	-	12 Mbps (CP 5622-compatible), optional	12 Mbps (CP 5622-compatible) onboard, optional	12 Mbps (CP 5622-compatible) onboard, optional
Ethernet	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
USB	1 x USB 2.0, 3 x USB 2.0	4 x USB 2.0	4 x USB 3.0	4 x USB 3.0	4 x USB 3.0
Graphics	1 x DisplayPort	1 x DVI-D	• 1 x DVI-I (DVI and VGA) • 1 x DisplayPort	• 1 x DVI-I (DVI or VGA) • 1 x DisplayPort	• 1 x DVI-I (DVI and VGA) • 1 x DisplayPort

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Technical specifications (continued)

	SIMATIC IPC227E (Nanobox PC)	SIMATIC IPC227D (Nanobox PC)	SIMATIC IPC427D (Microbox PC)	SIMATIC IPC627D (Box PC)	SIMATIC IPC827D (Box PC)
Drives					
Hard disks	1 x 2.5" (optional)	1 x 2.5" (optional)	1 x 2.5" (optional)	• 1 x 3.5" • RAID1, 2 x 2.5" • Swap HDD, 2 x 2.5"	• 1 x 3.5" • RAID1, 2 x 2.5" • Swap HDD, 2 x 2.5"
Solid-state drive	1 x 2.5" SATA (optional)	1 x 2.5" SATA (optional)	1 x 2.5" SATA (optional)	1 x 2.5" SATA (optional)	1 x 2.5" SATA (optional)
Flash Drive	1 x CFast externally accessible	1 x CF externally accessible	• 1 x CFast externally accessible • 1 x CFast internal, in place of HDD, SSD (optional)	-	-
Optical drives	-	-	-	DVD R/W	DVD R/W
Ambient conditions					
Vibration/shock load during operation	1 g / 15 g (with Flash Drive)	1 g / 15 g (with Flash Drive)	1 g / 15 g (with Flash Drive)	1 g / 5 g	1 g / 5 g
Ambient temperature during operation	0 … 50 °C (with FlashDrive) 0 … 40 °C (with hard disk)	0 … 50 °C (with Flash Drive), 0 … 40 °C (with hard drive)	With maximum configuration: 0 ... 50/55 °C (with Flash Drive) 5 ... 40 °C (with hard disk)	With maximum configuration: 5 ... 45 °C 5 ... 50/55 °C (with 20/10 W load on USB, PCI(e) bus)	With maximum configuration: 5 ... 45 °C 5 ... 50/55 °C (with 50/10 W load on USB, PCI(e) bus)

• Available

- Not available

[1] Suitable for specific Linux versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for Linux", see http://support.automation.siemens.com/WW/view/en/10805661/134200 (Linux is a brand name of Linus Torvalds).

More information

Further information can be found on the Internet at:

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

Information material can be ordered or downloaded from the Internet:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
Box PC

SIMATIC IPC227E

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 — Article No.

	Article No.
SIMATIC IPC227E	**6ES7647 - 8 B ▪ ▪ ▪ - ▪ ▪ ▪ ▪**

Processor
• CPU Good -> Celeron N2807 (2C/2T)	A
• CPU Best -> Celeron N2930 (4C/4T)	B

RAM / NVRAM
• 2 GB	1
• 4 GB	2
• 8 GB	3
• 2 GB / NVRAM available soon	4
• 4 GB / NVRAM available soon	5
• 8 GB / NVRAM available soon	6

Device version / interface
• Basis without COM	1
• Basis with COM1/2	2
• PCIe without COM	3
• PCIe with COM1/2	4

Operating system
• Without OS	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 (available soon)	3
• Windows Embedded Standard 7 P SP1, English, 64-bit (available soon)	4
• Windows 7 Ultimate SP1, 32-bit, MUI (Eng, Ger, Fr, It, Sp)	5
• Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp)	6

Mass storage
• None	A
• 80 GB SSD	B
• 160 GB SSD	C
• 4 GB CFast	K
• 8 GB CFast	L
• 16 GB CFast	M
• 320 GB HDD	R

Software
• None	A

Mounting accessories
• Standard rail	1
• Wall mounting	2
• Portrait mounting	3

More information

Further information can be found on the Internet at:

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

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■ Overview

SIMATIC IPC227D (Nanobox PC): The compact embedded IPC – maintenance-free and dust-proof with versatile mounting

- Maximum compactness with approx. 1 liter enclosure volume or more with integrated industrial power supply for minimum space requirements in the control cabinet
- Maximum flexibility thanks four 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 port (RS 232/RS 485/CAN) and 2 x teaming-capable Gigabit LAN
- 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 or RS 232 interfaces or digital I/O

■ Technical specifications

Article number	6ES7647-8A...-....
	SIMATIC IPC227D (NANOBOX PC)
Product type designation	
Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V
Processor	
Processor type	Intel Atom E6x0
Drives	
Hard disk	CF or SSD or HD
SSD	Yes; ≥ 80 GB optional
Memory	
Main memory	512 MB to 2 GB
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	512 kbyte
Hardware configuration	
Slots	
• free slots	1x PCIe x1 (optional)
Interfaces	
serial interface	COM1: 1 x RS232 or RS485 or CAN
USB port	4x USB 2.0 high speed/high current
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	DVI-D
Industrial Ethernet	
• Industrial Ethernet interface	2 x Fast Ethernet
- 100 Mbps	Yes
- 1000 Mbps	Yes

Article number	6ES7647-8A...-....
	SIMATIC IPC227D (NANOBOX PC)
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	No
Degree and class of protection	
IP (at the front)	IP20
Standards, approvals, certificates	
Approval	CE (industry), UL, cULus
CE mark	Yes
cULus	Yes
KC approval	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
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to 50 °C
• min.	0 °C
• max.	50 °C
Operating systems	
Operating system	Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit
pre-installed operating system	Yes
• Windows XP Prof.	Yes
• Windows 7	Yes
without operating system	Yes

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PC-based Automation
Box PC

SIMATIC IPC227D

■ Ordering data | Article No.

SIMATIC IPC227D	6ES7647 - 8 A ■ ■ ■ - ■ ■ ■ ■
1 x DVI-D graphics interface 2 x 10/100/1 000 Mbps Ethernet RJ45 4 x USB V2.0 (high current) CompactFlash slot 24 V DC industrial power supply	

Processors / memory configuration / NVRAM

• Atom E620 (600 MHz), 512 MB RAM	A
• Atom E620 (600 MHz), 512 MB RAM, NVRAM	B
• Atom E640 (1.0 GHz), 1 GB RAM	E
• Atom E640 (1.0 GHz), 1 GB RAM, NVRAM	F
• Atom E660 (1.3 GHz), 2 GB RAM	G
• Atom E660 (1.3 GHz), 2 GB RAM, NVRAM	H

Drives

• Without drive, with CF slot	0
• 320 GB HDD SATA	1
• 160 GB Solid-State Drive SATA	2
• 80 GB Solid-State Drive SATA	4
• 2 GB SIMATIC IPC CompactFlash	5
• 4 GB SIMATIC IPC CompactFlash	6
• 8 GB SIMATIC IPC CompactFlash	7
• 16 GB SIMATIC IPC CompactFlash	8

COM interface

• COM1: RS232	0
• COM1: RS485	1
• COM1: CAN	2

Operating system

• Without operating system	0
• Windows Embedded Standard 2009 preinstalled (CF from 2 GB/SSD/HD)	1
• XP Prof. MUI preinstalled on SSD/HD	2
• Windows Embedded Standard 7 (32-bit) preinstalled (CF from 4 GB/SSD/HD)	3
• Windows 7 (32-bit) MUI preinstalled on SSD/HD	4

Article No.

SIMATIC IPC227D	6ES7647 - 8 A ■ ■ ■ - ■ ■ ■ ■

Software bundles

• Without RTX/HMI software	A
• RTX: WinAC RTX 2010	B
• RTX-F: WinAC RTX F 2010	C
• HMI: WinCC RT Advanced 128 PT	F
• HMI: WinCC RT Advanced 512 PT	G
• HMI: WinCC RT Advanced 2 048 PT	H
• HMI/RTX: RT 128 PT	M
• HMI/RTX: RT 512 PT	N
• HMI/RTX: RT 2 048 PT	P
• HMI/RTX-F: RT 128 PT	R
• HMI/RTX-F: RT 512 PT	S
• HMI/RTX-F: RT 2 048 PT	T

Device versions

• Device version: Base line	A
• Device version: PCIe (1 slot)	B
• Device version: COM (COM2-4: RS 232)	D
• Device version: IO (4x dig. inputs/outputs each)	E

Mounting accessories

• Standard mounting rail	1
• Wall mounting	2
• Portrait mounting	3
• Side mounting	4

Accessories

Cable strain relief set for IPC227D Packing unit: 5 units	6ES7648-1AA50-0XL0
Dust protection set for IPC227D	6ES7648-1AA50-0XG0

Release for individual order variants: See releases in the ordering procedure.

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Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.
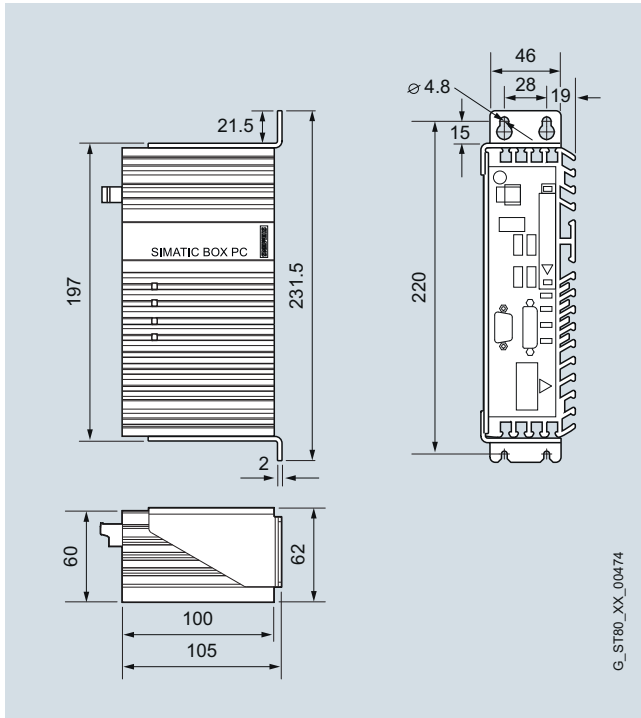
SIMATIC IPC227D basic unit, portrait mounting
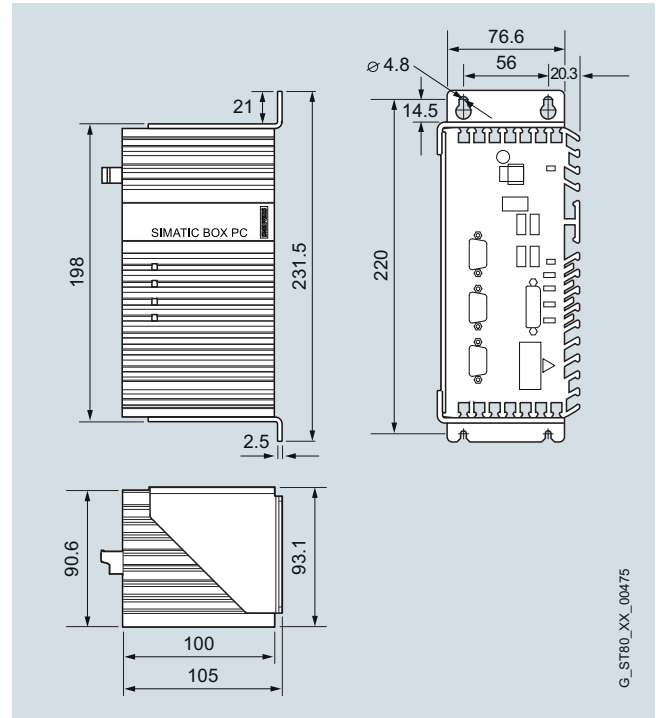
SIMATIC IPC227D COM version, portrait mounting
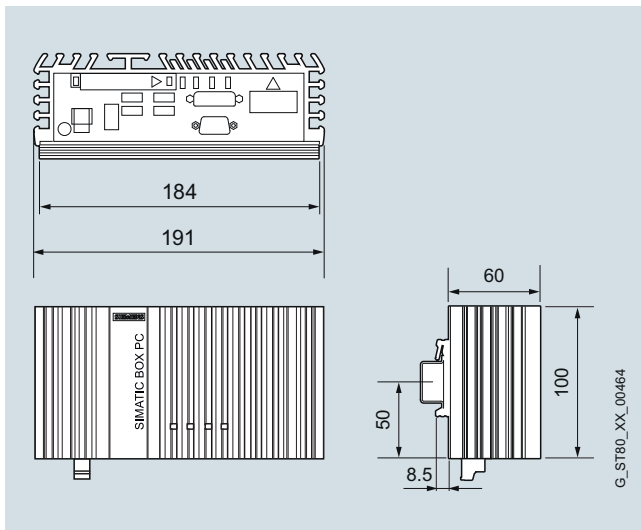
SIMATIC IPC227D basic unit, standard rail mounting
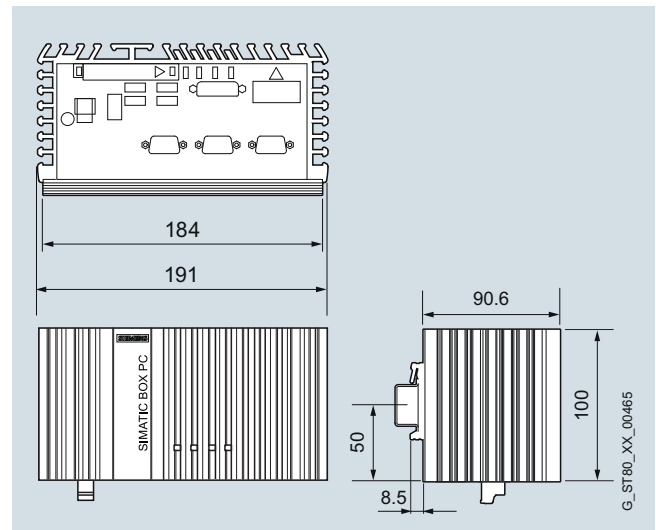
SIMATIC IPC227D COM version, standard rail mounting

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PC-based Automation

Box PC

■ Dimensional drawings (continued)
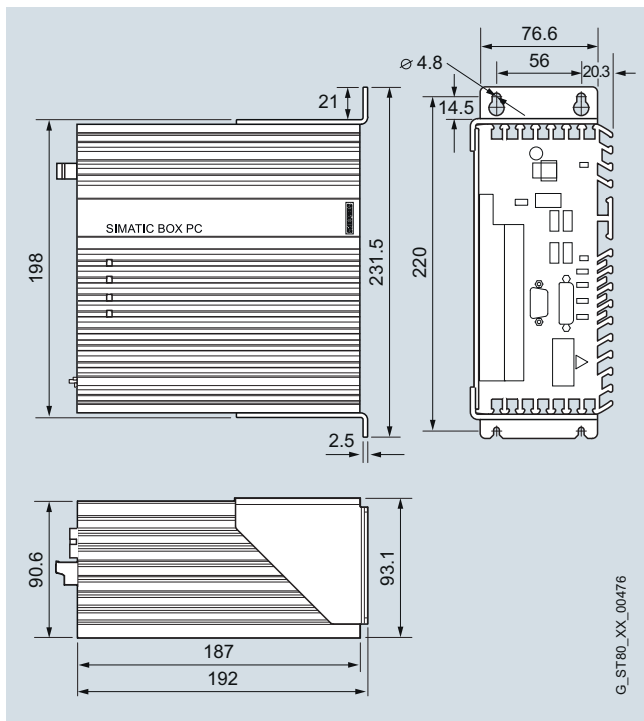
SIMATIC IPC227D PCIe version, portrait mounting
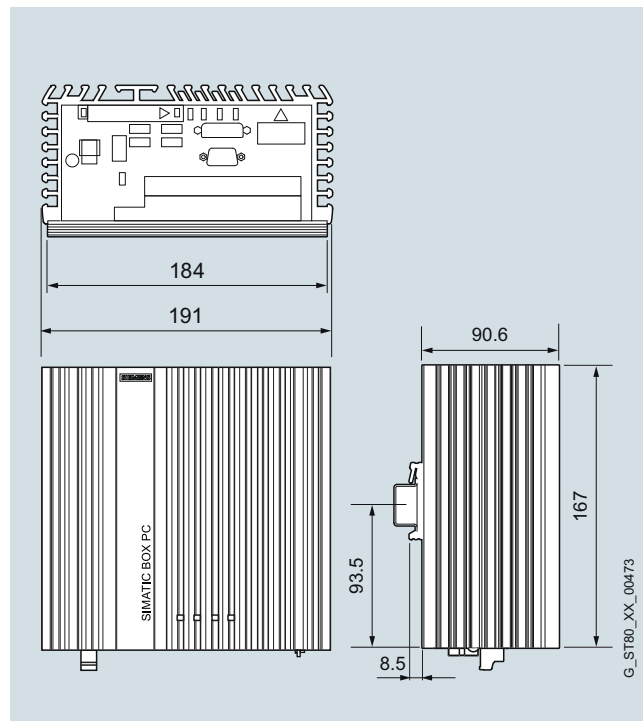
SIMATIC IPC227D PCIe version, standard rail mounting

■ More information

Further information can be found on the Internet at:

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

Overview

SIMATIC IPC427D (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration

Ready to start complete solution:
- Ultra-compact
- Maintenance-free
- Third generation Intel Core i technology

Technical specifications

Article number	6AG4140-.....-...0
	SIMATIC IPC427D (MICROBOX PC)
Product type designation	
Supply voltage	
Type of supply voltage	24 V DC
Processor	
Processor type	Intel® Celeron® Processor 827E (1.5MB Cache, 1.40 GHz); Intel® Core™ i3-3217UE Processor (3MB Cache, 1.60 GHz); Intel® Core™ i7-3517UE Processor (4MB Cache, up to 2.80 GHz)
Drives	
Hard disk	2.5" SATA hard disk, at least 250 GB
Memory	
Main memory	1 GB to 8 GB, ECC optional
Hardware configuration	
Slots	
• free slots	1xPCIe (x4), 1xPCIe (x1)
Interfaces	
PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible
serial interface	1 x RS232; 2 x RS232 (optional); CAN (optional)
USB port	4x USB 3.0 high speed/high current
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)
PROFINET IO	
• Number of PROFINET interfaces	1; 3 ports (incl. switch)
Industrial Ethernet	
• Industrial Ethernet interface	2 x Fast Ethernet
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Degree and class of protection	
IP (at the front)	20

Article number	6AG4140-.....-...0
	SIMATIC IPC427D (MICROBOX PC)
Standards, approvals, certificates	
Approval	CE, cULus (508), C-TICK
CE mark	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 55022A, EN 61000-6-4, EN 61000-6-2
EN 61000-6-2	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
• Polski Rejestr Statkow (PRS)	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +55 °C
• min.	0 °C
• max.	55 °C
Relative humidity	
• Relative humidity	Tested to DIN IEC 60068-2-3, DIN IEC 60068-2-30, DIN IEC 60068-2-56: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate (Multi Language) 32-bit/64-bit, Windows Embedded Standard 7 32-bit/64-bit
pre-installed operating system	Yes
Software	
SIMATIC Software	Optionally with pre-installed software bundle SIMATIC WinCC RT Advanced / WinAC RTX

PC-based Automation
Box PC

SIMATIC IPC427D

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
• DIN rail mounting	B
• Wall mounting	D
• Portrait mounting	E
• Mounting onto standard rail with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	F
• Wall mounting onto standard rail with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	G
• Vertical mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	H
RAM/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

SIMATIC IPC427D (Box PC) [1][2]	6AG4140 - ▪ ▪ ▪ ▪ ▪ - ▪ ▪ ▪ ▪
Expansions/interface:	
• 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 (Eng, Ger, Fr, It, Sp)	6
• Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp)	7
Mass storage, externally accessible:	
• Without external mass storage	0
• CFast 2 GB Without operating system	1
• CFast 4 GB (only optionally with operating system if no internal mass storage)	2
• CFast 8 GB (only optionally with operating system if no internal mass storage)	3
• CFast 16 GB (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
• 80 GB solid-state drive (standard)	H
• HDD 320 GB	K
• 160 GB solid-state drive (standard)	P

[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

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■ **Ordering data**   **Article No.**   ■ **Dimensional drawings**

All dimensions in mm. For mounting cut-out, see technical specifications.

SIMATIC IPC427D (Box PC) [1][2]	6AG4140 - ■ ■ ■ ■ ■ - ■ ■ ■ ■	
SIMATIC software preinstalled (bundles, only with Windows Embedded Standard 7):		
• Without SIMATIC software		A
• WinAC RTX 2010 [3]		B
• WinCC RT Advanced, 128 PT		C
• WinCC RT Advanced, 512 PT		D
• WinCC RT Advanced, 2 048 PT		E
• WinCC RT Advanced, 4 096 PT		F
• WinCC RT Advanced 128 PT, WinAC RTX 2010 [3]		J
• WinCC RT Advanced 512 PT, WinAC RTX 2010 [3]		K
• WinCC RT Advanced 2 048 PT, WinAC RTX 2010 [3]		L
• WinCC RT Advanced 4 096 PT, WinAC RTX 2010 [3]		M
• WinAC RTX F 2010 [3]		N
• WinCC RT Advanced 128 PT, WinAC RTX F 2010 [3]		P
• WinCC RT Advanced 512 PT, WinAC RTX F 2010 [3]		Q
• WinCC RT Advanced 2 048 PT, WinAC RTX F 2010 [3]		R
• WinCC RT Advanced 4 096 PT, WinAC RTX F 2010 [3]		S
• WinCC RT Professional Client/ single-user station 128 PT		Y
Power supply:		
• 24 V DC industrial power supply		0
• 24 V DC and TPM (not for China and Russia)		8

[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.de/ipc-configurator
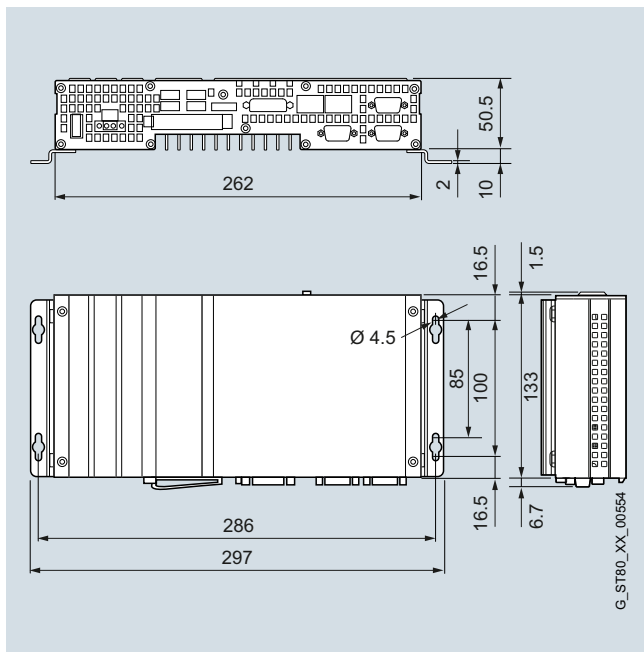
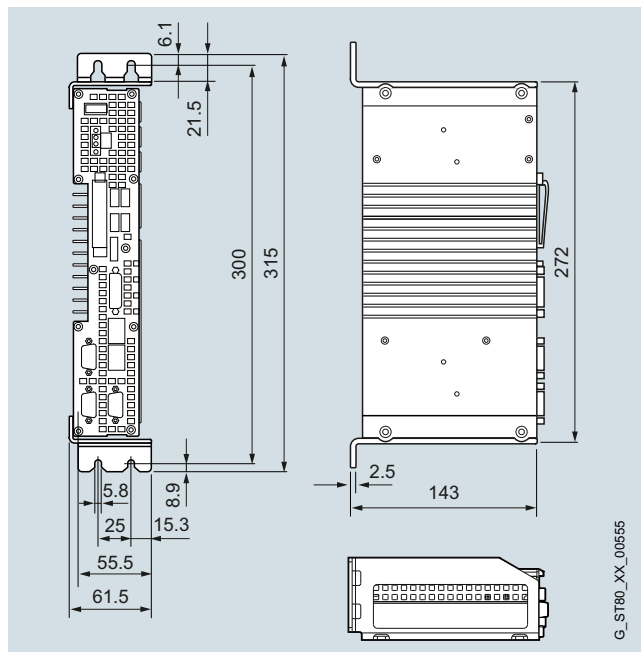[3] Only with "RAM and NVRAM".

Note:

Bundles with SIMATIC software only with Windows Embedded Standard 7, RAM and NVRAM (with RTX and RTX F), and CFast mass storage of 4 GB or more / SSD.

SIMATIC IPC427D, DIN rail mounting

PC-based Automation
Box PC

■ **Dimensional drawings** (continued)

SIMATIC IPC427D, wall mounting

SIMATIC IPC427D, portrait mounting

◾ Overview

IPC627D with DVD drive

*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)
• Windows Embedded Standard 7 Prof. 32-bit on 80 GB SSD

◾ Technical specifications

Article number	**6AG4131-2....-....**
	SIMATIC IPC627D (BOX PC)
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Chipset	Intel DH82C226 PCH
Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT)
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA ≥ 250 GB, optional: 3.5" SATA ≥ 500 GB; 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	
Main memory	2 GB to 16 GB DDR3 1600 DIMM, ECC optional

Article number	**6AG4131-2....-....**
	SIMATIC IPC627D (BOX PC)
Hardware configuration	
Slots	
• free slots	2x PCI or 1x PCIe & 1x PCIe (x16) or 2x PCIe (x4, x16), slots with card retainer
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	4x USB 3.0 SuperSpeed
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	1x DVI-I; 1x DP V1.2
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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PC-based Automation
Box PC

SIMATIC IPC627D

Technical specifications (continued)

Article number	6AG4131-2....-.... SIMATIC IPC627D (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
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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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

Article number	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)
Standards, approvals, certificates	
Approval	CE, cULus (508), C-TICK
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
EN 61000-6-2	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C to +45 °C, +5 °C to +50 °C with USB / PCI(e) less than 20 W; +5 °C to +55 °C with USB / PCI(e) less than 10 W
• min.	5 °C
• max.	55 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s² (1g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate 32-bit / 64-bit, SP1, multi-language; Windows Embedded Standard 7 P SP1, MUI, 32-bit, 80 GB SSD
pre-installed operating system	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX
Dimensions	
Width	312 mm
Height	81 mm; with DVD drive: 105 mm
Depth	301 mm; incl. mounting rail

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Ordering data

SIMATIC IPC627D [1]	Article No.
HD graphics onboard (Xeon, i3: HD4600); 2 x Gigabit Ethernet (IE/PN) RJ45; 4 x USB V3.0; 1x serial (COM1); RAID controller onboard; 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 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

• 250 GB HDD SATA	A
• 250 GB HDD SATA; DVD+/-RW	B
• 500 GB HDD SATA	D
• 500 GB 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
• Swap HDD RAID1 2 x 320 GB SATA (2.5")	K
• Swap 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 80 GB, internal for WES7P	Q
• Solid-state drive 80 GB, internal for WES7P; DVD+/-RW	R

SIMATIC IPC627D [1]	Article No.
	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 expansions (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 (Eng, Ger, Fr, It, Sp)	A
• Windows 7 Ultimate, 64-bit SP1, MUI (Eng, Ger, Fr, It, Sp)	B
• Windows Embedded Standard 7 P, 32-bit, SP1, MUI (Eng, Ger, Fr, It, Sp) with SSD 80 GB option	D
• Without	X

Expansion (SW)

• SIMATIC IPC DiagMonitor V4.x enclosed	A
• SIMATIC IPC Image & Partition Creator V3.x enclosed	B
• SIMATIC IPC DiagMonitor V4.x, Image & Partition Creator V3.x enclosed	C
• Without	X
• TPM module (not for China and Russia)	Y

Country-specific design / power supply

• 110/230 V AC industrial power supply with NAMUR; European power cable	0
• 110/230 V AC industrial power supply with NAMUR; UK power cable	1
• 110/230 V AC industrial power supply with NAMUR; power cable for Switzerland	2
• 110/230 V AC industrial power supply NAMUR; US power cable	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

[1] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

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PC-based Automation
Box PC

SIMATIC IPC627D

Odering 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	**6ES7648-3AB00-0XA0**
DVI-I acc. to VGA, 250 mm long	
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**

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

SIMATIC IPC627D, Box PC

More information

Additional information is available on the Internet at:

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

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Overview

IPC827D with opened DVD drive

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)
- Windows Embedded Standard 7 Prof. 32-bit on 80 GB SSD

Technical specifications

Article number	**6AG4132-2....-....**
	SIMATIC IPC827D (BOX PC)
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Chipset	Intel DH82C226 PCH
Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT)
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA ≥ 250 GB, optional: 3.5" SATA ≥ 500 GB; 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	
Main memory	2 GB to 16 GB DDR3 1600 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	3xPCI, 1xPCIe (x4), 1xPCIe (x16)

Article number	**6AG4132-2....-....**
	SIMATIC IPC827D (BOX PC)
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	4x USB 3.0 SuperSpeed
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	1x DVI-I; 1x DP V1.2
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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PC-based Automation
Box PC

SIMATIC IPC827D

Technical specifications (continued)

Article number	6AG4132-2....-....
	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
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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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

Article number	6AG4132-2....-....
	SIMATIC IPC827D (BOX PC)
Standards, approvals, certificates	
Approval	CE, cULus (508), C-TICK
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
EN 61000-6-2	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C to +45 °C, +5 °C to +50 °C with USB / PCI(e) less than 20 W; +5 °C to +55 °C with USB / PCI(e) less than 10 W
• min.	5 °C
• max.	55 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s² (1g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate 32-bit / 64-bit, SP1, multi-language; Windows Embedded Standard 7 P SP1, MUI, 32-bit, 80 GB SSD
pre-installed operating system	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX
Dimensions	
Width	312 mm
Height	155 mm; With DVD drive: 179 mm
Depth	301 mm; incl. mounting rail

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Ordering data

	Article No.
	Article No.

SIMATIC IPC827D [1]

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HD graphics onboard
(Xeon, i3: HD4600);
2 x Gigabit Ethernet (IE/PN) RJ45;
4 x USB V3.0;
1x serial (COM1);
RAID controller onboard;
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 [2]	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 [2]	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 [2]	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
• 250 GB HDD SATA	A
• 250 GB HDD SATA; DVD+/-RW	B
• 500 GB HDD SATA	D
• 500 GB 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
• Swap HDD RAID1 2 x 320 GB SATA (2.5")	K
• Swap 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 80 GB, internal for WES7P	Q
• Solid-state drive 80 GB, internal for WES7P; DVD+/-RW	R

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 expansions (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 (Eng, Ger, Fr, It, Sp)	A
• Windows 7 Ultimate 64-bit SP1, MUI (Eng, Ger, Fr, It, Sp)	B
• Windows Embedded Standard 7 P, 32-bit, SP1, MUI (Eng, Ger, Fr, It, Sp) with SSD 80 GB option	D
• Without	X

Expansion (SW)
• SIMATIC IPC DiagMonitor V4.x enclosed	A
• SIMATIC IPC Image & Partition Creator V3.x enclosed	B
• SIMATIC IPC DiagMonitor V4.x, Image & Partition Creator V3.x enclosed	C
• Without	X
• TPM module (not for China and Russia)	Y

Country-specific design / power supply
• 110/230 V AC industrial power supply with NAMUR; European power cable	0
• 110/230 V AC industrial power supply with NAMUR; UK power cable	1
• 110/230 V AC industrial power supply with NAMUR; power cable for Switzerland	2
• 110/230 V AC industrial power supply NAMUR; US power cable	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

[1] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

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PC-based Automation
Box PC

SIMATIC IPC827D

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	**6ES7648-3AB00-0XA0**
DVI-I acc. to VGA, 250 mm long	
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 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**

Dimensional drawings

All dimensions in mm. For mounting cut-out, see Technical Specifications.

SIMATIC IPC827D, Box PC

More information

Additional information is available on the Internet at:

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

Overview

SIMATIC IPC627C (Box PC): The high-end IPC – with maximum performance, functional scope and expansion capability

It offers:

- Maximum performance in the smallest space
- Intel Core i7 technology

Technical specifications

Article number	6ES7647-6C...-....
	SIMATIC IPC627C (BOX PC)
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller
Chipset	Intel QM57 Express Chipset
Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4MB cache); Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3MB cache); Celeron P4505 (2C/2T, 1.86 GHz, VT, 2MB cache);
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA hard disk ≥ 250 GB, optional ≥ 500 GB, optional: RAID1 2x 2.5" SATA ≥ 320 GB, optional: Solid state drive (SSD) ≥ 160 GB; all hard disk drives within the enclosure are vibration-damped
SSD	Yes; Optional
Memory	
Main memory	1 GB to 8 GB DDR3 1066 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	2x PCI or 1x PCI & 1x PCIe (x16) (265 mm/185mm long), 1x slot for CompactFlash Card

Article number	6ES7647-6C...-....
	SIMATIC IPC627C (BOX PC)
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbps, no plug-in card necessary, CP 5611-A2-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	4x USB 2.0 high speed/high current
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	DVI-I: VGA / DVI combined
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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PC-based Automation
Box PC

SIMATIC IPC627C

■ **Technical specifications** (continued)

Article number	6ES7647-6C...-....
	SIMATIC IPC627C (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
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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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

Article number	6ES7647-6C...-....
	SIMATIC IPC627C (BOX PC)
Standards, approvals, certificates	
Approval	CE, cULus (508), C-TICK
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
EN 61000-6-2	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
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C to +45 °C, +5 °C to +50 °C with USB / PCI(e) less than 20 W; +5 °C to +55 °C with USB / PCI(e) less than 10 W
• min.	5 °C
• max.	55 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows XP Prof. SP3, MUI; Windows 7 Ultimate 32/64Bit, MUI; Windows Embedded Standard 2009 English on 8 GB CompactFlash; without operating system;
pre-installed operating system	Yes
• Windows XP Prof.	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX
Dimensions	
Width	312 mm
Height	80 mm; with DVD drive: 100 mm
Depth	301 mm; incl. mounting rail

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■ Ordering data

SIMATIC IPC627C [1]	Article No.
HD graphics on-board, 128 MB dyn. shared memory; 2 x 10/100/1000 Mbit/s Ethernet RJ45; 4 x USB V2.0 (high current); 1 x serial (COM1), RAID controller on-board; CompactFlash drive No. 1 at front (without CF); watchdog, temp./fan monitoring	6ES7647- 6 C ■ ■ ■ - ■ ■ ■ ■
Processor:	
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache)	A
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache), PROFIBUS/MPI (CP5611-A2-compatible), 2 MB battery-backed SRAM	B
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MB cache), PROFINET (3 x RJ45, CP1616-compatible), 2 MB battery-backed SRAM	C
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache)	D
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache), PROFIBUS/MPI (CP5611-A2-compatible), 2 MB battery-backed SRAM	E
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache); PROFINET (3 x RJ45, CP1616-compatible), 2 MB battery-backed SRAM	F
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache)	G
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache), PROFIBUS/MPI, (CP5611-A2-compatible), 2 MB battery-backed SRAM	H
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache), PROFINET (3 x RJ45, CP1616-compatible), 2 MB battery-backed SRAM	J
Memory configuration	
• 1 GB DDR3 1066 DIMM	0
• 2 GB DDR3 1066 DIMM	1
• 3 GB DDR3 1066 DIMM	2
• 4 GB DDR3 1066 DIMM	3
• 8 GB DDR3 1066 DIMM	4
• 2 GB DDR3 1066 DIMM, ECC	5
• 4 GB DDR3 1066 DIMM, ECC	6
• 8 GB DDR3 1066 DIMM, ECC	7
Country-specific version/ power supply	
• 100/240 V AC industrial power supply with Namur; European cable	0
• 100/240 V AC industrial power supply with Namur; UK cable	1
• 100/240 V AC industrial power supply with Namur; Swiss cable	2
• 100/240 V AC industrial power supply with Namur; USA cable	3
• 100/240 V AC industrial power supply with Namur; Italian cable	4
• 100/240 V AC industrial power supply with Namur; Chinese cable	5
• 24 V DC industrial power supply	6
• Device Certification UL Class I Div. 2; 24 V DC industrial power supply	7
• Device Certification UL Class I Div. 2; 110 / 230 V AC Industrial Power Supply with Namur	8

SIMATIC IPC627C [1]	Article No.
	6ES7647- 6 C ■ ■ ■ - ■ ■ ■ ■
PC slots	
• 2 x PCI free	0
• 1 x PCI, 1x PCIe (x16) free	1
Drives	
• 250 GB HDD SATA	A
• 250 GB HDD SATA; DVD+/-RW	B
• 500 GB HDD SATA	C
• 500 GB HDD SATA; DVD+/-RW	D
• 2 x 320 GB SATA (2.5")	E
• 2 x 320 GB SATA (2.5"); DVD+/-RW	F
• RAID1 2 x 320 GB SATA (2.5")	G
• RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW	H
• 160 GB SATA solid-state drive	L
• 160 GB SATA solid-state drive; DVD+/-RW	M
• CompactFlash drive No. 2 installed, DVD+/-RW	U
• CompactFlash drive No. 2 installed	V
• DVD+/-RW	W
• Without drives	X
Operating system (preinstalled and activated)	
• Windows XP Professional MUI, SP3 (Eng, Ger, Fr, It, Sp)	A
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 32-bit, SP1 included	B
• Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 64-bit, SP1 included	C
• Windows Embedded Standard 2009 English on 8 GB CompactFlash	F
• Without operating system	X
Expansion	
• No expansion (software)	0
• SIMATIC IPC DiagMonitor software included	1
• SIMATIC IPC Image&Partition Creator software included	2
• SIMATIC IPC DiagMonitor, Image & Partition Creator software included	3

[1] For an up-to-date overview, see the SIMATIC PC online configurator at: http://www.siemens.com/ipc-configurator

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PC-based Automation
Box PC

SIMATIC IPC627C

Ordering data

Ordering data	Article No.
Accessories	
Memory expansions	
• 1 GB DDR3 1066, DIMM	**6ES7648-2AJ40-0KA0**
• 1 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ40-1KA0**
• 2 GB DDR3 1066, DIMM	**6ES7648-2AJ50-0KA0**
• 2 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ50-1KA0**
• 4 GB DDR3 1066, DIMM	**6ES7648-2AJ60-0KA0**
• 4 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ60-1KA0**
PCI expansion card with COM1 and LPT	**6ES7648-2CA01-0AA0**
Graphics adapter cable	
• DVI-I acc. to VGA, 250 mm long	**6ES7648-3AB00-0XA0**
• DVI-I acc. to VGA and DVI-D, 250 mm long (Y cable)	**6ES7648-3AE00-0XA0**
Portrait assembly kit	
• Interfaces upward/downward	**6ES7648-1AA10-1YA0**
• Interfaces to the front	**6ES7648-1AA10-1YB0**
SIMATIC PC, 230 V AC power cable angled, 3 m for Box PC and Panel PC for	
• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	**6ES7900-1AA00-0XA0**
• United Kingdom	**6ES7900-1BA00-0XA0**
• Switzerland	**6ES7900-1CA00-0XA0**
• USA	**6ES7900-1DA00-0XA0**
• Italy	**6ES7900-1EA00-0XA0**
• China	**6ES7900-1FA00-0XA0**
Expansion components	See expansion components
Communication products	See expansion components
For power supplies and uninterruptible power supplies	See expansion components
RMOS3 real-time operating system	See RMOS

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 favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

More information

Further information can be found in the Internet under:

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

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Overview

SIMATIC IPC827C (Box PC): The high-end IPC – with maximum performance, functional scope and expansion capability

It offers:

• Maximum performance and high expandability

• with Intel Core i technology

Technical specifications

Article number	6ES7647-6P...-....
	SIMATIC IPC827C (BOX PC)
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller
Chipset	Intel QM57 Express Chipset
Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4MB cache); Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3MB cache); Celeron P4505 (2C/2T, 1.86 GHz, VT, 2MB cache);
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA hard disk ≥ 250 GB, optional ≥ 500 GB, optional: RAID1 2x 2.5" SATA ≥ 320 GB, optional: Solid state drive (SSD) ≥ 160 GB; all hard disk drives within the enclosure are vibration-damped
SSD	Yes; Optional
Memory	
Main memory	1 GB to 8 GB DDR3 1066 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	3xPCI, 1 x PCIe (x4), 1 x PCIe (x16), 1xslot for CompactFlash Card

Article number	6ES7647-6P...-....
	SIMATIC IPC827C (BOX PC)
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbps, no plug-in card necessary, CP 5611-A2-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	4x USB 2.0 high speed/high current
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	DVI-I: VGA / DVI combined
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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PC-based Automation
Box PC

Technical specifications (continued)

Article number	6ES7647-6P...-....
	SIMATIC IPC827C (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
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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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

Article number	6ES7647-6P...-....
	SIMATIC IPC827C (BOX PC)
Standards, approvals, certificates	
Approval	CE, cULus (508), C-TICK
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
EN 61000-6-2	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C to +45 °C, +5 °C to +50 °C with USB / PCI(e) less than 20 W; +5 °C to +55 °C with USB / PCI(e) less than 10 W
• min.	5 °C
• max.	55 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows XP Prof. SP3, MUI; Windows 7 Ultimate 32/64Bit, MUI; Windows Embedded Standard 2009 English on 8 GB CompactFlash; without operating system;
pre-installed operating system	Yes
• Windows XP Prof.	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX
Dimensions	
Width	312 mm
Height	153 mm; With DVD drive: 174 mm
Depth	301 mm; incl. mounting rail

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Ordering data

SIMATIC IPC827C	Article No. 6ES7647 - 6 P ▪ ▪ ▪ ▪ ▪ ▪ ▪	
Processor		
• Celeron P 4505 (2C/2T, 1.86 GHz, VT, 2 MB cache)	A	
• Celeron P 4505 (2C/2T, 1.86 GHz, VT, 2 MB cache); PROFIBUS/MPI (CP5611-A2-compatible); 2 MB battery-backed SRAM	B	
• Celeron P 4505 (2C/2T, 1.86 GHz, VT, 2 MB cache) ; PROFINET (3 x RJ45, CP1616-compatible); 2 MB battery-backed SRAM	C	
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MB cache)	D	
• Core i3-330E (2.13 GHz, HT, VT, 3 MB cache); PROFIBUS/MPI (CP5611-A2-compatible); 2 MB battery-backed SRAM	E	
• Core i3-330 (2C/4T, 2.13 GHz, HT, VT, 3 MB cache); PROFINET (3 x RJ45, CP1616-compatible); 2 MB battery-backed SRAM	F	
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache)	G	
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache); PROFIBUS/MPI (CP5611-A2-compatible); 2 MB battery-backed SRAM	H	
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MB cache); PROFINET (3 x RJ45, CP1616-compatible); 2 MB battery-backed SRAM	J	
Memory configuration		
• 1 GB DDR3 1066 DIMM	0	
• 2 GB DDR3 1066 DIMM	1	
• 3 GB DDR3 1066 DIMM	2	
• 4 GB DDR3 1066 DIMM	3	
• 8 GB DDR3 1066 DIMM	4	
• 2 GB DDR3 1066 DIMM, ECC	5	
• 4 GB DDR3 1066 DIMM, ECC	6	
• 8 GB DDR3 1066 DIMM, ECC	7	
Power supply		
• 100/240 V AC industrial power supply with Namur; European cable	0	
• 100/240 V AC industrial power supply with Namur; UK cable	1	
• 100/240 V AC industrial power supply with Namur; Swiss cable	2	
• 100/240 V AC industrial power supply with Namur; USA cable	3	
• 100/240 V AC industrial power supply with Namur; Italian cable	4	
• 100/240 V AC industrial power supply with Namur; Chinese cable	5	
• 24 V DC industrial power supply	6	

SIMATIC IPC827C	Article No. 6ES7647 - 6 P ▪ ▪ ▪ ▪ ▪ ▪ ▪	
Expansions (hardware)		
• 3 x PCI, 2 x PCIe (x4), 1 x PCIe (x16) available	0	
Mass storage		
• 250 GB HDD SATA		A
• 250 GB HDD SATA; DVD+/-RW		B
• 500 GB HDD SATA		C
• 500 GB HDD SATA; DVD+/-RW		D
• 2 x 320 GB SATA (2.5")		E
• 2 x 320 GB SATA (2.5"); DVD+/-RW		F
• RAID1 2 x 320 GB SATA (2.5")		G
• RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW		H
• 160 GB SATA solid-state drive		L
• 160 GB SATA solid-state drive; DVD+/-RW		M
• DVD+/-RW		W
• Without drives		X
Operating system (preinstalled and activated)		
• Windows XP Professional MUI, SP3 (Eng, Ger, Fr, It, Sp)		A
• Windows 7 Ultimate, 32-bit, MUI (Eng, Ger, Fr, It, Sp)		B
• Windows 7 Ultimate, 64-bit, MUI (Eng, Ger, Fr, It, Sp)		C
• Windows XP Embedded Standard 2009 English on 8 GB CompactFlash		F
• Without operating system		X
Expansion software		
• No expansion (software)		0
• SIMATIC IPC DiagMonitor software included		1
• SIMATIC IPC Image&Partition Creator included		4
• SIMATIC IPC DiagMonitor & Image & Partition Creator included		5

Note:
Windows Embedded only without RAID option

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 favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

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PC-based Automation
Box PC

SIMATIC IPC827C

Ordering data

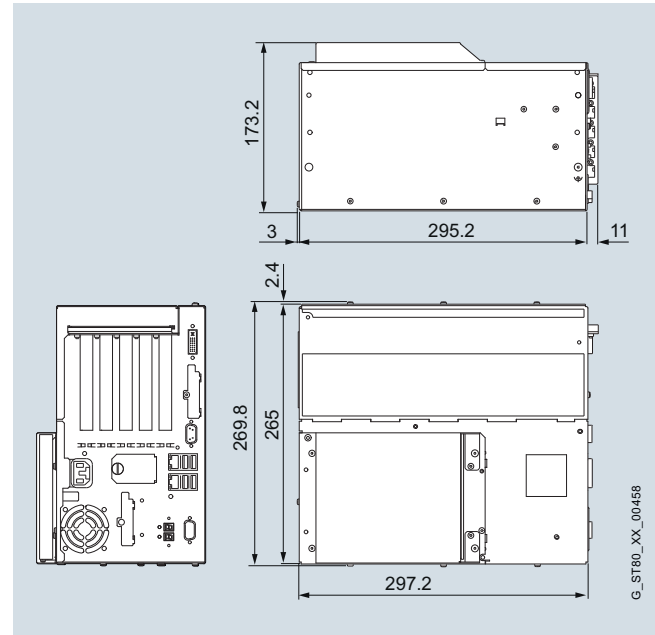|	Article No.
Accessories	
Memory expansions	
• 1 GB DDR3 1066, DIMM	**6ES7648-2AJ40-0KA0**
• 1 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ40-1KA0**
• 2 GB DDR3 1066, DIMM	**6ES7648-2AJ50-0KA0**
• 2 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ50-1KA0**
• 4 GB DDR3 1066, DIMM	**6ES7648-2AJ60-0KA0**
• 4 GB DDR3 1066, DIMM; ECC	**6ES7648-2AJ60-1KA0**
PCI expansion card with COM1 and LPT	**6ES7648-2CA01-0AA0**
Graphics adapter cable	
• DVI-I acc. to VGA, 250 mm long	**6ES7648-3AB00-0XA0**
• DVI-I acc. to VGA and DVI-D, 250 mm long (Y cable)	**6ES7648-3AE00-0XA0**
Portrait assembly kit	
• Interfaces upward/downward	**6ES7648-1AA30-1YA0**
• Interfaces to the front	**6ES7648-1AA30-1YB0**
Power supply cable	
SIMATIC PC, power cable for 230 V AC, angled, 3 m for Box PC and Panel PC for	
• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	**6ES7900-1AA00-0XA0**
• United Kingdom	**6ES7900-1BA00-0XA0**
• Switzerland	**6ES7900-1CA00-0XA0**
• USA	**6ES7900-1DA00-0XA0**
• Italy	**6ES7900-1EA00-0XA0**
• China	**6ES7900-1FA00-0XA0**
Expansion components	See expansion components
Communication products	See expansion components
For power supplies and uninterruptible power supplies	See expansion components
RMOS3 real-time operating system	See RMOS

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.

More information

Weitere Informationen finden Sie im Internet unter:

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

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 as per NAMUR)
- Service-friendly device design
- Bright, brilliant displays in different sizes from 7" to 22"
- Same front panel mounting dimensions and uniform front design across all device families
- 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 IPC477D: 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 preinstalled software
- HMI: Innovative HMI software WinCC RT Advanced
- (including logging and recipes)
- RTX: with real-time capable software PLC WinAC RTX
- Retentive memory on-board
- (NV-RAM, usable with WinAC RTX)

SIMATIC HMI IPC477C: The powerful embedded Panel PC – maintenance-free with versatile configuration

- Compact design
- High performance with highly compact design and ruggedness
- Also available as PRO version (all-round IP65 degree of protection) with 15" and 19" Touch displays
- No rotating parts (without fan and hard disk)
- High security due to Microsoft Windows Embedded Standard 2009 or Windows Embedded Standard 7 operating systems
- Ready-to-use devices with optionally preinstalled software
  - HMI: Innovative HMI software WinCC flexible (incl. archives and recipes)
  - RTX: with real-time capable software PLC WinAC RTX
- Retentive memory on board (NV-RAM, usable with WinAC RTX)

SIMATIC HMI IPC677: The high-end Panel PC – with maximum performance, functional scope and expansion capability

- Rugged, expandable industrial PC with different front panels
- Rugged design for industrial use
- Complete PC openness
- Optional PROFIBUS or PROFINET onboard
- All processors with dual core

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PC-based Automation
Panel PC

Introduction

Technical specifications

	SIMATIC IPC277E	SIMATIC IPC277D	SIMATIC IPC477D	SIMATIC HMI IPC677D
Design				
Centralized configuration	•	•	•	•
Display				
Size	7"/9"/12" Widescreen TFT 15"/19" available soon	7"/9"/12"/15"/19" Widescreen TFT	12"/15"/19"/22" Widescreen TFT	15"/19"/22" Widescreen TFT
Resolution	800 x 480 / 800 x 480 / 1 280 x 800 / 1 280 x 800 available soon 1 366 x 768 available soon	800 x 480 / 800 x 480 / 1 280 x 800 / 1 280 x 800 / 1 366 x 768	1 280 x 800 / 1 280 x 800 / 1 366 x 768 / 1 920 x 1 080	1 280 x 800 / 1 366 x 768 / 1 920 x 1 080
Operator controls				
Membrane keyboard	-	-	• [8]	-
Touch screen	Single-touch	Single-touch	Multitouch/single-touch	Multitouch/single-touch
General features				
Power supply 24 V DC / 110/240 V AC	•/-	•/-	•/-	•/•
Processor	• Intel Celeron N2930, 1.83 GHz, Quad Core • Intel Celeron N2807, 1.58 GHz, Dual Core	• Intel Atom E640, 1.0 GHz; • Intel Atom E660, 1.3 GHz	• Intel Core i7-3517UE, 1.7 GHz, 4 MB SLC • Intel Core i3-3217UE, 1.6 GHz, 3 MB SLC • Intel Celeron 827E 1.4 GHz, 1.5 MB SLC	• Intel Xeon E3-1268L v3 (4C, 2.3 (3.3) GHz, HT, 8 MB cache, VT-d, AMT) • Intel Core i3-4330TE, (2C, 2.4 GHz, 4 MB cache, HT, VT-x) • Intel Celeron G1820TE (2C, 2.2 GHz, 2 MB cache)
Main memory	2 GB, 4 GB, 8 GB	1 GB, 2 GB	1 GB, 2 GB, 4 GB, 8 GB	2 GB, expandable up to 16 GB, optional ECC
Expansion slots	• 1 x CFast slot (externally accessible)	1 x CF slot for CompactFlash card (externally accessible)	• 2 x CFast slot (externally accessible) • 1 x PCIe	• 2 x PCI or 1 x PCIe • 1 x PCI or • 2 x PCIe x16/x4
Operating system	• Windows Embedded Standard 7 E (P available soon), 32 bit or 64 bit • Windows 7 Ultimate, Multi-Language, 32 bit or 64 bit	• Windows Embedded Standard 2009 or XP Professional MUI • Windows Embedded Standard 7 (32-bit) or Windows 7 Ultimate MUI (32-bit)	• Without • Windows 7 Ultimate MUI (32-bit or 64-bit) • Windows Embedded Standard 7 (32-bit)	• Without • Windows 7 Ultimate 32-bit MUI • Windows 7 Ultimate 64-bit MUI • Windows Embedded Standard 7 Professional (32-bit)
Interfaces				
PROFIBUS/MPI	-	-	•	•
PROFINET (RT/IRT)	• / -	• / -	• / •	• / •
Ethernet	2 x 10/100/1 000 Mbps	2 x 10/100/1 000 Mbps	2 x 10/100/1 000 Mbps	2 x 10/100/1 000 Mbps
USB	•	•	•	•
Serial interface	•	•	•	•
Graphics interface	•	-	•	•
Ambient conditions				
Vibration load during operation	**1 g**	**1 g**	**1 g**	**1 g** [3]
Shock loading during operation	**5 g**	**5 g**	**5 g**	**5 g**
Permissible temperature during operation with maximum configuration	+0 °C to +50 °C [7]	+0 °C to +50 °C [7]	+0 °C to +50 °C [7]	+5 °C to +45 °C [6] [7]

• Available

- Not available

[1] 12"/15" displays
[2] All slots with card retainer
[3] Valid with CF/CFast or SSD; with HDD: 5 g / 0.5 g
[4] 3 W taken into account for each PCI/PCIe slot

[5] 15 W taken into account for each PCI/PCIe slot
[6] +0 °C to +50 °C; max. +50 °C in installation space, max. 40 °C if at the front
[7] +0 °C to +45 °C for 19"

▪ Technical specifications (continued)

	SIMATIC IPC277E	SIMATIC IPC277D	SIMATIC IPC477D	SIMATIC HMI IPC677D
Power loss in maximum configuration				
7" display	26 W	27 W		
9" display	33 W	29 W		
12" display	33 W	34 W	55 W	
15" display	36 W	42 W	56 W	160 W [5]
19" display	36 W	45 W	65 W	160 W [5]
22" display	-	-	74 W	170 W [5]

• Available

- Not available

[1] 12"/15" displays
[2] All slots with card retainer
[3] Valid with CF/CFast or SSD; with HDD: 5 g / 0.5 g
[4] 3 W taken into account for each PCI/PCIe slot

[5] 15 W taken into account for each PCI/PCIe slot
[6] +0 °C to +50 °C; max. +50 °C in installation space, max. 40 °C if at the front
[7] +0 °C to +45 °C for 19"

▪ 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? 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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PC-based Automation
Panel PC

SIMATIC IPC277E

■ **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**

Operator control unit
- Touch 7" — **A**
- Touch 9" — **B**
- Touch 12" — **C**
- Multitouch 15" available soon — **D**
- Multitouch 19" available soon — **E**

Processor
- CPU Good -> Celeron N2807 (2C/2T) — **A**
- CPU Best -> Celeron N2930 (4C/4T) — **B**

RAM / NVRAM
- 2 GB — **1**
- 4 GB — **2**
- 8 GB — **3**
- 2 GB / NVRAM available soon — **4**
- 4 GB / NVRAM available soon — **5**
- GB / NVRAM available soon — **6**

Operating system
- Without OS — **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 (available soon) — **3**
- Windows Embedded Standard 7 P SP1, English, 64-bit (available soon) — **4**
- Windows 7 Ultimate SP1, 32-bit, MUI (Eng, Ger, Fr, It, Sp) — **5**
- Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp) — **6**

Mass storage
- None — **A**
- 80 GB SSD — **B**
- 160 GB SSD — **C**
- 4 GB CFast — **K**
- 8 GB CFast — **L**
- 16 GB CFast — **M**

Software
- None — **A**

■ **More information**

Further information can be found on the Internet at:

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

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◼ Overview

***SIMATIC IPC277D: The embedded Nanopanel PC –
maintenance-free and compact with displays starting
from 7"***

- Offers great flexibility in the selection of rugged widescreen fronts
- From 7" to 19" for 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 and SSD as mass storage and fanless operation up to 50 °C ambient temperature
- Maximum industrial functionality due to non-volatile retentive memory
- Ready-to-use embedded bundles with visualization or/and control software

The following front installation versions are available:

- 7" Touch
- 9" Touch
- 12" Touch
- 15" Touch with USB interface on the front
- 19" Touch with USB interface on the front
- All fronts as widescreen version

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PC-based Automation
Panel PC

SIMATIC IPC277D

Technical specifications

Article number	6AV7881-.A.0.-...0
	SIMATIC IPC277D
Product type designation	
Installation type/mounting	
Design	Panel PC, built-in unit
maximum permissible installation angle +/-	45°
Supply voltage	
Type of supply voltage	24 V DC
Processor	
Processor type	Intel Atom E6x0
Drives	
Optical drives	possible as external drive via USB
Hard disk	CF or SSD
SSD	Yes; ≥ 80 GB optional
Memory	
Main memory	1 GB to 2 GB
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	128 kbyte
Interfaces	
serial interface	COM1 (RS232)
USB port	Yes
Connection for keyboard/mouse	USB / USB
Industrial Ethernet	
• Industrial Ethernet interface	2 x Fast Ethernet
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	No
Fan	No

Article number	6AV7881-.A.0.-...0
	SIMATIC IPC277D
Degree and class of protection	
IP (at the front)	IP65
IP (rear)	IP20
Standards, approvals, certificates	
Approval	CE, cULus (508)
CE mark	Yes
cULus	Yes
Marine approval	
• Germanischer Lloyd (GL)	Yes; 7", 9", 12"
• American Bureau of Shipping (ABS)	Yes; 7", 9", 12"
• Bureau Veritas (BV)	Yes; 7", 9", 12"
• Det Norske Veritas (DNV)	Yes; 7", 9", 12"
• Lloyds Register of Shipping (LRS)	Yes; 7", 9", 12"
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to 50 °C
• min.	0 °C
• max.	50 °C; 19": max. 45 °C
Operating systems	
Operating system	Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit
pre-installed operating system	Yes
• Windows XP Prof.	Yes
• Windows 7	Yes
Software	
SIMATIC Software	Optionally with pre-installed software bundle SIMATIC WinCC RT Advanced / WinAC RTX

■ **Ordering data**

Nanopanel PC SIMATIC IPC277D	Article No.
Interfaces: 2 x Gbit LAN (RJ45), 1 x serial (COM1), 3 x USB	**6AV7881 - ■ A ■ 0 0 - ■ ■ ■ 0**

Operator control unit
- Touch 7" TFT — **1**
- Touch 9" TFT — **2**
- Touch 12" TFT — **3**
- Touch 15" TFT, front USB interface — **4**
- Touch 19" TFT, front USB interface — **5**

Processors / memory configuration / NVRAM
- Atom E640 (1.0 GHz), 1 GB RAM — **A**
- Atom E640 (1.0 GHz), 1 GB RAM, NVRAM — **B**
- Atom E660 (1.3 GHz), 2 GB RAM — **E**
- Atom E660 (1.3 GHz), 2 GB RAM, NVRAM — **F**

Drives
- Without drive, with CF slot — **0**
- 2 GB SIMATIC PC CompactFlash — **1**
- 4 GB SIMATIC PC CompactFlash — **2**
- 8 GB SIMATIC PC CompactFlash — **3**
- 16 GB SIMATIC PC CompactFlash — **4**
- 160 GB Solid-State Drive SATA — **6**
- 80 GB Solid-State Drive SATA — **8**

Nanopanel PC SIMATIC IPC277D	Article No.
	6AV7881 - ■ A ■ 0 0 - ■ ■ ■ 0

Operating system
- Without operating system — **A**
- WES 2009 preinstalled (CF from 2 GB/SSD) — **B**
- XP-Prof. MUI preinstalled on SSD — **C**
- WES 7 32 bit preinstalled (CF from 4 GB/SSD) — **D**
- Windows 7 MUI 32 bit preinstalled on SSD — **E**

Software bundles
- Without RTX/HMI software — **A**
- RTX: WinAC RTX 2010 — **B**
- RTX-F: WinAC RTX F 2010 — **C**
- HMI: WinCC RT Advanced 128 PT — **F**
- HMI: WinCC RT Advanced 512 PT — **G**
- HMI: WinCC RT Advanced 2 048 PT — **H**
- HMI/RTX: RT 128 PT — **M**
- HMI/RTX: RT 512 PT — **N**
- HMI/RTX: RT 2 048 PT — **P**
- HMI/RTX-F: RT 128 PT — **R**
- HMI/RTX-F: RT 512 PT — **S**
- HMI/RTX-F: RT 2 048 PT — **T**

Accessories

	Article No.
Bracket clamp, long for 15", 19" and 22" widescreen, Comfort Panels, IPC, Flat Panel monitors and Thin Client (except SCD1900 19" widescreen)	6AV6671-8XK00-0AX4
Protective film	see "SIMATIC HMI accessories"
Touch pen	see "SIMATIC HMI accessories -> Accessibility"

Please be sure to note:

The IPC277D with bundled software is always supplied with inserted CF card.
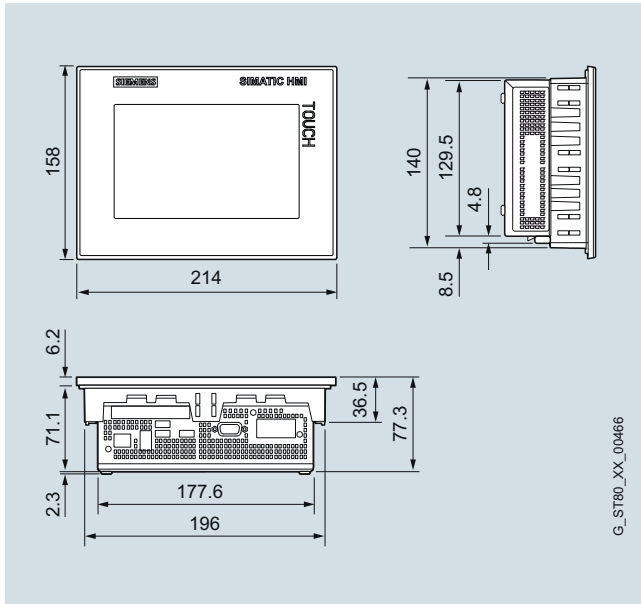The licenses are on the supplied USB flash drive.
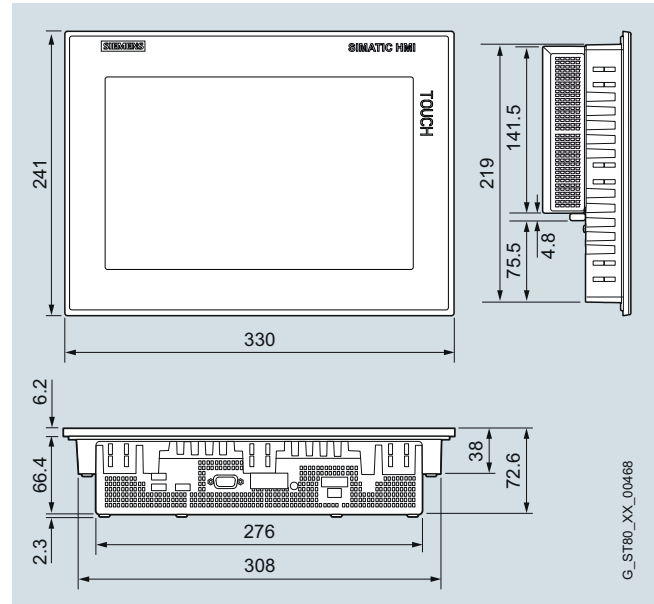
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PC-based Automation

Panel PC

SIMATIC IPC277D
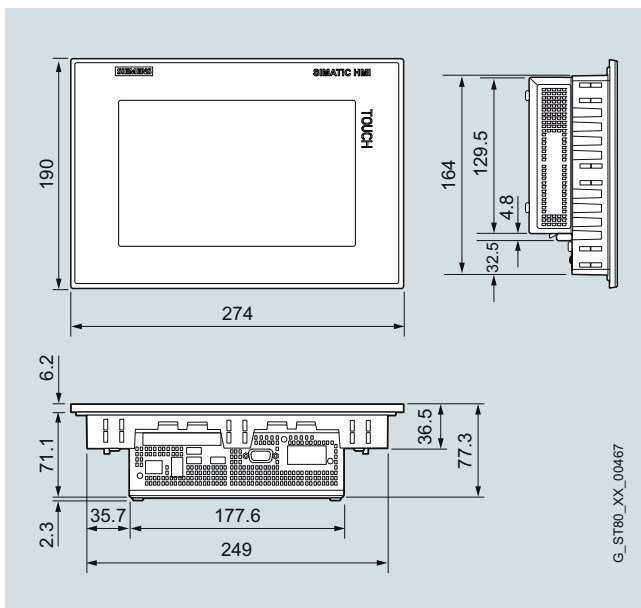
■ Dimensional drawings

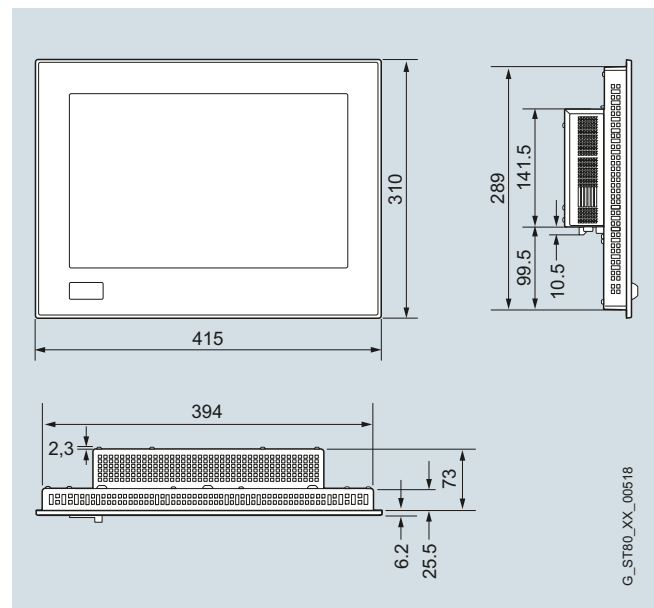All dimensions in mm. For mounting cut-out, see technical specifications.
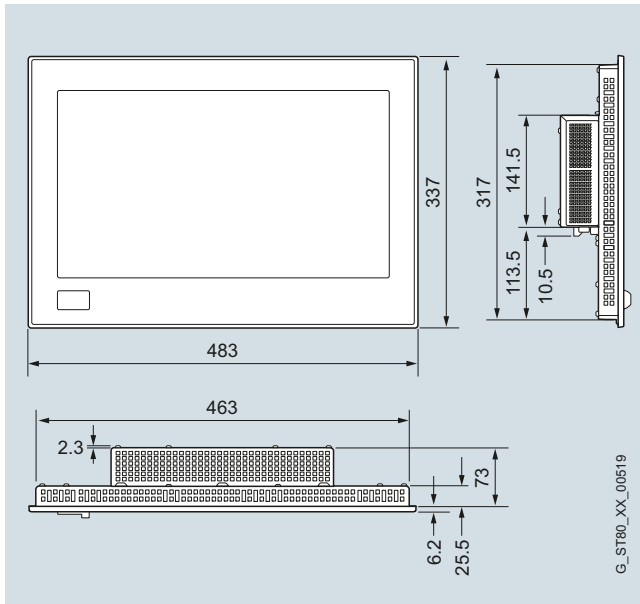
SIMATIC IPC277D 7" version

SIMATIC IPC277D 12" version

SIMATIC IPC277D 9" version

SIMATIC IPC277D 15" version

■ **Dimensional drawings** (continued)

G_ST80_XX_00519

SIMATIC IPC277D 19" version

■ **More information**

Further information can be found on the Internet at:

http://www.siemens.com/simatic-panel-pc

PC-based Automation
Panel PC

SIMATIC IPC477D

■ Overview

SIMATIC IPC477D: The powerful embedded Panel PC –
maintenance-free with versatile configuration

- Embedded PC platform with extremely high industrial compat-ibility 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
- Completely protected IPC477D PRO 19" (degree of protection IP65): Start for delivery scheduled for Q3/2015

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

■ Technical specifications

Article number	6AV7240-.....-....
	SIMATIC IPC 477D
Product type designation	
Supply voltage	
Type of supply voltage	24 V DC
Processor	
Processor type	Intel Core i7-3517UE
	Intel Core i3-3217UE
	Intel Celeron 827E
Memory	
Type of memory	DDR3-SDRAM
Main memory	1 GB to 8 GB, ECC optional
Interfaces	
PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232
USB port	4x USB 3.0 high speed/high current
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	DVI VGA / DVI integrated
PROFINET IO	
• Number of PROFINET interfaces	3; 3 ports (incl. switch)
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100 Mbit/s, RJ45, no plug-in card necessary

Article number	6AV7240-.....-....
	SIMATIC IPC 477D
Monitoring functions	
Watchdog	Yes
Status LEDs	Yes
Degree and class of protection	
IP (at the front)	IP65
Standards, approvals, certificates	
EMC	CE, EN 61000-6-4; CISPR 22:2004 Class A; FCC Class A
Relative humidity	
• Relative humidity	5% - 80% at 25 °C
Vibrations	
• Vibration load in operation	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)
Operating systems	
Operating system	Windows 7 Ultimate (Multi Language) 32-bit/64-bit, Windows Embedded Standard 7 32-bit/64-bit

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Ordering data

SIMATIC IPC477D [1]	Article No. 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
RAM/NVRAM	
• 1 GB	A
• 2 GB	B
• 4 GB	C
• 8 GB	D
• 1 GB and NVRAM	J
• 2 GB and NVRAM	K
• 4 GB and NVRAM	L
• 8 GB and NVRAM	M

SIMATIC IPC477D [1]	Article No. 6AV7240 - ■ ■ ■ ■ ■ - ■ ■ ■ ■
Expansions/interface:	
• 1 x RS 232, without PCIe	0
• 1 x RS 232 and 1 x PCIe	1
• Second RS 232, without PCIe	3
• Second RS 232 and 1 x 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 (Eng, Ger, Fr, It, Sp)	6
• Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp)	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
• 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
• SSD 80 GB Standard	H
• HDD 320 GB	K
• DVD	L
• SSD 80 GB standard with DVD	N
• SSD 160 GB standard without DVD	P
• HDD min. 320 GB with DVD	Q

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PC-based Automation

Panel PC

SIMATIC IPC477D

■ **Ordering data**	**Article No.**

SIMATIC IPC477D [1]

6AV7240 - ■ ■ ■ ■ ■ - ■ ■ ■ ■

SIMATIC software pre-installed (bundles):

• Without SIMATIC software	A
• WinAC RTX 2010 [2]	B
• WinCC RT Advanced 128 PT	C
• WinCC RT Advanced 512 PT	D
• WinCC RT Advanced 2 048 PT	E
• WinCC RT Advanced 4 096 PT	F
• WinCC RT Advanced 128 PT, WinAC RTX [2]	J
• WinCC RT Advanced 512 PT, WinAC RTX [2]	K
• WinCC RT Advanced 2 048 PT, WinAC RTX [2]	L
• WinCC RT Advanced 4 096 PT, WinAC RTX [2]	M
• WinAC RTX 2010 F [2]	N
• WinCC RT Advanced 128 PT, WinAC RTX F [2]	P
• WinCC RT Advanced 512 PT, WinAC RTX F [2]	Q
• WinCC RT Advanced 2 048 PT, WinAC RTX F [2]	R
• WinCC RT Advanced 4 096 PT, WinAC RTX F [2]	S
• WinCC RT Professional Client/ single-user station 128 PT	Y

Power supply:

|	
• 24 V DC industrial power supply	0
• 110/230 V AC industrial power supply with Namur; no 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 (not for China and Russia)	8

[1] Built to order versions with a delivery time of max. 15 working days and with identified repair.
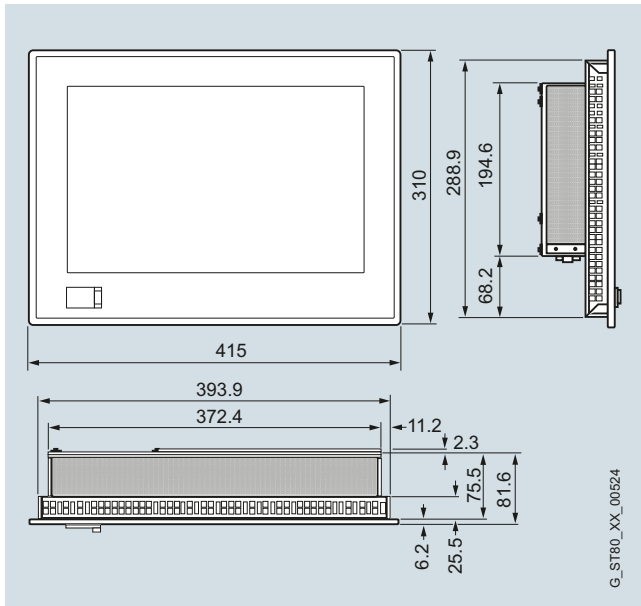
[2] Only with RAM and NVRAM.

■ **Dimensional drawings**

All dimensions in mm. For mounting cut-out, see technical specifications.
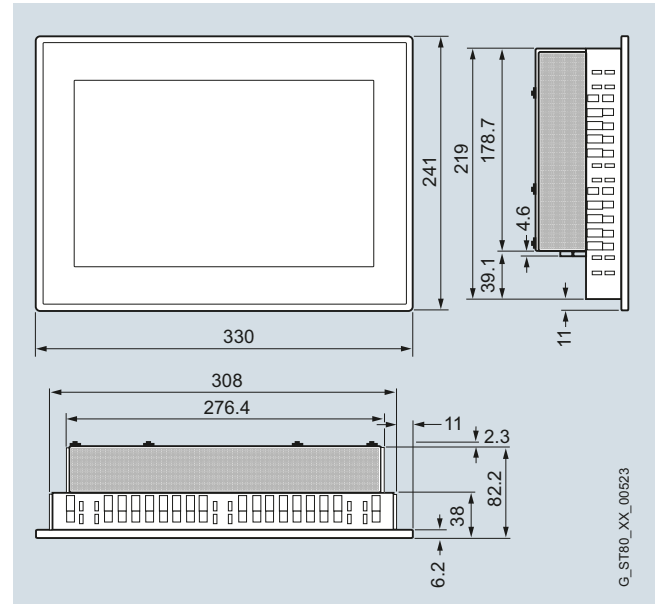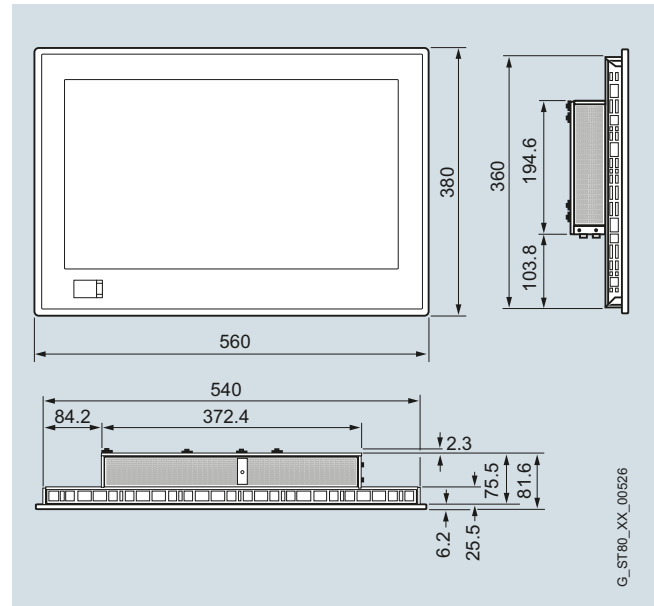
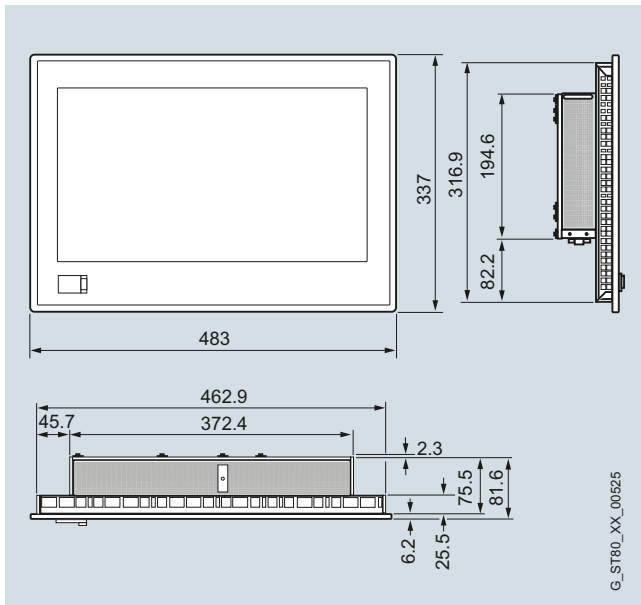

SIMATIC IPC477D 12" Touch device
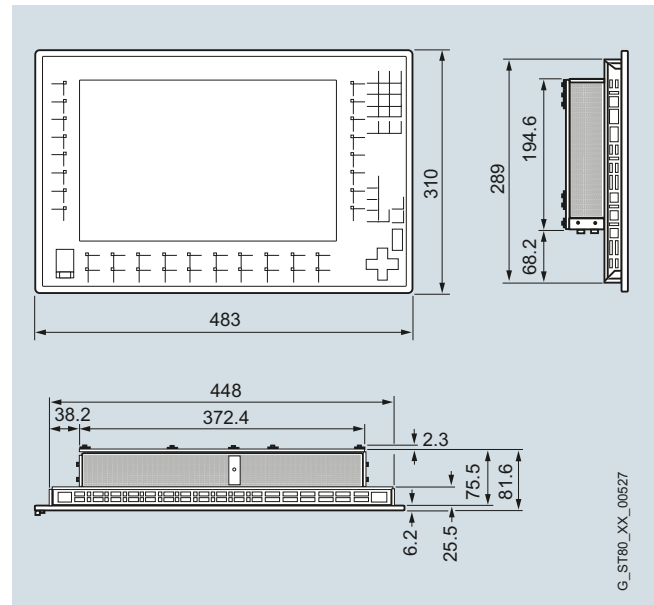
■ **Dimensional drawings** (continued)

SIMATIC IPC477D 15" Touch device

SIMATIC IPC477D 22" Touch device

SIMATIC IPC477D 19" Touch device

SIMATIC IPC477D 15" Touch/Key device

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PC-based Automation
Panel PC

SIMATIC IPC677D

■ **Overview**

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
- Battery-independent retentive memory onboard
- High degree of investment protection
- Fast integration capability

The following widescreen front versions are available:
- Built-in versions
  - 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-.....-....
	SIMATIC IPC677D
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Chipset	Intel DH82C226 PCH
Installation type/mounting	
Design	Panel PC, built-in unit
maximum permissible installation angle +/-	20°
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT)
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA hard disk ≥ 250 GB, optional ≥ 500 GB, optional: RAID1 2x 2.5" SATA ≥ 320 GB, optional: Solid state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped
SSD	Yes; ≥ 240 GB optional

Article number	6AV7260-.....-....
	SIMATIC IPC677D
Memory	
Main memory	2 GB to 16 GB DDR3 1600 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	2x PCI or 1x PCIe & 1x PCIe (x16) or 2x PCIe (x4, x16), slots with card retainer
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	4x USB 3.0 SuperSpeed
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	1x DVI-I; 1x DP V1.2
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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■ **Technical specifications** (continued)

Article number	6AV7260-.....-....
	SIMATIC IPC677D
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 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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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	6AV7260-.....-....
	SIMATIC IPC677D
Standards, approvals, certificates	
Approval	CE, cULus (508)
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
EN 61000-6-2	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C to +45 °C with full configuration
• min.	5 °C
• max.	45 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s² (1g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate 32-bit / 64-bit, SP1, Multi Language; Windows Embedded Standard 7 P SP1, 32-bit, English on 80 GB SSD
pre-installed operating system	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX

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PC-based Automation
Panel PC

SIMATIC IPC677D

■ **Ordering data** Article No.

SIMATIC IPC677D [1]

	6AV7260 - ■ ■ ■ ■ ■ - ■ ■ ■ ■
HD graphics onboard; 2 x Gigabit Ethernet (IE/PN) RJ45; 4 x USB V3.0; 1x serial (COM1); RAID controller onboard; watchdog, temp./fan monitoring	

Operator control 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 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

SIMATIC IPC677D [1]

	6AV7260 - ■ ■ ■ ■ ■ - ■ ■ ■ ■
Drives	
• 250 GB HDD SATA	A
• 250 GB HDD SATA; DVD+/-RW	B
• 500 GB HDD SATA	D
• 500 GB 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
• Swap HDD RAID1 2 x 320 GB SATA (2.5")	K
• Swap 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 80 GB, internal for WES7P	Q
• Solid-state drive 80 GB, internal for WES7P; DVD+/-RW	R

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

2. Expansions (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

[1] Production and delivery as per order

Ordering data

Ordering data	Article No.
SIMATIC IPC677D [1]	**6AV7260 - ■ ■ ■ ■ ■ - ■ ■ ■ ■**

Operating system	
• Windows 7 Ultimate, 32-bit SP1, MUI (Eng, Ger, Fr, It, Sp)	**A**
• Windows 7 Ultimate, 64-bit SP1, MUI (Eng, Ger, Fr, It, Sp);	**B**
• Windows Embedded Standard 7 P, 32-bit, SP1, MUI (Eng, Ger, Fr, It, Sp) with SSD 80 GB option	**D**
• None	**X**
Expansions (SW)	
• SIMATIC IPC DiagMonitor V4.x enclosed	**A**
• SIMATIC IPC Image & Partition Creator V3.x enclosed	**B**
• SIMATIC IPC DiagMonitor V4.x, Image & Partition Creator V3.x enclosed	**C**
• None	**X**
• TPM module (not for China and Russia)	**Y**
Country-specific version / power supply	
• 100/230 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**

[1] Production and delivery as per order

| Accessories	Article No.
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 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

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PC-based Automation
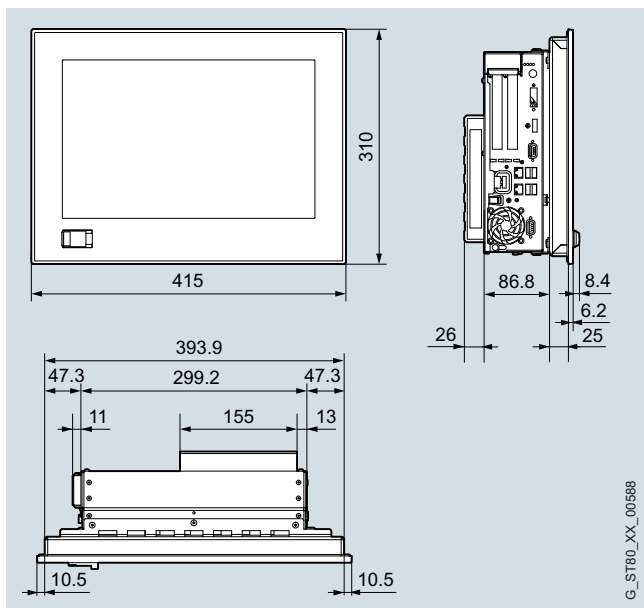
Panel PC

■ **Dimensional drawings**

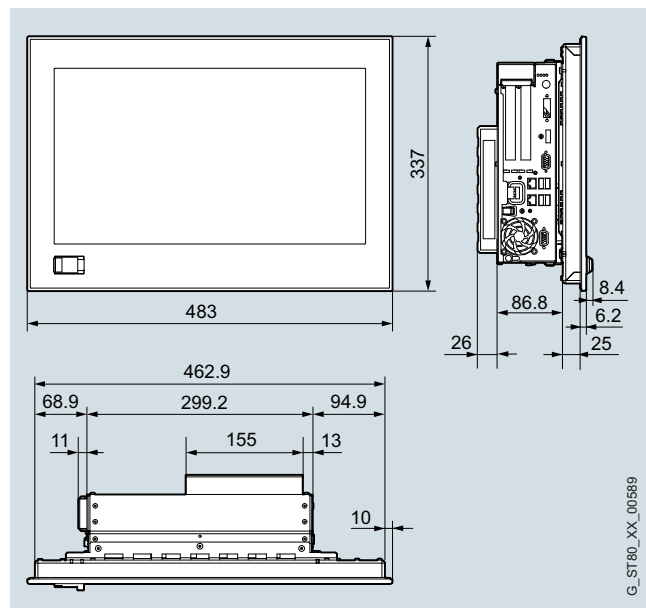All dimensions in mm. For mounting cut-out, see Technical Specifications.
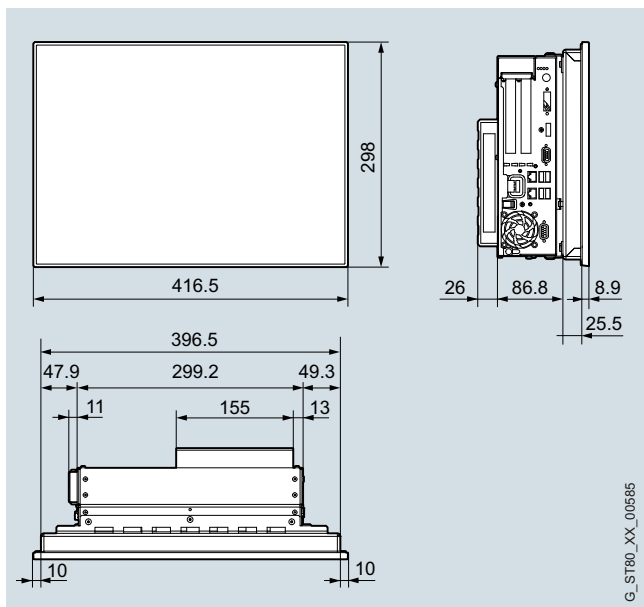
Panel PC IPC677D, 15" with capacitive multi-touch screen
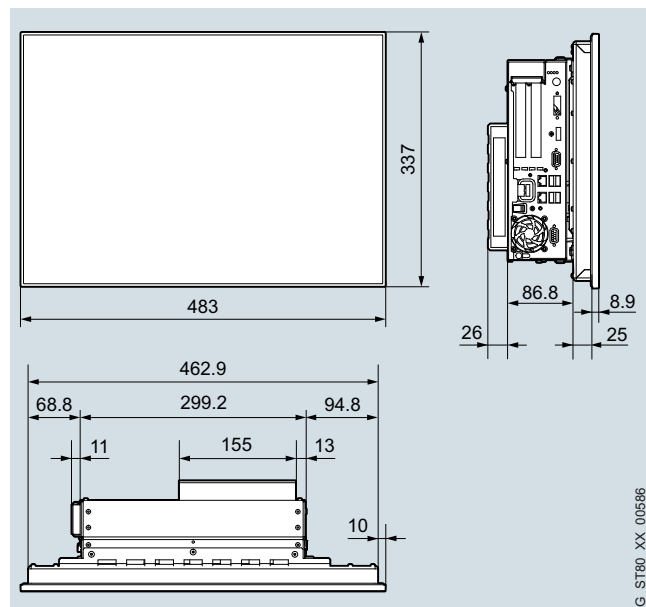
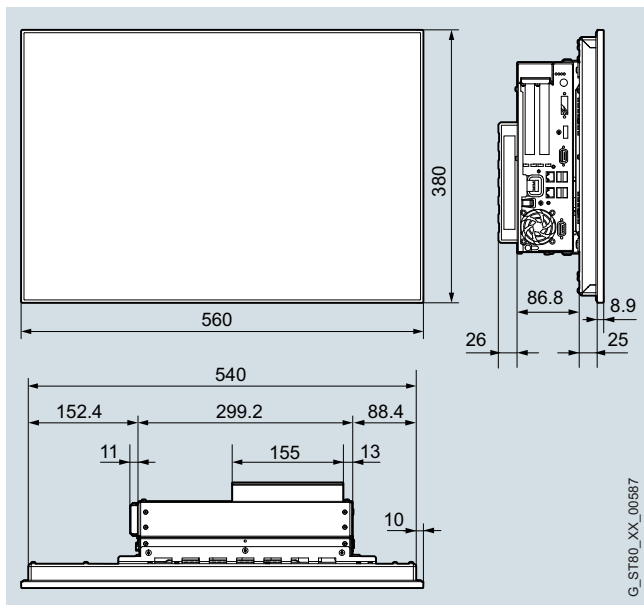Panel PC IPC677D, 19" with capacitive multi-touch screen

Panel PC IPC677D, 15" with resistive single touch screen

Panel PC IPC677D, 19" with resistive single touch screen

■ **Dimensional drawings** (continued)

Panel PC IPC677D, 22" with capacitive multi-touch screen
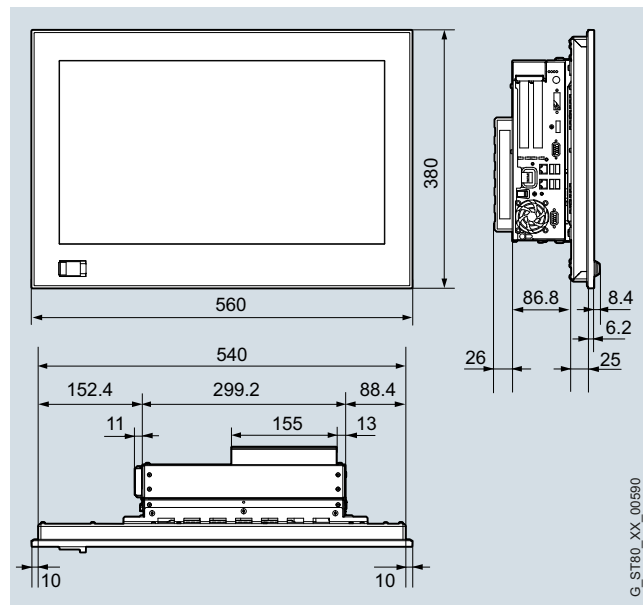
Panel PC IPC677D, 22" with resistive single touch screen

■ **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.

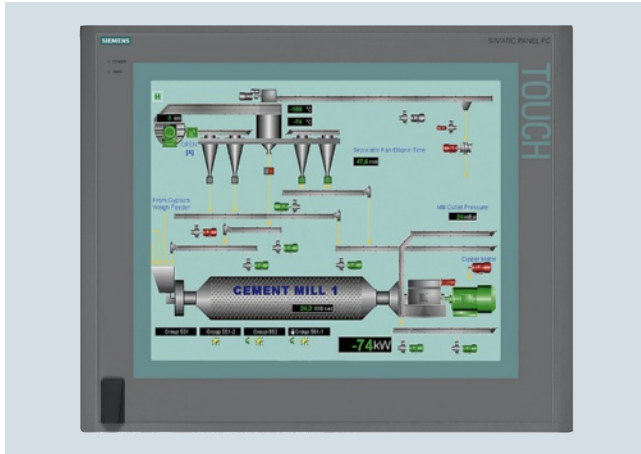# PC-based Automation
Panel PC

SIMATIC HMI IPC677C

■ Overview

***SIMATIC HMI IPC677C: The high-end Panel PC –
with maximum performance, functional scope and
expansion capability***

<u>Rugged construction: The PC is resistant to the harshest
mechanical stress and is reliable in operation</u>

- Compact design
- High degree of investment security
- Fast integration capability
- Front panel versions:
  - 12", 15" and 19" TFT Touch
  - 12" and 15" TFT Key
  - 15" TFT Touch INOX with stainless steel front for special
    requirements, e.g. in the food, beverages and tobacco
    industries

■ Technical specifications

Article number	**6AV789.-.....-....**
	SIMATIC HMI IPC677C
Product type designation	
PC configuration	
Graphics card	Intel HD graphics controller
Chipset	Intel QM57 Express Chipset
Installation type/mounting	
Design	Panel PC, built-in unit
maximum permissible installation angle +/-	20°
Supply voltage	
Type of supply voltage	100 V AC / 240 V AC (autorange) 50/60 Hz; optional 24 V DC
Processor	
Processor type	Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4MB cache); Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3MB cache); Celeron P4505 (2C/2T, 1.86 GHz, VT, 2MB cache);
Drives	
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA hard disk ≥ 250 GB, optional ≥ 500 GB, optional: RAID1 2x 2.5" SATA ≥ 320 GB, optional: Solid state drive (SSD) ≥ 160 GB; all hard disk drives within the enclosure are vibration-damped
SSD	Yes; Optional
Memory	
Main memory	1 GB to 8 GB DDR3 1066 DIMM, ECC optional

Article number	**6AV789.-.....-....**
	SIMATIC HMI IPC677C
Hardware configuration	
Slots	
• free slots	2x PCI or 1x PCI & 1x PCIe (x16) (slots with card retainer), 1x slot for CompactFlash Card
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbps, no plug-in card necessary, CP 5611-A2-compatible
serial interface	COM1: 1 x V.24 (RS232)
parallel interface	optional LPT1
USB port	1x at front, 4x at rear, USB 2.0 (500 mA)
Connection for keyboard/mouse	USB / USB
Video interfaces	
• Graphics interface	DVI-I usable for additional display unit (VGA via adapter); color depth 32 bits, 8 to 128 MB Shared Memory
PROFINET IO	
• Number of PROFINET interfaces	3; Optional
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes
- 1000 Mbps	Yes
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	Yes
Monitoring function via network	Optional

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■ Technical specifications (continued)

Article number	6AV789.-.....-....
	SIMATIC HMI IPC677C
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 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 against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1000 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 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 (on front) to EN60529 and NEMA4
IP (rear)	IP20

Article number	6AV789.-.....-....
	SIMATIC HMI IPC677C
Standards, approvals, certificates	
Approval	CE, cULus (508)
CE mark	Yes
UL approval	Yes
cULus	Yes
KC approval	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
EN 61000-6-2	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
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	12", 15": +5 °C to +50 °C; 19": +5 °C to +45 °C
• min.	5 °C
• max.	50 °C
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Vibrations	
• Vibration load in operation	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s² (1 g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s² (5g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows XP Prof. SP3, MUI; Windows 7 Ultimate 32/64Bit, MUI; Windows Embedded Standard 2009 English on 8 GB CompactFlash; without operating system;
pre-installed operating system	Yes
• Windows XP Prof.	Yes
• Windows 7	Yes; Ultimate 32 bits or 64 bits
without operating system	Yes
Software	
SIMATIC Software	Optional in a package with SIMATIC WinCC, WinCC flexible, or WinAC RTX

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PC-based Automation
Panel PC

SIMATIC HMI IPC677C

Ordering data

	Article No.
SIMATIC HMI IPC677C	**6AV789** ■ - ■ ■ ■ ■ - ■ ■ ■ ■
(Production and delivery as per order)	

Front panels
• 12" TFT Touch	0
• 12" TFT Key	1
• 15" TFT Touch	2
• 15" TFT Key	3
• 19" TFT Touch	4

Front options
• With front USB interface	0
• Without front USB interface	1
• INOX front, without front USB, with 15" TFT Touch only	3 2
• 19" TFT Touch with ATEX 22 and UL Class 1 Division 2 certification	4 3

Power supply
• 24 V DC	A
• 110/230 V AC, power cable for Europe	B
• 110/230 V AC, without power cable	C
• 110/230 V AC, power cable for UK	D
• 110/230 V AC, power cable for CH	E
• 110/230 V AC, power cable for the USA	F
• 110/230 V AC, power cable for Italy	G
• 110/230 V AC, power cable for China	H

Processor
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MByte cache)	A
• Celeron P4505 (2C/2T, 1.86 GHz, VT, 2 MByte cache); PROFIBUS/MPI (CP5611-A2 compatible); 2 MByte battery-backed SRAM	B
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MByte cache)	D
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MByte cache); PROFIBUS/MPI (CP5611-A2 compatible); 2 MByte battery-backed SRAM	E
• Core i3-330E (2C/4T, 2.13 GHz, HT, VT, 3 MByte cache); PROFINET (3 x RJ45, CP1616 compatible); 2 MByte battery-backed SRAM	F
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT) 4 MByte cache	G
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MByte cache); PROFIBUS/MPI (CP5611-A2 compatible); 2 MByte battery-backed SRAM	H
• Core i7-610E (2C/4T, 2.53 GHz, TB, HT, VT, AMT, 4 MByte cache); PROFINET (3 x RJ45, CP1616 compatible); 2 MByte battery-backed SRAM	J

	Article No.
SIMATIC HMI IPC677C	**6AV789** ■ - ■ ■ ■ ■ - ■ ■ ■ ■
(Production and delivery as per order)	

Main memory
• 1 GB DDR3	0
• 2 GB DDR3	1
• 3 GB DDR3	2
• 4 GB DDR3	3
• 8 GB DDR3	4
• 2 GB DDR3 with ECC	5
• 4 GB DDR3 with ECC	6
• 8 GB DDR3 with ECC	7

Mass storage
• 250 GB SATA hard disk	0
• 500 GB SATA hard disk	1
• RAID1 dual hard disk module 2 x 320 GB SATA, preconfigured	2
• Dual hard disk module 2 x 320 GB SATA	3
• Second CF card slot, internal, empty (not with Windows XP or Windows 7) instead of hard disk or SSD	5
• 160 GB SSD	6
• Without mass memory	8

Optical drives
• without	0
• DVD±RW±R	1

Communication interfaces
• 2x PCI free	A
• 1x PCI, 1x PCIe (x16) free	B

Operating system (preinstalled and activated)
• Without operating system	A
• Windows XP Professional Multi-Language [1]	B
• Windows 7 Ultimate 32 bit SP1 Multi-Language [1]	C
• Windows Embedded Standard 2009 on 8 GByte CF card [2]	D
• Windows 7 Ultimate 64 bit SP1 Multi-Language [1]	E

Expansion software
• without	0
• SIMATIC IPC DiagMonitor V4.x enclosed	1
• SIMATIC IPC Image & Partition Creator V3.x enclosed	2
• SIMATIC IPC DiagMonitor V4.x, Image & Partition Creator V3.x enclosed	3

[1] Multi-Language means: D/E/F/I/SP/CHIN

[2] Only without RAID 1 option

Note:

Software Packages with SIMATIC WinCC flexible, SIMATIC WinCC and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC with a price advantage.

More information under "Embedded Bundles / Packages for industrial PCs".

■ Ordering data

	Article No.		Article No.
Preferred versions		**Accessories**	
12" TFT Touch with Windows XP Prof. MUI, 110/230 V AC power supply, Core i3 2.13 GHz, 2 x PCI, 1 GB RAM, 250 GB HDD DVD±R/RW burner, PROFIBUS/MPI, NVRAM	6AV7890-0BE00-1AB0	**Protective film for Panel PC 477/577/677/Flat Panel** Set of 10, for protecting the touch screen against dirt/scratches • for 12" Touch • for 15" Touch • for 19" Touch	 6AV7671-2BA00-0AA0 6AV7671-4BA00-0AA0 6AV7672-1CE00-0AA0
12" TFT Key with Windows XP Prof. MUI, 110/230 V AC power supply, Core i3 2.13 GHz, 2 x PCI, 1 GB RAM, 250 GB HDD DVD±R/RW burner, PROFIBUS/MPI, NVRAM	6AV7891-0BE00-1AB0	**Labeling strips for Panel PC 477/577/677 key devices** For labeling soft keys and function keys, blank, supplied in sets of 10	6AV7672-0DA00-0AA0
15" TFT Touch with Windows XP Prof. MUI, 110/230 V AC power supply, Core i3 2.13 GHz, 2 x PCI, 1 GB RAM, 250 GB HDD DVD±R/RW burner, PROFIBUS/MPI, NVRAM	6AV7892-0BE00-1AB0	**Memory expansion** • 1 GB DDR3 1066 SDRAM, DIMM • 2 GB DDR3 1066 SDRAM, DIMM • 4 GB DDR3 1066 SDRAM, DIMM • 1 GB DDR3 1066 SDRAM, DIMM, ECC • 2 GB DDR3 1066 SDRAM, DIMM, ECC • 4 GB DDR3 1066 SDRAM, DIMM, ECC	 6ES7648-2AJ40-0KA0 6ES7648-2AJ50-0KA0 6ES7648-2AJ60-0KA0 6ES7648-2AJ40-1KA0 6ES7648-2AJ50-1KA0 6ES7648-2AJ60-1KA0
15" TFT Key with Windows XP Prof. MUI, 110/230 V AC power supply, Core i3 2.13 GHz, 2 x PCI, 1 GB RAM, 250 GB HDD DVD±R/RW burner, PROFIBUS/MPI, NVRAM	6AV7893-0BE00-1AB0	**Non-heating apparatus cable for SIMATIC Box and Panel PC** SIMATIC PC power cable, 230 V AC, angled, 3 m, for: • Germany • United Kingdom • Switzerland • USA • Italy • China	 6ES7900-1AA00-0XA0 6ES7900-1BA00-0XA0 6ES7900-1CA00-0XA0 6ES7900-1DA00-0XA0 6ES7900-1EA00-0XA0 6ES7900-1FA00-0XA0
19" TFT Touch with Windows XP Prof. MUI, 110/230 V AC power supply, Core i3 2.13 GHz, 2 x PCI, 1 GB RAM, 250 GB HDD DVD±R/RW burner, PROFIBUS/MPI, NVRAM	6AV7894-0BE00-1AB0	**Touch pen** Captive pen for operation of the touch devices, mounting of the support on the control cabinet	6AV7672-1JB00-0AA0
		Expansion components	See expansion components
		Communication components	See expansion components

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PC-based Automation
Panel PC

SIMATIC HMI IPC677C

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.
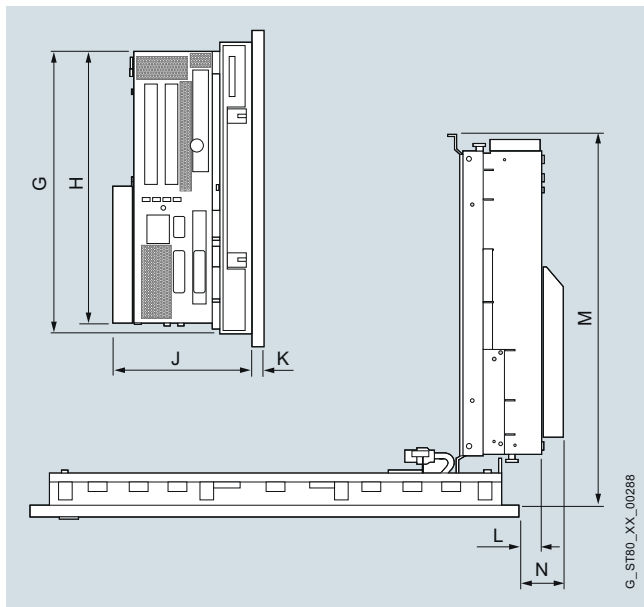
Operator control unit and overall device
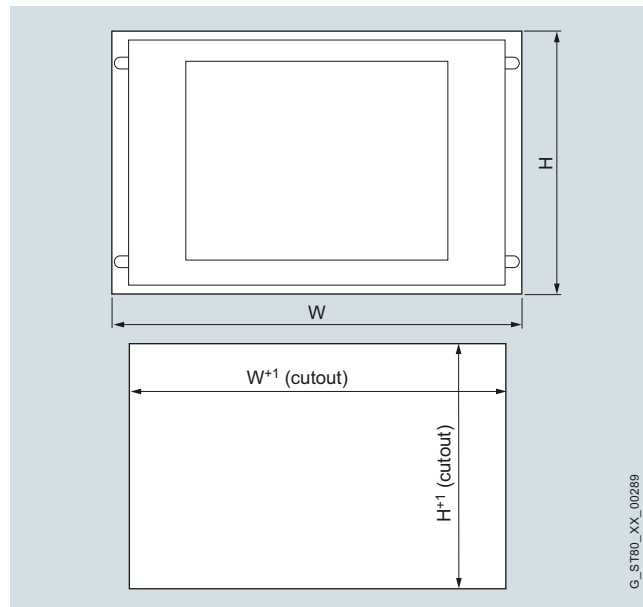
Installation cutout

Note:

All dimensions without screw clearances.

Operating units IPC 677	G	H	J	K	L	M	N
Touch devices							
• 12"	289	271	141	11	53	369	71
• 15"	289	271	138	11	24	367	42
• 19"	378	271	147	11	18	376	36
Key devices							
• 12"	289	271	122	11	42	351	59
• 15"	324	271	141	11	31	370	48

	Front dimensions		Installation cutout		
	W	H	W+1	H+1	D
Touch devices					
• 12"	400	310	368	290	51
• 15"	483	310	450	290	55
• 19"	483	400	450	380	57
Key devices					
• 12"	483	310	450	290	
• 15"	483	355	450	321[1]	

[1] In addition: Two cutouts 25 x 5 mm on the top for keyboard slide-in label channels.

More information

Additional information is available on the Internet under:

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.

■ Overview

Compact and powerful

The SIMATIC ET 200SP Open Controller is the first controller of this type to combine the functions of an ET 200SP controller with visualization and PC applications in one rugged, compact control system with central I/Os (inputs/outputs).

Features	CPU 1515SP PC (+HMI)
RAM for program, integrated	1 MB
RAM 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	2048
IEC counter	Arbitrary (only limited by the RAM)
IEC timer	Arbitrary (only limited by the RAM)
Bit memory	16 KB
I/O address range	
Inputs	32 KB (all inputs are stored in the process image)
Outputs	32 KB (all inputs are stored in the process image)
Motion	
No. of axes	Up to 6
Communication	
PtP	Yes (via CM)
PROFINET IO	1 x PN IO IRT (2-port switch)
PROFIBUS DP	Yes (via CM DP)
Web server	Yes
GB-Ethernet	Yes, 1 x via GB-Ethernet RJ45 interface

■ More information

Further information and downloads

Manuals

The ET 200SP Open Controller manuals can be downloaded free of charge from the Internet (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

Brochures

Information material for downloading can be found on the Internet:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
PC-based controllers

CPU 1515SP PC

■ Overview
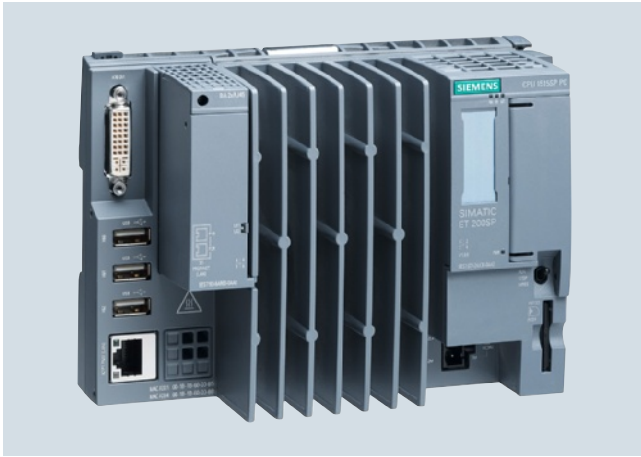
- Turnkey all-in-one solution with pre-installed SIMATIC S7-1500 software controller and optionally pre-installed WinCC Runtime Advanced V13 SP1
- Central expansion via ET 200SP modules (station width up to 1 m or up to 64 modules)
- SIMATIC Hypervisor: for separating Windows systems from control functions
- 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 webpages
- 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 (optionally with WinCC RT Advanced V13 SP1)	
Type of delivery: German, English, Chinese, Italian, French, Spanish	
Windows embedded Standard 7 E 32-bit, 8 GB CFast card	
• CPU 1515SP PC (2 GB RAM)	**6ES7677-2AA31-0EB0**
• CPU 1515SP PC + HMI 128PT (4 GB RAM)	**6ES7677-2AA31-0EK0**
• CPU 1515SP PC + HMI 512PT (4 GB RAM)	**6ES7677-2AA31-0EL0**
• CPU 1515SP PC + HMI 2048PT (4 GB RAM)	**6ES7677-2AA31-0EM0**
Windows embedded Standard 7 P 64-bit (Multitouch), 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**
Accessories	
BusAdapter BA 2xRJ45	**6ES7193-6AR00-0AA0**
BusAdapter BA 2xFC	**6ES7193-6AF00-0AA0**
for increased vibration and EMC loads	
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 Mbit/s	
Server module	**6ES7193-6PA00-0AA0**
Spare parts	
Power supply connector	**6ES7193-4JB00-0AA0**
Spare part; for connecting the 24 V DC supply voltage; with push-in terminals (10 units)	
Reference identification label	**6ES7193-6LF30-0AW0**
10 sheets of 16 labels	
Labeling strips	
• 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer	**6ES7193-6LR10-0AA0**
• 1000 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 V13 SP1	
Target system: SIMATIC S7-1200, S7-1500, S7-300, S7-400, WinAC Requirement: Windows 7 Professional SP1 (64-bit), Windows 7 Enterprise SP1 (64-bit), Windows 7 Ultimate SP1 (64-bit), Windows 8.1 (64-bit), Windows 8.1 Professional (64-bit), Windows 8.1 Enterprise (64-bit), Windows Server 2008 R2 StdE (full installation), Windows Server 2012 StdE (full installation) Available in: German, English, Chinese, Italian, French, Spanish	
• STEP 7 Professional V13 SP1, floating license	**6ES7822-1AA03-0YA5**
• STEP 7 Professional V13 SP1, floating license, software download incl. license key [1] Email address required for delivery	**6ES7822-1AE03-0YA5**
SIMATIC ODK 1500S	**6ES7806-2CD00-0YA0**
Open Development Kit for developing Windows and real-time library functions for S7-1500 software controllers	
SIMATIC WinCC Advanced V13 SP1	
Engineering software for the configuration and simulation of SIMATIC Panels; SIMATIC WinCC Runtime Advanced electronic documentation in English, German, French, Italian, Spanish, Chinese	
• Software and documentation on DVD, floating license, license key on USB stick	**6AV2102-0AA03-0AA5**
• as download [1], floating license, software and license key download, email address required for delivery	**6AV2102-0AA03-0AH5**

[1] For up-to-date information and download availability, see: http://www.siemens.com/tia-online-software-delivery

◼ **More information**

Further information and downloads

Manuals

The ET 200SP Open Controller manuals can be downloaded free of charge from the Internet (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

Brochures

Information material for downloading can be found on the Internet: http://www.siemens.com/simatic/printmaterial

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PC-based Automation
PC-based controllers

Overview

- For developing dynamically loadable function libraries for S7-1500 Software Controllers:
  - Implementation of function libraries by means of high-level programming with C/C++.
  - Execution of the library functions under Windows or in the real-time context of the software controller.
  - Calling the functions directly from the PLC program.
- Development environment for real-time library functions included in the scope of delivery.
- Development of Windows library functions with MS Visual Studio.
- 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.

Technical specifications

System requirements

The SIMATIC ODK 1500S can be used on PC platforms with the following requirements:

- Windows 7, Windows 8 operating systems
- Min. 150 MB hard drive memory
- min. 4 GB RAM
- Mouse, keyboard, screen

Ordering data

	Article No.
SIMATIC ODK 1500S	**6ES7 806-2CD00-0YA0**
Open Development Kit for support in developing Windows and real-time library functions for S7-1500 software controllers	

■ **Overview**
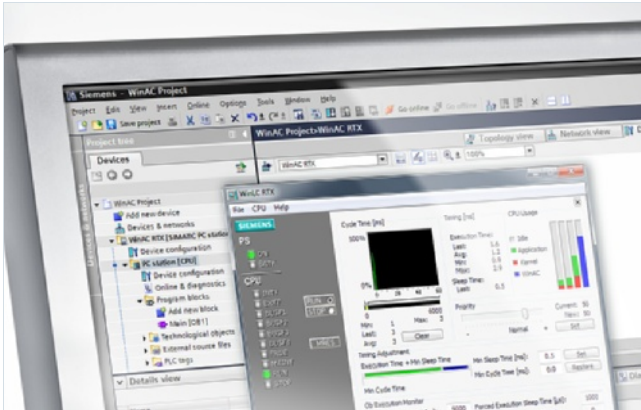
Siemens has developed a wide range of coordinated hardware and software components for PC-based Automation.

Focal point: *SIMATIC PC-based Control* with SIMATIC WinAC, the open, flexible and reliable controller for your PC-based automation solution.

All automation tasks can be implemented on one platform on the PC, such as open-loop control, closed-loop control, HMI and motion control. PC-based Automation is your first choice wherever PC applications have to be handled in addition to classic PLC tasks.

SIMATIC PC-based Control

- Adds PC-based controllers to the SIMATIC S7 controller family
- Especially suitable where a variety of tasks such as data processing, communication, visualization, technology and control have to be integrated in one PC.

Versions

- *SIMATIC WinAC Software PLC*
  for tasks requiring a high level of flexibility and integration capability.
- *SIMATIC WinAC ODK*
  allows PC solutions for technological tasks to be integrated flexibly and powerfully into the controller.

Properties:

- Runs on standard PCs under Windows XP Professional SP2.
- Code-compatible with SIMATIC S7:
  Programmed with SIMATIC industrial software, created programs can also be used for SIMATIC S7.
- Uses standard interfaces for integration into the office environment.
- Open interfaces for the integration of solution-specific technological hardware and software.

Catalog ST 70:

You can also find information about SIMATIC PC-based controllers in **Catalog ST 70:**

http://www.automation.siemens.com/salesmaterial-as/catalog/en/simatic-st70-chap08-english-2015.pdf

■ **More information**

Brochures

Information material for downloading can be found in the Internet:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
Software controllers

SIMATIC WinAC RTX

Overview
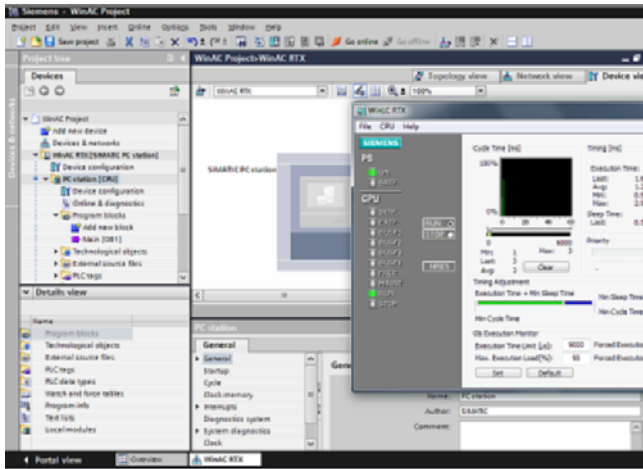
- SIMATIC WinAC RTX:
  Optimized for applications that require a high degree of flexibility and integration capability.
- The software solution for tasks that require hard deterministic behavior and high performance.
- With real-time expansion for assuring deterministic behavior for the control section.

New with WinAC RTX 2010 SP1:
- SIMATIC IPC427D and IPC477D are fully supported
  - Communication via onboard CP 5622
  - Retentive memory
  - LED display of the operating status
- Support for the new PROFIBUS CP 5612 (PCI) and CP 5622 (PCIe)

5

Ordering data

	Article No.
SIMATIC WinAC RTX 2010 Software PLC for PC-based automation tasks with stringent deterministic requirements; PROFIBUS and PROFINET; CD-ROM with electronic documentation d, e, f; single license, executable under Windows XP SP2 and SP3 as well as Windows 7 (32 bit)	6ES7671-0RC08-0YA0
SIMATIC WinAC RTX 2010 Upgrade For upgrading from basic/RTX V3.x, V4.0, V4.1 2005, 2008 and 2009; single license, executable under Windows XP SP2 and SP3 and Windows 7 (32 bit)	6ES7671-0RC08-0YE0
CP 5612 communications processor PCI card (32 bit) for connection of a programming device or PC to PROFIBUS	6GK1561-2AA00
CP 5622 communications processor PCI Express x1 card (32 bit) for connection of a programming device or PC to PROFIBUS	6GK1562-2AA00
CP 5603 Microbox Package Comprising CP 5603 module and Microbox expansion rack	6GK1560-3AU00
CP 5613 A3 communications processor 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
CP 5623 communications processor 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; German/English	6GK1562-3AA00
CP 1616 communications processor PCI Card (32 bit; 3.3/5 V universal key) 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 (RT operation) 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; German/English	6GK1161-6AA02

■ **More information**

Add-ons for SIMATIC WinAC

PC-based Competence Center Cologne

Our add-ons supplement the WinAC RTX soft PLC by useful functions which have arisen in the context of projects. You can thus fully utilize the advantages of PC-based automation.

The applications are available in the form of function blocks and are easy to use without special programming knowledge.

Detailed information and prices can be obtained from your Siemens contact or from:

Contact:

Siemens AG
Competence Center Cologne
E-mail: CCCologne@siemens.com

Application	Function
WinAC serial driver	Communication over serial interfaces
WinAC PC IO driver	Access to central I/O expansion PC IO including interrupt handling
WinAC SQL	Access to SQL databases
WinAC TCP/IP driver	Data exchange between WinAC and other communication partners over Windows interface using TCP/IP, UDP, or ISO-on-TCP
WinAC OPC Client	Access to various OPC servers
WinAC Shutdown	Controlled shutdown of WinAC and PC system
WinAC File-I/O	Reading and writing of DBs as file on the PC system
WinAC Command	Calling of batch commands from WinAC
WinAC Access-DB	High-performance access to DBs, bit memories or I/O image
WinAC SMX Cover	Provision of SMX functions, e.g. for Delphi or VB
WinAC CMI Wrapper	Simple program-based operation of WinAC

Brochures

Information material for downloading can be found in the Internet:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
Software controllers

SIMATIC WinAC RTX F

Overview

- SIMATIC WinAC RTX F:
  Optimized for applications that demand a high degree of flexibility and integration capability and that must also satisfy safety requirements up to SIL 3 (IEC 61508).
- The software solution for tasks that require hard deterministic behavior and high performance.
- With real-time expansion for assuring deterministic behavior for the control section.
- Distributed I/O can be connected over PROFIBUS and/or PROFINET, also safety-related over PROFIsafe.

New
- SIMATIC IPC427D and IPC477D are fully supported
  - Communication via onboard CP 5622
  - Retentive memory
  - LED display of the operating status
- Support for the new PROFIBUS CP 5612 (PCI) and CP 5622 (PCIe)

Ordering data

	Article No.
SIMATIC WinAC RTX F 2010	**6ES7671-1RC08-0YA0**
SIMATIC WinAC RTX F 2010 upgrade	**6ES7671-1RC08-0YE0**
CP 5612 communications processor	**6GK1561-2AA00**
PCI card (32 bit) for connection of a programming device or PC to PROFIBUS	
CP 5622 communications processor	**6GK1562-2AA00**
PCI Express x1 card (32 bit) for connection of a programming device or PC to PROFIBUS	
CP 5603 Microbox Package	**6GK1560-3AU00**
Comprising CP 5603 module and Microbox expansion rack	
CP 5613 A3 communications processor	**6GK1561-3AA02**
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	
CP 5623 communications processor	**6GK1562-3AA00**
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; German/English	
CP 1616 communications processor	**6GK1161-6AA02**
PCI Card (32 bit; 3.3/5 V universal key) 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 (RT operation) 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; German/English	

■ **More information**

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PC-based Competence Center Cologne

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Detailed information and prices can be obtained from your Siemens contact or from:

Contact:

Siemens AG
Competence Center Cologne
E-mail: CCCologne@siemens.com

Application	Function
WinAC serial driver	Communication over serial interfaces
WinAC PC IO driver	Access to central I/O expansion PC IO including interrupt handling
WinAC SQL	Access to SQL databases
WinAC TCP/IP driver	Data exchange between WinAC and other communication partners over Windows interface using TCP/IP, UDP, or ISO-on-TCP
WinAC OPC Client	Access to various OPC servers
WinAC Shutdown	Controlled shutdown of WinAC and the PC system
WinAC File I/O	Reading and writing of DBs as a file on the PC system
WinAC Command	Calling batch commands from WinAC
WinAC Access DB	High-performance accesses to DBs, bit memories or I/O image
WinAC SMX Cover	Provides SMX functions, e.g. for Delphi or VB
WinAC CMI Wrapper	Easy program-controlled operation of WinAC

Brochures

Information material is available for downloading in the Internet at:

http://www.siemens.com/simatic/printmaterial

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PC-based Automation
Software controllers

SIMATIC WinAC ODK

■ Overview

- SIMATIC WinAC software PLCs support powerful interfaces which permit close meshing of the control task with PC-based applications.
- WinAC ODK allows the user to develop applications or to integrate already existing applications into the control task.

New with WinAC ODK V4.2:

- CCX interface:
  - New SFB 65003 for asynchronous execution of ODK applications
  - Expansion of data access functions
  - Creation of Windows DLL with C# and VB
- SMX interface:
  - Access to the Shared Memory interface under IntervalZero RTX
  - Expansion of data access functions
  - Creation of Windows applications with C# and VB
- Supports MS Visual Studio 2005 and 2008 (under Windows)

■ Ordering data

	Article No.
SIMATIC WinAC ODK V4.2 for integration of C/C++ code in WinAC PLCs, executable under Windows XP SP2 or SP3; CD-ROM with electronic documentation Single license	**6ES7806-1CC03-0BA0**

■ More information

Brochures

Information material for downloading can be found in the Internet:

http://www.siemens.com/simatic/printmaterial

■ **Overview**

An embedded PC or embedded device is combined with automation software (e.g. software PLC, HMI system, etc.) and is ready-for-use.

Windows Embedded Standard or Windows Embedded Compact is used as the operating system.

PC-based Automation comprises:

• Control
• Technology
• Visualization
• Data processing
• Communication
• Fail-safe

on a common embedded PC platform.

S7-mEC

SIMATIC S7-mEC is a modular controller in S7-300 design with powerful embedded PC technology. The embedded controller combines the advantages of the tried-and-tested modular S7 controller with PC technology in one new device.

SIMATIC S7-mEC RTX is characterized by:

• Maximum ruggedness without fan or hard disk
• Modular expansion options, e.g. central expansion with S7-300 I/O or PC interfaces
• Commissioning, as for S7-300, by automation specialists
• SIMATIC WinAC RTX or alternatively WinAC RTX F preinstalled as a software PLC

SIMATIC IPC bundles

The SIMATIC IPC bundles are ready-to-use, combined embedded PCs with the following SIMATIC software options:

• SIMATIC WinAC RTX
• SIMATIC WinAC RTX F
• SIMATIC WinCC flexible or WinCC RT Advanced
• Combinations with WinAC and WinCC

SIMATIC IPC227D and IPC277D bundles

SIMATIC IPC227D and SIMATIC IPC277D are also available with ready-to-use, pre-installed SIMATIC software:

• SIMATIC WinCC RT Advanced
• SIMATIC WinAC RTX
• SIMATIC WinAC RTX F
• Combinations of SIMATIC WinAC (F) and WinCC

The panels are available in 7", 9", 12", 15" and 19" TFT touch operation. With their compact structure, these SIMATIC IPCs are the ideal solution for simple control and HMI tasks on a single platform and also offer the openness of a PC-based system.

SIMATIC IPC477C bundles

As in the case of SIMATIC IPC427C, the SIMATIC HMI IPC477C can also be ordered with ready-to-use, pre-installed SIMATIC software:

• SIMATIC WinCC flexible or WinCC RT Advanced
• SIMATIC WinAC RTX
• SIMATIC WinAC RTX F
• Combinations of SIMATIC WinAC RTX (F) and WinCC

The panels are available in 12", 15" and 19" front variants, option-ally with touch or key functionality. With their compact structure, Panel PCs are the ideal solution for complex control and HMI tasks on a single platform and also offer the openness of a PC-based system.

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PC-based Automation
Software controllers
SIMATIC S7-mEC

SIMATIC S7-modular Embedded Controller

■ **Overview** (continued)

SIMATIC IPC477D bundles

As in the case of SIMATIC IPC427D, the SIMATIC IPC477D can also be ordered with ready-to-use, pre-installed SIMATIC software:

- SIMATIC WinCC RT Advanced
- SIMATIC WinAC RTX
- SIMATIC WinAC RTX F
- Combinations of SIMATIC WinAC RTX (F) and WinCC

The panels are available in 12" TFT Touch, 15" TFT Touch, 15" TFT Touch/Key, 19" TFT Touch and 22" TFT Touch front variants. With their compact structure, Panel PCs are the ideal solution for complex control and HMI tasks on a single platform and also offer the openness of a PC-based system.

Decision aid for the use of embedded systems

Customer benefits	Modular Control	PC-based Automation			
	SIMATIC S7	S7 Modular Embedded Controller (S7-mEC)	IPC227D, IPC277D bundles	IPC427C/D, IPC477D, HMI IPC477C bundles	on SIMATIC PC
Design					
Ruggedness	• •	•	•	•	• (depends on hardware configuration)
Type of construction	Modular	Modular	Compact	Compact	Depending on the type of construction
Spare parts availability (beyond date of discontinuation)	10 years	5 years	5 years	5 years	5 years
Performance					
Fast restart after power failure	•	-	-	-	-
Hard real-time	• •	• •	• •	• •	• •
Fast program processing	•	• •	• •	• •	Up to • • • (depending on processor)
Safety Integrated	•	• • (Option)	• • (Option)	• • (Option)	• •
I/O interfacing					
Central/distributed	• • / • •	• / • •	- / • •	• / • • 4x7D: - / • •	- / • •
User know-how					
Preconfigured, turnkey	•	•	•	•	-
Previous knowledge					
PLC	• • •	• •	•	•	•
PC	-	•	• •	• •	• • •
HMI	-	o	o	o	• •
Openness					
Openness • Integration of C++ programs • Further processing of data using external programs via OPC on a hardware platform	-	•	•	•	•
Modularization with distributed intelligence (CBA)	•	•	•	•	•
Integration of PLC and HMI on one hardware platform	-	•	•	•	•

• Applies

o Applies under certain conditions

- Does not apply

■ **More information**

Brochures

Information material for downloading can be found on the Internet:

http://www.siemens.com/simatic/printmaterial

Overview

- Get off to a fast start in automation solutions with embedded PC platforms.
  - Ready-to-use SIMATIC WinAC RTX or WinAC RTX F preinstalled on EC31
  - Prepared for use in a SIMATIC environment with PROFINET and Industrial Ethernet
  - Commissioning by specialist automation personnel as with the S7-300
  - Configuring and programming with SIMATIC STEP 7 over Industrial Ethernet
  - Optional visualization

- Modular expansion capability:
  Central expansion with
  - S7-300 I/O (SM modules of S7-300)
  - Expansion modules for additional PC interfaces, e.g. DVI-I, USB, Gigabit Ethernet networks and memory card slots, as well as PCI-104

- Rugged operation
  - Hard-disk-free operation based on flash disk and Windows Embedded Standard
  - Fan-free operation

- Flexibility of a PC-based automation environment
  - Free memory space on flash disk can be used for other PC applications
  - Use of WinAC ODK with SIMATIC WinAC RTX and WinAC RTX F (read-only in safety-related program part)
  - Connection option for USB devices
  - Memory capacity expandable using multimedia card

- Data retentivity for WinAC RTX and RTX F without uninterruptible power supply (UPS)

Ordering data

|	Article No.
SIMATIC S7-modular Embedded Controller	
EC31	6ES7677-1DD10-0BA0
Intel CoreDuo 1.2 GHz processor Memory configuration: 1 GB RAM, 4 GB Flash Disk; interfaces: 1 Industrial Ethernet port, 2 PROFINET ports, 2 USB ports, 1 slot for multimedia card; Software: Windows Embedded Standard preinstalled, Software Development Kit (SDK) for creating C/C++ applications with accesses to central I/O modules	
EC31-RTX	6ES7677-1DD10-0BB0
Intel CoreDuo 1.2 GHz processor Memory configuration: 1 GB RAM, 4 GB Flash Disk; interfaces: 1 Industrial Ethernet port, 2 PROFINET ports, 2 USB ports, 1 slot for multimedia card; Software: Windows Embedded Standard and WinAC RTX 2010 preinstalled	
EC31-RTX F	6ES7677-1FD10-0FB0
Intel CoreDuo 1.2 GHz processor Memory configuration: 1 GB RAM, 4 GB Flash Disk; interfaces: 1 Industrial Ethernet port, 2 PROFINET ports, 2 USB ports, 1 slot for multimedia card; Software: Windows Embedded Standard and WinAC RTX F 2010 preinstalled	
EC31-HMI/RTX	
Intel CoreDuo 1.2 GHz processor Memory configuration: 1 GB RAM, 4 GB Flash Disk; interfaces: 1 Industrial Ethernet port, 2 PROFINET ports, 2 USB ports, 1 slot for multimedia card; Software: Windows Embedded Standard, WinAC RTX 2010, SIMATIC SOFTNET-S7/V7.0 Lean preinstalled	
• With WinCC flexible 2008 RT 128 PT	6ES7677-1DD10-0BF0
• With WinCC flexible 2008 RT 512 PT	6ES7677-1DD10-0BG0
• With WinCC flexible 2008 RT 2048 PT	6ES7677-1DD10-0BH0
Accessories	
EM PCI-104 expansion module	6ES7677-1DD60-1AA0
For fitting up to 3 additional PCI-104 cards	
EM PC expansion module	6ES7677-1DD50-2AA0
Additional connection options: 2 USB interfaces, 1 Gigabit Ethernet interface, 1 serial interface, 1 slot for CF card, 1 slot for SD card/Micro Memory Card	

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PC-based Automation
Software controllers
SIMATIC S7-mEC

Expansion modules

■ Overview

- Expansion modules for SIMATIC S7-modular Embedded Controller EC31
  - EM PCI-104 for additionally accommodating up to 3 PCI-104 cards
  - EM PC with additional PC interfaces and slots for memory media

■ Ordering data

	Article No.
EM PCI-104 expansion module For fitting up to 3 additional PCI-104 cards	6ES7677-1DD60-1AA0
EM PC expansion module Additional connection options: 1 DVI-I interface, 2 USB interfaces, 1 Gigabit Ethernet interface, 1 serial interface, 1 slot for CF card, 1 slot for SD card/Micro Memory Card	6ES7677-1DD50-2AA0

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■ **Overview**
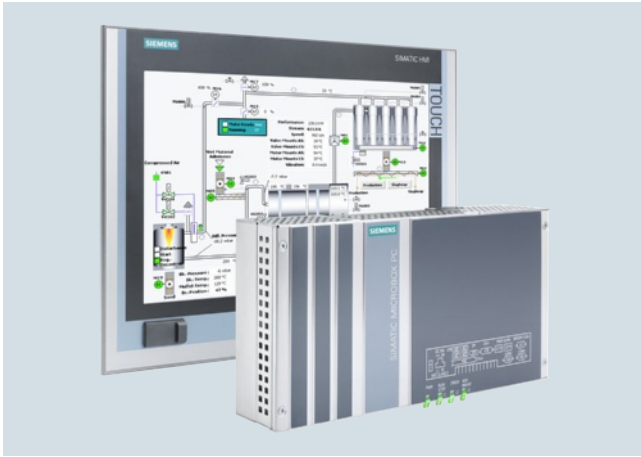
SIMATIC IPC427D and SIMATIC IPC477D family

Fast and efficient getting started with PC-based automation

Our *Embedded Bundles* for PC-based automation are based on rugged, fan-free embedded industrial PCs:

• Nanobox PC SIMATIC IPC227D and
  Microbox PC SIMATIC IPC427C/427D or

• Panel PC SIMATIC IPC277D and
  SIMATIC HMI IPC477C (PRO)/477D

and

• the Embedded Controller SIMATIC S7-mEC.

They are pre-installed, configured, and ready-to-use with the SIMATIC WinAC RTX (F) software controller and/or a version of the SIMATIC WinCC (SCADA, Advanced) visualization software.

Software packages with SIMATIC WinAC RTX (F), SIMATIC WinCC (SCADA, Advanced, Professional) are available for all SIMATIC IPCs. Ordering the automation software together with an industrial PC results in significant price savings.

Embedded Bundles

Embedded bundles are embedded IPC configurations with preinstalled software, specially designed for automation and visualization tasks.

• All embedded bundles 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 Core i7 CPUs for complex automation solutions.

• Pre-installed and configured with the SIMATIC WinAC RTX (F) software controller and/or the SIMATIC WinCC RT Advanced / WinCC flexible visualization software.

Furthermore, bundles with WinCC RT Professional as client or single-user station are available for the SIMATIC IPC427D / IPC477D.

■ **More information**

Further information can be found in the Internet at:

http://www.automation.siemens.com/mcms/pc-based-automa-tion/en/embedded-bundles

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PC-based Automation
Embedded bundles/Software packages

SIMATIC IPC227D Bundles

■ **Overview**
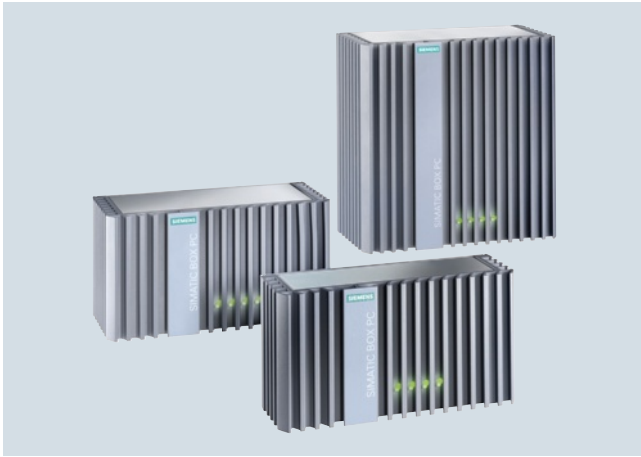
- A quick start in automation solutions with embedded PC platforms
  - SIMATIC WinAC RTX or SIMATIC WinAC RTX F preinstalled on SIMATIC IPC227D and ready for use
  - PROFINET RT and Industrial Ethernet pre-configured for use in a SIMATIC environment
  - Optional WinCC RT Advanced for visualization tasks in parallel with SIMATIC WinAC RTX
  - Configuration and programming with SIMATIC STEP 7 via Industrial Ethernet or PROFINET
- Safety requirements up to SIL 3 in accordance with IEC 61508/62061 or EN ISO 13849-1 up to PL e can be implemented with WinAC RTX F
- Rugged operation
  - Hard-disk-free operation with CompactFlash card (CF card) or solid-state drive and Windows Embedded Standard 2009 or Windows Embedded Standard 7, 32-bit
  - Fan-free operation
  - 128 KB of retentive data for WinAC RTX, also without uninterruptible power supply (UPS)
- Flexibility of a PC-based automation environment
  - Use of WinAC ODK with SIMATIC WinAC RTX or SIMATIC WinAC RTX F (read-only for fail-safe program section)
  - Connection option for USB devices, flat panel monitor or screen
  - PCIe cards can be plugged in

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■ Ordering data

	Article No.
SIMATIC IPC227D 1 x DVI-D graphics interface 2 x 10/100/1 000 Mbps Ethernet RJ45 4 x USB V2.0 (high current) CompactFlash slot 24 V DC industrial power supply	**6ES7647 - 8 A ■ ■ ■ - ■ ■ ■ ■**

Processors / memory configuration / NVRAM
- Atom E620 (600 MHz), 512 MB RAM — **A**
- Atom E620 (600 MHz), 512 MB RAM, NVRAM — **B**
- Atom E640 (1.0 GHz), 1 GB RAM — **E**
- Atom E640 (1.0 GHz), 1 GB RAM, NVRAM — **F**
- Atom E660 (1.3 GHz), 2 GB RAM — **G**
- Atom E660 (1.3 GHz), 2 GB RAM, NVRAM — **H**

Drives
- Without drive, with CF slot — **0**
- 320 GB HDD SATA — **1**
- 160 GB Solid-State Drive SATA — **2**
- 80 GB Solid-State Drive SATA — **4**
- 2 GB SIMATIC IPC CompactFlash — **5**
- 4 GB SIMATIC IPC CompactFlash — **6**
- 8 GB SIMATIC IPC CompactFlash — **7**
- 16 GB SIMATIC IPC CompactFlash — **8**

COM interface
- COM1: RS 232 — **0**
- COM1: RS 485 — **1**
- COM1: CAN — **2**

Operating system
- Without operating system — **0**
- Windows Embedded Standard 2009 preinstalled (CF from 2 GB/SSD/HD) — **1**
- XP Prof. MUI preinstalled on SSD/HD — **2**
- Windows Embedded Standard 7 (32-bit) preinstalled (CF from 4 GB/SSD/HD) — **3**
- Windows 7 (32-bit) MUI preinstalled on SSD/HD — **4**

	Article No.
SIMATIC IPC227D	**6ES7647 - 8 A ■ ■ ■ - ■ ■ ■ ■**

Software bundles
- Without RTX/HMI software — **A**
- RTX: WinAC RTX 2010 — **B**
- RTX-F: WinAC RTX F 2010 — **C**
- HMI: WinCC RT Advanced 128 PT — **F**
- HMI: WinCC RT Advanced 512 PT — **G**
- HMI: WinCC RT Advanced 2 048 PT — **H**
- HMI/RTX: RT 128 PT — **M**
- HMI/RTX: RT 512 PT — **N**
- HMI/RTX: RT 2 048 PT — **P**
- HMI/RTX-F: RT 128 PT — **R**
- HMI/RTX-F: RT 512 PT — **S**
- HMI/RTX-F: RT 2 048 PT — **T**

Device versions
- Device version: Base line — **A**
- Device version: PCIe (1 slot) — **B**
- Device version: COM (COM2-4: RS 232) — **D**
- Device version: IO (4x dig. inputs/outputs each) — **E**

Mounting accessories
- Standard mounting rail — **1**
- Wall mounting — **2**
- Portrait mounting — **3**
- Side mounting — **4**

Release for individual order variants: See releases in the ordering procedure.

Accessories	
Cable strain relief set for IPC227D Packing unit: 5 units	6ES7648-1AA50-0XL0
Dust protection set for IPC227D	6ES7648-1AA50-0XG0

■ More information

Delivery

Production and delivery of the devices will typically be completed within 15 business days after receipt of order.
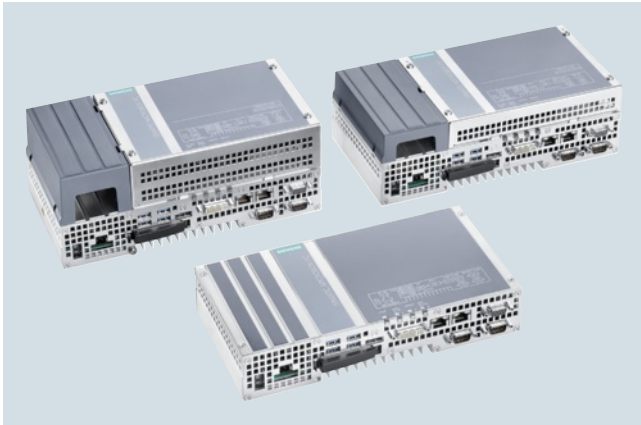
The hardware and mass memory with the complete, preinstalled, ready-to-use software are supplied fully assembled.

PC-based Automation
Embedded bundles/Software packages

SIMATIC IPC427D bundles

◼ Overview

SIMATIC IPC427D (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration

Ready-to-run, complete solutions (software is already installed and preconfigured) for visualization and automation in connection with WinCC RT Advanced and/or WinAC RTX.

- Ultra-compact
- Maintenance-free
- Third generation Intel Core i technology
- Current product versions of the pre-installed software:
  - SIMATIC WinCC RT Advanced V13
  - SIMATIC WinAC RTX 2010
  - SIMATIC Net V12.1

◼ 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
• DIN rail mounting	B
• Wall mounting	D
• Portrait mounting	E

RAM/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

[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

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■ Ordering data

	Article No.
SIMATIC IPC427D (Box PC) [1)][2)]	**6AG4140 - ■ ■ ■ ■ ■ - ■ ■ ■ ■**

Expansions/interface:
• 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 (Eng, Ger, Fr, It, Sp)	6
• Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp)	7

Mass storage, externally accessible:
• Without external mass storage	0
• CFast 2 GB Without operating system	1
• CFast 4 GB (only optionally with operating system if no internal mass storage)	2
• CFast 8 GB (only optionally with operating system if no internal mass storage)	3
• CFast 16 GB (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
• 80 GB solid-state drive (standard)	H
• HDD 320 GB	K
• 160 GB solid-state drive (standard)	P

	Article No.
SIMATIC IPC427D (Box PC) [1)][2)]	**6AG4140 - ■ ■ ■ ■ ■ - ■ ■ ■ ■**

SIMATIC software preinstalled (bundles, only with Windows Embedded Standard 7):
• Without SIMATIC software	A
• WinAC RTX 2010 [3)]	B
• WinCC RT Advanced, 128 PT	C
• WinCC RT Advanced, 512 PT	D
• WinCC RT Advanced, 2 048 PT	E
• WinCC RT Advanced, 4 096 PT	F
• WinCC RT Advanced 128 PT, WinAC RTX 2010 [3)]	J
• WinCC RT Advanced 512 PT, WinAC RTX 2010 [3)]	K
• WinCC RT Advanced 2 048 PT, WinAC RTX 2010 [3)]	L
• WinCC RT Advanced 4 096 PT, WinAC RTX 2010 [3)]	M
• WinAC RTX F 2010 [3)]	N
• WinCC RT Advanced 128 PT, WinAC RTX F 2010 [3)]	P
• WinCC RT Advanced 512 PT, WinAC RTX F 2010 [3)]	Q
• WinCC RT Advanced 2 048 PT, WinAC RTX F 2010 [3)]	R
• WinCC RT Advanced 4 096 PT, WinAC RTX F 2010 [3)]	S
• WinCC RT Professional Client/ single-user station 128 PT	Y

Power supply:
• 24 V DC industrial power supply	0
• 24 V DC and TPM (not for China and Russia)	8

[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 "RAM and NVRAM".

Note:

Bundles with SIMATIC software only with Windows Embedded Standard 7, RAM and NVRAM (with RTX and RTX F), and CFast mass storage of 4 GB or more / SSD.

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PC-based Automation
Embedded bundles/Software packages

SIMATIC IPC427D bundles

■ **More information**

Delivery

Production and delivery of the devices will typically be completed within 15 business days after receipt of order. The hardware and mass memory with the complete, pre-installed, ready-to-use software are supplied fully assembled.

Commissioning

Before the control or visualization application is complete, simply perform the following steps:

• Optional: Installation and setup of additional software on the device

• Optional: Installation and setup of other software on the device

• Transfer of the engineering projects from STEP 7 or WinCC Advanced

• Transfer of the supplied license keys for SIMATIC software

• Backup of the installed software and protection of the flash-based mass memory by switching on the Enhance Write filter

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■ **Overview**

SIMATIC IPC277D for implementing simple visualization and control tasks

- High degree of flexibility when selecting rugged widescreen fronts from 7" to 19" for more freely configurable display area
- High resolution, large viewing angle and up to 100% dimmable backlighting for brilliant display with optimized power consumption
- Absolutely maintenance-free due to the use of CompactFlash and SSD as mass storage and fanless operation up to 50 °C ambient temperature
- Maximum industrial functionality due to non-volatile retentive memory for battery-free operation
- Ready-to-run embedded bundles with visualization or/and control software

The following front installation versions are available:
- 7" Touch
- 9" Touch
- 12" Touch
- 15" Touch with front USB interface
- 19" Touch with front USB interface
- All fronts in widescreen design

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PC-based Automation
Embedded bundles/Software packages

SIMATIC IPC277D bundles

Ordering data

Nanopanel PC SIMATIC IPC277D	Article No.
Interfaces: 2 x Gbit LAN (RJ45), 1 x serial (COM1), 3 x USB	6AV7881 - ■ A ■ 0 0 - ■ ■ ■ 0

Operator control unit
• Touch 7" TFT	1
• Touch 9" TFT	2
• Touch 12" TFT	3
• Touch 15" TFT, front USB interface	4
• Touch 19" TFT, front USB interface	5

Processors / memory configuration / NVRAM
• Atom E640 (1.0 GHz), 1 GB RAM	A
• Atom E640 (1.0 GHz), 1 GB RAM, NVRAM	B
• Atom E660 (1.3 GHz), 2 GB RAM	E
• Atom E660 (1.3 GHz), 2 GB RAM, NVRAM	F

Drives
• Without drive, with CF slot	0
• 2 GB SIMATIC PC CompactFlash	1
• 4 GB SIMATIC PC CompactFlash	2
• 8 GB SIMATIC PC CompactFlash	3
• 16 GB SIMATIC PC CompactFlash	4
• 160 GB Solid-State Drive SATA	6
• 80 GB Solid-State Drive SATA	8

Nanopanel PC SIMATIC IPC277D	Article No.
	6AV7881 - ■ A ■ 0 0 - ■ ■ ■ 0

Operating system
• Without operating system	A
• WES 2009 preinstalled (CF from 2 GB/SSD)	B
• XP-Prof. MUI preinstalled on SSD	C
• WES 7 32 bit preinstalled (CF from 4 GB/SSD)	D
• Windows 7 MUI 32 bit preinstalled on SSD	E

Software bundles
• Without RTX/HMI software	A
• RTX: WinAC RTX 2010	B
• RTX-F: WinAC RTX F 2010	C
• HMI: WinCC RT Advanced 128 PT	F
• HMI: WinCC RT Advanced 512 PT	G
• HMI: WinCC RT Advanced 2 048 PT	H
• HMI/RTX: RT 128 PT	M
• HMI/RTX: RT 512 PT	N
• HMI/RTX: RT 2 048 PT	P
• HMI/RTX-F: RT 128 PT	R
• HMI/RTX-F: RT 512 PT	S
• HMI/RTX-F: RT 2 048 PT	T

Accessories

Bracket clamp, long for 15", 19" and 22" widescreen, Comfort Panels, IPC, Flat Panel monitors and Thin Client (except SCD1900 19" widescreen)	6AV6671-8XK00-0AX4
Protective film	see "SIMATIC HMI accessories"
Touch pen	see "SIMATIC HMI accessories -> Accessibility"

Please be sure to note:

The IPC277D with bundled software is always supplied with inserted CF card.
The licenses are on the supplied USB flash drive.

More information

Delivery

Production and delivery of the devices will typically be completed within 15 working days after receipt of order.

The hardware and mass memory with the complete, preinstalled, ready-to-use software are supplied fully assembled.

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Overview

SIMATIC IPC477D: The powerful embedded Panel PC – maintenance-free with versatile configuration

Ready-to-run, complete solutions (software is already installed and preconfigured) for visualization and automation in connection with WinCC RT Advanced and/or WinAC RTX.

- 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 investment protection
- Fast integration capability
- Safety requirements up to SIL 3 in accordance with IEC 61508/62061 or EN ISO 13849-1 up to PL e can be implemented with WinAC RTX F

The following front versions are available:

- Built-in versions
  - 12" TFT Touch
  - 15" TFT Touch
  - 19" TFT Touch
  - 22" TFT Touch
  - 15" TFT Touch/Key
- Current product versions of the pre-installed SIMATIC software:
  - SIMATIC WinCC RT Advanced V13
  - SIMATIC WinAC RTX 2010 or SIMATIC WinAC RTX F 2010
  - SIMATIC NET V12.1 (including SIMATIC SOFTNET S7 Basis license)
  - and the combinations of the software packages listed above

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

RAM/NVRAM

• 1 GB	A
• 2 GB	B
• 4 GB	C
• 8 GB	D
• 1 GB and NVRAM	J
• 2 GB and NVRAM	K
• 4 GB and NVRAM	L
• 8 GB and NVRAM	M

[1] Built to order versions with a delivery time of max. 15 working days and with identified repair.

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PC-based Automation
Embedded bundles/Software packages

SIMATIC IPC477D bundles

Ordering data

SIMATIC IPC477D [1]	Article No. 6AV7240 - ☐☐☐☐☐ - ☐☐☐☐
Expansions/interface:	
• 1 x RS 232, without PCIe	0
• 1 x RS 232 and 1 x PCIe	1
• Second RS 232, without PCIe	3
• Second RS 232 and 1 x 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 (Eng, Ger, Fr, It, Sp)	6
• Windows 7 Ultimate SP1, 64-bit, MUI (Eng, Ger, Fr, It, Sp)	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
• 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
• SSD 80 GB Standard	H
• HDD 320 GB	K
• DVD	L
• SSD 80 GB standard with DVD	N
• SSD 160 GB standard without DVD	P
• HDD min. 320 GB with DVD	Q

SIMATIC IPC477D [1]	Article No. 6AV7240 - ☐☐☐☐☐ - ☐☐☐☐
SIMATIC software pre-installed (bundles):	
• Without SIMATIC software	A
• WinAC RTX 2010 [2]	B
• WinCC RT Advanced 128 PT	C
• WinCC RT Advanced 512 PT	D
• WinCC RT Advanced 2 048 PT	E
• WinCC RT Advanced 4 096 PT	F
• WinCC RT Advanced 128 PT, WinAC RTX [2]	J
• WinCC RT Advanced 512 PT, WinAC RTX [2]	K
• WinCC RT Advanced 2 048 PT, WinAC RTX [2]	L
• WinCC RT Advanced 4 096 PT, WinAC RTX [2]	M
• WinAC RTX 2010 F [2]	N
• WinCC RT Advanced 128 PT, WinAC RTX F [2]	P
• WinCC RT Advanced 512 PT, WinAC RTX F [2]	Q
• WinCC RT Advanced 2 048 PT, WinAC RTX F [2]	R
• WinCC RT Advanced 4 096 PT, WinAC RTX F [2]	S
• WinCC RT Professional Client/ single-user station 128 PT	Y
Power supply:	
• 24 V DC industrial power supply	0
• 110/230 V AC industrial power supply with Namur; no 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 (not for China and Russia)	8

[1] Built to order versions with a delivery time of max. 15 working days and with identified repair.

[2] Only with RAM and NVRAM.

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■ Overview

Software packages with SIMATIC IPC and S7-mEC

Software packages with WinCC or WinAC together with the corresponding SIMATIC IPC.

The following are available:

- SIMATIC IPC Packages with WinCC
- SIMATIC IPC packages with WinCC RT Advanced (TIA Portal)
- SIMATIC IPC packages with WinCC RT Professional (TIA Portal)
- 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.
SIMATIC WinCC Package [2] [4]	6AV6382 - 2 ■ A 0 7 - 3 A X 0
WinCC V7.3 Runtime [2] [4]	
• 128 Power Tags	
• 256 Power Tags	C
• 1 024 Power Tags	D
• 8 192 Power Tags	E
• 65 536 Power Tags	H
	F
SIMATIC WinCC Package [2] [4]	6AV6382 - 2 ■ A 0 7 - 2 A X 0
WinCC V7.2 Runtime [2] [4]	
• 128 Power Tags	
• 512 Power Tags	C
• 2 048 Power Tags	D
• 8 192 Power Tags	E
• 65 536 Power Tags	H
	F

SIMATIC WinCC (TIA Portal)

	Article No.
WinCC Runtime Advanced Package V13 SP1 [1] [2] [3]	6AV2114 - 2 ■ A 0 3 - 0 A A 0
incl. Recipes + Logging	
• 128 Power Tags	
• 512 Power Tags	B
• 2 048 Power Tags	D
• 4 096 Power Tags	F
	H
SIMATIC WinCC Runtime Profession. Package V13 SP1 [2] [3]	6AV2115 - 2 ■ A 0 3 - 0 A A 0
• 128 Power Tags	
• 512 Power Tags	B
• 2 048 Power Tags	D
• 4 096 Power Tags	F
• 8 192 Power Tags	H
• 65 536 Power Tags	K
	M
SIMATIC WinCC Runtime Professional Package V12 SP1 [2]	6AV2115 - 2 ■ A 0 0 - 0 A A 0
• 128 Power Tags	
• 512 Power Tags	B
• 2 048 Power Tags	D
• 4 096 Power Tags	F
• 8 192 Power Tags	H
• 65 536 Power Tags	K
	M

[1] Only if ordered together with a SIMATIC IPC, SIMATIC Panel PC Ex, or S7-mEC

[2] Only if ordered together with a SIMATIC IPC

[3] The current version will always be supplied

[4] Not with IPC227D / IPC277D

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 will always be supplied

[3] For 32-bit operating systems only

[4] Nor for Rack IPC347D

Note:

For ordering data for Panel PCs and accessories, see configurators in "SIMATIC Panel PCs".

■ More information

Further information can be found in the Internet at:

http://www.automation.siemens.com/simatic-hmi

PC-based Automation

Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

■ Overview

The Industrial Flat Panels are rugged industry-standard LCD monitors in a wide screen design.

- Installation:
  - Equally suited for installation in the machine, in control cabinets, in consoles, to 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).
- Completely protected IFP1900 PRO (degree of protection IP65): Start of delivery scheduled for Q3/2015

■ Technical specifications

Article number	6AV7863-2AA00-0AA0	6AV7863-2AB10-0AA0	6AV7863-2BB10-0AA0	6AV7863-2TA00-0AA0	6AV7863-2TB10-0AA0
	SIMATIC FLAT PANEL 15" DISPLAY ONLY	SIMATIC FLAT PANEL 15" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 15" TOUCH/KEY	SIMATIC FLAT PANEL 15" TOUCH	SIMATIC FLAT PANEL 15" TOUCH EXT
Product type designation					
General information					
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	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	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
Viewing angle	170° x 170°	170° x 170°	170° x 170°	170° x 170°	170° x 170°
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
Number of colors (bit levels)	24 bit	24 bit	24 bit	24 bit	24 bit
Resolution (pixels)					
• Resolution (WxH in pixel)	1280 x 800	1280 x 800	1280 x 800	1280 x 800	1280 x 800
• 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					
• non-reflective and tempered mineral glass screen	Yes	Yes	Yes		
• Detachable from computer unit	5 m	30 m	5 m	5 m	5 m
• Brightness/contrast	400 cd/m² / 1000:1	400 cd/m² / 1000:1	400 cd/m² / 1000:1	400 cd/m² / 1000:1	400 cd/m² / 1000:1
Backlighting					
• Type of backlighting	LED	LED	LED	LED	LED
• MTBF backlighting (up to 50%, 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 %
Keyboard					
• Function keys	No	No	36	No	No
Touch operation					
• Monitor keyboard			Yes	Yes	Yes

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■ **Technical specifications** (continued)

Article number	6AV7863-2AA00-0AA0	6AV7863-2AB10-0AA0	6AV7863-2BB10-0AA0	6AV7863-2TA00-0AA0	6AV7863-2TB10-0AA0
	SIMATIC FLAT PANEL 15" DISPLAY ONLY	SIMATIC FLAT PANEL 15" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 15" TOUCH/KEY	SIMATIC FLAT PANEL 15" TOUCH	SIMATIC FLAT PANEL 15" TOUCH EXT
Installation type/mounting					
Built-in unit	Yes; Portrait mode possible	Yes; Portrait mode possible	Yes	Yes; Portrait mode possible	Yes; Portrait mode possible
• permissible angle to the vertical backward (console)	35°	35°	35°	35°	35°
• permissible angle to the vertical forward (ceiling mounting)	35°	35°	35°	35°	35°
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
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 AC					
• Typical		40 W	40 W		40 W
• Maximum		60 W	60 W		60 W
Power loss DC					
• Typical	40 W	40 W	40 W	40 W	40 W
• Maximum	65 W	65 W	65 W	65 W	65 W
Interfaces					
USB on the rear		2	1		2
USB at the front			1		
Connection for keyboard/mouse		USB	USB		USB
Video interfaces					
• DVI-D	Yes	Yes	Yes	Yes	Yes
• Display port	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					
IP65 at front	Yes	Yes	Yes	Yes	Yes
Enclosure Type 4 at the front	Yes	Yes	Yes	Yes	Yes
NEMA4 at the front	No	No	No	No	No
NEMA4X at the front	No	No	No	No	No
IP20 rear	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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PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

■ Technical specifications (continued)

Article number	6AV7863-2AA00-0AA0	6AV7863-2AB10-0AA0	6AV7863-2BB10-0AA0	6AV7863-2TA00-0AA0	6AV7863-2TB10-0AA0
	SIMATIC FLAT PANEL 15" DISPLAY ONLY	SIMATIC FLAT PANEL 15" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 15" TOUCH/KEY	SIMATIC FLAT PANEL 15" TOUCH	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 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing
Vibrations					
• Vibration load in operation	1 gn	1 gn	1 gn	1 gn	1 gn
• Vibration load during transport/storage	1 gn	1 gn	1 gn	1 gn	1 gn
Shock testing					
• Shock load during operation	15 gn	15 gn	15 gn	15 gn	15 gn
• Shock load during transport/storage	15 gn	15 gn	15 gn	15 gn	15 gn
Connection method					
Connector (IEC) for cold condititons		Yes	Yes		
Mechanics/material					
Type of housing (front)	aluminum	aluminum	aluminum	aluminum	aluminum
• 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					
Without packaging	3.9 kg	3.9 kg	4.3 kg	3.9 kg	3.9 kg
With packaging	5 kg	5 kg	5.4 kg	5 kg	5 kg

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■ **Technical specifications** (continued)

Article number	**6AV7863-3AA00-0AA0** SIMATIC FLAT PANEL 19" DISPLAY ONLY	**6AV7863-3AB10-0AA0** SIMATIC FLAT PANEL 19" DISPLAY ONLY EXT	**6AV7863-3TA00-0AA0** SIMATIC FLAT PANEL 19" TOUCH	**6AV7863-3TB10-0AA0** SIMATIC FLAT PANEL 19" TOUCH EXT
Product type designation				
General information				
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
Viewing angle	170° x 160°	170° x 160°	170° x 160°	170° x 160°
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 (bit levels)	24 bit	24 bit	24 bit	24 bit
Resolution (pixels)				
• Resolution (WxH in pixel)	1366 x 768	1366 x 768	1366 x 768	1366 x 768
• 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				
• non-reflective and tempered mineral glass screen	Yes	Yes		
• Detachable from computer unit	5 m	30 m	5 m	30 m
• Brightness/contrast	300 cd/m² / 1000:1	300 cd/m² / 1000:1	300 cd/m² / 1000:1	300 cd/m² / 1000:1
Backlighting				
• Type of backlighting	LED	LED	LED	LED
• MTBF backlighting (up to 50%, 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 %
Keyboard				
• Function keys	No	No	No	No
Touch operation				
• 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
• permissible angle to the vertical backward (console)	35°	35°	35°	35°
• permissible angle to the vertical forward (ceiling mounting)	35°	35°	35°	35°
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
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 AC				
• Typical		40 W		40 W
• Maximum		60 W		60 W
Power loss DC				
• Typical	40 W	40 W	40 W	40 W
• Maximum	65 W	65 W	65 W	65 W

PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

■ Technical specifications (continued)

Article number	6AV7863-3AA00-0AA0	6AV7863-3AB10-0AA0	6AV7863-3TA00-0AA0	6AV7863-3TB10-0AA0
	SIMATIC FLAT PANEL 19" DISPLAY ONLY	SIMATIC FLAT PANEL 19" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 19" TOUCH	SIMATIC FLAT PANEL 19" TOUCH EXT
Interfaces				
USB on the rear		2		2
Connection for keyboard/mouse		USB		USB
Video interfaces				
• DVI-D	Yes	Yes	Yes	Yes
• Display port	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				
IP65 at front	Yes	Yes	Yes	Yes
Enclosure Type 4 at the front	Yes	Yes	Yes	Yes
NEMA4 at the front	No	No	No	No
NEMA4X at the front	No	No	No	No
IP20 rear	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 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing
Vibrations				
• Vibration load in operation	1 gn	1 gn	1 gn	1 gn
• Vibration load during transport/ storage	1 gn	1 gn	1 gn	1 gn
Shock testing				
• Shock load during operation	15 gn	15 gn	15 gn	15 gn
• Shock load during transport/storage	15 gn	15 gn	15 gn	15 gn
Connection method				
Connector (IEC) for cold condititons		Yes		Yes
Mechanics/material				
Type of housing (front)	aluminum	aluminum	aluminum	aluminum
• 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				
Without packaging	5.5 kg	5.5 kg	5.5 kg	5.5 kg
With packaging	6.5 kg	6.5 kg	6.5 kg	6.5 kg

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■ **Technical specifications** (continued)

Article number	**6AV7863-3MA00-0AA0** SIMATIC FLAT PANEL 19" MULTITOUCH	**6AV7863-3MB10-0AA0** SIMATIC FLAT PANEL 19" MULTITOUCH EXT	**6AV7863-4MA00-0AA0** SIMATIC FLAT PANEL 22" MULTITOUCH	**6AV7863-4MB10-0AA0** SIMATIC FLAT PANEL 22" MULTITOUCH EXT
Product type designation				
General information				
Short designation	Flat Panel 19" Multitouch	Flat Panel 19" Multitouch ext.	Flat Panel 22" Multitouch	Flat Panel 22" Multitouch 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	21.5 in	21.5 in
Screen diagonal (cm)	47 cm	47 cm	56 cm	56 cm
Display width	409.8 mm	409.8 mm	476 mm	476 mm
Display height	230.4 mm	230.4 mm	268 mm	268 mm
Viewing angle	170° x 160°	170° x 160°	170° x 170°	170° x 170°
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 (bit levels)	24 bit	24 bit	24 bit	24 bit
Resolution (pixels)				
• Resolution (WxH in pixel)	1366 x 768	1366 x 768	1920 x 1080	1920 x 1080
• Pixel size, horizontal	0.3 mm	0.3 mm	0.2475 mm	0.2475 mm
• Pixel size, vertical	0.3 mm	0.3 mm	0.2475 mm	0.2475 mm
General features				
• non-reflective and tempered mineral glass screen	Yes	Yes	Yes	Yes
• Detachable from computer unit	5 m	30 m	5 m	30 m
• Brightness/contrast	300 cd/m² / 1000:1	300 cd/m² / 1000:1	250 cd/m² / 1000:1	250 cd/m² / 1000:1
Backlighting				
• Type of backlighting	LED	LED	LED	LED
• MTBF backlighting (up to 50%, 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 %
Keyboard				
• Function keys	No	No	No	No
Touch operation				
• 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
• permissible angle to the vertical backward (console)	35°	35°	35°	35°
• permissible angle to the vertical forward (ceiling mounting)	35°	35°	35°	35°
Supply voltage				
Type of supply voltage	DC	AC/DC	DC	AC/DC
Rated value (DC)	24 V; PELV	24 V; PELV	24 V; PELV	24 V; PELV
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 AC				
• Typical	40 W	40 W	40 W	40 W
• Maximum	60 W	60 W	60 W	60 W
Power loss DC				
• Typical	40 W	40 W	40 W	40 W
• Maximum	65 W	65 W	65 W	65 W

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

■ **Technical specifications** (continued)

Article number	6AV7863-3MA00-0AA0	6AV7863-3MB10-0AA0	6AV7863-4MA00-0AA0	6AV7863-4MB10-0AA0
	SIMATIC FLAT PANEL 19" MULTITOUCH	SIMATIC FLAT PANEL 19" MULTITOUCH EXT	SIMATIC FLAT PANEL 22" MULTITOUCH	SIMATIC FLAT PANEL 22" MULTITOUCH EXT
Interfaces				
USB on the rear		2		2
Connection for keyboard/mouse		USB		USB
Video interfaces				
• DVI-D	Yes	Yes	Yes	Yes
• Display port	Yes; DisplayPort V1.1	Yes; DisplayPort V1.1	Yes; DisplayPort V1.1	Yes; DisplayPort V1.1
Touch interfaces				
• USB	Yes	Yes	Yes	Yes
Degree and class of protection				
IP65 at front	Yes	Yes	Yes	Yes
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
NEMA4 at the front	No	No	No	No
NEMA4X at the front	No	No	No	No
IP20 rear	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
Marine approval				
• Germanischer Lloyd (GL)	No	No	Yes; Available soon	Yes; Available soon
• American Bureau of Shipping (ABS)	No	No	Yes; Available soon	Yes; Available soon
• Bureau Veritas (BV)	No	No	Yes; Available soon	Yes; Available soon
• Det Norske Veritas (DNV)	No	No	Yes; Available soon	Yes; Available soon
• Lloyds Register of Shipping (LRS)	No	No	Yes; Available soon	Yes; Available soon
• Nippon Kaiji Kyokai (Class NK)	No	No	Yes; Available soon	Yes; Available soon
Use in hazardous areas				
• ATEX Zone 2	No; Available soon	Yes; Available soon	Yes; Available soon	Yes; Available soon
• ATEX Zone 22	Yes; Available soon	Yes; Available soon	Yes; Available soon	Yes; Available soon
• 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 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing
Vibrations				
• Vibration load in operation	1 gn	1 gn	1 gn	1 gn
• Vibration load during transport/storage	1 gn	1 gn	1 gn	1 gn
Shock testing				
• Shock load during operation	15 gn	15 gn	15 gn	15 gn
• Shock load during transport/storage	15 gn	15 gn	15 gn	15 gn

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■ **Technical specifications** (continued)

Article number	**6AV7863-3MA00-0AA0**	**6AV7863-3MB10-0AA0**	**6AV7863-4MA00-0AA0**	**6AV7863-4MB10-0AA0**
	SIMATIC FLAT PANEL 19" MULTITOUCH	SIMATIC FLAT PANEL 19" MULTITOUCH EXT	SIMATIC FLAT PANEL 22" MULTITOUCH	SIMATIC FLAT PANEL 22" MULTITOUCH EXT
Connection method				
Connector (IEC) for cold condititons		Yes		Yes
Mechanics/material				
Type of housing (front)	Glass	Glass	Glass	Glass
• Glass	Yes	Yes	Yes	Yes
Dimensions				
Width of the housing front	483 mm	483 mm	560 mm	560 mm
Height of housing front	337 mm	337 mm	380 mm	380 mm
Mounting cutout, width	465 mm; Tolerance: +1 mm	465 mm; Tolerance: +1 mm	542 mm; Tolerance: +1 mm	542 mm; Tolerance: +1 mm
Mounting cutout, height	319 mm; Tolerance: +1 mm	319 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				
Without packaging	5.5 kg	5.5 kg	6.5 kg	6.5 kg
With packaging	6.5 kg	6.5 kg	7.6 kg	7.6 kg

Article number	**6AV7863-4AA00-0AA0**	**6AV7863-4AB10-0AA0**	**6AV7863-4TA00-0AA0**	**6AV7863-4TB10-0AA0**
	SIMATIC FLAT PANEL 22" DISPLAY ONLY	SIMATIC FLAT PANEL 22" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 22" TOUCH	SIMATIC FLAT PANEL 22" TOUCH EXT
Product type designation				
General information				
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
Viewing angle	170° x 170°	170° x 170°	170° x 170°	170° x 170°
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 (bit levels)	24 bit	24 bit	24 bit	24 bit
Resolution (pixels)				
• Resolution (WxH in pixel)	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
• 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				
• non-reflective and tempered mineral glass screen	Yes	Yes		
• Detachable from computer unit	5 m	30 m	5 m	30 m
• Brightness/contrast	250 cd/m² / 1000:1	250 cd/m² / 1000:1	250 cd/m² / 1000:1	250 cd/m² / 1000:1
Backlighting				
• Type of backlighting	LED	LED	LED	LED
• MTBF backlighting (up to 50%, 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 %
Keyboard				
• Function keys	No	No	No	No
Touch operation				
• 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
• permissible angle to the vertical backward (console)	35°	35°	35°	35°
• permissible angle to the vertical forward (ceiling mounting)	35°	35°	35°	35°

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

■ **Technical specifications** (continued)

Article number	**6AV7863-4AA00-0AA0**	**6AV7863-4AB10-0AA0**	**6AV7863-4TA00-0AA0**	**6AV7863-4TB10-0AA0**
	SIMATIC FLAT PANEL 22" DISPLAY ONLY	SIMATIC FLAT PANEL 22" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 22" TOUCH	SIMATIC FLAT PANEL 22" TOUCH EXT
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
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 AC				
• Typical		40 W		40 W
• Maximum		60 W		60 W
Power loss DC				
• Typical	40 W	40 W	40 W	40 W
• Maximum	65 W	65 W	65 W	65 W
Interfaces				
USB on the rear		2		2
Connection for keyboard/mouse		USB		USB
Video interfaces				
• DVI-D	Yes	Yes	Yes	Yes
• Display port	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				
IP65 at front	Yes	Yes	Yes	Yes
Enclosure Type 4 at the front	Yes	Yes	Yes	Yes
NEMA4 at the front	No	No	No	No
NEMA4X at the front	No	No	No	No
IP20 rear	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 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing	95 %; Non-condensing
Vibrations				
• Vibration load in operation	1 gn	1 gn	1 gn	1 gn
• Vibration load during transport/storage	1 gn	1 gn	1 gn	1 gn
Shock testing				
• Shock load during operation	15 gn	15 gn	15 gn	15 gn
• Shock load during transport/storage	15 gn	15 gn	15 gn	15 gn

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■ **Technical specifications** (continued)

Article number	**6AV7863-4AA00-0AA0**	**6AV7863-4AB10-0AA0**	**6AV7863-4TA00-0AA0**	**6AV7863-4TB10-0AA0**
	SIMATIC FLAT PANEL 22" DISPLAY ONLY	SIMATIC FLAT PANEL 22" DISPLAY ONLY EXT	SIMATIC FLAT PANEL 22" TOUCH	SIMATIC FLAT PANEL 22" TOUCH EXT
Connection method				
Connector (IEC) for cold condititons		Yes		Yes
Mechanics/material				
Type of housing (front)	aluminum	aluminum	aluminum	aluminum
• 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				
Without packaging	6.5 kg	6.5 kg	6.5 kg	6.5 kg
With packaging	7.6 kg	7.6 kg	7.6 kg	7.6 kg
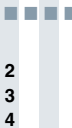
Article number	**6AV7466-1TA00-0AA0**
	SIMATIC FLAT PANEL 12" TOUCH
Product type designation	
General information	
Short designation	Flat Panel 12" Touch
Display	
Screen diagonal	12.1 in
Display width / Display height	261 mm 163 mm
Viewing angle	170° x 170°
Number of colors (bit levels)	24 bit
Resolution (pixels)	
• Resolution (WxH in pixel)	1280 x 800
General features	
• Brightness/contrast	400 cd/m² / 1000:1
Backlighting	
• Type of backlighting	LED
• MTBF backlighting (up to 50%, at 25 °C)	50 000 h; At 25°C
• Backlight dimmable	Yes; 5-100 %
Keyboard	
• Function keys	No
Installation type/mounting	
Built-in unit	Yes
• permissible angle to the vertical backward (console)	35°
• permissible angle to the vertical forward (ceiling mounting)	35°
Supply voltage	
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Power loss	
Power loss DC	
• Typical / Maximum	40 W / 65 W
Interfaces	
Video interfaces	
• DVI-D	Yes
• Display port	Yes; DisplayPort V1.1
Touch interfaces	
• USB	Yes

Article number	**6AV7466-1TA00-0AA0**
	SIMATIC FLAT PANEL 12" TOUCH
Degree and class of protection	
IP65 at front	Yes
Enclosure Type 4 at the front	Yes
NEMA4 at the front	No
NEMA4X at the front	No
IP20 rear	Yes
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes; Corresponds to UL 508
RCM (formerly C-TICK)	Yes
KC approval	Yes
Use in hazardous areas	
• ATEX Zone 22	No
• FM Class I Division 2	No
Ambient conditions	
Ambient temperature during storage/transportation	
• min. / max.	-20 °C / 60 °C
Mechanics/material	
Type of housing (front)	aluminum
• aluminum	Yes
Dimensions	
Width of the housing front	330 mm
Height of housing front	241 mm
Mounting cutout, width	310 mm; Tolerance: +1 mm
Mounting cutout, height	221 mm; Tolerance: +1 mm
Overall depth	76 mm
Weights	
Without packaging	2.65 kg
With packaging	3.5 kg

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Flat Panels

Ordering data	Article No.				Article No.

Industrial Flat Panel Monitor — 6AV7863 - ■ ■ ■ ■ 0 - 0 A A 0

Display size
- 15" → 2
- 19" → 3
- 22" → 4

Operator functionality
- Display devices without operator functionality → A
- Touch screen (capacitive) multi-touch → M
- Touch screen (analog/resistive) → T
- Touch screen + function keys, 15" only and extended special functions → B B 1

Special functions
- Standard, can be located up to 5 m away → A 0
- Extended, for positioning at a distance of up to 30 m, 100 ... 230 V AC (without supply cable) + special functions → B 1

Customized products — 6AV7466 - 1 T A 0 0 - 0 A A 0
12", touchscreen (analog/resistive), standard, can be located up to 5 m away

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Accessories

Item	Article No.
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 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)	
DisplayPort cable (industrial quality) • 3 m • 5 m	6AV7860-0DH30-0AA0 6AV7860-0DH50-0AA0
DVI-D cable (industrial quality) • 3 m • 5 m	6AV7860-0BH30-0AA0 6AV7860-0BH50-0AA0
USB cable (industrial quality) • 3 m • 5 m	6AV7860-0CH30-0AA0 6AV7860-0CH50-0AA0
Accessories for extended variants up to 30 m (6AV7863-..B1.-0AA0)	
Cable set (USB/Cat5; sender module, DVI) • 10 m • 15 m • 20 m • 30 m	6AV7860-1EX21-0AA1 6AV7860-1EX21-5AA1 6AV7860-1EX22-0AA1 6AV7860-1EX23-0AA1
Cable set 90° USB/Cat5; sender module, DVI 90° angle, 20 m	6AV7860-1EX22-0BA1
USB host extender incl. 20 cm USB cable (USB to Cat5)	6AV7671-1EX02-0AA0

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■ **Dimensional drawings**

Mounting dimensions

Industrial Flat Panel	Faceplate dimensions, in mm		Mounting cutout, in mm		
	W	H	W+1	H+1	D
IFP1200 Touch	330	241	310	221	76
IF1500 Key/Touch	483	310	450	291	62.5
IFP1500	415	310	396	291	62.5
IFP1900	483	337	465	319	62.5
IFP2200	560	380	542	362	62.5

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Flat Panels

■ Overview
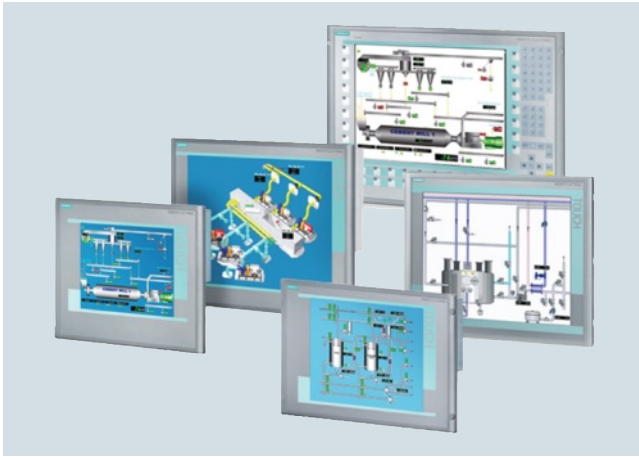
The Flat Panels are rugged industry-standard LCD monitors.
- Installation:
  - They are equally suited to installation in the machine, in control cabinets, consoles and gantries or in 19" racks.
  - As a device with all-round IP65 protection for mounting on a supporting arm/stand
- Type of operator control:
  - Simple display devices without operator functionality
  - Optional devices with touch control
  - Rear connection of I/O devices (optional)

NEW
Completely protected IFP1900 PRO (degree of protection IP65), 19" widescreen multi-touch – start of delivery scheduled for Q3/2015

■ Technical specifications

Article number	6AV7861-1AA00-1AA0	6AV7861-1AB00-1AA0	6AV7861-1AB10-1AA0	6AV7861-1KB10-1AA0	6AV7861-1TA00-1AA0	6AV7861-1TB00-1AA0	6AV7861-1TB10-1AA0
	SIMATIC FLAT PANEL 12, F. 24VDC	SIMATIC FLAT PANEL 12	SIMATIC FLAT PANEL 12 EXTENDED	SIMATIC FLAT PANEL 12" KEY EXTENDED	SIMATIC FLAT PANEL 12T, F. 24VDC	SIMATIC FLAT PANEL 12T	SIMATIC FLAT PANEL 12T EXTENDED
Product type designation							
Display							
Design of display	TFT	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	12 in	12 in	12 in	12 in	12 in	12 in	12 in
Visible area (HxV) in mm	246 x 184,5	246 x 184,5	246 x 184,5	246 x 184,5	246 x 184,5	246 x 184,5	246 x 184,5
Viewing angle	140° x 120°	140° x 120°	140° x 120°	140° x 120°	140° x 120°	140° x 120°	140° x 120°
On Screen Display (OSD) configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of colors (bit levels)	262k	262k	262k	262k	262k	262k	262k
Resolution (pixels)							
• Resolution (WxH in pixel)	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600
General features							
• Brightness/contrast	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1	> 350 cd/m² / 450:1
Control elements							
Input device							
• integrated mouse cursor control	No	No	No	No	No	No	No
Keyboard							
• Function keys	No	No	No	No	No	No	No
- Number of function keys	0	0	0		0	0	0
Installation type/mounting							
Rack mounting possible	No	No	No	No	No	No	No
VESA mounting	No	No	No	No	No	No	No
Supply voltage							
Type of supply voltage	AC/DC	AC/DC	AC/DC	AC/DC	AC/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	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	28.8 V
permissible range, lower limit (AC)	90 V	90 V	90 V	90 V	90 V	90 V	90 V
permissible range, upper limit (AC)	264 V	264 V	264 V	264 V	264 V	264 V	264 V

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■ **Technical specifications** (continued)

Article number	6AV7861-1AA00-1AA0	6AV7861-1AB00-1AA0	6AV7861-1AB10-1AA0	6AV7861-1KB10-1AA0	6AV7861-1TA00-1AA0	6AV7861-1TB00-1AA0	6AV7861-1TB10-1AA0
	SIMATIC FLAT PANEL 12, F. 24VDC	SIMATIC FLAT PANEL 12	SIMATIC FLAT PANEL 12 EXTENDED	SIMATIC FLAT PANEL 12" KEY EXTENDED	SIMATIC FLAT PANEL 12T, F. 24VDC	SIMATIC FLAT PANEL 12T	SIMATIC FLAT PANEL 12T EXTENDED
Interfaces							
Video interfaces							
• analog video signal (VGA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Degree and class of protection							
IP54 at front	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack
IP65 at front	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners
IP20 rear	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates							
UL approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	No	No	No	No	No	No	No
Marine approval							
• Germanischer Lloyd (GL)	Yes; Optional	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	Yes; Optional
• Bureau Veritas (BV)	Yes; Optional	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	Yes; Optional
• Lloyds Register of Shipping (LRS)	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional
• Polski Rejestr Statkow (PRS)	Yes; Optional	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	0 °C
• max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
Dimensions							
Width of the housing front	400 mm	400 mm	400 mm	483 mm	400 mm	400 mm	400 mm
Height of housing front	310 mm	310 mm	310 mm	310 mm	310 mm	310 mm	310 mm
Mounting cutout, width	368 mm	368 mm	368 mm	450 mm	368 mm	368 mm	368 mm
Mounting cutout, height	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm
Overall depth	51 mm	51 mm	51 mm	49 mm	51 mm	51 mm	51 mm

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Flat Panels

■ Technical specifications (continued)

Article number	6AV7861-2AA00-1AA0	6AV7861-2AB00-1AA0	6AV7861-2AB10-1AA0	6AV7861-2KB10-1AA0	6AV7861-2TA00-1AA0	6AV7861-2TB00-1AA0	6AV7861-2TB10-1AA0
	SIMATIC FLAT PANEL 15, F. 24VDC	SIMATIC FLAT PANEL 15	SIMATIC FLAT PANEL 15 EXTENDED	SIMATIC FLAT PANEL 15" KEY EXTENDED	SIMATIC FLAT PANEL 15T, F. 24VDC	SIMATIC FLAT PANEL 15T	SIMATIC FLAT PANEL 15T EXTENDED
Product type designation							
Display							
Design of display	TFT	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	15 in	15 in	15 in	15 in	15 in	15 in	15 in
Visible area (HxV) in mm	304 x 228	304 x 228	304 x 228	304 x 228	304 x 228	304 x 228	304 x 228
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)	100° x 90° (min)
On Screen Display (OSD) configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of colors (bit levels)	16.2 million	16.2 million	16.2 million	16.2 million	16.2 million	16.2 million	16.2 million
Resolution (pixels)							
• Resolution (WxH in pixel)	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
General features							
• Brightness/contrast	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1	> 260 cd/m² / 350:1
Control elements							
Input device							
• integrated mouse cursor control	No	No	No	No	No	No	No
Keyboard							
• Function keys	No	No	No	No	No	No	No
- Number of function keys	0	0	0		0	0	0
Installation type/mounting							
Rack mounting possible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VESA mounting	No	No	No	No	No	No	No
Supply voltage							
Type of supply voltage	AC/DC	AC/DC	AC/DC	AC/DC	AC/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	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	28.8 V
permissible range, lower limit (AC)	90 V	90 V	90 V	90 V	90 V	90 V	90 V
permissible range, upper limit (AC)	264 V	264 V	264 V	264 V	264 V	264 V	264 V
Interfaces							
Video interfaces							
• analog video signal (VGA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Degree and class of protection							
IP54 at front	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack
IP65 at front	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners

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■ **Technical specifications** (continued)

Article number	**6AV7861-2AA00-1AA0**	**6AV7861-2AB00-1AA0**	**6AV7861-2AB10-1AA0**	**6AV7861-2KB10-1AA0**	**6AV7861-2TA00-1AA0**	**6AV7861-2TB00-1AA0**	**6AV7861-2TB10-1AA0**
	SIMATIC FLAT PANEL 15, F. 24VDC	SIMATIC FLAT PANEL 15	SIMATIC FLAT PANEL 15 EXTENDED	SIMATIC FLAT PANEL 15" KEY EXTENDED	SIMATIC FLAT PANEL 15T, F. 24VDC	SIMATIC FLAT PANEL 15T	SIMATIC FLAT PANEL 15T EXTENDED
Standards, approvals, certificates							
UL approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	No	No	No	No	No	No	No
Marine approval							
• Germanischer Lloyd (GL)	Yes; Optional	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	Yes; Optional
• Bureau Veritas (BV)	Yes; Optional	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	Yes; Optional
• Lloyds Register of Shipping (LRS)	Yes; Optional	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	0 °C
• max.	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C	50 °C
Dimensions							
Width of the housing front	483 mm	483 mm	483 mm	483 mm	483 mm	483 mm	483 mm
Height of housing front	310 mm	310 mm	310 mm	355 mm	310 mm	310 mm	310 mm
Mounting cutout, width	450 mm	450 mm	450 mm	450 mm	450 mm	450 mm	450 mm
Mounting cutout, height	290 mm	290 mm	290 mm	321 mm	290 mm	290 mm	290 mm
Overall depth	55 mm	55 mm	55 mm	49 mm	55 mm	55 mm	55 mm

Article number	**6AV7861-3AA00-1AA0**	**6AV7861-3AB00-1AA0**	**6AV7861-3AB10-1AA0**	**6AV7861-3TA00-1AA0**	**6AV7861-3TB00-1AA0**	**6AV7861-3TB10-1AA0**
	SIMATIC FLAT PANEL 19, F. 24VDC	SIMATIC FLAT PANEL 19	SIMATIC FLAT PANEL 19 EXTENDED	SIMATIC FLAT PANEL 19T, F. 24VDC	SIMATIC FLAT PANEL 19T	SIMATIC FLAT PANEL 19T EXTENDED
Product type designation						
Display						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	19 in	19 in	19 in	19 in	19 in	19 in
visible area (HxV) in mm	376 x 301	376 x 301	376 x 301	376 x 301	376 x 301	376 x 301
Viewing angle	170° x 170°	170° x 170°	170° x 170°	170° x 170°	170° x 170°	170° x 170°
On Screen Display (OSD) configuration	Yes	Yes	Yes	Yes	Yes	Yes
Number of colors (bit levels)	16.7 million	16.7 million	16.7 million	16.7 million	16.7 million	16.7 million
Resolution (pixels)						
• Resolution (WxH in pixel)	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
General features						
• Brightness/contrast	> 300 cd/m² / 300:1	> 300 cd/m² / 300:1	> 300 cd/m² / 300:1	> 300 cd/m² / 300:1	> 300 cd/m² / 300:1	> 300 cd/m² / 300:1
Control elements						
Input device						
• integrated mouse cursor control	No	No	No	No	No	No
Keyboard						
• Function keys	No	No	No	No	No	No
- Number of function keys	0	0	0	0	0	0
Installation type/mounting						
Rack mounting possible	Yes	Yes	Yes	Yes	Yes	Yes
VESA mounting	No	No	No	No	No	No

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Flat Panels

■ **Technical specifications** (continued)

Article number	6AV7861-3AA00-1AA0	6AV7861-3AB00-1AA0	6AV7861-3AB10-1AA0	6AV7861-3TA00-1AA0	6AV7861-3TB00-1AA0	6AV7861-3TB10-1AA0
	SIMATIC FLAT PANEL 19, F. 24VDC	SIMATIC FLAT PANEL 19	SIMATIC FLAT PANEL 19 EXTENDED	SIMATIC FLAT PANEL 19T, F. 24VDC	SIMATIC FLAT PANEL 19T	SIMATIC FLAT PANEL 19T EXTENDED
Supply voltage						
Type of supply voltage	AC/DC	AC/DC	AC/DC	AC/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	90 V	90 V
permissible range, upper limit (AC)	264 V	264 V	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						
IP54 at front	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack	Yes; For screw mounting in 19" rack
IP65 at front	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners	Yes; if mounted with the supplied latch fasteners
IP20 rear	Yes	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates						
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.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
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

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▪ Ordering data

	Article No.
Flat Panel Monitor	**6AV7861 - ▪ ▪ ▪ ▪ 0 - 1 A A 0**
Display size	
• 12"	1
• 15"	2
• 19"	3
Operator functionality:	
• Display devices without operator functionality	A
• Touch screen (analog/resistive)	T
Power supply	
• 24 V DC (not for Extended versions since these always have AC and DC)	A
• 100 to 230 V AC (incl. Euro power supply cable) and 24 V DC	B
Variant	
• Standard, can be located up to 5 m away	0
• Extended, can be located up to 30 m away, marine approvals Dimmable background illumination Ex22	1

	Article No.
Special versions	
Flat Panel Monitor	
• 12" Key	**6AV7861-1KB10-1AA0**
• 15" Key	**6AV7861-2KB10-1AA0**
• PRO 15" Touch	**6AV7861-5TB10-1BA0**
• PRO 19" Touch	**6AV7861-6TB10-1BA0**
Accessories	
Protective films For protecting the touch screen against dirt and scratches Pack with 10 units	
• for 12" Touch	**6AV7671-2BA00-0AA0**
• 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 (VGA)	
• 3.0 m	**6AV7860-0AH30-0AA0**
• 5.0 m	**6AV7860-0AH50-0AA0**
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 and PRO versions	
• 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**

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PC-based Automation

Industrial monitors and thin clients

Dimensional drawings

All dimensions in mm.
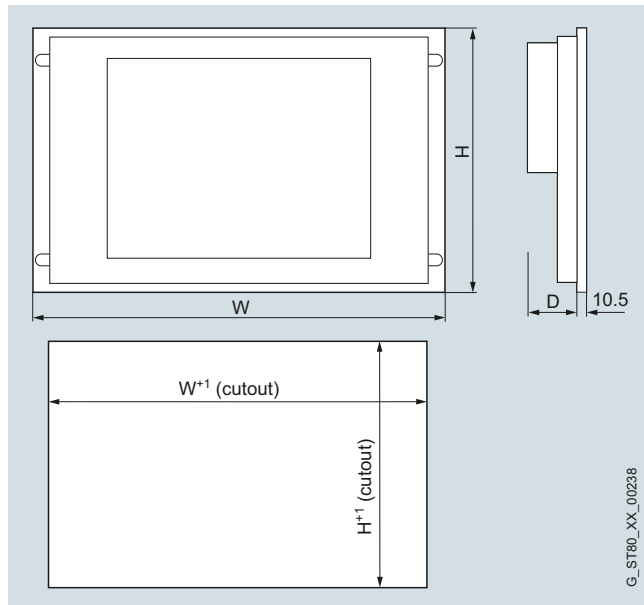
Installation cutout for Flat Panel
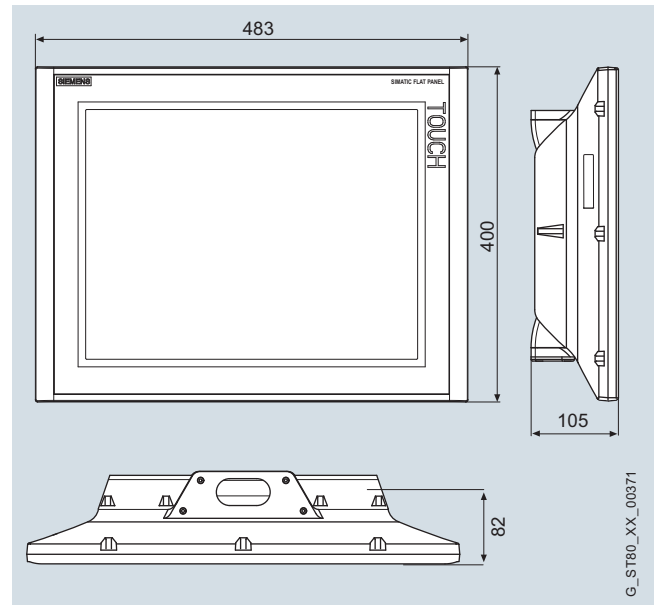
Flat Panel PRO 19" Touch

Touch devices	Front dimensions		Installation cutout		
	W	H	W+1	H+1	D
12"	400	310	368	290	51
15"	483	310	450	290	55
19"	483	400	450	380	57

More information

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
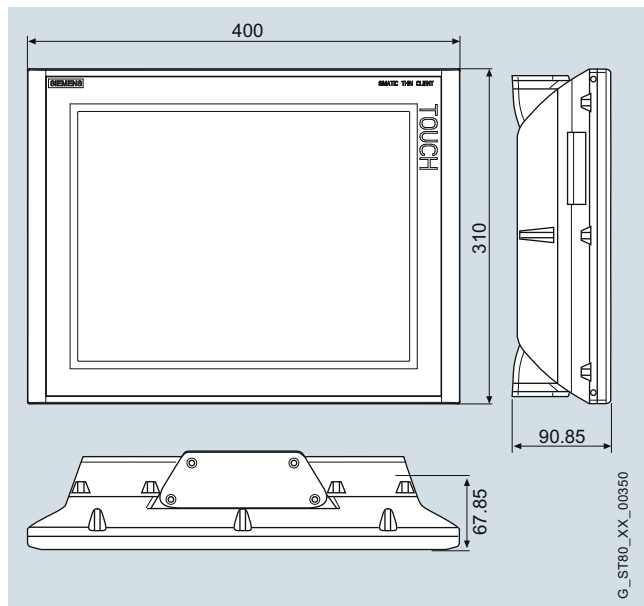
Flat Panel PRO 15" Touch

Overview
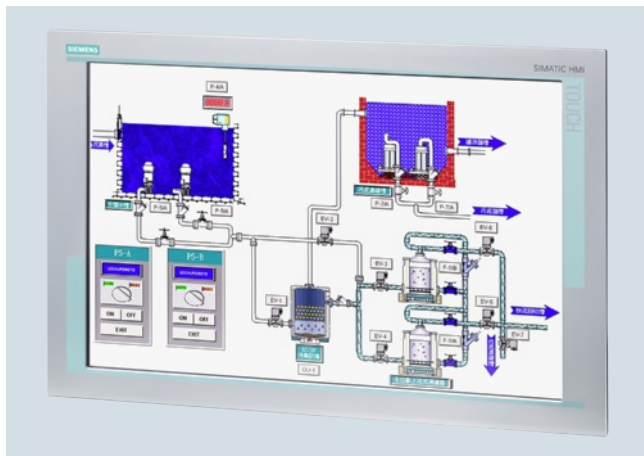
The SIMATIC HMI SCD 1900 is a rugged, industry-standard PC monitor.

It is used as an operator control unit in all types of industrial and standard PC, including for portrait mounting. Standard interfaces permit a wide range of possible applications.

Built-in versions:
- Built-in unit (for control cabinets, control desks, and gantries)
- Built-in portrait for portrait mounting (for control cabinets, control desks and gantries)
- 19" built-in units (for 19" racks)

Type of operator control:
- Panels with touch control

Technical specifications

Article number	6AV7862-2TA00-1AA0
	SIMATIC SCD1900 19"WIDE/TOUCH/1440X900
Product type designation	
General information	
Short designation	Flat Panel 19" Touch
Display	
Design of display	TFT widescreen display, LED backlighting
Screen diagonal	19 in
visible area (HxV) in mm	255 x 408
Viewing angle	160° x 170°
On Screen Display (OSD) configuration	Yes
Number of colors (bit levels)	24 bit
Resolution (pixels)	
• Resolution (WxH in pixel)	1440 x 900
General features	
• Brightness/contrast	300 cd/m² / 1000:1
Backlighting	
• MTBF backlighting (up to 50%, at 25 °C)	50 000 h
Installation type/mounting	
Rack mounting possible	Yes
Built-in unit	Yes
VESA mounting	No
Supply voltage	
Type of supply voltage	DC
permissible range, lower limit (DC)	21.6 V
permissible range, upper limit (DC)	26.4 V

Article number	6AV7862-2TA00-1AA0
	SIMATIC SCD1900 19"WIDE/TOUCH/1440X900
Interfaces	
Video interfaces	
• analog video signal (VGA)	Yes
• DVI-D	Yes
Touch interfaces	
• USB	Yes
Degree and class of protection	
IP65 at front	Yes
IP20 rear	Yes
Standards, approvals, certificates	
CE mark	Yes; Industry
CSA approval	No
UL approval	Yes
cULus	Yes
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Shock testing	
• Shock load during operation	10 gn
• Shock load during transport/storage	10 gn
Mechanics/material	
Type of housing (front)	
• aluminum	Yes
Weights	
Without packaging	6 kg

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PC-based Automation
Industrial monitors and thin clients

Ordering data

	Article No.
SCD monitor 1900	**6AV7862-2TA00-1AA0**
Portrait SCD monitor 1900	**6AV7466-2TA17-1AA0**
Accessories	
Cable for connecting to the graphics interface of the PC	
• VGA cable 3.0 m	**6AV7860-0AH30-0AA0**
• VGA cable 5.0 m	**6AV7860-0AH50-0AA0**
• DVI-D cable, 3.0 m	**6AV7860-0BH30-0AA0**
• DVI-D cable, 5.0 m	**6AV7860-0BH50-0AA0**
USB cable for connecting the touch screen	
• 3.0 m	**6AV7860-0CH30-0AA0**
• 5.0 m	**6AV7860-0CH50-0AA0**
External power supply for SCD 1900	**6AV7860-2AD06-0AA0**
100-230 V AC, 50-60 Hz; incl. mounting accessories for optional installation at the device.	

Dimensional drawings

All dimensions in mm. For mounting cut-out, see technical specifications.
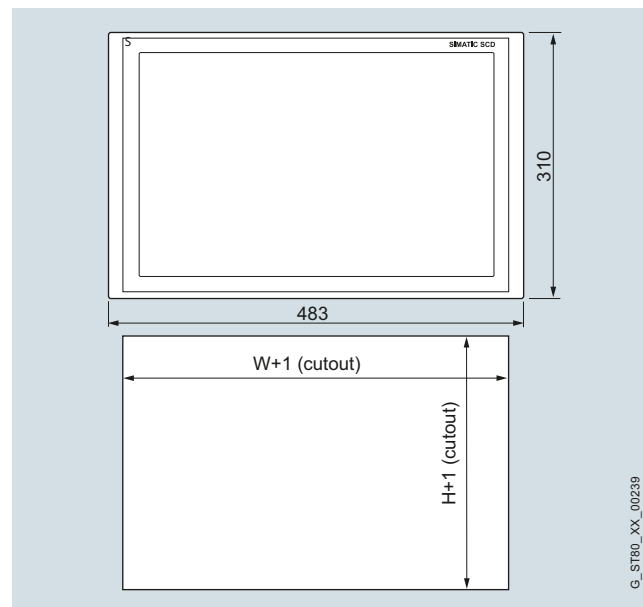
SCD 1900

■ Dimensional drawings (continued)

All dimensions in mm. For mounting cut-out, see technical specifications.
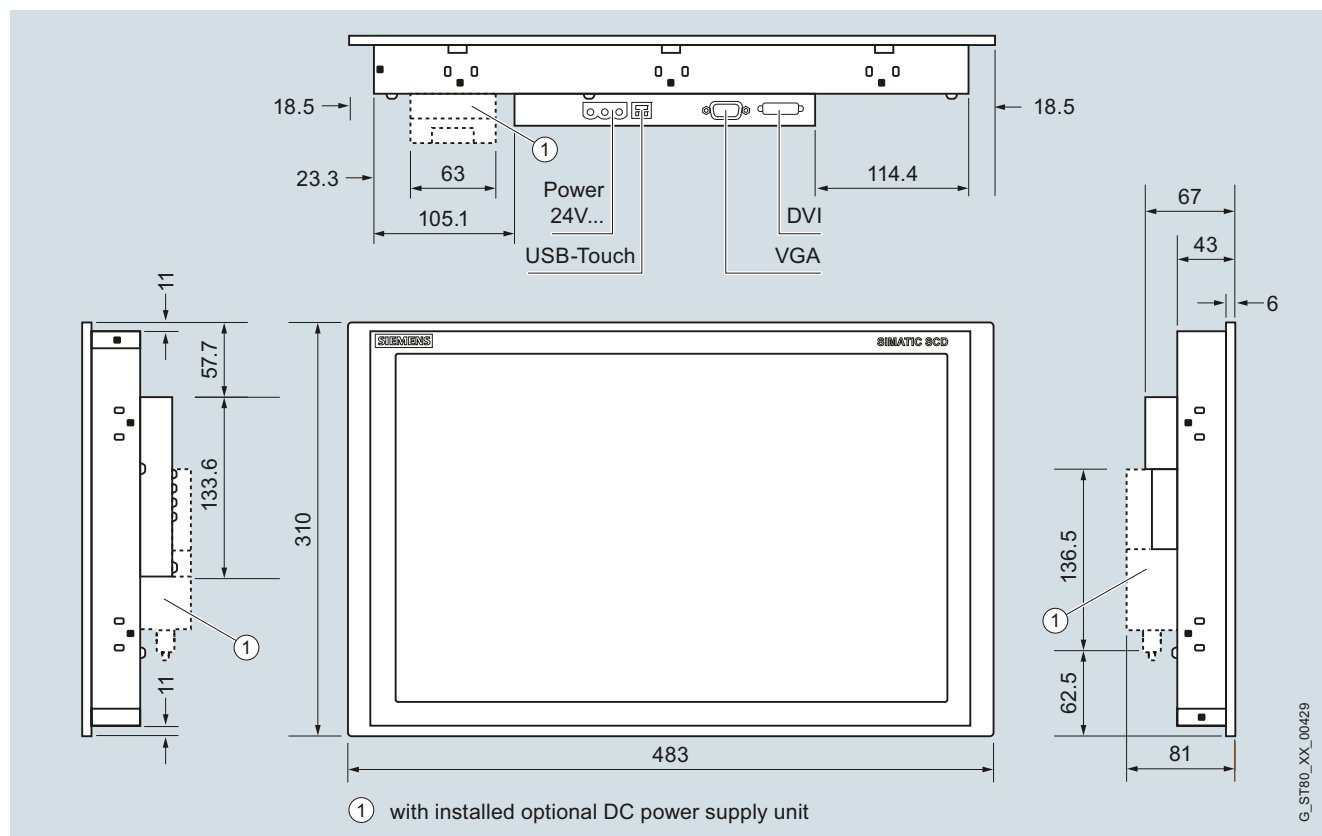
① with installed optional DC power supply unit

■ More information

Additional information is available on the Internet under:

http://www.siemens.com/industrial-lcd

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PC-based Automation

Industrial monitors and thin clients

SIMATIC Industrial Thin Client

◼ 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 stations on a SIMATIC Industrial PC, Panel PC, or server, and on a SIMATIC Panel.

The following installation versions are available:
- 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. This device differs technically from the devices mentioned above. For more details, refer to the SIMATIC Thin Client EX chapter.

◼ Technical specifications

Article number	**6AV6646-1AA22-0AX0**	**6AV6646-1AB22-0AX0**	**6AV6646-1AC22-0AX0**	**6AV6646-1AD22-0AX0**
	SIMATIC ITC1200	SIMATIC ITC1500	SIMATIC ITC1900	SIMATIC ITC2200
Product type designation				
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	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				
• PDF reader	Yes	Yes	Yes	Yes
Backlighting				
• Type of backlighting	LED, dimmable	LED, dimmable	LED, dimmable	LED, dimmable
• Backlight dimmable	Yes; 5-100 %	Yes; 5-100 %	Yes; 5-100 %	Yes; 5-100 %
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

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■ **Technical specifications** (continued)

Article number	**6AV6646-1AA22-0AX0**	**6AV6646-1AB22-0AX0**	**6AV6646-1AC22-0AX0**	**6AV6646-1AD22-0AX0**
	SIMATIC ITC1200	SIMATIC ITC1500	SIMATIC ITC1900	SIMATIC ITC2200
Input current				
Current consumption, max.	1.2 A	1.5 A	1.3 A	2.2 A
Starting current inrush I²t	0.5 A²·s	0.5 A²·s	0.5 A²·s	0.5 A²·s
Interfaces				
USB on the rear	2	2	2	2
USB at the front	0	0	0	0
Connection for keyboard/mouse	USB	USB	USB	USB
Industrial Ethernet				
• Number of industrial Ethernet interfaces	1	1	1	1
• 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
Protocols				
PROFINET IO Device				
Services				
- PROFIenergy	No	No	No	No
Degree and class of protection				
IP65 at front	Yes	Yes	Yes	Yes
IP20 rear	Yes	Yes	Yes	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				
• cULus Class I Zone 1	No	No	No	No
• cULus Class I Zone 2, Division 2	Yes; Available soon	Yes; Available soon	Yes; Available soon	Yes; Available soon
• FM Class I Division 2	Yes; Available soon	Yes; Available soon	Yes; Available soon	Yes; Available soon

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PC-based Automation
Industrial monitors and thin clients

SIMATIC Industrial Thin Client

▪ Technical specifications (continued)

Article number	**6AV6646-1AA22-0AX0** SIMATIC ITC1200	**6AV6646-1AB22-0AX0** SIMATIC ITC1500	**6AV6646-1AC22-0AX0** SIMATIC ITC1900	**6AV6646-1AD22-0AX0** SIMATIC ITC2200
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
Configuration				
Configuration				
• On-board	Yes	Yes	Yes	Yes
• Remote administration	Yes; With Remote Configuration Center (RCC) as of V2.0	Yes; With Remote Configuration Center (RCC) as of V2.0	Yes; With Remote Configuration Center (RCC) as of V2.0	Yes; With Remote Configuration Center (RCC) as of V2.0
Languages				
Online languages				
• German	Yes	Yes	Yes	Yes
• English	Yes	Yes	Yes	Yes
Peripherals/Options				
Peripherals				
• 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
Mechanics/material				
Type of housing (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				
Without packaging	3.4 kg	5.2 kg	6.5 kg	7.1 kg
With packaging	4.1 kg	5.7 kg	7.1 kg	7.8 kg

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Ordering data

	Article No.
Industrial Thin Client	
• SIMATIC ITC1200 12" Touch device	**6AV6646-1AA22-0AX0**
• SIMATIC ITC1500 15" Touch device	**6AV6646-1AB22-0AX0**
• SIMATIC ITC1900 19" Touch device	**6AV6646-1AC22-0AX0**
• SIMATIC ITC2200 22" Touch device	**6AV6646-1AD22-0AX0**
Accessories	See HMI accessories

Dimensional drawings
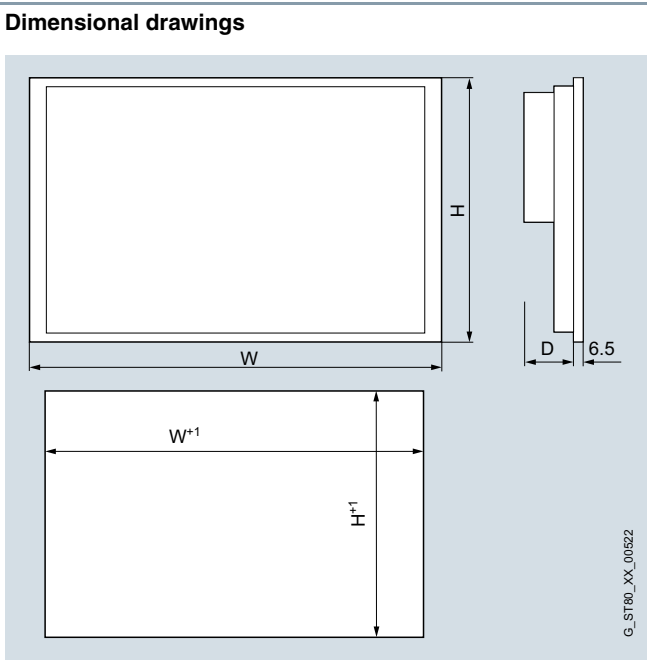
Mounting dimensions

Industrial Thin Client	Faceplate dimensions, in mm		Mounting cutout, in mm		
	W	H	W+1	H+1	D
ITC1200	330	241	310	221	82
ITC1500	415	310	396	291	75
ITC1900	483	337	465	319	75
ITC2200	560	380	542	362	75

More information

Additional information is available on the Internet at:

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

PC-based Automation
Real-time operating systems

SIMATIC IPC Support Package for VxWorks

■ Overview

SIMATIC IPC Support Package for VxWorks V1.0
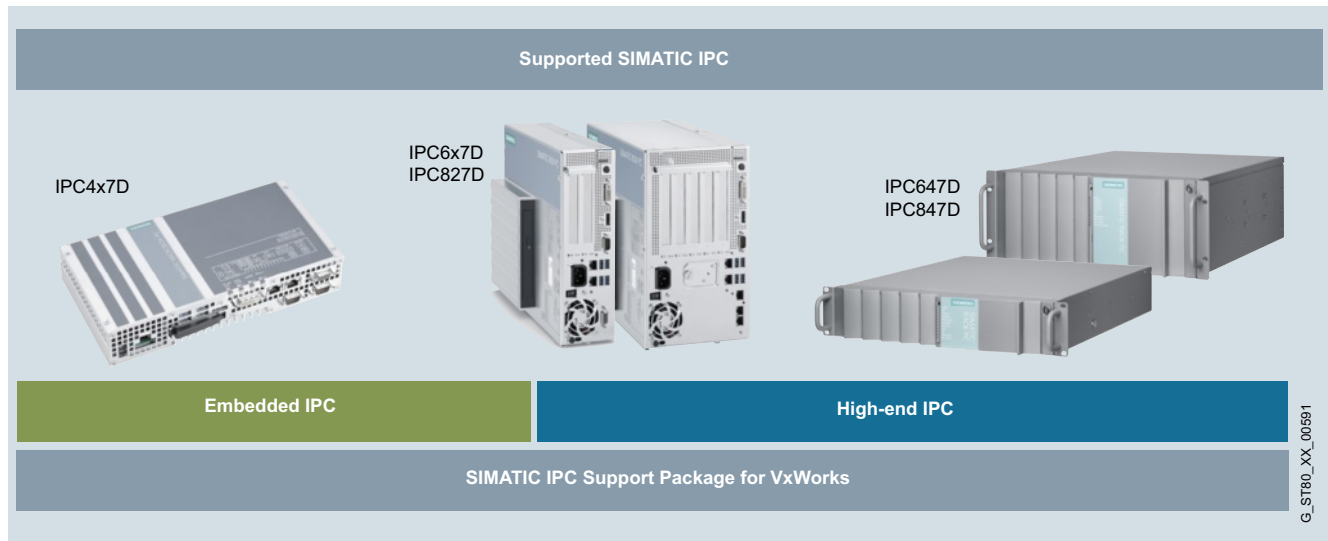
The SIMATIC Embedded and High-end IPC devices of the D generation (except IPC227D) are supported with the SIMATIC IPC Support Package for VxWorks.

The following SIMATIC IPCs can therefore now be operated along with their PROFINET, PROFIBUS and hardware-based functions with the real time VxWorks V6.9 operating system:

• IPC427D
• IPC627D
• IPC827D
• IPC647D
• IPC847D

The PROFINET onboard interfaces of the SIMATIC IPCs offer diverse options for the integration of real-time solutions with SIMATIC IPC into PROFINET networks.

PROFINET RT (real-time) is supported by the standard Ethernet interface of the IPC; PROFINET IRT (isochronous real-time) is supported by the onboard PROFINET interface.

■ Technical specifications

Development system	
Component	**Requirements**
Hardware	PC
Operating system	Windows 7 (32-bit or 64-bit)
Configuration software for PROFIBUS DP	STEP 7 as of version 5.5 SP3 Hotfix 3 (optional)
	from TIA V13 (optional)
	NCM PC from Version 5.5 SP3 (optional)
Configuration software for PROFINET	STEP 7 from Version 5.5 SP3 (optional)
	from TIA V12 (optional)
	NCM PC from Version 5.5 SP3 (optional)
Development tools	Workbench V3.3 für VxWorks V6.9

Target system	
Component	**Requirements**
Hardware	SIMATIC IPC427D or
	SIMATIC IPC627D or
	SIMATIC IPC827D or
	SIMATIC IPC647D or
	SIMATIC IPC847D
Operating system	VxWorks V6.9 (32-bit)

■ Ordering data | Article No.

SIMATIC IPC Support Package for VxWorks	6ES7648-6VA01-0YA0
SIMATIC IPC Support Package for VxWorks V1.0, supports IPC 427D, 627D, 827D, 647D and 847D incl. DP and PN, as well as diagnostics functions	

■ Overview

SIMATIC PCs offer users a wide range of designs and systems which perfectly match industrial applications and fulfill the high requirements in terms of ruggedness.

These include e.g.:

- Wide temperature of use up to 55 °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

Increased system availability

A graded concept is available for effective early detection of potential failures and minimization of actual downtimes. This consists of hardware and software expansion options specially developed for SIMATIC PCs with which the system availability can be individually increased depending on the safety requirements.

The use pays off:
Because the safety is significantly increased by components such as a second hard disk for additional data backup or the DiagMonitor for permanent self-diagnostics. The system availability options thus make a contribution to the significant minimization of the total costs (TCO) of the installation according to the motto: "Small effort, large effect".

The following components are available:

Hard disks options
- Solid-state drive (SSD)
- Second hard disk:
  The safety of the data stored on the hard disk is a cornerstone for system availability.
  - Simple and fast data backup of complete installation and user data in combination with the SIMATIC IPC Image & Partition Creator.
  - Following a faulty software installation or in the case of a hard disk defect, the system can be immediately put back into operation by booting the back-up disk.
  - Fast download of the last saved hard disk image to the working disk.

Two hard disks are optionally available in a user-friendly swap frame for the Rack PC to permit fast and easy data backup.

SIMATIC IPC CompactFlash and SIMATIC IPC CFast

The application of PCs in industrial areas requires rugged systems to prevent or minimize production downtimes. SIMATIC IPCs have been developed precisely for this purpose. One way of improving the industrial suitability and system availability of SIMATIC IPCs even further is to use SIMATIC PC CompactFlash cards instead of hard disk drives. These are system-tested with the SIMATIC IPCs.

SIMATIC PC CompactFlash is a hardware option that can be ordered via the relevant SIMATIC IPC configurator or separately as an accessory.

The SIMATIC IPC CFast memory cards are readily replaceable mass storage units for SIMATIC IPC427D and IPC477D. They are connected via a SATA interface. As a result of the different interface, the SIMATIC IPC CFast memory cards are not compatible with the SIMATIC IPC CompactFlash memory cards.

SIMATIC IPC USB FlashDrive

- Mobile memory medium for SIMATIC IPC/PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged
- Preinstalled SIMATIC IPC BIOS Manager

SIMATIC IPC Service USB FlashDrive

The SIMATIC IPC Service USB FlashDrive is the ideal tool for maintenance as well as saving and restoring of data.
With the preinstalled SIMATIC IPC Image & Partition Creator and SIMATIC IPC BIOS Manager, the FlashDrive is immediately ready for use.

Central I/O expansion PC IO

The PC IO expansion comprises:
- Basic module with encoder/counter functionality, PCI104 interface to the host system, and communication interfaces to the I/O modules
- Digital and analog I/O modules that are managed by the basic module
- Mechanical installation components

SIMATIC Panel PC Remote Kit

- Separation of computer unit and operator control unit
- At a maximum distance of up to 30 m
- Pure hardware solution, no need to install additional software
- Maintaining the full Panel PC front functionality

5

PC-based Automation
Expansion components and accessories

Introduction

■ **Overview** (continued)

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
- Software tool for editing the hard disk partitioning

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
- Integrated log functions, comprehensive text messages, online help (English/German)

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 IPCs.

SIMATIC IPC BIOS Manager

The SIMATIC IPC BIOS Manager is a software tool with which CMOS data from the BIOS configuration of a SIMATIC IPC can be edited. The tool is obtained by downloading it from the Internet using the Automation Value Card from Customer Support.

SITOP power supply

- Reliable power supplies for almost all line voltages and stabilized 24 V requirements and outputs, as well as other output voltages
- Expansion modules for increasing availability, e.g. through redundant configuration or selective protection of 24 V leads
- Expansion to uninterruptible 24 V power supply, based on capacitors for buffering in the minutes range or battery modules enabling operation to continue for several more hours.

Input and output devices

The SIMATIC IPC accessories encompass a variety of input devices such as keyboards and the SIMATIC IPC mouse.

5

Overview
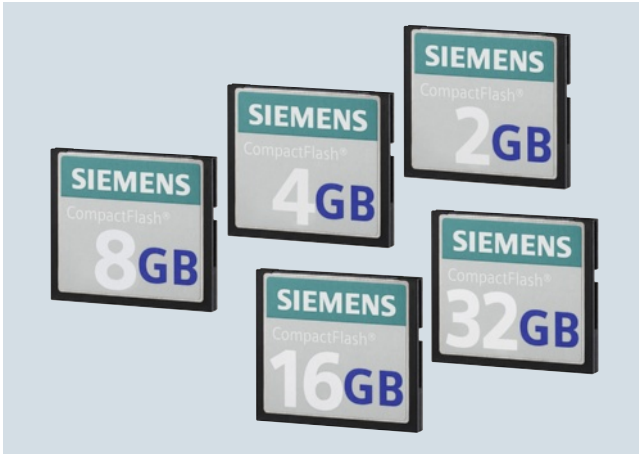
Rugged systems are required when using PCs in industrial environments to ensure minimal production standstill times.

SIMATIC IPCs have been developed precisely for this purpose. One possibility for enhancing the industrial compatibility and system availability of the SIMATIC IPC is to use SIMATIC IPC CompactFlash instead of hard disk drives. These have been system-tested with the respective SIMATIC IPC.

SIMATIC IPC CompactFlash can be ordered as a hardware option through SIMATIC IPC Configurator or as an accessory. Depending on the application, cards are available with a storage capacity ranging from 2 GB to 16 GB.

The SIMATIC IPC CFast memory cards are readily replaceable mass storage units for SIMATIC IPC427D and IPC477D. They are connected via a SATA interface. As a result of the different interface, the SIMATIC IPC CFast memory cards are not compatible with the SIMATIC IPC CompactFlash memory cards.

Ordering data

	Article No.
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**
• 32 GB	**6ES7648-2BF10-0XK0**

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PC-based Automation

Expansion components and accessories

SIMATIC IPC (Service) USB FlashDrive

■ Overview

The SIMATIC IPC USB FlashDrive is the ideal mobile storage medium for industrial applications.

Thanks to the rugged and ultra-compact construction in a metal enclosure, the fast data transfer, and the high memory capacity of 8 GB / 16 GB, the USB FlashDrive is ideally suited for use in industrial applications. It replaces diskettes, CD and DVD read/write media as data memory. Thanks to its high access speed, it is also ideal for tools that are not to be installed on the computer ("portable apps").

In addition, it can be set up ready to boot using SIMATIC PC BIOS-Manager. There is an option of expanding the USB FlashDrive set up in this way into a "tool stick" using SIMATIC IPC Image & Partition Creator.

The SIMATIC IPC SERVICE USB FlashDrive is the perfect tool for backup and restoring. With the pre-installed SIMATIC IPC Image & Partition Creator V3.3, it is immediately ready to use.

■ Technical specifications

Article number	6ES7648-0DC50-0AA0	6ES7648-0DC60-0AA0
	SIMATIC IPC USB-FLASH-DRIVE 8GB	SIMATIC IPC USB-FLASH-DRIVE 16GB
Product type designation		
Connection type		
• USB	Yes; USB 2.0	Yes; USB 3.0
Frame size/design		
• Standard	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
Rated value (DC)	5.5 V	5.5 V
Input current		
Current consumption (rated value)	60 mA	60 mA
Memory		
Type of memory	SLC	MLC
Memory size	8 192 Mbyte	16 Gbyte
Speed class	ATTO Disk Benchmark: Read: 25 MB/s, Write: 19 MB/s	CrystalDiskMark 3.0: Read: 75 MB/s, Write: 21 MB/s
File format	32k Cluster	17k Cluster
Write protection switch	No	No
Battery		
Battery charge indicator	No	
Rechargeable	No	
Type of output		
LED colors		
• red	Yes; LED indicator: Busy, Waiting, Off	Yes; LED indicator: Busy, Waiting, Off
Interfaces		
Number of USB interfaces	1	1
Standards, approvals, certificates		
CE mark	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• min.	-10 °C	-10 °C
• max.	85 °C	70 °C
Ambient temperature during storage/transportation		
• min.	-10 °C	-10 °C
• max.	85 °C	70 °C
Relative humidity		
• Operation, max.	85 %	85 %

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Technical specifications (continued)

Article number	6ES7648-0DC50-0AA0	6ES7648-0DC60-0AA0
	SIMATIC IPC USB-FLASH-DRIVE 8GB	SIMATIC IPC USB-FLASH-DRIVE 16GB
Operating systems		
Executable for operating system		
• Windows XP	Yes	Yes
• Windows CE		No
• Windows Vista	Yes	Yes
• Windows 7	Yes	Yes
• Windows 8	Yes	Yes
• Linux	Yes	Yes; 2.4 or comparable
Mechanics/material		
Type of housing (front)		
• plastic	Yes	Yes
Dimensions		
Width	16.7 mm	16.8 mm
Height	59.1 mm	59.3 mm
Thickness	7 mm	7 mm
Weights		
Without packaging	12 g	12 g
With packaging	14 g	170 g
Scope of supply		
Delivery quantity in pieces	1	1
Other		
Note:	SIMATIC IPC USB FlashDrive, 8 GB (SLC), USB 2.0, SIMATIC IPC BIOS Manager (installed), boot capability, metal enclosure, for Comfort Panels, Basic 2nd and IPC	SIMATIC IPC USB FlashDrive, 16 GB, USB 3.0, CD with SIMATIC IPC BIOS Manager, boot capability, metal enclosure, for Comfort Panels, Basic 2nd and IPC

Ordering data

	Article No.
SIMATIC IPC USB FlashDrive	
• 8 GB, USB 2.0, metal enclosure, boot capability, SIMATIC IPC BIOS Manager V3.3 preinstalled For SIMATIC IPC: Rack PC, Box PC, Panel PC and for SIMATIC PG	**6ES7648-0DC50-0AA0**
• 16 GB, USB 3.0, metal enclosure, boot capability, (SIMATIC IPC BIOS Manager enclosed on CD) For current and new SIMATIC HMI Panels and IPCs. Note: This memory stick does not support Classic Panels such as TPs, OPs, and Multi Panels!	**6ES7648-0DC60-0AA0**
SIMATIC IPC Service USB FlashDrive	
• 8 GB, USB 2.0, metal enclosure, boot capability, SIMATIC IPC Image & Partition Creator V3.3 and SIMATIC IPC BIOS Manager V3.3 (Win PE) preinstalled, including CD	**6AV7672-8JD01-0AA0**
• 16 GB, USB 3.0, metal enclosure, boot capability, SIMATIC IPC Image & Partition Creator V3.3.2 and SIMATIC IPC BIOS Manager V3.3 (Win PE) preinstalled, including CD	**6AV7672-8JD02-0AA0**
SIMATIC HMI USB memory stick	**6AV2181-8AS20-0AX0**
• 8 GB; can be used for SIMATIC HMI Classic Panels, e.g. TPs, OPs and Multi Panels with a USB interface.	

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PC-based Automation
Expansion components and accessories

SIMATIC Panel PC Remote Kit

■ Overview

The Remote Kit makes it possible to separate the Panel PC 677B operator control unit from the computer unit and install them up to 30 m apart.

■ Technical specifications

SIMATIC Panel PC Remote Kit	
Design	Subsequent installation on the Panel PC 677B operator control unit
Supported operator control units	All Panel PC 677B operator control units: • 12" Touch/Key • 15" Touch/Key • 17" Touch • 19" Touch
Cable sets	• 5 m • 10 m • 15 m • 20 m • 30 m
Front panel functionality	As centralized installation with the following constraint in respect of USB functionality: • Distance 5 m: USB 2.0, and only one external 2.0 Hub • Distance > 5 m: USB 1.1, and only one external 1.1 Hub
External ports	2 additional USB ports on the remote module (on the rear of the remote operator control unit)
Power supply	24 V DC; 20.4 ... 28.8 V DC or 110 ... 240 V AC; 50/60 Hz
Approvals	CE, cULus (UL 508)
Scope of supply	• Remote module • Cable set • Mounting accessories for the PC 677B computer unit • European power supply cable (with the AC option)

■ Ordering data

	Article No.
SIMATIC Panel PC Remote Kit	
• 24 V DC, 5 m	**6AV7671-1EA00-5AA1**
• 24 V DC, 10 m	**6AV7671-1EA01-0AA1**
• 24 V DC, 15 m	**6AV7671-1EA01-5AA1**
• 24 V DC, 20 m	**6AV7671-1EA02-0AA1**
• 24 V DC, 30 m	**6AV7671-1EA03-0AA1**
• 100/240 V AC, 5 m	**6AV7671-1EA10-5AA1**
• 100/240 V AC, 10 m	**6AV7671-1EA11-0AA1**
• 100/240 V AC, 15 m	**6AV7671-1EA11-5AA1**
• 100/240 V AC, 20 m	**6AV7671-1EA12-0AA1**
• 100/240 V AC, 30 m	**6AV7671-1EA13-0AA1**
Accessories	
Power supply cable	
• Europe: D/F/NL/E/B/A/S/FIN [1]	**6ES7900-1AA00-0XA0**
• United Kingdom	**6ES7900-1BA00-0XA0**
• Switzerland	**6ES7900-1CA00-0XA0**
• USA	**6ES7900-1DA00-0XA0**
• Italy	**6ES7900-1EA00-0XA0**
• China	**6ES7900-1FA00-0XA0**
Sub-components of the Remote Kit (only available individually as spare parts)	
• 24 V DC remote module with fixing accessories	**6AV7671-1EX01-0AD0**
• 110/240 V AC remote module with fixing accessories	**6AV7671-1EX01-0BD0**
• USB amplifier/CAT6 converter	**6AV7671-1EX02-0AB0**
• 5 m cable set (DVI, USB standard cable)	**6AV7671-1EX10-5AA0**
• 10 m cable set (DVI, Cat 6 cable)	**6AV7671-1EX11-0AA0**
• 15 m cable set (DVI, Cat 6 cable)	**6AV7671-1EX11-5AA0**
• 20 m cable set (DVI, Cat 6 cable)	**6AV7671-1EX12-0AA0**
• 30 m cable set (DVI, Cat 6 cable)	**6AV7671-1EX13-0AA0**

[1] A European power supply cable is included in the scope of delivery of the AC (100-240 V) version of the Remote Kit.

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■ **Dimensional drawings**

Front dimensions	W	H
Touch panels		
12"	400	310
15"	483	310
19"	483	400
Key Panels		
12"	483	310
15"	483	355

Installation cutout	W+1	H+1	D
Touch panels			
12"	368	290	95
15"	450	290	93
19"	450	380	102
Key Panels			
12"	450	290	77
15"	450	321*	96

* In addition: two recesses 25 x 5 mm on the top side for keyboard slide-in label channels

G_ST80_XX_00267

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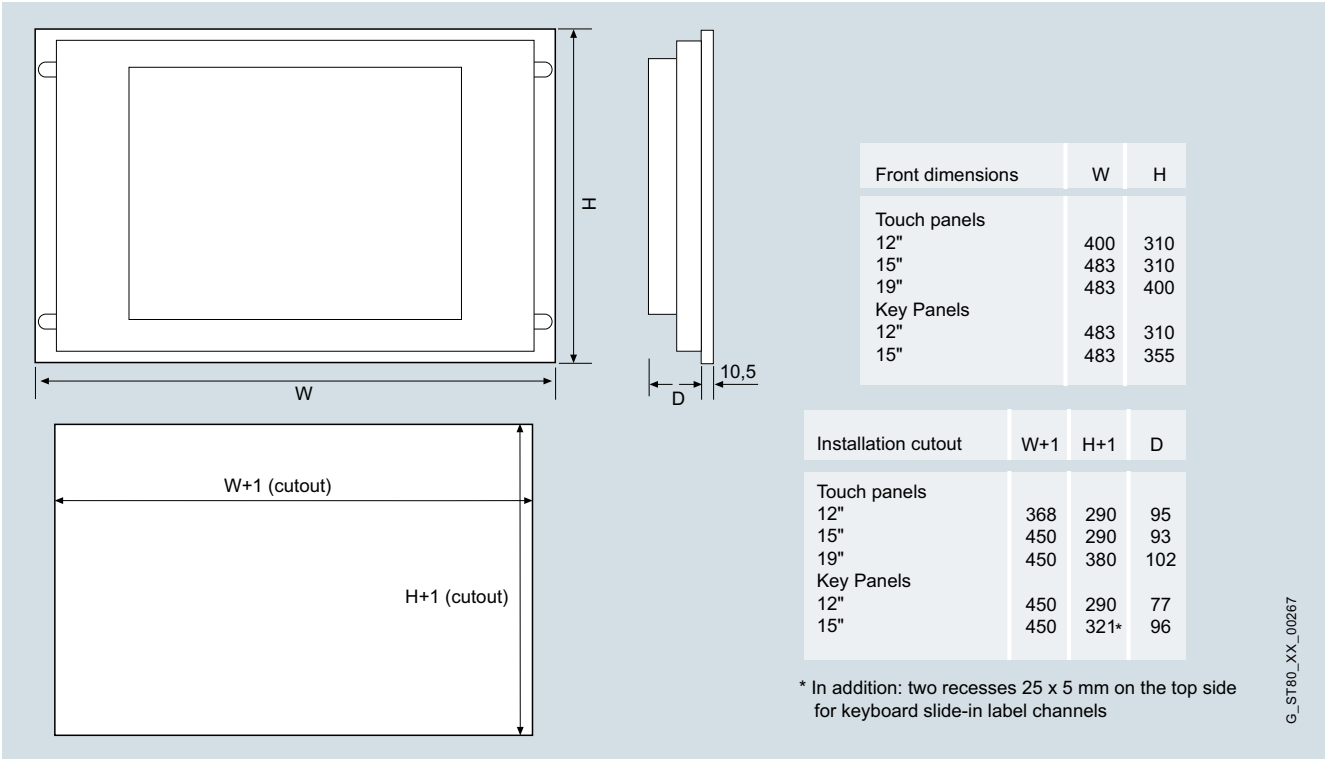
PC-based Automation
Expansion components and accessories

SIMATIC IPC Image & Partition Creator

■ **Overview**
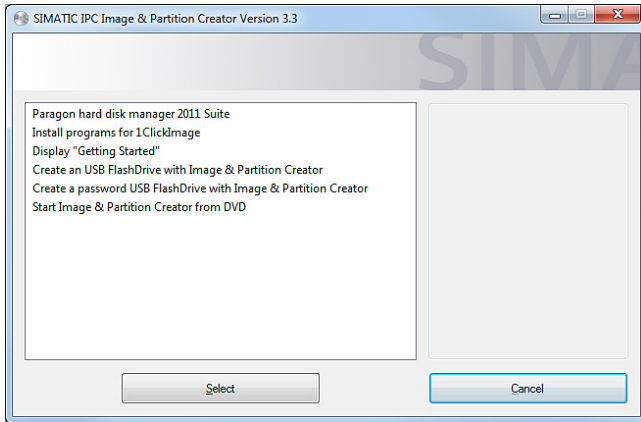
SIMATIC IPC Image & Partition Creator is the software tool for easy, preventive back-up and restoring of hard disk contents (images of individual partitions or complete hard disks).
This software can be ordered through the Configurator for the SIMATIC IPCs, or separately with single license.

• Can run on all SIMATIC IPCs, regardless of the computer configuration

• Direct starting from the CD possible (no installation required)

• Complete backup by means of a mouse double-click with "1ClickImage" (must be installed)

• Menu-driven creation of a bootable USB flash drive as an alternative start medium from which SIMATIC IPC Image & Partition Creator can be started

• Independent of the operating system thanks to ability to start from the bootable SIMATIC IPC Image & Partition Creator DVD or bootable USB flash drive with Image & Partition Creator

■ **Ordering data**   **Article No.**

SIMATIC IPC Image & Partition Creator V3.4	Can be ordered using the SIMATIC IPC Configurator
SIMATIC IPC Image & Partition Creator V3.4 Software tool for very easy preventive data backup and efficient partition management on SIMATIC IPCs	**6ES7648-6AA03-4YA0**

Note:

SIMATIC IPC Image & Partition Creator is also available together with the SIMATIC IPC BIOS Manager preinstalled with the SIMATIC IPC Service USB FlashDrive.

■ Overview
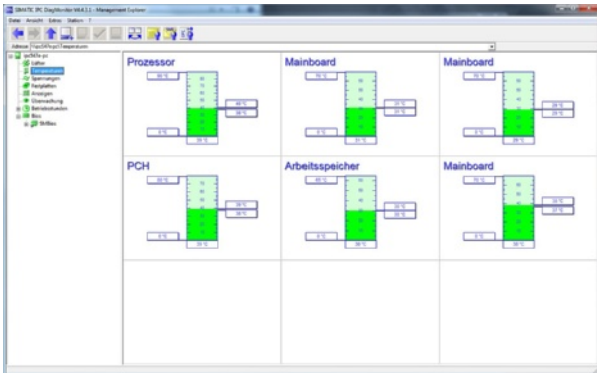
SIMATIC IPC DiagMonitor: Intelligent and comprehensive diagnostics for the SIMATIC IPC – local and remote.

The SIMATIC IPC DiagMonitor software for monitoring and remote signaling detects possible hardware and software faults at an early stage. It monitors, signals and visualizes the operating statuses of the SIMATIC IPC both locally and remotely.

The SIMATIC IPC DiagMonitor can run on the following SIMATIC IPCs:

- IPC427C / IPC627C / IPC827C
- IPC547C / IPC647C / IPC847C
- HMI IPC477C / HMI IPC477C PRO / HMI IPC577C / HMI IPC677C
- IPC227D / IPC427D / IPC 627D / IPC 827D
- IPC277D / IPC477D / IPC677D
- IPC547D / IPC 647D / IPC847D
- IPC547E

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) or
- Option ordered according to the SIMATIC IPC configurator (Internet, Mall)

■ Ordering data

	Article No.
SIMATIC IPC DiagMonitor V4.5	Can be ordered using the SIMATIC IPC Configurator
SIMATIC IPC DiagMonitor V4.5 Software tool for monitoring the SIMATIC IPC, incl. manual on CD ROM (English, German), single license	**6ES7648-6CA04-5YX0**

5

PC-based Automation

Expansion components and accessories

SIMATIC IPC Remote Manager

■ **Overview**
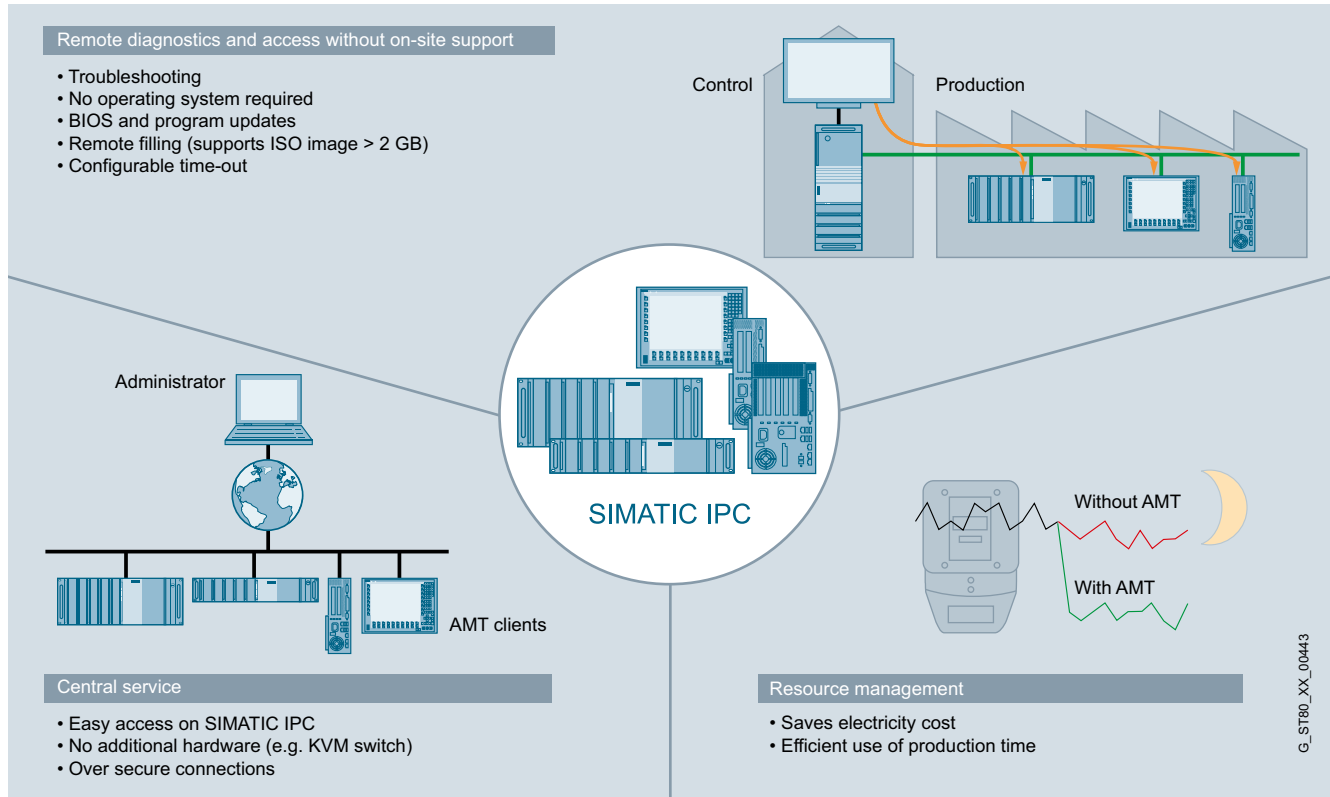
Remote diagnostics and access without on-site support

- Troubleshooting
- No operating system required
- BIOS and program updates
- Remote filling (supports ISO image > 2 GB)
- Configurable time-out

Control   Production

Administrator

SIMATIC IPC

AMT clients

Without AMT

With AMT

Central service

- Easy access on SIMATIC IPC
- No additional hardware (e.g. KVM switch)
- Over secure connections

Resource management

- Saves electricity cost
- Efficient use of production time

G_ST80_XX_00443

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.

http://support.automation.siemens.com/WW/view/en/56230140

■ **Ordering data**   **Article No.**

SIMATIC IPC Remote Manager V1.2 Software tool for remote mainte-nance and management of SIMATIC IPC, incl. manual on CD-ROM (English, German), single license	**6ES7648-6EA01-2YA0**

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Overview
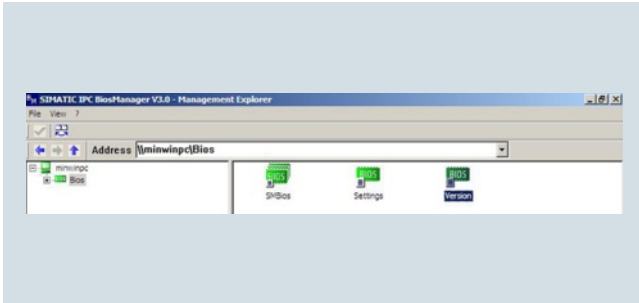
The SIMATIC IPC BIOS Manager V3.3 (WinPE) is a software tool for the management and processing of SIMATIC IPC BIOS data. The tool is obtained by downloading it from the Service & Support web pages of Industry Automation & Drive Technologies using the Automation Value Card.

http://support.automation.siemens.com/WW/view/en/58512643

Ordering data

	Article No.
SIMATIC IPC BIOS Manager Software tool for the management and processing of SIMATIC IPC BIOS data	available as a download from Customer Support http://support.automation.siemens.com/WW/view/en/58512643

Note:

SIMATIC IPC BIOS Manager is also available together with the SIMATIC IPC USB FlashDrive and IPC Service USB FlashDrive.

5

PC-based Automation
Input devices

SIMATIC PC keyboard

■ Overview
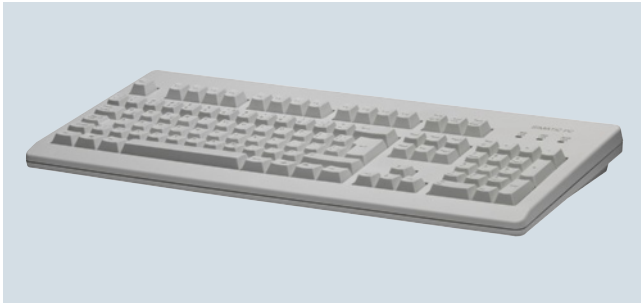
The original SIMATIC PC keyboard is the ideal input medium for your SIMATIC PC. It combines the convenience of an office keyboard with the ruggedness of an industrial device.

The SIMATIC PC keyboard is available with a USB connection and German/international layout.

■ Technical specifications

Article number	6ES7648-0CB00-0YA0
	USB GER/INT KEYBOARD
Product type designation	
Keyboard	
• Keyboard assignment	MF2, 105 keys, German / International
• Color of the buttons	White
• Per-key illumination	No
• Number pad	Yes
• Status LED displays	Yes
- for number pad	Yes
Connection type	
• USB	Yes
• PS/2	Yes
• Cable length	1.75 m
Frame size/design	
• Standard	Yes; For industrial applications
Supply voltage	
Rated value (DC)	5 V; via USB
Input current	
Current consumption (rated value)	35 mA
Battery	
Battery charge indicator	No; Without battery
Standards, approvals, certificates	
CE mark	Yes; GS
cULus	No; cURus
RCM (formerly C-TICK)	Yes; C-Tick
Suitable for safety functions	No
FCC Class B	Yes

Article number	6ES7648-0CB00-0YA0
	USB GER/INT KEYBOARD
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	80 %; no condensation
• Condensation permissible	No
Operating systems	
Executable for operating system	
• Windows XP	Yes
• Windows CE	Yes
• Windows Vista	Yes
• Windows 7	Yes
Cables	
Cable length	1.75 m; USB
Dimensions	
Width	470 mm
Height	44 mm
Depth	195 mm
Weights	
Without packaging	1 400 g
With packaging	1 620 g
Scope of supply	
Delivery quantity in pieces	1
Other	
Note:	for Comfort Panel, IPC, Flat Panel, Thin Client

■ Ordering data — Article No.

	Article No.
SIMATIC PC keyboard German/international, USB connection incl. USB-PS2 adapter	6ES7648-0CB00-0YA0

Overview
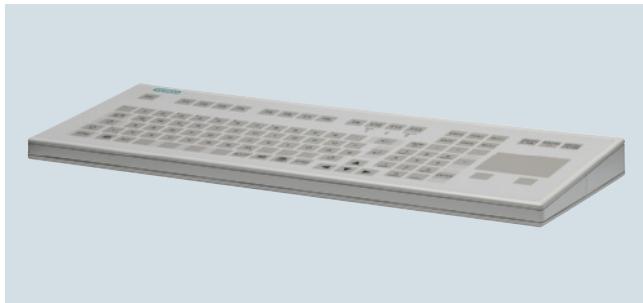
The desktop version of the IP65 membrane keyboard is ideal for use in industrial areas in which a high degree of protection (IP65) is required. The keyboard is equipped with a touchpad.

Technical specifications

Article number	6GF6710-2AC	6GF6710-2BC
	INDUSTRIAL MEMBRANE KEYBOARD IP 65 WITH TOUCHPAD (GERMAN)	MEMBRANE KEYBOARD IP 65 TOUCHPAD (INT.)
Product type designation		
Keyboard		
• Keyboard assignment	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON
• Function keys	> 1	> 1
- Programmable	Yes	Yes
• Number pad	Yes	Yes
Touch operation		
• Integrated touch pad	Yes	Yes
Connection type		
• USB	Yes	Yes
• PS/2	Yes	Yes
Frame size/design		
• Standard	Yes; For industrial applications	Yes; For industrial applications
Input current		
Current consumption (rated value)	25 mA	25 mA
Battery		
Battery charge indicator	No; Without battery	No; Without battery
Degree and class of protection		
IP (at the front)	IP65	IP65
Splashproof	Yes	Yes

Article number	6GF6710-2AC	6GF6710-2BC
	INDUSTRIAL MEMBRANE KEYBOARD IP 65 WITH TOUCHPAD (GERMAN)	MEMBRANE KEYBOARD IP 65 TOUCHPAD (INT.)
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	40 °C	40 °C
Ambient temperature during storage/transportation		
• min.	-10 °C	-10 °C
• max.	50 °C	50 °C
Relative humidity		
• Operation, max.	90 %; no condensation	90 %; no condensation
• Condensation permissible	No	No
Mechanics/material		
Type of housing (front)		
• plastic	Yes	
Dimensions		
Width	478.5 mm	478.5 mm
Height	28 mm	28 mm
Depth	180 mm	180 mm
Weights		
Without packaging	2 260 g	2 260 g
With packaging	2 410 g	2 410 g
Scope of supply		
Delivery quantity in pieces	1	1

Ordering data — Article No.

Standard configuration

IP65 membrane keyboard, desktop version with touchpad

With PS/2 connector
| • German keyboard layout | **6GF6710-2AC** |
| • International keyboard layout | **6GF6710-2BC** |

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PC-based Automation
Input devices

IP65 membrane keyboard, 19" built-in version

■ Overview
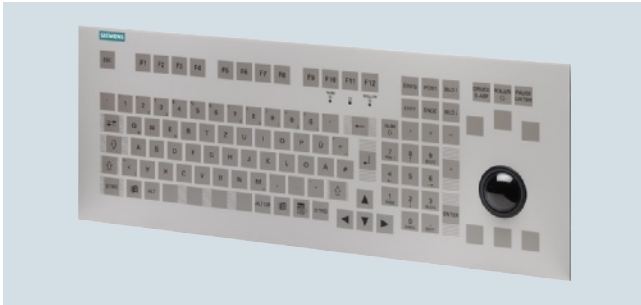
The built-in version of the IP65 membrane keyboard is ideal for use in industrial areas in which a high degree of protection (IP65 at the front, IP54 at the rear) is required. The keyboard is specially designed for installation in 19" cabinets.

■ Technical specifications

Article number	6GF6710-3AE	6GF6710-3BG	6GF6710-3BE
	19" FLUSH-MOUNTED KEYBOARD 4HE WITH TOUCHPAD (GERMAN)	BUILT-IN KEYBOARD W.TRACKBALL (INT.)	19"FLUSHMOUNTED KEYBOARD 4HE W.TOUCHPAD (INT.)
Product type designation			
Keyboard			
• Keyboard assignment	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON
• Function keys	> 1	> 1	> 1
- Programmable	Yes	Yes	Yes
• Number pad	Yes	Yes	Yes
Touch operation			
• Integrated touch pad	Yes	Yes; Trackball	Yes
Connection type			
• USB	Yes	Yes	Yes
• PS/2	Yes	Yes	Yes
Frame size/design			
• Standard	Yes; For industrial applications	Yes; For industrial applications	Yes; For industrial applications
Input current			
Current consumption (rated value)	25 mA	35 mA	25 mA
Battery			
Battery charge indicator	No; Without battery	No; Without battery	No; Without battery
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
Splashproof	Yes	Yes	Yes
Ambient conditions			
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	40 °C	40 °C	40 °C
Ambient temperature during storage/transportation			
• min.	-10 °C	-10 °C	-10 °C
• max.	50 °C	50 °C	50 °C
Relative humidity			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
• Condensation permissible	No	No	No

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■ **Technical specifications** (continued)

Article number	6GF6710-3AE	6GF6710-3BG	6GF6710-3BE
	19" FLUSH-MOUNTED KEYBOARD 4HE WITH TOUCHPAD (GERMAN)	BUILT-IN KEYBOARD W.TRACKBALL (INT.)	19"FLUSHMOUNTED KEYBOARD 4HE W.TOUCHPAD (INT.)
Mechanics/material			
Type of housing (front)			
• plastic	Yes	Yes	Yes
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			
Without packaging	1 480 g	1 490 g	1 480 g
With packaging	1 665 g	1 735 g	1 665 g
Scope of supply			
Delivery quantity in pieces	1	1	1

■ **Ordering data** — Article No. / Article No.

Standard configuration		With trackball	
IP65 membrane keyboard, 19" built-in version		• International keyboard layout	**6GF6710-3BG**
For installation in 19" cabinets, with touchpad			
• German keyboard layout	**6GF6710-3AE**		
• International keyboard layout	**6GF6710-3BE**		

PC-based Automation

Input devices

19" withdrawable keyboard PS/2 with trackball

■ Overview

With its compact design and integrated trackball the new draw-out keyboard is suitable in particular for industrial applications with limited space. This can be, for example, cubicles or mobile systems.

The draw-out keyboard is supplied in combination with a drawer.

■ Technical specifications

Article number	6GF6710-3BJ	6GF6710-3BK
	19" KEYBOARD W. TRACKBALL, (GERMAN)	19"WITH-DRAWABLE KEYBOARD W. TRACKBALL, (INT.)
Product type designation		
Keyboard		
• Keyboard assignment	84 (country-specific version), 83 (US version)	84 (country-specific version), 83 (US version)
• Number pad	No	No
• Status LED displays	Yes	Yes
Touch operation		
• Integrated touch pad	Yes; Trackball	Yes; Trackball
Connection type		
• USB	No	Yes
• PS/2	Yes	Yes
• Cable length	1.6 m	1.8 m
Frame size/design		
• Standard	Yes; For industrial applications	Yes; For industrial applications
Input current		
Current consumption (rated value)	32 mA; max.	100 mA; max.
Battery		
Battery charge indicator	No; Without battery	No; Without battery
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	50 °C	50 °C
Ambient temperature during storage/transportation		
• min.	-40 °C	-40 °C
• max.	65 °C	65 °C
Operating systems		
Executable for operating system		
• Windows XP	Yes	Yes
• Windows CE	Yes	Yes
• Windows Vista	Yes	Yes
• Windows 7	Yes	Yes
• Windows 8	Yes	Yes
Dimensions		
Width	370 mm	370 mm
Height	20 mm	20 mm
Depth	138.5 mm	138.5 mm

■ Ordering data — Article No.

	Article No.
Standard configuration	
19" withdrawable keyboard	
With trackball	
• German keyboard layout	**6GF6710-3BJ**
• International keyboard layout	**6GF6710-3BK**

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Overview

Robust mouse for harsh everyday use with a pleasantly coated slip-free surface, precise BlueTrack technology, three buttons incl. large scroll wheel, trouble-free cable operation and symmetrical casing design for right-handed and left-handed users.

The mouse supports all SIMATIC HMI Panels, PGs, and IPCs with an USB interface. SIMATIC HMI Panels support all functions that can also be executed on the touch display of the panel by finger-tip control.

- Interface: USB
- Operating systems: Microsoft Windows® 7, Windows Vista® and Windows XP (not for Windows XP 64 bit)
- Connection cable: 2 m long, USB plug
- Approvals corresponding to office environment:
  - ACA/MED Declaration of Conformit y (Australia and New Zealand)
  - ICES-003 report on file (Canada)
  - EIP Pollution Control Mark, EPUP (China)
  - CE Declaration of Conformity, Safety and EMC (European Union)
  - WEEE (European Union)
  - VCCI Certificate (Japan)
  - KCC Certificate (Korea)
  - GOST Certificate (Russia)
  - BSMI Certificate (Taiwan)
  - FCC Declaration of Conformity (USA)
  - UL and cUL Listed Accessory (USA and Canada)
  - CB Scheme Certificate (International)

Technical specifications

Article number	**6AV2181-8AT00-0AX0**
	SIMATIC HMI USB MOUSE
Product type designation	
Control elements	
With parameterizable keys	No; 5 including scroll wheel
Input device	
• Movement resolution	1 000 dpi; 8 000 images/second
• Movement tracking	Microsoft - proprietary BlueTrack™ Technology
• Image scroll wheel/scroll wheel	Yes; Vertical and horizontal scrolling
• Speed	1 829 mm/s; 1.829 m/s
Touch operation	
• Integrated touch pad	No
Connection type	
• USB	Yes
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 charge indicator	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
KC approval	Yes
Suitable for safety functions	No
FCC Class B	Yes; FCC ID available
BSMI	Yes
Marine approval	
• Nippon Kaiji Kyokai (Class NK)	No; Only VCCI available
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	40 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	60 °C
Relative humidity	
• Operation, max.	80 %; 65 % for storage
• Condensation permissible	No

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PC-based Automation
Input devices

SIMATIC IPC mouse

■ Technical specifications (continued)

Article number	**6AV2181-8AT00-0AX0**
	SIMATIC HMI USB MOUSE
Operating systems	
Executable for operating system	
• Windows XP	Yes; SP2 and higher
• Windows CE	Yes; Not all functions are available
• Windows Vista	Yes
• 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 of housing	
• plastic	Yes; Anthracite
Dimensions	
Width	67.9 mm
Height	42.3 mm
Depth	116 mm
Weights	
Without packaging	131 g
With packaging	270 g
Scope of supply	
Delivery quantity in pieces	1
Other	
Note:	Suitable for HMI Panels and IPCs with USB interface

■ Ordering data

	Article No.
SIMATIC IPC mouse	**6AV2181-8AT00-0AX0**
Optical (BlueTrack) wheel mouse, USB interface Color anthracite	

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■ Overview

The benchmark in reliability, efficiency and integration

Efficient operation of a machine or plant requires a reliable, constant power supply.

The quality and reliability of the SITOP stabilized power supplies ensure high levels of safety in DC power supply in industrial engineering and building management systems.

Our perfectly coordinated selection of SITOP power supplies is enhanced by a unique range of add-on modules that extensively protect the 24 V power supplies against interference on the primary and secondary side, right up to complete all-round protection.

TOP reliability

You should only have to think once about a good power supply when you are purchasing it – and then never again.

SITOP has proved its reliability more than 10 million times over in almost every supply system in the world. With their wide-range input, excellent load behavior and extensive certification, SITOP power supplies alone ensure the reliability of the power supply.

Depending on requirements, SITOP power supplies can be individually adapted with expansion modules and uninterruptible power supplies (DC UPS). This ensures reliability of the 24 V supply for machines or plants, even in the event of an overload in the output circuit or a power failure on the input side.

TOP efficiency

Production costs are determined more and more by energy costs. Savings in this area generate valuable competitive advantages. SITOP power supplies make an important contribution here. Due to the high degree of efficiency, the primary switched-mode power supplies operate extremely effectively. The power loss across the entire performance range is low – even during no-load operation. Because power supplies are rarely operated at full load, there is outstanding potential for savings here.

SITOP also supports the entire process chain of the customer efficiently. It offers easy product selection using the SITOP Selection Tool, for example, and extensive additional information such as 3D data, circuit diagram macros, certification and individually-configurable product documentation.

Every SITOP solution can therefore be planned and ordered, designed, configured and operated in an extremely efficient manner.

TOP integration

The better power supplies are integrated in their industrial environment, the higher their productivity. SITOP is optimally tailored to automation systems such as SIMATIC, SINUMERIK and SIMOTION.

In addition, the PSU8600 power supply system and the UPS1600 uninterruptible power supply are completely integrated in TIA. Convenient engineering in the TIA Portal supports, for example, easy network integration in PROFINET or comprehensive diagnostics.

SIMATIC S7 function blocks support easy integration in STEP 7 user programs, and ready-to-use WinCC faceplates are available for operator control and monitoring.

PC-based Automation
SITOP power supplies
SITOP smart

Overview

Overview

The powerful standard power supply

The one-phase and three-phase SITOP smart are the universal and powerful standard power supplies for machinery and plant engineering.

Despite their compact design, they offer an excellent overload response: Thanks to a power boost of 150 %, loads with high power consumption can be connected without any problems and the permanent overload capability of 120% offers power reserves in case of expansions. The high degree of efficiency results in low energy consumption and minimal heat generation inside the control cabinet.

To further increase the 24 V availability, the SITOP smart power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

- 1-phase, 24 V DC/2.5 A, 5 A, 10 A and 20 A as well as 12 V/7 A and 14 A
- 3-phase, 24 V DC/10 A, 20 A and 40 A
- Compact design - no lateral clearances required
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Permanent overload capability with 1.2 times the rated current up to 45 °C ambient temperature (24 V versions)
- High degree of efficiency up to 91.5 %
- Adjustable output voltage for compensating voltage drops
- Signaling contact for easy integration in the plant monitoring system
- Wide temperature range from -25 or –10 to +70 °C
- Comprehensive certifications, such as cULus, ATEX and GL

More information

Select the appropriate power supply quickly and easily with the SITOP Selection Tool:

http://www.siemens.com/sitop-selection-tool

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Overview

The one-phase SITOP smart are the universal and powerful standard power supplies for machinery and plant engineering. Despite their compact design, they offer an excellent overload response: Thanks to a power boost of 150 %, loads with high power consumption can be connected without any problems and the permanent overload capability of 120% offers power reserves in case of expansions. The high degree of efficiency results in low energy consumption and minimal heat generation inside the control cabinet.

To further increase 24 V availability, the SITOP smart power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

- 1-phase, 24 V DC/2.5 A, 5 A, 10 A and 20 A
- Input voltage 120 V and 230 V AC with automatic range switching
- Compact design - no lateral clearances required
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Permanent overload capability with 1.2 times the rated current up to 45 °C ambient temperature
- Adjustable output voltage for compensating voltage drops
- Signaling contact for easy integration in the plant monitoring system
- Wide temperature range from -25 or -10 to +70 °C
- Comprehensive certifications, such as cULus, ATEX and GL

Ordering data

	Article No.
SITOP PSU100S 1-phase, 24 V DC/2.5 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/2.5 A	6EP1332-2BA20
SITOP PSU100S 1-phase, 24 V DC/5 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/5 A	6EP1333-2BA20
SITOP PSU100S 1-phase, 24 V DC/10 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC / 10 A	6EP1334-2BA20
SITOP PSU100S 1-phase, 24 V DC/20 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/20 A	6EP1336-2BA10
Accessories	
SITOP PSE202U redundancy module Input/output: 24 V DC/40 A suitable for decoupling two SITOP power supplies with a maximum of 20 A output current	6EP1961-3BA21
SITOP PSE202U redundancy module Input/output: 24 V DC/NEC Class 2 suitable for decoupling two SITOP power supplies output power limited < 100 VA	6EP1962-2BA00
SITOP PSE202U redundancy module Input/output: 24 V DC/10 A suitable for decoupling two SITOP power supplies with a maximum of 5 A output current	6EP1964-2BA00
SITOP PSE200U 3 A selectivity module 4-channel selectivity module Input: 24 V DC Output: 24 V DC/3A per each channel output current adjustable 0.5 … 3 A	
• With common alarm signal	6EP1961-2BA11
• With single-channel signaling	6EP1961-2BA31
SITOP PSE200U 10 A selectivity module 4-channel selectivity module Input: 24 V DC Output: 24 V DC/10 A per channel output current adjustable 3 ... 10 A	
• With common alarm signal	6EP1961-2BA21
• With single-channel signaling	6EP1961-2BA41
SITOP PSE201U buffer module For SITOP smart and SITOP modular buffer time 100 ms to 10 s dependent on load current	6EP1961-3BA01

More information

Select the appropriate power supply quickly and easily with the SITOP Selection Tool:

http://www.siemens.com/sitop-selection-tool

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PC-based Automation
SITOP power supplies
SITOP smart

3-phase, 24 V DC

■ Overview

The three-phase SITOP smart are the universal and powerful standard power supplies for machinery and plant engineering. Despite their compact design, they offer an excellent overload response: Thanks to a power boost of 150 %, loads with high power consumption can be connected without any problems and the permanent overload capability of 120% offers power reserves in case of expansions.

The high degree of efficiency results in low energy consumption and minimal heat generation inside the control cabinet.

To further increase 24 V availability, the SITOP smart power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

- 3-phase, 24 V DC/10 A, 20 A and 40 A
- Wide-range input from 340 to 550 V AC for global use
- Compact design - no lateral clearances required
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Permanent overload capability with 1.2 times the rated current up to 45 °C ambient temperature
- Adjustable output voltage for compensating voltage drops
- Signaling contact for easy integration in the plant monitoring system
- Wide temperature range from -10 to +70 °C
- Comprehensive certifications, such as cULus, ATEX and GL

■ Ordering data

	Article No.
SITOP PSU300S 3-phase, 24 V DC/10 A Stabilized power supply Input: 3 AC 400 … 500 V Output: 24 V DC/10 A	6EP1434-2BA10
SITOP PSU300S 3-phase, 24 V DC/20 A Stabilized power supply Input: 3 AC 400 … 500 V Output: 24 V DC/20 A	6EP1436-2BA10
SITOP PSU300S 3-phase, 24 V DC/40 A Stabilized power supply Input: 3 AC 400 … 500 V Output: 24 V DC/40 A	6EP1437-2BA20
Accessories	
Device labeling plates	3RT1900-1SB20
SITOP PSE202U redundancy module Input/output: 24 V DC/40 A suitable for decoupling two SITOP power supplies with a maximum of 20 A output current	6EP1961-3BA21
SITOP PSE202U redundancy module Input/output: 24 V DC/NEC Class 2 suitable for decoupling two SITOP power supplies output power limited < 100 VA	6EP1962-2BA00
SITOP PSE202U redundancy module Input/output: 24 V DC/10 A suitable for decoupling two SITOP power supplies with a maximum of 5 A output current	6EP1964-2BA00
SITOP PSE200U 3 A selectivity module 4-channel selectivity module Input: 24 V DC Output: 24 V DC/3A per each channel output current adjustable 0.5 … 3 A	
• With common alarm signal	6EP1961-2BA11
• With single-channel signaling	6EP1961-2BA31
SITOP PSE200U 10 A selectivity module 4-channel selectivity module Input: 24 V DC Output: 24 V DC/10 A per channel output current adjustable 3 ... 10 A	
• With common alarm signal	6EP1961-2BA21
• With single-channel signaling	6EP1961-2BA41
SITOP PSE201U buffer module For SITOP smart and SITOP modular buffer time 100 ms to 10 s dependent on load current	6EP1961-3BA01

■ More information

Select the appropriate power supply quickly and easily with the SITOP Selection Tool:

http://www.siemens.com/sitop-selection-tool

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■ Overview

The technology power supply for demanding solutions

The one, two and three-phase SITOP modular units are the technology power supplies for demanding solutions. They offer maximum functionality for use in complex plants and machines. The wide-range input allows a connection to almost any electrical power system worldwide and ensures a high degree of safety even if there are large voltage fluctuations.

They offer outstanding overload characteristics: Power boost delivers up to three-times the rated current for short periods of time, and with extra power of 150%, loads with high power consumption can be connected without any problems. And in the event of an overload, you can choose between constant current or automatic restart.

The extremely high efficiency keeps energy consumption and heat buildup in the control cabinet low, and the compact metal enclosure also saves space.

To further increase the 24 V availability, the SITOP smart power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

- 1-phase, 24 V DC / 5 A, 10 A, 20 A, 40 A
- 1-phase and 2-phase, 24 V DC / 5A, 10 A
- 3-phase, 24 V DC / 10 A, 20 A, 40 A und 48 V/ 10 A, 20 A
- Extremely slim design – no lateral installation clearances required
- Power boost with 3 times rated current (for 25 ms) for tripping protective devices
- Extra power with 1.5 times rated current (5 s/min) for brief functional overload
- Selectable short-circuit response between constant current and restart
- Symmetrical load distribution can be selected for parallel operation
- Operating status on 3 LEDs
- Extremely high efficiency up to 94 %
- Large temperature range from -25 to +70 °C
- Comprehensive certifications, such as cULus, ATEX, IECex and GL

■ More information

Select the appropriate power supply quickly and easily with the SITOP Selection Tool:

http://www.siemens.com/sitop-selection-tool

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PC-based Automation
SITOP power supplies
SITOP modular

1-phase, 24 V DC

Overview

The 1-phase SITOP modular are technology power supplies for sophisticated solutions and offer maximum functionality for use in complex plants and machines. The wide-range input allows a connection to almost any electrical power system worldwide and ensures a high degree of safety even if there are large voltage fluctuations. The power boost provides up to three times the rated current for brief periods. In case of overload, you can choose between constant current with automatic restart or latching shutdown. The high degree of efficiency keeps energy consumption and heating in the control cabinet low, and the compact metal housing also saves space.

To further increase the 24 V availability, the SITOP modular power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

- 24 V DC/ 5 A, 10 A, 20 A and 40 A
- 1-phase wide-range input for connection to any supply system and for safety in case of voltage supply deviations
- Extremely slim design – no lateral installation clearances required
- Power Boost with 3 times the rated current (for 25 ms) for tripping protective devices
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Selectable short-circuit response between constant current and restart
- Optional symmetrical load distribution for parallel operation
- Operating status on 3 LEDs
- Extremely high efficiency to 94 %
- Wide temperature range from -25 to +70 °C
- Comprehensive certifications, such as cULus, ATEX and GL

Ordering data | Article No.

Ordering data	Article No.
SITOP PSU8200 1-phase, 24 V DC/5 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/5 A	6EP3333-8SB00-0AY0
SITOP PSU8200 1-phase, 24 V DC/10 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/10 A	6EP3334-8SB00-0AY0
SITOP PSU8200, 1-phase, 24 V DC/20 A Stabilized power supply Input: 120 ... 230 V AC Output: 24 V DC/20 A	6EP1336-3BA10
SITOP PSU100M 1-phase, 24 V DC/40 A Stabilized power supply Input: 120/230 V AC Output: 24 V DC/40 A	6EP1337-3BA00
Accessories	
SITOP PSE201U buffer module For SITOP smart and SITOP modular buffer time 100 ms to 10 s dependent on load current	6EP1961-3BA01
SITOP modular signaling module For 6EP1XXX-3BA00 signaling contacts: Output voltage OK, readiness for operation OK, remote ON/OFF	6EP1961-3BA10
SITOP PSE202U redundancy module Input/output: 24 V DC/40 A suitable for decoupling two SITOP power supplies with a maximum of 20 A output current	6EP1961-3BA21
SITOP PSE202U redundancy module Input/output: 24 V DC/NEC Class 2 suitable for decoupling two SITOP power supplies; output power limited < 100 VA	6EP1962-2BA00
SITOP PSE202U redundancy module Input/output: 24 V DC/10 A suitable for decoupling two SITOP power supplies with a maximum of 5 A output current	6EP1964-2BA00
SITOP PSE200U selectivity module 3 A 4-channel Input: 24 V DC Output: 24 V DC/3 A per channel Adjustable output current 0.5 ... 3 A • With common alarm signal • With single-channel signaling	 6EP1961-2BA11 6EP1961-2BA31
SITOP PSE200U selectivity module 10 A 4-channel Input: 24 V DC Output: 24 V DC/10 A per channel Adjustable output current 3 ... 10 A • With common alarm signal • With single-channel signaling	 6EP1961-2BA21 6EP1961-2BA41
Device labeling plates	3RT1900-1SB20

■ Overview

The 3-phase SITOP modular are technology power supplies for sophisticated solutions and offer maximum functionality for use in complex plants and machines. The wide-range input allows a connection to almost any electrical power system worldwide and ensures a high degree of safety even if there are large voltage fluctuations. The power boost provides up to three times the rated current for brief periods. In case of overload, you can choose between constant current with automatic restart or latching shutdown. The high degree of efficiency keeps energy consumption and heating in the control cabinet low, and the compact metal housing also saves space.

To further increase 24 V availability, the SITOP modular power supplies can be combined with *buffer*, *DC UPS*, *redundancy* and *selectivity modules*.

Main product highlights

• 24 V DC/ 20 A and 40 A

• 3-phase wide-range input from 320 to 575 V AC for global use

• Extremely slim design – no lateral installation clearances required

• Power Boost with 3 times the rated current (for 25 ms) for tripping protective devices

• Extra power with 1.5 times the rated current (5 s/min) for brief functional overload

• Selectable short-circuit response between constant current and restart

• Optional symmetrical load distribution for parallel operation

• Operating status on 3 LEDs

• Extremely high efficiency up to 94%

• Wide temperature range from -25 to +70 °C

• Comprehensive certifications, such as cULus, ATEX, IECex and GL

■ Ordering data

	Article No.
SITOP PSU8200, 3-phase, 24 V DC/20 A	6EP3436-8SB00-0AY0
Stabilized power supply Input: 400 … 500 V 3 AC Output: 24 V DC/20 A	
SITOP PSU8200 3-phase, 24 V DC/40 A	6EP1437-3BA10
Stabilized power supply Input: 400 … 500 V 3 AC Output: 24 V DC/20 A	
Accessories	
SITOP PSE201U buffer module	6EP1961-3BA01
For SITOP smart and SITOP modular buffer time 100 ms to 10 s dependent on load current	
SITOP PSE202U redundancy module	6EP1961-3BA21
Input/output: 24 V DC/40 A suitable for decoupling two SITOP power supplies with a maximum of 20 A output current	
SITOP PSE202U redundancy module	6EP1962-2BA00
Input/output: 24 V DC/NEC Class 2 suitable for decoupling two SITOP power supplies; output power limited < 100 VA	
SITOP PSE202U redundancy module	6EP1964-2BA00
Input/output: 24 V DC/10 A suitable for decoupling two SITOP power supplies with a maximum of 5 A output current	
SITOP PSE200U selectivity module 3 A	
4-channel Input: 24 V DC Output: 24 V DC/3 A per channel output current adjustable 0.5 … 3 A	
• With common alarm signal	6EP1961-2BA11
• With single-channel signaling	6EP1961-2BA31
SITOP PSE200U selectivity module 10 A	
4-channel Input: 24 V DC Output: 24 V DC/10 A per channel output current adjustable 3 ... 10 A	
• With common alarm signal	6EP1961-2BA21
• With single-channel signaling	6EP1961-2BA41
Device labeling plates	3RT1900-1SB20

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PC-based Automation
SITOP power supplies
PSU8600 power supply system

Introduction

■ Overview

As a unique power supply system with complete integration in Totally Integrated Automation (TIA), SITOP PSU8600 sets new standards in industrial power supplies.

The benefits of this integration are not only apparent during engineering in TIA Portal but also result in reliable operation. Voltage and current response thresholds can be set individually for each output of the power supply system, and selective monitoring of each output for overload results in fast fault location. Depending on requirements additional modules from the modular system, such as are used for buffering short power failures, can be added without wiring overhead.

Comprehensive diagnostic and maintenance information is available via PROFINET. It can be evaluated directly in SIMATIC S7 and visualized in SIMATIC WinCC.

Optimal support is also provided for energy management of plant or machines: From the acquisition of energy data from individual outputs, the specific activation and deactivation of outputs via PROFIenergy, to direct integration in power management systems.

■ More information

Select the appropriate power supply quickly and easily with the PSU8600 SITOP Selection Tool:

http://www.siemens.com/sitop-selection-tool

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PC-based Automation
SITOP power supplies
PSU8600 power supply system

3-phase, 24 V DC (PSU8600)

Overview

The slim 3-phase basic unit of the SITOP PSU8600 power supply system includes one Ethernet/PROFINET interface as well as four outputs with selective monitoring that can be configured individually (voltage and current threshold).

Additional units from the modular system can be added to increase the number of outputs (CNX8600) or to extend the mains buffering time (BUF8600) as required. Comprehensive diagnostic and maintenance information is available via PROFINET. It can be evaluated directly in SIMATIC S7 and visualized in SIMATIC WinCC.

Energy management is also optimally supported by collecting the energy data for each output as well as individual activation and deactivation of the outputs via PROFIenergy.

Main product highlights

- 3-phase wide-range input 400 to 500 V 3 AC for global use
- Extremely slim design with very high efficiency of up to 94%
- Four integrated outputs with up to 10 A each and selective monitoring
- Voltage and response threshold can be set separately and are infinitely adjustable for each output
- Extra power with 1.5 times the rated current (5 s/min) for brief, operational overload
- Integrated Ethernet/PROFINET interface (2 ports)
- Easy configuration in the TIA Portal
- Comprehensive diagnostic information during operation
- Outputs can be deactivated and activated in a targeted manner with PROFIenergy
- Individual expansion options from the modular system (expansion modules, buffer modules) without wiring overhead

Ordering data

	Article No.
SITOP PSU8600 3-phase, 24 V DC/40 A/4 x 10 A with PN/IE connection	6EP3437-8MB00-2CY0
Stabilized power supply Input: 400 … 500 V 3 AC Output: 24 V DC/40 A /4 x 10 A	
Accessories	
SITOP CNX8600 4 x 5 A expansion module	6EP4436-8XB00-0CY0
For SITOP PSU8600 Output: 24 V DC/4 x 5 A	
SITOP CNX8600 4 x 10 A expansion module	6EP4437-8XB00-0CY0
For SITOP PSU8600 Output: 24 V DC/4 x 10 A	
SITOP BUF8600 100 ms buffer module	6EP4297-8HB00-0XY0
For SITOP PSU8600 Buffer capacity 100 ms/40 A	
SITOP BUF8600 300 ms buffer module	6EP4297-8HB10-0XY0
For SITOP PSU8600 Buffer capacity 300 ms/40 A	
Device labeling plates	3RT1900-1SB20

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PC-based Automation
SITOP power supplies
PSU8600 power supply system
Modular system

Expansion of outputs (CNX8600), Buffer (BUF8600)

■ Overview CNX8600 expansion modules

The CNX8600 expansion modules are part of the SITOP PSU8600 modular system and expand the basic unit regarding the number of selectively monitored outputs.

You can connect up to three CNX8600 expansion modules to the PSU8600 basic unit. The connection takes place on top of the modules without any wiring by means of the System Clip Link, a connecting plug for system data and power supply.

Main product highlights

- Four integrated outputs with up to 5 A or 10 A each and selective monitoring
- Voltage and response threshold can be set separately and are infinitely adjustable for each output
- Comprehensive diagnostic information during operation via the PSU8600 basic unit
- Outputs can be activated and deactivated in a targeted manner with PROFIenergy via the PSU8600 basic unit
- Easy connection without wiring overhead
- Slim design

■ Overview BUF8600 buffer modules

The BUF8600 buffer modules are part of the SITOP PSU8600 modular system and are designed to bridge short-term power failures.

They are equipped with maintenance-free electrolytic capacitors as energy storage units and automatically take over the DC power supply in case of a line voltage failure.

You can connect up to two BUF8600 buffer modules to the PSU8600 basic unit. Connection takes place on top of the modules without any wiring by means of the System Clip Link, a connecting plug for system data and power supply.

Main product highlights

- Reliable bridging of short-term power failures
- Can be randomly combined for bridging times from 100 ms to 600 ms (at full load)
- Maintenance-free electrolytic capacitors as energy storage units
- Easy connection without wiring overhead

■ Ordering data	Article No.
SITOP CNX8600 4 x 5 A expansion module	**6EP4436-8XB00-0CY0**
For SITOP PSU8600 Output: 24 V DC/4 x 5 A	
SITOP CNX8600 4 x 10 A expansion module	**6EP4437-8XB00-0CY0**
For SITOP PSU8600 Output: 24 V DC/4 x 10 A	
Accessories	
Device labeling plates	**3RT1900-1SB20**

■ Ordering data	Article No.
SITOP BUF8600 100 ms buffer module	**6EP4297-8HB00-0XY0**
For SITOP PSU8600 Buffer capacity 100 ms/40 A	
SITOP BUF8600 300 ms buffer module	**6EP4297-8HB10-0XY0**
For SITOP PSU8600 Buffer capacity 300 ms/40 A	
Accessories	
Device labeling plates	**3RT1900-1SB20**

Overview
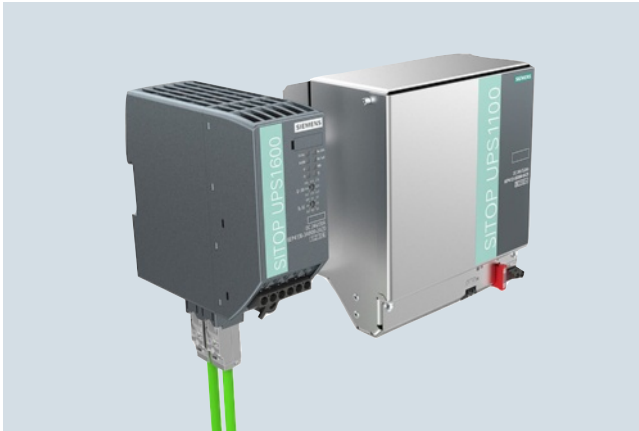
SITOP offers a comprehensive portfolio to protect against power failures with durations from a few seconds to several hours, ranging from buffer modules to system-integrated DC UPS units. Selection is based on the energy storage unit used, the associated ambient conditions, performance and functionality.

The selection matrix should help you to find the right 24 V buffering for your application:

SITOP modules for 24 V buffering	Buffer module [1]	UPS500	UPS1600	DC UPS
Energy storage units				
24 V buffering up to	10 s	Minutes	Hours	Hours
Storage medium	Electrolytic capacitors	Double-layer capacitors	Lead-gel batteries	Lead-gel batteries
Lifetime dependent on temperature The specified time refers to a fall to 50 % of the original capacity in the case of lead batteries and 80 % in the case of capacitors.	0 … +50 °C: > 8 years	… +50 °C: > 8 years	+20°…+40°C: 4 ... 1 years (high-temperature rechargeable battery: +20°…+60°C: > 10 ... 1 years)	+20°…+40°C: 4 ... 1 years (high-temperature rechargeable battery: +20°…+60°C: > 10 ... 1 years)
Temperature range	0 … +60 °C	0 … +60 °C	0 … +40 °C (high-temperature rechargeable battery: -40°…+60°C)	0 … +40 °C (high-temperature rechargeable battery: -40°…+60°C)
Ventilation required	-	-	●	●
Degree of protection	IP20	IP20/ IP65 (UPS500P)	IP00	IP00
UPS module/electronics				
Degree of protection	IP20	IP20/ IP65 (UPS500P)	IP20	IP20
Max. rated output current	40 A	15 A	40 A	40 A
Max. dynamic overload current	40 A (200 ms)	25 A (200 ms)	120 A (30 ms) / 60 A (5s/min)	56 A (80 ms)
Interfaces	-	I/O, USB	I/O, USB, Ethernet/ PROFINET	I/O, serial, USB
Information about operation and diagnostics via • Signaling contact • OPC servers • Web server • S7 function blocks • WinCC faceplate	- - - - -	● ● - - -	● ● ● ● ●	● ● - - -
Shutdown of multiple PCs/ PLCs	-	-	●	-
Starting from the battery, without supply voltage (stand-alone mode)	-	-	●	-
Engineering via • Software tool (PC) • TIA Portal	- -	● -	● ●	● -

[1] for SITOP smart and SITOP modular power supply units

More information

The SITOP Selection Tool offers detailed selection guidance according to criteria such as the required backup time, nominal current or peak current:
http://www.siemens.com/sitop-selection-tool

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PC-based Automation
DC UPS with capacitors

SITOP UPS500S, SITOP UPS501S, SITOP UPS500P

■ Overview
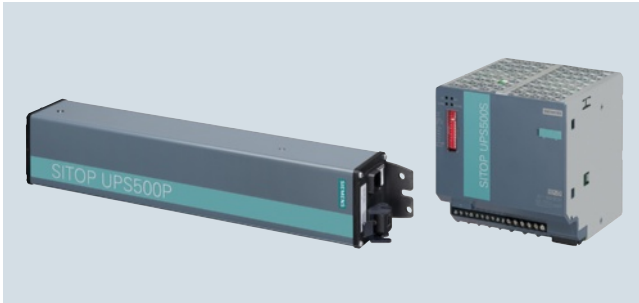
SITOP 24V power supplies can be expanded with a SITOP UPS500 uninterruptible DC power supply (DC UPS) for bridging short-term power failures in the order of minutes.

For PC-based automation solutions, the high-capacity double-layer capacitors of the SITOP UPS500 supply enough energy to back up the operation and application data and to shut down software applications in a defined manner.

You can increase the buffer times using SITOP PSU501S expansion modules (up to 3).

The IP65 version SITOP UPS500P in long metal housing is ideally suited to distributed use.

■ Ordering data

	Article No.
SITOP UPS500S	
DC UPS basic device 15 A	
• with USB interface and 2.5 kW	**6EP1933-2EC41**
• with USB interface and 5 kW	**6EP1933-2EC51**
SITOP UPS501S	
Expansion module 5 kW for UPS500S	**6EP1935-5PG01**
SITOP UPS500P	
DC UPS basic device 7 A	
• with USB interface and 5 kW	**6EP1933-2NC01**
• with USB interface and 10 kW	**6EP1933-2NC11**
Accessories	
Connector set for UPS500P	**6EP1975-2ES00**
consisting of connector for input and output with pre-assembled USB cable (2 m long)	

■ More information

The SITOP Selection Tool offers detailed selection guidance according to criteria such as the required backup time, nominal current or peak current. Available at:
http://www.siemens.com/sitop-selection-tool

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■ Overview

DC UPS with battery modules

SITOP 24V power supplies can be expanded with an uninterruptible DC power supply (DC UPS) with battery modules for bridging power failures in the order of hours. They prevent expensive downtimes and undefined plant states.

In addition, the innovative SITOP UPS1600 offer new options for diagnostics and system integration.

The SITOP UPS1600 offers comprehensive functions, open communication via USB or Ethernet/Profinet and is fully integrated in Totally Integrated Automation (TIA).

■ Overview SITOP UPS1600
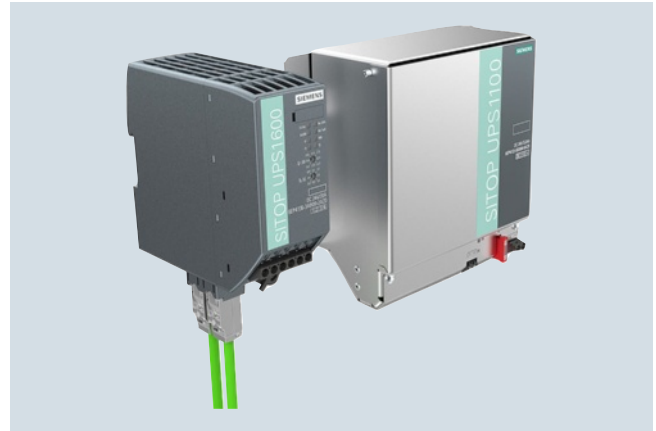
By combining one DC UPS module SITOP UPS1600 with at least one UPS1100 battery module and a SITOP power supply unit, longer power failures can be bridged without any interruption.

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 UPS Manager supports easy monitoring and configuration in PC systems, e.g. shutdown of several PCs in accordance with the master-slave principle. The integrated web server supports remote monitoring of the DC UPS.

■ Ordering data

	Article No.
SITOP UPS1600 24 V/ 10 A	**6EP4134-3AB00-0AY0**
• With USB interface	**6EP4134-3AB00-1AY0**
• With 2 Ethernet/ Profinet interfaces	**6EP4134-3AB00-2AY0**
SITOP UPS1600, 24 V/ 20 A	**6EP4136-3AB00-0AY0**
• With USB interface	**6EP4136-3AB00-1AY0**
• With 2 Ethernet/ Profinet interfaces	**6EP4136-3AB00-2AY0**
SITOP UPS1600 24 V/ 40 A	**6EP4137-3AB00-0AY0**
• With USB interface	**6EP4137-3AB00-1AY0**
• With 2 Ethernet/ Profinet interfaces	**6EP4137-3AB00-2AY0**
Starter Kit SITOP UPS1600	**6EP4134-3AB00-2AP0**
Comprising: SITOP UPS1600 DC UPS, 24 V DC/10 A with Ethernet/PROFINET interface; SITOP UPS1100 battery module 3.2 Ah; Industrial Ethernet cable; software tools and documentation on CD	

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PC-based Automation
DC UPS with battery modules

SITOP UPS1100 battery modules

■ Overview

Maintenance-free SITOP UPS1100 battery modules with 1.2 Ah up to 12 Ah 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) via the energy storage link of the connected battery modules.

For longer buffer times, up to six battery modules can be connected in parallel. Mounting onto standard mounting rail or directly to the wall.

■ Ordering data

	Article No.
SITOP UPS 1100 battery module 1.2 Ah	**6EP4131-0GB00-0AY0**
with maintenance-free, closed lead-acid batteries for DC UPS module SITOP UPS1600, 10 A	
SITOP UPS 1100 battery module 3.2 Ah	**6EP4133-0GB00-0AY0**
with maintenance-free, closed lead-acid batteries for DC UPS module SITOP UPS1600, 10 A and 20 A	
SITOP UPS 1100 battery module 7 Ah	**6EP4134-0GB00-0AY0**
with maintenance-free, closed lead-acid batteries for DC UPS module SITOP UPS1600, 10 A and 20 A	
SITOP UPS 1100 battery module 12 Ah	**6EP4135-0GB00-0AY0**
with maintenance-free, closed lead-acid batteries for DC UPS module SITOP UPS1600, 20 A and 40 A	
SITOP UPS 1100 battery module 2.5 Ah, high temperature	**6EP4132-0GB00-0AY0**
With maintenance-free, sealed rechargeable pure lead batteries for DC UPS module SITOP UPS1600, 10 A and 20 A	

■ More information

The SITOP Selection Tool offers more detailed selection guidance according to criteria such as the required backup time, nominal current and peak current:
http://www.siemens.com/sitop-selection-tool

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Overview

The operating systems listed in the table refer exclusively to the communication products specified!

Please refer to the description of the relevant IPC for the operating system that is available and has been released for that IPC.

Communication hardware	Communication software	Operating system environment of the communication software								SIMATIC Industrial PC/ Field PG									Embedded Systems — Operation system		Embedded Systems — SIMATIC Industrial-PC	
		Windows 7 Professional / Ultimate SP1	Windows 8.1 Pro / Enterprise	Windows Server 2008 R2 SP1	Windows Server 2012 R2	Windows Server 2008 + SP1/2	Windows XP Pro + SP3	Windows Server 2003 R2 / SP2	other operating systems	Field PG M4	SIMATIC IPC227D + IPC 277D	SIMATIC IPC427D + IPC 477D	SIMATIC IPC547E	SIMATIC IPC627D	SIMATIC IPC647D	SIMATIC HMI IPC677D	SIMATIC IPC827D	SIMATIC IPC847D	Windows Embedded Standard 2009	Windows Embedded Standard 7 + SP1	SIMATIC IPC427D + 477D + IPC 227D/277D	SIMATIC S7 modular Embedded Controller
CPs and software for Industrial Ethernet																						
CP 1613 A2 (PCI 32 Bit)	HARDNET-IE S7	●	●	●	●	●	●	●			●			●	●	●	●	●	●			
	HARDNET-IE S7 REDCONNECT [1]	●	●	●	●	●	●	●			●	○[4][5]		●	○[4][5]	●	●	●	●			
	S7 OPC Redundancy for Industrial Ethernet			●										●	●	●	●					
CP 1623 (PCIe x1)	HARDNET-IE S7	●	●	●	●	●	●	●				○[5]		●		○[5]	●	●	●	●	●	
	HARDNET-IE S7 REDCONNECT [1]	●	●	●	●	●	●	●				○[4][5]		○[4][5]		○[4][5]	○[5]				○[4][5]	
	S7 OPC Redundancy for Industrial Ethernet			●										●		●		●				
CP 1628 (PCIe x1)	HARDNET-IE S7	●	●	●	●							○[5]		●		○[5]	●	●	●			
	HARDNET-IE S7 REDCONNECT [1]	●	●	●	●							○[4][5]		○[4][5]		○[4][5]	○[5]				○[4][5]	
	S7 OPC Redundancy for Industrial Ethernet			●										●		●		●				
CP 1612 A2 (PCI 32 Bit)	SOFTNET-IE S7	●		●		●	●	●			●			●	●	●	●	●	●			
	SOFTNET-IE S7 Lean	●		●		●	●	●			●			●	●	●	●	●	●			
	SOFTNET-IE PG	●		●		●	●	●			●			●	●	●	●	●	●			
	S7 OPC Redundancy for Industrial Ethernet			●										●	●	●	●					
SIMATIC PG/PC with integral Ethernet interface	SOFTNET-IE S7	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
	SOFTNET-IE S7 Lean	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
	SOFTNET-IE PG	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
	S7 OPC Redundancy for Industrial Ethernet			●										●	●	●	●					
CPs and software for PROFINET																						
CP 1616 [1] (PCI 32 Bit)	DK-16xx PNIO	●	●			●			○[8]		○[6][7]	○		○[6]	○[6]	○	○[6]	○[6]	○			
CP 1604 [1] (PCI-104)	DK-16xx PNIO	●	●			●			○[8]										○			
SIMATIC PG/PC with integral Ethernet interface	SOFTNET PN IO	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
	Support package SIMATIC IPC for VxWorks								●			●		●	●		●	●				

1) and integrated CP1616-compatible onboard 3-port PROFINET interface
2) possible with restrictions, if necessary, depending on memory expansion and processor capacity
3) requires at least 2 PCI or 2 PCIe slots for redundant connection (4-way redundancy requires 4 free PCI or 4 PCIe slots!); hybrid configurations with CP 1613 A2 (PCI) and CP 1623 (PCIe) are possible, depending on PC expansion
4) without 4-way redundancy as there are only 2 slots
5) Observe restrictions for some PC versions: Number of slots and tolerable maximum heat loss/ power consumption per slot and in total
6) integrated CP1616-compatible onboard 3-port PROFINET interface is optional
7) only with integrated interface
8) Portioning DL-16xx PNIO

Notes
- Please always note the supplementary conditions for the specified SIMATIC NET products that you can view on the Internet pages shown below.
- for further details on XP embedded, see http://support.automation.siemens.com/WW/view/en/21661049
- further details on system requirements and operating environments can be found in the Readme file of the communication products on the SIMATIC NET PC Software DVD
- Updates and supplements to the catalog entries, as well as the above tables can be viewed at http://www.siemens.com/simatic-net/ik-info

● suitable
(blank) not suitable
○ suitable under certain conditions

G_IK10_XX_10225

Connection options of Industrial Ethernet CPs to PG/PC/IPC

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PC-based Automation
Communication
Industrial Ethernet

CP 1604

■ Overview
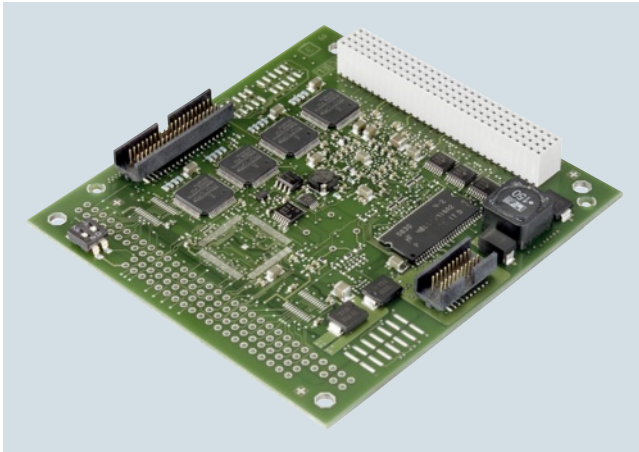
ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
	●	●	●				

- 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 included in delivery of module

■ Ordering data

	Article No.
CP 1604 communications processor	**6GK1160-4AA01**
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 German/English	
Accessories	
Connection board for CP 1604	**6GK1160-4AC00**
Connection board for CP 1604 with four RJ45 sockets incl. connecting cable	
Power supply for CP 1604	**6GK1160-4AP00**
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	
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 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	
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 Mbit/s RJ45 ports	

Note:

You can find order information for software under System connections – software overview

■ More information

The DK-16xx PN IO development kit can be found on the Internet at:
http://www.siemens.com/simatic-net/dk16xx

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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; German/English	
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 Mbit/s RJ45 ports	

Note:

You can find order information for software under System connections – software overview

More information

The DK-16xx PN IO development kit can be found on the Internet at:
http://www.siemens.com/simatic-net/dk16xx

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PC-based Automation
Communication
Industrial Ethernet

CP 1612 A2

Overview

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●	●		●	●	●	●

- 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 Mbit/s RJ45 port, electrical
- Automatic data transmission rate detection (10/100/1000 Mbit/s), 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 Mbit/s) 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

5

■ Overview

ISO	TCP/ UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	●

- PCI card (32 bit; 33 MHz/66 MHz; 3.3 V/5 V universal key) with microprocessor for connection of PG/PC to Industrial Ethernet with 10/100 Mbit/s autosensing/autonegotiation

- Communication services using
  - Open IE communication via TCP/IP and UDP)
  - ISO transport protocol
  - PG/OP communication
  - S7 communication
  - Open communication (SEND/RECEIVE)

- 15-pole ITP connection
- RJ45 connection
- Time synchronization
- ISO and TCP/IP transport protocol onboard
- SNMP-supported diagnostics
- The appropriate OPC server and configuration tools are included in the respective scope of supply of the communication software

■ Ordering data

	Article No.
CP 1613 A2 communications processor	**6GK1161-3AA01**
PCI card (32-bit, 33 MHz/66 MHz; 3.3 V/5 V universal keyed) for connection to Industrial Ethernet (10/100 Mbit/s) with ITP and RJ45 connection over HARDNET-IE S7/ S7-1613 and S7-REDCONNECT, for operating system support, see SIMATIC NET Software	
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

PC-based Automation
Communication
Industrial Ethernet

CP 1623

■ Overview

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	●

- PCI Express Card (PCIe x1) with an internal microprocessor for connection of PG/PC to Industrial Ethernet
- 10/100/1000 Mbit/s (autosensing/autocrossover/autonegotiation)
- Integrated 2-port switch (2 x RJ45 connection)
- Communications 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	**6GK1162-3AA00**
PCI Express x1 card for connection to Industrial Ethernet (10/100/1000 Mbit/s), with 2-port switch (RJ45) via HARDNET-IE S7/S7-1613 and S7-REDCONNECT. For operating system support, see SIMATIC NET Software	
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

■ Overview

ISO	TCP/ UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	●

- PCI Express card (PCIe x1) with its own microprocessor and integrated 2-port switch (2 x RJ45 connection, 10/100/1000 Mbit/s) for the connection of a PG/PC to Industrial Ethernet
- Integrated security mechanisms (e.g. firewall, VPN)
- ISO and TCP/IP transport protocol on board
- Communications 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	**6GK1162-8AA00**
PCI Express x1 card for connection to Industrial Ethernet (10/100/ 1 000 Mbit/s), 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	
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 will find more information on the topic of Industrial Security on the Internet at:
http://www.siemens.com/industrialsecurity

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PC-based Automation
Communication
Industrial Ethernet

HARDNET-IE S7-REDCONNECT

Overview
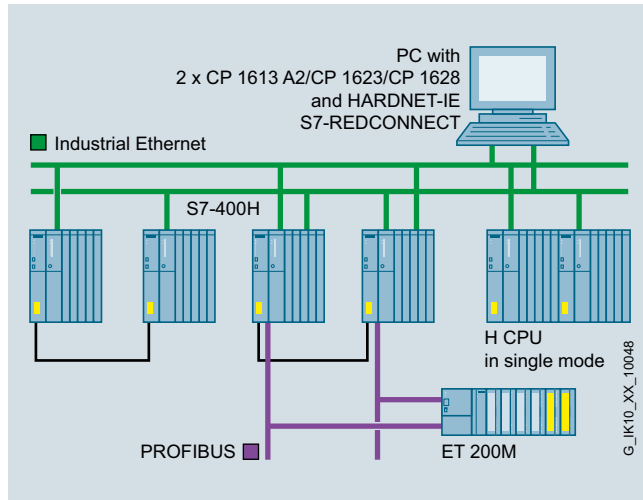
System configuration for S7-REDCONNECT

ISO	TCP/ UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●				●	●	●	

- For connecting PCs over redundant Industrial Ethernet to the SIMATIC S7-400H
- Protected 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 stick, Class A;	
For CP 1613 A2, CP 1623, CP 1628	
HARDNET-IE S7-REDCONNECT V13	
for 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English; single license for one installation	
• On DVD	**6GK1716-0HB13-0AA0**
• Download [1]	**6GK1716-0HB13-0AK0**
Software Update Service	**6GK1716-0HB00-3AL0**
For one 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	

Ordering data	Article No.
HARDNET-IE S7-REDCONNECT Powerpack 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 stick, Class A	
HARDNET-IE S7-REDCONNECT Powerpack V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English • On DVD • Download [1]	 6GK1716-0HB13-0AC0 6GK1716-0HB13-0AK1
CP 1613 A2 communications processor PCI card (32-bit, 33 MHz/66 MHz; 3.3 V/5 V universal keyed) for connection to Industrial Ethernet (10/100 Mbit/s) with ITP and RJ45 connection over HARDNET-IE S7 and S7-REDCONNECT, for operating system support, see SIMATIC NET Software	6GK1161-3AA01
CP 1623 communications processor PCI Express x1 card for connection to Industrial Ethernet (10/100/1000 Mbit/s), with 2-port switch (RJ45) via HARDNET-IE S7 and S7-REDCONNECT. For operating system support, see SIMATIC NET Software	6GK1162-3AA00
CP 1628 communications processor PCI Express x1 card for connection to Industrial Ethernet (10/100/1 000 Mbit/s), 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

[1] For more details of online software delivery, visit:
http://www.siemens.de/tia-online-software-delivery
under Ordering Data.

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PC-based Automation
Communication
Industrial Ethernet

SOFTNET for Industrial Ethernet

■ Overview
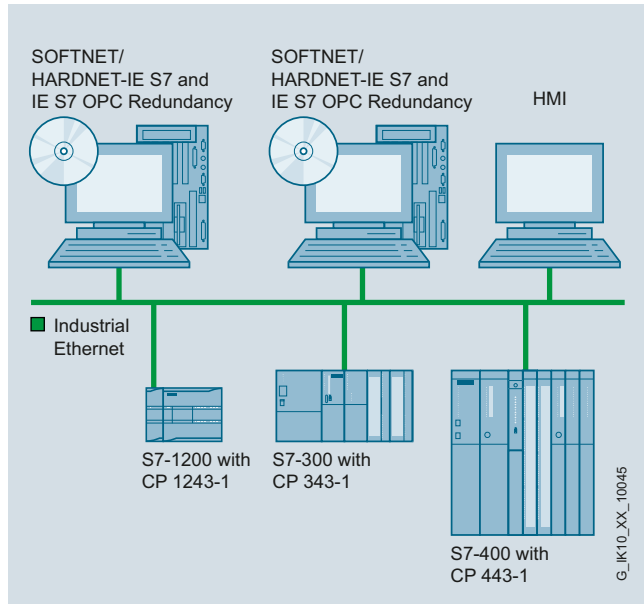
System configuration SOFTNET for Industrial Ethernet

ISO	TCP/ UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	

- Software for coupling programming devices/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

	Article No.
SOFTNET S7 for Industrial Ethernet Software for S7 and open communication, incl. OPC server, PG/OP communication, and NCM PC/STEP 7 Professional V12, runtime software, software and electronic manual on CD-ROM, license key on a USB stick, Class A	
SOFTNET-IE S7 V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English Up to 64 connections; Single License for one installation	
• On DVD	**6GK1704-1CW13-0AA0**
• Download [1]	**6GK1704-1CW13-0AK0**
Software Update Service	**6GK1704-1CW00-3AL0**
For 1 year with automatic extension; 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**

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Ordering data	Article No.
SOFTNET-IE S7 REDCONNECT VM V13	
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 stick, Class A For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English	
• Single license for one installation	**6GK1704-0HB13-0AA0**
SOFTNET-IE S7 Lean Edition V13	
For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; Up to eight connections; German/English; Single license for one installation	
• On DVD	**6GK1704-1LW13-0AA0**
• Download [1]	**6GK1704-1LW13-0AK0**
Software Update Service	**6GK1704-1LW00-3AL0**
For 1 year with automatic extension; 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 stick, Class A	
IE S7 OPC Redundancy V13	
for 64-bit: Windows 2008 Server R2 SP1; German/English	
• Single license for one installation	**6GK1706-1CW13-0AA0**

[1] For more details of online software delivery, visit:
http://www.siemens.de/tia-online-software-delivery
under Ordering Data.

5

PC-based Automation
Communication
Industrial Ethernet

SOFTNET PN IO

■ Overview
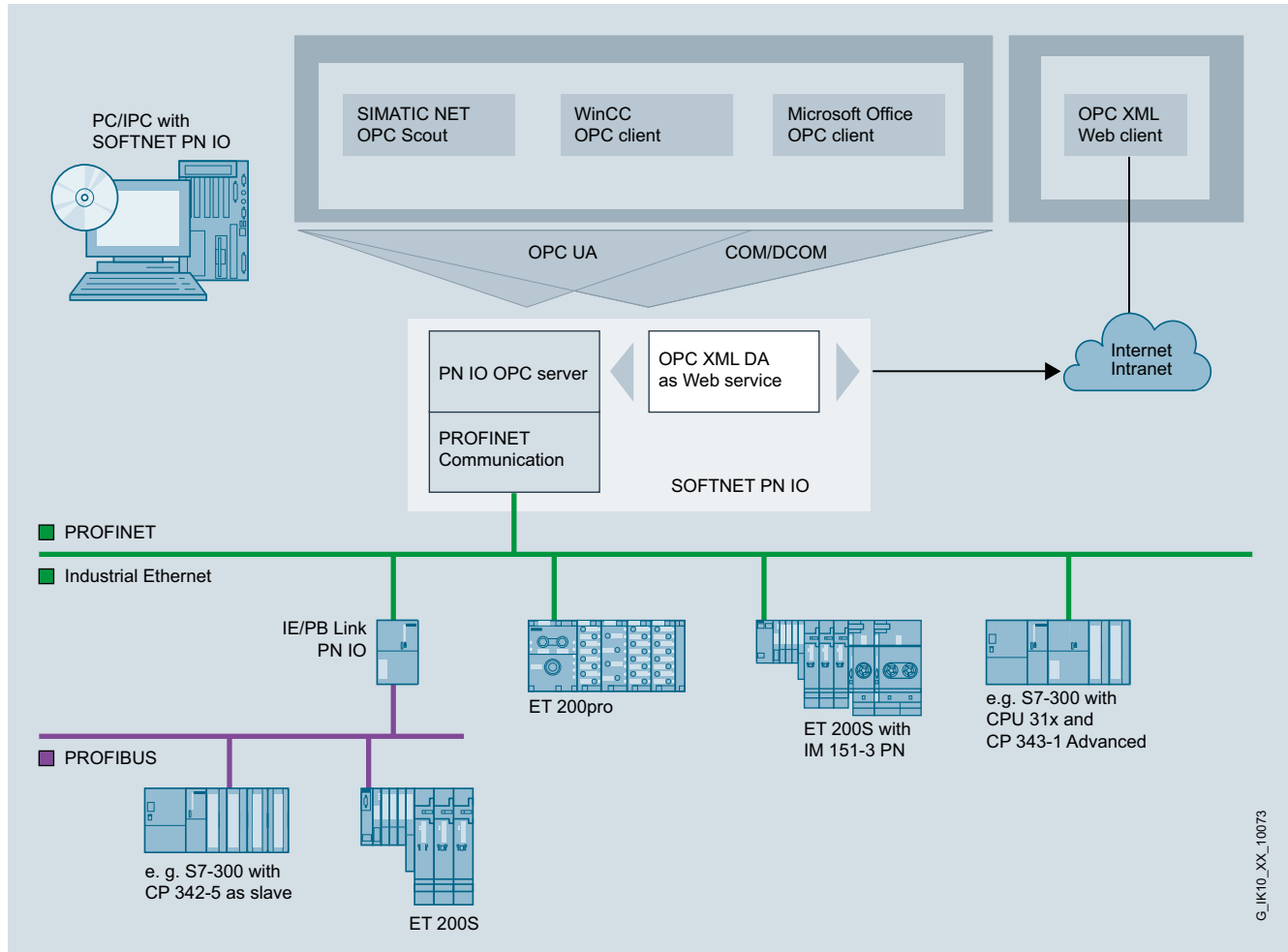
PC with SOFTNET PN IO as PROFINET IO Controller

ISO	TCP/ UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
	●	●		●			

- 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	Article No.
SOFTNET PN IO	
Software for PROFINET IO Controller with OPC server and NCM PC / STEP7 Professional V12, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A	
SOFTNET-IE PN IO V12	
For 32/64-bit Windows 7 Professional/Ultimate; for Windows 2008 Server R2; for 32/64 Bit Windows 8 Pro; for Windows Server 2012 German/English	
• Single License for one installation	**6GK1 704-1HW12-0AA0**
Software Update Service	**6GK1704-1HW00-3AL0**
for 1 year with automatic extension Requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET PN IO Edition 2008 or V12	**6GK1704-1HW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET PN IO Edition 2008 or V12	**6GK1704-1HW00-3AE1**

5

OPC server for Industrial Ethernet

■ **Overview**

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
- It permits 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.		Article No.
SNMP OPC Server	See SNMP OPC server	**S7 OPC Redundancy V13**	
Status monitoring of SNMP-capable devices in any OPC client systems; e.g. SIMATIC WinCC/PCS 7		For 64-bit: Windows 2008 Server R2 SP1; German/English	
		• Single License for one installation	**6GK1706-1CW13-0AA0**
S7 OPC Redundancy		**Software Update Service**	**6GK1706-1CW00-3AL0**
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		For 1 year with automatic extension; requirement: Current software version	

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 the redundant configuration of OPC UA servers to SIMATIC S7.

The availability of automation data to operator control and monitoring systems is guaranteed thanks to the redundant use of OPC UA servers. This requires neither additional cabling for synchronizing the redundant OPC UA servers, nor additional programming overhead in the PC. The OPC UA servers are synchronized via high-performance Industrial Ethernet network access points at 10/100 and 1000 Mpbs. S7 OPC Redundancy represents an integrated customer solution for all SIMATIC NET S7 SOFTNET and HARDNET software products in the automation world.

■ **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**
for 64-bit: Windows 2008 Server R2; German/English	
• Single License for one installation	

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PC-based Automation
Communication
Industrial Ethernet

SNMP OPC server

Overview
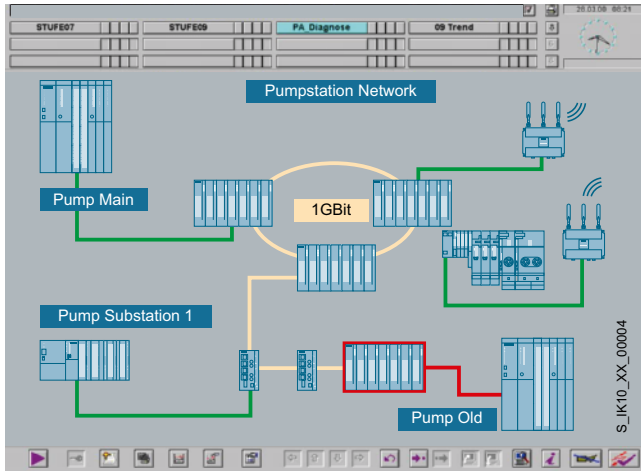
- Status monitoring of SNMP-capable devices in any OPC Client systems; e.g. SIMATIC WinCC/PCS 7
- Easy access to SNMP-capable devices over the OPC interface
- Devices without SNMP agents can be monitored using the ping mechanism
- Configuration with STEP 7 (up to STEP 7 V5.5) or NCM PC
- Ready-to-use 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 run-time software; software and electronic manual on CD-ROM; license key on USB stick, Class A	
SNMP OPC Server Basic	
Administration of up to 20 IP addresses	
• Basic V13 For 32/64 bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; Single license for one installation	6GK1706-1NW13-0AA0
Software Update Service SNMP OPC Server Basic	6GK1706-1NW00-3AL0
For 1 year with automatic extension; requirement: current software version	
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 V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; Single license for one installation	6GK1706-1NX13-0AA0
Software Update Service SNMP OPC Server Extended	6GK1706-1NX00-3AL0
For 1 year with automatic extension; requirement: Current software version	
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 Powerpack	
For upgrade from SNM OPC Server Basic to SNM OPC Server Extended	
Powerpack V13	6GK1706-1NW13-0AC0

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Ordering data

	Article No.		Article No.

Software

SOFTNET Security Client V4 — 6GK1704-1VW04-0AA0

Software for designing secure IP-based VPN connections from a programming device/PC to network segments which are secured by SCALANCE S in bridge mode; Single license for 1 installation, runtime software (German/English), configuring tool (German/English) and electronic manual on CD-ROM (German/English/French/Italian/Spanish) for 32-bit Windows, XP Professional + SP1, SP2, SP3; for 32/64-bit Windows 7 Ultimate/Business

For CP 1612 A2

Upgrade
- From V3.0 to SOFTNET Security Client V4 — 6GK1704-1VW00-0AE0
- From Edition 2008+HF1 to SOFTNET Security Client V4 — 6GK1704-1VW00-0AE1

SOFTNET PN IO

Software for PROFINET IO Controller with OPC server and NCM PC, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A

For CP 1612 A2

SOFTNET-IE PN IO V12

for 32/64-bit:
Windows 8.1 Pro, Windows 7 SP1 Professional/Ultimate;
for 64-bit:
Windows 2008 Server R2, Windows Server 2012
German/English
- Single License for one installation — 6GK1704-1HW12-0AA0

Software Update Service — 6GK1704-1HW00-3AL0

For 1 year with automatic extension; requirement: current software version

Upgrade
- From Edition 2006 to SOFTNET PN IO Edition 2008 or V12 — 6GK1704-1HW00-3AE0
- From V6.0, V6.1, V6.2 or V6.3 to SOFTNET PN IO Edition 2008 or V12 — 6GK1704-1HW00-3AE1

SOFTNET S7 for Industrial Ethernet

Software for S7 and open communication, including OPC server, PG/OP communication and NCM PC, runtime software, software and electronic manual on CD-ROM, license key on a USB stick, Class A

For CP 1612 A2

SOFTNET-IE S7 V13

For 32/64-bit:
Windows 7 SP1 Professional/Ultimate;
For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1;
Windows Server 2012 R2;
German/English

Up to 64 connections; single license for one installation
- On DVD — 6GK1704-1CW13-0AA0
- Download [1] — 6GK1704-1CW13-0AK0

Software Update Service — 6GK1704-1CW00-3AL0

For 1 year with automatic extension; 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 Lean V13

For 32/64-bit:
Windows 7 SP1 Professional/Ultimate;
For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1; Windows Server 2012 R2;
German/English

Up to eight connections;
Single License for one installation
- On DVD — 6GK1704-1LW13-0AA0
- Download [1] — 6GK1704-1LW13-0AK0

Software Update Service — 6GK1704-1LW00-3AL0

For 1 year with automatic extension; 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

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Communication for PC-based systems – Software

Ordering data	Article No.		Article No.
SOFTNET-IE PG **for Industrial Ethernet** Software for PG/OP communication, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A *For CP 1612 A2*		**HARDNET-IE S7** **for Industrial Ethernet** Software for S7 and open communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A; for CP 1613/CP 1613 A2/CP 1623/CP 1628 *For CP 1613 A2, CP 1623, CP 1628*	
SOFTNET-IE PG V12 For 32/64-bit: Windows 8.1 Pro, Windows 7 SP1 Professional/Ultimate; For 64-bit: Windows 2008 Server R2 SP1, Windows Server 2012 R2; German/English • Single license for one installation, on DVD	6GK1704-1PW12-0AA0	**HARDNET-IE S7 V8.2** for 32/64-bit: Windows Server 2012, Windows 8 Pro, Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English; single license for one installation • On DVD • Download [1]	6GK1716-1CB12-0AA0 6GK1716-1CB12-0AK0
Upgrade • From Edition 2006 to Edition 2008 or V12 • From V6.0, V6.1, V6.2 or V6.3 to Edition 2008 or V12	6GK1704-1PW00-3AE0 6GK1704-1PW00-3AE1	**Software Update Service** For 1 year with automatic extension; requirement: current software version	6GK1716-1CB00-3AL0
		Upgrade • S7-1613, Edition 2006 or higher, to S7-1613 Edition 2008 or HARDNET-IE S7 V12 • from S7-1613 V6.0, V6.1, V6.2 or V6.3 to S7-1613 Edition 2008 or HARDNET-IE S7 V12	6GK1716-1CB00-3AE0 6GK1716-1CB00-3AE1

[1] For more details of Online Software Delivery, visit:
http://www.siemens.com/tia-online-software-delivery
under Ordering Data.

Note:

The Windows XP software version is still available for older CPs, see the Industry Mall: http://www.siemens.com/industrymall

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Overview
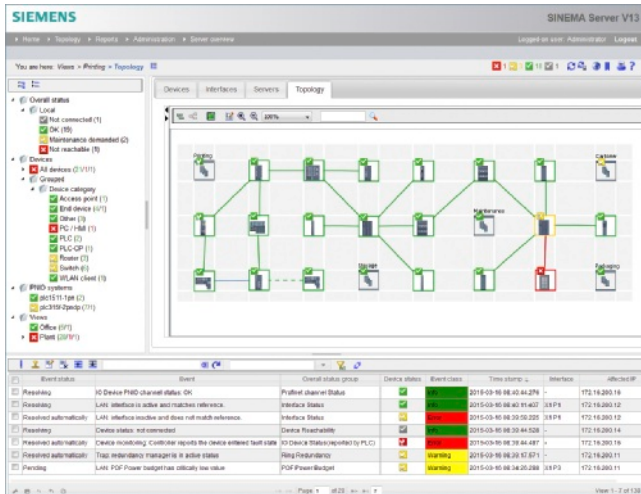
The SINEMA Server software has been specially developed for industrial applications. Using SNMP for all classic network components and by evaluating SIMATIC and PROFINET modules in the automation environment, complete networks can be analyzed and monitored. Captured data is stored in a long-term archive and can thus be evaluated as required and presented in the form of reports. The network diagnosis can additionally be integrated seamlessly into HMI/SCADA systems (e.g. WinCC, PCS7) by means of OPC and web mechanisms.

Main features:
- Ease of operation
- Automatic detection of all components in the network
- Clear display of the network topology
- Event-based signaling system for transparent representation of network diagnostics
- SIMATIC diagnostics (S7-300, S7-400)
- PROFINET diagnostics
- Standardized network documentation (reports) even for longer periods
- User-based adaptation of user interfaces
- Access possible via any standard web browser
- "Server Overview" cross-server status view
- Data export in CSV format for cross-server evaluation
- Profile concept for integration of any required network device
- HMI connection via URL and OPC server

Ordering data

	Article No.
SINEMA Server V13 Network monitoring software for industrial Ethernet and PROFINET networks, runtime software, software and electronic manual on DVD (not with download), license key on USB stick (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) English/German/French/Chinese. Other languages possible on request.	
For 50 devices that can be identified via IP address • On DVD • Download [1]	6GK1781-1BA13-0AA0 6GK1781-1BA13-0AK0
For 100 devices that can be identified via IP address • On DVD • Download [1]	6GK1781-1DA13-0AA0 6GK1781-1DA13-0AK0
For 250 devices that can be identified via IP address • On DVD • Download [1]	6GK1781-1JA13-0AA0 6GK1781-1JA13-0AK0
For 500 devices that can be identified via IP address • On DVD • Download [1]	6GK1781-1TA13-0AA0 6GK1781-1TA13-0AK0
Upgrade SINEMA Server V12 to V13 • On DVD • Download [1]	6GK1781-2AA13-0AA0 6GK1781-2AA13-0AK0

[1] For more details of online software delivery, visit:
http://www.siemens.com/tia-online-software-delivery
under Ordering Data.

5

PC-based Automation
Communication
PROFIBUS

Connection options to SIMATIC PCs

■ Overview

Communication hardware	Communication software	Operating system environment of the communication software								SIMATIC Industrial PC/ Field PG									Embedded Systems — Operation system		SIMATIC Industrial PC [3]	
		Windows 7 Professional / Ultimate SP1	Windows 8.1 Pro / Enterprise	Windows Server 2008 R2 SP1	Windows Server 2012 R2	Windows Server 2008 + SP1/2	Windows XP Pro + SP3	Windows Server 2003 R2 / SP2	other operating systems	Field PG M4	SIMATIC IPC227D + IPC 277D	SIMATIC IPC427D + IPC 477D	SIMATIC IPC547E	SIMATIC IPC627D	SIMATIC IPC647D	SIMATIC HMI IPC677D	SIMATIC IPC827D	SIMATIC IPC847D	Windows Embedded Standard 2009	Windows Embedded Standard 7 + SP1	SIMATIC IPC427D + 477D + IPC 227D/277D	SIMATIC S7 modular Embedded Controller
CPs and software for PROFIBUS																						
CP 5603 (PCI-104)	CP with DP-Base	●	●	●	●	●	●	●				●							●	●	●	
	HARDNET-PB DP DK [1]	○	○	○	○	○	○	○	○			○							○	○	○	○[5]
	HARDNET-PB DP	●	●	●	●	●	●	●				●							●	●	●	
	HARDNET-PB S7	●	●	●	●	●	●	●				●							●	●	●	
	S7 OPC Redundancy for PROFIBUS			●																		
CP 5613 A2, CP 5614 A2 (PCI 32 Bit)	CP with DP-Base	●	●	●	●	●	●	●						●	●	●	●	●				
	HARDNET-PB DP DK [1]	○	○	○	○	○	○	○	○					○	○	○	○	○	○	○		
	HARDNET-PB DP	●	●	●	●	●	●	●						●	●	●	●	●				
	HARDNET-PB S7	●	●	●	●	●	●	●						●	●	●	●	●				
	S7 OPC Redundancy for PROFIBUS			●										●		●		●				
CP 5613 A3, CP 5614 A3 (PCI 32 Bit)	CP with DP-Base	●	●	●	●									●	●	●		●	●			
	HARDNET-PB DP DK [1]	○	○	○	○	○	○	○	○					○	○	○		○	○	○	○	
	HARDNET-PB DP	●	●	●	●									●	●	●		●	●			
	HARDNET-PB S7	●	●	●	●									●	●	●		●	●			
	S7 OPC Redundancy for PROFIBUS			●										●		●		●				
CP 5623, CP 5624 (PCIe x1)	CP with DP-Base	●	●	●	●	●	●	●				●		○[4]		○[4]	●	●[4]		●		
	HARDNET-PB DP DK [1]	○	○	○	○	○	○	○	○			○		○		○[4]	○	○	○	○		
	HARDNET-PB DP	●	●	●	●	●	●	●				●		○[4]		○[4]	●	●[4]		●		
	HARDNET-PB S7	●	●	●	●	●	●	●				●		○[4]		○[4]	●	●[4]		●		
	S7 OPC Redundancy for PROFIBUS			●														●[4]				
CP 5612 (PCI 32 Bit)	SOFTNET-PB DP	●	●	●	●	●	●	●						●	●	●	●	●				
	SOFTNET-PB DP Slave	●	●	●	●	●	●	●						●	●	●	●	●				
	SOFTNET-PB S7	●	●	●	●	●	●	●						●	●	●	●	●				
	S7 OPC Redundancy for PROFIBUS			●										●		●		●				
CP 5622 (PCIe x1)	SOFTNET-PB DP	●	●	●	●	●	●	●		●		●		○[4]		○[4]	●	●[4]				
	SOFTNET-PB DP Slave	●	●	●	●	●	●	●		●		●		○[4]		○[4]	●	●[4]				
	SOFTNET-PB S7	●	●	●	●	●	●	●		●		●		○[4]		○[4]	●	●[4]				
	S7 OPC Redundancy for PROFIBUS			●								●						●[4]				
CP 5711 (USB V2.0)	SOFTNET-PB DP	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●		●
	SOFTNET-PB DP Slave	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●		●
	SOFTNET-PB S7	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●		●
	S7 OPC Redundancy for PROFIBUS			●						●				●		●		●				●
SIMATIC PG/PC	SOFTNET-PB DP	●	●	●	●	●	●	●		●		○[2]		○[2]	○[2]	○[2]	○[2]	○[2]	●	●	○[2]	
	SOFTNET-PB DP Slave	●	●	●	●	●	●	●		●		○[2]		○[2]	○[2]	○[2]	○[2]	○[2]	●	●	○[2]	
	SOFTNET-PB S7	●	●	●	●	●	●	●		●		○[2]		○[2]	○[2]	○[2]	○[2]	○[2]	●	●	○[2]	
	S7 OPC Redundancy for PROFIBUS			●												○[2]		○[2]				

1) In order to use these CPs in other operating system environments, it is required to port HARDNET DP Development Kits (DK-5613) into the respective operating system. You can request the HARDNET DP DK in the Internet under www.siemens.com/simatic-net/dk5613.
2) integrated PROFIBUS interface is optional
3) depending on available memory and processor performance there could be restrictions
4) Observe restrictions for some PC versions: Number of slots and tolerable maximum heat loss/ power consumption per slot and in total
5) EM-PCI 104 expansion module is required

Notes
- Please always note the supplementary conditions for the specified SIMATIC NET products that you can view on the Internet pages shown below.
- for further details on XP embedded, see http://support.automation.siemens.com/WW/view/en/21661049
- further details on system requirements and operating environments can be found in the Readme file of the communication products on the SIMATIC NET PC Software DVD
- Updates and supplements to the catalog entries, as well as the above tables can be viewed at http://www.siemens.com/simatic-net/ik-info

● suitable

not suitable

○ suitable under certain conditions

G_IK10_XX_50025

Connection options of PROFIBUS CPs to PG/PC

Note:
The operating systems listed refer exclusively to the communication products specified!

For the actual operating system that is available and has been released, please refer to the description of the corresponding IPC.

Overview
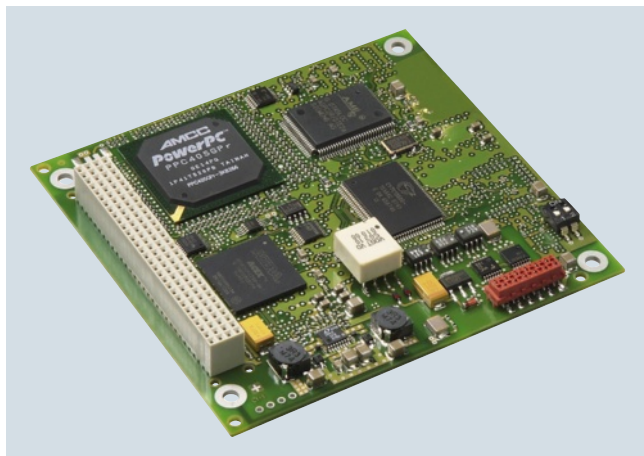
DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●	●	●	●	●

- PCI-104 interface card with own microprocessor for connecting embedded systems with PCI-104 interface to PROFIBUS at up to 12 Mbit/s
- 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 — Article No.

Ordering data	Article No.
CP 5603 communications processor 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; German/English	6GK1560-3AA00
CP 5603 Microbox Package For use of CP 5603 in Microbox 420/427B/427C; consisting of CP 5603 module and Microbox expansion frame	6GK1560-3AU00
CP 5603 expansion rack For use in Microbox 420/427B/427C with mounting material	6GK1560-3AA00-0AU0
CP 5603 mEC Package For use of CP 5603 in SIMATIC S7-MEC; consisting of CP 5603 and withdrawable unit for CP 5603 for installation in the EM PCI-104 expansion module of the SIMATIC S7-MEC	6GK1560-3AE00
CP 5603 insert plate Metal plate with RS485 cutout for inserting for the S7 modular embedded controller	6GK1560-3AA00-0AE0
HARDNET-PB DP Development Kit HARDNET-PB DP Development Kit software for CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; for integration into other operating system environments on systems with a PCI slot	See http://www.siemens.com/simatic-net/dk5613

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CP 5603

▪ Ordering data	Article No.		Article No.
HARDNET-PB DP		**FMS-5613 Edition 2008**	6GK1713-5FB71-3AA0
Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624		Software for FMS protocol incl. PG/OP communication; FDL, FMS-OPC server and NCM PC; runtime software, software and electronic manual on USB stick, Class A, for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; for CP 5603, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; German/English Single License for one installation	
HARDNET-PB DP V8.2	6GK1713-5DB08-2AA0		
For 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation			
DP-5613 Edition 2008	6GK1713-5DB71-3AA0	**Software Update Service**	6GK1713-5FB00-3AL0
For 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation		For 1 year with automatic extension; requirement: current software version	
Software Update Service	6GK1713-5DB00-3AL0	**Upgrade** • From Edition 2006 or 2007 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE0
For 1 year with automatic extension; requirement: current software version		• From V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE1
Upgrade • From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V8.1	6GK1713-5DB00-3AE0	**Accessories**	
		PROFIBUS FastConnect bus connector RS485 Plug 180	6GK1500-0FC10
• From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET-PB DP V8.1	6GK1713-5DB00-3AE1	With 180° cable outlet, insulation displacement	
HARDNET-PB S7		**PROFIBUS FC Standard Cable GP**	6XV1830-0EH10
Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624		Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m	
HARDNET-PB S7 V8.2	6GK1713-5CB08-2AA0	**PROFIBUS FastConnect Stripping Tool**	6GK1905-6AA00
For 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation		Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
S7-5613 Edition 2008	6GK1713-5CB71-3AA0	**PROFIBUS bus terminal 12M**	6GK1500-0AA10
For 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation		Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	
Software Update Service	6GK1713-5CB00-3AL0		
For 1 year with automatic extension; requirement: current software version			
Upgrade • From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE0		
• From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE1		

Note:

You can find order information for software for communication with PC systems under System connections – software overview

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▪ **More information**

You can find the HARDNET-PB DP Development Kit on the Internet at:
http://www.siemens.com/simatic-net/dk5613

Overview

DP−M	DP−S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- 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 Mbit/s
- Communication services:
  - PROFIBUS DP master according to IEC 61158/61784 on a 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

	Article No.
CP 5613 A3 communications processor 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**
HARDNET-PB DP Development Kit HARDNET-PB DP Development Kit software for CP 5613 A2/CP 5614 A2/ CP 5613 A3/ CP 5614 A3/ CP 5603/ CP 5623/ CP 5624 for integration into other operating system environments	See http://www.siemens.com/simatic-net/dk5613
HARDNET-PB DP Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; 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 5613 A3/ CP 5614 A3/ CP 5603/ CP 5623/ CP 5624	
HARDNET-PB DP V12 for 32/64-bit: Windows 7 Professional/ Ultimate; for 32/64-bit: Windows 8 Pro for 64-bit: Windows 2008 Server R2 for 64-bit: Windows 2012 Server German/English Single License for one installation	**6GK1713-5DB12-0AA0**
Software Update Service For 1 year with automatic extension; requirement: current software version	**6GK1713-5DB00-3AL0**
Upgrade • From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V12	**6GK1713-5DB00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET-PB DP V12	**6GK1713-5DB00-3AE1**

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CP 5613 A3

■ Ordering data	Article No.
HARDNET-PB S7	
Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A, for CP 5603, CP 5613 A2/A3, CP 5623, CP 5614 A2/A3, CP 5624;	
HARDNET-PB S7 V12	**6GK1713-5CB12-0AA0**
for 32/64-bit: Windows 7 Professional/ Ultimate; for 32/64-bit: Windows 8 Pro for 64-bit: Windows 2008 Server R2 for 64-bit: Windows 2012 Server German/English Single License for one installation	
Software Update Service	**6GK1713-5CB00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V12	**6GK1713-5CB00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V12	**6GK1713-5CB00-3AE1**

	Article No.
Accessories	
PROFIBUS FC Standard Cable GP	
Standard type with special design for quick assembly, 2-core, shielded, sold in meters; delivery unit max. 1000 m, minimum order 20 m	
PROFIBUS FastConnect bus connector RS 485 Plug 180	**6GK1500-0FC10**
With 180° cable outlet, insulation displacement	
PROFIBUS bus terminal 12M	**6GK1500-0AA10**
Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	
PROFIBUS FastConnect Stripping Tool	**6GK1905-6AA00**
Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	

Note:

You can find order information for software for communication with PC systems under System connections – software overview

■ More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

The CP 5613 A3 module can also be used under the LINUX and UNIX operating systems. Information on the available LINUX distributors and UNIX operating systems can be found at:

http://www.siemens.com/simatic-net/ik-info

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Overview

DP−M	DP−S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- 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 Mbit/s
- 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

	Article No.
CP 5614 A3 communications processor	**6GK1561-4AA02**
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; German/English	
HARDNET-PB DP Development Kit	See http://www.siemens.com/simatic-net/dk5613
HARDNET-PB DP Development Kit software for CP 5613 A2/CP 5614 A2/ CP 5613 A3/ CP 5614 A3/ CP 5603/ CP 5623/ CP 5624 for integration into other operating system environments	
HARDNET-PB DP	
Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; 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 5613 A3/ CP 5614 A3/ CP 5603/ CP 5623/ CP 5624	
HARDNET-PB DP V12	**6GK1713-5DB12-0AA0**
for 32/64-bit: Windows 7 Professional/ Ultimate; for 32/64-bit: Windows 8 Pro for 64-bit: Windows 2008 Server R2 for 64-bit: Windows 2012 Server German/English Single License for one installation	
Software Update Service	**6GK1713-5DB00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V12	**6GK1713-5DB00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET-PB DP V12	**6GK1713-5DB00-3AE1**

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CP 5614 A3

■ Ordering data

	Article No.
HARDNET-PB S7	
Software for S7 communication incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A; for CP 5613 A2/CP 5614 A2/ CP 5613 A3/ CP 5614 A3/ CP 5603/ CP 5623/ CP 5624	
HARDNET-PB S7 V12	6GK1713-5CB12-0AA0
For 32/64-bit: Windows 7 Professional/ Ultimate; for 32/64-bit: Windows 8 Pro for 64-bit: Windows 2008 Server R2 for 64-bit: Windows 2012 Server German/English Single License for one installation	
Software Update Service	
For 1 year with automatic extension; requirement: current software	6GK1713-5CB00-3AL0
Upgrade	
• From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V12	6GK1713-5CB00-3AE0
• From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V12	6GK1713-5CB00-3AE1

	Article No.
Accessories	
PROFIBUS FastConnect bus connector RS 485 Plug 180	6GK1500-0FC10
With 180° cable outlet, insulation displacement	
PROFIBUS FC Standard Cable GP	6XV1830-0EH10
Standard type with special design for fast mounting, 2-core, shielded, sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m	
PROFIBUS FastConnect Stripping Tool	6GK1905-6AA00
Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
PROFIBUS bus terminal 12M	6GK1500-0AA10
Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	

Note:

You can find order information for software for communication with PC systems under System connections – software overview

■ More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

The CP 5614 A3 module can also be used under the LINUX and UNIX operating systems. Information on the available LINUX distributors and UNIX operating systems can be found at:

http://www.siemens.com/simatic-net/ik-info

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Overview

DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●	●	●	●	●

- PCI Express card (PCIe x1) with own microprocessor for connecting PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbit/s
- Communication services:
  - PROFIBUS DP master Class 1 and 2 or DP slave according to IEC 61158/61784 on a 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

	Article No.
CP 5623 communications processor	**6GK1562-3AA00**
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; German/English	
HARDNET-PB DP Development Kit	See http://www.siemens.com/simatic-net/dk5613
HARDNET-PB DP Development Kit software for CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; for integration into other operating system environments on systems with a PCI or PCI Express slot	
HARDNET-PB DP	
Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624;	
HARDNET-PB DP V8.2	**6GK1713-5DB08-2AA0**
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
DP-5613, Edition 2008	**6GK1713-5DB71-3AA0**
for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation	
Software Update Service	**6GK1713-5DB00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V8.1	**6GK1713-5DB00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET-PB DP V8.1	**6GK1713-5DB00-3AE1**

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CP 5623

■ Ordering data

	Article No.
HARDNET-PB S7	
Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624	
HARDNET-PB S7 V8.2	6GK1713-5CB08-2AA0
for 32/64-bit: Windows 7 Professional/ Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
S7-5613 Edition 2008	6GK1713-5CB71-3AA0
for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation	
Software Update Service	6GK1713-5CB00-3AL0
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE0
• From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE1
FMS-5613 Edition 2008	6GK1713-5FB71-3AA0
Software for FMS protocol incl. PG/OP communication; FDL, FMS-OPC server and NCM PC; runtime software, software and electronic manual on USB stick, Class A, for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; for CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; German/English Single License for one installation	
Software Update Service	6GK1713-5FB00-3AL0
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE0
• From V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE1

	Article No.
Accessories	
PROFIBUS FastConnect bus connector RS485 Plug 180	6GK1500-0FC10
With 180° cable outlet, insulation displacement	
PROFIBUS FC Standard Cable GP	6XV1830-0EH10
Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m	
PROFIBUS FastConnect Stripping Tool	6GK1905-6AA00
Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
PROFIBUS bus terminal 12M	6GK1500-0AA10
Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	

Note:

You can find order information for software for communication with PC systems under System connections – software overview

■ More information

You can find the HARDNET-PB DP Development Kit on the Internet at:

http://www.siemens.com/simatic-net/dk5613

The CP 5623 module can also be used under LINUX and UNIX operating systems. Information on the available LINUX distributors and UNIX operating systems can be found at:
http://www.siemens.com/simatic-net/ik-info

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Overview
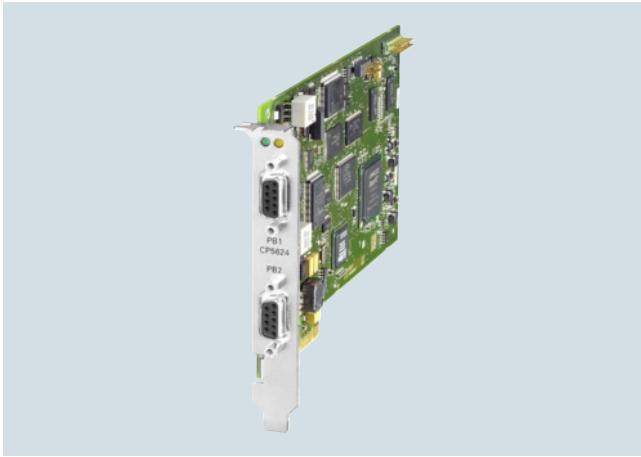
DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●	●	●	●	●

- PCI Express card (PCIe x1) with own microprocessor for connecting PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbit/s
- 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

	Article No.
CP 5624 communications processor	**6GK1562-4AA00**
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; German/English	
HARDNET-PB DP Development Kit	See http://www.siemens.com/simatic-net/dk5613
HARDNET-PB DP Development Kit software for CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; for integration into other operating system environments on systems with a PCI or PCI Express slot	
HARDNET-PB DP	
Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624;	
HARDNET-PB DP V8.2	**6GK1713-5DB08-2AA0**
For 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
DP-5613, Edition 2008	**6GK1713-5DB71-3AA0**
for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation	
Software Update Service	**6GK1713-5DB00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V8.1	**6GK1713-5DB00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET DP V8.1	**6GK1713-5DB00-3AE1**

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PC-based Automation
Communication
PROFIBUS

CP 5624

■ **Ordering data**	Article No.		■	Article No.
HARDNET-PB S7			*Accessories*	
Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A, for CP 5603, CP 5613 A2, CP 5623, CP 5614 A2, CP 5624;			**PROFIBUS FastConnect bus connector RS485 Plug 180**	6GK1500-0FC10
			With 180° cable outlet, insulation displacement	
			PROFIBUS FC Standard Cable GP	6XV1830-0EH10
HARDNET-PB S7 V8.2	6GK1713-5CB08-2AA0		Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m	
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation				
			PROFIBUS FastConnect Stripping Tool	6GK1905-6AA00
S7-5613 Edition 2008	6GK1713-5CB71-3AA0		Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation			**PROFIBUS bus terminal 12M**	6GK1500-0AA10
			Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	
Software Update Service	6GK1713-5CB00-3AL0			
For 1 year with automatic extension; requirement: current software version			Note:	
Upgrade			You can find order information for software for communication with PC systems under System connections – software overview	
• From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE0			
• From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V8.1	6GK1713-5CB00-3AE1		■ **More information**	
FMS-5613 Edition 2008	6GK1713-5FB71-3AA0		You can find the HARDNET-PB DP Development Kit on the Internet at:	
Software for FMS protocol incl. PG/OP communication; FDL, FMS-OPC server and NCM PC; runtime software, software and electronic manual on USB flash drive, Class A, for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; for CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; German/English Single License for one installation			http://www.siemens.com/simatic-net/dk5613	
Software Update Service	6GK1713-5FB00-3AL0			
For 1 year with automatic extension; requirement: current software version				
Upgrade				
• From Edition 2006 or 2007 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE0			
• From V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008	6GK1713-5FB00-3AE1			

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Overview

DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- PCI card (universal-keyed 5 V/3.3 V) for connecting PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbit/s 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 the 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)

- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software.

Ordering data | Article No.

CP 5612 communications processor	
• PCI card (32-bit) for connection of a programming device or PC to PROFIBUS	**6GK1561-2AA00**
• PCI card (32-bit) CP 5612 and MPI cable, 5 m	**6GK1561-2AM00**
SOFTNET-PB S7	
Software for S7 communication, incl. FDL protocol with OPC server and NCM PC, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5512, CP 5611, CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB S7 V8.2	**6GK1704-5CW08-2AA0**
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
Software Update Service	**6GK1704-5CW00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE1**
SOFTNET-PB DP	
Software for DP protocol (master class 1 and 2), incl. FDL protocol with OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB DP V8.2	**6GK1704-5DW08-2AA0**
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
Software Update Service	**6GK1704-5DW00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Edition 2008 or V8.1	**6GK1704-5DW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 or V8.1	**6GK1704-5DW00-3AE1**

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PC-based Automation
Communication
PROFIBUS

CP 5612

■ Ordering data

	Article No.		Article No.
SOFTNET-PB DP Slave		**Accessories**	
Software for DP slave, with DP OPC server and NCM PC, Single License for one installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711;		**PROFIBUS FastConnect bus connector RS485 Plug 180**	6GK1500-0FC10
		With 180° cable outlet, insulation displacement	
		PROFIBUS FC Standard Cable GP	6XV1830-0EH10
SOFTNET-PB DP Slave V8.2	6GK1704-5SW08-2AA0	Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m	
for 32/64-bit: Windows 7 Professional/ Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation		**PROFIBUS FastConnect Stripping Tool**	6GK1905-6AA00
		Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
Software Update Service	6GK1704-5SW00-3AL0	**PROFIBUS bus terminal 12M**	6GK1500-0AA10
For 1 year with automatic extension; requirement: current software version		Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	
Upgrade			
• From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE0		
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE1		

Note:

You can find order information for software for communication with PC systems under System connections – software overview

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PC-based Automation
Communication
PROFIBUS

CP 5622

Overview

DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

G_K10XX_10182

- PCI Express card (PCIe x1) for connection of PCs and SIMATIC PG/PC to PROFIBUS at up to 12 Mbit/s and to the MPI of the 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 the 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)

- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software

Ordering data

	Article No.
CP 5622 communications processor	
• PCI Express x1 card (32-bit) for connection of a PG or PC to PROFIBUS	**6GK1562-2AA00**
• PCI Express x1 card (32-bit) CP 5622 and MPI cable, 5 m	**6GK1562-2AM00**
SOFTNET-PB S7	
Software for S7 communication, incl. FDL protocol with OPC server and NCM PC, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5512, CP 5611, CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB S7 V8.2	**6GK1704-5CW08-2AA0**
For 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
Software Update Service	**6GK1704-5CW00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE1**
SOFTNET-PB DP	
Software for DP protocol (master class 1 and 2), incl. FDL protocol with OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB DP V8.2	**6GK1704-5DW08-2AA0**
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
Software Update Service	**6GK1704-5DW00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Edition 2008 or V8.1	**6GK1704-5DW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 or V8.1	**6GK1704-5DW00-3AE1**

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PC-based Automation
Communication
PROFIBUS

CP 5622

Ordering data	Article No.			Article No.
SOFTNET-PB DP Slave		**Accessories**		
Software for DP slave, with DP OPC server and NCM PC, Single License for one installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711		**PROFIBUS FastConnect bus connector RS485 Plug 180** With 180° cable outlet, insulation displacement	6GK1500-0FC10	
SOFTNET-PB DP Slave V8.2	6GK1704-5SW08-2AA0	**PROFIBUS FC Standard Cable GP**	6XV1830-0EH10	
for 32/64-bit: Windows 7 Professional/ Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation		Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m		
Software Update Service	6GK1704-5SW00-3AL0	**PROFIBUS FastConnect Stripping Tool**	6GK1905-6AA00	
For 1 year with automatic extension; requirement: current software version		Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables		
Upgrade • From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE0	**PROFIBUS bus terminal 12M**	6GK1500-0AA10	
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE1	Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long		

Note:

You can find order information for software for communication with PC systems under System connections – software overview

5

Overview

DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- 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 end station of a segment
- Robust USB connection due to mechanical locking of the USB connector to the CP 5711 enclosure
- 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 the FDL interface) with SOFTNET-PB DP or SOFTNET-PB S7 software package
- PROFIBUS connection with up to 12 Mbit/s
- 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

	Article No.
CP 5711 communications processor	
for connection of a programming device or notebook to PROFIBUS or MPI, under 32 bit in connection with PROFIBUS SOFTNET software or STEP 7; German/English	
• USB V2.0 adapter	**6GK1571-1AA00**
• USB V2.0 adapter CP 5711 and MPI cable, 5 m	**6GK1571-1AM00**
Mounting rail support for CP 5711	**6GK1571-1AA00-0AH0**
Compartment for CP 5711 enclosure; fastened mechanically to 35 mm DIN rail	
SOFTNET-PB S7	
Software for S7 communication, incl. FDL protocol with OPC server and NCM PC, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB S7 V8.2	**6GK1704-5CW08-2AA0**
for 32/64-bit: Windows 7 Professional/Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
SOFTNET-S7 Edition 2008 (V7.1)	**6GK1704-5CW71-3AA0**
for 32-bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; German/English Single License for one installation	
Software Update Service	**6GK1704-5CW00-3AL0**
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 or V8.1	**6GK1704-5CW00-3AE1**

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PC-based Automation
Communication
PROFIBUS

CP 5711

■ Ordering data

SOFTNET-PB DP	Article No.
Software for DP protocol (master class 1 and 2), incl. FDL protocol with OPC server and NCM PC; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB DP V8.2	6GK1704-5DW08-2AA0
for 32/64-bit: Windows 7 Professional/ Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
SOFTNET-DP Edition 2008 (V7.1)	6GK1704-5DW71-3AA0
for Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation	
Software Update Service	6GK1704-5DW00-3AL0
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Edition 2008 or V8.1	6GK1704-5DW00-3AE0
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 or V8.1	6GK1704-5DW00-3AE1
SOFTNET-PB DP Slave	
Software for DP slave, with DP OPC server and NCM PC, Single License for one installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for CP 5611 A2, CP 5612 (Win 7 and higher), CP 5621, CP 5622 (Win 7 and higher), CP 5711;	
SOFTNET-PB DP Slave V8.2	6GK1704-5SW08-2AA0
for 32/64-bit: Windows 7 Professional/ Ultimate; for 64-bit: Windows 2008 Server R2 German/English Single License for one installation	
SOFTNET-DP Slave Edition 2008 (V7.1)	6GK1704-5SW71-3AA0
for 32 Bit Windows XP Professional SP2/3; Windows 2003 Server R2, SP2; Windows Vista Business/Ultimate SP1; Windows 2008 Server; English/German Single License for one installation	
Software Update Service	6GK1704-5SW00-3AL0
For 1 year with automatic extension; requirement: current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE0
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 or V8.1	6GK1704-5SW00-3AE1

Accessories	Article No.
PROFIBUS FastConnect bus connector RS485 Plug 180	6GK1500-0FC10
With 180° cable outlet, insulation displacement	
PROFIBUS FC Standard Cable GP	6XV1830-0EH10
Standard type with special design for quick assembly, 2-core, shielded, sold in meters; max. length 1000 m, minimum order 20 m	
PROFIBUS FastConnect Stripping Tool	6GK1905-6AA00
Preset stripping tool for fast stripping of PROFIBUS FastConnect bus cables	
PROFIBUS bus terminal 12M	6GK1500-0AA10
Bus terminal for connection of PROFIBUS stations up to 12 Mbps with connecting cable 1.5 m long	
Mounting rail support	6GK1571-1AA00-0AH0
Compartment for CP 5711 enclosure; fastened mechanically to 35 mm DIN rail	

Note:

You can find order information for software for communication with PC systems under System connections – software overview

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Overview

PC/IPC with
CP 5612/
CP 5622/CP 5711
and SOFTNET for
PROFIBUS

PROFIBUS ■

S7-1200 with
CM 1243-5

S7-1500 with
CM 1542-5

S7-300 with
CP 342-5

S7-400 with
CP 443-5 Extended

G_IK10_XX_50039

DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

G_IK10_XX_01398

- Software for connecting PCs/programming devices and notebooks to programmable controllers
- 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   Article No.

SOFTNET-PB S7	
Software for S7 communication, incl. FDL protocol with OPC server and configuration tool, runtime software, software and electronic manual on DVD-ROM, license key on USB stick, Class A; for CP 5612 (Win 7 and higher), CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB S7 V13	**6GK1704-5CW13-0AA0**
For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English Single License for one installation	
Software Update Service	**6GK1704-5CW00-3AL0**
For 1 year, with automatic extension; requirement: Current software version	
Upgrade	
• From Edition 2006 to SOFTNET-S7 Edition 2008 or V13	**6GK1704-5CW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 or V13	**6GK1704-5CW00-3AE1**
SOFTNET-PB DP	
Software for DP protocol (master Class 1 and 2), incl. FDL protocol with OPC server and configuration tool; runtime software, software and electronic manual on DVD-ROM, license key on USB stick; for CP 5612 (Win 7 and higher), CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB DP V13	**6GK1704-5DW13-0AA0**
For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English Single License for one installation	
Software Update Service	**6GK1704-5DW00-3AL0**
For 1 year, with automatic extension; requirement: Current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Edition 2008 or V13	**6GK1704-5DW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 or V13	**6GK1704-5DW00-3AE1**

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PC-based Automation
Communication
PROFIBUS

SOFTNET for PROFIBUS

Ordering data	Article No.
SOFTNET-PB DP-Slave	
Software for DP slave, with OPC server and configuration tool,single license for one installation, runtime software, software and electronic manual on DVD-ROM, license key on USB stick, Class A; for CP 5612 (Win 7 and higher), CP 5622 (Win 7 and higher), CP 5711	
SOFTNET-PB DP Slave V13	**6GK1704-5SW13-0AA0**
For 32/64-bit: Windows 7 SP1 Professional/Ultimate; For 64 bit: Windows 8.1 Pro; For 64 bit: Windows Server 2008 R2 SP1; For 64 bit: Windows Server 2012 R2; German/English Single License for one installation	
Software Update Service	**6GK1704-5SW00-3AL0**
For 1 year, with automatic extension; requirement: Current software version	
Upgrade	
• From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V13	**6GK1704-5SW00-3AE0**
• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 or V13	**6GK1704-5SW00-3AE1**

Note:

The Windows XP software version is still available for older CPs; see the Industry Mall:
http://www.siemens.com/industrymall.

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Overview

- Standardized, open multi-vendor interface
- Interfacing of OPC-capable Windows applications to DP, FMS, S7 communication and open communication (SEND/RECEIVE) based on the FDL interface
- OPC Scout with browser functionality as an OPC client and OCX-Data-Control/.NET Data Control for simple OPC client creation
- The relevant OPC servers are supplied with each communication software package
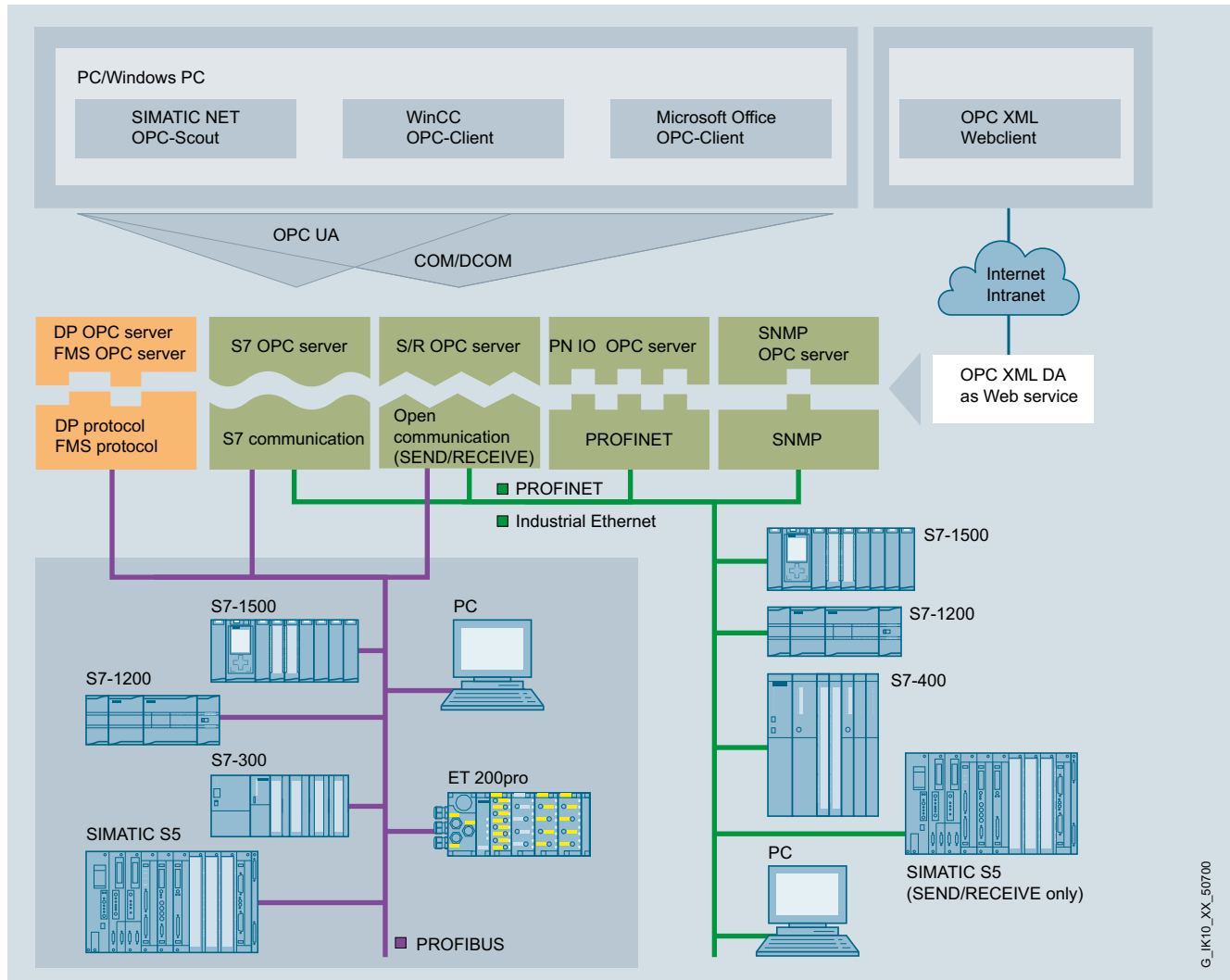
System integration with OPC server

PC-based Automation
Communication
PROFIBUS

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 the redundant configuration of OPC UA servers to SIMATIC S7. The availability of automation data to operator control and monitoring systems is guaranteed thanks to the redundant use of OPC UA servers. This requires neither additional cabling for synchronizing the redundant OPC UA servers, nor additional programming overhead in the PC. The OPC UA servers are synchronized via high-performance Industrial Ethernet network access points at 10/100 and 1000 Mpbs. S7 OPC Redundancy represents an integrated customer solution for all SIMATIC NET S7 SOFTNET and HARDNET software products in the automation world.

■ 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 stick, Class A	
S7 OPC Redundancy V13 for PROFIBUS	**6GK1706-5CW13-0AA0**
for 64-bit Windows 2008 server R2; English/German	
Single License for one installation	
Software Update Service	**6GK1706-5CW00-3AL0**
For 1 year, with automatic extension; requirement: Current software version	

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■ Ordering data

	Article No.
HARDNET-PB DP Development Kit Software HARDNET-PB DP Development Kit for integration in other operating system environments *For CP 5603, CP 5613 A2, CP 5614 A2, CP 5613 A3, CP 5614 A3, CP 5623, CP 5624*	See http://www.siemens.com/simatic-net/dk5613
Software upgrade *For CP 5603, CP 5613 A2, CP 5614 A2, CP 5613 A3, CP 5614 A3, CP 5623, CP 5624 to Edition 2008 or V13*	6GK1561-3AA01-3AE0
HARDNET-PB DP Software for DP, incl. PG and FDL protocol, OPC server and configuration tool; runtime software, software and electronic manual on DVD-ROM, license key on USB flash drive, Class A *For CP 5603, CP 5613 A2, CP 5614 A2, CP 5613 A3, CP 5614 A3, CP 5623, CP 5624*	
HARDNET-PB DP V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate; for 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1, Windows Server 2012 R2 German/English Single License for one installation	6GK1713-5DB13-0AA0
Software Update Service For 1 year with automatic extension; requirement: current software version	6GK1713-5DB00-3AL0
Upgrade • From Edition 2006 or 2007 to DP-5613 Edition 2008 or HARDNET-PB DP V13 • From V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 or HARDNET-PB DP V13	6GK1713-5DB00-3AE0 6GK1713-5DB00-3AE1
HARDNET-PB S7 Software for S7 communication incl. PG and FDL protocol, OPC server and configuration tool; runtime software, software and electronic manual on DVD-ROM, license key on USB flash drive, Class A; *For CP 5603, CP 5613 A2, CP 5614 A2, CP 5613 A3, CP 5614 A3, CP 5623, CP 5624*	
HARDNET-PB S7 V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1, Windows Server 2012 R2 German/English Single License for one installation	6GK1713-5CB13-0AA0
Software Update Service For 1 year with automatic extension; requirement: current software version	6GK1713-5CB00-3AL0
Upgrade • From Edition 2006 or 2007 to S7-5613 Edition 2008 or HARDNET-PB S7 V13 • From V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 or HARDNET-PB S7 V13	6GK1713-5CB00-3AE0 6GK1713-5CB00-3AE1

	Article No.
SOFTNET-PB S7 Software for S7 communication, including FDL protocol with OPC server and configuration tool, runtime software, software and electronic manual on DVD-ROM, license key on USB flash drive, Class A; *For CP 5612 (as of Win 7), CP 5622 (as of Win 7), CP 5711*	
SOFTNET-PB S7 V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1, Windows Server 2012 R2 German/English Single License for one installation	6GK1704-5CW13-0AA0
Software Update Service For 1 year with automatic extension; requirement: current software version	6GK1704-5CW00-3AL0
Upgrade • From Edition 2006 to SOFTNET-S7 Edition 2008 or V13 • From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 or V13	6GK1704-5CW00-3AE0 6GK1704-5CW00-3AE1
SOFTNET-PB DP Software for DP protocol (Master Class 1 and 2), including FDL protocol with OPC server and configuration tool; runtime software, software and electronic manual on DVD-ROM, license key on USB flash drive; *For CP 5612 (as of Win 7), CP 5622 (as of Win 7), CP 5711*	
SOFTNET-PB DP V13 For 32/64-bit: Windows 7 SP1 Professional/Ultimate For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1, Windows Server 2012 R2 German/English Single License for one installation	6GK1704-5DW13-0AA0
Software Update Service For 1 year with automatic extension; requirement: current software version	6GK1704-5DW00-3AL0
Upgrade • From Edition 2006 to SOFTNET-DP Edition 2008 or V13 • From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 or V13	6GK1704-5DW00-3AE0 6GK1704-5DW00-3AE1

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PC-based Automation
Communication
PROFIBUS

Communication for PC-based systems – Software

▪ Ordering data	Article No.		Article No.
SOFTNET-PB DP Slave		**Software Update Service**	**6GK1704-5SW00-3AL0**
Software for DP slave, with OPC server and configuration tool, Single License for one installation, runtime software, software and electronic manual on DVD-ROM, license key on USB flash drive, Class A;		For 1 year with automatic extension; requirement: current software version	
		Upgrade	
For CP 5612 (as of Win 7), CP 5622 (as of Win 7), CP 5711		• From Edition 2006 to SOFTNET-DP Slave Edition 2008 or V13	**6GK1704-5SW00-3AE0**
		• From V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 or V13	**6GK1704-5SW00-3AE1**
SOFTNET-PB DP Slave V13	**6GK1704-5SW13-0AA0**		
For 32/64-bit: Windows 7 SP1 Professional/Ultimate For 64-bit: Windows 8.1 Pro, Windows 2008 Server R2 SP1, Windows Server 2012 R2 German/English Single License for one installation			

Note:

The Windows XP software version is still available for older CPs, see the Industry Mall: http://www.siemens.com/industrymall.

PC adapter USB A2

▪ Overview		▪ Ordering data	Article No.
		PC adapter USB A2 for connecting a PG/PC or Notebook to PROFIBUS or MPI; USB cable included in scope of delivery	**6GK1571-0BA00-0AA0**

DP-M	DP-S	FMS	PG/OP	S7/S5	
			●		

USB adapter for the connection of PCs/Notebooks and SIMATIC PG/PC to the SIMATIC S7 automation system via USB interface.

• For connection to USB 1.1, 2.0 and 3.0 interfaces

• Power supply from the USB interface

• PROFIBUS connection with up to 12 Mbit/s

• 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 system

• Scope of delivery:
  - PC adapter USB A2
  - CD with drivers for the PC adapter USB A2
  - USB cable
  - MPI cable 0.3 m

Customized Automation

■ **Overview**

Customized Automation - Hardware

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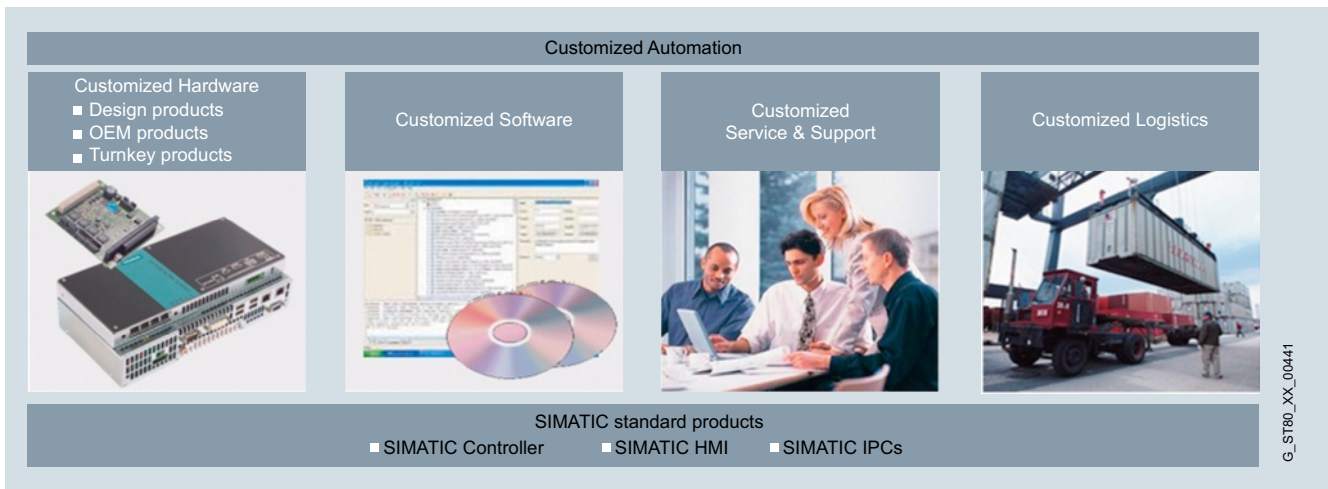
Customized Automation - overview

With Customized Automation, field-proven SIMATIC, SIMATIC PC and SIMATIC HMI standards are transferred to individual products and systems – tailored precisely to the customer's requirements.

The portfolio covers the hardware and software range, as well as support and logistics.

■ Benefits

Time savings

- You can use comprehensive customization know-how and our long years of experience with the SIMATIC components
- You do not have to build up any additional know-how, and you can concentrate completely on your own core competence

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
- You save unnecessary costs thanks to tailor-made solutions, and you benefit from the global service & support concepts with SIMATIC, SIMATIC IPC, and SIMATIC HMI

Increase in competitive edge for the machine

- You use SIMATIC products that correspond to the highest quality standards, offer optimal performance, and thus boost your productivity by minimizing standstill times
- You receive customized products with Customized Automation that fit outstandingly well into the "Totally Integrated Automation" (TIA) concept
- You stand out not only for exceptional technology but also for individual design of your machine, for example, by printing a logo on the front of the enclosure

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*

The customer-specific modifications are available in all performance classes, starting with Push Button Panels or Key Panels, Basic Panels, Comfort Panels 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.

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
- *SIMATIC KNX/EIB2S7*
  Enables integration of actuators/sensors on a KNX/EIB bus of building automation systems into SIMATIC S7
- *Open MODBUS for SIMATIC systems*
  Provides the capability of connecting systems from various manufacturers to SIMATIC automation systems

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 can offer products for the following industries:

- Renewable energy
- Automotive industry - HMI for factory automation
- General machine construction
- Food and beverages industry/pharmaceuticals
- Oil & gas/chemicals and shipbuilding

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/hmi-oem

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Customized Automation

Customized adaptations

Overview

Our SIMATIC IPC Customization Centers convert the field-proven SIMATIC IPCs into individualized products and systems for you – tailored precisely to your specific needs. Our portfolio ranges from individualized design, through software installation and special tests or certifications, right up to just-in-time delivery.

This provides you with more **time** for your own projects while improving your **profitability** and thus your **competitive advantage**.

Customized SIMATIC IPC - precisely tailored to your requirements

Benefits

You gain time because you ...
- can benefit from our comprehensive customization expertise and many years of experience regarding industrial PCs.
- do not have to create industrial computer-specific expertise and can therefore fully concentrate on your core competencies.

You increase profitability because you ...
- invest your money and resources specifically in your core competencies.
- implement a reliable inventory control and logistics planning as required thanks to our logistics services.
- ensure maximum investment protection due to maximum quality, long-term availability and continuity with SIMATIC IPC.
- avoid unnecessary costs due to custom-tailored solutions.
- benefit from worldwide Service & Support concepts with SIMATIC IPC.

You increase your competitive edge because you ...
- use industrial PCs that conform to the highest quality standards, offer optimum performance, and thus increase productivity by minimizing downtimes.
- use customer-specific SIMATIC IPCs that are optimally integrated in the Totally Integrated Automation (TIA) concept.
- not only stand out due to extraordinary technology, but also due to the customized design of your machine, e.g. by printing a logo on the device front of the industrial PC.

Application
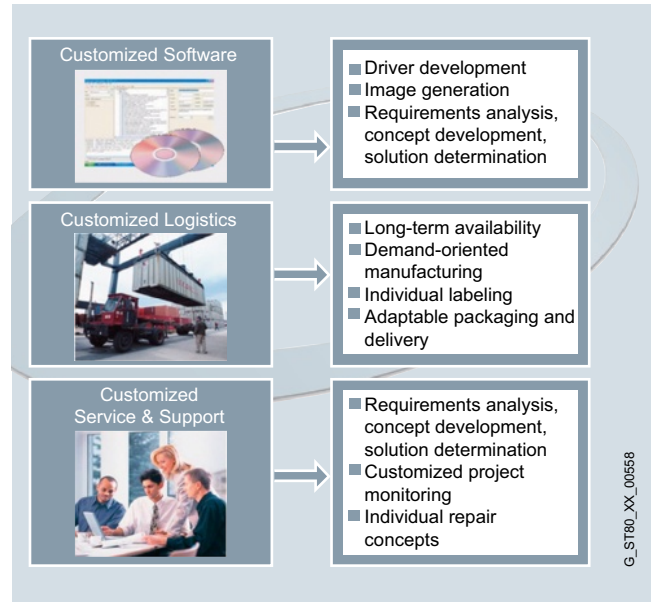
Customized hardware - Individual in design and configuration

Customized design
- *Inscription or printed logo*,
  e.g. on the front cover of the enclosure, matches your corporate design requirements
- *Custom color design of enclosure*,
  individual enclosure components, e.g. enclosure front and front cover – for perfect optical integration of the PC in the operating environment

Customer-specific configuration
- *Optimization of the computer configuration* –
  corresponding to the requirements of your application, e.g. with or without PROFIBUS interfaces or optical drives
- *Optimal selection of the required components* -
  with regard to performance capability, long-term availability and compatibility, e.g. processor, fan, RAM, etc.
- *Installation of the hardware you specified* –
  e.g. third-party hardware such as drives and PC cards or customized, supplied hardware

Customized software – operating systems, drivers, image

Generation of operating systems
- E.g. for Windows XP embedded
- And the RMOS3 real-time operating system from Siemens
- For customer-specific preinstalled LINUX operating system[1]

Integration and installation of driver software and image storage
- E.g. for additional plug-in cards, controllers and memory media
- For complete, turn-key systems

[1] Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see http://support.automation.siemens.com/WW/view/en/10805661/134200

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■ **Application** (continued)

Customized service and support

Pre-sales and after-sales support

- Requirements analysis, concept creation, solution generation
- Competent project support from the offer through to delivery and beyond
- Individual repair concepts with worldwide Siemens service network with 190 branches and 33 repair centers
- 24-hour product support over the SIMATIC Hotline

System test of hardware and software, e.g.

- *EMC chamber* – Test for electromagnetic compatibility
- *Thermal simulation* – Thermal simulation and heat imaging camera to detect heat pockets
- *Heat test* – Testing of all components in a 36-hour heat test at 40 degrees Celsius in a heated cabinet
- *Stress test* – Test for high vibration/shock loading, specially for CPU, graphics, memory, modules, etc.

Product Equipment Data (PED)

- *Online tool PED* (www.siemens.com/ped) – For easy, systematic identification and management of device components. It shows you the most important components of your equipment (delivery status) easily and quickly and supports you worldwide in the event of a servicing requirement with the procurement of suitable replacement parts.

"Tempesting" (SITEMP)

- *TEMPEST (Temporary emanation and spurious transmission)* – For protecting compromising data from listening-in attacks by means of electromagnetic radiation
- Series measurements and certification of special PC hardware according to the standards of the German Institute for Safety in Information Technology (BSI) for radiation safety
- E.g. PC for processing highly sensitive research and development data

Certification and approval of hardware and software

- E.g. UL and CE industry certification

On-site service

- E.g. for plant failure, on-site repairs, product upgrades

Customized logistics

Availability tailored to your requirements

- *Configuration and design freeze* – Individual availability agreements for unchanged hardware and software versions of the products (image compatibility)
- *Replacement parts in centralized or decentralized spare parts storage* – For individually agreed periods or, where applicable, last-time buying and storage of components
- *License authorization* for discontinued software, e.g. for Microsoft operating systems such as Windows NT, MS DOS, WES 7

Tailor-made right down to the detail

- *Change notices* – Individual agreements for customer information management, e.g. product discontinuation, version updates, phase-out announcements
- *Individual labeling* – On the industrial PC and/or product packaging, e.g. customized item/device/inventory numbers, warehouse barcodes or packing and safety instructions
- *Supply of accessories* – e.g. adapter cables, keyboards or accompanying documents and manuals

Individual logistics solutions

- *Kanban delivery* – We supply according to the requirements of the organization units in the production process of our customers who organize their production process control in accordance with the Kanban principle. This shortens the throughput time and reduces inventories.
- *Just in time* – We reduce the inventories and throughput times of our customers by supplying the hardware manufactured customer specifically at exactly the time when they need them in the production process or in the logistics chain.
- *Reusable packaging* – Better than recycling! The packaging is collected from our customers after the specially manufactured hardware has been unpacked and reused for transporting the next delivery. Packaging material is saved to the advantage of our customers and the environment.

■ **More information**

You can find further information at:

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

Email: customized.automation@siemens.com

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Customized Automation
Customized hardware

■ Overview

Customized products are modified SIMATIC HMI standard products

A distinction is made according to the degree of hardware modification:

- Design products
- OEM products
- Turnkey products

The Open Platform Program is available for customized software solutions.

With these possible modifications, products are planned for special customer requirements in the various industries.

- Customized products from various sectors

Additional information is available on the Internet at:

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

Proportion of customized modifications on the individual product types:
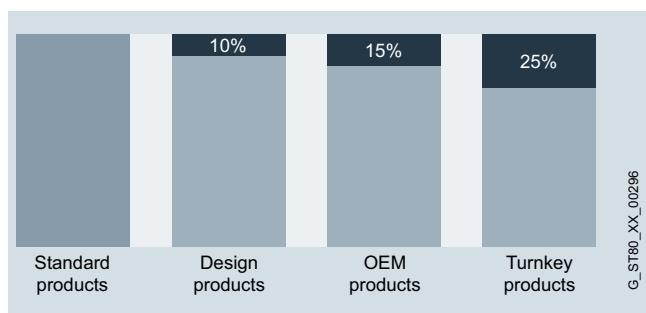
Customized hardware:

Design products

Customized design means modifying the design and visual impact of the SIMATIC, SIMATIC HMI and SIMATIC IPC 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 and 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 SIMATIC standard components. They are specified, offered, developed and supplied individually in consultation with the customer.
For this purpose, we simply combine the standard components, the customized components, and the additionally required software function expansions into a SIMATIC OEM device, as with a modular system.

Modification options:

- Changes in the keyboard layout, key size/design and key arrangement
- Freely definable front dimensions and mechanical components
- Integration into enclosure for desktop use or support arm mounting
- Different processors and memory media
- Different display technologies, sizes and resolutions
- Distributed configuration
- Additional modules or interfaces
- Freely selectable Windows versions as operating systems, pre-installed SIMATIC software packages

However, new OEM products can frequently be based on already implemented OEM products for efficiency and cost savings (see product examples). The end product is then represented as a customized modification of an existing OEM product.

Our OEM devices are available in every performance class - starting from OEM Push Button Panels, through Text Displays, Touch and Operator Panels, right up to multifunctional platforms (MPs) and PCs in rack/box/panel versions with extensive changes to hardware, equipment and installed software. Customized OEM products are developed and produced in various stages in accordance with quality standards.

Turnkey products

Customized turnkey products are ready-to-install and ready-to-use products from a single source that have been combined and assembled to customer specifications and in accordance with the specific technical requirements of HMI products. With the turnkey products, the HMI products are tested and supplied, e.g. as complete operator stations, that is, mounted and wired in special enclosures, and installed with the specified software:

- Optimized HMI operator station: ergonomic, functional, certified and tested
- Optimal mechanical installation of the devices with defined high degree of protection
- Flexible in installation and wiring
- Variable mounting options
  (support arm, stand, wall-mounting)
- Certified in accordance with VDE, CE and UL (in accordance with agreements and statutory conditions)
- Vibration-tested and shock-tested
- Packaged for safe transport
- Tested heat balance with passive cooling and with specified ambient temperature
- Customer-specific software suite with electronic software release management

Customized SIMATIC turnkey products offer standard product quality from a single source and are ready-to-install and ready-to-use.

Overview

SIMATIC HMI products in individual corporate design for machines and plants are important for customers when making purchasing decisions. Seamless integration of the HMI devices in operation and ergonomics as well as in the overall machine and plant design is especially important.

The HMI devices with customer-specific design fully meet these requirements.

The following design changes are possible depending on the variant:

- Extremely fast design implementations
- Implementation of even low minimum quantities (no general agreements)
- Photo-realistic design up to 600 dpi
- Color gradients in the logo

The following changes (design variants) are possible:

- Version *A*:
  Inserting the individual company logo instead of the Siemens logo and changing the type designation
- Version *B*:
  Version A + changing keyboard colors, key labels, symbols and background color
- Version *C*:
  Version B + changing the frame color for the front frame
- *Digital Express design*:
  Version B in photo-realistic print quality, for small quantities with accelerated execution of the project

The following applies for variants A-C:

- A contractually agreed minimum quantity per year is necessary
- Stockpiling in accordance with contract
- First deliveries 8 weeks after design start at the earliest

Selected SIMATIC HMI Touch devices are available in Digital Express design thanks to adapted production procedures.

The following applies for implementation in Digital Express design:

- Without contractual obligation
- Even small ordering quantities
- Significantly reduced implementation time
- Photo-realistic print quality

The SIMATIC HMI products with customer-specific design are completely identical to the standard products in respect of technology and function. This similarity makes it possible to respond flexibly to almost any need situation. In this way, a machinery and plant supplier can quickly switch to standard products if in the event of a fault there are no HMI design units available in the spare parts inventory.

This flexible production makes cost-effective design products possible even in small ordering quantities. The devices are manufactured in the series production factory and are subject to the same quality requirements as standard devices.

The professional creation of customized designs is handled by the *SIMATIC HMI Design Center*.

The following services are offered to the customer:

- Support in the selection of suitable design variants
- Direct, specialist coordination and customer consultation in the selection of appropriate typefaces, colors, and standard symbols, e.g. to optimize machine operation
- Creation of a customer-specific design draft
- Short response times, first design draft around 5 days after design start
- Obtaining required customer approval

There are no one-off project costs for these services of the SIMATIC HMI Design Center (see "Additional information" for details). A quotation will be made for any further changes and consultation services.

Regarding customized design, it is also possible to match the colors of various SIMATIC HMI design devices in order to achieve a uniform corporate identity. The associated costs will be calculated according to actual requirements.

Benefits

- Seamless adaptation to the customer's machine and plant design and special operating philosophy
- No restrictions in ergonomics compared with a standard product
- Even small quantities of design products may be ordered
- Replaceable and fully compatible with the standard devices in terms of:
  - Functions and interfaces
  - SIMATIC HMI configuration software
  - Enclosure and installation dimensions
  - Logistics and service, identified repairs
- UL and CE certification, more upon request

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Customized Automation
Customized hardware

Design products

■ Ordering data

According to size of display	Device type	Article No. of the basic product	Minimum order quantity p.a. Design variant A//B	Minimum order quantity per order Design variant Express design
Touch				
7 inch	**HMI TP700 Comfort**	**6AV2124-0GC01-0AX0**	75	3
9 inch	**HMI TP900 Comfort**	**6AV2124-0JC01-0AX0**	75	3
12 inch	**HMI TP1200 Comfort**	**6AV2124-0MC01-0AX0**	50	3
15 inch	**HMI TP1500 Comfort**	**6AV2124-0QC02-0AX0**	50	3
	HMI TP1500 Basic color PN	**6AV6647-0AG11-3AX0**	50	on request
19 inch	**HMI TP1900 Comfort**	**6AV2124-0UC02-0AX0**	50	2
22 inch	**HMI TP2200 Comfort**	**6AV2124-0XC02-0AX0**	50	-
Key				
3 inch	**HMI KP8 PN**	**6AV3688-3AY36-0AX0**	on request	-
	HMI KP8F PN	**6AV3688-3AF37-0AX0**	on request	-
	HMI KP300 Basic mono PN	**6AV6647-0AH11-3AX0**	200	-
4 inch	**HMI KTP400 Basic**	**6AV2123-2DB03-0AX0**	200	on request
	HMI KTP400 Comfort	**6AV2124-2DC01-0AX0**	100	on request
	HMI KP400 Comfort	**6AV2124-1DC01-0AX0**	100	-
	HMI KTP400 Basic mono PN	**6AV6647-0AA11-3AX0**	200	-
	HMI KP400 Basic color	**6AV6647-0AJ11-3AX0**	200	-
	HMI KTP400 Basic Color	**6AV6647-0AK11-3AX0**	200	-
7 inch	**HMI KTP700 Basic**	**6AV2123-2GB03-0AX0**	200	on request
	HMI KP700 Comfort	**6AV2124-1GC01-0AX0**	75	-
	HMI KTP600 Basic mono PN	**6AV6647-0AB11-3AX0**	200	-
	HMI KTP600 Basic color DP	**6AV6647-0AC11-3AX0**	200	-
	HMI KTP600 Basic color PN	**6AV6647-0AD11-3AX0**	200	-
9 inch	**HMI KTP900 Basic**	**6AV2123-2JB03-0AX0**	175	on request
	HMI KP900 Comfort	**6AV2124-1JC01-0AX0**	75	-
12 inch	**HMI KP1200 Comfort**	**6AV2124-1MC01-0AX0**	50	-
	HMI KTP1000 Basic color DP	**6AV6647-0AE11-3AX0**	75	-
	HMI KTP1000 Basic color PN	**6AV6647-0AF11-3AX0**	75	-
15 inch	**HMI KP1500 Comfort**	**6AV2124-1QC02-0AX0**	50	-

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■ Ordering data (continued)

According to size of display	Device type	Article No. of the basic product	Minimum order quantity p. a. design variant A/B	Minimum order quantity per order Design variant Express design
Touch/Monitor/Key				
7 inch	**IPC277D Touch**	depending on the configuration	50	2
9 inch	**IPC277D Touch**	depending on the configuration	50	2
12 inch	**IPC277D Touch**	depending on the configuration	50	2
	IPC477D Touch	depending on the configuration	50	2
	Flat Panel Touch or Monitor	depending on the configuration	75	2
	Panel PC Touch or Key	depending on the configuration	50	-
	ITC1200	**6AV6646-1AA22-0AX0**	75	-
15 inch	**IPC277D Touch**	depending on the configuration	40	2
	IPC477D Touch	depending on the configuration	40	2
	Flat Panel Touch or Monitor	depending on the configuration	50	-
	Flat Panel Touch PRO	**6AV7861-5TB10-1BA0**	50	-
	IPC477C Touch PRO	depending on the configuration	40	-
	IPC477C Touch	depending on the configuration	40	2
	IPC677C Touch	depending on the configuration	40	2 (USB)
	Panel PC Touch or Key	depending on the configuration	30	-
	ITC1500	**6AV6646-1AB22-0AX0**	50	-
19 inch	**IPC277D Touch**	depending on the configuration	30	2
	IPC477D Touch	depending on the configuration	30	2
	Flat Panel Touch or Monitor	depending on the configuration	30	on request
	Flat Panel Touch PRO	**6AV7861-6TB10-1BA0**	30	on request
	IPC477C Touch PRO	depending on the configuration	30	2
	Panel PC Multitouch	depending on the configuration	on request	-
	Panel PC Touch	depending on the configuration	30	on request
	ITC1900	**6AV6646-1AC22-0AX0**	50	on request
22 inch	**IPC477D Touch**	depending on the configuration	30	2
	IPC677D Touch	depending on the configuration	30	on request
	Panel PC Multitouch	depending on the configuration	on request	-
	ITC2200	**6AV6646-1AD22-0AX0**	50	-

For all other products not listed here, please inquire directly.

Customized Automation
Customized hardware

Design products

■ **More information**

Ordering information

Explanation of the tables with selection and order data:

"Device type" and "Article No. of the basic product"
- "Type specification" and "Article No." of the HMI standard product to be modified.
- Start of delivery of a design variant cannot commence less than 4 months after the start of delivery of a standard device.

"Design variant"
- Type of modification required, according to design variants.

"Minimum quantity"
- In order to be able to offer high-quality products at a competitive price in the global market, there must be a lower limit to the annual quantity and a minimum order quantity.
- The possible design devices with the associated minimum quantities are listed in the overview tables.

Prices and one-off costs

An additional amount over the price of the standard device is charged for the customized design device.

There are no additional costs for a one-off design (without Change Requests).

Processing

A special order processing is required for the customized design. Various approval steps by the customer are to ensure that the end product meets the customer's expectations. The orders are processed, like standard orders, via the Logistic Center Nuremberg (LZN). Orders and deliveries of 1 unit or more depending on the version or contract are possible!

Repairs/spare parts storage

Presuming the basic product is repaired, only replacement and repair and return are carried out for the design product.

Unless otherwise agreed, the required customer-specific spare parts (device front panels) are not stocked after expiry of the warranty or after completion of delivery. If customer-specific spare parts are not available, spare parts of the basic product are then used for repairs.

Contacts

Please contact your local/national SIMATIC HMI representative (visit our Internet site for more information)

Additional information is available on the Internet at:

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

http://www.siemens.com/Express-HMI-Tool

E-Mail: Design-Customized.Automation@Siemens.com

6

Overview

- HMI product modifications for OEM customers are suitable for complex industrial automation tasks that cannot be implemented using standard products.
- OEM devices are available in all performance classes: from OEM Push Button Panels through Micro Panels, Panels and Multi Panels right up to Panel PCs as well as Rack and Box PCs - with far-reaching changes in hardware, equipment and software.
- The following modifications are possible:
  - Changes to keyboard layout: Number of keys, key size/ design and key layout
  - Freely definable front dimensions and mechanical components
  - A variety of processors for customized performance
  - A variety of memory media and capacities
  - Installation of function cards
  - Display technologies, sizes and resolutions
  - Options such as direct key modules
  - Distributed configuration of Panel PCs
  - Housings for desktop, stand or support-arm versions (operator station concept)
  - Additional modules or interfaces, of course always complete with the necessary device drivers
  - Selectable Windows operating systems
  - Preinstalled SIMATIC software and customized software packages
  - additional functions due to PCIe slot
  - Frontplate design in color and labeling of the interfaces
  - Large number of interface options in the configurator in a very small space

Benefits

The SIMATIC HMI OEM concept represents "customizing at its best":
- Your requirements, based on sector and application know-how, combined with our experience in the development of HMI devices of all performance classes, result in tailor-made solutions at a fair price.
- Customized OEM products are developed in defined stages in accordance with quality standards and produced using standard plant facilities - always in close cooperation with the customer.
- Users in various industries, including regenerative energies, the automotive industry, the food, beverages and tobacco industries, the oil and gas industry, as well as in the plastics-processing industry and others are benefiting from our experience of delivering tried and tested OEM versions and industry standards.

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Customized Automation
Customized hardware
OEM products

MP 277 8" Touch control console

Overview

OEM MP 277 8.4" Touch

Benefits

- Heavy-duty, die-cast aluminum housing
- Easy mounting on patient table with clamping device
- Low space requirements
- Extremely good readability
- Simple operation
- Joystick can be connected optionally on left or right
- Ethernet communication

Application

The OEM MP 277 8.4" Touch is suitable for use as a control console for coronary angiography systems in the medical field.

Technical specifications

- Rugged die-cast aluminum housing
- 8.4'' TFT display
- 800 x 600 pixel resolution
- Operation by means of touch screen and optional joystick
- Customized application and customized WinCE image
- Degree of protection on front: IP65.

Option
- Different housing color

Ordering data

	Article No.
OEM MP 277 8.4" Touch	On request

Customized products can only be ordered in conjunction with a product agreement. The following points are defined in the product agreement:

- Status: Released for delivery
- Project runtime: None
- Non-recurring costs: None
- Minimum quantity: 200

More information

Additional information is available on the Internet at:

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

Overview
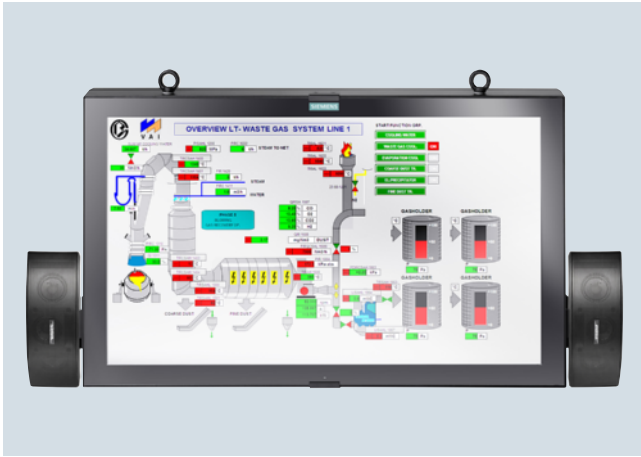
Professional display system for continuous, maintenance-free operation

The SIMATIC HMI Net Panel is multifunctional when it comes to rugged, large-scale display applications for industrial areas, as it is ideal for production plants and control stations or for trade fairs and information points visited by the public.

The Net Panel is based on a reliable industrial PC of the SIMATIC IPC series and is designed for 24-hour, maintenance-free operation in an industrial environment. It is extremely flexible in operation and can be used as a stand-alone solution or in the network as a complete industrial display system comprising several Net Panels. For applications that require audio output, variants of the Net Panel are available with audio modules and speaker equipment.

Remote Control for setting up the SIMATIC HMI Net Panel

The Remote Control Software included in the scope of delivery allows the Net Panel to be operated either locally or via the network. It enables the brightness and volume to be adjusted and the backlight to be switched off.

For self-diagnosis the device temperature can be indicated. The Remote Control software allows the function to be shut down to prevent burn-in effects (anti-image sticking). The anti-image sticking function should, however, only be deactivated when adequate measures have been implemented on the Net Panel to prevent image sticking.

Remote Operate as client/server solution for industrial display systems (optional)

When Remote Operate is installed, four virtual graphics cards can be set up on one IPC and presented as extended desktops.

On every SIMATIC HMI Net Panel, a Remote Operate client is installed that is assigned to a virtual graphics card. The different screen contents are distributed to the virtual graphics adapters using the HMI software WinCC. If the Net Panel is equipped with sound, MP3 and Wave files can be sent to a specific Net Panel where they can be played, using an easily accessible function.

Benefits

- High degree of system availability due to maintenance-free industrial design with IP65 degree of protection for continuous 24-hour operation
- High security of investment due to rugged industrial products from SIMATIC that will remain available over the long term
- Reduced costs through low-wear and power-saving LED backlight and anti image sticking function to prevent burn-in effect
- Easy, cost-efficient integration in a standard network environment without VGA/DVI/HDMI extensions or expensive video signal extenders
- Optionally available with audio module and loudspeaker for sound output
- Flexible mounting on support arm systems, wall and ceiling, as well as back-to-back mounting and with an angle of inclination of up to 20° from the vertical
- Remote Control Software (locally on the device and remotely from the network) for the easy parameterization of
  - Brightness
  - Deactivation of backlighting
  - Status messages of display
  - Speaker control
- Supported by WinCC flexible 2008 SP2 or higher (IPC427C with 1920 x 1080 resolution)

Customized Automation
Customized hardware
OEM products

SIMATIC HMI Net Panel

Application

The SIMATIC HMI Net Panel is designed for demanding large-scale displays in the industrial environment.

It is based on rugged, reliable PC technology with interfaces for easy, cost-efficient integration in existing networks and offers maximum flexibility for positioning and mounting.

The large LCD display with LED backlight, round-the-clock operation, and full PC openness make the large-scale display ideal for use as an industrial manufacturing display, add-on system, multimedia display, process visualization system, railway station and airport display (check-in, gate, baggage claim, advertising display) or at trade fairs, in shopping centers, hotels, museums and more.

Design

The SIMATIC HMI Net Panel is a rugged display system with an integrated industrial PC and optional audio and loudspeaker equipment.

- LCD display with 1920 x 1080 pixel full HD resolution
- Power saving and long-life LED backlight
- Integral SIMATIC industrial PC
- Rugged and attractive device design with reduced enclosure depth
- Degree of protection IP65 all-round, industry compatible
- Solid, shatterproof front pane of 6 mm laminated glass
- Anti-glare front pane resistant to welding beads
- Safety eyebolts (removable as required) for additional protection against dropping in suspended installations
- Optional: adapter for Rose & Krieger FSK 50 support arm system
- Integrated wide-range power supply
- Rear connector for 1x USB (with IP65 protective cap), 1x Industrial Ethernet (M12 4-pin with protective cap)
- Rear Quick-On connection for integrated 100 - 240 V power supply (connector included in scope of delivery)
- Rear status indicator

Technical specifications

	SIMATIC HMI Net Panel
Display	
Size	46" (116 cm) LCD TFT
Resolution	1 920 x 1 080 Full HD (16:9)
Colors	16.7 million colors
Reading angle	+/- 178°
Backlighting	LED backlight
Brightness	Typically 500 cd/m²
PC configuration	
IPC	IPC427D
Processor	**Core i3 1.6 GHz**
Main memory	4 GB
Mass storage	80 GB SSD
Operating system	Windows 7 Ultimate SP1 64-bit
General features	
Enclosure design	Industry-compatible steel enclosure, black, powder-coated
Glass front	Shatterproof front pane of 6 mm laminated glass, anti-glare, resistant to welding beads
Degree of protection	IP65 all-round; IP54 when USB is plugged in
Ambient temperature	5…45°C for 24-hour operation
Approvals	CE
Interfaces	
USB 2.0	1 x rear-mounted (with IP65 protective cap)
Ethernet	1 x Industrial Ethernet, D-coded (M12 4-pin with protective cover)
Power supply	100 ... 230 V AC Quick-On connector
Keyboard, mouse	Connectable via USB interface (optional USB hub recommended for commissioning)
Audio (optional)	
Audio module	• None • 2 x 15 W audio module
Speakers	1 pair, mounted to left and right, Bose or Visaton
Dimensions	
External dimensions (W x H x D in mm), weight	1 138 x 681 x 130, approx. 60 kg
External dimensions (W x H x D in mm) with BOSE loudspeaker, weight	1 410 x 681 x 130, approx. 65 kg
External dimensions (W x H x D in mm) with Visaton loudspeakers, weight	1 565 x 681 x 130, approx. 65 kg
Special features	• Continuous glass front with narrow protective frame • Auto-refresh function to reduce burn-in effects (anti image sticking function) • 2-point mounting, M8 on left and right sides of enclosure, 75 mm spacing • Safety eyebolts on top of enclosure, removable

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Ordering data	Article No.
SIMATIC HMI Net Panel	
Intelligent large format display; 1 920 x 1 080 full HD widescreen; Core i3 1.6 GHz, 4 GB RAM, 80 GB SSD, IPC427D, 1 x Industrial Ethernet M12, 1 x USB at back; Windows 7 Ultimate SP1 64-bit, remote control software; IP54 when inserted, incl. quick-on connector for 100 ... 230 V AC power supply	
• Without speakers, without audio module	**6AV7426-1AF36-0FA0**
• With Visaton speakers, with audio module 2 x 15 W	**6AV7426-1AF36-1FA0**
• With Bose speakers, with audio module 2 x 15 W	**6AV7426-1AF36-2FA0**
Accessories	
Support arm systems	
Various support arm systems for ceiling, back-to-back, wall or stand mounting are offered by Rose & Krieger.	

More information

Customized modification options on request. Recommended support arm system from Rose & Krieger.

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 customized order number.

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Customized Automation
Customized hardware
OEM products

SIMATIC Mobile Client900

■ Overview

Mobile handheld operator unit with 9" widescreen display

- Mobile operator panel for direct operator control of the plant and machine from any point
- Supports an optimum view of the workpiece or process and, at the same time, direct access and visual contact with the operator panel
- Flexible implementation thanks to hot swapping
- Pixel-graphic, high-luminance color display with touch screen (analog/resistive)
- Communication via PROFINET or Industrial Ethernet
- Freely configurable and inscribable function keys (with LED) for Mobile Client900xFN
- Communication options via Ethernet or PROFINET connection
- Fast system availability after plugging into the connection boxes
- Connection to the controller and power supply is made via the connection box and the connecting cable
- Optionally with two three-stage acknowledgment buttons
- Optionally available with emergency stop button button (latching)
- Optionally available with connection point recognition for local identification of the device based on the connection point ID

■ Benefits

- Flexible options for connecting to the process
- Enhanced productivity, minimization of engineering costs, reduction of lifecycle costs
- Fast and accurate set-up as well as positioning
- Reliable operation with sophisticated safety concept
- Rugged for industrial use
- Integral component of Totally Integrated Automation (TIA)

■ Application

Regardless of the industry or application, if mobility is required for the on-site control and monitoring of machines and plants, SIMATIC Mobile Panels offer some crucial advantages: The machine operators or commissioning engineers are able to work exactly where they have the best view of the workpiece or process.

Even for larger production facilities, complex or enclosed machines, long transfer or production lines, or conveyor systems, mobile operator panels allow fast and precise set-up and positioning during commissioning. They ensure shorter downtimes during retrofitting, maintenance or repairs.

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Design

- Ergonomic and compact with different holding and gripping points (suitable for right-handed and left-handed personnel)
- Pixel-graphics, high-luminance color display and touch screen (analog/resistive)
- Optionally with freely configurable and labelable function keys (with LED)
- The front is resistant to various oils, greases and standard detergents
- Extremely shock-resistant due to the double-walled construction and the rounded enclosure
- Dust-proof and jet-proof enclosure with IP65 degree of protection on all sides
- Option of two three-stage acknowledgment buttons
- Option of emergency stop
- Integrated Industrial Ethernet or PROFINET interface (up to 100 Mbps)
- Connection to the PLC via the rugged and reliable connection boxes with degree of protection IP65:
  - Connection box variant "SWP": Enables use of the heating function
  - Connection box variant "CCB Basic PN"
  - Connection box variant "Basic": Enables the STOP button to be integrated into the safety circuit
  - Connection box variant "Plus": Enables the STOP button to be integrated into the safety circuit without interruption when disconnecting the device. The emergency stop circuit remains closed regardless of whether a Mobile Client is plugged in or not. If the Mobile Client is disconnected during operation, the emergency stop circuit in the connection box Plus is automatically closed, preventing triggering of the emergency stop circuit.

Advanced safety concept

The two acknowledgement buttons (acc. to EN 60204-1) with three switching steps each ensure the protection of personnel and machines in critical situations. They are integrated into the handle on the back.

The STOP button (to EN 60204-1) is hard-wired and positively latches when pressed. It can be looped into the emergency-stop circuit of a plant in which case it takes on the functionality of an emergency stop button. SIMATIC Mobile Panels and Clients offer the option of making mobile safety functions available at any point of a machine or plant.

STOP and acknowledgement buttons are implemented according to safety regulations with two circuits, and comply with the requirements of Category 3 PLd according to DIN EN ISO 13849-1:2008.

Technical specifications

	SIMATIC Mobile Client900
Display	
Size	9", widescreen (WXGA)
Resolution	1 280 x 768
Brightness	Up to 800 cd, dimmable
Number of colors	24-bit
Backlighting	LED, dimmable
Power supply	
Rated voltage	24 V DC
Power consumption, typical	Approx. 1 A
Environmental conditions	
Degree of protection	
Front/rear	IP65
Special characteristics	Gore-Tex diaphragm for pressure and moisture management
Ambient temperature	
Standard version	• Storage temperature: -25 °C ... +70 °C • In operation: 0 °C ... +45° C
"Arctic" version	• Storage temperature: -40 °C ... +70 °C with power supply • In operation: -25 °C ... +45° C
Relative humidity	10 % to 90 %, without condensation
Certifications	
CE	Yes
UL	Yes (508)
Others	On request
Data interfaces	
Standard interface	LAN or PROFINET/IE
Service interface	USB
Dimensions	
Exterior overall dimensions (W x H x D) in mm	Approx. 333 x 294 x 116 (including handle)
Weight	Approx. 2.3 kg

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Customized Automation
Customized hardware
OEM products

SIMATIC Mobile Client900

■ Technical specifications (continued)

	Accessories for SIMATIC Mobile Client900
Connection box	Connection box for electrical connection of the SIMATIC Mobile Client900. Connection to the device using an appropriate cable.
Power supply	24 V DC
Data/communication	RJ45 socket
Degree of protection, front	IP65 (built-in)
Degree of protection, rear	IP20
Exterior overall dimensions (W x H x D) in mm	72 x 70 x 50 mm
Weight	0.5 kg
Connecting cables	Connecting cable for SIMATIC Mobile Client900 as link between connection box and device. Length = 5 m, 10 m, 15 m
Stylus with holder	Stylus for more precise operation of the touch screen. Can be attached to the cable using flex strip, and be removed again without any residue.
Protective film for display	Self-adhesive protective film (transparent) to protect the touch screen surface against damage (e.g. scratches) during operation. Pack of 10
Display hardcover	Hardcover (snap-on) to protect the display against damage during transport.
Weight	Approx. 200 g
Wall-mounting bracket • rigid • magnetic	Similar to wall mount for SIMATIC Mobile Panels, but with additional cable holder Wall mount including snap lock for safely holding the SIMATIC Mobile Client900. Pivot for adjusting the tilt angle to different operating positions. Magnetic feet (rear-mounted) for attaching to metallic surfaces

■ Ordering data

	Article No.
Mobile Client900RXN [1] WinCC RT adv. for TIA Portal V13, without operator controls	6AV6645-7CF00-2AA0
Mobile Client900RFN [1] WinCC RT adv. for TIA Portal V13, HMI operator controls (F technology)	6AV6645-7CJ00-2AA0
Mobile Client900RXA [1] WinCC RT adv. for TIA Portal V13, arctic (integrated heater, without HMI operator controls)	6AV6645-7CG00-2AA0
Mobile Client900WXN [1] Linux-based Web Client, without HMI operator controls	6AV6645-7CF30-2AA0
Mobile Client900WFN [1] Linux-based Web Client, HMI operator controls (F technology)	6AV6645-7CJ30-2AA0
Mobile Client900WXA [1] Linux-based Web Client, arctic (integrated heater, without HMI operator controls)	6AV6645-7CG30-2AA0
Accessories	
Connecting cables for mobile Client900	
• 5 m	6AV6645-7CY03-1WP0
• 10 m	6AV6645-7CY04-1WP0
• 15 m	6AV6645-7CY05-1WP0
Connection box for Mobile Client900, customer-specific, for versions without HMI operator controls	6AV6645-7CX06-1WP0
Rubber strips for Mobile Client900, anti-slip, pack of 10	6AV6645-7CX01-1WP0
Protective cover for Mobile Client900, protection of display und touch screen, customer-specific	6AV6645-7CX02-1WP0
Protective film for Mobile Client900, pack of 10	6AV6645-7CX07-1WP0
Wall-mounting bracket for Mobile Client900, Mobile Panel 170 / 177 / 277, without mounting parts, including cable tray	6AV6645-7CX04-1WP0
Wall holder (magnetic) for Mobile Client900, without mounting parts	6AV6645-7CX05-1WP0
Touch pen for Mobile Client900, with retaining strap	6FC5348-0AA08-4AA0
SIMATIC CCB BASIC PN Cabinet connection box for Mobile Panel/Client, customer-specific	6AV6675-5XG00-0AX0

[1] Legend:
R: WinCC Runtime advanced for TIA Portal V13
W: Web Client, based on Chrome
F: with HMI operator controls
(emergency stop, acknowledgment button, illuminated pushbutton)
X: without operator controls
A: "arctic" – with built-in heater for cold environments
N: "standard" – without heater

6

Overview

Turnkey products are ready-to-install and ready-to-use SIMATIC HMI products.

The benefits are found in the optimal mechanical installation of the devices, ergonomic, functional and with tested heat balance, and flexible in installation.

Products

HMI operator stations

HMI devices with display diagonal of 10" and more are installed in selected enclosures to suit the function.

HMI operator stations can be used wherever it is not possible to install human machine interface devices in a control cabinet or direct at the machine, and where off-the-shelf, turnkey products can save on engineering overhead.

Installation of a customized image in the devices is possible (ready-to-run). Customized SIMATIC turnkey products offer standardized quality from a single source.

Backplane cover

The backplane cover enables the enclosure of flat HMI products such as the HMI IPC 477C or MP 377.

The backplane cover is provided with a VESA flange on the rear. More operator elements can be installed on the side in additional enclosures.

Overview HMI operator stations

Application example: Multi Panel in aluminum enclosure with operator controls, two-tier and with external keyboard

Turnkey products are SIMATIC HMI products or "ready-to-run" operator stations, i.e. pre-configured, ready for installation and ready-to-run SIMATIC Panels Thin Client, Multi Panels or Flat Panels and Panel PCs, installed in customer-specific enclosures.

Examples are Multi Panels fitted in customized die-cast aluminum enclosures with external keyboard; with installed application software, ready for connection, and ready-to-run.

Benefits

High industrial capability thanks to an all-round rugged, tried and tested design:

• Ergonomic, technically proven and certified solutions ready for operation
• Safe operation even under difficult environmental conditions
• Temperature-tested and temperature-monitored
• Suitable even for special industries, e.g., stainless steel versions for the food, beverages and tobacco industries
• For high availability and a safe return on your investment
• Siemens quality support, service and repair

The following issues are considered when developing the HMI operator stations:

• Optimal HMI product installation technology to eliminate thermal hotspots and heat pockets in the housing
• Calculation of actual maximum permissible ambient temperature of the entire operator station in continuous duty at location of use Data takes into account device heat dissipation values
• Ensuring the adherence to the load limits for rotary mass storage systems and large displays verified by shock and vibration tests on the entire operator station during operation
• Adherence to legal regulations (certifications)
• Determination and testing of required degrees of protection and EMC measures
• Assurance of surface quality along with its abrasion and chemical resistance
• To the greatest possible extent, passive technology provides the basis for all measures to improve the suitability of use of the operator stations in specific environments (e.g., no active air conditioning). The aim is to ensure durability and fault-free operation with minimum maintenance.

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Customized Automation
Customized hardware
Turnkey products

HMI operator stations for turnkey products

▪ Application

Complete HMI operator stations can be used wherever HMI devices cannot be installed in a control cabinet or directly at the machine. Operator stations are suitable for:

- Industrial application
- Near-industrial application
- Use in secondary applications in food, beverage and tobacco production
- Stainless steel version in the primary areas of the food, beverages and tobacco industries

HMI turnkey products can be used wherever prefabricated, ready-to-run hardware and software products can be used to save on engineering.

▪ Design

The HMI operator station concept is based on a modular system where HMI devices are built into selected enclosures to suit the functionality.

- HMI device enclosure for all-round protection (IP65)
- Mounting possible on stand or supporting bracket
- Rotation possible by means of adjusting elements
- Connection option for external keyboard and mouse
- Installation option for specific hardware components

Ambient temperature for turnkey products

The ambient temperature is always lower than the max. permissible ambient temperature of the HMI products (temperature values in Manual) installed in the operator station housing.

Depending on the components and version (e.g. according to heat dissipation), permissible ambient temperatures around the operator station will vary between 5°C and 40 °C.
Higher operator station ambient temperatures can be achieved by applying additional cooling measures.

▪ Function

- Fatigue-free, fast operation
- Operator station can be quickly adapted to different operators
- Coherent, easy-to-learn operator philosophy
- Rugged against shocks and vibrations in operation
- Suitable device selection (SIMATIC HMI devices from 10" display)
- Ensuring the data transfer and access to drives and interfaces
- Direct operation of the machine (conventional operator elements for direct connection to machine units)
- Simple alphanumeric input
- Cleaning agents taken into account

▪ Ordering data

Ordering notes

Product specifications and quotation preparations

- Product specification according to customer requirements
- Quotation preparation by SIMATIC HMI specialists, specification of:
  - one-time project costs
  - costs for sample devices/prototypes
  - standard unit prices
  - general conditions (product agreement)

Processing

Customized turnkey products are developed and produced in various stages in accordance with quality standards. Prototypes are created to test products. Once the devices have been approved by the customer, they undergo certification and are introduced into the production process.

Devices are produced using standard plant facilities, ensuring observation of customer quantity forecasts. For this purpose, individual quantity forecasts are exchanged with the customer.

In the event of questions and problems, customers can contact our worldwide 24-hour SIMATIC Customer Support. This is complemented by a special OEM After Sales Support service. Customer-specific project hotlines can be set up for bulk quantity customers.

Customized products can only be ordered in conjunction with a product agreement. The following points are defined in the product agreement:

- Delivery and pricing
- Logistics - annual volume, purchase quantity, delivery batch volumes
- Spare parts
- Service

Repairs/spare parts storage

Only identified repairs are performed. The required customer-specific spare parts (device fronts) are to be stored and provided by the customer upon delivery completion.

▪ More information

Contacts

Please contact the HMI representatives of your Siemens sales office/national company.

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

6

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, for example
  - and the RMOS3 real-time operating system from Siemens
  - for customized LINUX installation
- Integration and installation of driver software and pre-installed images
  - for additional cards, controllers, or memory media, for example
  - for completely turnkey systems

In addition, customized software products based on our experience in the industrial automation offer an opportunity to set up multi-user systems and industrial remote operation and 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 clients with MP 377 and HMI IPCs. The clients can also be assigned to several servers.

KNX/EIB2S7

Bus systems for building management systems, such as KNX/EIB, and a host of associated components, are used for automation of building systems.

While controllers for the room level are used for local automation, field-proven industrial components like SIMATIC are resorted to in the case of more complex, higher-level automation.

Communication between the automation levels takes place over Ethernet using special KNXnet/IP interfaces.

The KNX/EIB2S7 software package provides blocks for communication between SIMATIC S7 and building automation components. This means message frames of the KNX bus can be processed in a SIMATIC controller.

Application

Remote Operate Software
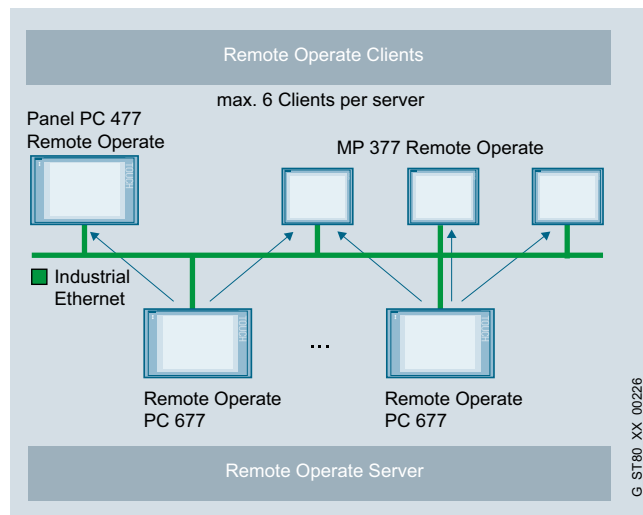
Panel PC with connected Thin Clients

Multi-user system with Panel PCs for up to 6 operator stations based on Thin Clients with MP 377 and PC 477

- Including operator lock
- In one software application with identical image contents
- Identical screen resolution
- Excluding server operating system
- Industrial remote control
  - Independent of the installed software
- Identical images on all devices
- Automatic scaling takes place in the case of differences in screen resolution between server and client
- Resolution up to 1 366 x 768 with true color
- Remote Operate Server with Windows XP Professional, Windows XP embedded, or Windows 7
- Up to 6 clients on one server
- Communication via Ethernet
- Designed for industrial requirements
  - Automatic login
  - Simple administration
  - Automatic reconnect
  - Permanent server/client assignment
  - Administration of operator authorization
  - Can be used after Windows login
  - Optional key-operated switch for operator authorization

6

Customized Automation
Customized software

SIMATIC KNX/EIB2S7

Overview

- Software for communication between SIMATIC S7 and components of a building automation system
- For using components from industrial automation in the area of building automation
- Enables the integration of actuators/sensors into a KNX/EIB bus in automation solutions with SIMATIC S7
- For transferring information from the building automation system for automating a production plant

Benefits

- Use of field-proven industrial components in the area of building automation
- Use of information from building automation for automating production plants
- Simple transfer of configuring data from the KNX configuring tool ETS3
- Automatic matching of KNX addresses with the associated SIMATIC addresses
- Use of the SIMATIC standards

Application

With rising energy awareness and increased requirements regarding user-friendliness and security, recent years have seen building automation facing far-reaching demands.

Bus systems for building management systems, such as KNX/EIB, and a host of available components for these are used for implementing the corresponding systems.

While controllers for the room level are used for local automation, field-proven industrial components like SIMATIC are resorted to in the case of more complex, higher-level automation.

Communication between the automation levels takes place over Ethernet using special KNXnet/IP interfaces.

The KNX/EIB2S7 software package provides blocks for communication between SIMATIC S7 and building automation components. This means message frames of the KNX bus can be processed in a SIMATIC controller.

Design

The SIMATIC S7 is connected with the KNX/EIB components via KNXnet/IP interfaces. The interfaces connect the KNX/EIB bus with the Industrial Ethernet bus of the SIMATIC S7.

Up to 5 KNXnet/IP interfaces can be connected to a SIMATIC S7 controller Up to 7 000 group addresses can be monitored, operated and read via these interfaces. The maximum number of group addresses depends on the controller type and the number of connected KNXnet/IP interfaces.

KNX/EIB2S7 supports the following CPUs of the SIMATIC S7:
- ET 200
  - IM 151-8 PN/DP CPU
- S7 300/400
  - CPU 315-2 PN/DP
  - CPU 317-2 PN/DP
  - CPU 319-3 PN/DP
  - CPU 414-3 PN/DP
  - CPU 416-3 PN/DP
- Soft PLC
  - SIMATIC WinAC RTX 2008 SP 1
- SIMATIC S7-300 with CP 343-1
  - CPU 315-2 DP
  - CPU 317-2 DP
  - CPU 319-3 PN/DP
- SIMATIC S7-400 with CP 443–1 Advanced
  - CPU 412-2 MPI/DP
  - CPU 414-2 MPI/DP
  - CPU 416-2 MPI
- Supported KNXnet/IP interfaces:
  - N 146/2 IP router
  - N 148/221 IP interface
  - N 350E IP controller
  - N 151 IP viewer

Mode of operation

The KNX components are parameterized with the ETS 3 software of the Konnex organization.

The KNX/EIB2S7 Editor is based on the exported parameterization data of ETS3 and evaluates the group address, data type, name and description. It only remains to select the group addresses that are to be received and to mark those that are to be automatically read at initialization. Data can be imported from ETS4 via a free app, "SIEMENS KNX2S7 Export" (http://onlineshop.knx.org).

Addresses are assigned automatically by the editor. The addresses can be viewed in the Editor or exported for documentation.

The parameterization of the blocks necessary for the SIMATIC is generated by the Editor at the click of a mouse and can then be downloaded to the SIMATIC. The blocks contained in KNX/EIB2S7 handle the communication on the basis of this parameterization.

When data is received, the current values are saved in the data blocks provided for them. The values that have been updated are then marked. Equally, there are blocks available for the selective reading and writing of values.

6

Technical specifications

Representation of the data types					
Data type	KNX value	EIS type	SIMATIC data type	Representation in the SIMATIC	User conversion
DPT1	BOOL	EIS1	Bit	TRUE/FALSE	n
DPT2	1 bit controlled	EIS8	Byte	MSB ([0000 00XY] LSB X = controlled Y = Value	n
DPT3	4 bits	EIS2	Byte	MSB (0000 XYYY) LSB X = Increase/decrease Y = Step 0-7	n
DPT4	Char	EIS13	Char	ASCII	n
DPT5	1 byte unsigned	EIS14	Byte		n
DPT6	1 byte signed	EIS14	Byte		y
DPT7	2 bytes unsigned	EIS10	Word		n
DPT8	2 bytes signed	EIS10	Int	Representation in 2s complement	n
DPT9	2 bytes float	EIS5	Real	Conversion implicit in the driver	n
DPT10	Time of Day	EIS3	DWord	MSB (0000 0000/dddh hhhh/00mm mmmm/00ss ssss) LSB d = day 0 no day; 1-7 h = hour 0-23 m = minute 0-59 s = second 0-59 Important! No value check by the driver	n
DPT11	Date	EIS4	DWord	MSB (0000 0000/000d dddd/0000 mmmm/0yyy yyyy) LSB d = day 0-31 m = month 0-12 y = year 0-99 (0-89 = 2000-2089; 90-99 = 1990-1999) Important! No value check by the driver	n
DPT12	4 bytes unsigned	EIS11	DWord		n
DPT13	4 bytes signed	EIS11	D Int	Representation in 2s complement	n
DPT14	Float	EIS9	Real	IEEE754	n
DPT15	Access	EIS12	DWord	MSB (XXXX6 XXXX5/XXXX4 XXXX3/XXXX2 XXXX1/EPDC NNNN) LSB X = AccessCode 6-digit; 0-9; 1 nibble each E = 1 detection error (reading of access information code was not successful) P = Permission 0=not accepted; 1= accepted D = Direction 0=left to	n
DPT16	String	EIS15	String (14)	Driver evaluates header of the S7 string and then generates the 14-character long EIB string.	n

Ordering data | Article No.

KNX/EIB2S7 program package
Task:
Software for connecting KNX/EIB components from building management systems to SIMATIC S7
Type of delivery:
Editor, function blocks for SIMATIC S7, samples, documentation on CD
License for Editor on USB flash drive

6AV6643-7AC10-0AA1

Customized Automation
Customized software

SIMATIC Modbus/TCP

Overview
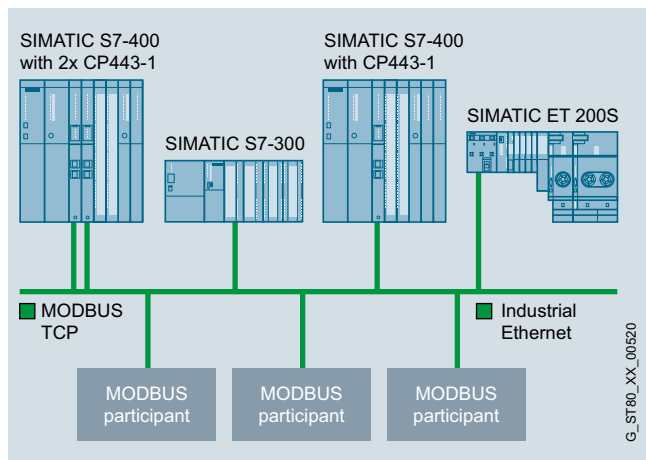
- Software for communication between SIMATIC S7 and devices that support the Modbus/TCP protocol
- Expansion or upgrade of existing plants with SIMATIC automation systems
- Connection of controllers and systems from different manufacturers

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 tool SIMATIC STEP 7
- Fast configuration with the help of a wizard (only available for specific versions)

Application

MODBUS is a protocol that is widely used internationally, open to all users and supported by many manufacturers. MODBUS/TCP was developed from it for use in modern networks.

This protocol is now an open Internet draft standard that was introduced by IEFT (Internet Engineering Task Force), the organization for Internet standardization.

This openness means that every manufacturer and user is able to use this protocol – a possibility that many leading manufacturers have already availed of.

The increasing expansion of Ethernet communication into industrial areas as well as the office environment has extended the use of MODBUS/TCP in every sector. Heterogeneous system landscapes are the typical areas of use.

Design

Communication with the Modbus/TCP stations is performed via a communications processor (CP) or via the integrated PN interface of the SIMATIC S7 CPU.

A SIMATIC S7 controller can communicate with more than one Modbus/TCP station simultaneously, depending on the number of connection resources of the S7 CPU.

SIMATIC Modbus/TCP CP and Redundant V2 support the following CPs of the SIMATIC S7:
- S7 300
  - CP 343-1
- S7 400
  - CP 443-1

Use is possible only on CPs that support the function AG_CNTRL.

SIMATIC Modbus/TCP PN CPU, SIMATIC Modbus/TCP PN Red and SIMATIC Modbus/TCP SENTRON PAC support the following CPUs of the SIMATIC S7:
- ET 200
  - IM 151-8 PN/DP CPU
  - IM 154-8 PN/DP CPU
- S7 300/400
  - CPU 314C-2 PN/DP
  - CPU 315-2 PN/DP
  - CPU 317-2 PN/DP
  - CPU 319-3 PN/DP
  - CPU 412-2 PN
  - CPU 414-3 PN/DP
  - CPU 416-3 PN/DP
- Soft PLC (SIMATIC Modbus/TCP PN CPU only)
  - SIMATIC WinAC RTX
- SENTRON PAC (for SIMATIC Modbus/TCP SENTRON PAC)
  - PAC 3200, as of FW V2.2.1
  - PAC 4200, as of FW V1.5.1

The Modbus/TCP products have been released for standard CPUs, for F-CPUs, and for (PN)-(H) CPUs.

Mode of operation

The Modbus block functions according to the client/server principle. The client is the active station and the server is the passive station in the communication process. Data is exchanged between the communication partners by means of various different function codes. The S7 can be operated as a client as well as a server during transmission.

In the initialization phase, it is determined on which S7 data blocks the Modbus registers and coils should be represented.

A distinction is made between client and server functionality during cyclic operation:
- If the S7 is operating as a client, when a task is activated, a Modbus message frame is generated from the specified current parameters and sent to the coupling partner over the TCP/IP connection. After the response frame has been received and the data has been checked and found to be consistent, the required actions, such as reading or writing data, will be performed. Any errors that occur during evaluation or processing will be indicated on the Modbus block.
- If the S7 is operating as a server, the block waits for a response frame from the client. If a frame is received from a client, it is checked and evaluated. After the frame has been checked and found to be consistent, the response frame is generated and the required actions, such as reading or writing data, will be performed. A processed request, or any errors that occur during evaluation, will be indicated on the Modbus block.

Technical specifications

	2XV9 450-1MB00	2XV9 450-1MB02	2XV9 450-1MB11
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
Modbus address range	0 - 65535	0 - 65535	0 - 65535
Data volume			
Read register	125	125	125
Write register	123	123	123
Read bits	2000	2000	2000
Write bits	1968	1968	1968
Capable of multi-instance	•	•	•
Max. number of parallel block calls	• CPU-dependent • Client: No limit to the number of block calls; maximum number of simultaneously active blocks limited by the CPU (AG_SEND/AG_RECV) • Server: limited by the max. number of AG_SEND/AG_RECV calls of the CPU	• Unlimited number of block calls; • Number of simultaneously established connections is dependent on the CPU	• CPU-dependent • Client: No limit to the number of block calls; maximum number of simultaneously active blocks limited by the CPU (AG_SEND/AG_RECV) • Server: limited by the max. number of AG_SEND/AG_RECV calls of the CPU
Connection configuration	Static connections over NetPro	Dynamic connections over TCON and TDISCON	Static connections over NetPro
Communication	AG_(L)SEND/AG_(L)RECV	TSEND/TRCV	AG_(L)SEND/AG_(L)RECV
Work memory requirement			
FB (Client/Server)	16 KB	19 KB	20 KB
IDB	approx. 1 KB	approx. 1 KB	approx. 1 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 two-sided redundancy is possible
Bit memories/timers can be used	No	No	No

Ordering data

	Article No.		Article No.
Modbus/TCP PN RED Single License, redundant MODBUS communication via the integrated PN interface of the S7-400 PN(H) CPU and S7-300 PN CPU, valid for 1 PN-H CPU pair or 1 single PN-CPU	6AV6676-6MB10-0AX0	**Modbus/TCP PN CPU** Task: Software for coupling ModbusTCP devices to SIMATIC S7 via the integrated PN interface Type of delivery: Function blocks for SIMATIC S7, example projects, documentation on CD	2XV9450-1MB02
Modbus/TCP 20 SENTRON PAC Single License	6AV6676-6MA30-0AX0		
Modbus/TCP 100 SENTRON PAC Single License	6AV6676-6MA30-1AX0	**Modbus/TCP RED V2** Task: Software for coupling ModbusTCP devices to SIMATIC S7 H stations via 2 communications processors (CPs) Type of delivery: Function blocks for SIMATIC S7, example projects, documentation on CD	2XV9450-1MB11
Modbus/TCP 512 SENTRON PAC Single License, communication via the integrated PN interface for reading out values from PAC 3200 and PAC 4200 devices, valid for 1 CPUe	6AV6676-6MA30-2AX0		
Modbus/TCP CP Task: Software for coupling Modbus/TCP devices to SIMATIC S7 via a communications processor (CP) Type of delivery: Function blocks for SIMATIC S7, example projects, documentation on CD	2XV9450-1MB00		

Customized Automation

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 can offer products for the following sectors:

• Renewable energy
• Automotive industry - HMI for factory automation
• General machine construction
• Food and beverages industry, pharmaceuticals
• Oil & gas, chemicals industry and shipbuilding

Customized products for various industries are developed and produced in association with a customized product agreement.

Examples:
• Application area *Renewable energy*:
  - SIMATIC Rack PC with flexible expansion
  - SIMATIC Box PC: 627/427 with QNX
• Use in the *automotive industry*:
  - HMI operator stations
  - Front panel for Panel PC, 15" with arrow keys on the side
  - Mobile Panel 277 10" Remote Operate
• Application area *mechanical equipment manufacture, general*:
  - Touch and Key front panel 15" for Panel PC, resistant to honing oil
  - Flat Panels 10.4" for Panel PCs – Flat Panel SCD1900 portrait
• Area of application *food* and *beverages industry* and *pharmaceuticals*:
  - Panels and Panel PCs with stainless steel front
  - HMI panels as rear-mounting devices
  - Flat Panels with stainless steel front
  - HMI stainless steel operator stations
• Area of application *oil & gas, chemicals* and *shipbuilding*:
  - MP 377 15" Touch daylight readable

6

■ **Overview**

SIMATIC HMI products are provided with additional features in order to facilitate use in specific sectors.

Solar systems

Photovoltaic systems 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.

6

Customized Automation
Examples of sector products
Renewable energy

Solar systems

Overview

Solar systems

Compared to other power plants, photovoltaic systems 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

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

Application

All SIMATIC Panels and IPCs are developed for especially demanding environments and also for long service life. Spare parts availability for many years secures use in sound solar and photovoltaic systems.

• Rugged:
  Ambient temperatures of 0 °C to +55 °C offer high flexibility in the choice of installation location. Use of a TEK is recommended for increasing the temperature range (see Chapter: Temperature Extension Kit).

• Innovative and flexible:
  - We meet the ever-increasing demand for more computing power by using the current generation of processors from Intel®. Based on the current chipsets, devices are available with CeleronM, Core2Solo, Core2Duo and Core2Quad. This makes power-saving applications (e.g. simple data acquisition) just as possible as power-hungry applications (such as the software PLC in real-time WinAC RTX) and server systems.
  - The SIMATIC IPCs fit into any control cabinet. Different mounting methods enable a host of installation variants.

Optimized equipping of the Panels and IPCs for more system availability is one of the simplest options for increasing productivity by means of reducing standstill times. Electromechanical components often cause malfunctions in PCs.

Since hard disks and fans in the industrial PC usually operate continuously, they are subject to an especially high rate of wear and tear. Software options for diagnostics and data backup, such as SIMATIC IPC DiagMonitor or SIMATIC IPC Image Creator, are particularly effective here, in addition to the use of high-quality industrial grade components.

6

Overview

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.

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

Application

All SIMATIC Panels and IPCs are developed for especially demanding environments. The devices are optimally equipped to deal with vibration in wind turbines: rugged enclosures, special hard disk brackets, and interlocks are just a few examples of standard features on SIMATIC devices.

- Rugged:
  - The SIMATIC IPCs fit into any control cabinet. Different mounting methods enable a host of installation variants. Ambient temperatures of 0 °C to +55 °C are supported on the IPC427C, with much higher temperatures in some applications. Use of a TEK is recommended for extreme temperatures (see Chapter: Temperature Extension Kit).
  - Salt-laden atmospheres are hard on the devices. SIMATIC Panels are also available in the IP65 type and are thus eminently suitable for offshore use. Versions of the Microbox 427C also enable use in salt-laden atmospheres: this is made possible by special paint processes that have been in use for many years.

- Innovative and flexible:
  We meet the ever-increasing demand for more computing power by using the current generation of processors from Intel®. Based on current chipsets, devices with Celeron M, Core2 Solo, Core2 Duo and Core2 Quad are available. This makes power-saving applications (e.g. simple data acquisition) just as possible as power-hungry applications (such as the software PLC in real-time WinAC RTX) and server systems.

Optimized equipping of the IPC and the Panel for more system availability is one of the simplest options for increasing productivity by means of reducing standstill times. Electromechanical components often cause malfunctions in PCs.

Since hard disks and fans in the industrial PC usually operate continuously, they are subject to an especially high rate of wear and tear. Software options for diagnostics and data backup, such as SIMATIC IPC DiagMonitor or SIMATIC IPC Image Creator, are particularly effective here, in addition to the use of high-quality industrial grade components.

6

Customized Automation
Examples of sector products – Automotive industry
Electrified Monorail System (EMS)

EMS400S family

■ **Overview**

EMS400S family for S7-1200

Power Signal Booster PSB-C and PSB-S with S7-1200
- Device family for the low-cost transmission of pulse-encoded commands via contact wire for electric overhead conveyors
- Bidirectional communication between vehicle and system control with a transmission rate of 16 bit/ 250 ms
- Control via S7-1200; freely programmable via TIA Portal

6

■ Overview

SIMATIC EMS450S

The EMS450S 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 –
  three-phase / 24 V DC / 5 A
- Frequency inverter MM440
- SIMATIC PSB C module for sending and receiving pulse-encoded signals on the rail
- Display unit with 3 x 7-segment displays for depicting the control states

■ Technical specifications

	EMS450S
Display	See IR-DU
Power supply	
Rated voltage	Three-phase alternating current 400 V AC, 50 / 60 Hz
Power consumption, typical	Approx. 0.4 A (400 V AC)
Environmental conditions	
Degree of protection	
Front / Rear	IP65
Ambient temperature	
During operation	0 °C to +45 °C
Relative humidity	10% to 90%, no condensation
Transport / storage temperature	-20 °C to +55 °C
Certifications	CE, others on request
Dimensions	
External overall dimensions (W x H x D), in mm (including connectors)	481.5 x 300 x 128
Weight	10 kg

■ Ordering data

	Article No.
EMS450S EHB controller with S7-1200 and PSB-C, with integrated frequency inverter MM440	**6ES7212-0AA50-0AA0**

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Customized Automation
Examples of sector products – Automotive industry
Electrified Monorail System (EMS)

SIMATIC EMS451S

■ Overview

SIMATIC EMS451S

- 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 – three-phase / 24 V DC / 5 A
- SINAMICS V20 frequency inverter
- SIMATIC PSB C module for sending and receiving pulse-encoded signals on the rail
- Display unit with 3 x 7-segment displays for depicting the control states

■ Technical specifications

	EMS451S
Display	See IR-DU
Power supply	
Rated voltage	Three-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
Certifications	CE, others on request
Dimensions	
Exterior overall dimensions (W x H x D) in mm	
• Without fan	
- Without connector	400 x 230 x 153
- incl. connector	468 x 230 x 153
• incl. fan	
- Without connector	400 x 250 x 153
- incl. connector	468 x 250 x 153
Weight	
• Without fan	9.2 kg
• incl. fan	10 kg

■ Ordering data

	Article No.
EMS451S	
• With S7-1200 and PSB-C, with integrated frequency converter SINAMICS V20, 0 ... 45 °C	**6ES7212-0AA51-0AA0**
• With S7-1200 and PSB-C, with integrated frequency converter SINAMICS V20 and external PN interface, 0 ... 50 °C	**6ES7212-0AA51-0AB0**

6

■ Overview

EMS400S rail signal booster

SIMATIC EMS400S PSB-C module

The PSB-C (*Power-Signal-Booster Carrier*) module is employed in the cart and establishes the communication between it and the segment control.

The module is connected on the right of the S7-1200 as an IO module. The PSB-C module can operate one rail channel. Other interfaces:

• Analog velocity setpoint
• RS 232 interface for the IR-DU display module

■ Technical specifications

	SIMATIC EMS400S PSB-C module
Power supply	
Rated 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 bit
RAIL Interface	
Quantity	1
Type	Differential, 48 V AC
Data rate	16 bits / 250 ms
Display unit interface	
Quantity	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%, no condensation
Storage temperature	-40 °C to +70 °C
Certifications	CE, cULus, AS/NZL
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	**6ES7228-1RC51-0AA0**
Power signal booster PSB-C, 1 x AQ, 0 ... 10 V DC, RS 232, rail signal 48 V DC	

6

Customized Automation

Examples of sector products – Automotive industry
Electrified Monorail System (EMS)

SIMATIC EMS400S PSB-S module

■ Overview

EMS400S rail signal booster

SIMATIC EMS400S PSB-S module

The PSB-S (*Power-Signal-Booster-Segment*) module is used for segment control and establishes the communication between it and the cart.

The module is connected on the right of the S7-1200 as an IO 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

	SIMATIC EMS400S PSB-S module
Power supply 1	
Rated voltage	24 V DC
Power consumption, typical	Approx. 0.1 A
Power supply 2	
Rated voltage	48 V DC
Power consumption, typical	Approx. 1.9 A
SYNC input	
Number of inputs	1
Type	Current-sinking, IEC Type 1
Rated voltage	24 V
Digital inputs	
Number of inputs	6, in a group
Type	Current-sinking, IEC Type 1
Rated voltage	24 V
RAIL interface	
Quantity	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%, no condensation
Storage temperature	-40 °C to +70 °C
Certifications	CE, cULus, AS/NZL
Dimensions	
Dimensions (W x H x D) in mm	70 x 100 x 75
Weight	Approx. 230 g

■ Ordering data — Article No.

Ordering data	Article No.
SIMATIC EMS400S PSB-S module 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

EMS400S IR-DU infrared display unit

SIMATIC EMS400S IR-DU

The EMS400S IR-DU (*Infrared Display Unit*) module represents the HMI unit in the cart.

It contains 3 x 7-segment displays, indicator lights and an infrared receiver. It is controlled by the S7-1200 in the cart.

Technical specifications

	SIMATIC EMS400S IR-DU
Power supply	
Rated 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	
Quantity	1
Data exchange interface	
Quantity	1
Type	RS232-based
Environmental conditions	
Degree of protection	
Front	IP65
Rear	IP20
Ambient temperature	
During operation	0 °C to +60 °C
Relative humidity	10% to 95%, no condensation
Storage temperature	-20 °C to +60 °C
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	**6ES7292-0AA50-0AA0**
Infrared display unit	

Customized Automation
Examples of sector products – Automotive industry
Electrified Monorail System (EMS)

SIMATIC EMS400S IR-RC

■ Overview

EMS400S IR-RC infrared remote control

SIMATIC EMS400S IR-RC

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

	SIMATIC EMS400S IR-RC
Power supply	
Rated voltage	3 V DC (2 x AA batteries)
Power consumption, typical	< 15 mA
Infrared reception	
Opening angle	<16°
Range	Min. 10 m
Keys	
Quantity	16
Environmental conditions	
Degree of protection	
Front / Rear	IP65
Ambient temperature	
During operation	0 °C to +60 °C
Relative humidity	10% to 95%, no condensation
Storage temperature	-20 °C to +60 °C
Dimensions	
Dimensions (W x H x D) in mm	152 x 83 x 35
Weight	< 200 g

■ Ordering data | Article No.

SIMATIC EMS400S IR-RC	**6ES7292-0CA50-0AA0**
IR-RC infrared remote control for SIMATIC S7-1200	

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Overview

EMS400S IR-S external infrared sensor

SIMATIC EMS400S IR-S

The EMS400S IR-S (*Infrared External Sensor*) module forms an extension of the IR-DU display module.

In the event that the integrated sensor does not lie in the accessible control field of the user, it is possible to connect the external sensor to any other point of the control housing.

Technical specifications

	SIMATIC EMS400S IR-S external sensor
Power supply	
Rated voltage	5 V DC
Power consumption, typical	Approx. 0.35 mA
Infrared reception	
Opening angle	<120°
Range	Min. 10 m
Ambient temperature	
During operation	0 °C to +60 °C
Relative humidity	10% to 95%, no condensation
Storage temperature	-20 °C to +60 °C
Dimensions	
Dimensions (W x H x D)	M20 x 1.5 fine thread, H=10.5 mm
Weight	< 50 g

Ordering data

	Article No.
SIMATIC EMS400S IR-S	**6ES7292-0AA55-0AA0**
Expansion of the IR-DU display module	

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Customized Automation
Examples of sector products – Automotive industry
Electrified Monorail System (EMS)

SIMATIC EMS400S DU

◼ Overview

EMS400S diagnostics unit

SIMATIC EMS400S DU

The EMS400S module (*Diagnostics Unit*) is a test tool for:
• System and control cabinet configuration
• Commissioning of a system, segment control system, carriage
• Maintenance, troubleshooting (also while in operation)
• Operating modes:
  - Signal and telegram 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

	SIMATIC EMS400S DU
Power supply	
Rated voltage	
Graphics	Graphic display 240 x 320 pixels color
Keyboard	16 x membrane keys
Contacting	
Contacting	• Galvanic on rail, 4 mm socket • Signal input galvanically isolated
Data interface	USB for PC communication and USB stick

◼ Ordering data

	Article No.
SIMATIC EMS400S DU Test tool	**6ES7292-0EA50-0AA0**

■ **Overview**

Operations computer: Unit operator panel and protective guard control box (PGCB)

The fully-equipped and wired turnkey solutions in a variety of designs are ideal for the requirements of the automotive industry.

■ **Benefits**

• Modern design combined with outstanding functionality
• Increased heat dissipation thanks to ribbed aluminum profile and backpanel heat sink
• Easy access to controls thanks to hinged front frame or hinged backpanel
• Modular system for precise customization and tailoring to Panel or Panel PC
• High-quality aluminum press-drawn section with clean surface finish
• Colors to complement design, also possible in customized RAL colors
• Rugged and maintenance-friendly device design
• Very high EMC
• Distributed configuration for large machines and distributed installations
• Optimized high-speed operator control thanks to:
  - Reduced number of operator controls
  - Optimum control element layout
  - 24 V DC hardware
  - Direct keys or high-speed PROFIBUS communication for direct keys
• Use of high-capacity mass storage for large software applications
• Silicone-free device configuration
• Chemically-resistant surfaces (resistant to lubricants and fillers, oils, etc., in particular)
• Welding sputter-resistant surface
• Project-specific software ready installed

■ **Application**

In automotive industry, the fault-free operation of production facilities is of paramount importance. The requirements of industrial control enclosures in respect of impermeability to dust and water, as well as those in respect of the management of the internal heat balance are therefore very high.

In addition to the HMI IPC477C and HMI IPC577C, the HMI IPC677C and Flat Panels are also suitable for use as operator PCs in the automotive industry.

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Customized Automation
Examples of sector products
Automotive industry

HMI operator stations for the automotive industry

■ Design

- The modular design with a variety of aluminum frame and expansion profiles can support all required device combinations. A variety of operator stations appear in the overview:
  - Modular aluminum control enclosure system for the combination of multiple HMI Panels, Panel PCs, and SIMATIC S7 PLCs
  - Modular aluminum control enclosure system for the combination of multiple HMI Panels
  - Modular aluminum control enclosure system for the installation of an HMI Panel or Panel PC
- Can be accessed via hinged front frame or hinged backpanel
- Integrated support arm elements at the top and bottom for the direct attachment of support arm couplings
- Integrated handle attachments facilitate handling and underline the design image

Certifications / Approvals

- IP65
- NEMA 4/EEMAC Type 12
- cULus
- CE

■ Technical specifications

Examples from the automotive industry		
Type	**HMI operator control unit**	**Operator PC unit operator panel + PLC**
Components		
Computing unit	SIMATIC HMI IPC677C • Core i7, 2.53 GHz, 4 GB RAM • 250 GB HD, • PROFINET + 2 x Ethernet interfaces 10/100 Mbit • Europe default 230 V	PC Box based on SIMATIC HMI IPC677C • Core i7, 2.53 GHz, 4 GB RAM • 250 GB HD, • Without MPI/PROFIBUS + 2 x Ethernet interface 10/100 Mbit • Europe default 230 V
Front panel	SIMATIC HMI IPC677C 15" Touch, 15" XGA 1024x768 resolution	Customized front with 2x6 control keys, 15" XGA 1024x768 resolution
Additional components		• PP17-I PROFIsafe • PP17-II • S7-400 configuration
Additional components		
Operator panel enclosure	CC-4000, mounted on stand	• VIP 6000 (upper part) • IW 6900 (lower part)
Dimensions	578 x 764 x 183 mm	630 x 1870 x 636 mm
Operator panel	with slide-in label	–
Keyboard	Sasse stainless steel keyboard IP65	Sasse stainless steel keyboard IP65
Mouse	Track-Ball integrated in the keyboard	Optical mouse
Elements	3 x 3SB3 elements with labeling plates, 1 x Emergency Off, 1x machine circuit-breaker, signal light processing possible	2 x 4 operator controls, 1 x Emergency Stop
Locking	• E1-locking for enclosure lock • E7 key-operated switch	Customized enclosure lock
Mounting	Installation in operator panel enclosure with electrical wiring	Installation in operator panel enclosure with electrical wiring
Ventilation	–	–
Terminals	Use of 3-wire terminals	Use of Wago terminals
Core identification	Yes	Yes
Base profile	• Icotec • RJ45 Ethernet port	• Icotec • RJ45 Ethernet port
Software:	• Windows 7, MUI • WinCC V7.x • SIMATIC STEP 7 Prof V5.x	• Windows 7, MUI • SIMATIC Softnet S7 for IE V 6.x • SIMATIC STEP 7 V 5.x • SIMATIC S7-Graph V 5.x • SIMATIC Distributed-Safety V 5.x • InTouch Runtime V 9.x

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Technical specifications (continued)

Type	Protective guard control box (PGCB)
Components	• SIMATIC HMI KP8F • SIMATIC ET200S • SCALANCE X202 – 2P IRT Ethernet switch
Additional components	
Operator panel enclosure	AE housing
Dimensions	300 x 300 x 155 mm
Elements	• 8 short-stroke keys • 1 x emergency stop • 3 x Siemens key switches • 1 x signaling column
Locking	Customized enclosure lock
Mounting	Installation in operator panel enclosure with electrical wiring
Core identification	Yes

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 order number is allocated during the product agreement process.

SIMATIC contacts in your area:

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

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Customized Automation
Examples of sector products
Automotive industry

Front panel 15" with motion keys at side

Overview
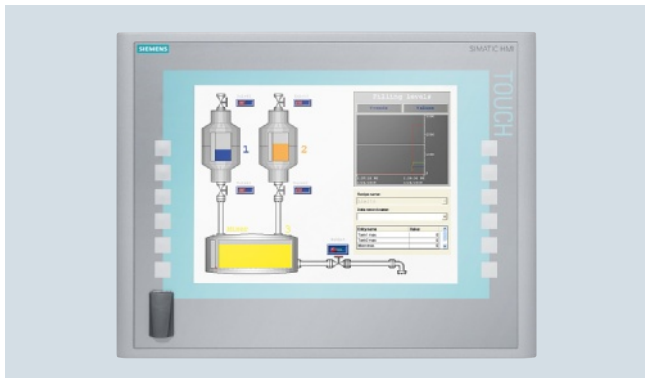
Front panel 15" with function keys at side for Panel PC in the automotive industry

The front panel 15.1" with arrow keys at side is designed as a front unit for Panel PC. The arrow keys at the side allow intuitive and direct activation of movements in the plant. The display is a pure display unit, alphanumeric characters are entered using an external keyboard and external pointing device.

Benefits

- Display unit with additional function keys for efficient and direct activation of motions
- Display surface resistant to welding beads
- 24 V DC function keys for wiring to digital inputs of controller
- Non-interchangeable terminals

Application

Application example: Operations computer in the automotive industry

The front panel for Panel PCs with function keys at the side is designed for HMI operations in the automotive industry, e.g. as a display for control computers.

The front unit as the display unit with function keys at the side is always used if comprehensive inputs are necessary using an external keyboard and pointing device, but where efficient control of movements should be additionally possible using the function keys assigned to the graphics and directly to the PLC.

Design

- 2 x 6 function keys (24 V DC) on left and right of display
- Function keys connectable using non-interchangeable terminals, e.g. using vacant inputs of a Push Button Panel to the control
- Display surface resistant to welding beads
- USB interface at the front
- External dimensions and mounting cutout as for corresponding standard product
- IP65 degree of protection at the front

Technical specifications

Type	Front panel 15" with lateral function keys
Display	15.1" TFT
Resolution (pixels)	1024 x 768 pixels
General features	As for 15.1" front panel for HMI IPC677C

Special features	
Interfaces	USB interface at the front
Connectable to Panel PC	HMI IPC477C, HMI IPC677C, compact and distributed design
Number of keys	2 x 6 function keys (24 V DC) on left and right of display, wired to terminals

Modification possibilities
- Customized design
- Modification of front design

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.

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Overview

Front view

- For high-contrast and clearly readable display of already configured SIMATIC WinCC process pictures of a stationary operator panel (e.g. with PC 677) without further configuring and adaptation overhead
- Server and client optimized for the following resolutions:
  - Remote Operate Server with 1024 x 768 pixels
  - Remote Operate Client with 800 x 600 pixels
- Features
  - High-resolution display 10" SVGA
  - Integral acknowledgment and stop button (safety category 3 in accordance with EN 954-1)
  - Rugged and double-panel enclosure (drop height 1 m, complete IP65 degree of protection)
  - Thin Client concept:
    Communication with the higher-level operator station using Remote Operate software and PROFINET

Application

RO Client 800 x 600 pixels and RO Server 1024 x 768 pixels

The SIMATIC Mobile Panel 277 10" Remote Operate (RO) from Siemens bridges the gap between flexible use through portability and ease of handling, and the benefits of a thin client concept.

Existing WinCC configurations of a Panel PC 677 15" can be represented with functional compatibility. Reliable data transfer and short response times are guaranteed here. Operator input using the touch screen is intuitive. The optional device holder enables secure storage or stationary operation of the Mobile Panel.

Design

Rear view and side view

User-friendliness and ergonomic use were consistent design considerations. With its low weight and compact design, the Mobile Panel sits comfortably in the hand.

The Mobile Panels are extremely impact-resistant thanks to the double-panel design and the rounded enclosure shape. The STOP button is protected by a "collar" against unintentional use and against damage when dropped. Harsh industrial environments present no problems to the SIMATIC Mobile Panels with their dust and spray-water-protected enclosures in degree of protection IP65.

The Mobile Panel is simply connected wherever it is needed in the plant. The rugged connection box with degree of protection IP65 can be installed anywhere. It ensures fault-free connection and disconnection during normal operation and thus enables the operator-control locations to be easily and safely changed when several connection points are available in a plant.

The cable is up to 25 meters in length and handles power supply, transfer of the STOP and acknowledgment button signals, and also data communication.

The device has no rotating media.

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Customized Automation
Examples of sector products
Automotive industry

Mobile Panel 277 10" Remote Operate

Mode of operation

All applications are run on the the Remote Operate Server, which in turn handles any control connection to the production process. The user now decides which applications will be operated and monitored from the Mobile Panel. The plant operator hardly notices that he or she is now working on the main operator station and no longer locally.

The device does not process the data locally, but instead accesses the data of up to ten selectable main operator stations with the help of the pre-installed Remote Operate Client software.

These main operator stations are, in turn, equipped with the Remote Operate Server software. All stations are connected via Industrial Ethernet.

The Mobile Panel is thus optimized exclusively on the visualization and management of the different stationary operator stations.

Communication with the higher-level operator station takes place via the Remote Operate software and is enabled via PROFINET.

Function

- Automatic restart after switching on and display of the server selection list (up to 4 hierarchical levels and up to 10 servers)
- Password protection
- Automatic Reconnect of client
- Operation authorization indication (traffic light) on the server and client

Sophisticated safety concept

The Mobile Panel has an acknowledgement button (in accordance with EN 60204-1) with three switching steps. This can be adjusted to an ergonomic position for both left-handed users and right-handed users simply by turning.

The STOP pushbutton (acc. to EN 60204-1) can be looped into the EMERGENCY OFF circuit of a machine and positively latches when pressed. It is distinguished from an EMERGENCY-OFF button by its gray color. This ensures that it cannot be mistaken for the EMERGENCY-OFF equipment.

The STOP and acknowledgment buttons are implemented as double circuits in accordance with Safety Category 3 to EN 954-1.

Technical specifications

Type	Mobile Panel 277 10" Remote Operate
Display	10" touch screen SVGA with 800x600 pixels, TFT display with 65,536 colors
Operation	Touch screen with captive stylus and stylus holder, three-level acknowledgment button (dead-man's switch) integrated into the handle, stop button, function keys, key-operated switches and backlit pushbuttons as option. Suitable for left and right-handed operation
Interfaces	Hardwired connection line to connection box Plus for PROFINET/Ethernet and power supply (e.g. Mobile Panel 277 PN)
Software	Remote Operate Client software (Thin Client) on Windows CE 5.0, function-compatible representation of existing WinCC configurations/software applications of an existing server, e.g. PC677
Ambient conditions	Full IP65 degree of protection, ambient operating temperature 0°C to 40°C, drop height to 1.0 m
Certification	CE, cULus, C-Tick, EMC compliance, prototype test (BG/BIA or SIBE Switzerland)
In the accessories pack	CD-ROM, operating instructions, programming manual for Remote Operate Software
Options	Membrane function keys, access control (key-operated switch), buttons, handwheel
Weight	2.3 kg

	PN Plus connection box
Interfaces	2 x Ethernet with 10/100 Mbit/s, integrated switch
Expansion for operator-process communication	Reconnection during operation without interrupting the emergency stop circuit, monitoring of the STOP button, location recognition (through hardware)

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Ordering data

	Article No.
Mobile Panel 277 10" Remote Operate Configuration on request	**6AV6645-7AB10-0AS0**
Connection box PN Plus	**6AV6671-5AE11-0AX0**
Connecting cable • 5 m • 10 m • 25 m	**6XV1440-4BH50** **6XV1440-4BN10** **6XV1440-4BN25**

More information

Customer-specific modifications

- Individual company logo instead of the Siemens logo and changing the type designation
- Changing the keyboard colors, labeling, symbols and background color
- Possible options: Membrane function keys, access control, pushbuttons and handwheel

Quotation preparation

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting of a quote by SIMATIC HMI specialists, determining the following:

- 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 be easily ordered using this product agreement and a customized order number. Device fronts are to be stored and provided by the customer upon delivery completion.

6

Customized Automation
Examples of sector products
General machine construction

Front panel 15" Touch and Key for Panel PCs, resistant to honing oil

Overview
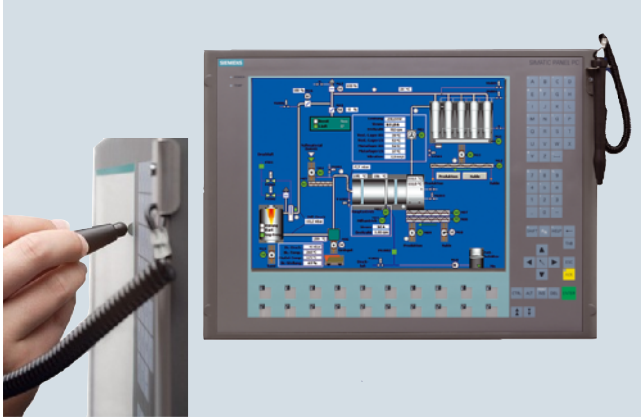
The Front Panel Touch and Key is designed as a front unit for Panel PCs. The combination of touch and key operation as well as the resistance to honing oil are characteristics of this product.

Complete lamination of the decoration foil 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 touch pen which cannot be lost
- Simple cleaning
- Resistant to coolants and lubricants

Application

The front panel for Panel PCs with touch screen and membrane keyboard has been designed for operator control and monitoring at machine level for machine construction applications, where honing oil and lubricants are used.

The touch and key front is always used if efficient operation of the machine is associated with the following requirements:

- Intuitive operation using graphic representation on display
- Specific command inputs using fixed command inputs
- Effective inputs in forms using the integrated numeric and alphanumeric keyboard

Also in applications with increased environmental influences such as dirt and oil. The homogenous foil surface without joints or edges permits easy cleaning, and is resistant to coolants and lubricants.

Application examples

- Printing machines
- Drilling, milling, honing machines
- Brake test stands
- Injection molding machines
- Building management
- Warehouse systems
- Automotive industry

Design

- External dimensions and mounting cutout as for corresponding standard product
- Degree of protection IP65 at the front

Customized Automation
Examples of sector products
General machine construction

Front panel 15" Touch and Key for Panel PCs, resistant to honing oil

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
	20 function keys with LED
Resistance	Tested with: 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 Order No. is allocated during the product agreement process.

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

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Customized Automation
Examples of sector products
General machine construction

Flat Panels, 10.4" for Panel PC

Overview

- Ideal for machine-level human machine interfacing
- Especially suitable for use in machines with restricted installation space
- Can be modified in design and front mechanical components (e.g. stainless steel front for food and beverages industry)
- Distance between the Flat Panel and PC max. 30 m
- Functions correspond to the standard Flat Panels
- Available with and without touch operation
- VGA and SVGA resolution

Application

The Flat Panel 10.4" TFT Touch has been designed as display and operator control unit for industrial PCs (e.g. SIMATIC Microbox 427C) and Panel PCs (e.g. PC 677C) and can be separated from the computing unit by up to 30 m.

They supplement the SIMATIC standard products and are suitable for machine-level human machine interfacing when PC functionality is required but little space is available for installing a display. VGA and SVGA resolution also in a secondary display, e.g. Panel PC 677C.

Technical specifications

Flat Panel	10.4"
Resolution (pixels)	800 x 600 pixels
Input unit	Analog-resistive touch screen
MTBF (at 25 °C)	50 000 h
Power supply	24 V DC, RoHS
Front dimensions (L x W x D in mm)	335 x 275 x 75
Installation dimensions (L x W in mm)	310 x 248
Approx. weight in kg	0.80

Ordering data

	Article No.
Flat Panel 10" Touch SIMATIC Flat Panel 10.4" TFT with analog-resistive Touch Panel, resolution 800 x 600 pixels, 24 V DC power supply, VGA, DVI-D interface, incl. VGA cable 1.8 m	**6AV7461-7TA00-0AA1**

More information

Customized modification options

- Customized design
- Modification of front design, e.g. stainless steel front

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Introduction

■ **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, DIN EN 1672-2 (Hygienic Design), GMP, LMHV, LMBG.

However, optimization and variation in the device hardware are also perfectly possible in regard to:

• 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 boxes	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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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Introduction

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 DIN 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 177.2006
- 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 front, the SIMATIC HMI Standard Panels are eminently suitable for industrial and machine-level use.

The Panels with stainless steel front 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 cabinet as ready-to-use units is optionally available as a customized version.

[1] Special resistance requirements must be examined separately.

Certificates, listings and appraisals

SIMATIC HMI products with stainless steel front, and the stainless steel operator panel, 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.126/01.03.2007)
- 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 front and the stainless steel operator panel 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 DIN EN ISO 14644-1".

Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Introduction

■ **Application**

Quality and hygiene are decisive competitive features in the production of food and beverages. In addition, higher volumes have to be produced in shorter times and with rising quality demands.

Objects and equipment that come into contact with food and beverages must be

- such that they are clean and can be maintained and, if necessary, disinfected, and have no adverse effect on the food and beverages
- installed in such a way that the immediate environment can be cleaned appropriately

Objects and equipment must be clean and well maintained (extract from the German food and beverages hygiene legislation). This requires not only the innovative know-how of engineering offices, mechanical equipment manufacturers and plant builders, but also modern, powerful human machine interface systems whose hardware and software are adapted to the special requirements.

The SIMATIC Panels and Panel PCs with touch screens and stainless steel fronts have been designed for use in the food, beverages and tobacco industry and for operator control and monitoring close to food processing machines. For this reason, the devices with stainless steel front have been developed in compliance with DIN EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".

Simpler cleaning and disinfecting

The high quality requirements in the food and beverages industry require 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 must be easy to clean and disinfect so that cross-contamination of the foodstuffs can be avoided.

The Panels with stainless steel front have a 240 grit hairline finish, so they are suitably smooth. 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.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Panels and Panel PCs with stainless steel front

■ 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 and beverages industry for operator control and monitoring close to food processing machines. They have been developed in compliance with DIN EN 1672-2 "Food processing machines – 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 shattering protection
- Degree of protection IP66K

■ Design

- External dimensions and mounting cutout as for corresponding standard product
- Optimized frame profile with a slight projection to the cabinet
- IP66K degree of protection at the front
- Surface ground with 240 grain abrasive
- Minimal number of grooves and joints
- Decorative film tested for resistance to chemicals
- Display splash protection
- Food-standard seals
- Rear tensioning frame for even application pressure of the seal

■ 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	
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, 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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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Panels and Panel PCs with stainless steel front

▊ 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, 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

	Article No.
TP 177B color PN/DP INOX with stainless steel front, otherwise corresponding to 6AV6642-0BA01-1AX0	**6AV6642-8BA10-0AA0**
MP 277 10" Touch INOX with stainless steel front and LED backlight, otherwise corresponding to 6AV6643-0CD01-1AX1	**6AV6643-0ED01-2AX0**
MP 377 15" Touch with stainless steel front and LED backlight; otherwise corresponding to 6AV6644-0AB01-2AX0	**6AV6644-0CB01-2AX0**
Panel PC 677B 15" 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 terminal which is ergonomic, functional, with high degree of protection as well as tested heat dissipation (e.g. with complete degree of protection IP66K)

Drafting a quotation

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting a quotation 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 easily ordered using this product agreement and a customized Article No.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

HMI Panels as rear-mounted devices

■ Overview
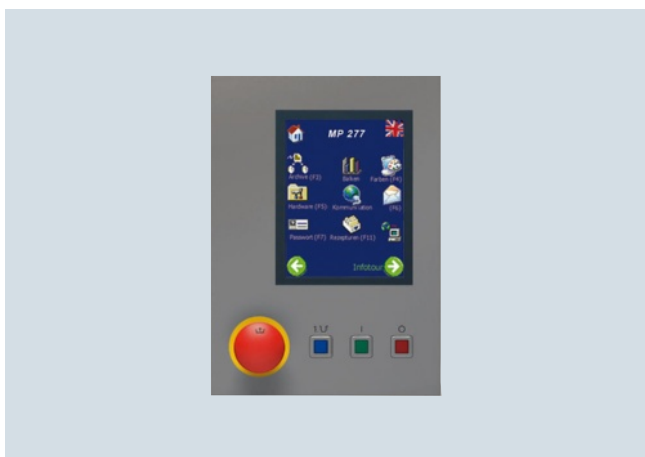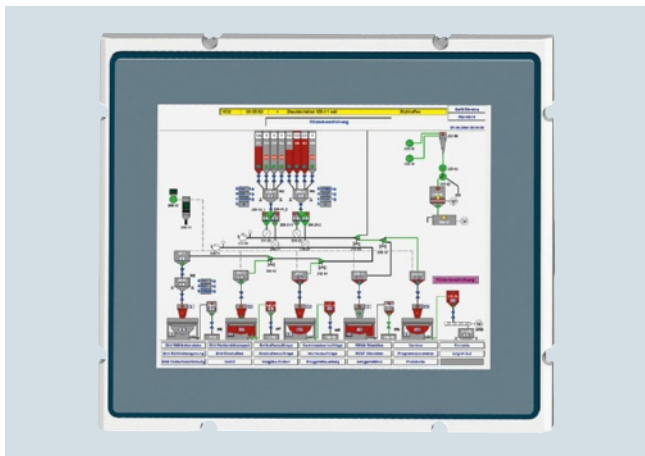
MP 377 12" Touch, rear-mounting, MP 277 8" Touch vertical, rear-mounting

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-mounting 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-mounting device of the same type for service purposes (MP 377 12" Touch rear-mounting only)

■ Design

The front frame is modified customer-specifically on the "rear-mounting devices":

The surface with the display viewing area covered with decorative membrane, and the marginal area around the display necessary for touch operation must be flush with the control cabinet sheet metal at the front. For this purpose, the front frame with the device seal and the cutouts for the holding bolts are set back from the visible surface by the thickness of the control cabinet sheet metal. The enclosure must have a suitable number of stud bolts available. The all-round device seal thus enables a high degree of protection: IP65.

The installation cutout can be dimensioned in such a way that the rear-mounting device can be replaced with the same type of front-mounting device for service purposes.

The decorative membrane is also drawn across the visible area of the display on the rear-mounting devices, so there is no cutout with adhesive edge above the display. The decorative membrane is smooth.

For sensitive applications where the gap dimension of the control cabinet cutout has too great a tolerance, there is the option of covering the entire surface including the gap with a transparent and replaceable membrane.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

HMI Panels as rear-mounted devices

Technical specifications

	MP 277 8" Touch vertical, 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)	about 50,000 hours 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-mounting panel in portrait format	Rear-mounting panel; panel cutout as on standard device
Weight	Approx. 2.7 kg	Approx. 5.5 kg

Ordering data

	Article No.
MP 377 12" Touch, rear-mounting Configuration on request	**6AV6644-…**
MP 277 8" Touch vertical, rear-mounting With emergency-off button and 3 short-stroke keys with LEDs on the front Configuration on request	**6AV6643-…**

More information

Customized modification options

Customized rear-mounting 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 easily ordered using this product agreement and a customized order number.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Flat Panels with stainless steel front

Overview
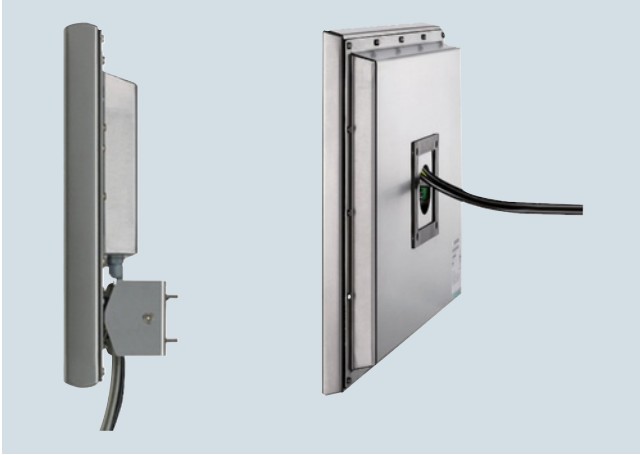
Flat Panel 15" Touch INOX,
Flat Panel 15" Touch INOX (enclosed),
Flat Panel 19" Touch INOX,
Flat Panel 19" Touch INOX (enclosed)

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.

Design

- Functions compatible with the SIMATIC HMI Standard Flat Panels
- Enclosure seal EPDM, sulfur-free
- Decorative membrane laminated over display, no display cutout
- 240 grain brushed stainless steel surface

The Flat Panels 15" Touch INOX and 19" Touch INOX VESA are fully enclosed and are suitable for space-saving mounting on a support system. The cables are then run in the supporting tube.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

Flat Panels with stainless steel front

■ 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 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

■ Ordering data

	Article No.
Flat Panel 15" Touch INOX	**6AV7486-2TA10-1AA0**
Flat Panel 15" Touch INOX fully enclosed Configuration on request	**6AV7476-...**
Flat Panel 19" Touch INOX Cable 1.8 m enclosed	**6AV7486-4TA01-0AA0**
Flat Panel 19" Touch INOX fully enclosed Cable 1.8 m pre-assembled	**6AV7486-4TA11-0AA0**

■ More information

Customized modification options

- Customized design
- Customized flange connection
- Cable length up to 30 m

Drafting a quotation

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting a quotation 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 easily ordered using this product agreement and a customized Article No.

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Customized Automation
Examples of sector products
Food and beverages industry/pharmaceuticals

HMI stainless steel operator stations

Overview

SIMATIC HMI Panels or Panel PCs mounted in a stainless steel cabinet as a ready-to-install and ready-to-use terminal that is ergonomic and functional, and has a high degree of protection (complete degree of protection IP66K) 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.

Design

- Control box completely assembled, wired, tested, with passive cooling

Design of stainless steel terminal
- For Panels and Panel PCs
- Angular surfaces so that liquids can run off
- Prepared for stand mounting
- With integrated handles at sides

High complete degree of protection
- Screwed-on rear panel
- Cable inlet through stand and flange

Simple to clean
- No sharp corners or edges
- No dead spaces
- Hairline finish of surface with 240 grade grain

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.

Customized Automation
Examples of sector products
Oil & gas/chemicals/shipbuilding

MP 377 15" Touch daylight readable

Overview

The requirements of the sectors oil and gas, chemicals and ship-building are diverse and range from use in areas subject to explosion hazard involving drill pipes, use in the extended temperature range (outdoor) and in direct sunlight, all the way to use on the darkened bridge of a ship.

In the case of drill pipes in the oil and gas industry and also in the chemicals industry, the following product features are important:

- Certification for areas subject to explosion hazard in Zones 2 and 22 in accordance with ATEX, FM Class I, Div. 2 and UL Haz. Loc.
- Daylight-readable display
- Use in sub-zero temperatures and in regions with high atmospheric humidity
- Resistant to harsh environmental conditions
- Scratch-proof and impact-resistant fronts are demanded for increased mechanical requirements

The following features are required in shipbuilding:

- Dimmable display down to complete black-out
- Marine Type certification such as Germanischer Lloyd and others

HMI sector products

- MP 377 15" Touch daylight readable

Overview
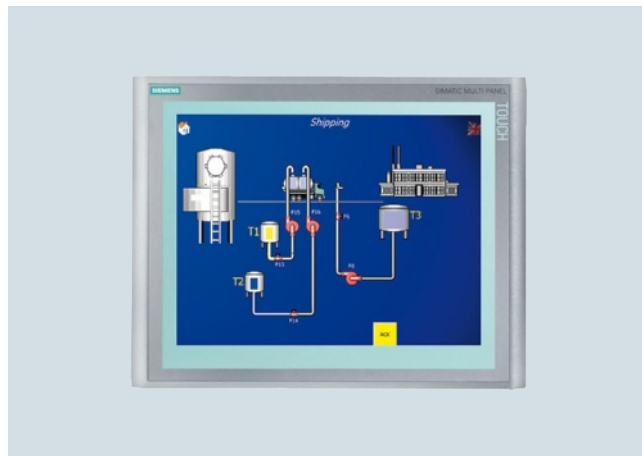
- Ideal for use in the oil & gas industry:
  - Certification in accordance with ATEX for Zone 2/22, UL Haz. Loc.,
  - FM Class I, Div.2
  - Bright, daylight-readable display
  - Rugged front for harsh environmental conditions
  - UV-protected decorative membrane
  - High degree of protection
  - Can be used in an air-conditioned control cabinet for the extended outdoor temperature range from -30 °C to +70 °C
- Ideal for use in shipbuilding:
  - Diverse shipbuilding certificates (available soon)
  - 100% dimmable display backlighting, local and centralized
  - Console installation without special measures or restrictions
  - High-contrast display with wide reading angle
  - Design version with black frame possible
- Features:
  - Daylight-readable, bright and dimmable LCD display
  - Splashwater-protected (IP66)
  - Rugged aluminum front, impact-resistant, UV-protected
  - Capacitive touch with 3 mm glass for harsh environmental conditions
  - Touch operation with thin gloves
  - Outdoor applications with extended temperature range (option)
  - ATEX Zone 2/22, FM Class I, Div. 2, UL Haz. Loc.
  - Ship-building certificates: DNV, GL, NK, ABS, LRS, CCS, RINA, BV, PRS
  - Fan-free

Benefits

- A panel for applications inside and outside the production hall
- Extremely easy to read under diverse conditions
- Ergonomic dimmer function for optimal reading in control desks
- Can be connected to centralized dimming potentiometer (via PLC)
- Familiar HMI functions (exception: Sm@rt option and high-speed keys), no new training

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Customized Automation
Examples of sector products
Oil & gas/chemicals/shipbuilding

MP 377 15" Touch daylight readable

■ Application

The panel has a daylight-readable and dimmable display, making it ideal for use in the control consoles, for example, of drilling rigs (oil & gas industry), ships (marine industry) and in other exposed areas including outdoor applications in air-conditioned control cabinets.

■ Design
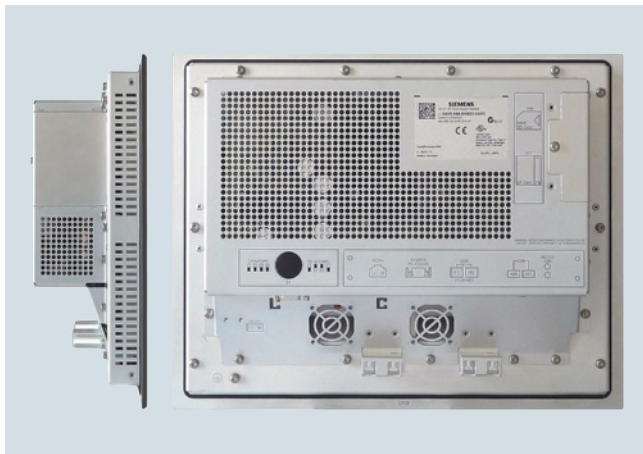
The "MP 377 15" Touch daylight readable" has a powder-coated milled aluminum front that is impact-resistant, scratch-proof and highly resistant to chemicals.

Touch operation uses projected capacitive technology protected against humidity, heat and dirt in harsh environments by a 3-mm pane of glass, without reflective membranes.

The refined polyester-based decorative membrane is UV-resistant and protected against yellowing and embrittling.

The LED-backlit and dimmable display is designed using transflective technology that allows a higher contrast than conventional, transmissive displays in extremely bright environments. The LED backlighting is dimmable using a slider on the process picture or centrally via the controller. Dimming is carried out using a gradation curve and is thus optimally ergonomically matched to the human eye.

The Panel is based on the field-proven electronics card of the MP 377 with WinCC flexible functionality and the familiar interfaces. The entire mechanical design is prepared for good convection and temperature balance, for long service life, and for operation onboard ship, or other vehicles with corresponding shock and vibration stresses.

■ Technical specifications

Multi Panels	MP 377 15" Touch daylight readable
General features	
Display	15" TFT, transflective
Brightness	max. 1 000 cd/m^2
Contrast	max. 1 000:1
Reading angle	160°
Resolution	1 024 x 768
MTBF of backlit display (at 25°C)	50 000 h LED backlighting, dimmable 0 (off) to 100%
Input unit	Touch, projected capacitive
Power supply	24 V DC, typ. 1.5 A
Special features	Daylight-readable
Front	
Material	Aluminum, Autotex XE, glass
Surface	Powder-coated aluminum, polyester-based decorative membrane, glass (Mohs 7)
Device seal	HC / EPDM 4x4
Ambient conditions	
Degree of protection	Front IP66, rear IP20
Ambient temperature during operation	Front -30°C to +70°C, rear 0°C to +50°C, changeover time >= 3 min
Relative humidity	10% to 90%, without condensation
Vibration	IEC 60068, Part 2–6 (sine), constant acceleration 1 g
Shock	IEC 60068, Part 2–29, 15 g peak value, 11 ms duration
Transport and storage conditions	IEC 60721-3-2, Class 2M2
Transport/storage temperature	-40 °C to +80 °C
Approvals	CE, cULus, C-Tick, ATEX Zone 2/22, UL haz. loc., FM Class I, Div. 2, marine certificates: DNV, GL, NK, ABS, LRS, CCS, RINA, PRS, BV
Sector	Oil & gas, ship, outdoor
Can be connected to SIMATIC PC	Multi Panels
HMI software	
HMI engineering software	Configurable from WinCC flexible 2008, SP1 with add-ons
HMI Runtime software	
Special features	Console mounting with an inclination of up to 90°, installation cutout as on MP 377 15" Touch (W x H)
Dimensions	
External dimensions (W x H x D in mm)	400 x 315.5 x 106
Installation cutout (W x H x D in mm)	365.6 x 287 x 100
Weight	4.6 kg

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Customized Automation
Examples of sector products
Oil & gas/chemicals/shipbuilding

MP 377 15" Touch daylight readable

Ordering data

	Article No.
MP 377 15" Touch daylight readable Multi Panel 15" Touch with display suitable for natural-light viewing	**6AV6644-8AB20-0AA1**

More information

Customized modification options

• Integration into customized turnkey operator panels
• Customized design

Drafting a quotation

SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting a quotation 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 easily ordered using this product agreement and a customized Article No.

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Customized Automation

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SIMATIC HMI accessories

Overview

SIMATIC not only offers first-class Panels, Thin Clients and IPCs, but also an extensive range of original SIMATIC HMI accessories which harmonizes optimally with the core products. All our accessory components are subject to the same quality standards as the core products.

Because we understand that accessory parts are required over the entire service life of a product and that they are subject to wear, we ensure that each accessory remains available throughout the life-cycle of the core products.

Tip:
The SIMATIC HMI Selector automatically shows appropriate accessories for every SIMATIC HMI product, making it even easier to find the right one.

SIMATIC HMI accessories include:

- Batteries (including rechargeable batteries, etc.)
- Labeling elements (frames, clips, locks, holders, etc.)
- Labeling strips (protective covers, labeling strips, labeling films, etc.)
- Input devices (keyboards, mice etc.)
- Input aids (touch pens, gloves, etc.)
- HMI connection components (device connectors, converters, adapters, etc.)
- IWLAN accessories (access points, KeyPlug, power supplies, Moby D accessories, etc.)
- Power supplies (power supply units, power cables, etc.)
- Process coupling
  - Connecting cables
  - RS 485 bus connector
  - IE FC RJ45 Plug 2 x 2
- Protective films
- Protective covers, caps
- Service Sets (packs containing various small components for a Panel or an IPC)
- Memory media (MMCs, SDs, CF memories, hard disks, etc.)
- Distributors (hubs, distributors, extensions, etc.)
- Further accessories (keys, small components, etc.)

Accessories for fully enclosed HMI PRO devices can also still be found under HMI devices for special requirements.

The accessories can also be used for competitor products. Further information can be found in the Technical Data.

Note:
The complete range of SIMATIC HMI accessories and the latest Technical Data can be found in the Mall and in our online media, incl. photos. Photos and product images may differ from the actual product!

https://eb.automation.siemens.com

Or on our SIMATIC Support pages:

http://support.automation.siemens.com

Overview
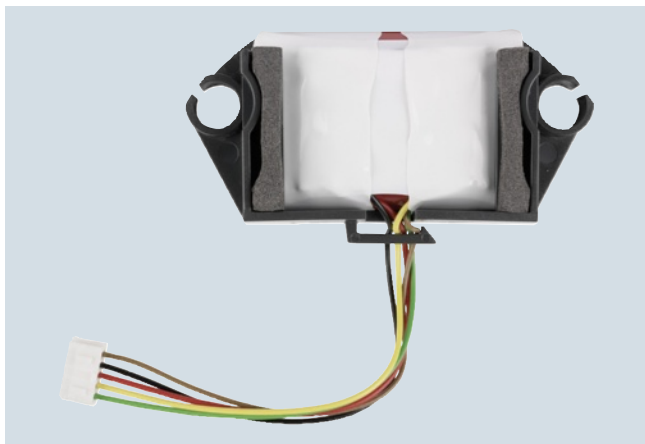
Rechargeable buffer battery for Mobile Panel

Lithium battery for SIMATIC HMI, C7 and S7

Main rechargeable battery for Mobile Panel IWLAN

Battery and accumulator

From a technical viewpoint, a battery is a combination of several similar galvanic cells/elements that are switched in series. There are batteries made of primary cells (non-rechargeable), and batteries made of secondary cells (rechargeable), also known as accumulators.

When a battery is charged, electrical energy is converted into chemical energy. When a load is connected to the battery, the chemical energy is converted back into electrical energy. The rated voltage typical for an electrochemical cell, the efficiency and the energy density all depend on the type of materials used.

If a battery remains unused, it loses a proportion of its stored energy over time. This process is called "self-discharge". The amount depends on the type and age of the battery and on the storage temperature.

The following batteries and accumulators are available:
- Rechargeable buffer battery
- Main rechargeable battery
- Lithium battery

Note:

Data sheets and manufacturer declarations are available for downloading in the Online Support area.

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SIMATIC HMI accessories

Batteries

■ Technical specifications

Article number	6ES7623-1AE01-5AA0	6AV6671-5CL00-0AX0	6AV6671-5AD00-0AX0
	LITHIUM BATTERY SIMATIC HMI, C7 AND S7	MAIN BATTERY MOBILE PANEL IWLAN	RECHARGEABLE BUFFER BATTERY MOBILE PANEL
Product type designation			
Installation type/mounting			
Wall mounting/direct mounting possible	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
Rated value (DC)	3.6 V; 1.6 Ah	7.2 V; 5.1 Ah	3.6 V; 1.15 Ah
Battery			
Design			
• Special design	Yes; 2/3 AA	Yes; bent	Yes; Flat
Technology			
• Lithium-ion	Yes; SL-361	Yes; 2ICR19/65-2 CGR	Yes; 1/CP7/34/50 01 CGA
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
Ambient conditions			
Ambient temperature during operation			
• min.	0 °C	0 °C; Don't charge below	0 °C; Don't charge below
• max.	55 °C	55 °C	55 °C
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Dimensions			
Width		75 mm	35 mm
Height	33 mm; Length	78 mm	50 mm
Thickness	14.7 mm; Diameter	33 mm	10 mm
Weights			
Without packaging	14 g	320 g	38 g
Scope of supply			
Delivery quantity in pieces	1; Incl. 45 mm + 210 mm connecting cable	1	1; incl. 65 mm connecting cable
Other			
Note:	for TD17, OP17, OP25, OP27, OP35, OP37, TP27, TP37, OP/TP270, MP 270, MP 270B, MP 370, C7-621, C7-623, C7-624, C7-626 and PG 7xx	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)	for Mobile Panel DP cabled, Mobile Panel PN cabled, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN

■ Ordering data

	Article No.		Article No.
Lithium battery SIMATIC HMI and C7 For contents and matching devices, see Technical Specifications in the Mall	W79084-E1001-B2	**Main rechargeable battery Mobile Panel IWLAN** For contents and matching devices, see Technical Specifications in the Mall	6AV6671-5CL00-0AX0
Lithium battery SIMATIC PG7xx, HMI and C7 Incl. 250 mm adapter cable For contents and matching devices, see Technical Data	6ES7623-1AE01-5AA0	**Rechargeable buffer battery Mobile Panel** For contents and matching devices, see Technical Specifications in the Mall	6AV6671-5AD00-0AX0

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

■ More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:
http://support.automation.siemens.com

■ Overview
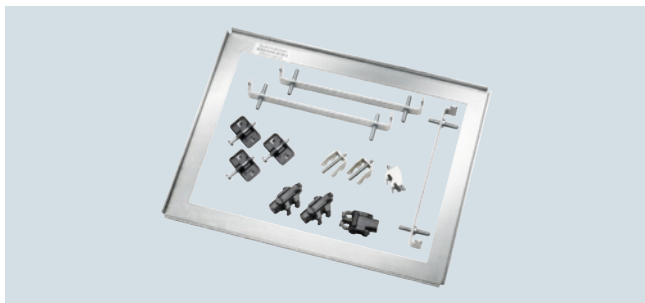
Clamping frames, mounting clips and mounting brackets

Fixing elements

Mobile Panel wall bracket with magnetic holder

Mobile Panel wall bracket with cable holder

Memory card lock

All parts required to install a SIMATIC device are listed here.

Mounting frames enable compliance with device-specific degrees of protection IP65, NEMA4x and NEMA12 (indoor only) if the thickness of the mounting plate is less than the minimum plate thickness specified in the operating instructions. The mounting frames have been specially developed for thin plates.

Depending on the device, various fixing elements are available for attaching the panel.

- Memory card lock
- Wall-mounting bracket
- Mounting frame
- Mounting clip
- Mounting bracket

Note regarding Industrial USB Hub 4:

The mounting frame is only available in the service set 6AV6671-3EA01-0AX0.

SIMATIC HMI accessories

Fasteners

Technical specifications

Article number	6AV6671-3CS00-0AX0 MOUNTING FRAME 8" TOUCH	6AV6671-3CS01-0AX0 MOUNTING FRAME 8" KEY	6AV6671-8XS00-0AX0 MOUNTING FRAME 10" TO 12" TOUCH DEVICES
Product type designation			
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.	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Mechanics/material			
Type of housing (front)			
• Sheet metal	Yes	Yes	Yes
Scope of supply			
Delivery quantity in pieces	1	1	1
Other			
Note:	For MP277 8" Touch	For MP 277 8" Key	For KTP1000 Basic, MP 277 10" Touch, MP 377 12" Touch, Thin Client 10"

■ **Technical specifications** (continued)

Article number	6AV6671-8XK00-0AX2	6AV6671-8XK00-0AX1	6AV6671-8XK00-0AX0
	PLASTIC MOUNTING CLIP	SPRING MOUNTING CLIP	ALUMINUM MOUNTING CLIP
Product type designation			
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.		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 %
Mechanics/material			
Screw type			
• 4.5 V	Yes; Original partially Phillips screw		Yes
Type of housing (front)			
• plastic	Yes	Yes	
• aluminum			Yes
Dimensions			
Width	30 mm	20 mm	15 mm
Height	17 mm; Without screw	35 mm	21 mm; Without screw
Thickness	8 mm	20 mm	15 mm
Weights			
Without packaging	4 g; Per unit	8 g; Per unit	5 g; Per unit
Scope of supply			
Delivery quantity in pieces	20	20	20
Other			
Note:	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/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"

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SIMATIC HMI accessories

Fasteners

Technical specifications (continued)

Article number	6AV6671-8XK00-0AX3 STEEL MOUNTING CLIP	6AV6671-8XK00-0AX4 STEEL MOUNTING CLAMP
Product type designation		
Installation type/mounting		
Mounting in portrait format possible	Yes	Yes
Mounting in landscape format possible	Yes	Yes
Standards, approvals, certificates		
CE mark	Yes	Yes
Ambient conditions		
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 %
Mechanics/material		
Screw type		
• 4.5 V	Yes	Yes
Type of housing (front)		
• Sheet metal	Yes	Yes
Dimensions		
Width	20 mm	142 mm
Height	15 mm; Without screw	18 mm; Without screw
Thickness	8 mm	8 mm
Scope of supply		
Delivery quantity in pieces	20	10
Other		
Note:	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

■ Technical specifications (continued)

Article number	**6AV2181-4DM10-0AX0** MEMORY CARD LOCK 4''	**6AV2181-4XM00-0AX0** MEMORY CARD LOCK 7''- 22''
Product type designation		
Installation type/mounting		
Wall mounting/direct mounting possible	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.	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 %
Mechanics/material		
Material of housing		
• plastic	Yes	Yes
Dimensions		
Width	25 mm	45 mm
Height	30 mm	59 mm
Thickness	10 mm	12 mm
Weights		
Without packaging	4 g; Per unit	6 g; Per unit
Scope of supply		
Delivery quantity in pieces	5	5
Other		
Note:	Comfort Panel 4"	Comfort Panels 7" to 22"

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SIMATIC HMI accessories

Fasteners

Technical specifications (continued)

Article number	6AV6574-1AF04-4AA0	6AV6645-7CX04-1WP0	6AV6645-7CX05-1WP0
	MOBILE PANEL WALL BRACKET, TYPE 10	MOBILE PANEL WALL BRACKET, TYPE 11	MOBILE CLIENT WALL BRACKET, TYPE12
Product type designation			
Installation type/mounting			
Mounting in portrait format possible	Yes	Yes	Yes
Mounting in landscape format possible	No	No	No
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
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Mechanics/material			
Type of housing (front)			
• Sheet metal	Yes; Powder-coated	Powder-coated	Yes; Powder-coated
Dimensions			
Width	200 mm	200 mm	300 mm
Height	230 mm	400 mm	300 mm
Depth	25 mm; Constructive	25 mm; Constructive	100 mm; Constructive
Weights			
Without packaging	550 g; Without cable holder	880 g; Incl. cable holder	750 g; Without cable holder
Scope of supply			
Delivery quantity in pieces	1; Color: Black	1; Color: Black	1; Color: Black
Other			
Note:	Mobile Panel 170, Mobile Panel 177, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN, without mounting parts	Mobile Panel 170, Mobile Panel 177, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN, including cable holder, without mounting parts	MOBILE CLIENT900 and Mobile Panel 170, Mobile Panel 177, Mobile Panel 277 IWLAN, Mobile Panel 277F IWLAN

Ordering data

Ordering data	Article No.
For IP65 installation of panels in thin-walled mounting plates	
Mounting frame 8" Touch	6AV6671-3CS00-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
Mounting frame for 8" Key	6AV6671-3CS01-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
Mounting frame 10"/12" Touch	6AV6671-8XS00-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
Mounting clip/bracket for practical mounting of SIMATIC Panels and IPCs.	
Plastic mounting clip	6AV6671-8XK00-0AX2
For contents and matching devices, see Technical Specifications in the Mall	
Spring mounting clip	6AV6671-8XK00-0AX1
For contents and matching devices, see Technical Specifications in the Mall	
Aluminum mounting clip	6AV6671-8XK00-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
Steel mounting clip	6AV6671-8XK00-0AX3
For contents and matching devices, see Technical Specifications in the Mall	
Steel mounting bracket	6AV6671-8XK00-0AX4
For contents and matching devices, see Technical Specifications in the Mall	
Mounts and interlocks	
4" memory card lock	6AV2181-4DM10-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
7" … 22" memory card lock	6AV2181-4XM00-0AX0
For contents and matching devices, see Technical Specifications in the Mall	
Wall mounting bracket for Mobile Panels, Type 10	6AV6574-1AF04-4AA0
For Mobile Panel and Mobile Client900, without cable storage For contents and matching devices, see Technical Specifications in the Mall	
Wall mounting bracket for Mobile Panels, Type 11	6AV6645-7CX04-1WP0
For Mobile Panel and Mobile Client900, without cable storage For contents and matching devices, see Technical Specifications in the Mall	
Wall mounting bracket for Mobile Panels, Type 12	6AV6645-7CX05-1WP0
For mobile Client900, magnetic fixing For contents and matching devices, see Technical Specifications in the Mall	

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

Dimensional drawings
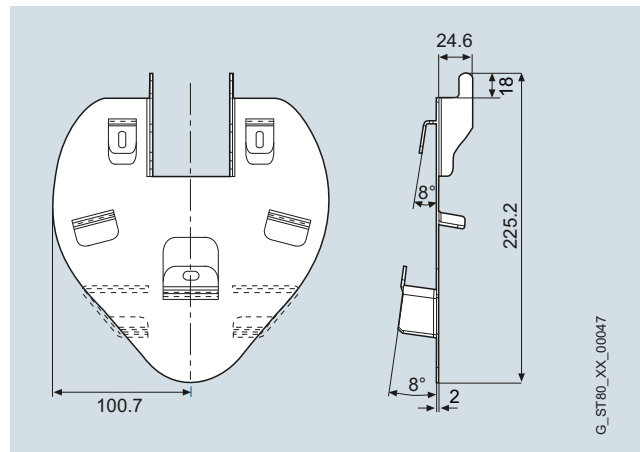
SIMATIC Mobile Panel wall-mounting bracket

More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:
http://support.automation.siemens.com

SIMATIC HMI accessories

Labeling strips

Overview

Labeling strips

Protective cover for labeling strips for Mobile Panel 170,
Mobile Panel 177

Labelling strips and printable membranes

The following products are available for labeling panels and text displays:

- Labeling strips
- Front membrane (unprinted)
- Labeling set
- Protective sleeve

Labeling strips and printable front membranes are available for:

- Text display
- Multi Panel
- Mobile Panel

Note:

The labeling strips, blank membranes, and protective membranes should be printed at a printing works.

Further details on printing the membranes can be found in the respective Technical Data.

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 download Label Creator from:

http://support.automation.siemens.com/WW/view/en/61507590

■ Technical specifications

Article number	6AV6574-1AB04-4AA0	6AV6671-5BF00-0AX0	6AV6574-1AB00-2BA0	6ES7272-1BF00-7AA0	6AV6671-0AP00-0AX0
	PROTECTIVE POUCH FOR LABELING STRIPS	LABELING SET MOBILE PANEL 277	LABELING STRIPS MP 37X KEY	TD100C FRONT FILM, BLANK	TD400C FRONT FILM, BLANK
Product type designation					
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	Yes	Yes
Ambient conditions					
Ambient temperature during operation					
• min.	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	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
• max.	60 °C	60 °C	60 °C	60 °C	60 °C
Relative humidity					
• Operation, max.	90 %	90 %	90 %	90 %	90 %
Films					
Number of films per sheet		6		6	2
printable with laser printer	No	Yes	Yes	Yes	Yes
Dimensions					
Width		210 mm	210 mm	210 mm	210 mm
Height		297 mm	297 mm	297 mm	297 mm
Width of the housing front					163 mm
Height of housing front					91 mm
Scope of supply					
Delivery quantity in pieces	5	2; 2 sheets with 3 labeling strips each, incl. corner seals, O-ring, replacement screw, decorative film for corner seal	1	10	10
Number of sets		6	2	60	20
Other					
Note:	For Mobile Panel 170, Mobile Panel 177	For Mobile Panel 277	For MP 370 Key, MP 377 Key	For TD100C	For TD400C

■ Ordering data

	Article No.		Article No.
Protective sleeve for Mobile Panel 170/177 For contents and matching devices, see Technical Data in the Mall	6AV6574-1AB04-4AA0	**Front membrane TD100C, unprinted** For contents and matching devices, see Technical Data in the Mall	6ES7272-1BF00-7AA0
Labeling set for Mobile Panel 277 For contents and matching devices, see Technical Data in the Mall	6AV6671-5BF00-0AX0	**Front membrane TD400C, unprinted** For contents and matching devices, see Technical Data in the Mall	6AV6671-0AP00-0AX0
Labeling set for MP 377 Key For contents and matching devices, see Technical Data in the Mall	6AV6574-1AB00-2BA0		

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
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■ More information

Note:

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SIMATIC HMI accessories

Input devices

■ Overview

Desktop keyboard

SIMATIC IPC mouse

Removable keyboard with trackball

Membrane keyboard as desktop variant

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.

The following input devices are available for use with IPCs and panels:

- USB mouse
- Stainless steel keyboard
- Membrane keyboard
- Removable keyboard
- Withdrawable keyboard
- Tool and keyboard tray

Note:

If you need to modify or supplement the products described here, we'll be pleased to provide the necessary information at: "Customized products".

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Technical specifications

Article number	**6ES7648-0CB00-0YA0**
	USB GER/INT KEYBOARD
Product type designation	
Keyboard	
• Design	Keyboard with short-stroke keys, service life > 50 million operations
• Keyboard assignment	MF2, 105 keys, German / International
• Color of the buttons	White
• Per-key illumination	No
• Number pad	Yes
• Status LED displays	Yes
- for number pad	Yes
Connection type	
• USB	Yes
• PS/2	Yes
• Cable length	1.75 m
Frame size/design	
• Standard	Yes; For industrial applications
Supply voltage	
Rated value (DC)	5 V; via USB
Input current	
Current consumption (rated value)	35 mA
Battery	
Battery charge indicator	No; Without battery
Standards, approvals, certificates	
CE mark	Yes; GS
cULus	No; cURus
RCM (formerly C-TICK)	Yes; C-Tick
Suitable for safety functions	No
FCC Class B	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	80 %; no condensation
• Condensation permissible	No
Operating systems	
Executable for operating system	
• Windows XP	Yes
• Windows CE	Yes
• Windows Vista	Yes
• Windows 7	Yes
Cables	
Cable length	1.75 m; USB
Dimensions	
Width	470 mm
Height	44 mm
Depth	195 mm
Weights	
Without packaging	1 400 g
With packaging	1 620 g
Scope of supply	
Delivery quantity in pieces	1
Other	
Note:	for Comfort Panel, IPC, Flat Panel, Thin Client

Article number	**6AV7674-0NE00-0AA0**
	KEYBOARD FOR 19" PRO-DEVICES; 483MM WIDTH
Product type designation	
Keyboard	
• Design	Keyboard with short-stroke keys
• Keyboard assignment	English
• Number pad	Yes
• Status LED displays	Yes
- for number pad	Yes
- for Shift keys	Yes
Touch operation	
• Integrated touch pad	No
Connection type	
• USB	Yes; Type A
• Cable length	1.5 m
Frame size/design	
• Standard	Yes; For industrial applications
Battery	
Battery charge indicator	No; Without battery
Degree and class of protection	
IP (at the front)	IP65
Splashproof	Yes
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Ambient temperature during storage/transportation	
• min.	0 °C
• max.	60 °C
Relative humidity	
• Condensation permissible	No
Mechanics/material	
Material of housing	
• Stainless steel	Yes; Between 90° and 180° in steps of 15°
Type of housing (front)	
• Stainless steel	Yes; Cleaning using "Stainless Steel Dry Cleaner" from Interflon
Dimensions	
Width	481 mm
Height	20 mm
Depth	171.6 mm
Scope of supply	
Delivery quantity in pieces	1

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SIMATIC HMI accessories

Input devices

■ Technical specifications (continued)

Article number	**6GF6710-2AC**	**6GF6710-2BC**
	MEMBRANE KEYBOARD IP 65 WITH TOUCHPAD	MEMBRANE KEYBOARD IP 65 TOUCHPAD (INT.)
Product type designation		
Keyboard		
• Design	Membrane keyboard, service life: 1x 10^6 operations (minimum)	Membrane keyboard, service life: 1x 10^6 operations (minimum)
• Keyboard assignment	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON
• Function keys	> 1	> 1
- Programmable	Yes	Yes
• Number pad	Yes	Yes
Touch operation		
• Integrated touch pad	Yes	Yes
Connection type		
• USB	Yes	Yes
• PS/2	Yes	Yes
Frame size/design		
• Standard	Yes; For industrial applications	Yes; For industrial applications
Input current		
Current consumption (rated value)	25 mA	25 mA
Battery		
Battery charge indicator	No; Without battery	No; Without battery
Degree and class of protection		
IP (at the front)	IP65	IP65
Splashproof	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	40 °C	40 °C
Ambient temperature during storage/transportation		
• min.	-10 °C	-10 °C
• max.	50 °C	50 °C
Relative humidity		
• Operation, max.	90 %; no condensation	90 %; no condensation
• Condensation permissible	No	No
Mechanics/material		
Type of housing (front)		
• plastic	Yes; AUTOTEX (R) V150	Yes
Dimensions		
Width	478.5 mm	478.5 mm
Height	28 mm	28 mm
Depth	180 mm	180 mm
Weights		
Without packaging	2 260 g	2 260 g
With packaging	2 410 g	2 410 g
Scope of supply		
Delivery quantity in pieces	1	1

Technical specifications (continued)

Article number	6GF6710-3BJ	6GF6710-3BK
	19" KEYBOARD W. TRACK BALL	19" WITHDRAWABLE KEYBOARD W. TRACKBALL, INT
Product type designation		
Keyboard		
• Design	Service life: approx. 20 million operations	Service life: approx. 20 million operations
• Keyboard assignment	84 (country-specific version), 83 (US version)	84 (country-specific version), 83 (US version)
• Number pad	No	No
• Status LED displays	Yes	Yes
Touch operation		
• Integrated touch pad	Yes; Trackball	Yes; Trackball
Connection type		
• USB	No	Yes
• PS/2	Yes	Yes
• Cable length	1.6 m	1.8 m
Frame size/design		
• Standard	Yes; For industrial applications	Yes; For industrial applications
Input current		
Current consumption (rated value)	32 mA; max.	100 mA; max.
Battery		
Battery charge indicator	No; Without battery	No; Without battery
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	50 °C	50 °C
Ambient temperature during storage/transportation		
• min.	-40 °C	-40 °C
• max.	65 °C	65 °C
Operating systems		
Executable for operating system		
• Windows XP	Yes	Yes
• Windows CE	Yes	Yes
• Windows Vista	Yes	Yes
• Windows 7	Yes	Yes
• Windows 8	Yes	Yes
Dimensions		
Width	370 mm	370 mm
Height	20 mm	20 mm
Depth	138.5 mm	138.5 mm

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SIMATIC HMI accessories

Input devices

Technical specifications (continued)

Article number	6GF6710-3AE	6GF6710-3BG	6GF6710-3BE
	19" FLUSH-MOUNTED 4U KEYBOARD WITH TOUCHPAD	BUILT-IN KEYBOARD W. TRACKBALL (INT)	19" FLUSHMOUNTED KEYBOARD 4U W. TOUCHPAD (INT.)
Product type designation			
Keyboard			
• Design	Membrane keyboard, service life: 1x 10^6 operations (minimum)	Membrane keyboard, service life: 1x 10^6 operations (minimum)	Membrane keyboard, service life: 1x 10^6 operations (minimum)
• Keyboard assignment	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON	B3F, 101/102 or 104/105 OMRON
• Function keys	> 1	> 1	> 1
- Programmable	Yes	Yes	Yes
• Number pad	Yes	Yes	Yes
Touch operation			
• Integrated touch pad	Yes	Yes; Trackball	Yes
Connection type			
• USB	Yes	Yes	Yes
• PS/2	Yes	Yes	Yes
Frame size/design			
• Standard	Yes; For industrial applications	Yes; For industrial applications	Yes; For industrial applications
Input current			
Current consumption (rated value)	25 mA	35 mA	25 mA
Battery			
Battery charge indicator	No; Without battery	No; Without battery	No; Without battery
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
Splashproof	Yes	Yes	Yes
Ambient conditions			
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	40 °C	40 °C	40 °C
Ambient temperature during storage/transportation			
• min.	-10 °C	-10 °C	-10 °C
• max.	50 °C	50 °C	50 °C
Relative humidity			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
• Condensation permissible	No	No	No
Mechanics/material			
Type of housing (front)			
• plastic	Yes; AUTOTEX (R) V150	Yes; AUTOTEX (R) V150	Yes; AUTOTEX (R) V150
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			
Without packaging	1 480 g	1 490 g	1 480 g
With packaging	1 665 g	1 735 g	1 665 g
Scope of supply			
Delivery quantity in pieces	1	1	1

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■ Technical specifications (continued)

Article number	**6AV7674-0NE01-0AA0**
	SHELF FOR 19" PRO-DEVICES; 483 MM WIDTH
Product type designation	
Connection type	
• USB	Yes; USB 2.0
Frame size/design	
• Standard	Yes; SIMATIC PRO
• Ergonomic	Yes; 90° adjustable / tiltable
Ergonomics	
• Trackball rest	No
• Adjustable height	Yes; by adjusting inclination angle 0° to 180°
Installation type/mounting	
Wall mounting/direct mounting possible	Yes; Angular adjustment between 0° and 180° in steps of 15°; interlock: spring latching bolt
Mounting in portrait format possible	No
Mounting in landscape format possible	No
Mounting position	Horizontal
maximum permissible angle of inclination without external ventilation	180°
Mounting technology	Optionally for PRO devices
Number of slots for command devices and signaling units	2; USB sockets
Interfaces	
Number of USB interfaces	2; USB 2.0
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.	55 °C
• Operation (max. tilt angle, portrait format)	
- At maximum tilt angle, min.	0 °C
- At maximum tilt angle, min.	55 °C

Article number	**6AV7674-0NE01-0AA0**
	SHELF FOR 19" PRO-DEVICES; 483 MM WIDTH
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	70 °C
Relative humidity	
• Operation, max.	90 %
• Condensation permissible	No; Condensation not permissible
Cables	
Cable length	600 mm; USB
Mechanics/material	
Material of housing	
• aluminum	Yes; Powder-coated, RAL 9023
Dimensions	
Width	500 mm
Depth	200 mm; plus 135 mm incl. mounting arm
Overall depth	334.85 mm
Scope of supply	
Delivery quantity in pieces	1
Other	
Note:	Accessory pack: 4x socket cap screws DIN 7984 - M6 x 70, 1x end cover plate, 4x washers DIN 125 - M6 galv. st., 4x cap nuts DIN 986 - M6 self-locking galv. st., 1x grounding wire 1.5 mm² green/yellow with 2x ring lugs for M4

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SIMATIC HMI accessories

Input devices

■ **Technical specifications** (continued)

Article number	6AV2181-8AT00-0AX0
	SIMATIC HMI USB MOUSE
Product type designation	
Control elements	
With parameterizable keys	No; 5 including scroll wheel
Input device	
• Movement resolution	1 000 dpi; 8 000 images/second
• Movement tracking	Microsoft - proprietary BlueTrack™ Technology
• Image scroll wheel/scroll wheel	Yes; Vertical and horizontal scrolling
• Speed	1 829 mm/s; 1.829 m/s
Touch operation	
• Integrated touch pad	No
Connection type	
• USB	Yes
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 charge indicator	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
KC approval	Yes
Suitable for safety functions	No
FCC Class B	Yes; FCC ID available
BSMI	Yes
Marine approval	
• Nippon Kaiji Kyokai (Class NK)	No; Only VCCI available

Article number	6AV2181-8AT00-0AX0
	SIMATIC HMI USB MOUSE
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	40 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	60 °C
Relative humidity	
• Operation, max.	80 %; 65 % for storage
• Condensation permissible	No
Operating systems	
Executable for operating system	
• Windows XP	Yes; SP2 and higher
• Windows CE	Yes; Not all functions are available
• Windows Vista	Yes
• 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 of housing	
• plastic	Yes; Anthracite
Dimensions	
Width	67.9 mm
Height	42.3 mm
Depth	116 mm
Weights	
Without packaging	131 g
With packaging	270 g
Scope of supply	
Delivery quantity in pieces	1
Other	
Note:	Suitable for HMI Panels and IPCs with USB interface

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Ordering data

Ordering data	Article No.
SIMATIC PC keyboard German/international, USB port, USB-PS/2 adapter included	6ES7648-0CB00-0YA0
IP65 stainless steel keyboard 19" For mounting on 19" SIMATIC HMI PRO devices, with numeric keypad; US layout; tiltable	6AV7674-0NE00-0AA0
Membrane keyboard IP65, German With Touchpad, PS/2 (German)	6GF6710-2AC
Membrane keyboard IP65, international With Touchpad, PS/2 (international)	6GF6710-2BC
Removable keyboard, German 19" removable keyboard with trackball, PS/2	6GF6710-3BJ
Removable keyboard, international 19" removable keyboard with trackball, PS/2	6GF6710-3BK
Removable keyboard, touchpad, German 19" removable keyboard, 4U with touchpad, PS/2	6GF6710-3AE
Removable keyboard, touchpad, international 19" removable keyboard, 4U with touchpad, PS/2	6GF6710-3BE
Removable keyboard, trackball, international Removable keyboard with trackball, PS/2	6GF6710-3BG
Tool and keyboard tray For mounting on 19" SIMATIC HMI PRO devices, tiltable, including 2-way USB interface	6AV7674-0NE01-0AA0
SIMATIC HMI USB mouse For SIMATIC HMI Panels, programming devices and IPCs with corresponding interfaces. Color: Anthracite	6AV2181-8AT00-0AX0

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall. https://eb.automation.siemens.com

More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages: http://support.automation.siemens.com

SIMATIC HMI accessories

Input tools

■ Overview

Optional package: Touch stylus and touch pen

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 aids are available for operating the touch display:

• Touch pen, thin
• Touch pen, thick

■ Technical specifications

Article number	6AV7672-1JB00-0AA0	6AV6645-7AB14-0AS0
	TOUCH PEN, THICK, RESISTIVE TECHNOLOGY	TOUCH PEN, THIN, RESISTIVE TECHNOLOGY
Product type designation		
Installation type/mounting		
Wall mounting/direct mounting possible	Yes; Terminal holder can be attached	Yes; using 40 cm retaining cord
Standards, approvals, certificates		
CE mark	Yes	Yes
Ambient conditions		
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 %
Mechanics/material		
Screw type		
• Torx	Yes	
Material of housing		
• plastic	Yes	Yes
Dimensions		
Height	155 mm; Length	125 mm; Length
Thickness	20 mm; Diameter	8 mm; Diameter
Scope of supply		
Delivery quantity in pieces	1; Optional for extension units of the PRO devices	5; Incl. retaining cord for Mobile Panel 277 10"
Other		
Note:	for resistive touch screens, optimized for operating while wearing gloves	for resistive touch screens

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■ Ordering data

	Article No.
Touch pen, thick, resistive technology For resistive touch screen, optimized for operation with gloves, including screw-on wall-mounting bracket. For quantities and contents, see Technical Specifications in the Mall.	**6AV7672-1JB00-0AA0**
Touch pen, thin, resistive technology For resistive touch screen, attachment cord for Mobile Panel 277 10" and other resistive touch screen displays. For quantities and contents, see Technical Specifications in the Mall.	**6AV6645-7AB14-0AS0**

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
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■ More information

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SIMATIC HMI accessories

HMI connecting components

■ Overview
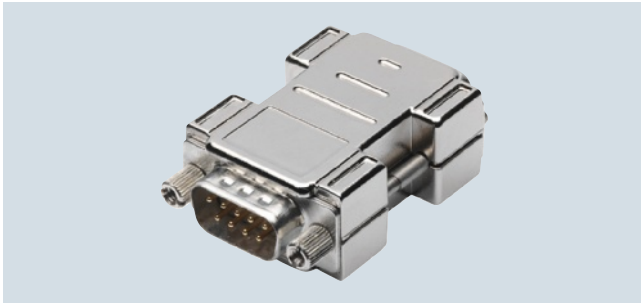
RS 422 to RS 232 converter

Connector, female, 2x2-pin, jumpered internally

RS 422 to TTY converter

Connector, female, 2-pin

The following HMI connection components are available for our HMI devices:

- Converters
- Connectors
- Elbow adapters

90 degree angle adapter, 1:1

Connector, female, 16-pin, I/O

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■ Technical specifications

Article number	6ES7193-4JB00-0AA0
	CONNECTOR, FEMALE, 2X2-PIN
Product type designation	
Installation type/mounting	
Wall mounting/direct mounting possible	Yes; can be plugged into SIMATIC HMI device
Supply voltage	
Rated value (DC)	24 V; DC
Interfaces	
Number of pins HMI-side	2; Outgoing side jumpered internally, color-coded
Number of pins device-side	4; Female, spring-loaded terminals 0.75 mm²
Standards, approvals, certificates	
CE mark	Yes

Article number	6ES7193-4JB00-0AA0
	CONNECTOR, FEMALE, 2X2-PIN
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	
Note:	for ET 200S, interface module, KP32F, PN-to-PN coupler
Usable in the following products	
• Product 1	6AV3688-3EH47-0AX0
• Product 2	6ES7158-3AD00-0XA0
• Product 3	6ES7158-3AD01-0XA0

Article number	6AV6671-8XE00-0AX0	6AV6671-8XJ00-0AX0	6AV6671-8XD00-0AX0
	RS 422 TO RS 232 CONVERTER	RS 422 TO TTY CONVERTER	RIGHT ANGLE ADAPTER, 1:1
Product type designation			
Installation type/mounting			
Wall mounting/direct mounting possible	Yes; Can be screwed onto the HMI	Yes; Can be screwed onto the HMI	Yes; Can be screwed onto the HMI
Interfaces			
Number of pins HMI-side	9; Pin (RS422)	9; Pin (RS422)	9; Male
Number of pins device-side	9; Pin (RS232)	15; Socket (TTY)	9; Female
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
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	95 %	95 %	95 %
Mechanics/material			
Screw type			
• 4.5 V	Yes; HMI page	Yes; HMI page	Yes; HMI page
Type of housing (front)			
• plastic	Yes	Yes	No
• Cast light alloy	No	No	Yes
Dimensions			
Width	31 mm	42 mm	31 mm
Height	50 mm	62 mm	25 mm
Thickness	11 mm	11 mm	25 mm
Weights			
Without packaging	26 g	28 g	34 g
Scope of supply			
Delivery quantity in pieces	1	1	1
Other			
Note:	suitable for all SIMATIC HMI RS422 interfaces, for details refer to the operating instructions of the respective device	suitable for all SIMATIC HMI RS422 interfaces, for details refer to the operating instructions of the respective device	suitable for all appropriate interfaces

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SIMATIC HMI accessories

HMI connecting components

■ Technical specifications (continued)

Article number	6AV6671-8XA00-0AX0	6AV6671-3XY38-4AX0	6AV6671-3XY48-4AX0	6AV6671-3XY58-4AX0
	CONNECTOR, FEMALE, 2-PIN	CONNECTOR, FEMALE, 12-PIN	CONNECTOR, FEMALE, 16-PIN	CONNECTING PLUG 24 PIN
Product type designation				
Installation type/mounting				
Wall mounting/direct mounting possible	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; DC	24 V; DC	24 V; DC	24 V; DC
Interfaces				
Number of pins HMI-side	2; Female	12; Female	16; Female	24; Female
Number of pins device-side	2; Female, screw terminals	12; Female, spring-loaded terminals	16; Female, spring-loaded terminals 0.75 mm²	24; Female, spring-loaded terminals 0.75 mm²
Standards, approvals, certificates				
CE mark	Yes	Yes	Yes	Yes
Ambient conditions				
Ambient temperature in operation				
• Min.	0 °C	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C	55 °C
Storage/transport temperature				
• Min.	-20 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C	70 °C
Relative humidity				
• Operation, max.	95 %	95 %	95 %	95 %
Mechanics/material				
Screw type				
• 4.5 V	Yes			
Type of housing (front)				
• plastic	Yes	Yes	Yes	Yes
Dimensions				
Width	10 mm	16 mm	16 mm	16 mm
Height	15 mm	20 mm	28 mm	54 mm
Thickness	27 mm	20 mm	20 mm	20 mm
Scope of supply				
Delivery unit in items	10	10; Without ejector	10; Without ejector	4; Without ejector
other				
Note:	for SIMATIC HMI Panels, except for Key Panel	for KP8 PN	for KP8F PN, KP32F PN	for KP32F PN

Ordering data

	Article No.
Connectors	
24 V DC connector (2-pin) For all SIMATIC HMI Panels, without screw mounting, loop-through not possible. Approved for all SIMATIC HMI Panels except Key Panels.	6AV6671-8XA00-0AX0
Connector, female, 2-pin, type 2 24 V DC for IPCs and Thin Client For further information, see Technical Data	A5E03604831
Connector, female, 2-pin, type 3 24 V DC for IPCs For further information see Technical Data in the Mall.	A5E02717632
Connector, female, 3-pin, type 1 24 V DC for IPCs, PCUs and Flat Panels. For further information see Technical Data in the Mall.	A5E03404000
24 V DC connector (2-pin) (can be looped through) for all SIMATIC HMI Panels, without screw mounting, loop through possible, even if connecter unplugged. Approved for Key Panels.	6ES7193-4JB00-0AA0
12-pin cable connector 12-pin, 24 V DC for SIMATIC HMI Key Panel KP8 PN	6AV6671-3XY38-4AX0
16-pin cable connector 16-pin, 24 V DC for SIMATIC HMI Key Panel KP8F PN and Key Panel KP32F PN	6AV6671-3XY48-4AX0
24-pin cable connector 24-pin, 24 V DC for SIMATIC HMI Key Panel KP32F PN	6AV6671-3XY58-4AX0

Detailed information can be obtained from the relevant Technical Specifications of the products.

	Article No.
Converters	
RS 422 to RS 232 converter 9-pin male contact (on HMI) to 9-pin male contact, to be screwed onto HMI RS 422 interface, cable outlet 180 degrees, for connection of non-Siemens PLC	6AV6671-8XE00-0AX0
RS 422 to TTY converter 9-pin male contact (on HMI) to 15-pin female contact, to be screwed onto HMI RS 422 interface, 180 degree cable outlet, for the connection to SIMATIC S5	6AV6671-8XJ00-0AX0
Adapters	
90 degree angle adapter 9-pin male contact (on HMI) to 9-pin female contact, 1:1 connection, to be screwed onto the RS 485/422/232 HMI interface, or any other suitable interface	6AV6671-8XD00-0AX0
Industrial USB extension Industrial USB extension for access to a USB port of a built-in device without opening the control cabinet; suitable for USB ports up to USB 3.0 standard	6AV2181-8AF80-0AX0

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:
http://support.automation.siemens.com

SIMATIC HMI accessories

IWLAN accessories

■ Overview

SCALANCE W761

Moby D data card transponder

■ Ordering data

	Article No.
SCALANCE	
SCALANCE W761-1 RJ45 Access Points	
National approvals for operation	
• outside the U.S.	**6GK5761-1FC00-0AA0**
• in the USA	**6GK5761-1FC00-0AB0**
SCALANCE W774-1 RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5774-1FX00-0AA0**
• 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**
• in the USA	**6GK5774-1FY00-0TB0**
SCALANCE W788-1 RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5788-1FC00-0AA0**
• in the USA	**6GK5788-1FC00-0AB0**
SCALANCE W788-2 RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5788-2FC00-0AA0**
• in the USA	**6GK5788-2FC00-0AB0**
SCALANCE W788-1 M12 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5788-1GD00-0AA0**
• in the USA	**6GK5788-1GD00-0AB0**
SCALANCE W788-2 M12 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5788-2GD00-0AA0**
• 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**
• in the USA	**6GK5788-2GD00-0TB0**
SCALANCE W786-1 RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5786-1FC00-0AA0**
• in the USA	**6GK5786-1FC00-0AB0**

[1] iFeatures can be optionally connected using KEY-PLUG W780 iFeatures

■ Ordering data

	Article No.
SCALANCE	
SCALANCE W786-2 RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5786-2FC00-0AA0**
• in the USA [2]	**6GK5786-2FC00-0AB0**
SCALANCE W786-2IA RJ45 Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5786-2HC00-0AA0**
• in the USA [2]	**6GK5786-2HC00-0AB0**
SCALANCE W786-2 SFP Access Points [1]	
National approvals for operation	
• outside the U.S.	**6GK5786-2FE00-0AA0**
• in the USA [2]	**6GK5786-2FE00-0AB0**
KEY-PLUG W780 iFeatures Swap medium for enabling additional iFeatures, for simple device replacement if a fault occurs and for storage of configuration data; can be used in SCALANCE W access points with PLUG compartment	**6GK5907-8PA00**
KEY-PLUG W740 iFeatures Swap medium for enabling additional iFeatures, for simple device replacement if a fault occurs and for storage of configuration data; can be used in SCALANCE W client modules with PLUG compartment	**6GK5907-4PA00**
KEY-PLUG W700 Security Swap medium for enabling security features for SCALANCE W700 and for simple device replacement if a fault occurs and for storage of configuration data	**6GK5907-0PA00**
PS791-2DC power supply 24 V DC power supply for installation in SCALANCE W-786 products; operating instructions in English/German	**6GK5791-2DC00-0AA0**
PS791-2AC power supply 110 V AC to 230 V AC power supply for installation in SCALANCE W-786 products; operating instructions in English/German	**6GK5791-2AC00-0AA0**
MOBY D accessories	
MOBY D, MDS D100 Minimum order quantity: 50 units	**6GT2600-0AD10**
RFID cards for Mobile Panels Packing unit with 10 x MDS D100 10 x spacers 10 x fixing pockets	**6GT2600-0AD11**
Spacer 1 unit	**6GT2190-0AA00**
Fixing pocket 1 unit	**6GT2190-0AB00**

[1] iFeatures can be optionally connected using KEY-PLUG W780 iFeatures

[2] Please note national approvals under http://www.siemens.com/wireless-approvals

■ More information

Note:

Photos and product images may differ from the actual product!

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall. https://eb.automation.siemens.com

Or on our SIMATIC Support pages: http://support.automation.siemens.com

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SIMATIC HMI accessories

Power supply units

Overview

SIMATIC power supply

Cable for non-heating apparatus

Power supply units and connection cables

The external power supply for the Mobile Panel IWLAN is intended for laboratory and office operation only.

The following power supply is available:

• Power supply, Mobile Panel

Note:

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.

Technical specifications

Article number	**6AV6671-5CN00-0AX2**
	POWER SUPPLY, EXT., MOBILE PANEL IWLAN
Product type designation	
Supply voltage	
Type of supply voltage	100 - 240 V AC
Rated value (DC)	12 V; Output side
Input current	
Current consumption (rated value)	1.5 A; 50 - 60 Hz
Output current	
per output	5 A
Power	
Output power	60 W
Interfaces	
HMI-side interface	Connector 5.5 mm jack (-) / 2.1 mm pin (+) 12 V DC
EMC	
Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	Yes; EN61000-4-2,3,4,5,6,8,11 light industry level
Standards, approvals, certificates	
CE mark	Yes; UL69950, TÜVEN600950-1, BSMI CNS14336, CCC GB4942 approved
Ambient conditions	
Ambient temperature during operation	
• min.	-10 °C
• max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	85 °C
Relative humidity	
• Operation, max.	90 %
Mechanics/material	
Type of housing (front)	
• plastic	Yes
Dimensions	
Width	125 mm
Height	50 mm
Thickness	31.5 mm
Weights	
Without packaging	305 g
Scope of supply	
Delivery quantity in pieces	1; Incl. AC and DC connecting cable
Number of sets	4; AC cable for EU, US, UK and JP
Other	
Note:	for Mobile Panel IWLAN

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Ordering data

Ordering data	Article No.
Power supply units	
Power supply unit, external, Mobile Panel IWLAN	**6AV6671-5CN00-0AX2**
Suitable only for operation under laboratory/office conditions. For quantities and contents, see Technical Specifications in the Mall.	
Power supply cable	
Power supply cable 230 V AC, angled	
For Box PCs and Panel PCs For quantities and contents, see Technical Specifications in the Mall.	
• 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**

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall. https://eb.automation.siemens.com

More information

Note:

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SIMATIC HMI accessories
Process coupling

Connecting cables

■ Overview

PROFINET FastConnect connector

Assembling the FastConnect cable

Components for system connection

The range includes plugs, cables and transducers for the networking of SIMATIC products by means of PROFIBUS and PROFINET.

■ Overview Connecting cables

Connecting cables

Connecting cable DP (PROFIBUS) for Mobile Panels

Connecting cable PN (PROFINET) for Mobile Panels

You can find article numbers for the connecting cables required to link the SIMATIC Panels and IPCs under Ordering data.

SIMATIC HMI accessories
Process coupling

■ **Overview** (continued)

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

Overview of SIMATIC HMI connection options

	RS 232 external (15/9-pole)	**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**
	6XV1 440-2Kxxx	6ES7 901-3EB10-0XA0	6ES7 901-1BF00-0XA0	6ES7 901-3CB30-0XA0	6ES7 901-3DB30-0XA0	6ES7 901-0BF00-0AA0
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

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SIMATIC HMI accessories
Process coupling

Connecting cables

■ Overview (continued)

	DP PtP	DP Standard	DP (Mobile Panel)	PN (cross cable) [2] Point-to-point	PN (standard cable) [2]	PN (Mobile Panel)	RS 422 to RS 232 converter	RS 232 to TTY converter (20 mA)	90° angular (9-pin 1:1)
	6XV1 830-0Axxx	Standard PROFIBUS (2-pin)	6XV1 440-4Axxx	6XV1 870-3RH20	Standard Ethernet CAT5	6XV1 440-4Bxxx	6AV6 671-8XE00-0AX0	6ES5 734-1BD20	6AV6 671-8XD00-0AX0
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	-	-	-	-
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

[1] With gender changer

[2] PROFINET IRT (Isochronous Runtime); isochronous mode only possible with IRT-enabled switch

[3] Only in conjunction with RS422/RS232 converter 6AV6671-8XE00-0AX0

[4] 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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SIMATIC HMI accessories
Process coupling

■ **Overview** (continued)

	DP PtP	DP Standard	DP (Mobile Panel)	PN (cross cable) [2] Point-to-point	PN (standard cable) [2]	PN (Mobile Panel)	RS 422 to RS 232 converter	RS 232 to TTY converter (20 mA)	90° angular (9-pin 1:1)
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 [4]	P/D/U
TP177B PN/DP	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
TP177B 4"	P/D	P/D	-	P/D/U	P/D/U	-	P	P [4]	P/D/U
OP177B DP	P/D	P/D	-	-	-	-	P	P [4]	P/D/U
OP177B PN/DP	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
TP277-6	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
OP277-6	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP177-6 T	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP277-8 T	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP277-8 K	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP277-10 T	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP277-10 K	P/D	P/D	-	P/D	P/D	-	P	P [4]	P/D/U
MP377-12 T	P/D	P/D	-	P/D/U	P/D/U	-	P	P [4]	P/D
MP377-12 K	P/D	P/D	-	P/D/U	P/D/U	-	P	P [4]	P/D
MP377-15 T	P/D	P/D	-	P/D/U	P/D/U	-	P	P [4]	P/D
MP377-19 T	P/D	P/D	-	P/D/U	P/D/U	-	P	P [4]	P/D

[1] With gender changer

[2] PROFINET IRT (Isochronous Runtime); isochronous mode only possible with IRT-enabled switch

[3] Only in conjunction with RS422/RS232 converter 6AV6671-8XE00-0AX0

[4] 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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SIMATIC HMI accessories
Process coupling

Connecting cables

Technical specifications

Article number	6XV1440-4BH20	6XV1440-4BH50	6XV1440-4BH80
	CONNECTING CABLE PN FOR MOBILE PANELS, 2M	CONNECTING CABLE PN FOR MOBILE PANELS, 5M	CONNECTING CABLE PN FOR MOBILE PANELS, 8M
Product type designation			
Supply voltage			
Rated value (DC)	24 V; DC	24 V; DC	24 V; DC
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
Suitable for safety functions	Yes; e.g. emergency stop, acknowledgment button	Yes; e.g. emergency stop, acknowledgment button	Yes; e.g. emergency stop, acknowledgment button
Ambient conditions			
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C
Ambient temperature during storage/transportation			
• min.	-40 °C	-40 °C	-40 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	85 %	85 %	85 %
Cables			
smallest bending radius	45 mm	45 mm	45 mm
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
Color of cable sheath	Red	Red	Red
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
Cable length	2 m	5 m	8 m
Scope of supply			
Delivery quantity in pieces	1	1	1

SIMATIC HMI accessories
Process coupling

■ Technical specifications (continued)

Article number	**6XV1440-4BN10**	**6XV1440-4BN15**	**6XV1440-4BN20**	**6XV1440-4BN25**
	CONNECTING CABLE PN FOR MOBILE PANELS, 10M	CONNECTING CABLE PN FOR MOBILE PANELS, 15M	CONNECTING CABLE PN FOR MOBILE PANELS, 20M	CONNECTING CABLE PN FOR MOBILE PANELS, 25M
Product type designation				
Supply voltage				
Rated value (DC)	24 V; DC	24 V; DC	24 V; DC	24 V; DC
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
Suitable for safety functions	Yes; e.g. emergency stop, acknowledgment button	Yes; e.g. emergency stop, acknowledgment button	Yes; e.g. emergency stop, acknowledgment button	Yes; e.g. emergency stop, acknowledgment button
Ambient conditions				
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C	55 °C
Ambient temperature during storage/transportation				
• min.	-40 °C	-40 °C	-40 °C	-40 °C
• max.	70 °C	70 °C	70 °C	70 °C
Relative humidity				
• Operation, max.	85 %	85 %	85 %	85 %
Cables				
smallest bending radius	45 mm	45 mm	45 mm	45 mm
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
Color of cable sheath	Red	Red	Red	Red
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
Cable length	10 m	15 m	20 m	25 m
Scope of supply				
Delivery quantity in pieces	1	1	1	1

Article number	**6ES7901-0BF00-0AA0**	**6ES7901-1BF00-0XA0**
	S7 MPI CABLE, 5M	RS232 / ZERO MODEM CABLE, 6 M
Product type designation		
Cables		
Cable length	5 m	6 m
Weights		
Weight, approx.	293 g	272 g

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SIMATIC HMI accessories
Process coupling

Connecting cables

Ordering data	**Article No.**		**Article No.**
SIMATIC S7 connecting cables		**DP connecting cable (MPI/PROFIBUS)**	
MPI cable between SIMATIC S7 and programming device via MPI max. 187.5 kBaud, standard length 5.0 m	6ES7901-0BF00-0AA0	for wired Mobile Panels 177, Mobile Panels 277, standard lengths	
		• 2 m	6XV1440-4AH20
Connecting cable 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	• 5 m	6XV1440-4AH50
		• 8 m	6XV1440-4AH80
		• 10 m	6XV1440-4AN10
		• 15 m	6XV1440-4AN15
		• 20 m	6XV1440-4AN20
Connecting cables 6XV1440-2A [2] Connecting cable between TD/TP/OP and AG S5 95U to -155U, 1000 m max.	6XV1440-2A…	• 25 m [1]	6XV1440-4AN25
		PN connecting cable (PROFINET) for wired Mobile Panels 177, Mobile Panels 277, standard lengths	
PROFIBUS connecting cable 830-1T For connection of data terminals, preassembled with two sub-D connectors, 9-pin terminated at both ends for PP, OP 73micro, OP 73, TP 177micro, OP 77A/B, TP 177A, TP/OP 177B		• 2 m	6XV1440-4BH20
		• 5 m	6XV1440-4BH50
		• 8 m	6XV1440-4BH80
		• 10 m	6XV1440-4BN10
		• 15 m	6XV1440-4BN15
		• 20 m	6XV1440-4BN20
• 1.5 m	6XV1830-1CH15	• 25 m [1]	6XV1440-4BN25
• 3.0 m	6XV1830-1CH30	**Connecting cable for KTP Mobile Panels**	
USB/PPI multi-master cable For connecting the S7-200 to the serial PC/OP interface Standard length 5 m	6ES7901-3DB30-0XA0	• 2 m	6AV2181-5AF02-0AX0
		• 5 m	6AV2181-5AF05-0AX0
		• 8 m	6AV2181-5AF08-0AX0
PROFIBUS FC Standard Cable [2] For connection to PPI; standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m	6XV1830-0E…	• 10 m	6AV2181-5AF10-0AX0
		• 15 m	6AV2181-5AF15-0AX0
		• 20 m	6AV2181-5AF20-0AX0
		• 25 m	6AV2181-5AF25-0AX0
Industrial Ethernet TP XP Cord RJ45/RJ45 Crossed TP cable 4 x 2, preassembled with 2 x RJ45 connectors			
• 1.0 m	6XV1870-3RH10		
• 6.0 m	6XV1870-3RH60		
• 10.0 m	6XV1870-3RN10		

[1] Instead of using longer cables, we recommend that you use additional connection boxes.

[2] See length code on next page.

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

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.

https://eb.automation.siemens.com

Or on our SIMATIC Support pages:

http://support.automation.siemens.com

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■ **Ordering data** (continued)

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** **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**
• 80	**6XV…-…80**

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**.
.

■ **More information**

Note:

Photos and product images may differ from the actual product!

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

Or on our SIMATIC Support pages:
http://support.automation.siemens.com

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SIMATIC HMI accessories
Process coupling

RS 485 bus connector

■ 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 Sub-D socket permit PG connection without the additional installation of network nodes

■ Ordering data

	Article No.
RS 485 bus connector with axial cable outlet (180°) For industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbit/s	**6GK1500-0EA02**
SIPLUS DP PB RS 485 connector with axial cable outlet (180°) For medial stress; Based-on 6GK1500-0EA02	**6AG1500-0EA02-2AA0**
RS 485 bus connector with cable outlet (90°) With screw-terminals, max. transmission rate 12 Mbit/s	
• Without PG interface	**6ES7972-0BA12-0XA0**
• With PG interface	**6ES7972-0BB12-0XA0**
SIPLUS DP PB RS 485 connector with 90° cable outlet for extended temperature range -25 … + 60 °C	
• Without PG interface Based on 6ES7972-0BA12-0XA0	**6AG1972-0BA12-2XA0**
• With PG interface Based on 6ES7972-0BB12-0XA0	**6AG1972-0BB12-2XA0**
RS 485 bus connector with angled cable outlet (35°) With screw-terminals, max. transmission rate 12 Mbit/s	
• Without PG interface	**6ES7972-0BA42-0XA0**
• With PG interface	**6ES7972-0BB42-0XA0**
SIPLUS DP PB RS 485 connector with inclined cable outlet (35°) for extended temperature range -25 … + 60 °C	
• Without PG interface Based on 6ES7942-0BA42-0XA0	**6AG1972-0BA42-7XA0**
• With PG interface Based on 6ES7942-0BB42-0XA0	**6AG1972-0BB42-7XA0**
RS 485 bus connector with cable outlet (30°) With screw-terminals, low-cost variant, max. transmission rate 1.5 Mbit/s	**6ES7972-0BA30-0XA0**

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Ordering data	Article No.		Article No.
PROFIBUS bus connector RS485 with FastConnect technology		**PROFIBUS FastConnect bus connector RS485 Plug 180** With insulation displacement terminals, with 180° cable outlet, for industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbit/s	6GK1500-0FC10
PROFIBUS FastConnect bus connector RS485 with 90° cable outlet With insulation displacement, max. transmission rate 12 Mbps			
Without PG interface		**SIMATIC S5/S7 plug-in cable for PROFIBUS** Preassembled with two 9-pin sub-D connectors; max. transmission rate 12 Mbit/s; 3 m	6ES7901-4BD00-0XA0
• 1 unit	6ES7972-0BA52-0XA0		
• 100 units	6ES7972-0BA52-0XB0		
With PG interface		**SIMATIC NET Manual Collection** Electronic manuals for communication systems, communication protocols, and communication products; on DVD; German/English	6GK1975-1AA00-3AA0
• 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 RS485 bus connector with angled cable outlet (35°) with insulation displacement, max. transmission rate 12 Mbps			
• Without PG interface	6ES7972-0BA60-0XA0		
• With PG interface	6ES7972-0BB60-0XA0		

SIMATIC HMI accessories
Process coupling

IE FC RJ45 Plug 2 x 2

■ Overview
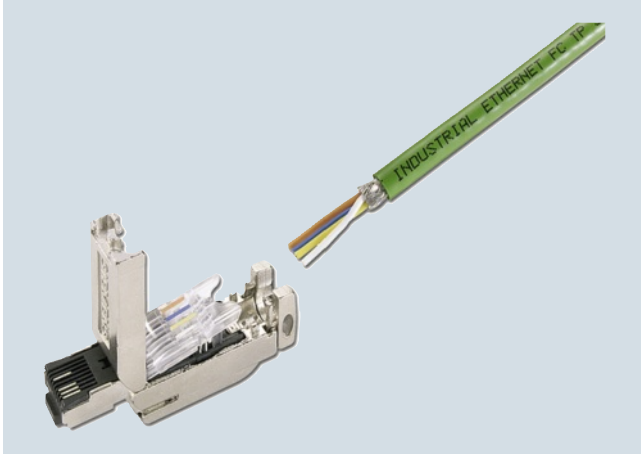
- Implementation of direct device connections over distances of up to 100 m with Industrial Ethernet FC installation cable 2 x 2 without patching
- Easy connection (insulation displacement contacts) for 4-core Twisted Pair installation cables (100 Mbit/s) without the need for special tools
- Error-preventing connection technique thanks to visible connection area as well as colored blade terminals
- Industry-compatible design (rugged metal housing, no easily lost small parts)
- Excellent EMC shielding and deflection (metal housing)
- Integrated strain-relief for installation cables
- Compatible to the EN 50173 (RJ45) / ISO IEC 11801 standard
- Additional strain and bending relief of plug connector possible through latching of plug on device housing, e.g. with SCALANCE X, SCALANCE S, ET 200S

■ 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 FC stripping tool	6GK1901-1GA00
Preadjusted stripping tool for fast stripping of Industrial Ethernet FC cables	
IE FC TP standard cable GP 2 x 2 (Type A)	
4-core, 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 20 m	6XV1840-2AH10
Preferred length	
• 1000 m	6XV1840-2AU10

■ Ordering data	Article No.		Article No.
IE FC TP flexible cable GP 2 x 2 (Type B) 4-core, 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 1000 m, minimum order 20 m	**6XV1870-2B**	**IE FC TP festoon cable GP 2 x 2 (Type B)** 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/IE FC RJ45 Plug 180/90 for use in festoon applications; PROFINET-compatible; with UL approval; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1871-2S**
IE FC TP trailing cable GP 2 x 2 (Type C) 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug for use in trailing cables; PROFINET-compatible; with UL approval; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1870-2D**	**IE FC TP food cable GP 2 x 2 (Type C)** 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug 180/90 for the food and beverages industry; PROFINET-compliant; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1871-2L**
IE FC TP trailing cable 2 x 2 (Type C) 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug 180/90 for use in trailing cables; PROFINET-compatible; without UL approval; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1840-3AH10**	**IE TP ground cable 2x2 (Type C)** 4-core, 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; PROFINET-compliant; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1871-2G**
IE TP torsion cable GP 2 x 2 (Type C) 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug for use with robots; PROFINET-compatible; with UL approval; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1870-2F**	**IE TP train cable GP 2x2 (Type C)** 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/IE FC RJ45 Plug 180/90 for railway applications; PROFINET-compliant; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1871-2T**
IE FC TP marine cable 2 x 2 (Type B) 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug 180/90; marine approval; sold by the meter; max. length 1000 m, minimum order 20 m	**6XV1840-4AH10**	**IE FC blade cassettes (5 mm)** Replacement blade cassette for the Industrial Ethernet stripping tool; for use with IE FC RJ45 Plugs and Modular Outlet, 5 items	**6GK1901-1GB01**
IE FC TP FRNC cable GP 2 x 2 (Type B) 4-core, shielded, halogen-free 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 1000 m, minimum order 20 m	**6XV1871-2F**		

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SIMATIC HMI accessories

Protective films

■ Overview

Example for fitting a protective film

Protective films

Protective films are available for almost all SIMATIC core products. They protect the display from dirt and scratching during operation and in harsh environments. The SIMATIC protective films are non-reflective and are only adhesive at the edges. This ensures that the display is always easy to read, even when using protective films. In general it is not possible to trim the films.

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
• Simple and fast to attach
• Lightweight, thin and frameless design

Note:

The protective membrane only has to cover the display completely. 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. If you use the SIMATIC HMI selection guide to find your core product, the appropriate accessories are also displayed automatically. This facilitates selection of suitable accessories.

■ Technical specifications

Article number	6AV6671-2EC00-0AX0	6AV6671-2XC00-0AX0	6AV6574-1AD04-4AA0	6AV6671-5BC00-0AX0	6AV6645-7AB15-0AS0
	PROTECT. FILM 4" TOUCH DEVICE	PROTECT. FILM 6" TOUCH DEVICE, TYPE 3	PROTECT. FILM 6" TOUCH DEVICE, TYPE 10	PROTECT. FILM 8" TOUCH DEVICE, TYPE 10	PROTECT. FILM 10" TOUCH DEVICE, TYPE 10
Product type designation					
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	Yes	Yes
Ambient conditions					
Ambient temperature during operation					
• min.	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	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
• max.	60 °C	60 °C	60 °C	60 °C	60 °C
Relative humidity					
• Operation, max.	90 %	90 %	90 %	90 %	90 %
Films					
printable with laser printer	Yes	Yes	Yes	Yes	Yes
Mechanics/material					
Material of housing					
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions					
Width	120 mm	179.4 mm	120.5 mm	155.5 mm	223.17 mm
Height	105 mm	141.4 mm	91 mm	124.9 mm	170.37 mm
Thickness	0.125 mm	0.125 mm	0.125 mm	0.3 mm	0.3 mm
Scope of supply					
Delivery quantity in pieces	10	10	10	2	10
Other					
Note:	for TP 177B 4", KTP 400 Basic	for TP 177micro, TP 177A, TP 177B, OP 177B, KTP 600 Basic	For Mobile Panel 170, Mobile Panel 177	for Mobile Panel 277 8"	for Mobile Panel 277 10"

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■ **Technical specifications** (continued)

Article number	6AV6671-3DC00-0AX0	6AV6671-3DC00-0AX5	6AV6574-1AD00-4EX0
	PROTECT. FILM 10" TOUCH DEVICE, TYPE 1	PROTECT. FILM 10" TOUCH DEVICE, TYPE 2	PROTECT. FILM 15" TOUCH DEVICE
Product type designation			
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.	0 °C	0 °C	0 °C
• 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
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Films			
printable with laser printer	Yes	Yes	Yes
Mechanics/material			
Material of housing			
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions			
Width	292 mm	299.8 mm	362 mm
Height	248 mm	259.9 mm	289 mm
Thickness	0.125 mm	0.125 mm	0.125 mm
Scope of supply			
Delivery quantity in pieces	10	10	10

SIMATIC HMI accessories

Protective films

◾ Technical specifications (continued)

Article number	6AV2124-6DJ00-0AX0	6AV2124-6GJ00-0AX0	6AV2124-6JJ00-0AX0	6AV2181-3JJ20-0AX0	6AV2124-6MJ00-0AX0	6AV2181-3MJ20-0AX0
	PROTECT. FILM 4" WIDESCREEN	PROTECT. FILM 7" WIDESCREEN	PROTECT. FILM 9" WIDESCREEN	PROTECT. FILM 9" WIDESCREEN, TYPE 2	PROTECT. FILM 12" WIDESCREEN	PROTECT. FILM 12" WIDESCREEN, TYPE 2
Product type designation						
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	Yes		Yes	
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.	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C
Relative humidity						
• Operation, max.			90 %	90 %	90 %	90 %
Films						
printable with laser printer	Yes	Yes	Yes	Yes	Yes	Yes
Mechanics/material						
Material of housing						
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions						
Width	131.4 mm	205.4 mm	265.4 mm	258.4 mm	321.4 mm	321.4 mm
Height	107.4 mm	149.4 mm	181.4 mm	173.4 mm	232.4 mm	236.8 mm
Thickness	0.125 mm	0.125 mm	0.125 mm	0.125 mm	0.125 mm	0.125 mm
Scope of supply						
Delivery quantity in pieces	10	10	10	10	10	10
Other						
Note:	for KTP400 Basic, KTP400 Basic 2nd, KTP400 Comfort	for KTP700 Basic 2nd, TP700 Comfort, IPC277D	for TP900 Comfort, IPC277D	for KTP900 Basic	for TP1200 Comfort, IPC277D	for KTP1200 Basic

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▌Technical specifications (continued)

Article number	**6AV2124-6QJ00-0AX1**	**6AV2124-6UJ00-0AX1**	**6AV2124-6XJ00-0AX1**
	PROTECT. FILM 15" WIDESCREEN	PROTECT. FILM 19" WIDESCREEN	PROTECT. FILM 22" WIDESCREEN
Product type designation			
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.	0 °C	0 °C	0 °C
• 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
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Films			
printable with laser printer	Yes	Yes	Yes
Mechanics/material			
Material of housing			
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions			
Width	368 mm	451 mm	518 mm
Height	231 mm	285 mm	334 mm
Thickness	0.125 mm	0.125 mm	0.125 mm
Weights			
Without packaging	26 g; Per unit	34 g; Per unit	44 g; Per unit
Scope of supply			
Delivery quantity in pieces	10	10	10
Other			
Note:	for Comfort Panel, IPC, Flat Panel, Thin Client	for Comfort Panel, IPC, Flat Panel, Thin Client	for Comfort Panel, IPC, Flat Panel, Thin Client

SIMATIC HMI accessories

Protective films

Technical specifications (continued)

Article number	6AV6574-1AD00-4AX0	6AV6574-1AD00-4CX0	6AV6574-1AD00-4DX0
	PROTECT. FILM 6" TOUCH DEVICE, TYPE 1	PROTECT. FILM 10" TO 12" TOUCH DEVICE	PROTECT. FILM 6" TOUCH DEVICE, TYPE 2
Product type designation			
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.	0 °C	0 °C	0 °C
• 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
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Films			
printable with laser printer	Yes	Yes	Yes
Mechanics/material			
Material of housing			
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions			
Width	118.4 mm	297.4 mm	178.4 mm
Height	89 mm	254.4 mm	135.4 mm
Thickness	0.125 mm	0.125 mm	0.125 mm
Scope of supply			
Delivery quantity in pieces	10	10	10
Other			
Note:	for TP 070, TP 170micro, TP 170A/B, C7-635 Touch	for TP 270 10", MP 270B 10", MP 37x 12" Touch, C7-636 Touch	for TP 270 6", TP 277 6", MP 177 6" Touch, MP 270B 6" Touch

■ **Technical specifications** (continued)

Article number	6AV6671-3CC00-0AX0	6AV6671-3CC00-0AX5	6AV7672-1CE00-0AA0
	PROTECT. FILM 8" TOUCH DEVICE, TYPE 1	PROTECT. FILM 8" TOUCH DEVICE, TYPE 2	PROTECT. FILM 19" TOUCH DEVICE
Product type designation			
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.	0 °C	0 °C	0 °C
• 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
Relative humidity			
• Operation, max.	90 %	90 %	90 %
Films			
printable with laser printer	Yes	Yes	Yes
Mechanics/material			
Material of housing			
• plastic	Yes; Nonreflecting	Yes; Nonreflecting	Yes; Nonreflecting
Dimensions			
Width	207 mm	217 mm	378 mm
Height	165 mm	217 mm	302.5 mm
Thickness	0.125 mm	0.125 mm	0.2 mm
Scope of supply			
Delivery quantity in pieces	10	10	10
Other			
Note:	for MP 277 8" Touch up to product version "ES 14"	for MP 277 8" Touch in product version "ES 15" and later	for Panel PC477/577/677/877, MP 377 19" Touch and Flat Panel

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SIMATIC HMI accessories

Protective films

Ordering data	Article No.		Article No.
Protective films for 4" Touch devices For contents and compatible devices, see Technical Specifications and Mall	6AV6671-2EC00-0AX0	**Protective films for 9" widescreen, type 2** For contents and compatible devices, see Technical Specifications and Mall	6AV2181-3JJ20-0AX0
Protective films for 6" Touch devices, type 4 For contents and compatible devices, see Technical Specifications and Mall	6AV6671-2XC00-0AX0	**Protective films for 12" widescreen, type 1** For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6MJ00-0AX0
Protective films for 6" Touch devices, type 10 For contents and compatible devices, see Technical Specifications and Mall	6AV6574-1AD04-4AA0	**Protective films for 12" widescreen, type 2** For contents and compatible devices, see Technical Specifications and Mall	6AV2181-3MJ20-0AX0
Protective films for 8" Touch devices, type 10 For contents and compatible devices, see Technical Specifications and Mall	6AV6671-5BC00-0AX0	**Protective films for 15" widescreen** For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6QJ00-0AX1
Protective films for 10" Touch devices, type 10 For contents and compatible devices, see Technical Specifications and Mall	6AV6645-7AB15-0AS0	**Protective films for 19" widescreen** For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6UJ00-0AX1
Protective film for 4" widescreen, Type 13 (available soon) For contents and compatible devices, see Technical Specifications and Mall	6AV2181-5DJ00-0AX0	**Protective films for 22" widescreen** For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6XJ00-0AX1
Protective film for 7" widescreen, Type 13 (available soon) For contents and compatible devices, see Technical Specifications and Mall	6AV2181-5GJ00-0AX0	**Protective films for 6" Touch devices, type 1** For contents and compatible devices, see Technical Specifications and Mall	6AV6574-1AD00-4AX0
Protective film for 9" widescreen, Type 13 (available soon) For contents and compatible devices, see Technical Specifications and Mall	6AV2181-5JJ00-0AX0	**Protective films for 10" Touch devices, type 2** For contents and compatible devices, see Technical Specifications and Mall	6AV6574-1AD00-4DX0
Protective films for 10" Touch devices, type 1 For contents and compatible devices, see Technical Specifications and Mall	6AV6671-3DC00-0AX0	**Protective films for 10" to 12" Touch devices** For contents and compatible devices, see Technical Specifications and Mall	6AV6574-1AD00-4CX0
Protective films for 10" Touch devices, type 2 For contents and compatible devices, see Technical Specifications and Mall	6AV6671-3DC00-0AX5	**Protective films for 8" Touch devices, type 1** For contents and compatible devices, see Technical Specifications and Mall	6AV6671-3CC00-0AX0
Protective films for 15" Touch devices For contents and compatible devices, see Technical Specifications and Mall	6AV6574-1AD00-4EX0	**Protective films for 8" Touch devices, type 2** For contents and compatible devices, see Technical Specifications and Mall	6AV6671-3CC00-0AX5
Protective films for 4" widescreen For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6DJ00-0AX0	**Protective films for 19" Touch devices** For contents and compatible devices, see Technical Specifications and Mall	6AV7672-1CE00-0AA0
Protective films for 7" widescreen For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6GJ00-0AX0		
Protective films for 9" widescreen, type 1 For contents and compatible devices, see Technical Specifications and Mall	6AV2124-6JJ00-0AX0		

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall. https://eb.automation.siemens.com

More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages: http://support.automation.siemens.com

■ **Overview**

Example for fitting a protective cover

Protective covers and caps

With a protective cover the complete panel front can be addition-ally protected.

This gives IP65 degree of protection to the complete panel front. 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 membranes are available for simple display protection.

Especially in extremely harsh environments, it is possible to dustproof unused or rarely used ports on the back or underside of the device. For this purpose we offer dust protection caps.

Note:

Protective covers with IP65 degree of protection provide complete frontal protection of the panel against dirt and scratches. 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.

Protective covers are unfortunately not available for Basic and Comfort Panels.

■ **Technical specifications**

Article number	6AV6574-1AE00-4AX0	6AV6671-1AJ00-0AX0	6AV6671-2DJ00-0AX0	6AV6671-3CK01-0AX0	6AV6671-3CK00-0AX0
	PROTECTIVE COVER 6" TOUCH DEVICES	PROTECTIVE COVER OP 77	PROTECTIVE COVER OP 177	PROTECTIVE COVER MP 277-8" TOUCH	PROTECTIVE COVER MP 277 10" TOUCH
Product type designation					
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.	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	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
• max.	60 °C	60 °C	60 °C	60 °C	60 °C
Relative humidity					
• Operation, max.	95 %	95 %	95 %	95 %	95 %
Mechanics/material					
Material of housing					
• plastic	Yes	Yes	Yes	Yes	Yes

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SIMATIC HMI accessories

Protective covers and caps

◾ Technical specifications (continued)

Article number	6AV6574-1AE00-4AX0	6AV6671-1AJ00-0AX0	6AV6671-2DJ00-0AX0	6AV6671-3CK01-0AX0	6AV6671-3CK00-0AX0
	PROTECTIVE COVER 6" TOUCH DEVICES	PROTECTIVE COVER OP 77	PROTECTIVE COVER OP 177	PROTECTIVE COVER MP 277-8" TOUCH	PROTECTIVE COVER MP 277 10" TOUCH
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					
Without packaging	750 g	750 g	750 g	750 g	750 g
Scope of supply					
Number of sets	2; 2 cover frames, 2 base frames, 2 protective covers, molded (for TP 070, TP 170micro, TP 170A/B), 2 protective covers, smooth (for TP 177micro, TP 177A/B, TP 270 6", MP 177 6" Touch, MP 270 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					
Note:	for TP 070, TP 170A, TP 170B, TP 170micro, TP 177micro, TP 177A, TP 177B, TP 270 6 ", TP 277 6 ", MP 270 6" Touch	for OP 77A, OP 77B	For OP177B	for MP 277 8" Touch as far as product version "ES 14" with narrow frame	for MP 277 10" Touch up to product version "ES 14 ", Thin Client 10" up to "ES 03" (6AV6646-0AA21-2AX0) with narrow frame

◾ Ordering data

	Article No.		Article No.
Protective covers for 6" Touch devices For TP 070, TP 170micro, TP 177micro, TP 170A/B, TP 177A/B, TP 270 6", TP 277 6" MP 177 6" Touch, MP 270 6" Touch For contents, see Technical Data in the Mall.	6AV6574-1AE00-4AX0	**Protective covers for MP 277 8" Touch devices** Only suitable for MP 277 8" Touch up to E14 [1] (for devices with a narrow frame geometry) For contents, see Technical Data in the Mall.	6AV6671-3CK01-0AX0
Protective covers for OP 77 For OP77 and OP77B For contents, see Technical Data in the Mall	6AV6671-1AJ00-0AX0	**Protective covers for MP 277 10" Touch devices** 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) For contents, see Technical Data in the Mall.	6AV6671-3CK00-0AX0
Protective covers for OP 177 For OP177B For contents, see Technical Data in the Mall	6AV6671-2DJ00-0AX0	**Dust protection set for USB and RJ45 ports** SIMATIC PC, dust protection set accessory, interfaces for Panels, Thin Clients and IPCs with suitable USB or RJ45 (LAN) port	6ES7648-1AA50-0XG0

[1] E14 = Product version 14

[2] E03 = Product version 03

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

◾ More information

Note:

Photos and product images may differ from the actual product!

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◼ Overview
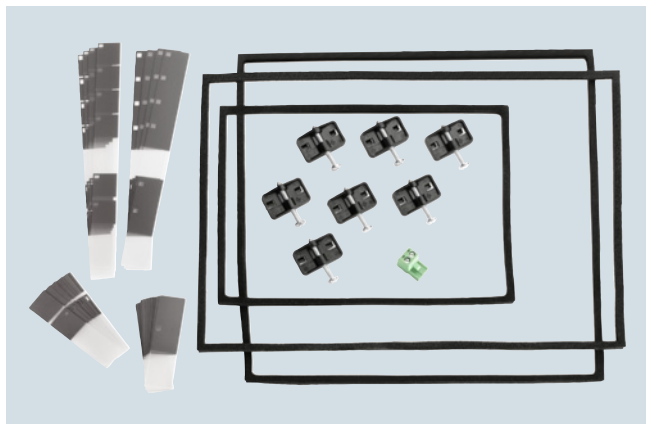
Service set for Panel

Service set for Mobile Panel

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. fixing clips, it makes more sense to order these separately.

Detailed information and quantities can be obtained from the relevant Technical Data. 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**	**6AV6675-3AA00-0AX0**	**6AV6671-4CA00-0AX0**
	SERVICE SET FOR 4" AND 6" DEVICES	SERVICE SET FOR 10" DEVICES, TYPE 2	SERVICE SET FOR 15" DEVICES
Product type designation			
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
Ambient temperature during storage/transportation			
• min.	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C
Relative humidity			
• Operation, max.	95 %	95 %	95 %
Scope of supply			
Number of sets	1; Content: 2 x seal KTP 400-TP 177B 4", 2 x seal for KTP 600, 7 x aluminum mounting clip, 1 x 2-pin female connector	1; Content: 1x installation seal, 10x cast aluminum mounting clips, 1x 2-pin female connector, 1x Allen key	1; Content: 1 x mounting seal, 1 x memory card lock, 12 x cast aluminum mounting clip, 1 x 2-pin female connector, 1 x Allen key
Other			
Note:	for KTP 400 Basic, KTP 600 Basic, TP 177B 4"	for MP277 10" Touch with stainless steel front	for MP377 15" Touch with stainless steel front

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SIMATIC HMI accessories

■ **Technical specifications** (continued)

Article number	6AV6574-1AA04-4AA0 SERVICE SET MOBILE PANEL	6AV6671-5CA00-0AX1 SERVICE SET MOBILE PANEL 277(F) IWLAN V1	6AV6671-5CA00-0AX2 SERVICE SET MOBILE PANEL 277(F) IWLAN V2
Product type designation			
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
Scope of supply			
Number of sets	1; Content: 1x blanking plug, 2x PG cable gland A-box, 1x screw set cover A-box, 2x 12-pin terminal box, 1x 3-pin terminal box, 1x dummy cap A-box, 2x corner seal l/r and O-ring, 4x decorative film corner seal l/r	1; Content: 2x covers for charging station l/r, 1x connector for charging station, 2x corner seals l/r, 2x gasket corner seals, 4x decorative film corner seals l/r, 1x backup battery 3.6 V / 1.5 Ah including cover, 1x spare key for charging cradle	1; Content: 1x battery slot cover device with seal, 2x cover charging station l/r, 1x circular connector charging station, 2x corner seal l/r, 2x O-ring seal, 4x decorative foil, 1x charging tray spare key incl. lock and lock holder, screws
Other			
Note:	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 SERVICE SET FOR INDUSTRIAL USB HUB 4	6AV6671-1XA00-0AX0 OP73MICRO, OP73, OP77 SERVICE SET	6AV3678-3XC30 SERVICE PACKAGE F: PP7, PP17 I, PP17 II	6AV3678-1CC10 SERVICE PACKAGE F. OP7/17 AND TD17
Product type designation				
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
Ambient temperature during storage/transportation				
• min.	-20 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C	70 °C
Relative humidity				
• Operation, max.	95 %	95 %	95 %	95 %
Scope of supply				
Number of sets	1; Content: 1 x mounting seal, 1 x mounting frame, 5 x plastic mounting clip, 1 x 2-pin female connector	1; Content: 1 x mounting seal OP73, 1 x mounting seal OP77, 4 x plastic mounting clip, 1 x 2-pin female connector	1; Content: 1 x mounting seal PP7, 1 x mounting seal PP17, 5 x plastic mounting clip, 1 x 2-pin female connector, 1 x 3-pin female connector, 1 x 4-pin female connector, 2 x 16-pin female connector	1; Content: 1 x mounting seal TD17, 1 x mounting seal OP7, 1 x mounting seal TD/OP17, 5 x plastic mounting clip
Other				
Note:	For the Industrial USB Hub 4	for OP73micro, OP73, OP77A, OP77B	for PP7, PP17-I, PP17-II	for TD17, OP7, OP17

◼ Technical specifications (continued)

Article number	6AV6574-1AA00-4AX0	6AV2181-8XA80-0AX0	6AV6671-2XA00-0AX0	6AV6574-1AA00-2CX0	6AV6574-1AA00-2DX0
	SERVICE SET FOR 6" DEVICES: TYPE 1	SERVICE SET 6" DEVICES, TYPE 2	SERVICE SET FOR 6" DEVICES, TYPE 3	SERVICE SET FOR 10" TO 15" DEVICES	SERVICE SET FOR 10" DEVICES, TYPE 1
Product type designation					
Standards, approvals, certificates					
CE mark	Yes	Yes	Yes	Yes	Yes
Ambient 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
Ambient temperature during storage/transportation					
• min.	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C	70 °C	70 °C
Relative humidity					
• Operation, max.	95 %	95 %	95 %	95 %	95 %
Scope of supply					
Number of sets	1; Content: 3 x mounting seal, 2 x labeling strip, 7 x plastic mounting clip, 1 x 2-pin female connector	1; Content: 3 x mounting seal, 2 x labeling strip, 7 x plastic mounting clip, 20 x aluminum mounting clip, 1 x 2-pin female connector	1; Content: 1 x mounting seal TP 177, 1 x mounting seal OP 177, 7 x plastic mounting clip, 1 x 2-pin female connector	1; Content: 10x aluminum mounting clips, 1x 2-pin female connector, 1x CF card interlock, 1x PC card interlock, 1x installation seal, C7-636, TP/MP270(B), MP370-12"T, 1x installation seal for MP370-15"T, all other panels have a non-replaceable foam seal	1; Content: 1x slide-in label strip for OP270 10" and MP270 10" Key, 1x installation seal for OP270 10" and MP270 10" Key, 10x cast aluminum mounting clips, 1x 2-pin female connector, 1x Allen key
Other					
Note:	for TP 070, TP 170A/B, OP 170B, TP 170micro, OP 270 6", TP 270 6", MP 270B 6" Touch	for TP 070, TP 170A/B, OP 170B, TP 170micro, OP /TP 270 6", MP 177 6"T, MP 270B 6" Touch	for TP 177micro, TP 177A, TP 177B, OP 177B	for C7-636 Touch, TP270 10", MP270B 10" Touch, MP370 12" Touch, MP370 15" Touch	for OP 270 10", MP 270B Key

Article number	6AV6671-3XA01-0AX0	6AV6671-3XA01-0AX1	6AV6574-1AA00-2BX0	6AV6671-4XA00-0AX0
	SERVICE SET FOR 6" TO 10" DEVICES	SERVICE SET FOR 8" TO 10" DEVICES	SERVICE SET FOR 12" DEVICES	SERVICE SET FOR 12" TO 19" DEVICES
Product type designation				
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
Ambient temperature during storage/transportation				
• min.	-20 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	70 °C	70 °C
Relative humidity				
• Operation, max.	95 %	95 %	95 %	95 %
Scope of supply				
Number of sets	1; Content: 6x device-specific seals, 15x aluminum mounting clips, 1x 2-pin female connector, 1x product information clamp	1; Content: 14x spring mounting clip, 1x 2-pin female connector	1; Content: 2x labeling strips, 6x aluminum mounting clips, 1x 2-pin female connector, 1x Allen key, 2x memory card interlocks	1; Content: 1 x mounting seal MP 377 12" Key, 1 x mounting seal MP 377 12" Touch, 1 x mounting seal MP 377 15" Touch, 1 x mounting seal MP 377 19" Touch, 18 x aluminum mounting clip, 1 x 2-pin female connector
Other				
Note:	for TP/OP 277 6", MP 277 8" Touch, MP 277 8" Key, MP 277 10" Key product version "ES 14" and later, MP 277 10" Touch product version "ES 14" and later	for MP 277 8" Touch, MP 277 8" Key product version "ES 15" and later, MP 277 10" Touch product version "ES 15" and later	for MP 370 12" Key	for MP 377 12" Key, MP 377 12" Touch, MP 377 15" Touch, MP 377 19" Touch

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SIMATIC HMI accessories

Service sets

■ Ordering data

Ordering data	Article No.
Service sets For contents and matching devices, see Technical Data in the Mall	
For 4" and 6" devices	**6AV6671-2EA00-0AX0**
For 10" devices, Type 2	**6AV6675-3AA00-0AX0**
For 15" devices	**6AV6671-4CA00-0AX0**
For Mobile Panels	**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 Push Button Panels	**6AV3678-3XC30**
For TD17, OP7/17	**6AV3678-1CC10**
For OP73 micro, OP73, OP77	**6AV6671-1XA00-0AX0**
For 6" devices, Type 1	**6AV6574-1AA00-4AX0**
For 6" devices, Type 2	**6AV2181-8XA80-0AX0**
For 6" devices, Type 3	**6AV6671-2XA00-0AX0**
For 10" to 15" devices	**6AV6574-1AA00-2CX0**
For 10", Type 1	**6AV6574-1AA00-2DX0**
For 6" to 10" devices	**6AV6671-3XA01-0AX0**
For 8" to 10" devices	**6AV6671-3XA01-0AX1**
For 12" devices	**6AV6574-1AA00-2BX0**
For 12" to 19" devices	**6AV6671-4XA00-0AX0**

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com/

■ More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:
http://support.automation.siemens.com

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■ Overview

Memory media

A partial list of approved memory media:

- **M**ulti **M**edia **C**ard
- **S**ecure **D**igital Memory Card
- **S**ecure **D**igital Memory System Card
- **PC** Card Adapter with **C**ompact**F**lash Card
- SIMATIC HMI USB stick

Storage media

Storage devices, memory cards and USB sticks tested and approved by Siemens ensure the best possible functionality and compatibility.

SIMATIC HMI memory media are suitable for industry and optimized for the requirements in industrial environments. Special formatting and write logarithms 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 memory media and panels Technical Data.

The actual memory capacity of the memory cards or USB sticks 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.

Note:

Do not use **any** SIMATIC S7 Memory Cards for S7 controllers in operator panels. When used in this way, these memory cards lose their functionality and can then no longer be used with S7 controllers. This rules out any replacement.

■ Technical specifications

Article number	**6ES7648-0DC60-0AA0**	**6ED1056-1BA00-0AA0**	**6AV6574-2AF00-8AX0**	**6AV6574-2AC00-2AF1**
	SIMATIC IPC USB-FLASHDRIVE 16GB	MEMORY MODULE FOR PUSHBUTTON PANEL	PC CARD ADAPTER FOR CF MEMORY CARD	PC MEMORY CARD 512 MB
Product type designation				
Connection type				
• USB	Yes; USB 3.0			
Frame size/design				
• Standard	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
Rated value (DC)	5.5 V			3.3 V
Input current				
Current consumption (rated value)	60 mA			75 mA
Memory				
Type of memory	MLC	Retentive memory module	Personal computer memory card type II	Personal computer memory card type II
Memory size	16 Gbyte			512 Mbyte
Speed class	CrystalDiskMark 3.0: Read: 75 MB/s, Write: 21 MB/s			
File format	17k Cluster			
Write protection switch	No			

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SIMATIC HMI accessories

Storage media

■ Technical specifications (continued)

Article number	6ES7648-0DC60-0AA0	6ED1056-1BA00-0AA0	6AV6574-2AF00-8AX0	6AV6574-2AC00-2AF1
	SIMATIC IPC USB-FLASHDRIVE 16GB	MEMORY MODULE FOR PUSHBUTTON PANEL	PC CARD ADAPTER FOR CF MEMORY CARD	PC MEMORY CARD 512 MB
Type of output				
LED colors				
• red	Yes; LED indicator: Busy, Waiting, Off			
Interfaces				
Number of USB interfaces	1			
Standards, approvals, certificates				
CE mark	Yes	Yes	Yes	Yes
Ambient conditions				
Ambient temperature during operation				
• min.	-10 °C	0 °C	0 °C	0 °C
• max.	70 °C	55 °C	50 °C	50 °C
Ambient temperature during storage/transportation				
• min.	-10 °C	-20 °C	-20 °C	-20 °C
• max.	70 °C	70 °C	60 °C	60 °C
Relative humidity				
• Operation, max.	85 %	95 %	90 %	90 %
Operating systems				
Executable for operating system				
• Windows XP	Yes			
• Windows CE	No			
• Windows Vista	Yes			
• Windows 7	Yes			
• Windows 8	Yes			
• Linux	Yes; 2.4 or comparable			
Mechanics/material				
Type of housing (front)				
• plastic	Yes	Yes; Yellow		Yes
• Sheet metal			Yes	
Dimensions				
Width	16.8 mm	14 mm	54 mm	54 mm
Height	59.3 mm	20 mm	85.6 mm	85.6 mm
Thickness	7 mm	8 mm	5 mm	5 mm
Weights				
Without packaging	12 g	3 g	24 g	34 g
With packaging	170 g			
Scope of supply				
Delivery quantity in pieces	1	1	1	1
Other				
Note:	SIMATIC IPC USB FlashDrive, 16 GB, USB 3.0, CD with SIMATIC IPC BIOS Manager, boot capability, metal enclosure, for Comfort Panels, Basic 2nd and IPC	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! article numbers ... 0BA1, ... 0BA2, ... 0BA3)	for SIMATIC HMI devices with PC card slot	for SIMATIC HMI devices with PC card slot

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■ Technical specifications (continued)

Article number	6AV6671-1CB00-0AX2	6AV6671-8XB10-0AX1	6AV2181-8XP00-0AX0	6AV6574-2AC00-2AA1
	SIMATIC HMI MM MEMORY CARD 128 MB	SIMATIC HMI SD MEMORY CARD 512 MB	SIMATIC HMI SD MEMORY CARD 2 GB	SIMATIC HMI CF MEMORY CARD 512 MB
Product type designation				
Frame size/design				
• Standard				Yes
Installation type/mounting				
Mounting in portrait format possible	Yes	Yes	Yes	Yes
Mounting in landscape format possible	Yes	Yes	Yes	Yes
Mounting position				Any
Supply voltage				
Type of supply voltage	DC	DC	DC	DC
Rated value (DC)	3.3 V	3.3 V	3.3 V	3.3 V
Input current				
Current consumption (rated value)	60 mA	60 mA	60 mA	75 mA
Memory				
Type of memory	MultiMediaCard	Secure Digital memory card	Secure Digital memory card	CompactFlash memory CF type I
Memory size	128 Mbyte	512 Mbyte	2 048 Mbyte	512 Mbyte
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.	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
Relative humidity				
• Operation, max.	90 %	90 %	90 %	90 %
• Condensation permissible				No
Operating systems				
Executable for operating system				
• Windows XP				Yes
• Windows CE				Yes
• Windows 7				Yes
• Windows 8				Yes
Mechanics/material				
Type of housing (front)				
• plastic	Yes	Yes	Yes	Yes
Dimensions				
Width	24 mm	24 mm	24 mm	42.8 mm
Height	32 mm	32 mm	32 mm	36.4 mm
Thickness	2.1 mm	2.1 mm	2.1 mm	3.3 mm
Weights				
Without packaging	3 g	3 g	3 g	10 g
Scope of supply				
Delivery quantity in pieces	1	1	1	1
Other				
Note:	for OP 77B, TP177B, OP 177B, TP 277, OP 277, C7-635, MP 177, MP 277, MP 377, Mobile Panel 177, Mobile Panel 277, Comfort Panel	for MP 177, MP 277, MP 377 and Mobile Panel 277, WinCC flexible 2008 SP1 and higher for OP 77, TP/OP 177, TP/OP 277, Mobile Panel 177, with SD/MMC slot	For all Comfort Panels	for SIMATIC HMI devices with CF slot

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SIMATIC HMI accessories

Storage media

Technical specifications (continued)

Article number	6AV2181-8AS20-0AX0	6AV7672-8JD02-0AA0
	SIMATIC HMI USB MEMORY STICK 8GB	SIMATIC IPC SERVICE USB FLASHDRIVE
Product type designation		
Connection type		
• USB	Yes; USB 2.0	Yes; USB 3.0
Frame size/design		
• Standard	Yes	Yes
Installation type/mounting		
Mounting in portrait format possible		Yes
Mounting in landscape format possible		Yes
Mounting position	Any	
Supply voltage		
Type of supply voltage	DC	DC
Rated value (DC)	5 V	5.5 V
Input current		
Current consumption (rated value)	100 mA	60 mA
Memory		
Type of memory	SLC	MLC
Memory size	8 Gbyte	16 Gbyte
Speed class		CrystalDiskMark 3.0: Read: 75 MB/s, Write: 21 MB/s
File format		17k Cluster
Write protection switch	No	No
Battery		
Battery charge indicator	No	
Rechargeable	No	
Type of output		
LED colors		
• red	Yes; LED indicator: Busy, Waiting, Off	Yes; LED indicator: Busy, Waiting, Off
Interfaces		
Number of USB interfaces	1	1
Standards, approvals, certificates		
CE mark	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• min.	0 °C	-10 °C
• max.	50 °C	70 °C
Ambient temperature during storage/transportation		
• min.	-40 °C	-10 °C
• max.	70 °C	70 °C
Relative humidity		
• Operation, max.	85 %	85 %
• Condensation permissible	No	
Operating systems		
Executable for operating system		
• Windows XP	Yes	Yes
• Windows CE	Yes	No
• Windows Vista	No	Yes
• Windows 7	Yes	Yes
• Windows 8	Yes	Yes
• Linux	No	Yes; 2.4 or comparable
Mechanics/material		
Type of housing (front)		
• plastic		Yes
• aluminum	Yes	

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▪ Technical specifications (continued)

Article number	6AV2181-8AS20-0AX0	6AV7672-8JD02-0AA0
	SIMATIC HMI USB MEMORY STICK 8GB	SIMATIC IPC SERVICE USB FLASHDRIVE
Dimensions		
Width	16.7 mm	16.8 mm
Height	59.1 mm	59.3 mm
Thickness	7 mm	7 mm
Weights		
Without packaging	12 g	12 g
With packaging	16 g	170 g
Scope of supply		
Delivery quantity in pieces	1	1

Article number	6ES7648-2BF02-0XJ0	6ES7648-2BF10-0XF0	6ES7648-2BF10-0XG0	6ES7648-2BF10-0XH0	6ES7648-2BF10-0XJ0	6ES7648-2BF10-0XK0
	COMPACTFLASH DIAG, 16GB INDUSTRIAL GRADE	CFAST, 2 GB, INDUSTRIAL GRADE	CFAST, 4 GB, INDUSTRIAL GRADE	CFAST, 8 GB, INDUSTRIAL GRADE	CFAST, 16 GB, INDUSTRIAL GRADE	CFAST, 32 GB, INDUSTRIAL GRADE
Product type designation						
Frame size/design						
• Standard	Yes	Yes	Yes	Yes	Yes	Yes
Installation type/mounting						
Rack mounting possible	Yes	Yes	Yes	Yes		
Front installation possible	Yes	Yes	Yes	Yes	Yes	Yes
Wall mounting/direct mounting possible	No	No	No	No	No	No
Mounting position	Any	Any	Any	Any	Any	Any
Power						
Power consumption, typ.	1 W	0.7 W	0.7 W	0.7 W	0.7 W	0.7 W
Memory						
Type of memory	CompactFlash memory CF type I					
Memory size	16 Gbyte	2 Gbyte	4 Gbyte	8 Gbyte	16 Gbyte	32 Gbyte
Transmission rate, max.	66 Mbit/s	66 Mbit/s	66 Mbit/s	66 Mbit/s	300 Mbit/s	300 Mbit/s
SLC flash write cycles industry		4	4.5	8	17	17
Standards, approvals, certificates						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
Ambient conditions						
Ambient temperature during operation						
• min.	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C
• max.	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C
Ambient temperature during storage/transportation						
• min.	-50 °C	-50 °C	-50 °C	-50 °C	-50 °C	-50 °C
• max.	100 °C	100 °C	100 °C	100 °C	100 °C	100 °C
Relative humidity						
• Operation, max.	85 %	85 %	85 %	85 %	85 %	85 %
• Condensation permissible	No	No	No	No	No	No
Operating systems						
Executable for operating system						
• Windows XP	Yes	No	No	No	No	No
• Windows CE	Yes	No	No	No	No	No
• Windows Vista	Yes	Yes	Yes	Yes	Yes	Yes
• Windows 7	Yes	Yes	Yes	Yes	Yes	Yes
• Windows 8	Yes	Yes	Yes	Yes	Yes	Yes
• Linux		Yes	Yes	Yes	Yes	Yes
Mechanics/material						
Type of housing (front)						
• plastic	Yes	Yes	Yes	Yes	Yes	Yes

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SIMATIC HMI accessories

■ Technical specifications (continued)

Article number	6ES7648-2BF02-0XJ0	6ES7648-2BF10-0XF0	6ES7648-2BF10-0XG0	6ES7648-2BF10-0XH0	6ES7648-2BF10-0XJ0	6ES7648-2BF10-0XK0
	COMPACTFLASH DIAG, 16GB INDUSTRIAL GRADE	CFAST, 2 GB, INDUSTRIAL GRADE	CFAST, 4 GB, INDUSTRIAL GRADE	CFAST, 8 GB, INDUSTRIAL GRADE	CFAST, 16 GB, INDUSTRIAL GRADE	CFAST, 32 GB, INDUSTRIAL GRADE
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
Depth	3.3 mm	3.3 mm	3.3 mm	3.3 mm	3.3 mm	3.3 mm
Thickness	3.3 mm	3.6 mm	3.6 mm	3.6 mm	3.6 mm	3.6 mm
Weights						
Without packaging	10 g	10 g	10 g	10 g	10 g	10 g
Scope of supply						
Delivery quantity in pieces	1	1	1	1	1	1

Article number	6AV7672-8JD01-0AA0
	SIMATIC IPC SERVICE USB FLASHDRIVE
Product type designation	
Supply voltage	
Rated value (DC)	5.5 V
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	-10 °C
• max.	85 °C

Article number	6AV7672-8JD01-0AA0
	SIMATIC IPC SERVICE USB FLASHDRIVE
Dimensions	
Width	16.7 mm
Height	59.1 mm
Thickness	7 mm
Scope of supply	
Delivery quantity in pieces	1

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■ Ordering data

	Article No.		Article No.
Memory cards For contents and matching devices, see Technical Data in the Mall		**SIMATIC IPC Service FlashDrive 8 GB** SIMATIC IPC Service USB Flash-Drive; USB-FlashDrive 8 GB (SLC); pre-installed with BIOS Manager and Image/Partition Creator (EN); including installation CD (DE/EN) More information: See technical specifications	6AV7672-8JD01-0AA0
SIMATIC HMI MM memory card 128 MB	6AV6671-1CB00-0AX2		
SIMATIC HMI SD memory card 512 MB	6AV6671-8XB10-0AX1		
SIMATIC HMI SD memory card 2 GB	6AV2181-8XP00-0AX0	**SIMATIC IPC Service FlashDrive 16 GB** SIMATIC IPC Service USB Flash-Drive; USB FlashDrive 16 GB, USB3.0, pre-installed, with BIOS Manager and Image/Partition Creator (EN); including installation CD (DE/EN) More information: See technical specifications	6AV7672-8JD02-0AA0
SIMATIC HMI 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		
SIMATIC HMI USB memory stick, 8 GB Specially for SIMATIC HMI Panels	6AV2181-8AS20-0AX0	**SIMATIC HMI USB FlashDrive, 16 GB, explosion protection** for HMI devices with the corresponding slot; More information: See technical specifications	6AV7675-0FX00-0AA0
SIMATIC IPC USB FlashDrive 16 GB, USB 3.0	6ES7648-0DC60-0AA0		
SIMATIC HMI USB FlashDrive 16 GB, Ex Explosion protection, for HMI devices and IPCs with the corresponding slot. More information: see Technical Data in the Mall	6AV7675-0FX00-0AA0	**SIMATIC HMI USB FlashDrive, 16 GB, explosion protection, with recovery function** for HMI devices with the corresponding slot; More information: See technical specifications	6AV7675-0FX10-0AA0
SIMATIC HMI CF memory card For contents and matching devices, see Technical Data in the Mall • 2 GB • 4 GB • 8 GB • 16 GB	 6ES7648-2BF02-0XF0 6ES7648-2BF02-0XG0 6ES7648-2BF02-0XH0 6ES7648-2BF02-0XJ0	**SIMATIC IPC memory expansion** For IPCs with the corresponding slot • 1 x 1 GB DDR3 1066 DIMM • 1 x 2 GB DDR3 1066 DIMM • 1 x 4 GB DDR3 1066 DIMM	 6ES7648-2AJ40-0KA0 6ES7648-2AJ50-0KA0 6ES7648-2AJ60-0KA0
SIMATIC CFAST memory card For contents and matching devices, see Technical Data in the Mall • 2 GB • 4 GB • 8 GB • 16 GB • 32 GB	 6ES7648-2BF10-0XF0 6ES7648-2BF10-0XG0 6ES7648-2BF10-0XH0 6ES7648-2BF10-0XJ0 6ES7648-2BF10-0XK0	**SIMATIC IPC memory expansion, ECC** SIMATIC IPC memory expansion, ECC, error checking and correction • 1 x 1 GB DDR3 1066 DIMM ECC • 1 x 2 GB DDR3 1066 DIMM ECC • 1 x 4 GB DDR3 1066 DIMM ECC	 6ES7648-2AJ40-1KA0 6ES7648-2AJ50-1KA0 6ES7648-2AJ60-1KA0
SIMATIC HMI PP memory module for Push Button Panel. For contents and matching devices, see Technical Data in the Mall	6ED1056-1BA00-0AA0		

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall. https://eb.automation.siemens.com

■ More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages: http://support.automation.siemens.com

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SIMATIC HMI accessories

Distribution boards

■ Overview
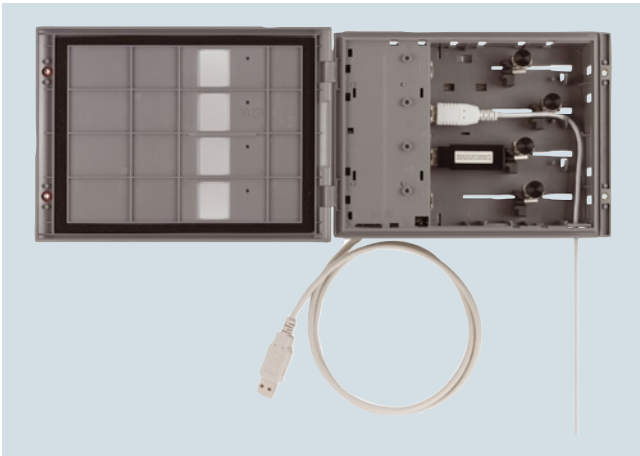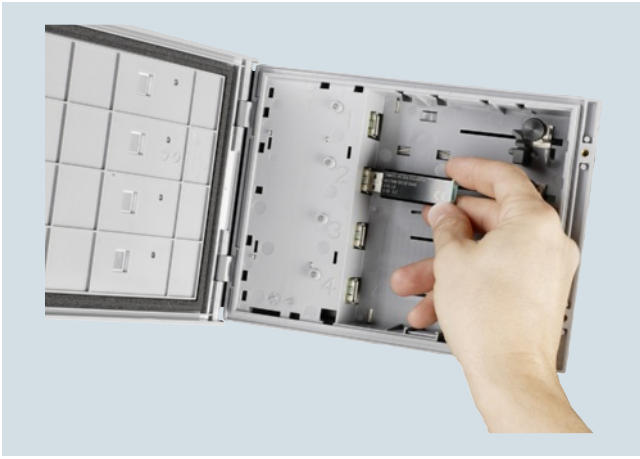
Industrial USB Hub 4, opened

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 port with IP65 protection is provided on the front of the cabinet or console.

USB for HMI-PRO devices

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
• Increased degree of protection at front if protective cover is closed

Industrial USB Hub 4

Through use of the Industrial USB Hub 4
• Permits the simultaneous connection of up to four I/O devices such as USB stick, USB FlashDrive, 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 standard rail mounting

The Industrial USB Hub 4 is approved for Windows CE/2000/XP/Windows 7 operating systems. The necessary drivers are supplied with the operating system software.

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.

■ Technical specifications

Article number	**6AV6671-3AH00-0AX0**
	INDUSTRIAL USB HUB 4
Product type designation	
Installation type/mounting	
Rail mounting possible	Yes; Standard - DIN rail
Mounting in landscape format possible	Yes
Supply voltage	
Type of supply voltage	24 V DC
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 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
KC approval	No
Suitable for safety functions	No
Ambient conditions	
Ambient temperature during operation	
• Operation (vertical installation)	0 to +50 °C
- For vertical installation, min.	0 °C
- For vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	90 %
Mechanics/material	
Type of housing (front)	
• plastic	Yes
Dimensions	
Width of the housing front	212 mm
Height of housing front	156 mm
Overall depth	50 mm
Weights	
Without packaging	460 g
Scope of supply	
Delivery quantity in pieces	1; Content: 1 X USB Hub 4, 10 x plastic mounting clip, 1 x female 2-pin connector
Other	
Note:	for access to the USB interface of a built-in device without having to open the control cabinet, mounting on standard rail possible, suitable for standard USB interfaces

■ Ordering data   Article No.

Industrial USB Hub 4	**6AV6671-3AH00-0AX0**
Use of standard USB interface four times simultaneously without having to open the control cabinet, standard rail mounting possible, suitable up to and including USB 2.0 standard. For quantities and contents, see Technical Specifications in the Mall.	
USB extension, Type 1	**6AV7674-0LX00-0AA0**
1-port USB interface for Fully Enclosed HMI devices: For quantities and contents, see Technical Specifications in the Mall.	
USB extension, Type 2	**6AV7674-0LX01-0AA0**
2-port USB interface for Fully Enclosed HMI devices: For quantities and contents, see Technical Specifications in the Mall.	
USB extension, Type 3	**6AV2181-8AF80-0AX0**
1-port-USB interface, suitable for extending or routing USB interfaces up to and including USB 3.0 standard. For quantities and contents, see Technical Specifications in the Mall.	

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

■ More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:

http://support.automation.siemens.com

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SIMATIC HMI accessories

Other accessories

Overview

Replacement keys for Mobile Panel

SIMATIC small components are also perfected for the industrial environment and optimally matched to the core products.

In order to achieve attractive prices, it is only possible in some cases to order packages containing larger quantities.

Further information can always be found in the Technical Data of the respective products.

Technical specifications

Article number	6AV6574-1AG04-4AA0
	SPARE KEY FOR MOBILE PANEL, TYPE 10
Product type designation	
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.	90 %
Mechanics/material	
Material of housing	
• Sheet metal	Yes; Handle made of plastic
Dimensions	
Width	35 mm
Height	18 mm
Thickness	4 mm
Weights	
Without packaging	30 g
Scope of supply	
Delivery quantity in pieces	10; Coupled with key ring
Other	
Note:	For Mobile Panel 1st Generation

Ordering data | Article No.

Spare keys for Mobile Panel, Type 10	6AV6574-1AG04-4AA0
For the key-operated switch of the Mobile Panel. For quantities and contents, see Technical Specifications in the Mall.	
Spare keys for Mobile Panel, Type 13	6AV2181-5AR80-0AX0
For the key-operated switch of the Mobile Panel 2nd Generation. For quantities and contents, see Technical Specifications in the Mall.	

Detailed information can be obtained from the relevant Technical Specifications of the products.

You can also find the complete range of accessories in the Mall.
https://eb.automation.siemens.com

More information

Note:

Photos and product images may differ from the actual product!

You can find more information on our SIMATIC Support pages:
http://support.automation.siemens.com

Appendix
SITRAIN – Training for Industry

■ You benefit from practical training right from the manufacturer

SITRAIN Training for Industry provides you with comprehensive support in solving your tasks.

Training right from the manufacturer enables you to make better choices with more confidence in your decision-making processes.

SITRAIN Training means:

- Less time for commissioning, maintenance and servicing
- Optimized production operations
- Safe engineering and commissioning
- Shorter start-up times, reduced downtimes and faster fault clearance
- Swift elimination of deficits in existing plants
- Avoidance of costly planning errors right from the start
- Flexible plant adaptation to market requirements
- Ensure quality standards in production
- Increased employee satisfaction and motivation
- Shorter orientation periods in case of technology or personnel change

■ Contact

Visit our website at:

www.siemens.com/sitrain

or let us advise you personally. You can request our latest training catalog from:

**SITRAIN – Training for Industry
Customer Support Germany:**

Phone: +49 911 895-7575

Fax: +49 911 895-7576

E-mail: info@sitrain.com

■ Important key data

Top trainers

Our trainers are skilled specialists with direct and extensive practical experience. Course developers have close contact with product development and directly pass on their knowledge to the trainers, and with that at the end to you.

Practical experience

Practice makes perfect – that's why we attach greatest importance to hands-on learning. Practical exercises can comprise up to half of the course time. You can therefore immediately implement your new knowledge in your day-to-day work.

300 courses in 62 countries

We offer a total of about 300 local attendance courses. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. To find out which course is held at which location, go to:

www.siemens.com/sitrain

Customized training

Would you prefer individual training instead? Our solution: We will provide a program tailored exactly to your personal requirements. Training can be carried out in our Training Centers or onsite at your company.

We instruct you using state-of-the-art training equipment which has been especially designed by our developers for the SITRAIN courses. This training approach will give you all the assurance you need.

The right mixture: Blended learning

Blended learning involves a combination of various training media. For example, a face-to-face course in a training center can be optimally supplemented by teach-yourself Web-based training (WBT) courses as preparation or follow-up.
The add-on effect: Reduced traveling costs and periods of absence.

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Training offer 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

Courses for SIMATIC HMI

Title		Course suitable for				
		Planning	Implementation	Operation	Duration/ Medium	Order code
SIMATIC WinCC based on TIA Portal and SIMATIC S7-1500						
SIMATIC TIA Portal WinCC on the machine level	TIA	✔	✔	✔	6 hours	WT-TIAWMUP
SIMATIC TIA Portal WinCC SCADA retraining course	TIA		✔	✔	3 days	TIA-WCCSUP
SIMATIC TIA Portal WinCC on the machine level	TIA		✔	✔	3 days	TIA-WCCM
SIMATIC TIA Portal WinCC SCADA	TIA		✔	✔	5 days	TIA-WCCS
SIMATIC WinCC flexible based on SIMATIC S7-300						
SIMATIC WinCC flexible, system course 1			✔	✔	3 days	ST-WCCFSYS1
SIMATIC WinCC flexible, system course 2			✔	✔	3 days	ST-WCCFSYS2
VISUAL BASIC SCRIPT in WinCC flexible			✔	✔	2 days	ST-WCCFVBS
SIMATIC WinCC auf Basis SIMATIC S7-300						
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
SIMATIC WinCC V7.x Market-specific Solutions						
Energy management						
Energy management with SIMATIC powerrate for WinCC			✔	✔	3 days	ST-EMPRWCC
Energy management with B.Data			✔	✔	4 days	ST-EMBDATA

TIA These courses are based on the new engineering platform TIA Portal.

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Appendix
Standards and approvals

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 stan-dards (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 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 concern-ing equipment and protective systems intended for use in po-tentially 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
I IA AS FA DH AMB
Postfach 1963
92209 Amberg
Germany

SIMATIC IPC:

Siemens Aktiengesellschaft
I IA AS PA R&D DH
Oestliche Rheinbrueckenstr. 50
76187 Karlsruhe
Germany

SIMATIC NET:

Siemens Aktiengesellschaft
Industry Sector
I IA SC 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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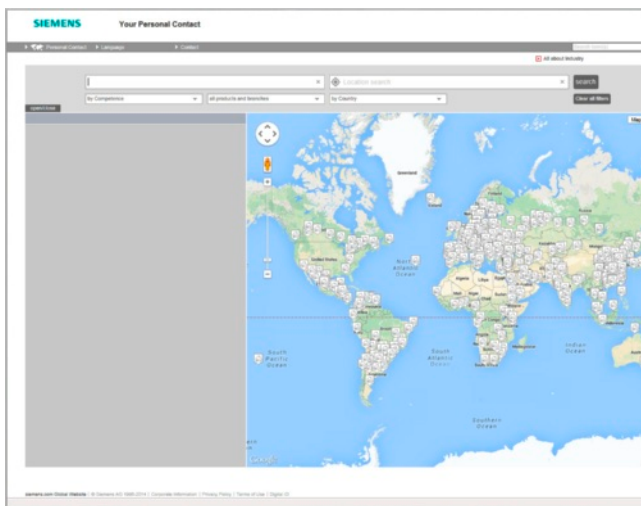
At Siemens Industry we are resolutely pursuing the same goal: long-term improvement of your competitive ability.
We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at:
www.siemens.com/automation/partner

You start by selecting

- the required competence,
- products and branches,
- a country,
- a city

or by a
- location search or
- person search.
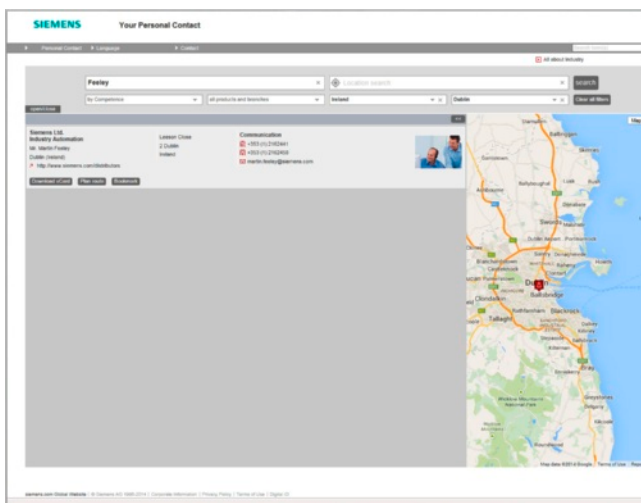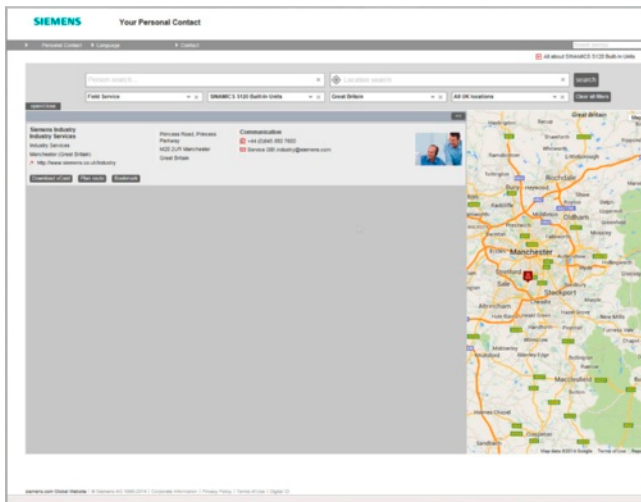
Appendix
Partner at Siemens

WinCC Competence Centers

■ **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 DIN ISO 9001.

You can find more information on the Internet at:
www.siemens.com/wincc-competence-center

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■ **Overview**

Siemens Solution und Approved Partners
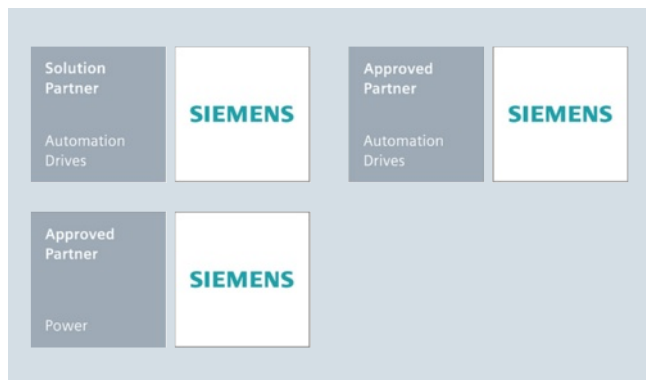
Highest competence in automation and drive technology as well as power distribution

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, as well as power distribution, are fulfilled as best as possible – wherever you are, and whatever the time. It is for this reason that we systematically train and keep our partners well prepared, in addition to certifying them in specific technologies. It is our declared intention and goal to train and prepare our partners to the same standards as our own employees.

This approach is based on contractually agreed quality criteria as well as optimum support for our partners by providing clearly-defined processes. This ensures that they possess all the qualities to meet customer requirements optimally. The partner emblem is the guarantee and indicator of proven quality.

Solution Partners and Approved Partners

The Siemens Partner Program distinguishes between Solution Partners and Approved Partners.

At present we are working with more than 1,400 Solution Partners worldwide. They represent countless tailored and future-proof automation and drive solutions in the most diverse industries.

With their extensive technical product knowledge, Siemens Approved Partners offer a combination of goods and services that include specialist technologies, customized modifications and the provision of high-quality system and product packages. They also provide qualified technical support and assistance

Partner Finder

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 solution 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/automation/partnerfinder

Additional information on the Siemens Solution Partner Program is available online at:

www.siemens.com/partner-program

DF/PD Siemens Partner Program De 06.02.15

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Appendix
Siemens Automation Cooperates with Education

Simplify your education in automation

■ Unique support for educators and students in educational institutions

Siemens Automation Cooperates with Education (SCE)
offers a global system for sustained support of technical skills.
SCE supports educational institutions in their teaching assignment in the industrial automation sector and offers added value in the form of partnerships, technical expertise, and know-how.
As the technological leader, our comprehensive range of services can support you in the knowledge transfer for Industry 4.0.

Our services at a glance

- Training curriculums for your lessons
- Trainer packages for hands-on learning
- Courses convey up-to-date specialist knowledge
- Support for your projects / textbooks
- Complete didactic solutions from our partners
- Personal contact for individual support

Training curriculums for your lessons

Use our profound industrial know-how for practiceoriented and individual design of your course. We offer you more than 100 didactically prepared training curriculums on the topics of automation and drives technology free of charge. These materials are perfectly matched to your curricula and syllabuses, and optimally suited for use with our trainer packages. This takes into account all aspects of a modern industrial solution: installation, configuration, programming, and commissioning. All documents, including projects, can be individually matched to your specific requirements.

Particular highlights:
- The new SIMATIC PCS 7 curriculums and trainer packages. Using plant simulation, you can pass on basic, practice-oriented PCS 7 knowledge at universities within about 60 hours (= 1 semester).

- The new TIA Portal training materials for SIMATIC S7-1500 / S7-1200 / S7-300 are available in English, German, French, Italian, Spanish, Portuguese and Chinese for download.

www.siemens.com/sce/curriculums

Trainer packages for hands-on learning

Our SCE trainer packages offer a specific combination of original industrial components which are perfectly matched to your requirements and can be conveniently used in your course. These price-reduced bundles available exclusively to schools include innovative and flexible hardware and software packages.
SCE currently offers more than 80 SCE trainer packages including related equipment e.g. Micro Memory. These cover both the factory and process automation sectors. You can use them to impart the complete course contents on industrial automation at a very low cost.

Trainer packages are available for:
- Introduction to automation technology with LOGO! logic module
- PLC engineering with SIMATIC S7 hardware and STEP 7 software (S7-1500, S7-1200, S7-300 and TIA Portal)
- Operator control and monitoring with SIMATIC HMI
- Industrial networking over bus systems with SIMATIC NET (PROFINET, PROFIBUS, IO-Link)
- Sensor systems with VISION, RFID and SIWAREX
- Process automation with SIMATIC PCS 7
- Networked drive and motion technologies with SINAMICS/SIMOTION
- Power Monitoring Devices SENTRON PAC 4200
- Motor Management SIMOCODE
- CNC programming with SinuTrain

Important ordering notes:

Only the following institutions are authorized to obtain trainer packages: vocational schools, Colleges and Universities, in-house vocational training departments, non commercial research institutions and non commercial training departments.

To purchase a trainer package, you require a specific end-use certificate, which you can obtain from your regional sales office.

www.siemens.com/sce/tp

■ **Unique support for educators and students in educational institutions** (continued)

Courses convey up-to-date specialist knowledge

Profit from our excellent know-how as the leader in industrial technologies. We offer you specific courses for automation and drive technology worldwide. These support you in the practice-oriented transferring of product and system know-how, are in conformance with curriculums, and derived from the training fields. Compact technical courses especially for use at universities are also available.

Our range of courses comprises a wide variety of training modules based on the principle of Totally Integrated Automation (TIA). The focus is on the same subject areas as with the SCE trainer packages.

Every PLC and drive course is oriented on state-of-the-art technology. Your graduates can thus be prepared optimally for their future professional life.

In some countries we are offering classes based on our training curriculums. Please inquire with your SCE contact partner.

www.siemens.com/sce/courses

Support for your projects/textbooks

Automation and drive technology is characterized by continuous and rapid developments. Service and Support therefore play an important role.

We can provide you with consulting for selected projects and support from your personal SCE contact as well as our web-based and regional Customer Support.

As a particular service, SCE supports technical authors with our know-how as well as with intensive technical consulting. Siemens library of special textbooks covering the industrial automation sector provides an additional resource for you and your students. These can be found at the SCE web site.

www.siemens.com/sce/contact
www.siemens.com/sce/books

Complete didactic solutions from our partners

Our partners for learning systems offer a wide range of training systems and solutions for use in your courses or laboratory.

These models have been designed based on our trainer packages and thus save you the time and cost of selfconstruction of individual components. The Partner systems provide you with simple and effective help in the fulfillment of your teaching assignment.

www.siemens.com/sce/partner

Contact for individual support

You can find your personal SCE contact on our Internet site. Your local SCE Promoter will answer all your questions concerning the complete SCE offering, and provide you with timely and competent information about innovations. When you encounter challenges, you can profit from our global team of excellence.

If a direct SCE contact is not listed for your country, please contact your local Siemens office.

www.siemens.com/sce/contact

SCE Support Finder for your Internet request

You are an educator and need support on the topic of industry automation? Send us your request:

www.siemens.com/sce/supportfinder

Discover SCE

IA/DT SCE En 28.07.2015

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Appendix
Online Services

Information and Ordering Options on the Internet and DVD

The Future of Manufacturing in the WWW

Detailed knowledge of the range of products and services available is essential when planning and engineering automation systems. It goes without saying that this information must always be as up-to-date as possible.

Industry is on the threshold of the fourth industrial revolution as digitization now follows after the automation of production. The goals are to increase productivity and efficiency, speed, and quality. In this way, companies can remain competitive on the path to the future of industry.

You will find everything you need to know about products, systems and services on the internet at:

www.siemens.com/industry

Product Selection Using the Interactive CA 01 Automation and Drives Catalog

Detailed information together with user-friendly interactive functions:
The CA 01 interactive catalog covers more than 100,000 products, thus providing a comprehensive overview of the product range provided by Siemens.

You will find everything you need here for solving tasks in the fields of automation, switching, installation and drives.
All information is provided over a user interface that is both user-friendly and intuitive.

You can order the CA 01 product catalog from your Siemens sales contact or in the Information and Download Center:

www.siemens.com/industry/infocenter

Information about the CA 01 interactive catalog can be found on the Internet at:

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall
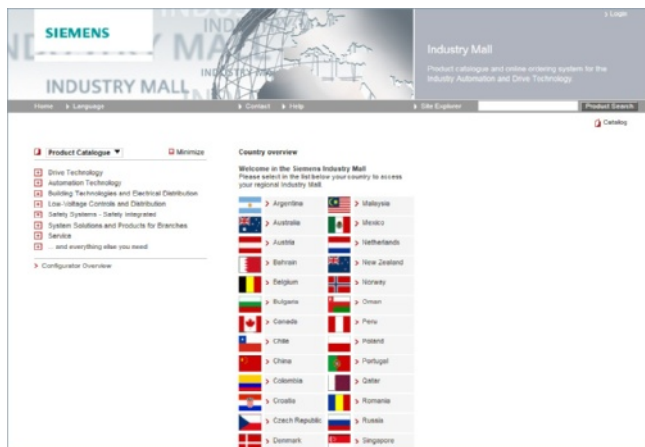
The Industry Mall is the electronic ordering platform of Siemens AG on the Internet. Here you have online access to a huge range of products presented in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, customer-specific discounts and bid creation are also possible.

Numerous additional functions are provided for your support. For example, powerful search functions make it easy to select the required products. Configurators enable you to configure complex product and system components quickly and easily. CAx data types are also provided here.

You can find the Industry Mall on the Internet at:

www.siemens.com/industrymall

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Downloading Catalogs
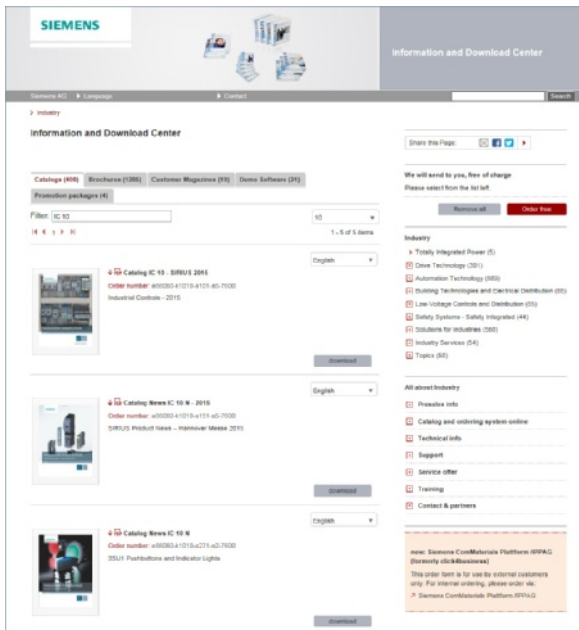
In addition to numerous other useful documents, you can also find the catalogs listed on the back inside cover of this catalog in the Information and Download Center. You can download these catalogs in PDF format without having to register.

The filter dialog above the first catalog displayed makes it possible to carry out targeted searches. If you enter "MD 3" for example, you will find both the MD 30.1 and MD 31.1 catalogs. If you enter "IC 10", both the IC 10 catalog and the associated news or add-ons are displayed.

Visit us at:

www.siemens.com/industry/infocenter

Social and Mobile Media
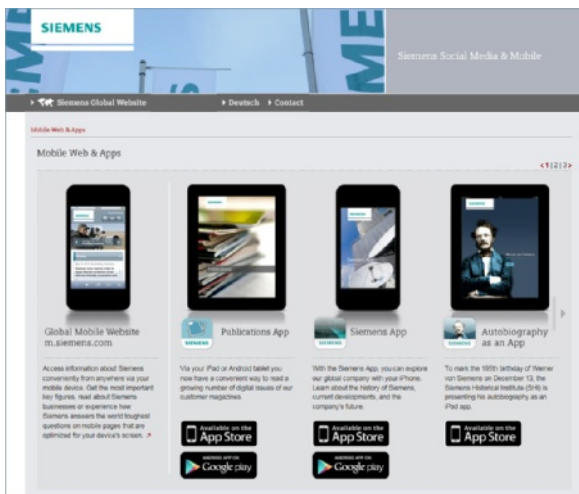
Connect with Siemens through social media: visit our social networking sites for a wealth of useful information, demos on products and services, the opportunity to provide feedback, to exchange information and ideas with customers and other Siemens employees, and much, much more. Stay in the know and follow us on the ever-expanding global network of social media.

To find out more about Siemens' current social media activities, visit us at:

www.siemens.com/socialmedia

Or via our product pages at:

www.siemens.com/automation or www.siemens.com/drives

Connect with Siemens Industry at our central access point to read all the news on the future of manufacturing, watch current videos and inform yourself about all the latest industry developments:

www.siemens.com/future-of-manufacturing/news.html
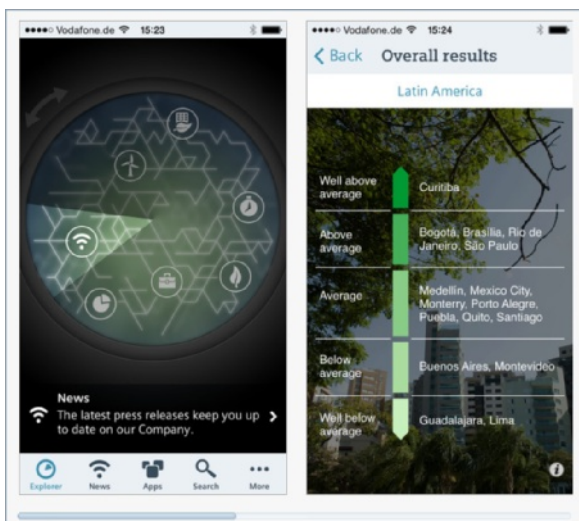
Discover the world of Siemens.

We are also constantly expanding our offering of cross-platform apps for smartphones and tablets. You will find the current Siemens apps at the App Store (iOS) or at Google Play (Android):

https://itunes.apple.com/en/app/siemens/id452698392?mt=8

https://play.google.com/store/search?q=siemens

The Siemens app, for example, tells you all about the history, latest developments and future plans of the company – with informative pictures, fascinating reports and the most recent press releases.

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Appendix
Industry Services

Your machines and plant can do more – with Industry Services.

Whether it is production or process industry - in view of rising cost pressure, growing energy costs, and increasingly stringent environmental regulations, services for industry are a crucial competitive factor in manufacturing as well as in process industries.

All over the world Siemens supports its customers with product, system, and application-related services throughout the entire life cycle of a plant. Right from the earliest stages of planning, engineering, and building, all the way to operation and modernization. These services enable customers to benefit from the Siemens experts' unique technological and product knowledge and industry expertise.

Thus downtimes are reduced and the utilization of resources is optimized. The bottom line: increased plant productivity, flexibility, and efficiency, plus reduced overall costs.

Discover all advantages of our service portfolio:
www.siemens.com/industry-services
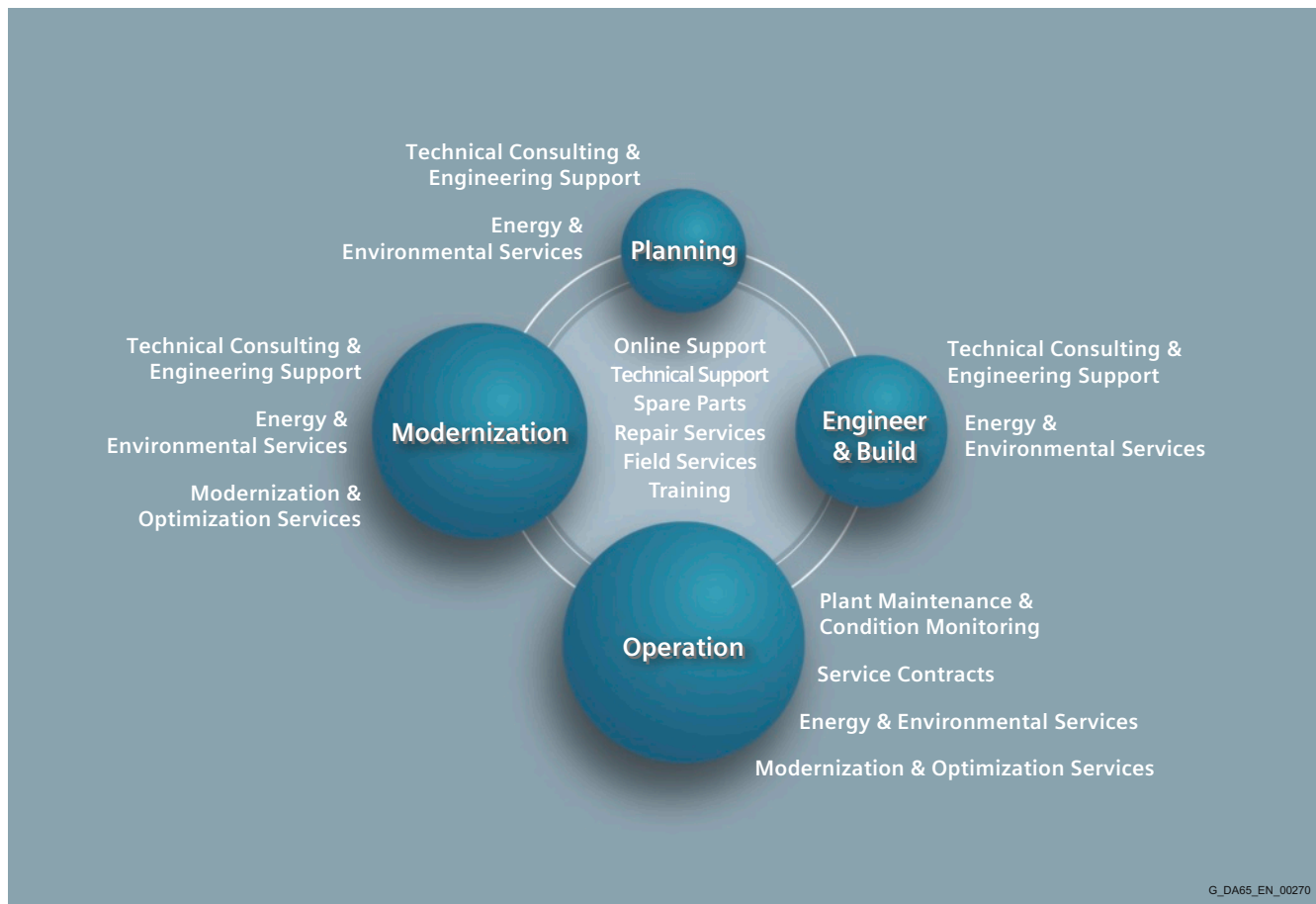
Siemens supports its clients with technology based Services across a plants entire life cycle.

Industry Services for the entire life cycle

Online Support

Online support is a comprehensive information system for all questions relating to products, systems, and solutions that Siemens has developed for industry over time. With more than 300,000 documents, examples and tools, it offers users of automation and drive technology a way to quickly find up-to-date information. The 24-hour service enables direct, central access to detailed product information as well as numerous solution examples for programming, configuration and application.

The content, in six languages, is increasingly multimediabased – and now also available as a mobile app. Online support's "Technical Forum" offers users the opportunity to share information with each other. The "Support Request" option can be used to contact Siemens' technical support experts. The latest content, software updates, and news via newsletters and Twitter ensure that industry users are always up to date.

www.siemens.com/industry/onlinesupport

Online Support App

Using the Online Support app, you can access over 300,000 documents covering all Siemens industrial products - anywhere, any time. Regardless of whether you need help implementing your project, fault-finding, expanding your system or are planning a new machine.

You have access to FAQs, manuals, certificates, characteristics curves, application examples, product notices (e.g. announcements of new products) and information on successor products in the event that a product is discontinued.

Just scan the product code printed on the product directly using the camera of your mobile device to immediately see all technical information available on this product at a glance. The graphical CAx information (3D model, circuit diagrams or EPLAN macros) is also displayed. You can forward this information to your workplace using the e-mail function.

The search function retrieves product information and articles and supports you with a personalized suggestion list. You can find your favorite pages – articles you need frequently – under

"mySupport". You also receive selected news on new functions, important articles or events in the News section.

Scan the QR code for information on our Online Support app.

The app is available free of charge from the Apple App Store (iOS) or from Google Play (Android).

www.siemens.com/industry/onlinesupportapp

Technical Support

The ability to quickly analyze system and error messages and take appropriate action are key factors in ensuring that plants run safely and efficiently. Questions can arise at any time and in any industry, whether it's an individual product or a complete automation solution. Siemens technical support offers individual technical assistance in matters related to functionality, how to operate, applications, and fault clearance in industrial products and systems – at any time and globally, over the phone, by e-mail, or via remote access. Experienced experts from Siemens answer incoming questions promptly. Depending on the requirements, they first consult specialists in the areas of development, on-site services, and sales. Technical support is also available for discontinued products that are no longer available. Using the support request number, any inquiry can be clearly identified and systematically tracked.

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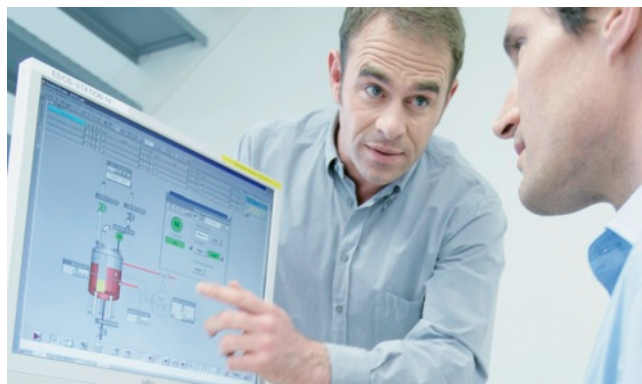
Appendix
Industry Services

Industry Services for the entire life cycle

Spare Parts

Drive and automation systems must be available at all times. Even a single missing spare part can bring the entire plant to a standstill – and result in substantial financial losses for the operator. The spare parts services from Siemens protects against such losses – with the aid of quickly available, original spare parts that ensure smooth interaction with all other system components. Spare parts are kept on hand for up to ten years; defective parts can be returned. For many products and solutions, individual spare parts packages ensure a preventive stock of spare parts on-site. The spare parts services is available around the world and around the clock. Optimum supply chain logistics ensure that replacement components reach their destination as quickly as possible. Siemens' logistics experts take care of planning and management as well as procurement, transportation, customs handling, warehousing, and complete order management for spare parts.

Repair Services

Reliable electrical and electronic equipment is crucial for operating continuous processes. That is why it is essential that motors and converters always undergo highly specialized repair and maintenance. Siemens offers complete customer and repair services – on site and in repair centers – as well as technical emergency services worldwide. The repair services include all measures necessary to quickly restore the functionality of defective units. In addition, services such as spare parts logistics, spare parts storage and rapid manufacturing are available to plant operators in all verticals. With a global network of certified repair shops operated by Siemens as well as third parties, Siemens handles the maintenance and overhaul of motors, converters, and other devices as an authorized service partner.

Field Services

It's a top priority in all industries: the availability of plants and equipment. Siemens offers specialized maintenance services such as inspection and upkeep as well as rapid fault clearance in industrial plants – worldwide, continuously, and even with emergency services as needed. The services include startup as well as maintenance and fault clearance during operation. The startup service includes checking the installation, function tests, parameterization, integration tests for machines and plants, trial operation, final acceptance, and employee training. All services, including remote maintenance of drives, are also available as elements of customized service contracts.

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Training

Increasingly, up-to-date knowledge is becoming a determining factor in success. One of the key resources of any company is well-trained staff that can make the right decision at the right moment and take full advantage of the potential. With SITRAIN – Training for Industry, Siemens offers comprehensive advanced training programs. The technical training courses convey expertise and practical knowledge directly from the manufacturer. SITRAIN covers Siemens' entire product and system portfolio in the field of automation and drives. Together with the customer, Siemens determines the company's individual training needs and then develops an advanced training program tailored to the desired requirements. Additional services guarantee that the knowledge of all Siemens partners and their employees is always up-to-date.
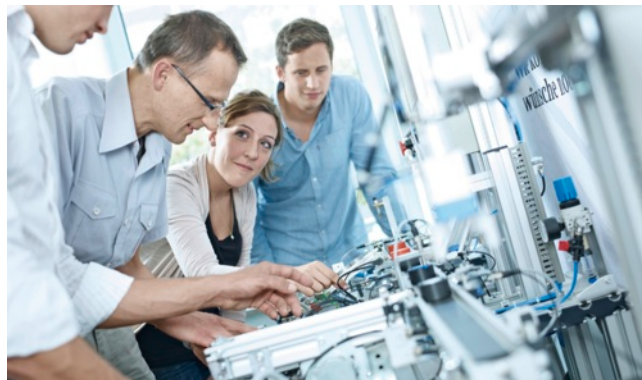
Technical Consulting & Engineering Support

The efficiency of plants and processes leads to sustainable economic success. Individual services from Siemens help save substantial time and money while also guaranteeing maximum safety. Technical consulting covers the selection of products and systems for efficient industrial plants. The services include planning, consulting, and conceptual design as well as product training, application support, and configuration verification – in all phases of a plant's lifecycle and in all questions related to product safety. Engineering support offers competent assistance throughout the entire project, from developing a precise structure for startup to product-specific preparation for implementation as well as support services in areas such as prototype development, testing and acceptance.

Energy & Environmental Services

Efficient energy use and resource conservation – these top sustainability concerns pay off – both for the environment and for companies. Siemens offers integrated solutions that unlock all technical and organizational potential for successful environmental management. Customized consulting services are aimed at sustainably lowering the cost of energy and environmental protection and thus increasing plant efficiency and availability. The experts provide support in the conceptual design and implementation of systematic solutions in energy and environmental management, enabling maximum energy efficiency and optimized water consumption throughout the entire company. Improved data transparency makes it possible to identify savings potential, reduce emissions, optimize production processes, and thereby noticeably cut costs.

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Appendix
Industry Services

Industry Services for the entire life cycle

Modernization & Optimization Services

High machine availability, expanded functionality and selective energy savings – in all industries, these are decisive factors for increasing productivity and lowering costs. Whether a company wants to modernize individual machines, optimize drive systems, or upgrade entire plants, Siemens' experts support the projects from planning to commissioning.

Expert consulting and project management with solution responsibility lead to security and make it possible to specifically identify savings potential in production. This secures investments over the long term and increases economic efficiency in operation.

Plant Maintenance & Condition Monitoring

Modern industrial plants are complex and highly automated. They must operate efficiently in order to ensure the company's competitive strength. In addition, the steadily increasing networking of machines and plants require consistent security concepts. Maintenance and status monitoring as well as the implementation of integrated security concepts by Siemens' experts support optimum plant use and avoid downtime. The services include maintenance management as well as consulting on maintenance concepts, including the complete handling and execution of the necessary measures. Complete solutions also cover remote services, including analysis, remote diagnosis, and remote monitoring. These are based on the Siemens Remote Services platform with certified IT security.

Service Contracts

Making maintenance costs calculable, reducing interfaces, speeding up response times, and unburdening the company's resources – the reduced downtimes that these measures achieve increase the productivity of a plant. Service contracts from Siemens make maintenance and repairs more cost-effective and efficient. The service packages include local and remote maintenance for a system or product group in automation and drive technology. Whether you need extended service periods, defined response times, or special maintenance intervals, the services are compiled individually and according to need. They can be adjusted flexibly at any time and used independently of each other. The expertise of Siemens' specialists and the capabilities of remote maintenance thus ensure reliable and fast maintenance processes throughout a plant's entire lifecycle.

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■ **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 months after delivery.

Scope of services of the service option within the period of service (36 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

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[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.

Product family	Article No. Service Option	Article designation
SIMATIC Rack PC	A5E00510072	36 months service option for SIMATIC Rack PC and Box PC
• SIMATIC IPC547		
• SIMATIC IPC647		
• SIMATIC IPC847		
SIMATIC Box PC		
• SIMATIC IPC227		
• SIMATIC IPC427		
• SIMATIC IPC627		
• SIMATIC IPC827		
SIMATIC Panel PC	A5E00509961	36 months service option for SIMATIC Panel PC
• SIMATIC IPC277		
• 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 delivery:
  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!

Appendix
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
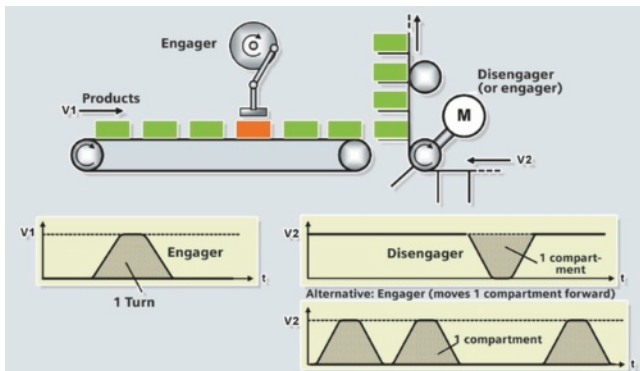
- Design of PC-based Automation systems from Siemens
- Integrated, customer-specific technology (add-ons) using high-level languages (C++) in Windows or real-time environments
- Knowledge transfer/workshops for the integration of third-party components, as well as for applications using the Open Development Kit (ODK)
- Technology and application know-how
- Development of add-ons for WinAC and WinCC flexible

■ Reference applications
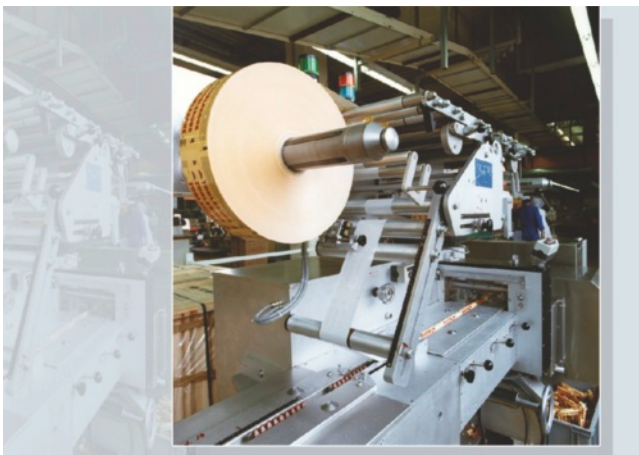
- Fast recording of measured values
- Software blocks for drives library
- Customer-specific communications via Ethernet (OPC/ActiveX, TCP socket)
- Synchronous operation, flying shear, table interpolation for electric and hydraulic axes
- Integration of PCI cards into PC-based Automation applications (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

■ 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 delivery 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.

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Appendix

Software Licenses

■ 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 www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

IA/DT/BT Software licenses En 21.03.13

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Conditions of sale and delivery

1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG 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 applies subordinate to the T&C:

- the "General Terms of Payment"[1] and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"[1] and,
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"[1].

1.2 For customers with a seat or registered office outside Germany

For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"[1] and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office outside of Germany"[1] and
- for other supplies and/or services, the "General Conditions for Supplies of Siemens Industry for Customers with a Seat or Registered Office outside of Germany"[1].

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 charget 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:

www.siemens.com/automation/salesmaterial-as/catalog/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.

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 of goods listed in this catalog may be subject to licensing requirements. We will indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US re-export authorization.

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.

Even without a label, or with label "AL:N" or "ECCN:N", authorization may be required i .a. due to the final disposition and intended use of goods.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you must comply with all applicable national and international (re-)export control regulations.

If required for the purpose of conducting export control checks, you (upon request by us) shall promptly provide us with all information pertaining to the particular end customer, final disposition and intended use of goods delivered by us respectively works and services provided by us, as well as to any export control restrictions existing in this relation.

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.

Errors excepted and subject to change without prior notice.

[1] The text of the Terms and Conditions of Siemens AG can be downloaded at
www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

IA/DT/BT VuL_ohne MZ En 21.03.2013

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Catalogs
Digital Factory, Process Industries and Drives and Low-Voltage Power Distribution

Further information can be obtained from our branch offices listed at www.siemens.com/automation/partner

Interactive Catalog on DVD	*Catalog*
Products for Automation and Drives	**CA 01**

Building Control	
GAMMA Building Control	ET G1

Drive Systems	
SINAMICS G130 Drive Converter Chassis Units	D 11
SINAMICS G150 Drive Converter Cabinet Units	
SINAMICS GM150, SINAMICS SM150 Medium-Voltage Converters	D 12
SINAMICS PERFECT HARMONY GH180 Medium-Voltage Air-Cooled Drives Germany Edition	D 15.1
SINAMICS G180 Converters – Compact Units, Cabinet Systems, Cabinet Units Air-Cooled and Liquid-Cooled	D 18.1
SINAMICS S120 Chassis Format Units and Cabinet Modules	D 21.3
SINAMICS S150 Converter Cabinet Units	
SINAMICS DCM DC Converter, Control Module	D 23.1
SINAMICS DCM Cabinet	D 23.2
SINAMICS Inverters for Single-Axis Drives and SIMOTICS Motors	D 31
SINAMICS G120P and SINAMICS G120P Cabinet pump, fan, compressor converters	D 35
Three-Phase Induction Motors SIMOTICS HV, SIMOTICS TN	D 84.1
• Series H-compact	
• Series H-compact PLUS	
Three-Phase Induction Motors SIMOTICS HV, Series H-compact	D 86.1
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2
DC Motors	DA 12
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2
Digital: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	*DA 22*
SIMOVERT PM Modular Converter Systems	DA 45
SIEMOSYN Motors	DA 48
MICROMASTER 420/430/440 Inverters	DA 51.2
MICROMASTER 411/COMBIMASTER 411	DA 51.3
SIMODRIVE 611 universal and POSMO	DA 65.4

Note: Additional catalogs on the SINAMICS drive system and SIMOTICS motors with SINUMERIK and SIMOTION can be found under Motion Control

Low-Voltage Three-Phase-Motors

SIMOTICS Low-Voltage Motors	D 81.1
SIMOTICS FD Flexible Duty Motors	D 81.8
LOHER Low-Voltage Motors	D 83.1
MOTOX Geared Motors	D 87.1
SIMOGEAR Geared Motors	MD 50.1
SIMOGEAR Gearboxes with adapter	MD 50.11

Mechanical Driving Machines

FLENDER Standard Couplings	MD 10.1
FLENDER High Performance Couplings	MD 10.2
FLENDER Backlash-free Couplings	MD 10.3
FLENDER SIG Standard industrial gear units	MD 30.1
FLENDER SIP Standard industrial planetary gear units	MD 31.1

Process Instrumentation and Analytics	
Digital: Field Instruments for Process Automation	*FI 01*
Digital: SIPART Controllers and Software	*MP 31*
Products for Weighing Technology	WT 10
Digital: Process Analytical Instruments	*AP 01*
Digital: Process Analytics, Components for the System Integration	*PA 11*

Digital: These catalogs are only available as a PDF.

Low-Voltage Power Distribution and Electrical Installation Technology	*Catalog*
SENTRON · SIVACON · ALPHA Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems	LV 10
Standards-Compliant Components for Photovoltaic Plants	LV 11
Electrical Components for the Railway Industry	LV 12
Digital: TÜV-certified Power Monitoring System	*LV 14*
Components for Industrial Control Panels according to UL Standards	LV 16
3WT Air Circuit Breakers up to 4000 A	LV 35
3VT Molded Case Circuit Breakers up to 1600 A	LV 36
Digital: SIVACON System Cubicles, System Lighting and System Air-Conditioning	*LV 50*
Digital: ALPHA Distribution Systems	*LV 51*
ALPHA FIX Terminal Blocks	LV 52
SIVACON S4 Power Distribution Boards	LV 56
SIVACON 8PS Busbar Trunking Systems	LV 70
Digital: DELTA Switches and Socket Outlets	*ET D1*

Motion Control	
SINUMERIK 840D sl Type 1B Equipment for Machine Tools	NC 62
SINUMERIK 808 Equipment for Machine Tools	NC 81.1
SINUMERIK 828 Equipment for Machine Tools	NC 82
SIMOTION, SINAMICS S120 & SIMOTICS Equipment for Production Machines	PM 21
Drive and Control Components for Cranes	CR 1

Power Supply	
SITOP Power supply	KT 10.1

Safety Integrated	
Safety Technology for Factory Automation	SI 10

SIMATIC HMI / PC-based Automation	
Human Machine Interface Systems/ PC-based Automation	ST 80/ ST PC

SIMATIC Ident	
Industrial Identification Systems	ID 10

SIMATIC Industrial Automation Systems	
Products for Totally Integrated Automation	ST 70
SIMATIC PCS 7 Process Control System System components	ST PCS 7
SIMATIC PCS 7 Process Control System Technology components	ST PCS 7 T
Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7 AO

SIMATIC NET	
Industrial Communication	IK PI

SIRIUS Industrial Controls	
SIRIUS Industrial Controls	IC 10

Information and Download Center

Digital versions of the catalogs are available on the Internet at:
www.siemens.com/industry/infocenter
There you'll find additional catalogs in other languages.

Please note the section "Downloading catalogs" on page "Online services" in the appendix of this catalog.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates.

For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action (e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. For more information about industrial security, visit
http://www.siemens.com/industrialsecurity.

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit
http://support.automation.siemens.com.

www.siemens.com/automation