

Human Machine Interface Systems/ PC-based Automation

Catalog ST 80 / ST PC • 2010



SIMATIC HMI / PC-based Automation

Answers for industry.

SIEMENS

Related catalogs

SIMATIC

Products for Totally Integrated Automation and Micro Automation

E86060-K4670-A101-B2-7600
E86060-K4670-A151-A5-7600 (News)

ST 70



SIMATIC NET

Industrial Communication

E86060-K6710-A101-B6-7600
E86060-K6710-A121-A3-7600 (News)

IK PI



SITOP

Power Supply

E86060-K2410-A111-A7-7600

KT 10.1



SITRAIN

Training for Automation and Industrial Solutions (in German)

E86060-K6850-A101-C1

ITC



Catalog CA 01

Products for Automation and Drives

E86060-D4001-A510-C9-7600

CA 01



Industry Mall

Information and Ordering Platform in the Internet:

www.siemens.com/industrymall



SIMATIC HMI / PC-based Automation Operator Control and Monitoring Systems

Catalog ST 80 / ST PC · 2010



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

Supersedes:

Catalog ST 80 · 2009 and

Catalog ST PC · November 2008

Refer to the Industry Mall for current updates of this catalog:

www.siemens.com/industrymall

The products contained in this catalog can also be found in the Interactive Catalog CA 01.

Order No.:

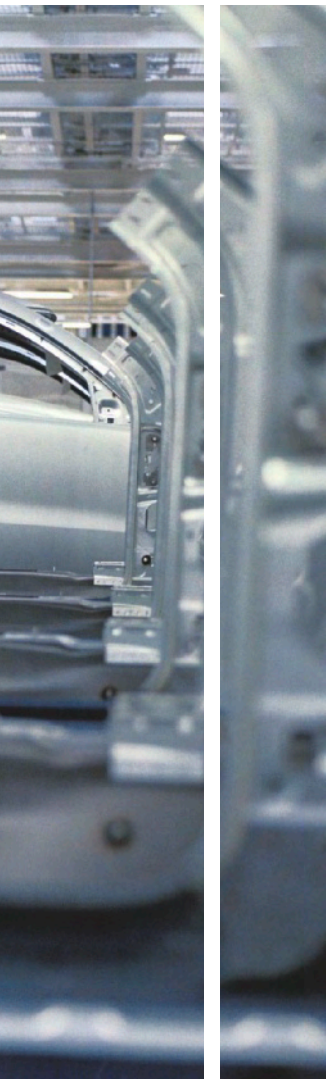
E86060-D4001-A510-C9-7600 (DVD)

Please contact your local Siemens branch

© Siemens AG 2010

Introduction	1
Operator control and monitoring devices	2
HMI devices for special requirements	3
HMI Software	4
PC-based Automation	5
Customized Automation	6
Appendix	7





Answers for industry.

Siemens Industry answers the challenges in the manufacturing and the process industry as well as in the building automation business. Our drive and automation solutions based on Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) are employed in all kinds of industry. In the manufacturing and the process industry. In industrial as well as in functional buildings.

Siemens offers automation, drive, and low-voltage switching technology as well as industrial software from standard products up to entire industry solutions. The industry software enables our industry customers to optimize the entire value chain – from product design and development through manufacture and sales up to after-sales service. Our electrical and mechanical components offer integrated technologies for the entire drive train – from couplings to gear units, from motors to control and drive solutions for all engineering industries. Our technology platform TIP offers robust solutions for power distribution.

The high quality of our products sets industry-wide benchmarks. High environmental aims are part of our eco-management, and we implement these aims consistently. Right from product design, possible effects on the environment are examined. Hence many of our products and systems are RoHS compliant (Restriction of Hazardous Substances). As a matter of course, our production sites are certified according to DIN EN ISO 14001, but to us, environmental protection also means most efficient utilization of valuable resources. The best example are our energy-efficient drives with energy savings up to 60 %.

Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.

ERP – Enterprise Resource Planning

Management Level

MES – Manufacturing Execution Systems



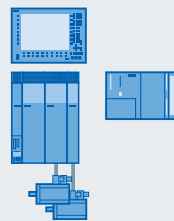
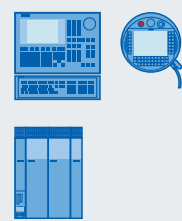
Operations Level

SIMATIC PCS 7
Process Control (DCS)

Control Level

Industrial Software for

- Design and Engineering
- Installation and Commissioning
- Operation
- Maintenance
- Modernization and Upgrade
- Energy Management

SIMOTION
Motion Control SystemSINUMERIK
Computer Numeric Control

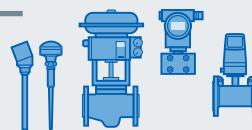
Field Level

■ PROFIBUS PA

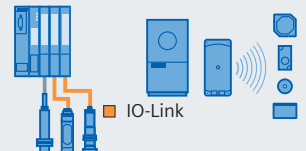


■ HART

Process Instrumentation



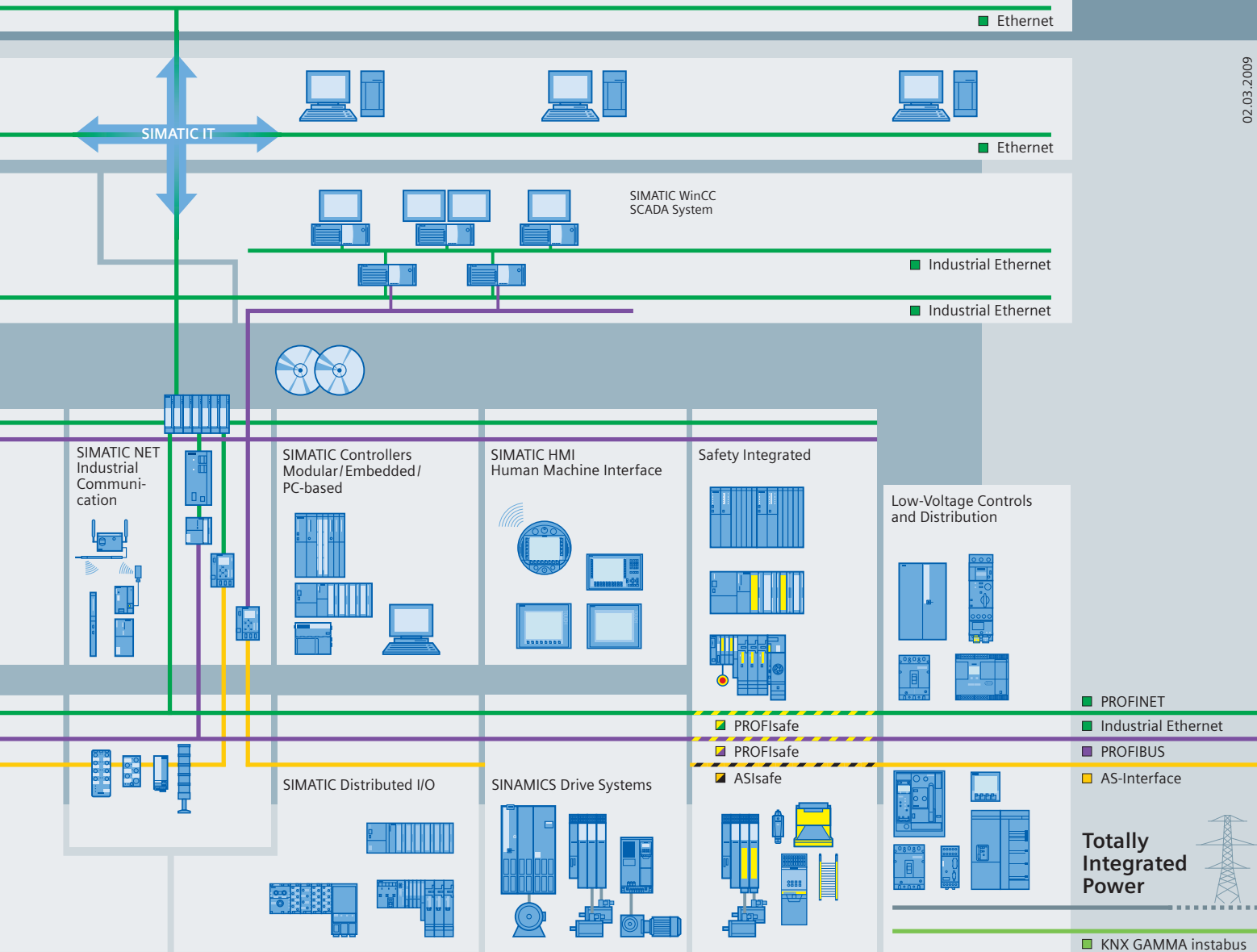
SIMATIC Sensors

Totally
Integrated
Automation

Setting standards in productivity and competitiveness.

Totally Integrated Automation.

Thanks to Totally Integrated Automation, Siemens is the only provider of an integrated basis for implementation of customized automation solutions – in all industries from inbound to outbound.

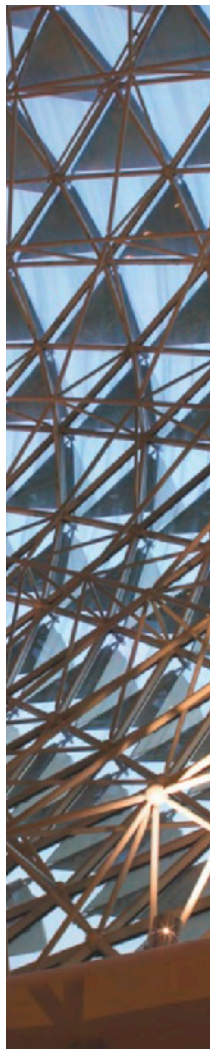


TIA is characterized by its unique continuity.

It provides maximum transparency at all levels with reduced interfacing requirements – covering the field level, production control level, up to the corporate management level. With TIA you also profit throughout the complete life cycle of your plant – starting with the initial planning steps through operation up to modernization, where we offer a high measure of investment security resulting from continuity in the further development of our products and from reducing the number of interfaces to a minimum.

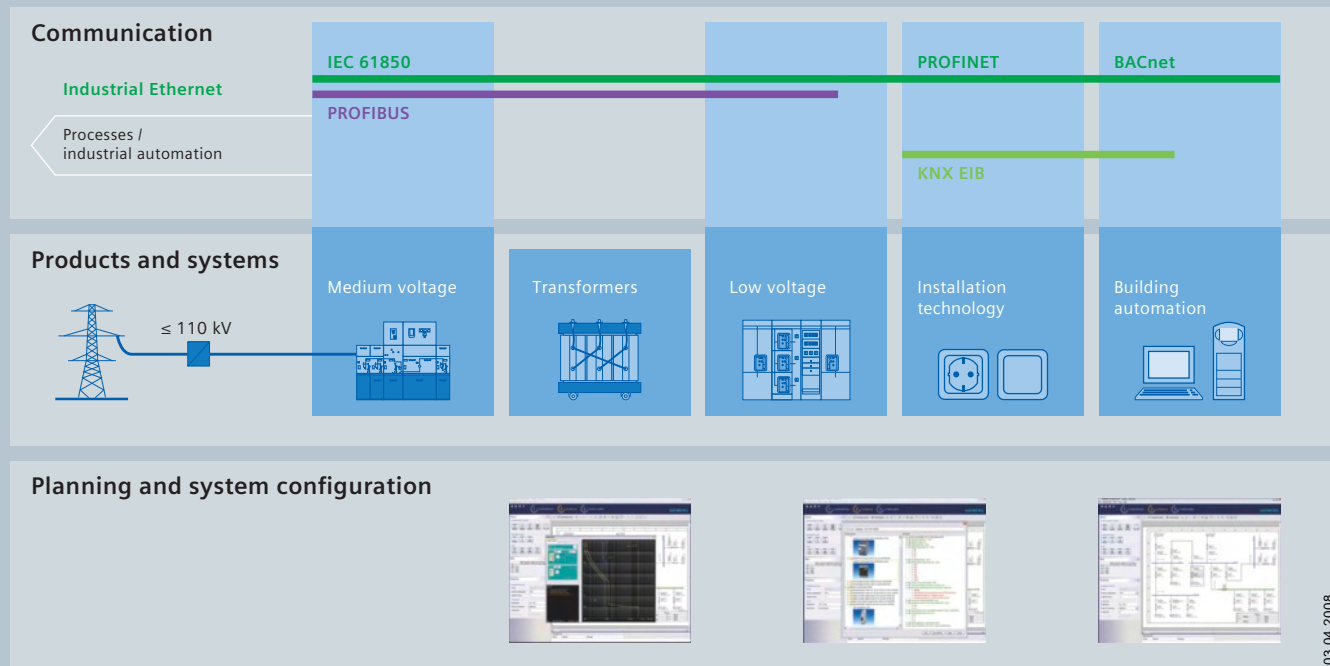
The unique continuity is already a defined characteristic at the development stage of our products and systems.

The result: maximum interoperability – covering the controller, HMI, drives, up to the process control system. This reduces the complexity of the automation solution in your plant. You will experience this, for example, in the engineering phase of the automation solution in the form of reduced time requirements and cost, or during operation using the continuous diagnostics facilities of Totally Integrated Automation for increasing the availability of your plant.



Integrated power distribution from one source.

Totally Integrated Power.



Electrical power distribution in buildings requires integrated solutions. Our response: Totally Integrated Power. This means innovative and integrated, interface-optimized products and systems which have been optimally coordinated and complemented with communication and software modules that link power distribution to building automation or industrial automation. Totally Integrated Power accompanies power distribution projects from one end to the other. From A to Z. From the planning to the building's use: Totally Integrated Power offers significant advantages in every project stage and to everyone involved in the project – the investors, electrical planning engineers, electricians, users and building facility managers.

Our portfolio comprises everything from engineering tools to the matching hardware: from switchgear and distribution systems for medium voltage to transformers, from switching and circuit-protection devices to low-voltage switchgear and busbar trunking systems, as far as to the small distribution board and the wall outlet. It goes without saying that both the medium-voltage switchgear, which requires no maintenance, and the low-voltage switchgear are type-tested, and their busbar connections, too. Comprehensive protection systems ensure the safety of man and machine at any time.

Gain transparency and lower costs: SIMATIC HMI operator control and monitoring systems

The interface between human and machine – the human machine interface or HMI for short – connects the world of automation with the individual requirements of the operator.

Operator control and monitoring is about managing the process, about optimizing machine and system operation, about availability and productivity.

Everything from a single source

With SIMATIC HMI, Siemens Automation and Drives offers a complete range of innovative and low-cost products and systems for the multi-faceted tasks of operator control and monitoring: Ranging from operator panels and visualization software for operator control and monitoring at the machine through to SCADA systems for widely differing requirements in process visualization.

For special requirements, optimally adapted products are offered such as especially rugged HMI devices with all-round protection for mounting on support arms/pedestals, or operator panels with stainless steel front for use in the food and beverages industry. Of course, individual, customer-specific requirements can also be implemented.

Perfectly equipped for integration in the world of automation

With their open, standardized interfaces in hardware and software, SIMATIC HMI products can be integrated at any time in the production and automation level as well as in the company management level. Connectivity to almost every controller on the market as well as multiple language capability of the configuration and visualization software - including Asian ideographic languages, of course - facilitate operation worldwide.

Increased production transparency through Plant Intelligence

Plant Intelligence is based on the rational use of information to improve processes within the company. It is designed to lower plant costs, consolidate and improve quality, avoid wastage, utilize production facilities better and ultimately ensure greater efficiency and cost effectiveness within the company. WinCC provides the best requirements for achieving this since WinCC features an integrated Historian for acquiring important production data.

Using intelligent functions and tools, these process data can be edited into information necessary for making decisions and can be made available throughout the company whenever and wherever it is required – for operators as well as production managers or anyone else within the company. Even the WinCC basic system provides a wealth of display and evaluation functions, such as the statistics function for the message and measured value logs.

WinCC options for IT & business integration make additional "smart" tools available for optimizing production using Plant Intelligence.

Integrated into the World Wide Web

SIMATIC HMI makes the Internet into a control desk - within a plant as well as in the worldwide network.

Using the WinCC/Web Navigator, you can monitor and operate plants over the Internet or over the internal corporate intranet. Thin client solutions can be used to integrate rugged, local devices which simultaneously establish the connection between the automation level and the control center. And over a wireless LAN or cell phone connection, you can use mobile thin clients such as laptop computers, PDAs (personal digital assistants) or WebPads.

In this way, process, service or management information can be made individually available to users. At the machine level, many control units support remote operation, e.g. as a link between the automation level and the control room through to service and diagnostics over the Internet.

With WinCC flexible, concepts with so-called Sm@rtClients and servers facilitate plant-wide access to variables and graphics, distributed operator stations as well as remote operation and diagnostics via the Internet – also in conjunction with SIMATIC Panels.

Traceability and simple validation

WinCC flexible and WinCC with "FDA options" provide a high degree of support to machine and plant manufacturers who must fulfill high quality requirements, both with respect to the products to be manufactured as well as to the manufacturing processes themselves.

These options simplify plant validation enormously and thus provide the most convincing and comprehensive solution for the requirements of these sectors. They support the user in fulfilling high quality requirements as specified by the FDA (Food and Drug Administration) 21 CFR Part 11 for the food, beverages and pharmaceutical industries.

Increased plant availability

All operator panels and Panel PCs are designed for harsh industrial use. Redundant WinCC process visualization systems ensure a high degree of plant availability during normal operation.

The ProAgent process diagnostics of SIMATIC HMI supports you effectively with error locating and elimination and significantly reduces downtimes.



Distributed operator control concepts

SIMATIC HMI offers different solutions for different requirements for operator control of large machines and plants spread over extensive areas.

Thus, the Sm@rtAccess option of the SIMATIC WinCC visualization software, for example, allows HMI devices such as panels, Thin Clients and PCs plant-wide access via PROFINET/Ethernet to current process values and the local screen images of all involved stations.

The Sm@rtService option is used for diagnostics, maintenance and remote control of local operator stations over the Internet.

As remote operator stations, SIMATIC Thin Clients make the functionality of machine-level panels available in the control room or in the office, thanks to their connection to PROFINET/Ethernet, and in the other direction, they bring SIMATIC WinCC or office or IT functionality straight to the machine.

In PC-based applications, the computing unit and the operating unit of a Panel PC 677B can be separated from each other by up to 30 m. When using PCs such as the SIMATIC Rack or Box PC, a SIMATIC Flat Panel monitor can also assume the function of the operating unit at a distance of up to 30 m.

More than just operator control and monitoring

The Multi Panels under Windows CE combine the advantages of two worlds: On the one hand, the ruggedness of an operator panel and on the other hand the flexibility typical of a PC.

Apart from classical operator control and monitoring, other automation functions such as control functions can execute simultaneously.

And for PC-based automation, the SIMATIC Panel PCs are available as a compact automation platform - the embedded versions being especially compact and rugged as well as maintenance-free.



All the advantages of Totally Integrated Automation

With Totally Integrated Automation (TIA), Siemens is the only supplier who offers a system-wide, integrated product and system range for automating the complete production workflow.

The distinguishing feature of TIA is that it is completely integrated. The reduced number of interfaces results in very clear structures. This reduces time and costs required for engineering the automation solution and increases the availability of the plant.

SIMATIC WinCC flexible, the system-wide engineering tool for the SIMATIC HMI operator panels, is part of TIA and uses the same database as STEP 7, the programming software for the SIMATIC Controllers. This saves input overhead and ensures data consistency at all times.

In conjunction with other SIMATIC components, SIMATIC HMI also supports system diagnostics and process diagnostics during normal operation. You can start STEP 7 diagnostics directly from WinCC for comprehensive error diagnostics from the circuit diagram through to the PLC program.

The SIMATIC Maintenance Station visualizes the maintenance information for the automation technology of a system – from the controller and network components to switchgear, protective equipment and control devices and the drives. This gives a clear overview of the status of the automation at any time.

A competent partner for automation solutions

With SIMATIC HMI, you not only get excellent products to suit your requirements, we will also support you with selecting a partner for your automation solution.

In our worldwide network of Siemens Automation Solution Partners, you will find competent contact partners in your area who are always up-to-date with SIMATIC HMI technology.

The Siemens-internal WinCC Competence Centers implement technology-specific products as well as customer and sector-specific solutions on the basis of WinCC. WinCC specialists are external system integrators who combine their WinCC expertise with their sector and technology know-how to create tailor-made, cost-effective solutions. Numerous products from our partners that perfectly interact with WinCC are available as WinCC Add-ons.

Investment protection is included

Our many years of experience in the automation engineering sector are to your advantage.

The same applies to our global service network with its expert support. Further services, such as a software update service, training, ordering over the Internet, etc. round off what we have to offer.

SIMATIC HMI:

A whole world of operator control and monitoring

Process visualization

SIMATIC WinCC

The SCADA system for scalable process visualization to suit any requirement – from the single-user through to the redundant multi-user systems, as well as for plant operation and monitoring over the Internet. WinCC is also the ideal information hub for IT and business integration, with Plant Intelligence ensuring more transparency in the production process.

Operator control and monitoring directly at the machine

Operator control and monitoring devices

SIMATIC Push Button Panels

Operator panels with bus capability for easy and direct operation of machines.

SIMATIC Micro Panels

Operator panels for small machines and specially designed for SIMATIC S7-200.

SIMATIC Mobile Panels

Mobile operator panels with or without cables for direct operator control of the plant and machine from any location.

SIMATIC Basic Panels

Operator panels with basic functionality for small machines and plants.

SIMATIC Panels

Compact and rugged operator panels for use directly at the machine – finely graded in performance and convenience and available as Operator Panels and Touch Panels.

SIMATIC Multi Panels

Multifunctional platforms that, in addition to visualization, also perform other automation tasks such as controlling.

SIMATIC WinAC MP

The software PLC can be used on the Multi Panels of the 170/270 and 370 series and is suitable for complex processes in which control and visualization tasks are to be solved with one and the same device.

Fully enclosed HMI devices for SIMATIC

The fully enclosed SIMATIC HMI devices (MP 377 PRO, Thin Client PRO, Flat Panel PRO, and HMI IPC477C 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 fronts

Panels and Panel PCs with touch screens and stainless steel fronts have been designed for use in the food, beverages and tobacco industry for operator control and monitoring directly on food processing machines.

HMI devices for hazardous areas

Die SIMATIC HMI Ex devices are intrinsically safe Panel PCs and Thin Clients that have been specially designed for hazardous areas.

Process visualization

Single-user PC



Operator control and monitoring directly at the machine

Push Button Panels



Micro Panels



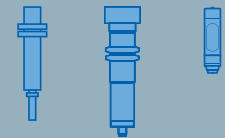
Mobile Panels



SIMOTION Motion Control

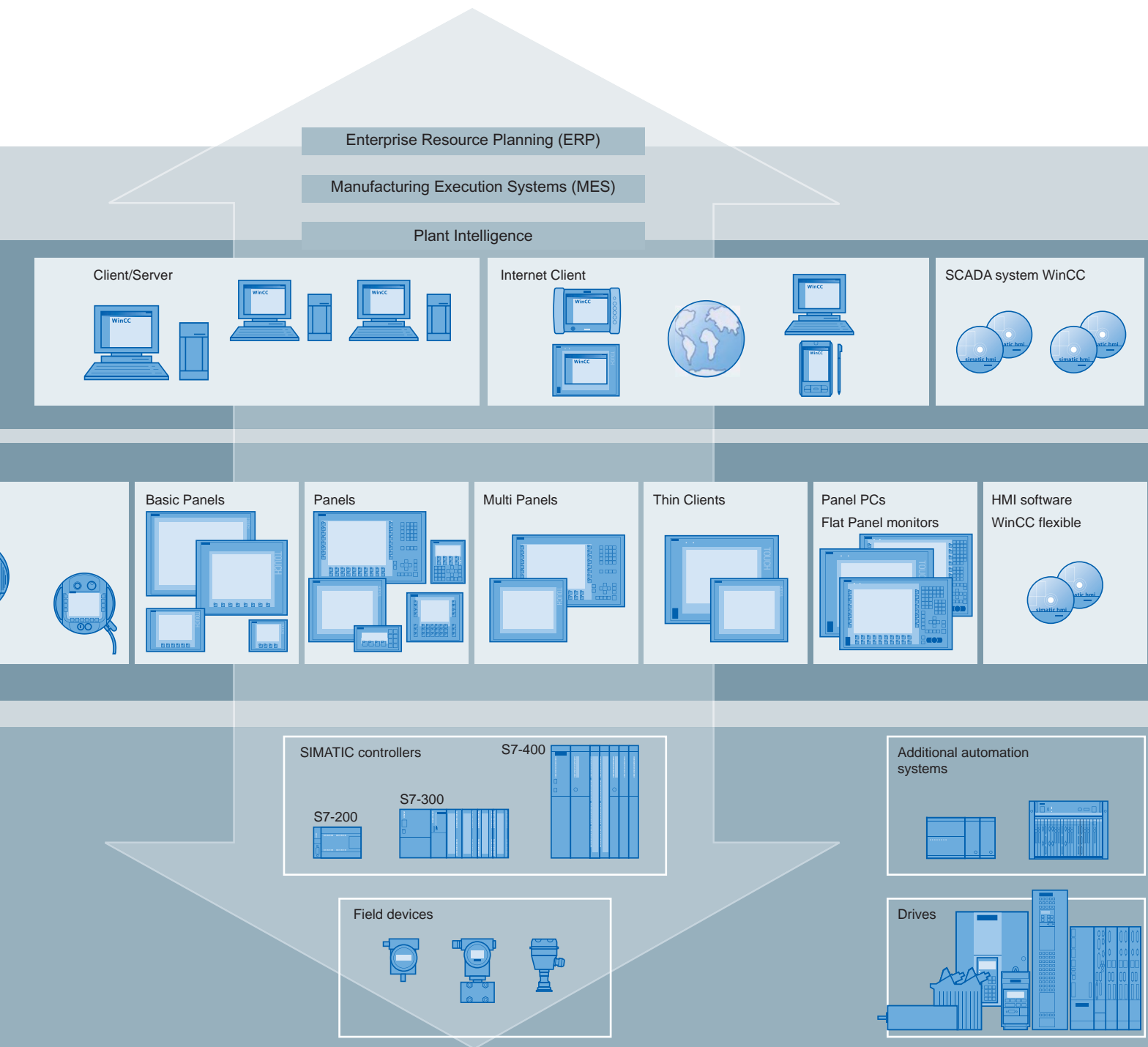


Actuators / Sensors



SIMATIC WinCC flexible

The innovative HMI software under Windows for all applications at the machine level and on the plant floor. The engineering software facilitates system-wide configuring of all SIMATIC HMI operator panels - from Micro Panels to on-site solutions with SIMATIC Panel PCs and local control rooms with standard PCs. WinCC flexible stands for the highest degree of configuration efficiency and features additional options for operation, service and diagnostics via the Web.



Panel PC

Industrial platforms for PC visualization locally or for the many and varied automation tasks of PC-based automation. The new embedded version is especially compact and rugged as well as maintenance-free.

Flat Panel monitors

Industry-standard LCD monitors with high-contrast TFT displays.

SCD monitors

LCD monitors in a rugged industrial design.

Thin Client

Low-cost, rugged operator stations providing panel functionality directly on-site for systems covering a relatively large area. These are used in Client-Server applications.

Compact, open and powerful: SIMATIC PC-based Automation

Why PC-based Automation?

The PC is an incomparable success story and has become indispensable in many areas of everyday life. PC know-how is taken for granted today and standards (hardware components, operating system, user interfaces, communication, etc.) have developed with the PC that can be implemented in an ever-widening range of applications thanks to constantly increasing performance combined with falling prices.

In the automation engineering sector, the small number of PC applications – particularly for visualization purposes – have developed in the meantime into comprehensive applications for complex tasks.

This has been mainly due to two reasons:

- The PC offers new possibilities with regard to flexibility, cost reductions and reduced time-to-market in combination with considerable increases in performance.
- PC technology provides on the one hand new application possibilities in a standardized environment, and on the other hand easy integration of such PC-based solutions in the office world.

Automation solutions based on this technology naturally result in total integration of all the main components (logic control, safety, visualization, high-level languages, distributed I/O, IT integration, etc.).

Rugged, turnkey, embedded bundles

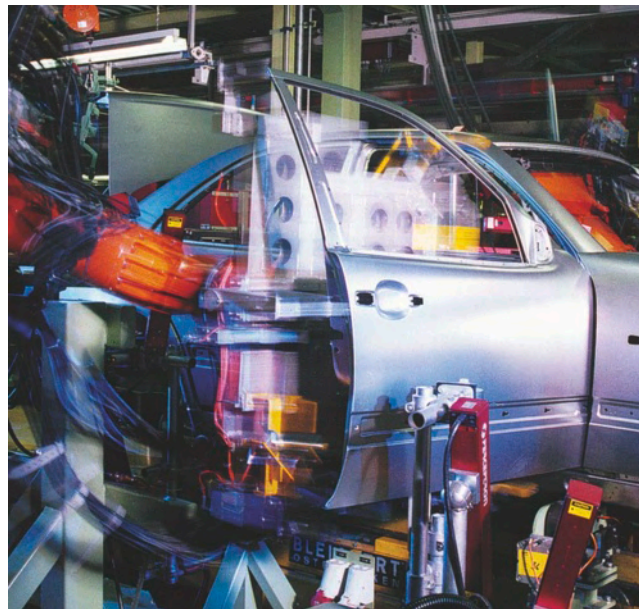
In recent years, thanks to the rapid advances in PC technology, a new class of embedded IPC has been created. Technologies are being applied which increase the ruggedness of such devices to a new level.

The modern embedded IPC is fan free due to appropriate selection of the new energy-saving processors and a suitable housing design.

By replacing the classical hard disk with a Flash memory card or solid-state drive (SSD), the disadvantages of rotating mass storage can also be avoided.

Building on a compact, embedded operating system (Windows Embedded), in combination with software PLCs, visualization software, technology functions and motion control functions, extremely compact, powerful and rugged embedded systems are created for implementation at the machine.

Embedded systems in the form of embedded bundles offer additional customer benefits, because logic control functions (also fail-safe) and/or visualization functions are pre-installed and ready for switch-on. This can save time in the engineering and commissioning phases of your applications.



Benefits of PC-based Automation

- Optimum integration with logic control, visualization, industrial PC, high-level languages, distributed I/O, communication and the IT world supports compact automation solutions
- Turnkey, embedded bundles – rugged and maintenance-free
- High-performance through participation in the relentless PC innovation process
- Easy integration of high-level languages (C/C++/VB/...) in the PLC program to support the implementation of technology functions and know-how protection through the encapsulation of functions
- Scalable, integrated safety solution – also on the PC – with system-wide advantages, such as uniform engineering and communication
- Open solutions through, for example, interfacing to software (databases, business SW) or through integrating special hardware
- Easy communication through integrated network interfaces
- High system availability
- Use of familiar PLC engineering tools (SIMATIC STEP 7)
- Integral diagnostic/alarm functions
- High degree of flexibility and openness

Siemens offers a complete range of automation products for PC-based automation which – with the experience of the market leader – have been developed on the basis of Totally Integrated Automation and are part of the large SIMATIC family.

For further information visit:

www.siemens.com/pc-based

Industrial PC

The optimum PC hardware platforms for PC-based automation from Siemens are our reliable and innovative industrial PCs.

We offer a powerful range of industry-standard PCs with high system availability and high investment safeguarding in box, rack and panel PC variants (SIMATIC IPC). Hardware and software expansions such as the PC diagnostics/signaling software SIMATIC IPC DiagMonitor or the SIMATIC IPC Image & Partition Creator for preventive backup of data increase the system availability in PC-based automation applications even further.

Optimized products are available for special requirements, such as especially rugged, fully enclosed operator panels with IP65 protection for mounting on a support arm or standard base. Of course, individual, customer-specific requirements can also be implemented.

PC-based Controllers

The Siemens controller for PC-based automation is SIMATIC WinAC RTX: WinAC offers scalable solutions with real-time and deterministic control. It is fully embedded within the Windows environment and has the necessary interfaces to the visualization component. Option packs are available for integrating C/C++ programs for technological functions.

SIMATIC WinAC RTX F is the fail-safe SIMATIC software controller for PC-based automation and permits both standard and fail-safe control tasks to be performed on the PC; it meets the highest safety requirements and complies with all relevant standards: EN 954-1 up to Cat. 4, IEC 62061 up to SIL 3 and EN ISO 13849-1 up to PL e. SIMATIC WinAC RTX (F) is programmed using the usual SIMATIC programming tools, so your SIMATIC know-how is protected.

Embedded controllers

SIMATIC S7-mEC is a modular controller in S7-300 design with the latest embedded PC technology. It comprises the EC31 (CPU) and optionally available expansion modules.

The embedded controller combines the advantages of the tried and tested modular S7 controller with PC technology in one new device. The functions of PC-based Control (also fail-safe) and/or visualization are already pre-installed and ready to use.

Embedded bundles and software packages for industrial PCs

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

Software packages for SIMATIC IPC

For a number of SIMATIC IPCs, low-cost software packages with the visualization software SIMATIC WinCC, WinCC flexible or the software controller SIMATIC WinAC RTX (F) are offered. An industrial PC must be purchased at the same time as the software package to take advantage of these offers.

Monitors and thin clients

Flexible operating concepts can be implemented via flat panel monitors and thin clients. These can be industrially compatible LCD monitors with high-luminance displays that can be placed up to 30 m away from the PC, or low-cost, rugged thin clients that offer HMI functionality over the network in large-scale, widely distributed plants.

Visualization software

Visualization tasks and PC-based control can be perfectly combined on a PC. Visualization covers all functions relating to operation, system display, message processing, measurement archiving and recipe management.

SIMATIC WinCC flexible for operation and monitoring at the machine and SIMATIC WinCC as powerful SCADA software are HMI systems with optimized interfaces for SIMATIC WinAC.

Communication

PC-based Automation enables the machine level and the IT environment to be integrated on one platform. Communication takes place with higher-level control systems and also with the I/O at the field level over PROFINET/Industrial Ethernet and PROFIBUS. The SIMATIC IPCs can be optionally supplied with these interfaces integrated on-board, leaving slots free.

PC-based automation in the system environment

Engineering is based on the proven SIMATIC industrial software (SIMATIC STEP 7), and permits unique integration of the SIMATIC products used. The optimum configuration for an automation task can always be found in accordance with the desired features.

With the SIMATIC IPCs, Siemens as the market leader in industrial automation is offering rugged, innovative products with long-term availability which are elementary components of the SIMATIC system family.

The SIMATIC IPCs are perfectly tuned to the automation software (for control and visualization) and are fully integrated in the system diagnostics to increase plant availability.



Much more than a catalog. The Industry Mall.

You have a catalog in your hands that will serve you well for selecting and ordering your products. But have you heard of the electronic online catalog (the Industry Mall) and all its benefits? Take a look around it sometime:

www.siemens.com/industrymall



Selecting

Find your products in the structure tree, in the new "Bread-crum" navigation or with the integral search machine with expert functions. Electronic configurators are also integrated into the Mall. Enter the various characteristic values and the appropriate product will be displayed with the relevant order numbers. You can save configurations, load them and reset them to their initial status.

Ordering

You can load the products that you have selected in this way into the shopping basket at a click of the mouse. You can create your own templates and you will be informed about the availability of the products in your shopping cart. You can load the completed parts lists directly into Excel or Word.

Delivery status

When you have sent the order, you will receive a short e-mail confirmation which you can print out or save. With a click on "Carrier", you will be directly connected to the website of the carrier where you can easily track the delivery status.

Added value due to additional information

So you have found your product and want more information about it? In just a few clicks of the mouse, you will arrive at the image data base, manuals and operating instructions. Create your own user documentation with My Documentation Manager. Also available are FAQs, software downloads, certificates and technical data sheets as well as our training programs. In the image database you will find, depending on the product, 2D/3Dgraphics, dimension drawings and exploded drawings, characteristic curves or circuit diagrams which you can download.

Convinced? We look forward to your visit!

Operator Control and Monitoring Devices



2/2	Introduction
2/8	Push Button Panels
2/8	SIMATIC PP7
2/11	SIMATIC PP17
2/15	Micro Panels
2/15	Text Display TD 200
2/18	Text Display TD 400C
2/21	SIMATIC OP 73micro
2/25	SIMATIC TP 177micro
2/29	Mobile Panels
2/29	Introduction
<u>2/33</u>	<u>170 series</u>
2/33	SIMATIC Mobile Panel 177
<u>2/43</u>	<u>270 series</u>
2/43	SIMATIC Mobile Panel 277
2/51	SIMATIC Mobile Panel 277(F) IWLAN
2/67	Basic Panels
2/67	Basic Panels
2/77	70 series
2/77	SIMATIC OP 73
2/81	SIMATIC OP 77A
2/85	SIMATIC OP 77B
<u>2/90</u>	<u>170 series</u>
2/90	SIMATIC TP 177A
2/95	SIMATIC TP 177B
2/102	SIMATIC OP 177B
<u>2/107</u>	<u>270 series</u>
2/107	SIMATIC TP 277 6"
2/112	SIMATIC OP 277 6"
2/117	Multi Panels
<u>2/117</u>	<u>170 series</u>
2/117	SIMATIC MP 177
<u>2/122</u>	<u>270 series</u>
2/122	SIMATIC MP 277
<u>2/131</u>	<u>370 series</u>
2/131	SIMATIC MP 377
<u>2/140</u>	<u>Multi Panel options</u>
2/140	SIMATIC WinAC MP
2/147	System interfaces: Panels and runtime software
2/148	SIMATIC S7
2/151	SIMATIC S5
2/153	SIMATIC 505
2/154	Third-party controllers

2/160	HMI Accessories
2/160	Industrial USB Hub 4
2/161	Connecting cables
2/165	RS485 bus connector
2/166	IE FC RJ45 Plug 2 x 2
<u>2/167</u>	<u>Accessories for SIMATIC Mobile Panels</u>
2/169	Terminal boxes
2/171	Charging station
2/172	Transponder
	<u>HMI Accessories(continued)</u>
2/173	Memory media
2/174	Converters/adapters
2/175	Service packs
2/178	Protective covers
2/179	Protective membranes
2/180	Fixing elements
2/181	Recommended printers for Panels and Multi Panels

Operator control and process monitoring devices

Introduction

Overview

A finely graded range of HMI devices is available for local operator control and monitoring. These include Push Button Panels and Micro Panels up to Mobile Panels, Basic Panels, Panels and Multi Panels. HMI devices with all-round IP65 / NEMA 4 protection for distributed configurings are available for applications with especially high requirements with regard to ruggedness.

Push Button Panels

Push Button Panels (PP) are the innovative alternative to conventionally wired operator keypads. Supplied pre-assembled and ready for installation, the bus-compatible operator panels are the key to drastically reducing wiring times when compared with conventional methods.

Micro Panels

Designed specifically for applications with the SIMATIC S7-200 micro PLC, either with text display (TD) or pixel-graphics display, as operator panels (OP) with membrane keyboard or touch screen (TP).

Mobile Panels

The portable operator panels facilitate operator control and monitoring at the actual scene of the event with direct access and visual contact to the process. They provide simple and safe reconnection during operation (Mobile Panel 177 and Mobile Panel 277) or wireless freedom (Mobile Panel 277 (F) IWLAN) and can therefore be used flexibly on a machine or system.

Basic Panels

Basic Panels offer basic HMI functionality for small machines and applications. They are available in four different display sizes from 4" to 15", with touch displays and additional keys, for connecting to PROFINET / Ethernet or PROFIBUS DP / MPI.

Graphic Panels of 70 / 170 / 270 series

with pixel-graphics display in 4" or 6" for realistic presentation of operating sequences. Either as Touch Panels (TP) with touch-sensitive display, Operator Panels (OP) with membrane keyboard, or touch / key combination on the OP 177B 6" or TP 177B 4".

Multi Panels 170 / 270 / 370 series

Like Panels, they can be used for operator control and monitoring and are available with touchscreens or membrane keyboards. In addition, the Multi Panels (MPs) permit installation of additional applications and thus allow integration of several automation tasks on a single platform with the PLC WinAC MP software, for example. The 370 series also encompasses an HMI device with all-round IP65 / NEMA 4 protection and 15" touch display for distributed configurings.

WinAC MP

The software PLC can be used in the 170 / 270 and 370 Multi Panels (exception: MP 370) and is ideal for complex processes in which one device must handle control and visualization tasks.

Thin Client

Low-cost, rugged operator stations providing panel functionality directly on-site for systems covering a relatively large area. These are used in Client-Server applications.

Benefits

Rugged and compact for use at machine level

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

The extremely rugged and shock-proof housing 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 configuring software for everything

SIMATIC WinCC flexible is a tool for continued configuring of all SIMATIC Panels as well as PC-based systems with the visualization software WinCC flexible Runtime. Graded variants are available for every task. The software permits simple and efficient configuring. Programming experience is not required.

Completed configurings 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 successful automation concepts worldwide. SIMATIC WinCC flexible is an integral component of this world.

It offers crucial advantages. Thanks to the uniformity in configuring / programming, data management and communication, the engineering costs of an automation solution are significantly reduced.

Open for a wide variety of automation systems

Despite the consistent incorporation 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

Based on the Windows CE operating system, 70, 170, 270 and 370 Series Mobile Panels, Panels and Multi Panels permit innovative operator control and monitoring combined with ruggedness, stability and simplicity.

Standard hardware and software interfaces provide more flexibility and openness to the office world, for example, the MMC / SD / CF card, USB, Ethernet, PROFIBUS DP, Visual Basic scripts or customer-specific ActiveX controls.

Worldwide application

The SIMATIC Panels are ideal for global use by design. Online language selection permits selection of up to five 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) or Russian. The configuring interface of WinCC flexible 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 servicing and support from Siemens.

Configuring overview

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

• Available

– Not available

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

2) WinCC flexible 2005 SP1 and higher

3) WinCC flexible 2007 and higher + HSP

4) WinCC flexible 2008 and higher

5) WinCC flexible 2008 SP1 and higher

Operator control and process monitoring devices

Introduction

Technology overview

	Micro Panels	Mobile Panels	Basic Panels	Panels 70 Series	170 Series	270 Series
	TD 200 / TD 400C ¹⁾ OP 73micro TP 177micro	Mobile Panel 177 Mobile Panel 277 Mobile Panel 277(F) IWLAN	KTP400 Basic KTP600 Basic KTP1000 Basic TP1500 Basic	OP 73 OP 77A/B	TP 177A TP/OP 177B	TP/OP 277
Display	TD 200 / TD 400C: Text display OP 73micro: 3" LCD TP 177micro: 5,7" STN	Mobile Panel 177: 5,7" STN; Mobile Panel 277: 7,5" / 10,4" TFT; Mobile Panel 277 (F) IWLAN: 7,5" TFT	KTP400 Basic 3,8" STN KTP600 Basic 5,7" STN or 5,7" TFT KTP1000 Basic 10,4" TFT TP1500 Basic 15,1" TFT	OP 73: 3" LCD OP 77A/B: 4,5" LCD	TP 177B 4": 4,3" TFT widescreen other- wise: 5,7" STN	5,7" TFT
Colors	TD 200 / TD 400C / OP 73micro: Monochrome TP 177micro: 4 shades of blue	Mobile Panel 177: 256 colors; Mobile Panel 277 / 277(F) IWLAN: 64k colors	KTP400 Basic 4 shades of gray KTP600 Basic 4 shades of gray or 256 colors KTP1000 Basic 256 colors TP1500 Basic 256 colors	Monochrome	TP 177A: 4 shades of blue TP/OP 177B: 4 shades of blue / 256 colors	256 colors
Operator controls						
Membrane keyboard	• (TD 200 / TD 400C / OP 73micro)	–	• (KTP400 / KTP600 / KTP1000)	•	•	•
Touch screen	• (TP 177micro)	–	•	–	•	•
Membrane keyboard and Touch	–	•	• (KTP400 / KTP600 / KTP1000)	–	• (only on OP 177B 6" and TP 177B 4")	–
Interfaces / protocols						
Serial / MPI / PROFIBUS DP	• / • / –	• 9) / • 9) / • 9)	• 13) / • 13) / • 13)	• / • / •	• / • / •	• / • / •
USB / Ethernet / WLAN	– / –	• 10) / • 5) / • 11)	– / • 14) / –	• 3) / –	• / • 7)	• / •
Multimedia card / SD card Slot: combined with:						
Number of Multimedia card / SD card slot	1	1	1	1	1	1
CF / PC card slot	– / –	– / –	– / –	– / –	– / • 4)	– / –
Memory (available for user data)	TD 200 / TD 400C / OP 73micro: 128 KByte TP 177micro: 256 KByte	Mobile Panel 177: 2 048 KByte; Mobile Panel 277 / 277(F) IWLAN: 6 Mbyte	KTP400 Basic / KTP600 Basic: 512 KByte KTP1000 Basic / TP1500 Basic: 1 024 KByte	OP 73 / OP 77A: 256 KByte OP 77B 1 024 KByte	TP 177A: 512 KByte TP/OP 177B: 2 Mbyte	4 Mbyte

• Available

– Not available

Technology overview (continued)

	Micro Panels	Mobile Panels	Basic Panels	Panels 70er Serie	170er Serie	270er Serie
	TD 200 / TD 400C ¹⁾ OP 73micro TP 177micro	Mobile Panel 177 Mobile Panel 277 Mobile Panel 277(F) IWLAN	KTP400 Basic KTP600 Basic KTP1000 Basic TP1500 Basic	OP 73 OP 77A/B	TP 177A TP/OP 177B	TP/OP 277
Connection to controller						
SIMATIC S7 / WinAC	S7-200 only	• / • ¹²⁾	• / •	• / •	• / •	• / •
SIMATIC S5 / 505	– / –	• ¹²⁾ / • ¹²⁾	– / –	• ⁶⁾ / • ⁶⁾	• ⁴⁾ / • ⁴⁾	• / •
SINUMERIK / SIMOTION	– / –	• ¹²⁾ / • ¹²⁾	– / –	– / –	• / • ⁴⁾	• / •
Third-party controllers	–	• ¹²⁾	• ¹³⁾	• ⁶⁾	• ⁴⁾	•
Applications / Options with WinCC flexible						
ProAgent	–	• ¹⁵⁾	–	–	–	•
Sm@rtService	–	• ⁵⁾	–	–	• ⁷⁾	•
Sm@rtAccess	–	• ⁵⁾	–	–	• ⁷⁾	•
OPC server	–	–	–	–	–	–
ThinClient / MP	–	–	–	–	–	–
MS Pocket Internet Explorer	–	• ¹⁰⁾	–	–	–	–
WinAC MP	–	–	–	–	–	–

• Available

– Not available

¹⁾ The configuring of the TD 200 / TD 400C is done with Micro / WIN²⁾ Except OP3³⁾ Only with OP 77B⁴⁾ Not with TP 177A, TP/OP 177B (S5 only)⁵⁾ Not with Mobile Panel 177 DP⁶⁾ With OP 73 and OP 77A, connection only possible to S7-200 / 300 / 400⁷⁾ Only with TP/OP 177B color⁸⁾ Only with TP/OP 177B⁹⁾ Only with Mobile Panel 177 DP / Mobile Panel 277¹⁰⁾ Only Mobile Panel 277 / 277(F) IWLAN¹¹⁾ Only Mobile Panel 277(F) IWLAN¹²⁾ Not with Mobile Panel 277(F) IWLAN¹³⁾ Only with KTP600 Basic DP and KTP1000 Basic DP¹⁴⁾ Not with KTP600 Basic DP and KTP1000 Basic DP¹⁵⁾ Not with Mobile Panel 177 and Mobile Panel 277(F) IWLAN

Operator control and process monitoring devices

Introduction

Technology overview (continued)

	Multi Panels		
	170 series: MP 177	270 series: MP 277	370 series: MP 377
Display	6" TFT	7,5" / 10,4" TFT	12" / 15" / 19" TFT
Colors	65535 colors	65535 colors	65535 colors
Operator controls			
Membrane keyboard	–	•	•
Touch screen	•	•	•
Membrane keyboard and Touch	–	–	–
Interfaces / protocols			
Serial RS 422 / 485 / MPI / PROFIBUS DP	• / • / •	• / • / •	• / • / •
USB / Ethernet	• / •	• / •	• / •
Multi Media or SD Card/ CompactFlash Card slot	• / –	• / –	• / •
Memory (available for user data)	2 Mbyte	6 Mbyte	12 Mbyte
Connection to controller			
SIMATIC S7 / WinAC	• / •	• / •	• / •
SIMATIC S5 / 505	• / •	• / •	• / •
SINUMERIK / SIMOTION	• / •	• / •	• / •
Third-party controllers	•	•	•
Applications / Options with WinCC flexible			
ProAgent	–	•	•
Sm@rtService	•	•	•
Sm@rtAccess	•	•	•
OPC server	–	•	•
MS Pocket Internet Explorer	–	•	•

	Thin Client		
	10" Touch	15" Touch	PRO 15" Touch
Display			
Type of display	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors
Size	10.4"	15.1"	15.1"
Resolution (W x H in pixels)	640 x 480	1 024 x 768	1 024 x 768
MTBF of backlit display (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operator controls			
Touch screen	•	•	•
Interfaces			
USB / Ethernet	•	•	•
Protocols (terminal connection)			
Sm@rtAccess	• / •	• / •	• / •
RDP / VNC	• / •	• / •	• / •
Citrix ICA Client / SINUMERIK connection	• / •	• / •	• / •
Web properties			
LLDP / HTTP	• / •	• / •	• / •
XML / HTML	• / •	• / •	• / •
CSS / Java Script	• / •	• / •	• / •

• Available

– Not available

Functionality (when configuring with WinCC flexible)

	Micro Panels	Mobile Panels	Basic Panels	Panels			Multi Panels		
	OP 73micro / TP 177micro	Mobile Panel 177 / Mobile Panel 277 / 277(F) IWLAN	KTP400 Basic KTP600 Basic KTP1000 Basic TP1500 Basic	70 series OP 73 / OP 77A / OP 77B	170 series TP 177A TP/OP 177B	270 series TP 277 / OP 277	170 series MP 177	270 series MP 277	370 series MP 377
Number of messages	OP 73micro: 250 TP 177micro: 500	Mobile Panel 177: 2 000 Mobile Panel 277 / 277(F) IWLAN: 4 000	200	OP 73: 500 OP 77A / OP 77B: 1 000	TP 177A: 1 000 TP/OP 177B: 2 000	4 000	4 000	4 000	4 000
Message buffer (number of entries)	128 ³⁾ OP 73micro: 100	Mobile Panel 177: 256 Mobile Panel 277 / 277(F) IWLAN: 512	256	OP 73: 150 OP 77A/B: 256 ³⁾	TP 177A ³⁾ / TP/OP 177B: 256	512	512	512	1 024
Recipes	–	Mobile Panel 177 100 Mobile Panel 277 / 277(F) IWLAN: 300	5	OP 77A: 5 OP 77B: 100	TP 177A: 5 ⁷⁾ TP/OP 177B: 100	300	300	300	500
Process images	250	500	50	500	TP 177A: 250 TP/OP 177B: 500	500	500	500	500
Bar graphs / line graphs (pixel graphics)	• / • ⁶⁾	• / •	• / •	• / –	• / • ⁷⁾	• / •	• / •	• / •	• / •
Variables	OP 73micro: 500 TP 177micro: 250	Mobile Panel 177: 1 024 Mobile Panel 277 / 277(F) IWLAN: 2 048	KTP400 Basic: 250 ⁹⁾¹⁰⁾ KTP600/ KTP1000 Basic/ TP1500 Basic: 500 ⁹⁾¹⁰⁾	1 000	TP 177A: 500 TP/OP 177B: 1 000	2 048	2 048	2 048	4 096 ⁸⁾
Archiving	–	• ⁵⁾	–	–	–	•	–	•	•
Visual Basic scripts	–	• ⁵⁾	–	–	–	•	–	•	•
Online languages	5	Mobile Panel 177: 5 Mobile Panel 277/277(F) IWLAN: 16	5	5	5	16	16	16	16
User administration (security)	•	•	•	•	•	•	•	•	•
Print functions	–	•	–	• ²⁾	• ¹⁾	•	•	•	•
PG functions (STATUS / CONTROL) with SIMATIC S5 / S7	–	• ⁵⁾	•	–	• ⁴⁾	•	•	•	•

• Available

– Not available

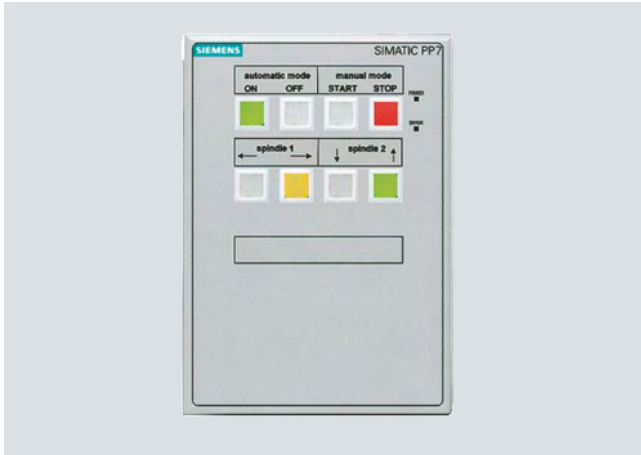
¹⁾ Except TP 177A²⁾ Only with OP 77B³⁾ Non-retentive⁴⁾ Only with TP/OP 177B⁵⁾ Only Mobile Panel 277 / 277(F) IWLAN⁶⁾ Only for TP 177micro⁷⁾ On TP 177A from WinCC flexible 2007⁸⁾ WinCC flexible 2008 and higher⁹⁾ WinCC flexible 2008 SP2 and higher¹⁰⁾ WinCC Basic 10.5 SP2 and higher (component part of STEP 7 Basic 10.5 SP2)

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP7

Overview



SIMATIC Push Button Panels are the innovative alternative to conventional operator panels for easy and direct control of machines:

- Pre-fabricated and ready for operation; simply connect to the control and all buttons and lamps are ready for immediate use
- Connection to any type of control via a bus cable (PROFIBUS DP as "standard slave" or MPI)
- Fitted with short-stroke keys, additional digital inputs and slots for 22.5 mm standard components.

Benefits

- Up to 90 % time savings: Pushbuttons, switches and lamps do not have to be fitted and wired individually
- Use of standard cables, for example, makes configuring and startup easier
- No configuring tool required
- Service-friendly thanks to rear display to indicate operating states and messages in plain text, without programming device
- Quick and easy machine operation thanks to multi-colored indicator lights
- User-friendly labeling option for pushbuttons and lamps using slide-in labels
- As the 22.5 mm standard elements can be connected directly on the panel, no additional wiring and I/O modules are required

Application

The rugged PP7 Push Button Panel is designed for simple and straightforward machine operation.

It can be used wherever HMI functions cannot be carried out without keys and lamps, e.g. on control consoles for machines and plants in the food and beverage industry where smooth fronts are necessary to facilitate cleaning. Even in special mechanical equipment manufacture, the push button panels can be used to easily set up standard operator panels that are then amenable to fast, flexible and modular expansion. The key and lamp functions can be changed later at any time without having to modify the wiring.

Design

PPs stand out because of their compact construction:

- Preassembled with 8 short-stroke keys that can be labeled individually with slide-in labels
- Smooth, easy to clean front; the front is resistant to various oils, greases and standard detergents
- Long-life, multi-colored surface LEDs in all short-stroke keys
- Additional digital inputs for flexible expansion
- Pre-perforated cut-outs for 22.5 mm standard auxiliary elements (buttons, lamps, Emergency Stop, key switch)
- Rear-side display with miniature keyboard for displaying operating status and changing standard settings in text format
- The PP7 fits seamlessly into the series
- Maintenance-friendly, no battery required
- All parameters are stored on a memory module, which can be easily replaced

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP7

2

Function

- LED color modes (e.g., red, green, yellow, red-flashing, green-flashing, yellow-flashing)
- Integrated flashing rate for LED
- Integrated diagnostic functions
- Integrated lamp and key test (also for additional digital inputs)
- Menu-assisted parameterization via rear display with miniature keyboard
- Short-stroke keys and digital inputs are also parameterizable as switches
- Parameterizable pulse stretching for short-stroke keys and digital inputs
- PROFIBUS DP standard slave

Integration

The Push Button Panels can be connected to

- SIMATIC S7-200 / -300 / -400, WinAC Software and Slot PLC via MPI and PROFIBUS DP
- SIMATIC S5 (AG95 / master or IM 308C) only via PROFIBUS DP
- PROFIBUS DP standard master, any vendor (e.g. Allen Bradley, etc.)

System interfaces

Controller	SIMATIC PP7 ¹⁾
Target hardware (PROTOCOL) (connector / physics)	Connection via DP / MPI
SIMATIC S7 / SIMATIC WinAC (MPI as master) ²⁾	
via MPI interface with S7-200/-300/-400/WinAC Software/ Slot PLC (9-pin socket / RS 485), ³⁾ ⁴⁾	Bus connector, bus cable and MPI network (see Catalog ST 70 / IK PI)
SIMATIC S5 / S7 (PROFIBUS DP as standard slave)	
via PROFIBUS with max. 1 x S7-200 (CPU 215-DP) on MPI protocol S7-300 / -400 with integrated PROFIBUS interface S7-300 with CP 342-5 S7-400 with CP 443-5	PROFIBUS ⁵⁾ (see Catalog ST 70 / IK PI)
via PROFIBUS DP with S5-95U / PROFIBUS DP master (6ES5 095-8ME02) S5-115U / -135U / -155U with IM 308C / IM 308B S5-115U / -135U / -155U with CP 5430 / CP 5431	PROFIBUS ⁵⁾ (see Catalog ST 70 / IK PI)
Non-Siemens controllers (PROFIBUS DP master)	
via PROFIBUS DP	PROFIBUS ⁵⁾ (see Catalog ST 70 / IK PI)

¹⁾ PP7 suitable up to 1.5 Mbit/s

²⁾ Standard PG / PC MPI cable cannot be used

³⁾ S7-200 only via MPI (CPU 212 not possible)

⁴⁾ S7-200 CPU 215-DP also possible on PROFIBUS DP interface via MPI protocol

⁵⁾ Bus connector: 6GK1 500-0EA02

Note:

The standard PG / PC MPI cable (6ES7 901-0BF00-0AA0) cannot be used to connect a PP and a CPU.

Technical specifications

SIMATIC PP7	6AV3 688-3AA03-0AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+18 V ... +30 V DC
Rated current	0.2 A
Power	5 W
Digital inputs	
Voltage (DC)	24 V
Number of digital inputs	4
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	8 function keys, 8 with LEDs
Membrane keyboard	Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	95 %
Temperature	
• Operation (vertical installation)	0 °C ... +55 °C
• Operation (max. tilt angle)	0 °C ... +55 °C
• Transport, storage	-20 °C ... +70 °C
Degree of protection	
Front	IP65
Rear	IP20
Certifications & standards	
Certifications	CE, FM Class I Div. 2, UL, CSA
Type of output	
LED colors	Red, yellow, green
Color modes for LED	3
Number of LEDs	8
Lifetime, typ.	
Short-stroke keys (in switching cycles)	1 500 000
LEDs (ON period)	100 %
Functionality	
Short lift keys / additional inputs as pushbuttons or switches	Yes
Flashing frequency for LEDs	0.5 Hz
Pushbutton and lamp test	Yes
max. pulse extension for short-stroke keys and digital inputs	1 000 ms
Release input	No
Dimensions	
Front of enclosure (W x H)	144 mm x 204 mm
Mounting cutout / Device depth (W x H x D) in mm	130 mm x 190 mm x 53 mm device depth
Weight	
Weight	0.8 kg

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP7

Ordering data

SIMATIC PP7 B **6AV3 688-3AA03-0AX0**

Push Button Panel incl. mounting accessories:

- 8 x short-stroke keys
- 8 x surface lighting diodes
- 4 x DI terminals (24 V)
- Max. 5 x 22.5 mm pre-perforated cutouts for additional components

Documentation to be ordered separately

Accessories for supplementary ordering See HMI Accessories, see page 2/160 onwards

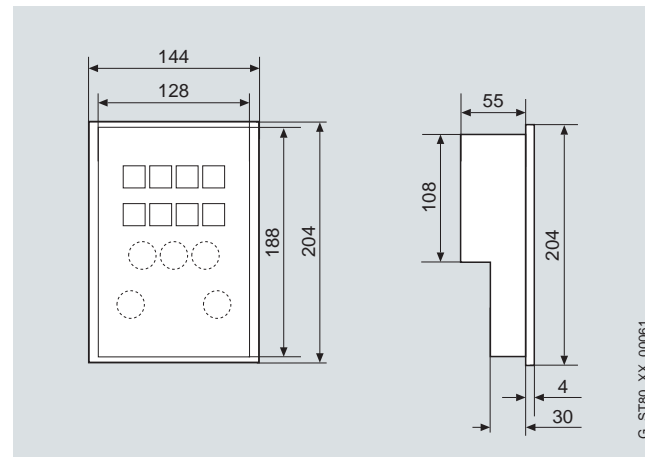
B: Subject to export regulations: AL: N and ECCN: EAR99H

Note:

Commercially available printing film (0.13 to 0.16 mm strength) can be used as labeling strips for the keyboard. Word templates are enclosed with the manual on a diskette.

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC PP7

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-pbp>

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 and general sector-specific products as well as about options for customer-specific modification and adaptation.

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP17

Overview



SIMATIC Push Button Panels are the innovative alternative to conventional operator panels for easy and direct control of machines:

- Pre-fabricated and ready for operation; simply connect to the control and all buttons and lamps are ready for immediate use
- Connection to any type of control via a bus cable (PROFIBUS DP as "standard slave" or MPI)
- **PP17-I:**
Fitted with short-stroke keys, additional digital inputs and outputs and slots for 22.5 mm standard elements
- **PP17-II:**
Fitted with short-stroke keys, additional digital inputs and outputs and much more

Benefits

- Up to 90 % time savings: Pushbuttons, switches and lamps do not have to be fitted and wired individually
- Use of standard cables, for example, makes configuring and startup easier
- No configuring tool required
- Service-friendly thanks to rear display to indicate operating states and messages in plain text, without programming device
- Quick and easy machine operation thanks to multi-colored indicator lights
- User-friendly labeling option for pushbuttons and lamps using slide-in labels
- As the 22.5 mm standard elements can be connected directly on the panel, no additional wiring and I/O modules are required

Application

The rugged PP17 Push Button Panels are designed for easy and straight-forward operation of the machine.

They can be used wherever keys and lamps are essential components in a human-machine interface. In the food processing industry, for example, on machines and systems on which smooth fronts are required for easier cleaning. Even in special mechanical equipment manufacture, the push button panels can be used to easily set up standard operator panels that are then amenable to fast, flexible and modular expansion.

The key and lamp functions can be changed later at any time without having to modify the wiring.

Design

PPs stand out because of their compact construction:

- Preassembled with short-stroke keys that can be labeled individually – also in color – with slide-in labels
- Smooth, easy to clean front; the front is resistant to various oils, greases and standard detergents
- Long-life, multi-colored surface LEDs in all short-stroke keys
- Additional digital inputs and outputs for flexible expansion
- Pre-perforated cut-outs for 22.5 mm standard auxiliary elements (buttons, lamps, etc.) for PP17-I
- Rear-side display with miniature keyboard for displaying operating states and changing standard settings in text format
- Central enabling input
- The PP17 can be laterally mounted
- Maintenance-friendly, no battery required
- All parameters are stored on a memory module, which can be easily replaced

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP17

Function

- LED color modes (e.g., red, green, yellow, red-flashing, green-flashing, yellow-flashing)
- Integrated flashing frequency for digital outputs and LED
- Integrated diagnostic functions
- Integrated lamp and key test (also for additional digital inputs 24 V inputs and outputs)
- Menu-assisted parameterization via rear display with miniature keyboard
- Short-stroke keys and digital inputs are also parameterizable as switches
- Parameterizable pulse stretching for short-stroke keys and digital inputs (max. 1 000 ms)
- PROFIBUS DP standard slave

Integration

The Push Button Panels can be connected to:

- SIMATIC S7-200 / -300 / -400, WinAC Software and Slot PLC via MPI and PROFIBUS DP
- SIMATIC S5 (AG95/master or IM 308C) only via PROFIBUS DP
- PROFIBUS DP standard master, any vendor (e.g., Allen Bradley, etc.)

System interfaces

Controller	SIMATIC PP17 ¹⁾
Target hardware (PROTOCOL) (connector / physics)	Connection via DP / MPI
SIMATIC S7 / SIMATIC WinAC (MPI as master) ²⁾	
via MPI interface with S7-200 / -300/-400 / WinAC Software/Slot PLC (9-pin socket / RS 485), ^{3) 4)}	Bus connector, connecting cable and MPI network (see catalog ST 70 / IK PI)
SIMATIC S5 / S7 (PROFIBUS DP as standard slave)	
via PROFIBUS with max. 1 x S7-200 (CPU 215-DP) on MPI protocol S7-300 / -400 with integrated PROFIBUS interface S7-300 with CP 342-5 S7-400 with CP 443-5	PROFIBUS ⁵⁾ (see catalog ST 70 / IK PI)
via PROFIBUS DP with S5-95U / PROFIBUS DP master (6ES5 095-8ME02) S5-115U / -135U / -155U with IM 308C / IM 308B S5-115U / -135U / -155U with CP 5430 / CP 5431	PROFIBUS ⁵⁾ (see catalog ST 70 / IK PI)
Non-Siemens controllers (PROFIBUS DP master)	
via PROFIBUS DP	PROFIBUS ⁵⁾ (see catalog ST 70 / IK PI)

¹⁾ PP17 suitable up to 12 Mbit/s

²⁾ Standard PG / PC MPI cable cannot be used

³⁾ S7-200 only via MPI (CPU 212 not possible)

⁴⁾ S7-200 CPU 215-DP also possible on PROFIBUS DP interface via MPI protocol

⁵⁾ Bus connector: 6GK1 500-0EA02

Note:

The standard PG / PC MPI cable (6ES7 901-0BF00-0AA0) cannot be used to connect a PP and a CPU.

Technical specification

SIMATIC PP17	6AV3 688-3CD13-0AX0 PP17-I	6AV3 688-3ED13-0AX0 PP17-II
Supply voltage		
Supply voltage	24 V DC	24 V DC
permissible range	+18 V ... +30 V DC	+18 V ... +30 V DC
Rated current	0.4 A	0.4 A
Power	10 W	10 W
Digital inputs		
Voltage (DC)	24 V	24 V
Number of digital inputs	16	16
Digital outputs		
Total power	12 W	12 W
Number of digital outputs	16	16
in groups of	4	4
Total current (per group), max.	500 mA	500 mA
Short-circuit protection	Yes	Yes
Operating mode		
Control elements	Membrane keyboard	Membrane keyboard
Function keys, programmable	16 function keys, 16 with LEDs	32 function keys, 32 with LEDs
Ambient conditions		
Mounting position	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °
max. relative humidity (in %)	95 %	95 %
Temperature		
• Operation (vertical installation)	0 °C ... +55 °C	0 °C ... +55 °C
• Operation (max. tilt angle)	0 °C ... +55 °C	0 °C ... +55 °C
• Transport, storage	-20 °C ... +70 °C	-20 °C ... +70 °C

Operator control and process monitoring devices

Push Button Panels

SIMATIC PP17

2

Technical specifications (continued)

SIMATIC PP17	6AV3 688-3CD13-0AX0 PP17-I	6AV3 688-3ED13-0AX0 PP17-II
Degree of protection		
Front	IP65	IP65
Rear	IP20	IP20
Certifications & standards		
Certifications	CE, FM Class I Div. 2, UL, CSA	CE, FM Class I Div. 2, UL, CSA
Type of output		
LED colors	Red, yellow, green	Red, yellow, green
Color modes for LED	3	3
Number of LEDs	16	32
Lifetime, typ.		
Short-stroke keys (in switching cycles)	1 500 000	1 500 000
LEDs (ON period)	100 %	100 %
Functionality		
Short lift keys / additional inputs as pushbuttons or switches	Yes	Yes
Flashing frequency for LEDs	0.5 Hz	0.5 Hz
Flashing frequency for digital outputs	0.5 Hz or 2 Hz	0.5 Hz or 2 Hz
Pushbutton and lamp test	Yes	Yes
max. pulse extension for short-stroke keys and digital inputs	1 000 ms	1 000 ms
Release input	Yes	Yes
Dimensions		
Front of enclosure (W x H)	240 mm x 204 mm	240 mm x 204 mm
Mounting cutout / Device depth (W x H x D) in mm	226 mm x 190 mm x 53 mm device depth	226 mm x 190 mm x 53 mm device depth
Weight		
Weight	1.2 kg	1.5 kg

Ordering data

Order No.

PP17-I	B	6AV3 688-3CD13-0AX0
<ul style="list-style-type: none"> • 16 x short-stroke keys • 16 x surface lighting diodes • 16 x DI terminals (24 V) • 16 x DO terminals (24 V) • 1 x enabling input • Max. 12 x 22.5 mm pre-perforated cutouts for additional components 		
incl. mounting accessories		
PP17-II	B	6AV3 688-3ED13-0AX0
<ul style="list-style-type: none"> • 32 x short-stroke keys • 32 x surface lighting diodes • 16 x DI terminals (24 V) • 16 x DO terminals (24 V) • 1 x enabling input 		
incl. mounting accessories		
Documentation		to be ordered separately
Accessories for supplementary ordering		See HMI Accessories, see page 2/160 onwards

B: Subject to export regulations: AL: N and ECCN: EAR99H

Note:

Commercially available printing film (0.13 to 0.16 mm strength) can be used as labeling strips for the keyboard. Word templates are enclosed with the manual on a diskette.

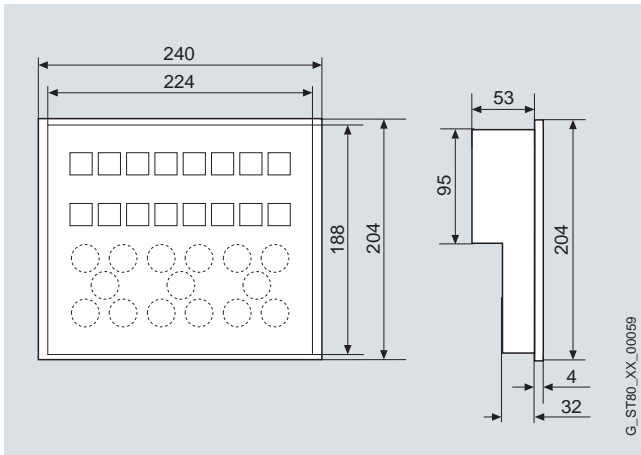
Operator control and process monitoring devices

Push Button Panels

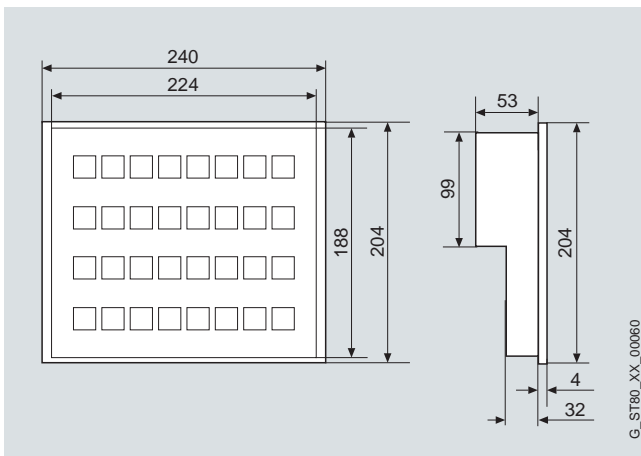
SIMATIC PP17

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC PP17-I



SIMATIC PP17-II

Further information

Further information is available in the Internet under:

<http://tp://www.siemens.com/simatic-pbp>

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 and general sector-specific products as well as about options for customer-specific modification and adaptation.

Overview

- The user-friendly text display for the S7-200
- For control and monitoring:
Message text display, intervention in PLC program, setting of inputs and outputs
- Direct connection to CPU interface using supplied cable or incorporation into network (also via EM 277)
- No separate power supply required
- No separate parameterization software required
- Addressing and setting of contrast in supplied menu

Application

The TD 200 Text Display is the optimum solution for all HMI tasks of SIMATIC S7-200.

It supports:

- Display of message texts
- Interventions in the control program, e.g. modification of setpoints
- Setting of inputs and outputs, e.g. for switching a motor on and off

Design

The TD 200 is simply connected to the PPI interface of the S7-200 using the supplied connecting cable. A separate power supply is not required. It is also possible to connect several TD 200 units to one S7-200.

The TD 200 features:

- Rugged plastics housing with degree of protection IP65 (front): Increased watertightness due to absence of slots for labeling strips.
- Mounting depth 27 mm:
The TD 200 can be mounted without additional accessories in control cabinets or operator panels, or used as a handheld unit.
- Backlit LC display;
readable even under unfavorable lighting.
- Ergonomically designed input keys, below which are programmable function keys
- Integrated interface for connection of cable
- Connection for optional power supply:
A power supply unit is required if the distance between the TD 200 and S7-200 is more than 2.5 m. PROFIBUS cables are then available instead of the connection cable.
- Customized labeling strips:
The back of the housing has to be removed to mount the labeling strips. This must therefore be performed before the unit is installed.

Operator control and process monitoring devices

Micro Panels

Text Display TD 200

Function

The TD 200 permits:

- Display of message texts:
Up to 80 message texts (alarms) with max. 6 variables display current operating states and can be optionally parameterized to require acknowledgment and can be additionally protected by a password. Also up to 64 static alarms with up to 6 variables can be configured. System texts are stored in English, German, French, Spanish and Italian in the unit. Various character sets can be selected, and messages can be additionally saved in the simplified Chinese character set.
- Display and modification of process parameters:
Process parameters are output on the display, and can be modified using the input keys, e.g. for temperature settings or modifications to speed.
- Setting of inputs and outputs:
A memory bit is assigned to each of the 8 programmable function keys. These can then be set during operation, e.g. during commissioning, testing and diagnostics. It is then possible e.g. to control motors without having to install additional control elements in the system.
- Additional functions and features:
E.g. processing of floating-point numbers, symbols for bar graph display, various data blocks for operation of several TD 200 displays on one CPU, password protection for integral SETUP menu and modified variables.
- Activation of TD 200 editing mode by PLC:
Variables embedded in messages can be edited directly without having to press the Enter key or to place the cursor at the variable.
- Setting a PLC bit:
 - Set bit:
When a function key is pressed, a bit is set in the PLC. This must be reset by the user program.
 - Momentary:
A bit is set when pressing a function key, and deleted again when the key is released.
- New character set (Greek, Latin2, Turkish) to support further foreign languages

Programming

The configuring data of the TD 200 are saved in the CPU of the S7-200. The message text strings and configuring parameters are created with the STEP 7 Micro / WIN configuring software of V4 and higher. Additional parameterization software is not required.

Special data areas are reserved in the CPU of the S7-200 for data exchange with the TD 200. The TD 200 directly accesses the respectively required functions of the CPU via these data areas. A separate TD 200 wizard in STEP 7 Micro / WIN V4 and higher supports user-friendly parameter assignment.

Technical specifications

Text Display TD 200	6ES7 272-0AA30-0YA1
Power supply	
Input voltage	24 V; Power supplied over the S7-200 communications interface or optional external power supply unit; the CPU sensor power supply (24 V DC) is not subjected to load
• Rated value	
Input current	120 mA
• Rated value at 24 V DC	
MPI	
Transmission speed (PPI), max.	187.5 kbit/s
1st interface	
Physics	RS 485
Functionality	Yes
• PPI	
PPI	126; S7-200, OP, TP, TBP, PG / PC
• Number of nodes, max.	
Operator control and monitoring	
Display	LCD backlit
• Design of display	
Operating	2
• Number of lines	
• Number of characters per line	
• Character size	
Environmental requirements	
Operating temperature	0 °C
• Min.	
• max.	60 °C
Storage / transport temperature	-40 °C
• Min.	
• max.	70 °C
Degree of protection	
IP65	Yes; at front
Dimensions	
Cabinet / switchboard strength	0.3 mm; 0.3 ... 4 mm
Dimensions	
Dimensions	148 mm
• Width	
• Height	
• Depth	
• Mounting cutout, width	
• Mounting cutout, height	
68 mm	
Weight	
• Weight, approx.	250 g

Ordering data	Order No.
Text Display TD 200 for connection to SIMATIC S7-200; can be used with STEP 7-Micro / WIN V3.2 SP4 or higher, incl. connecting cable	B 6ES7 272-0AA30-0YA1
Connecting cables For connecting TD 100C or TD 200C to S7-200	6ES7 901-3EB10-0XA0
Accessories for supplementary ordering	See HMI Accessories, see page 2/160 onwards

B: Subject to export regulations: AL: N and ECCN: EAR99H

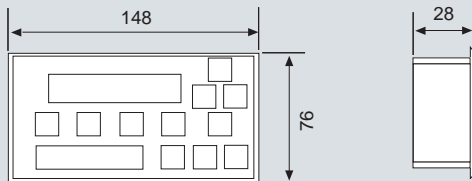
Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-micropanels>

Dimensions

All specifications in mm. Panel cutout see technical specifications.



G_ST80_XX_00320

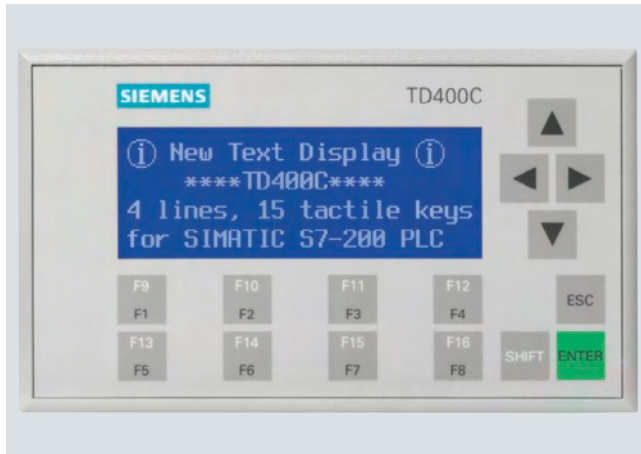
SIMATIC TD 200

Operator control and process monitoring devices

Micro Panels

Text Display TD 400C

Overview



- More screen space and extremely good readability thanks to backlit four-line display
- Customizable operator interface with 15 tactile keys
- Acoustic and visual feedback from key operation
- Optimal support of the S7-200:
 - Direct connection to the S7-200 interface via supplied cable
 - No separate power supply required
 - Parameterization with STEP 7-Micro / WIN V4 SP6

Application

The TD 400C Text Display is the optimal solution for all operator control and monitoring tasks of the SIMATIC S7-200. The customizable operator interface enables optimal adaptation of the device to the surroundings in which it is used.

It enables:

- Display of message texts
- Intervention in the control program, e.g. setpoint changes
- Setting of inputs and outputs, e.g. for switching a motor on and off

Compatibility with the TD 100C, TD 200 and TD 200C Text Displays:

- The TD 400C Text Display is not compatible with existing Text Displays (different mounting dimensions, configuring cannot be adopted).

Design

The TD 400C is connected to the S7-200 using the supplied connecting cable. A separate power supply is not required. It is also possible to connect several TD 400Cs to one S7-200.

The TD 400C has the following:

- 3.7" STN LCD backlit display:
Up to 4 text lines can be configured.
- Rugged plastic housing in degree of protection IP65 (on front), IP20 (on rear):
Increased waterproofing because there are no slots for labeling strips.
- Installation depth of 31 mm:
The TD 400C can be installed in control cabinets or used as a handheld device without any other accessories.
- Customizable operator interface:
The design (colors, pictures, text, etc.) of the operator interface can be individually designed.
Configuring is carried out with the Keypad Designer (component part of STEP 7-Micro / WIN).
- Configuring of tactile keys:
Up to 15 permanently positioned, tactile keys can be assigned numerous functions (e.g. direction keys, messages, Set PLC bit).
- Connection for optional power supply:
A power supply is required at a distance of more than 2.5 m between the TD 400C and S7-200. PROFIBUS bus cables are then available in place of the supplied connecting cable.

Function

- Display of message texts:
Up to 80 message texts (alarms) with up to 6 variables display current operating states and can be optionally parameterized as requiring acknowledgement and additionally protected by a password. In addition, up to 64 static messages, also with up to 6 variables, can be configured. Message texts can be displayed in two lines or four lines depending on the character size set. Four lines with 12 Chinese characters or 24 ASCII characters per line. Two lines with 8 Chinese characters or 16 ASCII characters per line.
- Display and modification of process parameters:
Process parameters are shown on the display and can be modified using the input keys, e.g. for setting temperatures or changing speeds.
- Setting inputs and outputs:
A memory bit is assigned to each of the programmable function keys. These bits can then be set during operation, e.g. at startup, and during test and diagnostics. In this way, motors can be controlled, for example, without having to install additional operator elements in the system.
- Additional functions and features:
For example, processing of floating-point numbers, different data blocks for operating several TDs on one CPU, password protection for integral SETUP menu, and modifiable variables.
- Activation of the TD 400C editing mode by the PLC:
Variables embedded in messages can be edited direct without pressing the Enter key and moving the cursor to the variable.
- Setting a PLC bit:
 - Set bit:
When a function key is pressed, a bit is set in the PLC. This must be reset again via the user program.
 - Momentary:
When a function key is pressed, a bit is set, and when the key is released, the bit is deleted.
- New character set (Greek, Latin2, Turkish) for supporting further languages
- Programming of the S7-200 memory submodule
- Selecting the operating mode of the CPU (RUN / STOP)
- Editing of the V memory area

Programming

The configuring data of the TD 400C is stored in the CPU of the S7-200. The message texts and the configuring parameters are created with the STEP 7-Micro / WIN V4 SP6 programming software. Additional parameterization software is not required. The operating front design is configured with the Keypad Designer (component part of STEP 7-Micro / WIN V4 SP6).

Special data areas are reserved in the CPU of the S7-200 for data exchange with the TD 400C. The TD 400C accesses each of the required functions of the CPU direct via these data areas. User-friendly parameterization takes place via a dedicated TD 400 Wizard in STEP 7-Micro / WIN V4 SP6.

Technical specifications

Text Display TD 400C	6AV6 640-0AA00-0AX1
Supply voltage	
Supply voltage	24 V DC
permissible range	DC
Configuring	
Configuring tool	MicroWin (to be ordered separately)
Display	
Display type	STN, black / white
Size	3.7"
Resolution (W x H in pixel)	192 x 64
• MTBF backlighting (at 25 °C)	about 20 000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	15 function keys
Membrane keyboard	Yes
Ambient conditions	
Temperature	
• Operation	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, FM Class I Div. 2, UL, C-TICK, NEMA 4, NEMA 4x, NEMA 12
Interfaces	
Interfaces	1 x RS485 (max. 187.5 Mbit/s)
Functionality under WinCC flexible	
Security	
• Number of user groups	1
Weight	
• Weight	0.33 kg

Operator control and process monitoring devices

Micro Panels

Text Display TD 400C

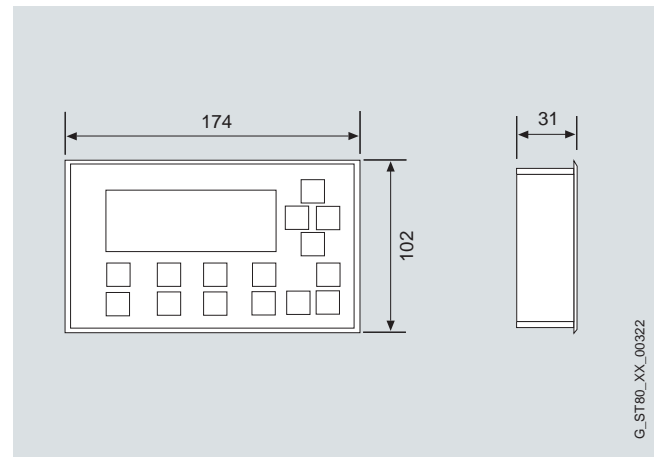
Ordering data	Order No.
TD 400C Text Display with customized operator interface on the device front; for connecting to SIMATIC S7-200; can be used from STEP 7-Micro/ WIN V4 SP6, incl. connecting cable	B 6AV6 640-0AA00-0AX1
Promotion package Consisting of: <ul style="list-style-type: none"> • TD 400C • SIMATIC S7-200 • SIMATIC STEP 7 Micro / WINV4.0 • Simulator module • Memory module • PPI cable • CD-ROM with documentation • TANOS Box 	C 6ES7 298-1AA20-0YA3
Connecting cables for connecting TD 100C / TD 200C or TD 400C to S7-200	6ES7 901-3EB10-0XA0
Blank foils for printing customized key-board layouts; 2 perforated films per sheet; 10 sheets per pack	6AV6 671-0AP00-0AX0
Accessories for supplementary ordering	See HMI Accessories, see page 2/160 onwards

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N and ECCN: EAR99T

Dimensions

All specifications in mm. Panel cutout see technical specifications.



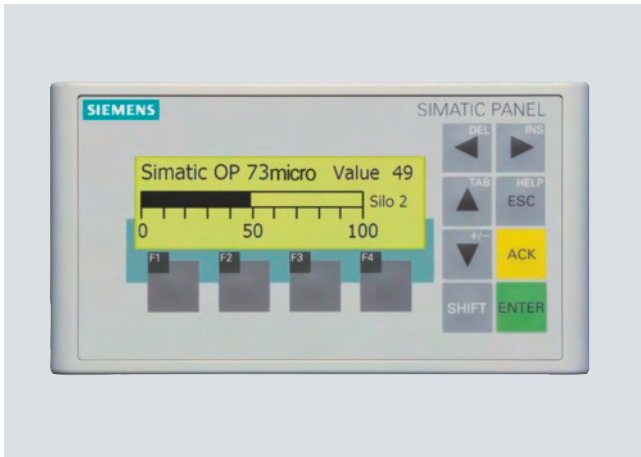
SIMATIC TD 400C

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-micropanels>

Overview



- Operator Panel for controlling and monitoring machines and systems
- Graphics in a new dimension: small and smart
- Pixel-graphics 3" LCD, monochrome
- 8 system keys, 4 user-configurable function keys
- Specific to the SIMATIC S7-200:
Communication with the controller takes place via the integrated interface (point-to-point)
- Connection to the controller via MPI or PROFIBUS DP cable

Benefits

- High-contrast display for good readability
- Large keys for high operational safety
- Simple handling and configuring
- Fast configuring and start-up
 - Service-friendly thanks to maintenance-free design (no battery) and long service life of the backlighting
- Graphics library is available complete with ready-to-use display objects
- Can be used worldwide:
 - 32 languages can be configured (including Asiatic and Cyrillic character sets)
 - Up to 5 languages are selectable online

Application

OP 73micro Operator Panels can be used wherever machines and systems are controlled and monitored locally – in production, process and building automation alike. They are used in all types of sectors and applications.

The OP 73micro has been designed specifically for use with the SIMATIC S7-200.

Compatibility

- Same mounting cutout as for OP3 and TD 200

Design

- 3" LCD, 160 x 48 pixels, monochrome
- 8 system keys, 4 freely configurable function keys
- Numeric and alphanumeric input using cursor control keys
- Compact design with small installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-in terminals for connecting a 24 V DC power supply
- RS 485 interface for connecting the MPI connecting cable or the PPI adapter

Operator control and process monitoring devices

Micro Panels

SIMATIC OP 73micro

Function

- Input / output fields for displaying and changing process parameters
- Function keys for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on function keys.
- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as simple on-screen graphics. In the configuring tool, a library is available containing an extensive range of graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw)
- Predefined for labeling function keys, process images and process values in different font sizes
- Bars for the graphical display of dynamic values.
- Language selection during runtime
 - 5 online languages, 32 configuring languages incl. Asian and Cyrillic character sets
- User administration (security) according to the requirements of the various sectors
 - Authentication using password
- Signaling system
 - Discrete alarms
 - Analog messages
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of message events
 - Message history
- Help texts for process images, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication
- Scheduler for global function execution
- Template concept
 - Creation of picture templates (picture elements configured in the template appear in every image)
- User-friendly maintenance and configuring thanks to:
 - Backup and restoration of configuring, operating system and firmware on a PC using ProSave
 - Configuring download serially via RS485
 - Individual contrast settings
 - No batteries are necessary

Configuring

SIMATIC WinCC flexible Micro, Compact, Standard or Advanced engineering software Version 2004 SP1 and higher plus HSP is used for configuring. For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible. A PC / PPI adapter cable is needed to download the configuring.

Integration

The OP 73micro can be connected to all SIMATIC S7-200 CPUs using the standard MPI bus cables or PROFIBUS DP cables (integration into networks possible).

Note:

For further information see "System interfaces".

Technical specifications

OP 73micro	6AV6 640-0BA11-0AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.1 A
Memory	
Type	Flash
Usable memory for user data	128 KByte usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Micro Version 2004 SP1, HSP or higher (to be ordered separately)
Display	
Display type	STN, black / white
Size	3"
Resolution (W x H in pixel)	160 x 48
Backlighting	
• MTBF backlighting (at 25 °C)	about 100 000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	4 function keys
Connection for mouse / keyboard / barcode reader	- / - / -
Touch operation	
• Touch screen	No
• System keys	8
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 80 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, UL, CSA, cULus, C-TICK, NEMA 4x
Interfaces	
Interfaces	1 x RS485 (max. 187.5 Mbit/s)
Operating systems	
Operating system	LINUX
Processor	
Processor	ARM

Operator control and process monitoring devices

Micro Panels

SIMATIC OP 73micro

2

Technical specifications (continued)

OP 73micro	6AV6 640-0BA11-0AX0
Functionality under WinCC flexible	
Task planner/Help system	Yes / Yes
Status / control	Not possible
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	250
• Bit messages / Analog messages	Yes / Yes
• Message buffer	Ring buffer (n x 100 entries)
Number of process images	
• Process images / Variables	250 / 500
• Limit values / Multiplexing	Yes / Yes
Image elements	
• Text objects	1 000 text elements
• Graphics object	Bit maps, icons, icon (full-screen)
• Dynamic objects	Bar graphs
Lists	
• Text lists	150
• Graphics list	0
• Libraries	Yes
Security	
• Number of user groups	1
• Passwords exportable	Yes
• Number of users	1
Data carrier support	
• Multi Media Card	No
Recording	
• Printer driver	–
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	WinCC flexible Standard, symbol languages
Transfer (upload / download)	
• Transfer of configuring	serial
Process coupling	
• Connection to controller	for S7-200, see section on "System interfaces"
Expandability / openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	154 mm x 84 mm
Mounting cutout / device depth (W x H)	138 mm x 68 mm / 28.5 mm device depth
Weight	
Weight	0.25 kg

Ordering data

Order No.

SIMATIC OP 73micro	C	6AV6 640-0BA11-0AX0
Operator panel for connection to the SIMATIC S7-200, with 3" display, monochrome incl. mounting accessories		
OP 73micro starter package	H	6AV6 650-0BA01-0AA0
Consisting of:		
• OP 73micro Operator Panel		
• SIMATIC WinCC flexible Micro engineering software		
• SIMATIC HMI Manual Collection, 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
• MPI cable (5 m) (for test purposes)		
Configuring		
with SIMATIC WinCC flexible		
Documentation		
Operating Instructions OP 73micro / TP 177micro		to be ordered separately
• German		6AV6 691-1DF01-0AA0
• English		6AV6 691-1DF01-0AB0
• French		6AV6 691-1DF01-0AC0
• Italian		6AV6 691-1DF01-0AD0
• Spanish		6AV6 691-1DF01-0AE0
User Manual WinCC flexible Micro		
• German		6AV6 691-1AA01-3AA0
• English		6AV6 691-1AA01-3AB0
• French		6AV6 691-1AA01-3AC0
• Italian		6AV6 691-1AA01-3AD0
• Spanish		6AV6 691-1AA01-3AE0
SIMATIC HMI Manual Collection A		6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		See HMI Accessories, see page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N and ECCN: EAR99T

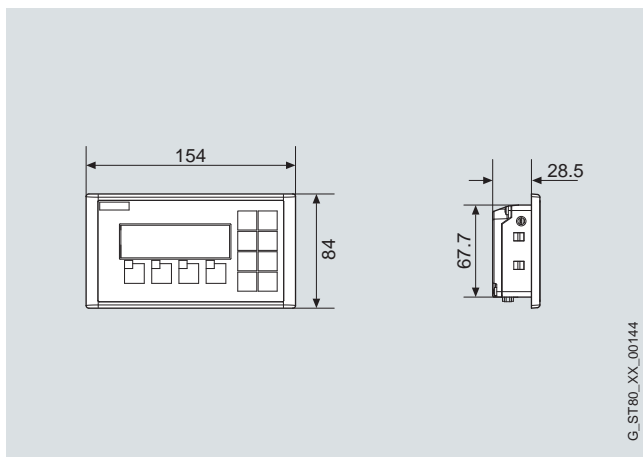
Operator control and process monitoring devices

Micro Panels

SIMATIC OP 73micro

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 73micro

Further information

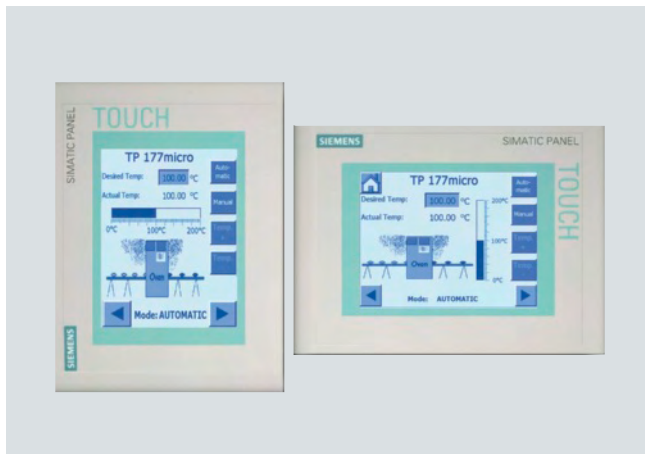
Further information is available in the Internet under:

<http://www.siemens.com/simatic-micropanels>

Note:

Do you need a specific modification or option for 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.

Overview



- Touch Panel for operator control and monitoring of small machines and plants
- Low-cost entry-level product in the category of touch panels with graphics capability and all the basic functions required for simple tasks
- Pixel graphics 5.7" STN touch screen (analog / resistive), Bluemode (4 levels)
- Specially for SIMATIC S7-200: Communication to the PLC through the integrated interface over a point-to-point link
- Connection to the PLC over MPI or PROFIBUS DP cable
- SIMATIC TP 177micro is the innovative successor to the Touch Panels SIMATIC TP 070 / TP 170micro

Benefits

- Can even be used where installation space is restricted thanks to vertical installation
- Fast configuring and start-up
- Service-friendly thanks to maintenance-free design and the long service life of the backlighting
- Graphics library is available complete with ready-to-use display objects
- Can be used worldwide:
 - 32 languages can be configured (including Asiatic and Cyrillic character sets)
 - Up to 5 languages are selectable online

Application

TP 177micro Touch Panels can be used wherever small machines and systems are controlled and monitored locally – in production, process and building automation alike. They are used in all types of sectors and applications.

The TP 177micro has been designed specifically for use with the SIMATIC S7-200. With fast response times, it is also ideal for jog mode.

Compatibility with TP 070 / TP 170micro

- Same mounting cutout as the TP 070 / TP 170micro.

Design

- 5.7" STN display, CCFL(1) backlit, Bluemode (4 levels)
- Resistive analog Touch
- Compact design with small installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- On-screen alphanumeric keyboard
- Plug-in terminals for connecting a 24 V DC power supply
- RS 485 interface for connection of the MPI cable or the PPI adaptor

1) Cold Cathode Fluorescence Lamps

Function

- Input / output fields for displaying and changing process parameters
- Buttons for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons
- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as background displays (wallpaper). In the configuring tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics Simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Predefined texts for labeling function keys, process images and process values in any character size
- Bars for the graphical display of dynamic values
- Changing languages
 - 5 online languages, 32 configuring languages incl. Asian and Cyrillic character sets
- User administration (security)
 - Authentication using password
- Signaling system
 - Discrete alarms
 - Analog messages
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of message events
 - Message history
- Help texts for process images, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication

Operator control and process monitoring devices

Micro Panels

SIMATIC TP 177micro

Function (continued)

- Template concept
Creation of picture templates (picture elements configured in the template appear in every image)
- User-friendly maintenance and configuring thanks to:
 - Backup and restoration of configuring, operating system and firmware on a PC using ProSave
 - Configuring download serially via RS485
 - Individual contrast setting and calibration
 - Clean screen
 - No batteries are necessary

Configuring

SIMATIC WinCC flexible Micro, Compact, Standard or Advanced engineering software Version 2004 SP1 and higher plus HSP is used for configuration.

For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible. A PC / PPI adapter cable is needed to download the configuration.

Integration

The TP 177micro can be connected to all SIMATIC S7-200-CPU's using the standard MPI bus cables or PROFIBUS DP cables (integration into networks possible).

Note:

For further information see "System interfaces"

Technical specifications

TP 177micro	6AV6 640-0CA11-0AX1
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.24 A
Memory	
Type	Flash
Usable memory for user data	256 KByte usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Micro Version 2004 SP1, HSP or higher (to be ordered separately)
Display	
Display type	STN, 4 shades of blue
Size	5.7"
Resolution (W x H in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 50 000 hours
Operating mode	
Control elements	Touchscreen
Function keys, programmable	None
Touch operation	
• Touch screen	analog, resistive
• System keys	0
• Numeric / alphabetical input	Yes / Yes

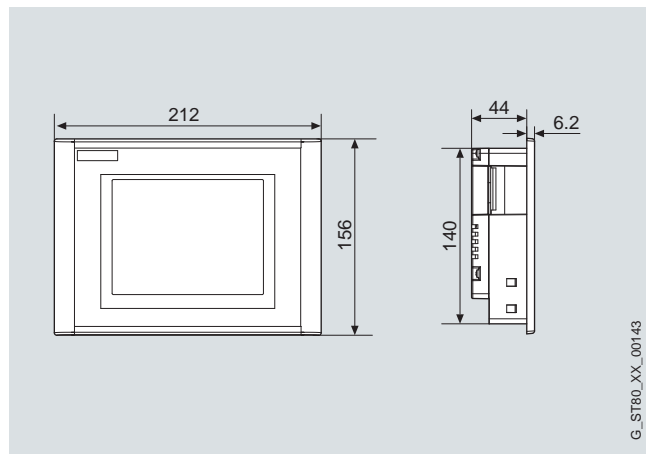
TP 177micro	6AV6 640-0CA11-0AX1
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2 (available soon), EX-Zone 22 (available soon), C-TICK, NEMA 4x
Interfaces	
Interfaces	1 x RS485 (max. 187.5 Mbit/s)
Operating systems	
Operating system	LINUX
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner / Help system	Yes / Yes
Status / control	Not possible
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	500
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 128 entries)
Number of process images	
• Process images / Variables	250 / 250
• Limit values / Multiplexing	Yes / Yes
Image elements	
• Text objects	500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics
• Dynamic objects	Diagrams, bar graphs
Lists	
• Text lists / Graphics list	150 / 100
• Libraries	Yes
Security	
• Number of user groups	1
• Passwords exportable	Yes
• Number of users	1
Data carrier support	
• Multi Media Card	No
Recording	
• Printer driver	-

Technical specifications (continued)

TP 177micro	6AV6 640-0CA11-0AX1
Functionality under WinCC flexible (continued)	
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	WinCC flexible Standard, symbol languages
Transfer (upload / download)	
• Transfer of configuring	serial
Process coupling	
• Connection to controller	for S7-200, see section on "System interfaces"
Expandability / openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	198 mm x 142 mm / 45 mm device depth
Weight	
Weight	0.75 kg

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC TP 177micro

Ordering data

Order No.

SIMATIC TP 177micro	C	6AV6 640-0CA11-0AX1
Touch Panel for connection to the SIMATIC S7-200, 5.7" STN display		
TP 177micro starter package	H	6AV6 650-0DA01-0AA0
Consisting of:		
• TP 177micro Touch Panel		
• SIMATIC WinCC flexible Micro engineering software		
• SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
• MPI cable (5m) (for test purposes)		
Configuring		see HMI Software chapter 4
with SIMATIC WinCC flexible		
Documentation		
Operating Instructions OP 73micro, TP 177micro		
• German		6AV6 691-1DF01-0AA0
• English		6AV6 691-1DF01-0AB0
• French		6AV6 691-1DF01-0AC0
• Italian		6AV6 691-1DF01-0AD0
• Spanish		6AV6 691-1DF01-0AE0
WinCC flexible Micro User Manual		
• German		6AV6 691-1AA01-3AA0
• English		6AV6 691-1AA01-3AB0
• French		6AV6 691-1AA01-3AC0
• Italian		6AV6 691-1AA01-3AD0
• Spanish		6AV6 691-1AA01-3AE0
SIMATIC HMI Manual Collection A		6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI Accessories, see page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N and ECCN: EAR99T

Operator control and process monitoring devices

Micro Panels

SIMATIC TP 177micro

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-micropanel>

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

**SIMATIC Mobile Panel**

- Mobile operator panel for direct operator control of the plant and machine from any point
- Supports optimized monitoring of the workpiece or process providing at the same time direct access and direct line of sight to the operator panel
- Flexible application with simple reconnection during operation (Mobile Panel 177 and Mobile Panel 277) or
- wireless freedom (Mobile Panel 277(F) IWLAN)
- Pixel-graphics, brilliant color display with touch screen (analog / resistive)
- PROFIBUS or PROFINET communication, PROFINET through WLAN with Mobile Panel 277(F) IWLAN
- Freely configurable and inscribable function keys (with LED) (not on Mobile Panel 277 10")

SIMATIC Mobile Panel 177 and SIMATIC Mobile Panel 277

- Two three-stage enabling buttons;
Optional versions include:
 - STOP pushbutton
 - STOP button, handwheel, key-operated switch and illuminated pushbutton (not for Mobile Panel 277 10")
- Communication is supported via a serial link, MPI / PROFIBUS or PROFINET
- Connection point recognition for local identification of the device based on the connection point ID
- Fast system availability after plugging into the connectivity boxes
- Connected to the PLC and power supply via the junction box and the connecting cable

SIMATIC Mobile Panel 277(F) IWLAN

- Wireless, mobile operator panel for flexible and location-independent system and machine operation
- WLAN communication in accordance with IEEE 802.11 a (b / g) and support of PROFINET
- Powerful batteries and flexible concept for changing permit battery replacement "on the fly" without interrupting operation
- Effective range limitation and the local identification of the device by using transponder technology
- Optional variants with: Handwheel, key switch and illuminated pushbutton
- Fail-safe operator controls of the SIMATIC Mobile Panel 277F IWLAN using PROFIsafe:
 - Two three-stage enabling buttons
 - Emergency stop button

IWLAN Access Points SCALANCE W for SIMATIC Mobile Panel 277(F) IWLAN

- The Access Points of the product line SCALANCE W-780 are ideally suited for setting up Industrial Wireless LAN (IWLAN) radio networks for 2.4 GHz and 5 GHz with data rates of up to 54 Mbit/s; they can be used for all applications that require a high degree of operational reliability, even under extremely harsh ambient conditions
- Suitable for any application:
 - SCALANCE W-788 for cabinet-free installation
 - SCALANCE W-786 for cabinet-free installation, also with integral antennas
 - SCALANCE W-784 for installation in control cabinets or integration into devices
- Wireless communication suitable for use in applications with high real-time and reliability requirements, such as PROFINET, PROFIsafe or video
- Standard-compliant thanks to IEEE 802.11 support, additional functional expansions especially for use with increased reliability
- Effective encryption mechanisms protect against unauthorized access, spying, tapping, and corruption
- The SINEMA E engineering tool, wizards and online help support planning, simulation, configuration and documentation; easy management with the web server and SNMP
- Fast commissioning of the Access Points thanks to the optional swap medium PRESET-PLUG and fast device replacement in the event of a fault thanks to the optional swap medium C-PLUG (Configuration Plug)
- Accessories such as antennas, connectors, cables incl. RCoax cables (leaky wave cables) that are tuned to one another for a reliable radio link.

Benefits

- Flexible connection to the process, cabled or wireless
- Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Fast and accurate setup as well as positioning
- Reliable operation with perfected safety concept
- Ergonomic, compact and light-weight
- Rugged for industrial use
- Integral component of Totally Integrated Automation (TIA):
- Graphics library available with off-the-shelf picture objects
- The data in the message buffer is in retentive memory
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Up to 16 online languages can be directly switched over on the Mobile Panel
- Reduction of service and commissioning costs through:
 - Backup / restore via a process interface or optionally via a standard multi-media card / SD card
 - Transfer of the configuration with automatic transfer recognition via all device interfaces
 - Long service life of backlit display
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD

Operator control and process monitoring devices

Mobile Panels

Introduction

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 materials handling or production lines and conveyor systems, mobile operator panels allow fast and precise setting up and positioning during commissioning. They also ensure shorter downtimes during retooling, maintenance or repairs.

Design

- Ergonomic and compact with different holding and gripping points (suitable for right-handed and left-handed personnel)
- Pixel-graphics, brilliant color display with touch screen (analog / resistive)
- Freely configurable and inscribable function keys (with LED) (not on Mobile Panel 277 10")
- The front is resistant to various oils, greases and standard detergents
- Extremely impact-resistant due to twin-wall construction and rounded enclosure
- Dust-proof and jet-proof casing with degree of protection IP65 on all sides
- Slot for a standard multi-media card / SD card for configuration backup / restore or for storing recipes
- Two three-stage acknowledgement buttons
- Optional variants with
 - STOP pushbutton or
 - STOP button, handwheel, key-operated switch and illuminated pushbutton (not on Mobile Panel 277 10")
 - The STOP pushbutton is secured specifically with a "protective collar".
If the STOP pushbutton is looped into the emergency-stop circuit, its function is equivalent to an emergency stop.
- Integrated serial, MPI / PROFIBUS (up to 12 Mbit/s) and / or PROFINET interface (up to 100 Mbit/s)

or

- Connection to the PLC via the rugged and reliable junction boxes with degree of protection IP65:
 - "Basic" junction box: Enables the STOP pushbutton to be integrated into the safety circuit
 - "Plus" junction box: Enables the STOP pushbutton to be integrated into the safety circuit without interruption when disconnecting the device. The emergency stop circuit remains closed regardless of whether a Mobile Panel is plugged in or not. If the Mobile Panel is disconnected during operation, the emergency stop circuit in the junction box Plus is automatically closed which prevents triggering of emergency stop.
- Fast system availability after plugging into the junction boxes
 - An optional rechargeable battery pack can be used to avoid restarting of the Mobile Panel (following brief disconnection from the junction box).
- Detection of the connection point can be used to perform machine-specific HMI authorizations or actions depending on the selected connection point

Sophisticated 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 built into the rear handle.

The STOP pushbutton (acc. 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 pushbutton, but is distinct with its gray color. This ensures that it cannot be mistaken for the emergency stop equipment. This is especially important when the Mobile Panel is not connected to the machine.

SIMATIC Mobile Panels offer the option of making safety functions available on a mobile basis at any point of a machine or plant.

STOP pushbuttons 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.

Innovative connection concept

The Mobile Panel is simply plugged into the junction box wherever it is needed in the plant and is immediately ready for use. The junction box can be installed anywhere, even outside the control cabinet. It ensures fault-free plugging and unplugging during normal operation and, therefore, allows the operator-control location to be easily and safely changed when several connection points are available in a plant or machine.

The location of a Mobile Panel can be clearly identified by setting an ID number on the junction box. This identifier permits the user to configure Mobile Panels in such a way that, for example, the user interface changes according to the connection point. The Mobile Panel establishes the connection to the controllers after being plugged into the junction boxes and following a short start-up period. An optional rechargeable battery pack can be used to avoid restarting of the Mobile Panel (following brief disconnection from the junction box).

Configuration options with emergency stop wiring

Panels with a STOP pushbutton can be integrated into the emergency stop circuit of a machine or plant via the junction box. When the STOP pushbutton on the Mobile Panel is pressed, the emergency stop function is activated. The STOP pushbutton on the Mobile Panel supplements but does not replace the emergency stop equipment installed on the machine according to EN 418. When the Mobile Panel is unplugged, "Plus" versions of the junction box automatically close the emergency stop circuit, thereby ensuring safe and fault-free changeover (swapping).

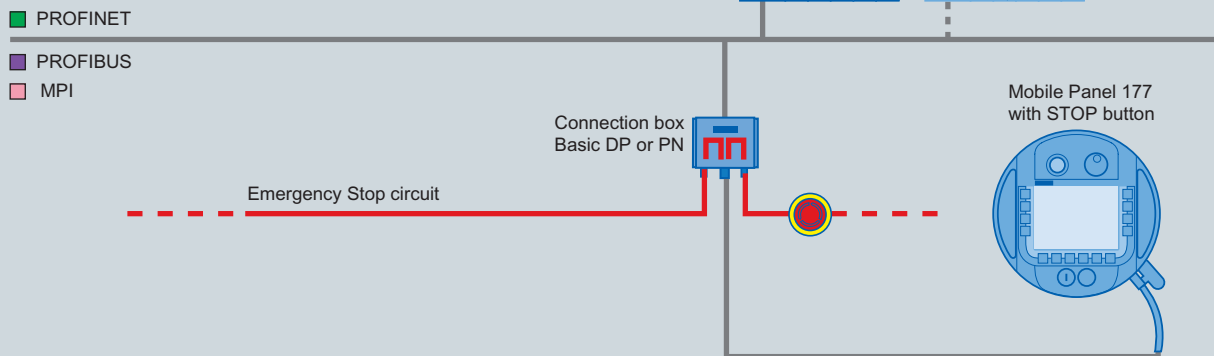
Design (continued)Connection at one point of the machine

When the "Basic" junction box variant is used, unplugging the Mobile Panel interrupts the emergency stop circuit and, therefore, triggers the emergency stop function.

This configuration is, therefore, best suited for applications in which the Mobile Panel is connected to a fixed point on the machine (example configuration: Mobile Panel 177).

Wiring into the EMERGENCY STOP circuit with connection box Basic DP or PN

- Mobile Panel plugged in: EMERGENCY STOP circuit closed
- Mobile Panel disconnected: EMERGENCY STOP circuit open

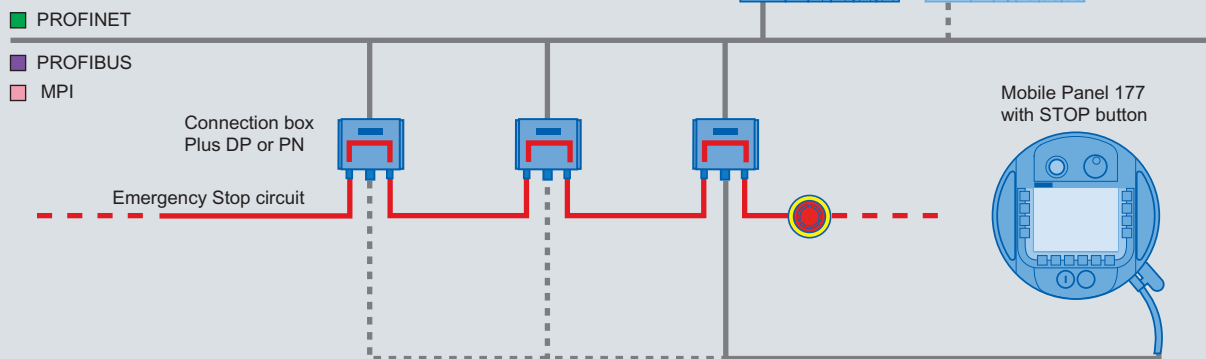
Flexible connection at various points on a machine or in a plant

If a Mobile Panel with a STOP pushbutton is used in combination with a "Plus" junction box, a configuration is possible in which the Mobile Panel can be used flexibly and is also looped into the emergency stop circuit. The emergency stop circuit remains closed regardless of whether a Mobile Panel is plugged into a junction box or not. When the Mobile Panel is plugged in, the

equipment is looped into the emergency stop circuit and when the STOP pushbutton is pressed, the circuit will be interrupted and the emergency stop function triggered. If the Mobile Panel is unplugged during operation, the emergency stop circuit is automatically closed in the "Plus" junction box variant (example configuration: Mobile Panel 177).

Automatic closing of the Emergency Stop circuit by connection box Plus DP or PN

- Mobile Panel plugged in: Emergency Stop circuit closed
- Mobile Panel disconnected: Emergency Stop circuit closed



Operator control and process monitoring devices

Mobile Panels

Introduction

Design (continued)

SIMATIC Mobile Panel 277(F) IWLAN

- WLAN communication in accordance with IEEE 802.11 a (b / g) and support of PROFINET
- Two versions as pure W-LAN HMI device without backup function (Mobile Panel 277 IWLAN) and two versions and fail-safe PROFIsafe device with emergency stop button and acknowledgement button (Mobile Panel 277F IWLAN)
- Powerful batteries and flexible concept for changing permit battery replacement "on the fly" without interrupting operation due to integrated backup battery
- Limited effective range (Mobile Panel 277F IWLAN) and local identification of the device (Mobile Panel 277F IWLAN) by using transponder technology, comparable with connection point recognition with cabled Mobile Panels
- Optional variants with: Handwheel, key switch and illuminated pushbutton
- Fail-safe control elements of the SIMATIC Mobile Panel 277F IWLAN using PROFIsafe:
 - Two three-stage acknowledgement buttons
 - Emergency stop button

Mobile operation and monitoring in industrial wireless LAN

The SIMATIC Mobile Panel 277(F) IWLAN enables integration as a WLAN client in wireless LAN networks. This makes it possible to implement a full-fledged mobile HMI device, which can also perform tasks that are not possible with stationary or cabled devices.

Reliable and rugged WLAN networks can be created using SCALANCE W IWLAN access points. The configuration and simulation software SINEMA E permits reliable WLAN planning ahead of time.

The device is configured – just like the cabled Mobile Panels – with WinCC flexible. The compatibility and continuity permit easy and problem-free migration of existing projects to the wireless device.

Transponders have been developed especially for the Mobile Panel 277(F) IWLAN and can be used for the local identification of the Mobile Panel in the plant. Comparable with the connection point recognition (Box-ID) for cabled Mobile Panels, these transponders can be used to configure location-dependent functions, e.g. the automatic switchover to a different display when a certain zone is accessed, or releasing / blocking of functions from the control zone. On the fail-safe Mobile Panel with enable button and emergency stop button (Mobile Panel 277F IWLAN), the transponders perform another task: The safety-related release of the enable button for hazardous operations.

Full safety function - even wireless!

The SIMATIC Mobile Panel 277F IWLAN is integrated via PROFINET and PROFIsafe into the safety-oriented program (Distributed Safety) of a SIMATIC F-CPU. Incorporating and removing Mobile Panels is possible during runtime. Both of the safety-related functions "acknowledgement button" and "emergency stop button" comply with SIL 3 according to IEC 61508 or PLe/Cat. 4 according to DIN EN ISO 13849-1 and are TÜV-certified. A detailed safety manual is delivered with the Mobile Panel 277F IWLAN, along with a CD containing the required F function blocks for integration in the F-program. The F-FBs are tested and certified - this enables a problem-free and simple integration of the Mobile Panel.

The emergency stop button is immediately available WLAN-wide as soon as the Mobile Panel 277F IWLAN is booted up and the PROFISAFE connection is established with the F-CPU via IWLAN. To use the enable button locally, transponders must be installed in the intended control stations. This allows the Mobile Panel to register for safety-related operation.

Configuration of the transponder and the effective range is also handled comfortably with WinCC flexible. After configuration and commissioning, the effective range in the system is approved to ensure the consistency of the planning and configuration.

The effect that the emergency stop button and the enable button should have and which response to certain events (e.g. leaving the WLAN range) they should have is defined by configuration the F-FBs in the F-CPU – taking account of the safety-relevant properties of the machine. If the Mobile Panel is not used any longer or if the device should be removed, it is to be moved to a specified location.

The Mobile Panel 277F IWLAN offers extensive diagnostic and status information (e.g. concerning the battery charge status, WLAN functionality, and quality of the effective range) and thus provides the user – if necessary, supported by the integrated vibration alarm – with full control of the device and system operation at all times.

System components for wireless Mobile Panels

Besides the four device versions, the following system components are offered (to be ordered individually):

For charging the battery in the Mobile Panel (which can be replaced without tools), either

- the table-top power supply 6AV6 671-5CN00-0AX1 (incl. power cable for EU, US, UK, JP) is required (only suitable for operation under laboratory / office conditions) or
- the charger 6AV6 671-5CE00-0AX0, which enables safe charging of the device (incl. lock for securing the device in the charger) and can load up to two additional batteries in parallel (IP65)

For quick and interruption-free battery replacement during operation

- Additional battery 6AV6 671-5CL00-0AX0 with LED indicator for charge status indication

To create zones (optional for all versions) and mandatory for using the enable button in the effective ranges with Mobile Panel 277F IWLAN:

- Transponder 6AV6 671-5CM00-0AX0 (incl. batteries for self-sufficient operation over several years, no cabling is required on the transponder).

Overview



Function

- Input / output fields for displaying and changing process values
- Function keys are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used as PROFIBUS DP input peripherals or directly as PROFINET IO. The function keys can also be reconfigured as system keys. A function that is used frequently such as "Acknowledge message" can be allocated to a function key this way.
- Additional operator controls such as handwheel, keyswitch and illuminated pushbutton can be connected to a variable or as a direct control over PROFIBUS DP input peripherals (DP direct keys) or PROFINET IO (direct keys).
- Buttons are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics can be used as symbols instead of text to "label" function keys or buttons. They can also be used as full-screen background images. In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics; simple geometric basic forms (e.g. lines, circles and rectangles) can be created direct in the configuring software
- Text fields for labeling function keys, process images and process values in any character size
- Curve displays and bars are used for the display of dynamic values in graphics-based format
- Display selection from the controller permits operator prompting from the controller
- Language selection; 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
- Language-dependent texts and graphics
- User administration (security)
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user name and password
 - User-group-specific rights
- Signaling system
 - Discrete alarms and analog alarms (limit value messages) as well as the ALARM_S message frame procedure for SIMATIC S7 and SIMOTION
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of message events
- Message buffer
 - Non-volatile, maintenance-free and battery-free message buffer. The messages are retained even when the Mobile Panel is disconnected.
- Recipe management
 - With additional data storage (on optional multi-media card)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Function (continued)

- Help texts for process images, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication
- Scheduler for cyclic function execution
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Permanent window and template concept
 - Creation of screen templates:
- Simple maintenance and configuration thanks to:
 - Backup / restore of the project, operating system, recipe data records and firmware on the optional standard multi-media card / SD card
 - Backup and restoration (Backup / Restore) of configuration, operating system, recipe data sets and firmware on a PC using ProSave
 - Project transfer / return over MPI / PROFIBUS DP / serial or PROFINET
 - Automatic transfer identification
 - Individual contrast settings
 - Project simulation directly on the configuration computer
- WinCC flexible options
 - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
 - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.
- Migration
 - Any existing Mobile Panel 170 junction boxes can be used in conjunction with the Mobile Panel 177 because they are fully compatible. The function of connection-point detection can only be used in conjunction with a Mobile Panel 177 with a DP or PN junction box.
 - Projects created for the Mobile Panel 170 using ProTool can be used again easily in WinCC flexible.

Configuring

Configuration is carried out with the SIMATIC WinCC flexible 2005 Compact, Standard or Advanced engineering software or later (see SIMATIC WinCC flexible HMI software / engineering software). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family.

Projects generated using ProTool can be easily migrated to WinCC. If WinCC flexible is started directly from SIMATIC Manager, the data in STEP 7 can be accessed directly while configuring the panel. Duplicated data input and data management is, therefore, avoided.

Integration

In the case of the Mobile Panel 177 DP, communication with the PLC can be implemented via PROFIBUS DP at up to 12 Mbit/s, via MPI or via the serial interface. The necessary interfaces are already onboard. A variety of drivers – even for PLCs from other suppliers – are supplied as standard.

In the case of the Mobile Panel 177 PN, communication with the PLC can be implemented via PROFINET at up to 100 Mbit/s. The necessary interfaces are already onboard. These are supplied with the device.

Using the junction boxes the Mobile Panel 177 can be connected to (see System interfaces):

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software / Slot PLC
- SIMOTION
- SIMATIC S5
- SIMATIC 505 (not on Mobile Panel 177 PN)
- Third-party controllers
 - Allen Bradley
 - Mitsubishi (not on Mobile Panel 177 PN)
 - Modicon Modbus
 - GE-Fanuc (not on Mobile Panel 177 PN)
 - LG GLOFA GM (not on Mobile Panel 177 PN)
 - OMRON (not on Mobile Panel 177 PN)
 - Telemecanique Uni-Telway (not on Mobile Panel 177 PN)
- SINUMERIK
 - (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring; For further details, see Catalog NC 60)

Using the DP junctions boxes the Mobile Panel 177 PN can be connected to:

- SIMATIC S7-200 / -300 / -400
- WinAC Software
- SIMOTION

Note:

The unwanted operation of a Mobile Panel 177 DP (PROFIBUS) on a PN (PROFINET) junction box and vice versa is not possible and is mechanically blocked. Further information can be found under "System interfaces".

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

2

Technical specifications

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0BA01-0AX0 with integral acknowledgment button	6AV6 645-0BB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Supply voltage			
Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2 048 KB of usable memory for user data / no user memory for options	2 048 KB of usable memory for user data / no user memory for options	2 048 KB of usable memory for user data / no user memory for options
Configuring			
Configuring tool	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display			
Display type	STN, 256 colors	STN, 256 colors	STN, 256 colors
Size	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)
Resolution (W x H in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours
Expansions for operator control of the process			
DP direct LEDs (LEDs as S7 output I/O)	F1...F8	F1...F8	F1...F8
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F14	F1...F14	F1...F14
Operating mode			
Operating options	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
• System keys	0	0	0
• Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Ambient conditions			
max. relative humidity (in %)	80 %	80 %	80 %
Drop height	1.5 m	1.5 m	1.5 m
Temperature			
• Operation	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection			
IP65 housing	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0BA01-0AX0 with integral acknowledgment button	6AV6 645-0BB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated push- button
Certifications & standards			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
EMC			
Performance level acc. to EN ISO 13849-1	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
Type of output			
LED colors	Green	Green	Green
Acoustics	No	No	No
Interfaces			
Interfaces	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)
PC card slot	No	No	No
CF card slot	No	No	No
USB port	No	No	No
Industrial Ethernet interface	No	No	No
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Functionality under WinCC flexible			
Applications / options	None	None	None
Number of Visual Basic Scripts	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0BA01-0AX0 with integral acknowledgment button	6AV6 645-0BB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Functionality under WinCC flexible (continued)			
Image elements			
• 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
• Dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons
Lists			
• Text lists	300	300	300
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes
Recording			
• Recording / Printing	-	-	-
• Printer driver	-	-	-
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	5	5	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable
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
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), for further non-Siemens drivers, see section on "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), for further non-Siemens drivers, see section on "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), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness			
• Open Platform Program	Yes	Yes	Yes
Mechanics			
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
Weight			
Weight	1.3 kg	1.3 kg	1.3 kg

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI / PROFIBUS)	6AV6 645-0AA01-0AX0 with integral acknowledgmentbutton	6AV6 645-0AB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated push- button
Supply voltage			
Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2 048 KByte of usable memory for user data / no user memory for options	2 048 KByte of usable memory for user data / no user memory for options	2 048 KByte of usable memory for user data / no user memory for options
Configuring			
Configuring tool	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display			
Display type	STN, 256 colors	STN, 256 colors	STN, 256 colors
Size	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)
Resolution (W x H in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours
Expansions for operator control of the process			
DP direct LEDs (LEDs as S7 output I/O)	F1...F8	F1...F8	F1...F8
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F14	F1...F14	F1...F14
Operating mode			
Operating options	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
• System keys	0	0	0
• Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Ambient conditions			
max. relative humidity (in %)	80 %	80 %	80 %
Drop height	1.5 m	1.5 m	1.5 m
Temperature			
• Operation	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection			
IP65 housing	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

2

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI / PROFIBUS)	6AV6 645-0AA01-0AX0 with integral acknowledgment button	6AV6 645-0AB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Certifications & standards			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
EMC			
Performance level acc. to EN ISO 13849-1	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
LED colors	Green	Green	Green
Acoustics	No	No	No
Interfaces			
Interfaces	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)
PC card slot	No	No	No
CF card slot	No	No	No
SD MMC card slot	1 x	1 x	1 x
USB port	No	No	No
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Functionality under WinCC flexible			
Applications / options	None	None	None
Number of Visual Basic Scripts	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI / PROFIBUS)	6AV6 645-0AA01-0AX0 with integral acknowledgment button	6AV6 645-0AB01-0AX0 with integral acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Functionality under WinCC flexible (continued)			
Image elements			
• 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
• Dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons
Lists			
• Text lists	300	300	300
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes
Recording			
• Recording / Printing	-	-	-
• Printer driver	-	-	-
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	5	5	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, all freely scal- able	Tahoma, WinCC flexible Standard, symbol languages, all freely scal- able	Tahoma, WinCC flexible Standard, symbol languages, all freely scal- able
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	S5, S7-200, S7- 300 / 400, TI 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX und MP4), OMRON (LINK / Multilink), Modicon (Modbus), Telemecanique, GE-Fanuc, LG GLOFA FM, for further non-Siemens drivers, see section on "System interfaces"		
Expandability / openness			
• Open Platform Program	Yes	Yes	Yes
Mechanics			
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
Weight			
Weight	1.3 kg	1.3 kg	1.3 kg

Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

2

Ordering data	Order No.	Order No.
SIMATIC Mobile Panel 177 DP (MPI / PROFIBUS) ¹⁾ <ul style="list-style-type: none"> With integrated acknowledgement button H 6AV6 645-0AA01-0AX0 With integrated acknowledgement button H 6AV6 645-0AB01-0AX0 With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton H 6AV6 645-0AC01-0AX0 		User Manual WinCC flexible Compact / Standard / Advanced <ul style="list-style-type: none"> German 6AV6 691-1AB01-3AA0 English 6AV6 691-1AB01-3AB0 French 6AV6 691-1AB01-3AC0 Italian 6AV6 691-1AB01-3AD0 Spanish 6AV6 691-1AB01-3AE0
SIMATIC Mobile Panel 177 PN (PROFINET) ¹⁾ <ul style="list-style-type: none"> With integrated acknowledgement button H 6AV6 645-0BA01-0AX0 With integrated acknowledgement button and STOP pushbutton H 6AV6 645-0BB01-0AX0 With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton H 6AV6 645-0BC01-0AX0 		WinCC flexible Communication User Manual <ul style="list-style-type: none"> German 6AV6 691-1CA01-3AA0 English 6AV6 691-1CA01-3AB0 French 6AV6 691-1CA01-3AC0 Italian 6AV6 691-1CA01-3AD0 Spanish 6AV6 691-1CA01-3AE0
Mobile Panel 177 PN Plus starter kit H 6AV6 651-5DA01-0AA0 <ul style="list-style-type: none"> Mobile Panel 177 PN with integrated acknowledgement button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton PN Plus connection box PN connecting cable, 10 m Wall holder SIMATIC WinCC flexible Compact SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp) Software Update Service for 1 year 		SIMATIC HMI Manual Collection A 6AV6 691-1SA01-0AX0 Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI
Mobile Panel 177 DP Plus starter kit H 6AV6 651-5BA01-0AA0 <ul style="list-style-type: none"> Mobile Panel 177 DP with integrated acknowledgement button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton DP Plus junction box DP connecting cable, 10 m Wall holder SIMATIC WinCC flexible Compact SIMATIC HMI Manual Collection (CD), 5 languages (En, Fr, Ger, It, Sp) 		System components DP junction box for Mobile Panels (MPI / PROFIBUS) <ul style="list-style-type: none"> Basic 6AV6 671-5AE00-0AX0 Plus B 6AV6 671-5AE10-0AX0 PN junction box for Mobile Panel (PROFINET) <ul style="list-style-type: none"> Basic B 6AV6 671-5AE01-0AX0 Plus B 6AV6 671-5AE11-0AX0 DP connecting cable (MPI / PROFIBUS) Standard cables <ul style="list-style-type: none"> 2 m 6XV1 440-4AH20 5 m 6XV1 440-4AH50 10 m 6XV1 440-4AN10 15 m 6XV1 440-4AN15 25 m 6XV1 440-4AN25 Intermediate lengths ²⁾ <ul style="list-style-type: none"> 8 m 6XV1 440-4AH80 20 m 6XV1 440-4AN20 PN connecting cable (PROFINET) Standard cables <ul style="list-style-type: none"> 2 m 6XV1 440-4BH20 5 m 6XV1 440-4BH50 8 m 6XV1 440-4BH80 10 m 6XV1 440-4BN10 15 m 6XV1 440-4BN15 20 m 6XV1 440-4BN20 25 m 6XV1 440-4BN25
Configuring with SIMATIC WinCC flexible	see HMI software chapter 4	
Documentation Operating Instructions for Mobile Panel 177 <ul style="list-style-type: none"> German 6AV6 691-1DK01-0AA0 English 6AV6 691-1DK01-0AB0 French 6AV6 691-1DK01-0AC0 Italian 6AV6 691-1DK01-0AD0 Spanish 6AV6 691-1DK01-0AE0 		Accessories for Mobile Panels see HMI Accessories, see page 2/167 onwards

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

²⁾ Delivery time approximately 6 weeks

A: Subject to export regulations: AL: N and ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

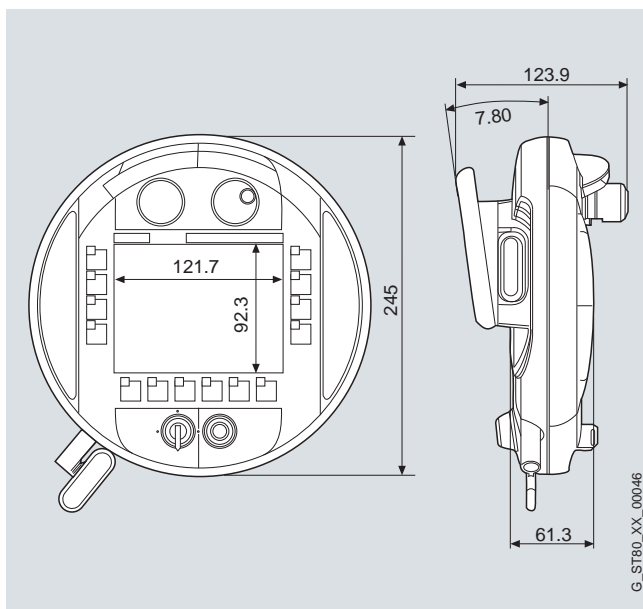
Operator control and process monitoring devices

Mobile Panels – 170 series

SIMATIC Mobile Panel 177

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC Mobile Panel 177 – front view and side view

Further information

Further 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



Function

- Input / output fields for displaying and changing of process values
- Function keys are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used as PROFIBUS DP input peripherals or directly as PROFINET IO. The function keys can also be reconfigured as system keys. A frequently used function such as "Acknowledge alarm" can thus be assigned to a function key. No function keys are available on the Mobile Panel 277 10".
- Additional command components such as handwheel, keyswitch and illuminated pushbutton can be connected to a variable or as a direct control over PROFIBUS DP input peripherals (DP direct keys) or PROFINET IO (direct keys). No additional operator controls are available on the Mobile Panel 277 10".
- Buttons are used for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics can be used as symbols instead of text for "labeling" function keys or buttons. They can also be used as full-screen background images. In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics; simple geometric basic forms (e.g. lines, circles and rectangles) can be created directly in the configuration software.
- Text fields for labeling function keys, process displays, and process values in any font size.
- Trend views and bars are used for the graphic display of dynamic values.
- Display selection from the controller permits operator prompting from the controller.
- Presentation of HTML documents with MS Pocket Internet Explorer.
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.).
- Language switching
16 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
 - Language-dependent texts and graphics
- User administration (security)
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user name and password
 - User-group-specific rights
- Signaling system
 - Discrete alarms and analog alarms (limit value messages) as well as the ALARM_S message frame procedure for SIMATIC S7 and SIMOTION
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of alarm events

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

Function (continued)

- Message buffer
 - Non-volatile, maintenance-free and battery-free message buffer. The messages are retained even when the Mobile Panel is disconnected.
- Recipe management
 - With additional data storage (on optional Multimedia Card / SD Card)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Help texts for process images, messages and variables.
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs.
- Indicator light for machine and plant status indication
- Scheduler for cyclic function processing.
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Permanent window and template concept
 - Creation of screen templates:
- Simple maintenance and configuration thanks to:
 - Backup / restore of the project, operating system, recipe data records and firmware on the optional standard Multimedia Card / SD Card
 - Backup and restoration of configuration, operating system, recipe data sets and firmware on a PC using ProSave
 - Project transfer / return over MPI / PROFIBUS DP / serial or PROFINET
 - Automatic transfer identification
 - Individual contrast settings
 - Project simulation directly on the configuration computer
- WinCC flexible options
 - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
 - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data records, passwords and HMI system-specific information, and much more.
 - OPC server: Communication with applications (e.g. MES, ERP, or applications in the office sector) from various manufacturers (see HMI Software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
 - Audit

Configuring

Configuration is carried out with the SIMATIC WinCC flexible Standard or Advanced configuration software (see SIMATIC WinCC flexible HMI software / engineering software).

SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly when the panel is configured. Double data entry and data storage are prevented this way.

Integration

The SIMATIC Mobile Panel 277 is generally provided for optional PROFIBUS or PROFINET communication. No distinction is made at device level.

This means the device can either be operated

- for the **communication via MPI / PROFIBUS** with the DP cables and connection to the **DP "Basic" or "Plus" connection boxes** or
- for the **communication via PROFINET** with the PN cables and connection to the **PN "Basic" or "Plus" connection boxes**.

A variety of drivers – even for PLCs from other suppliers – are supplied as standard.

Using the DP connection boxes, the Mobile Panel 277 DP can be connected to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- SIMOTION
- SIMATIC S5
- SIMATIC 505
- PLCs from other manufacturers
 - Allen Bradley
 - Mitsubishi
 - Modicon Modbus
 - GE-Fanuc
 - LG GLOFA GM
 - OMRON
- SINUMERIK (optionally with "SINUMERIK HMI copy licence WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring; For further details, see Catalog NC 60)

Using the PN connection boxes, the Mobile Panel 277 can be connected to:

- SIMATIC S7-200 / -300 / -400
- WinAC Software
- SIMOTION
- Over Ethernet (TCP/IP) to a higher-level PC, network printer

Note:

Further information can be found under "System interfaces".

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

Technical specifications

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integral acknowledgment button	6AV6 645-0CB01-0AX0 8" with integral acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integral acknowledgment button and STOP button
Supply voltage				
Supply voltage	via connection box	via connection box	via connection box	via connection box, DC
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 charge cycles, min				500
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data
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
Protocols				
PROFINET				Yes
PROFINET IO				Yes
Configuring				
Configuring tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2008 or higher (to be ordered separately)
Display				
Display type	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors
Size	7.5"	7.5"	7.5"	10.4"
Resolution (W x H in pixel)	640 x 480	640 x 480	640 x 480	800 x 600
Backlighting				
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours	about 50 000 hours
Expansions for operator control of the process				
DP direct LEDs (LEDs as S7 output I/O)	F1...F18	F1...F18	F1...F18	
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	Number of bytes for configurable buttons: 10
Operating mode				
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	None
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch operation				
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
• System keys				0
• Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings	No

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integral acknowledgment button	6AV6 645-0CB01-0AX0 8" with integral acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integral acknowledgment button and STOP button
Operating mode (continued)				
• Illuminated pushbutton	No	No	Yes; Two illuminated pushbuttons	No
• Handwheel	No	No	Yes	No
Ambient conditions				
max. relative humidity (in %)	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1 m
Temperature				
• Operation	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection				
IP65 housing	Yes	Yes	Yes	Yes
Certifications & standards				
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
EMC				
Performance level acc. to EN ISO 13849-1	d	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
I/O				
I/O devices	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Type of output				
LED colors	Green	Green	Green	
Interfaces				
Interfaces	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)
Multi Media Card slot	1 MMC / SD card slot	1 MMC / SD card slot	1 MMC / SD card slot	
USB port	1 x USB	1 x USB	1 x USB	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Processor				
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Functionality under WinCC flexible				
Applications / options	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50	50	50	50
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integral acknowledgment button	6AV6 645-0CB01-0AX0 8" with integral acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integral acknowledgment button and STOP button
Functionality under WinCC flexible (continued)				
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes				
• 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 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable
Number of process images				
• Process images	500	500	500	500
• Variables	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• 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
• 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				
• Text lists	500	500	500	500
• Graphics list	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes
Archiving				
• Number of archives per project	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
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32
Data carrier support				
• Multi Media Card	Yes	Yes	Yes	Yes
Recording				
• 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
Fonts				
• Keyboard fonts	US American (English)	US American (English)	US American (English)	US American (English)

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0	6AV6 645-0CB01-0AX0	6AV6 645-0CC01-0AX0	6AV6 645-0BE02-0AX0
	8" with integral acknowledgment button	8" with integral acknowledgment button and STOP button	8" with integral acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	10" with integral acknowledgment button and STOP button
Functionality under WinCC flexible (continued)				
Languages				
• Online languages	16	16	16	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)				
• Transfer of configuring	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), for further non-Siemens drivers, see section on "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), for further non-Siemens drivers, see section on "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), for further non-Siemens drivers, see section on "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), for further non-Siemens drivers, see section on "System interfaces"
Mechanics				
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	
Weight				
Weight	1.7 kg	1.7 kg	1.7 kg	2.3 kg

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277

2

Ordering data		Order No.		Order No.
SIMATIC Mobile Panel 277 8" ¹⁾				
• With integrated enabling button	H	6AV6 645-0CA01-0AX0		
• With integrated enabling button and STOP pushbutton	H	6AV6 645-0CB01-0AX0		
• With integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton	H	6AV6 645-0CC01-0AX0		
SIMATIC Mobile Panel 277 10"				
• With integrated enabling button and STOP pushbutton	H	6AV6 645-0BE02-0AX0		
SIMATIC Mobile Panel 277 8" starter package				
for:				
• DP communication	H	6AV6 651-5EB01-0AA0		
• PN communication	H	6AV6 651-5FB01-0AA0		
Configuring				
with SIMATIC WinCC flexible		see HMI software chapter 4		
Documentation				
Operating Instructions for Mobile Panel 277				
• German		6AV6 691-1DL01-0AA0		
• English		6AV6 691-1DL01-0AB0		
• French		6AV6 691-1DL01-0AC0		
• Italian		6AV6 691-1DL01-0AD0		
• Spanish		6AV6 691-1DL01-0AE0		
User Manual WinCC flexible Compact / Standard / Advanced				
• German		6AV6 691-1AB01-3AA0		
• English		6AV6 691-1AB01-3AB0		
• French		6AV6 691-1AB01-3AC0		
• Italian		6AV6 691-1AB01-3AD0		
• Spanish		6AV6 691-1AB01-3AE0		
WinCC flexible Communication User Manual				
• German		6AV6 691-1CA01-3AA0		
• English		6AV6 691-1CA01-3AB0		
• French		6AV6 691-1CA01-3AC0		
• Italian		6AV6 691-1CA01-3AD0		
• Spanish		6AV6 691-1CA01-3AE0		
SIMATIC HMI Manual Collection			A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD				
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI				
System components for Mobile Panels				
DP connection box for Mobile Panels (MPI / PROFIBUS)				
• Basic				6AV6 671-5AE00-0AX0
• Plus	B			6AV6 671-5AE10-0AX0
PN connection box for Mobile Panel (PROFINET)				
• Basic	B			6AV6 671-5AE01-0AX0
• Plus	B			6AV6 671-5AE11-0AX0
DP connecting cable (MPI / PROFIBUS)				
Standard cables				
2 m				6XV1 440-4AH20
5 m				6XV1 440-4AH50
10 m				6XV1 440-4AN10
15 m				6XV1 440-4AN15
25 m				6XV1 440-4AN25
Intermediate lengths ²⁾				
8 m				6XV1 440-4AH80
20 m				6XV1 440-4AN20
PN connecting cable (PROFINET)				
Standard cables				
2 m				6XV1 440-4BH20
5 m				6XV1 440-4BH50
8 m				6XV1 440-4BH80
10 m				6XV1 440-4BN10
15 m				6XV1 440-4BN15
20 m				6XV1 440-4BN20
25 m				6XV1 440-4BN25
Accessories for Mobile Panels				See HMI Accessories, see page 2/167 onwards

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

²⁾ Delivery time approximately 6 weeks

A: Subject to export regulations: AL: N and ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

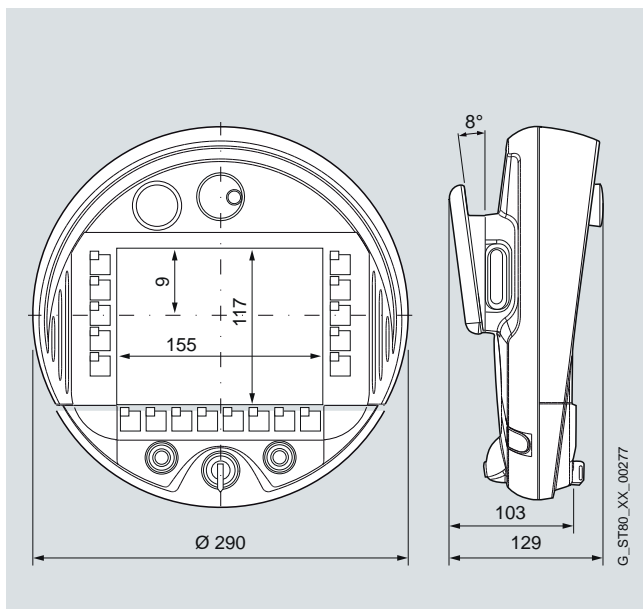
Operator control and process monitoring devices

Mobile Panels – 270 series

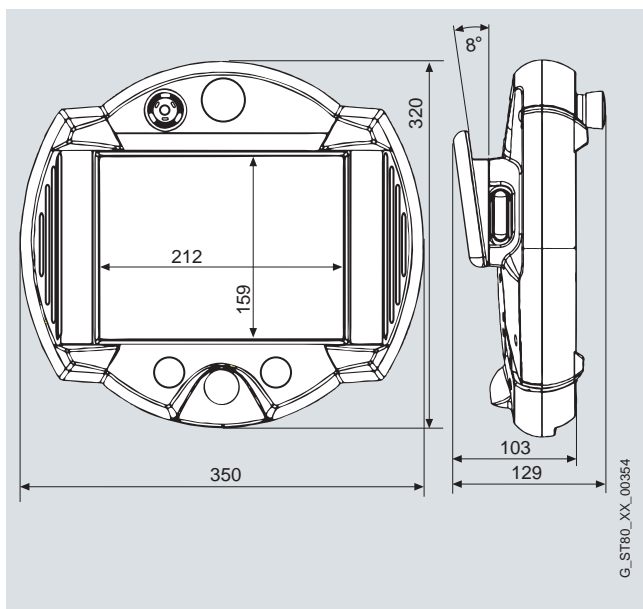
SIMATIC Mobile Panel 277

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC Mobile Panel 277 8" – front and side view



SIMATIC Mobile Panel 277 10" – front and side view

Further information

Further 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



Function

- Input / output fields for displaying and changing of process values.
- Function keys are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used directly as PROFINET IO. The function keys can also be reconfigured as system keys. A frequently used function such as "Acknowledge alarm" can thus be assigned to a function key.
- Auxiliary operator controls such as handwheels, key switches and illuminated pushbuttons can be assigned with a variable or as a direct actuation via PROFINET IO (direct keys).
- Buttons are used for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics can be used as symbols instead of text for "labeling" function keys or buttons. They can also be used as full-screen background images. In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics; simple geometric basic forms (e.g. lines, circles and rectangles) can be created directly in the configuration software.
- Text fields for labeling function keys, process displays, and process values in any font size.
- Trend views and bars are used for the graphic display of dynamic values.
- Display selection from the controller permits operator prompting from the controller.
- Presentation of HTML documents with MS Pocket Internet Explorer.
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.).
- Language switching
16 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Language-dependent texts and graphics
- User administration (security)
- User-oriented access protection according to requirements of specific sectors
- Authentication with user name and password
- User-group-specific rights

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Function (continued)

- Signaling system
 - Discrete and analog alarms (edge alarms) as well as the ALARM_S message frame procedure for SIMATIC S7
 - Freely definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of alarm events
- Message buffer
 - Non-volatile, maintenance-free and battery-free message buffer. The messages remain stored when the mobile panel has the battery removed as well
- Recipe management
 - With additional data storage (on optional multi-media card / SD card)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Help texts for process images, messages and variables.
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs.
- Indicator light for machine and plant status indication.
- Scheduler for cyclic function processing.
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Permanent window and template concept
 - Creation of screen templates:
- Simple maintenance and configuration thanks to:
 - Backup / restore of the project, operating system, recipe data records and firmware on the optional standard multi-media card / SD card
 - Backup and restoration of configuration, operating system, recipe data sets and firmware on a PC using ProSave
 - Project transfer / return transfer via PROFINET / WLAN
 - Automatic transfer identification
 - Individual brightness setting
 - Project simulation directly on the configuration computer
- WinCC flexible options
 - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
 - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data records, passwords and HMI system-specific information, and much more.
(Mobile Panel 277F IWLAN as server: View only)
 - OPC server: Communication with applications (e.g. MES, ERP, or applications in the office sector) from various manufacturers (see HMI software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
 - Audit

Configuring

Configuration is carried out with the SIMATIC WinCC flexible Standard or Advanced configuration software (see SIMATIC WinCC flexible HMI software / engineering software).

SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC.

If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly when the panel is configured. Duplicated data input and data management is, therefore, avoided.



IWLAN infrastructure

The required IWLAN infrastructure is set up with the IWLAN Access Points SCALANCE W-780, preferably with the version SCALANCE W786-2RR, which fully supports all possible applications of the Mobile Panel 277(F) IWLAN. For operating a plant without fail-safe communication, the version SCALANCE W786-1PRO can also be used.

The Access Point provides an Industrial Ethernet interface for connection to the wired network.

In addition to a reliable radio link, the SCALANCE W-780 Access Points stand out due to their optimum support of standardized IT mechanisms:

- IEEE 802.11b / g / a / h for different frequency ranges
- IEEE 802.11e for multimedia, wireless multimedia (WMM) ¹⁾
- IEEE 802.11i for security ¹⁾
- Construction of redundant networks with the Rapid Spanning Tree Protocol (RSTP)
- Virtual networks (VLAN) to logically separate, for example, different user groups
- Sending the log entries of the SCALANCE W devices to a Syslog server

¹⁾ Not supported by Mobile Panel Wireless

Integration

The SIMATIC Mobile Panel 277(F) IWLAN communicates via the WLAN Standard IEEE 802.11 a(b / g) via PROFINET. The Mobile Panel 277F IWLAN devices also support PROFIsafe communication.

There are four device versions:

For mobile operation and monitoring via WLAN:

- Mobile Panel 277 IWLAN
- Mobile Panel 277 IWLAN with handwheel, key switch and illuminated pushbuttons

As fail-safe device for safety-oriented operation as well:

- Mobile Panel 277F IWLAN with enable button and emergency stop button
- Mobile Panel 277F IWLAN with enable button, emergency stop button, handwheel, key switch and illuminated pushbuttons

For the versions Mobile Panel 277F IWLAN (PROFIsafe), the following system prerequisites apply:

- The Mobile Panel must be connected as a safe device (PROFIsafe, Distributed Safety)
- Use of a SIMATIC F-CPU

SIMATIC Mobile Panel		5 GHz frequency band (IEEE 802.11a)	SIMATIC F-CPU (Distributed Safety)
277 IWLAN	Only WLAN utilization (HMI)	x	–
	When using transponders	!	–
	When using PROFINET IO	x	–
277F IWLAN (Failsafe)		!	!

X recommended

! requirement

– not required

The Mobile Panel 277(F) IWLAN can be connected to:

- SIMATIC S7-200 / -300 / -400 (one F-CPU required for integrating the Mobile Panel 277F IWLAN)

Note:

Further information can be found under "System interfaces". The Function Manuals "Fail-Safe Operation of the Mobile Panel 277F IWLAN" are available for downloading in English, German, and Japanese.

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

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications

(RoW version)	6AV6 645-0DD01-0AX0	6AV6 645-0DE01-0AX0	6AV6 645-0DB01-0AX0	6AV6 645-0DC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Supply voltage				
Via charging station	Yes	Yes	Yes	Yes
Via table power supply	Yes	Yes	Yes	Yes
Main battery				
Rated voltage	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
Number of loading cycles, min.	500	500	500	500
Charging time, typ.	4 h	4 h	4 h	4 h
Operating time, typ.	4 h	4 h	4 h	4 h
Display for battery capacity	Yes	Yes	Yes	Yes
Energy-saving mode	Yes	Yes	Yes	Yes
Battery exchange in operation	Yes	Yes	Yes	Yes
Backup battery				
Battery operation	Maximum buffer time 5 min	Maximum buffer time 5 min	Maximum buffer time 5 min	Maximum buffer time 5 min
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data
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
Protocols				
PROFINET	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes
PROFIsafe			Yes	Yes
Configuring				
Configuring tool	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)
Display				
Display type	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors
Size	7.5"	7.5"	7.5"	7.5"
Resolution (W x H in pixel)	640 x 480	640 x 480	640 x 480	640 x 480
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operating mode				
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Emergency stop button			2-channel, positive latching (can be looped into the emergency stop circuit)	2-channel, positive latching

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

2

Technical specifications (continued)

(RoW version)	6AV6 645-0DD01-0AX0	6AV6 645-0DE01-0AX0	6AV6 645-0DB01-0AX0	6AV6 645-0DC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Operating mode (continued)				
Acknowledgement button			2-channel, number of positions: 3	2-channel, number of positions: 3
Key-operated switch	No	Yes, 3 switch settings	No	Yes, 3 switch settings
Illuminated pushbutton	No	Yes	No	Yes
Handwheel	No	Yes	No	Yes
EMC				
<ul style="list-style-type: none"> Emission of radio interferences acc. to EN 55 011 (limit class A) 	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	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	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	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
Ambient conditions				
max. relative humidity (in %)	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1.2 m
Temperature				
• Operation	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection				
IP65 housing	Yes	Yes	Yes	Yes
Certifications & standards				
Certifications	CE, C-TICK	CE, C-TICK	CE, C-TICK	CE, C-TICK
EMC				
• TÜV safety certification			Yes	Yes
• Safety Integrity Level to IEC 61508			3	3
• Performance level acc. to EN ISO 13849-1			E	E
• Safety category according to EN954-1			Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4
Type of output				
Status LEDs	Yes	Yes	Yes	Yes
• LED for safe	Yes	Yes	Yes	Yes
• LED for communication	Yes	Yes	Yes	Yes
• LED for battery	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes
Interfaces				
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Multimedia card slot	1 x Multimedia card slot	1 x Multimedia card slot	1 x Multimedia card slot	1 x Multimedia card slot
USB port	1 x USB	1 x USB	1 x USB	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

(RoW version)	6AV6 645-0DD01-0AX0	6AV6 645-0DE01-0AX0	6AV6 645-0DB01-0AX0	6AV6 645-0DC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbut- tons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Interfaces (continued)				
WLAN	Yes	Yes	Yes	Yes
• Supports standards	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a
• Supported channels (according to IEEE 802.11a)	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161
• Supported channels (according to IEEE 802.11b and IEEE 802.1g)	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14
• Country approval (radio)	Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Netherlands, Norway, Poland, Portugal, South Africa, Spain, Swe- den, Switzerland, Turkey	Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Netherlands, Norway, Poland, Portugal, South Africa, Spain, Swe- den, Switzerland, Turkey	Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Netherlands, Norway, Poland, Portugal, South Africa, Spain, Swe- den, Switzerland, Turkey	Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Netherlands, Norway, Poland, Portugal, South Africa, Spain, Swe- den, Switzerland, Turkey
• Encryption	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Processor				
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Functionality under WinCC flexible				
Applications / options	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50	50	50	50
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes				
• 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 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable

Technical specifications (continued)

(RoW version)	6AV6 645-0DD01-0AX0	6AV6 645-0DE01-0AX0	6AV6 645-0DB01-0AX0	6AV6 645-0DC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Functionality under WinCC flexible (continued)				
Number of process images				
• Process images	500	500	500	500
• Variables	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• 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
• 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				
• Text lists	500	500	500	500
• Graphics list	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes
Archiving				
• Number of archives per project	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
• Memory location	Multimedia card	Multimedia card	Multimedia card	Multimedia card
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32
Data carrier support				
• Multimedia card	Yes	Yes	Yes	Yes
Recording				
• Recording / Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET
Languages				
• Online languages	16	16	16	16
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)				
• Transfer of configuring	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

(RoW version)	6AV6 645-0DD01-0AX0	6AV6 645-0DE01-0AX0	6AV6 645-0DB01-0AX0	6AV6 645-0DC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Functionality under WinCC flexible (continued)				
• Wireless LAN	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
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"
• 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
- Number of effective ranges per project, max.			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, min.	8 m	8 m	8 m	8 m
Mechanics				
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	Dia 290 mm / D 103 mm
Weight				
Weight	2.2 kg	2.2 kg	2.2 kg	2.2 kg

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

2

Technical specifications (continued)

(U.S.A. version)	6AV6 645-0FD01-0AX0	6AV6 645-0FE01-0AX0	6AV6 645-0GB01-0AX0	6AV6 645-0GC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Supply voltage				
Via charging station	Yes	Yes	Yes	Yes
Via table power supply	Yes	Yes	Yes	Yes
Supply voltage	DC	DC	DC	DC
Main battery				
Rated voltage	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
Number of loading cycles, min	500	500	500	500
Charging time, typ.	4 h	4 h	4 h	4 h
Operating time, typ.	4 h	4 h	4 h	4 h
Display for battery capacity	Yes	Yes	Yes	Yes
Energy-saving mode	Yes	Yes	Yes	Yes
Battery exchange in opera- tion	Yes	Yes	Yes	Yes
Backup battery				
Battery operation	Maximum buffer time 5 min	Maximum buffer time 5 min	Maximum buffer time 5 min	Maximum buffer time 5 min
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data
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
Protocols				
PROFINET	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes
PROFIsafe			Yes	Yes
Configuring				
Configuring tool	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)
Display				
Display type	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors
Size	7.5"	7.5"	7.5"	7.5"
Resolution (W x H in pixel)	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting				
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours
Expansions for operator control of the process				
DP direct LEDs (LEDs as S7 output I/O)	F1...F18	F1...F18	F1...F18	F1...F18
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	Number of bytes for configurable buttons: 10

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

(U.S.A.-Variante)	6AV6 645-0FD01-0AX0	6AV6 645-0FE01-0AX0	6AV6 645-0GB01-0AX0	6AV6 645-0GC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Operating mode				
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
Connection for mouse / keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch operation				
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
• Emergency stop button			2-channel, enforced latching	2-channel, enforced latching
• Acknowledgement button			2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	Yes, 3 switch settings	No	Yes, 3 switch settings
• Illuminated pushbutton	No	Yes	No	Yes
• Handwheel	No	Yes	No	Yes
Ambient conditions				
max. relative humidity (in %)	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1.2 m
Temperature				
• Operation	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection				
IP65 housing	Yes	Yes	Yes	Yes
Certifications & standards				
Certifications	CE, C-TICK	CE, C-TICK	CE, C-TICK	CE, C-TICK
EMC				
• TÜV safety certification			Yes	Yes
• Safety Integrity Level to IEC 61508			3	3
• Performance level acc. to EN ISO 13849-1			E	E
• Safety category according to EN954-1			Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4
I/O				
I/O devices	Barcode reader	Barcode reader		
Type of output				
Status LEDs	Yes	Yes	Yes	Yes
• LED for safe	Yes	Yes	Yes	Yes
• LED for communication	Yes	Yes	Yes	Yes
• LED for battery	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

2

Technical specifications (continued)

(U.S.A. version)	6AV6 645-0FD01-0AX0	6AV6 645-0FE01-0AX0	6AV6 645-0GB01-0AX0	6AV6 645-0GC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Interfaces				
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Multimedia card slot	1 x Multi Media Card- / SD card slot	1 x Multi Media Card- / SD card slot	1 x Multi Media Card- / SD card slot	1 x Multi Media Card slot
USB port	1 x USB	1 x USB	1 x USB	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
WLAN	Yes	Yes	Yes	Yes
• Supports standards	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a
• Supported channels (according to IEEE 802.11a)	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161
• Supported channels (according to IEEE 802.11b and IEEE 802.11g)	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14
• Country approval (radio)	U.S.A.	U.S.A.	U.S.A.	U.S.A.
• Encryption	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA
• Supports Rapid Roaming	Yes	Yes	Yes	Yes
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Processor				
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Functionality under WinCC flexible				
Applications / options	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess	Internet Explorer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50	50	50	50
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes				
• 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 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

(U.S.A. version)	6AV6 645-0FD01-0AX0	6AV6 645-0FE01-0AX0	6AV6 645-0GB01-0AX0	6AV6 645-0GC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Functionality under WinCC flexible (continued)				
Number of process images				
• Process images	500	500	500	500
• Variables	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• 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
• 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				
• Text lists	500	500	500	500
• Graphics list	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes
Archiving				
• Number of archives per project	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
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32
Data carrier support				
• Multi Media Card	Yes	Yes	Yes	Yes
Recording				
• Recording / Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET
Languages				
• Online languages	16	16	16	16
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)				
• Transfer of configuring	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

Technical specifications (continued)

(U.S.A. version)	6AV6 645-0FD01-0AX0	6AV6 645-0FE01-0AX0	6AV6 645-0GB01-0AX0	6AV6 645-0GC01-0AX0
SIMATIC Mobile Panel	277 IWLAN Communication via WLAN (PROFINET)	277 IWLAN Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button	277(F) IWLAN Communication via WLAN (PROFINET) with enabling button and emergency STOP button, handwheel, key-operated switch and two illuminated pushbuttons
Functionality under WinCC flexible (continued)				
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"
• 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
- Number of effective ranges per project, max.			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, min.	8 m	8 m	8 m	8 m
Mechanics				
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	Dia 290 mm / D 103 mm
Weight				
Weight	2.2 kg	2.2 kg	2.2 kg	2.2 kg

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

Ordering data	Order No.	Order No.
SIMATIC Mobile Panel 277 IWLAN (RoW version) <ul style="list-style-type: none"> Communication via WLAN (PROFINET) Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons 	H 6AV6 645-0DD01-0AX0 H 6AV6 645-0DE01-0AX0	Accessories (continued) Service pack for Mobile Panel 277(F) IWLAN B 6AV6 671-5CA00-0AX1 contains accessories pack for Mobile Panel 277 (labeling strip cover), battery compartment cover (device), backup battery, cover left / right (charger), power supply connector counterpart (charger), replacement key (charger)
SIMATIC Mobile Panel 277F IWLAN (RoW version) <ul style="list-style-type: none"> Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons 	H 6AV6 645-0DB01-0AX0 H 6AV6 645-0DC01-0AX0	SCALANCE W-786 Access Points for SIMATIC Mobile Panel 277(F) IWLAN IWLAN Access Points with integrated radio interfaces; radio networks; IEEE 802.11b / g / a / h at 2.4 / 5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-40 °C to +70 °C); scope of delivery: Mounting hardware, 48 V DC terminal block; manual on CD-ROM; German / English; SCALANCE W-786-2RR IWLAN Dual Access Point with two integrated radio interface for setting up radio links with iPCF; RJ45 connection Four internal antennas • National approvals for operation outside the U.S. K 6GK5 786-2BA60-6AA0 • National approvals for operation within the U.S. K 6GK5 786-2BA60-6AB0
SIMATIC Mobile Panel 277 IWLAN (USA version) <ul style="list-style-type: none"> Communication via WLAN (PROFINET) Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons 	H 6AV6 645-0FD01-0AX0 H 6AV6 645-0FE01-0AX0	SCALANCE W-786-1PRO IWLAN Access Points with built-in wireless interface RJ45 connection Two internal antennas • National approvals for operation outside the U.S. K 6GK5 786-1BA60-2AA0 • National approvals for operation within the U.S. K 6GK5 786-1BA60-2AB0
SIMATIC Mobile Panel 277F IWLAN (USA version) <ul style="list-style-type: none"> Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons 	H 6AV6 645-0GB01-0AX0 H 6AV6 645-0GC01-0AX0	Further IWLAN Access Point versions SCALANCE W-784 Access Points IWLAN Access Points with integrated radio interfaces (see Catalog IK PI), radio networks IEEE 802.11b / g / a / h at 2.4 / 5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP30 (-20 °C to +60 °C); scope of delivery: Mounting hardware, 24 V DC terminal block; manual on CD-ROM; German / English; 6GK5 784-1AA30-... (see Catalog IK PI)
Accessories Note: Please order the table-top power supply or charging station as well. Required for charging the battery <ul style="list-style-type: none"> Table-top power supply incl. power cable for EU, US, UK, JP (only suitable for operation under laboratory / office conditions) Charger for safe storage and charging the device incl. lock for securing the device in the charger. Charging capabilities for up to two additional batteries Additional battery with LED indicator for indicating the charge status Transponder incl. batteries (3x AA) 	B 6AV6 671-5CN00-0AX1 B 6AV6 671-5CE00-0AX0 B 6AV6 671-5CL00-0AX0 6AV6 671-5CM00-0AX0	

A: Subject to export regulations: AL: N and ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

K: Subject to export regulations: AL: 5A002A1A2 and ECCN: 5A002ENC3

Operator control and process monitoring devices

Mobile Panels – 270 series

SIMATIC Mobile Panel 277(F) IWLAN

2

Ordering data (continued)	Order No.	Order No.
SCALANCE W-786 Access Points IWLAN Access Points with integrated radio interfaces (see Catalog IK PI); radio networks IEEE 802.11b / g / a / h at 2.4 / 5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-40°C to +70°C); scope of delivery: Mounting hardware, 48 V DC terminal block; manual on CD-ROM; German / English;	6GK5 786-... (see Catalog IK PI)	Documentation (to be ordered separately) Mobile Panel 277F IWLAN Operating Instructions <ul style="list-style-type: none"> German 6AV6 691-1DQ01-2AA0 English 6AV6 691-1DQ01-2AB0 French 6AV6 691-1DQ01-2AC0 Italian 6AV6 691-1DQ01-2AD0 Spanish 6AV6 691-1DQ01-2AE0
SCALANCE W-788 Access Points IWLAN Access Points with integrated radio interfaces (see Catalog IK PI); radio networks IEEE 802.11b / g / a / h at 2.4 / 5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-20°C to +60°C); scope of delivery: 2 ANT795-4MR antennas, IP67 hybrid plug-in connector, mounting hardware, manual on CD-ROM, German / English	6GK5 788-... (see Catalog IK PI)	Mobile Panel 277 IWLAN Operating Instructions <ul style="list-style-type: none"> German 6AV6 691-1DM01-2AA0 English 6AV6 691-1DM01-2AB0 French 6AV6 691-1DM01-2AC0 Italian 6AV6 691-1DM01-2AD0 Spanish 6AV6 691-1DM01-2AE0
PS791-2DC power supply 24 V DC power supply for installation in SCALANCE W-786 products; operating instructions in German / English	6GK5 791-2DC00-0AA0	Getting Started Mobile Panel 277(F) IWLAN <ul style="list-style-type: none"> German available as pdf English available as pdf
PS791-2AC power supply 110 V AC to 230 V AC power supply for installation in SCALANCE W-786 products; operating instructions in German / English	6GK5 791-2AC00-0AA0	User Manual WinCC flexible Compact / Standard / Advanced <ul style="list-style-type: none"> German 6AV6 691-1AB01-3AA0 English 6AV6 691-1AB01-3AB0 French 6AV6 691-1AB01-3AC0 Italian 6AV6 691-1AB01-3AD0 Spanish 6AV6 691-1AB01-3AE0
Other compatible accessories Wall mounting bracket for Mobile Panels	see Accessories for SIMATIC Mobile Panel see page 2/167 onwards	WinCC flexible Communication User Manual <ul style="list-style-type: none"> German 6AV6 691-1CA01-3AA0 English 6AV6 691-1CA01-3AB0 French 6AV6 691-1CA01-3AC0 Italian 6AV6 691-1CA01-3AD0 Spanish 6AV6 691-1CA01-3AE0
Memory card multi-media card / SD card	see HMI Accessories see page 2/173 onwards	
Mobile Panel 277 cover membrane	see HMI Accessories see page 2/179 onwards	
Key labeling strips for Mobile Panel 277	see HMI Accessories see page 2/177 onwards	
Spare key for Mobile Panels	see HMI Accessories see page 2/168 onwards	
SIMATIC Mobile Panel 277(F) IWLAN (RoW version) starter kit for		
<ul style="list-style-type: none"> • Mobile Panel 277 IWLAN H • Mobile Panel 277F IWLAN H 	6AV6 651-5GA01-0AA0 6AV6 651-5HA01-0AA0	
Configuring with SIMATIC WinCC flexible	see HMI Software chapter 4	

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

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

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

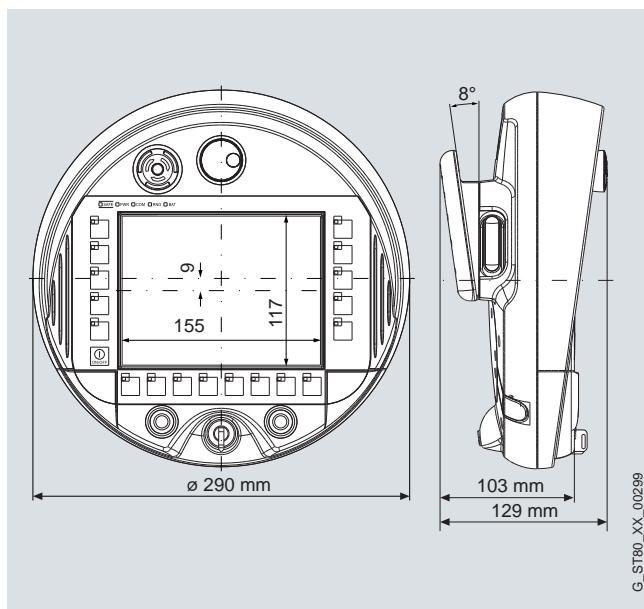
Operator control and process monitoring devices

Mobile Panels – 270 series

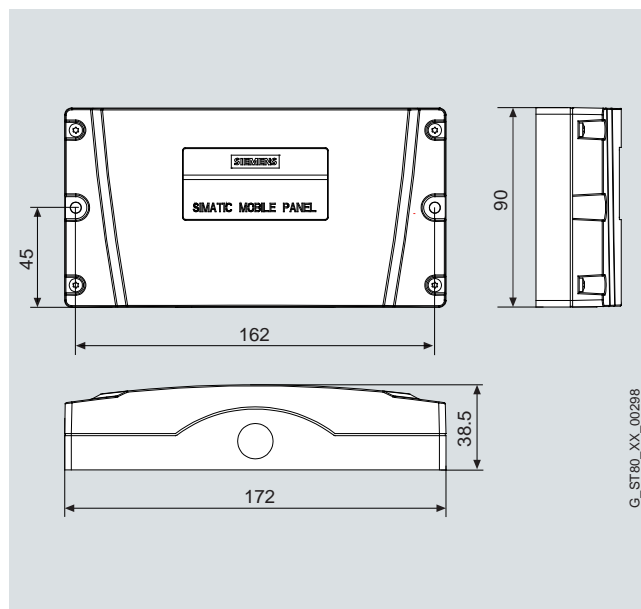
SIMATIC Mobile Panel 277(F) IWLAN

Dimensions

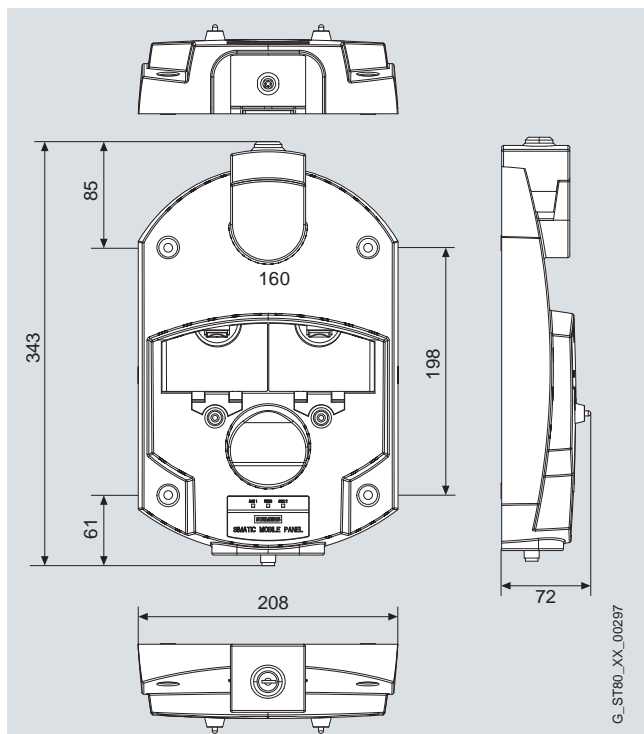
All specifications in mm. Panel cutout see technical specifications.



SIMATIC Mobile Panel 277(F) IWLAN – Front and side view



Transponder



Charger

Further information

Further 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



- The ideal entry level series of 3.8" to 15" for operating and monitoring compact machines and plants
- 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 RS485 / 422

Benefits

- Integral component of Totally Integrated Automation (TIA): Increased productivity, minimum engineering overhead, reduction in life-cycle costs
 - Can be used even where installation space is restricted thanks to vertical configuring (4" and 6" devices)
 - Short configuring and commissioning times
 - Service-friendly thanks to maintenance-free design and long service life of the backlighting display
- Simple and user-friendly representation of process values thanks to, for example, input / output fields, vector graphics, trend curves, bar charts, text and bitmaps
- Graphics library available with off-the-shelf picture objects
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - You can switch between up to 5 languages online
 - Language-dependent texts and graphics

Application

The SIMATIC HMI Basic Panels can be used wherever compact machines and plants are controlled and monitored locally – in production, process and building automation alike. They are used in the most diverse sectors and applications.

Design

The SIMATIC HMI Basic Panels are installation-compatible with the existing touch devices of the product family of Panels and Multi Panels.

- KTP400 Basic mono
 - 3.8" STN mono
 - 1 Ethernet interface (TCP/IP)
 - Touch screen and 4 tactile function keys
- KTP600 Basic mono
 - 5.7" STN mono
 - 1 Ethernet interface (TCP/IP)
 - Touch screen and 6 tactile function keys
- KTP600 Basic color
 - 5.7" TFT with 256 colors
 - 1 Ethernet interface (TCP/IP) or 1 RS 485/422 interface (separate version)
 - Touch screen and 6 tactile function keys
- KTP1000 Basic color
 - 10.4" TFT with 256 colors
 - 1 Ethernet interface (TCP/IP) or 1 RS 485/422 interface (separate version)
 - Touch screen and 8 tactile function keys
- TP1500 Basic color
 - 15.1" TFT with 256 colors
 - 1 Ethernet interface (TCP/IP)
 - Touch screen
- No slot for SD / CF / Multi Media Card, no USB interface

Operator control and process monitoring devices

Basic Panels

Basic Panels

Function

- Input / output fields for displaying and modifying process parameters
- Buttons are used for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as full-screen background images. The configuration tool contains a library with extensive graphics and diverse objects. All editors with an OLE interface can be used as graphics editors, e.g. PaintShop, Designer or CorelDraw, etc.
- Vector graphics Simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Fixed texts for labeling function keys, process images and process values in different font sizes
- Curve functions and bars are used for graphical display of dynamic values
- Language switching:
 - 5 online languages, 32 configuration languages including Asian and Cyrillic character sets
 - language-dependent texts and graphics
- User administration (security) in accordance with the requirements of the different sectors
 - authentication with user ID and password
 - user-group-specific rights
- Signaling system
 - discrete alarms
 - analog messages
 - freely definable message classes (e.g. status / fault messages) for defining acknowledgment response and displaying message events
 - message history
- Recipe management
- Help texts for process screens, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for indicating machine and plant statuses
- Scheduler for global function execution in case of global events
- Template concept for creation of screen templates (screen elements configured in the template appear in every screen)
- Simple maintenance and configuration thanks to:
 - backup / restore of configuration, operating system and firmware on a PC using ProSave
 - configuration download via MPI / PROFIBUS DP or Ethernet
 - automatic transfer identification
 - individual contrast setting and calibration (except KTP600)
 - clean screen
 - no battery required

Configuring

Configuration is implemented with the engineering software SIMATIC WinCC flexible 2008 Compact or with WinCC Basic V10.5, which is a component of STEP 7 Basic V10.5 (only PROFINET-based device versions).

Integration

The Basic Panels can be connected to:

- SIMATIC S7 controllers
- Non-Siemens controllers (applies for DP devices)
 - Allen Bradley DF1
 - Modicon Modbus RTU
 - Mitsubishi FX¹⁾
 - Omron Hostlink / Multilink¹⁾
- Non-Siemens controllers (non-Siemens drivers for PN devices)
 - Modicon Modbus TCP/IP¹⁾

¹⁾ WinCC flexible 2008 SP2 and higher

Note:

Further information can be found under "System interfaces".

Technical specifications

Basic Panel	6AV6 647-0AA11-3AX0 KTP400 Basic mono PN	6AV6 647-0AB11-3AX0 KTP600 Basic mono PN	6AV6 647-0AC11-3AX0 KTP600 Basic color DP	6AV6 647-0AD11-3AX0 KTP600 Basic color PN
Supply voltage				
Supply voltage	24 V DC	24 V DC	24 V DC	24 V DC
permissible range	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC
Rated current	0.07 A	0.24 A	0.35 A	0.35 A
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	512 KByte usable memory for user data	512 KByte usable memory for user data	512 KByte usable memory for user data	512 KByte usable memory for user data
Time of day				
Clock				
• Type	Software clock, not battery backed	Software clock, not battery backed	Software clock, not battery backed	Software clock, not battery backed
Protocols				
Protocols (terminal link)				
• Sm@rtAccess	No	No	No	No
Configuring				
Configuring tool	WinCC flexible Compact Version 2008 SP1 or higher (to be ordered separately)	WinCC flexible Compact Version 2008 SP1 or higher (to be ordered separately)	WinCC flexible Compact Version 2008 SP1 or higher (to be ordered separately)	WinCC flexible Compact Version 2008 SP1 or higher (to be ordered separately)
Display				
Display type	STN, gray scales	STN, gray scales	TFT, 256 colors	TFT, 256 colors
Size	3.8" (76.8 mm x 57.6 mm)	5.7" (115.2 mm x 86.4 mm)	5.7" (115.2 mm x 86.4 mm)	5.7" (115.2 mm x 86.4 mm)
Resolution (W x H in pixel)	320 x 240	320 x 240	320 x 240	320 x 240
Backlighting				
• MTBF backlighting (at 25 °C)	Approx. 30 000 hours	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operating mode				
Control elements	Membrane keyboard	Membrane keyboard	Membrane keyboard	Membrane keyboard
Function keys, programmable	4 function keys	6 function keys	6 function keys	6 function keys
Connection for mouse / keyboard / barcode reader	- / - / -	- / - / -	- / - / -	- / - / -
Touch operation				
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes (on-screen keyboard) / Yes (on-screen keyboard)
Ambient conditions				
Mounting position	vertical	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %	90 %
Temperature				
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection				
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20	IP20	IP20

Operator control and process monitoring devices

Basic Panels

Basic Panels

Technical specifications (continued)

Basic Panel	6AV6 647-0AA11-3AX0 KTP400 Basic mono PN	6AV6 647-0AB11-3AX0 KTP600 Basic mono PN	6AV6 647-0AC11-3AX0 KTP600 Basic color DP	6AV6 647-0AD11-3AX0 KTP600 Basic color PN
Certifications & standards				
Certifications	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12
I/O				
I/O devices	None	None	None	None
Type of output				
LED colors	None	None	None	None
Acoustics	Sound signal	Sound signal	Sound signal	Sound signal
Interfaces				
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x RS422, 1 x RS485 (max. 12 Mbit/s)	1 x Ethernet (RJ45)
PC card slot	No	No	No	No
CF card slot	No	No	No	No
Multi Media Card slot	No	No	No	No
USB port	No	No	No	No
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	No	1 x Ethernet (RJ45)
Processor				
Processor	RISC 32 bit, 75 MHz	RISC 32 bit, 75 MHz	RISC 32 bit, 75 MHz	RISC 32 bit, 75 MHz
Functionality under WinCC flexible				
Applications / options	None	None	None	None
Number of Visual Basic Scripts	Not possible	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	Not possible	Not possible	Not possible	Not possible
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	200	200	200	200
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free ¹⁾	Ring buffer (n x 256 entries), retentive, maintenance-free ¹⁾	Ring buffer (n x 256 entries), retentive, maintenance-free ¹⁾	Ring buffer (n x 256 entries), retentive, maintenance-free ¹⁾
Recipes				
• Recipes	5	5	5	5
• Data records per recipe	20	20	20	20
• Entries per data record	20	20	20	20
• Recipe memory	40 KByte integrated Flash	40 KByte integrated Flash	40 KByte integrated Flash	40 KByte integrated Flash
Number of process images				
• Process images	50	50	50	50
• Variables	250 ¹⁾²⁾	500 ¹⁾²⁾	500 ¹⁾²⁾	500 ¹⁾²⁾
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• Text objects	500 text elements	500 text elements	500 text elements	500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics
• Dynamic objects	Diagrams	Diagrams	Diagrams	Diagrams, bar graphs

¹⁾ WinCC flexible 2008 SP2 and higher

²⁾ WinCC Basic V10.5 SP2 (included in STEP 7 Basic V10.5 SP2)

Technical specifications (continued)

Basic Panel	6AV6 647-0AA11-3AX0 KTP400 Basic mono PN	6AV6 647-0AB11-3AX0 KTP600 Basic mono PN	6AV6 647-0AC11-3AX0 KTP600 Basic color DP	6AV6 647-0AD11-3AX0 KTP600 Basic color PN
Functionality under WinCC flexible				
(continued)				
Lists				
• Text lists	150	150	150	150
• Graphics list	100	100	100	100
• Libraries	Yes	Yes	Yes	Yes
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	No	No	No	No
• Number of user rights	32	32	32	32
Data carrier support				
• PC card	No	No	No	No
• CF card	No	No	No	No
• Multi Media Card	No	No	No	No
Recording				
• Recording / Printing	PROFINET	-		-
Fonts				
• Keyboard fonts	US American (English)	US American (English)	US American (English)	US American (English)
Languages				
• Online languages	5	5	5	5
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages	Tahoma, WinCC flexible Standard, symbol languages	Tahoma, WinCC flexible Standard, symbol languages	Tahoma, WinCC flexible Standard, symbol languages
Transfer (upload / download)				
• Transfer of configuring	Ethernet, automatic transfer recognition	Ethernet, automatic transfer recognition	MPI / PROFIBUS DP, serial, automatic transfer recognition	Ethernet, automatic transfer recognition
Process coupling				
• Connection to controller	S7-200, S7-1200 ²⁾ , S7- 300 / 400, Modicon (Modbus TCP/IP) ¹⁾ see chapter "System interfaces"	S7-200, S7-1200 ³⁾ , S7- 300 / 400, Modicon (Modbus TCP/IP) ¹⁾ see chapter "System interfaces"	S7-200, S7- 300 / 400, Allen Bradley (DF1), Modicon (Modbus), Mitsubishi FX ¹⁾ , Omron Hostlink / Multilink ¹⁾ see chapter "System interfaces"	S7-200, S7-1200 ³⁾ , S7- 300 / 400, Modicon (Modbus TCP/IP) ¹⁾ see chapter "System interfaces"
Expandability / openness				
• Open Platform Program	No	No	No	No
Dimensions				
Front of enclosure (W x H)	140 mm x 116 mm	214 mm x 158 mm	214 mm x 158 mm	214 mm x 158 mm
Mounting cutout / device depth (W x H)	123 mm x 99 mm / 40 mm device depth	197 mm x 141 mm / 44 mm device depth	197 mm x 141 mm / 44 mm device depth	197 mm x 141 mm / 44 mm device depth
Weight				
Weight	0.32 kg	1.07 kg	1.07 kg	1.07 kg

¹⁾ WinCC flexible 2008 SP2 and higher²⁾ WinCC Basic V10.5 SP2 (included in STEP 7 Basic V10.5 SP2)³⁾ WinCC Basic V10.5 (included in STEP 7 Basic V10.5)

Operator control and process monitoring devices

Basic Panels

Basic Panels

Technical specifications (continued)

Basic Panel	6AV6 647-0AE11-3AX0 KTP1000 Basic color DP	6AV6 647-0AF11-3AX0 KTP1000 Basic color PN	6AV6 647-0AG11-3AX0 TP1500 Basic color PN
Supply voltage			
Supply voltage	24 V DC	24 V DC	24 V DC
permissible range	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC
Rated current	0.6 A	0.6 A	0.8 A
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	1 024 KByte usable memory for user data	1 024 KByte usable memory for user data	1 024 KByte usable memory for user data
Time of day			
Clock			
• Type	Software clock, not battery backed	Software clock, not battery backed	Software clock, not battery backed
Protocols			
Protocols (terminal link)			
• Sm@rtAccess	No	No	No
Configuring			
Configuring tool	WinCC flexible Compact Version 2008 or higher (to be ordered separately)	WinCC flexible Compact Version 2008 or higher or WinCC Basic V10.5 (to be ordered separately)	WinCC flexible Compact Version 2008 or higher or WinCC Basic V10.5 (to be ordered separately)
Display			
Display type	TFT, 256 colors	TFT, 256 colors	TFT, 256 colors
Size	10.4" (211.2 mm x 158.4 mm)	10.4" (211.2 mm x 158.4 mm)	15" (304.1 mm x 228.1 mm)
Resolution (W x H in pixel)	640 x 480	640 x 480	1 024 x 768
Backlighting			
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operating mode			
Control elements	Membrane keyboard	Membrane keyboard	Touch screen
Function keys, programmable	8 function keys	8 function keys	None
Connection for mouse / keyboard / barcode reader	- / - / -	- / - / -	- / - / -
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes (on-screen keyboard) / Yes (on-screen keyboard)
Ambient conditions			
Mounting position	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %
Temperature			
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection			
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20	IP20
Certifications & standards			
Certifications	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12	CE, UL, cULus, NEMA 4, NEMA 4x, NEMA 12
I/O			
I/O devices	None	None	None

¹⁾ WinCC flexible 2008 SP2 and higher

²⁾ WinCC Basic V10.5 SP2 (included in STEP 7 Basic V10.5 SP2)

Technical specifications (continued)

Basic Panel	6AV6 647-0AE11-3AX0 KTP1000 Basic color DP	6AV6 647-0AF11-3AX0 KTP1000 Basic color PN	6AV6 647-0AG11-3AX0 TP1500 Basic color PN
Type of output			
LED colors	None	None	None
Acoustics	Sound signal	Sound signal	Sound signal
Interfaces			
Interfaces	1 x RS422, 1 x RS485 (max. 12 Mbit/s)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
PC card slot	No	No	No
CF card slot	No	No	No
Multi Media Card slot	No	No	No
USB port	No	No	No
Industrial Ethernet interface	No	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Processor			
Processor	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Functionality under WinCC flexible			
Applications / options	None	None	None
Number of Visual Basic Scripts	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status / control	Not possible	Not possible	Not possible
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	200	200	200
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), non-retentive	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	5	5	5
• Data records per recipe	20	20	20
• Entries per data record	20	20	20
• Recipe memory	40 KByte integrated Flash	40 KByte integrated Flash	40 KByte integrated Flash
Number of process images			
• Process images	50	50	50
• Variables	500 ¹⁾²⁾	500 ¹⁾²⁾	500 ¹⁾²⁾
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	500 text elements	500 text elements	500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics
• Dynamic objects	Diagrams, bar graphs	Diagrams, bar graphs	Diagrams, bar graphs
Lists			
• Text lists	150	150	150
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes
Security			
• Number of user groups	50	50	50
• Passwords exportable	No	No	No
• Number of user rights	32	32	32

1) WinCC flexible 2008 SP2 and higher

2) WinCC Basic V10.5 SP2 (included in STEP 7 Basic V10.5 SP2)

Operator control and process monitoring devices

Basic Panels

Basic Panels

Technical specifications (continued)

Basic Panel	6AV6 647-0AE11-3AX0 KTP1000 Basic color DP	6AV6 647-0AF11-3AX0 KTP1000 Basic color PN	6AV6 647-0AG11-3AX0 TP1500 Basic color PN
Functionality under WinCC flexible (continued)			
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	No	No	No
Recording			
• Recording / Printing	-	-	-
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	5	5	5
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages	Tahoma, WinCC flexible Standard, symbol languages	Tahoma, WinCC flexible Standard, symbol languages
Transfer (upload / download)			
• Transfer of configuring	MPI / PROFIBUS DP, serial, automatic transfer recognition	Ethernet, automatic transfer recognition	Ethernet, automatic transfer recognition
Process coupling			
• Connection to controller	S7-200, S7-300 / 400, Allen Bradley (DF1), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus) see section on "System interfaces"	S7-200, S7-300 / 400, Modicon (Modbus) see chapter "System interfaces"	S7-200, S7-300 / 400, Modicon (Modbus) see chapter "System interfaces"
Expandability / openness			
• Open Platform Program	No	No	No
Dimensions			
Front of enclosure (W x H)	335 mm x 275 mm	335 mm x 275 mm	400 mm x 310 mm
Mounting cutout / device depth (W x H)	310 mm x 248 mm / 60 mm device depth	310 mm x 248 mm / 60 mm device depth	367 mm x 289 mm / 60 mm device depth
Weight			
Weight	2.65 kg	2.65 kg	4.2 kg

¹⁾ WinCC flexible 2008 SP2 and higher

²⁾ WinCC Basic V10.5 SP2 (included in STEP 7 Basic V10.5 SP2)

³⁾ WinCC Basic V10.5 (included in STEP 7 Basic V10.5)

Ordering data		Order No.		Order No.
SIMATIC KTP400 Basic mono PN	C	6AV6 647-0AA11-3AX0		
Starterkit for SIMATIC KTP400 Basic mono PN	G	6AV6 652-7AA01-3AA0		
SIMATIC KTP600 Basic mono PN	C	6AV6 647-0AB11-3AX0		
Starterkit for SIMATIC KTP600 Basic mono PN	G	6AV6 652-7BA01-3AA0		
SIMATIC KTP600 Basic color DP	C	6AV6 647-0AC11-3AX0		
Starterkit for SIMATIC KTP600 Basic color DP	G	6AV6 652-7CA01-3AA0		
SIMATIC KTP600 Basic color PN	C	6AV6 647-0AD11-3AX0		
Starterkit for SIMATIC KTP600 Basic color PN	G	6AV6 652-7DA01-3AA0		
SIMATIC KTP1000 Basic color DP	C	6AV6 647-0AE11-3AX0		
Starterkit for SIMATIC KTP1000 Basic color DP	G	6AV6 652-7EA01-3AA0		
SIMATIC KTP1000 Basic color PN	C	6AV6 647-0AF11-3AX0		
Starterkit for SIMATIC KTP1000 Basic color PN	G	6AV6 652-7FA01-3AA0		
SIMATIC TP1500 Basic color PN	C	6AV6 647-0AG11-3AX0		
Starter kits consist of: <ul style="list-style-type: none"> the relevant SIMATIC KTP Basic Panel SIMATIC WinCC flexible Compact engineering software SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI Ethernet cable on PN devices MPI cable on DP devices (for download and test purposes only) 				
Starter kit SIMATIC S7-1200 + KTP400 Basic	G	6AV6 651-7AA01-3AA0		
consisting of: <ul style="list-style-type: none"> SIMATIC HMI KTP400 Basic mono PN SIMATIC S7-1200 CPU 1212C AC / DC / Rly SIMATIC S7-1200 Simulator Module SIM 1274 SIMATIC STEP 7 BASIC CD SIMATIC S7-1200 HMI Manual Collection CD Ethernet CAT5 cable, 2 m 				
			Starter kit SIMATIC S7-1200 + KTP600 Basic consisting of: <ul style="list-style-type: none"> SIMATIC HMI KTP600 Basic color PN SIMATIC S7-1200 CPU 1212C AC / DC / Rly SIMATIC S7-1200 Simulator Module SIM 1274 SIMATIC STEP 7 BASIC CD SIMATIC S7-1200 HMI Manual Collection CD Ethernet CAT5 cable, 2 m 	6AV6 651-7DA01-3AA0
			Configuring <ul style="list-style-type: none"> All device versions: with SIMATIC WinCC flexible Compact PROFINET-based device versions: with WinCC Basic V10.5 (component of STEP 7 Basic V10.5) 	see HMI software chapter 4 see HMI software chapter 4
			Documentation (to be ordered separately) Manuals for Basic Panels	in the Internet under http://support.automation.siemens.com
			WinCC flexible Compact / Standard/Advanced User Manual <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
			User Manual WinCC flexible Communication <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
			SIMATIC HMI Manual Collection Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
			Accessories for supplementary ordering	see HMI software in Catalog ST 70

A: Subject to export regulations: AL: N and ECCN: EAR99S

C: Subject to export regulations: AL: N and ECCN: EAR99T

G: Subject to export regulations: AL: N and ECCN: 5D992

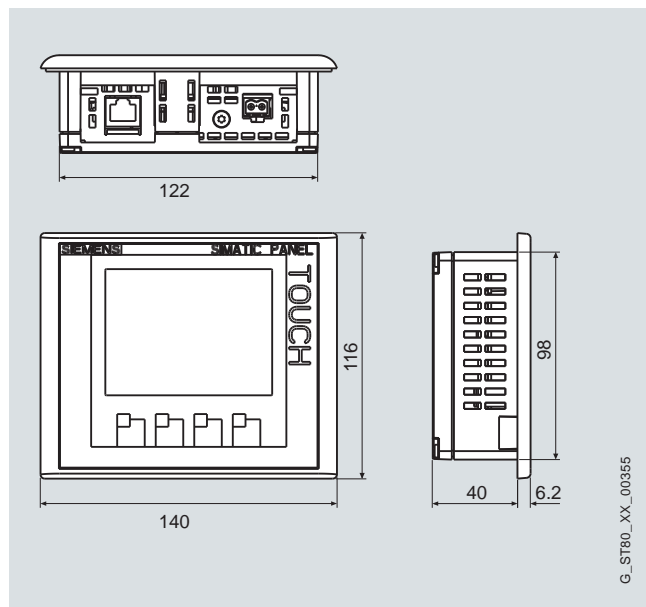
Operator control and process monitoring devices

Basic Panels

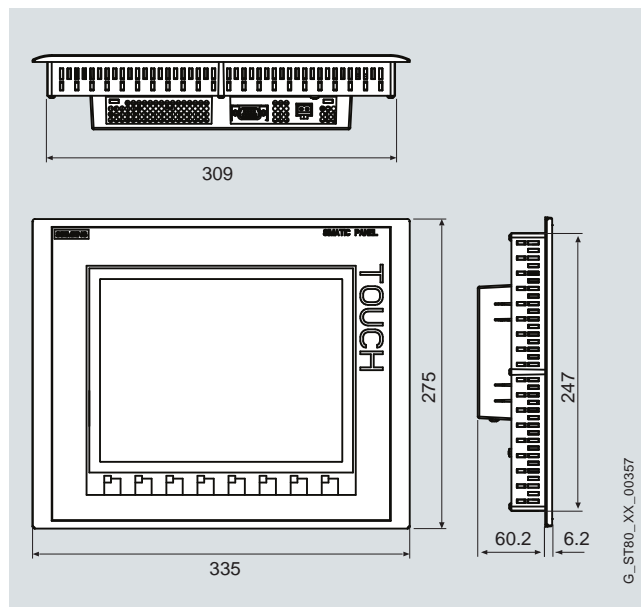
Basic Panels

Dimensions

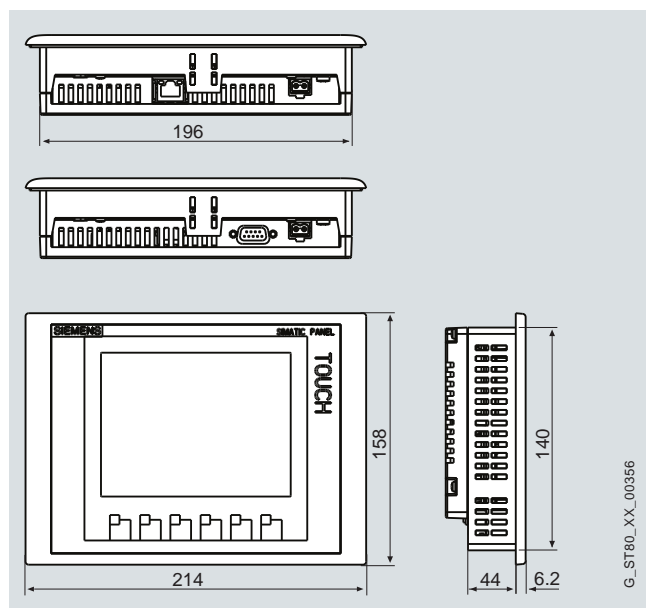
All dimensions in mm. Panel cutout see technical specifications.



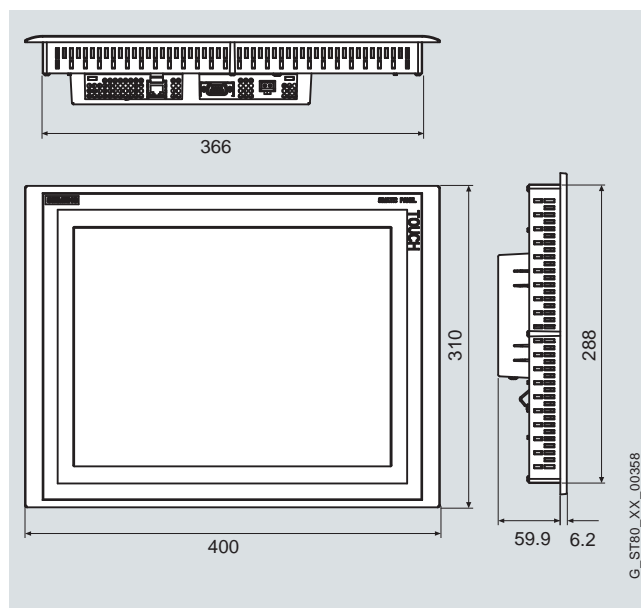
KTP400 Basic



KTP1000 Basic



KTP600 Basic



TP1500 Basic

Further information

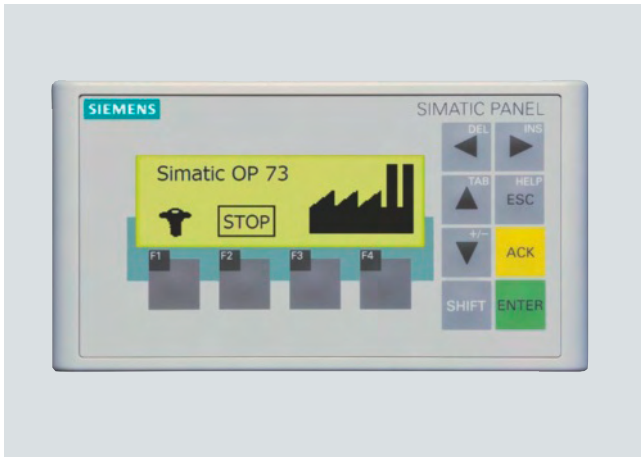
Further information is available in the Internet under:

<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



- Operator Panel for HMI functions of machines and plants
- Graphics in a new dimension: Small and smart
- Full graphics 3" LCD, monochrome
- 8 system keys, 4 freely programmable function keys
- All interfaces are on-board (e.g. MPI, PROFIBUS DP)
- SIMATIC OP 73 is the successor to the OP3 operator panel

Benefits

- High-contrast display for good readability
- Large keys for high operational safety
- Simple handling and configuring
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Service-friendly through maintenance-free design (no battery) and high service life of the backlighting
- Graphics library is available complete with ready-to-use display objects
- Can be used worldwide:
 - 32 languages can be configured (including Asiatic and Cyrillic character sets)
 - Up to 5 languages are selectable online
 - Language-dependent texts and graphics

Application

The OP 73 Operator Panels can be used wherever direct operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

Compatible with OP3

- Same installation cutout as OP3
- The OP3 configurations can be loaded from ProTool/Lite, ProTool and ProTool/Pro
- Migration manual with description of the important differences over OP3 or ProTool

Design

- 3"; LCD, 160 x 48 pixels, monochrome
- 8 system keys, 4 user-configurable function keys
- Numerical and alphanumeric input option via cursor keys
- Compact design with low mounting depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-type terminals for a 24 V DC power supply
- RS 485 interface for process connections (MPI, PROFIBUS DP up to 1.5 Mbit/s) and for configuration download

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 73

Function

- Input / output fields;
for displaying and changing process parameters
- Function keys;
for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on function keys.
- Graphics;
can be used as icons instead of text to "label" function keys or buttons. They can also be used as simple on-screen graphics. In the configuration tool, a library is available containing an extensive range of graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Predefined;
for labeling function keys, process images and process values in different font sizes
- Bars are used for the graphical display of dynamic values
- Language selection during runtime:
 - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
 - Language-dependent texts and graphics
- User administration (security):
 - Authentication with user ID and password
 - User-group-specific rights
- Message system:
 - Discrete alarms
 - Analog messages
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of message events
 - Message history
- Help texts;
for process images, messages and variables
- Arithmetic functions
- Limit value monitoring;
for reliable process control of inputs and outputs
- Indicator light;
for machine and plant status indication
- Scheduler for global function execution
- Template concept;
creation of screen templates (picture elements configured in the template appear in every screen)
- Simple maintenance and configuration thanks to:
 - Backup and restoration of configuration, operating system and firmware on a PC using ProSave
 - Configuration download using MPI / PROFIBUS DP or serially by using RS485
 - Individual contrast settings
 - No batteries are necessary

Configuring

SIMATIC WinCC flexible Compact, Standard or Advanced engineering software Version 2004 SP1 and higher plus HSP is used for configuration.

For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible.

Integration

The OP 73 can be connected to the following:

- SIMATIC S7-200 / -300-400
- SIMATIC WinAC Software/Slot PLC

Note:

Further information is available under "System interfaces"

Technical specifications

OP 73	6AV6 641-0AA11-0AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.1 A
Memory	
Type	Flash
Usable memory for user data	256 KByte usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Compact Version 2004 SP 1 or higher; HSP OP 73 (to be ordered separately)
Display	
Display type	STN, black / white
Size	3"
Resolution (WxH in pixel)	160 x 48
Backlighting	
• MTBF backlighting (at 25 °C)	about 100,000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	4 function keys
Connection for mouse / keyboard / barcode reader	- / - / -
Touch operation	
• System keys	8
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 80 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, UL, CSA, cULus, C-TICK, NEMA 4x
Interfaces	
Interfaces	1 x RS485 (max. 1.5 Mbit/s)
Operating systems	
Operating system	LINUX
Processor	
Processor	ARM

Technical specifications (continued)

OP 73	6AV6 641-0AA11-0AX0
Functionality under WinCC flexible	
Task planner / Help system	Yes / Yes
Status / control	Not possible
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	500
• Bit messages / Analog messages	Yes / Yes
• Message buffer	Ring buffer (n x 256 entries), non-retentive
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1 000 text elements
• Graphics object	Bit maps, icons, icon (full-screen)
• Dynamic objects	Bar graphs
Lists	
• Text lists / Graphics lists	150 / 0
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Recording	
• Recording / Printing	-
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuring languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / S K, TR, H
• Character sets	WinCC flexible Standard, symbol languages
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, serial, automatic transfer recognition
Process coupling	
• Connection to controller	S7-200, S7- 300 / 400, Win AC see section on "System interfaces"
Dimensions	
Front of enclosure (W x H)	154 mm x 84 mm
Mounting cutout / device depth (W x H)	138 mm x 68 mm / 28.5 mm device depth
Weight	
Weight	0.25 kg

Ordering data

Order No.

SIMATIC OP 73	C	6AV6 641-0AA11-0AX0
Operator Panel with 3" display, monochrome, including mounting accessories		
OP 73 starter package	G	6AV6 651-1AA01-0AA0
Consisting of:		
• OP 73 Operator Panel		
• SIMATIC WinCC flexible Compact engineering software		
• SIMATIC HMI Manual Collection (CD), 5 languages (En, Fr, Ger, It, Sp), comprising all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
• MPI cable (5m) (for download and test purposes only)		
• RS 232/PPI multi-master cable (for download image update and image booting)		
Configuring		see HMI software chapter 4
with SIMATIC WinCC flexible		
Documentation (to be ordered separately)		
User Manual WinCC flexible Compact / Standard / Advanced		
• German		6AV6 691-1AB01-3AA0
• English		6AV6 691-1AB01-3AB0
• French		6AV6 691-1AB01-3AC0
• Italian		6AV6 691-1AB01-3AD0
• Spanish		6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication		
• German		6AV6 691-1CA01-3AA0
• English		6AV6 691-1CA01-3AB0
• French		6AV6 691-1CA01-3AC0
• Italian		6AV6 691-1CA01-3AD0
• Spanish		6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection	A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, equipment manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI Accessories, see page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S

C: Subject to export regulations: AL: N and ECCN: EAR99T

G: Subject to export regulations: AL: N and ECCN: 5D992

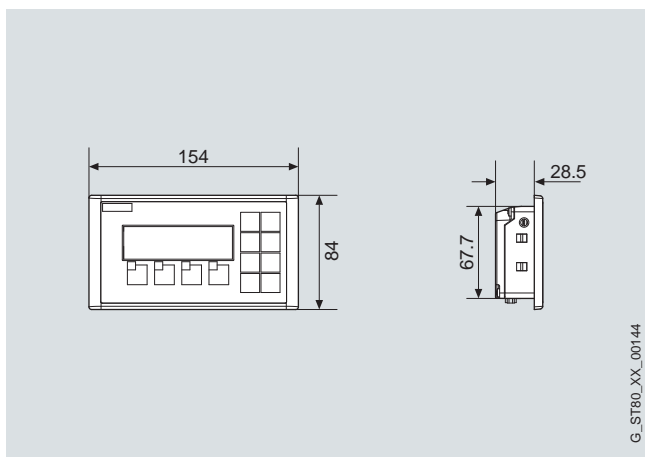
Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 73

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 73

Further information

Further information is available in the Internet under:

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



- Compact Operator Panel for operator control and monitoring of machines and plants
- Graphics in a new dimension – small and smart
- Pixel-graphics 4.5" LC display, monochrome
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- All interfaces (e.g. MPI, PROFIBUS DP) are onboard interfaces.
- Together with OP 77B, successor of the successful OP7

Benefits

- High-contrast display for good readability
- Large keys for high operational safety
- Simple handling and configuring
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction in service and startup costs thanks to maintenance-free design (no battery) and long service life of the backlighting
- Can be used worldwide:
 - 32 languages can be configured (including Asiatic and Cyrillic character sets)
 - Up to 5 languages are selectable online
 - Language-dependent texts and graphics
- Graphics library is available complete with ready-to-use display objects

Application

OP 77A Operator Panels can be used wherever machines and systems are controlled and monitored locally – in production, process and building automation alike. They are used in all types of sectors and applications.

Compatibility with OP7

- Same panel cutout as OP7
- Importing of OP7 configurations from ProTool/Lite, ProTool and ProTool/Pro
- Migration manual with description of most important changes to OP7 and ProTool

Design

- 4.5" LCD, 160 x 64 pixels, monochrome
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- Numeric and alphanumeric input facilities
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-type terminals for connection of a 24 V DC power supply
- RS 485 interface for process links (MPI, PROFIBUS DP up to 1.5 Mbit/s) and for downloading the configuration

Function

- Permanent window and template concept for creating screen templates
- Input / output fields for displaying and changing process parameters
- Function keys are used for directly actuating functions and actions. Up to 16 functions can be configured simultaneously on function keys.

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 77A

Function (continued)

- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as simple on-screen graphics. In the configuration tool, a library is available containing an extensive range of graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Predefined texts for labeling function keys, process images and process values in any character size
- Bars are used for the graphical display of dynamic values
- Display selection from the PLC supports operator prompting from the PLC
- Language selection during runtime
 - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
 - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Signaling system
 - Freely definable message classes (e.g., status / fault messages) for definition of acknowledgment response and display of message events
 - Message history
- Recipe management
- Help texts for process images, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication
- Scheduler for cyclic function execution
- Template concept; picture elements configured in the template appear in every picture
- Simple maintenance and configuration thanks to:
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Configuration download / upload using MPI / PROFIBUS DP and serially by using RS 485
 - Individual contrast settings
 - No batteries are necessary

Configuration

SIMATIC WinCC flexible Compact, Standard or Advanced configuration software Version 2004 SP1 and higher plus HSP is used for configuration.

For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible.

Integration

The OP 77A can be connected to the following:

- SIMATIC S7-200 / -300-400
- SIMATIC WinAC Software/Slot PLC

Note:

For further information see "System interfaces".

Technical specifications

OP 77A	6AV6 641-0BA11-0AX1
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.2 A
Memory	
Type	Flash / RAM
Usable memory for user data	256 KByte usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Compact Version 2004 SP 1 or higher; HSP OP 77 (to be ordered separately)
Display	
Display type	STN, black / white
Size	4.5"
Resolution (WxH in pixel)	160 x 64
Backlighting	
• MTBF backlighting (at 25 °C)	about 100 000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	8 function keys, 4 with LEDs
Connection for mouse / keyboard / barcode reader	- / - / -
Touch operation	
• System keys	23
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 80 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2 (available soon), EX-Zone 22 (available soon), C-TICK, NEMA 4x, NEMA 12
Type of output	
LED colors	Green

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 77A

Technical specifications

OP 77A	6AV6 641-0BA11-0AX1
Interfaces	
Interfaces	1 x RS422, 1 x RS485 (max. 1,5 MBit/s)
PC card slot / CF card slot	No / No
Multi Media Card slot	No
USB port	No
Industrial Ethernet interface	No
Operating systems	
Operating system	LINUX
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status / control	Not possible
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	1 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), non-retentive
Recipes	
• Recipes	5
• Data records per recipe	20
• Entries per data record	20
• Recipe memory	32 KB integrated Flash
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1 000 text elements
• Graphics object	Bit maps, icons, icon (full-screen)
• Dynamic objects	Bar graphs
Lists	
• Text lists	300
• Graphics list	0
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32

OP 77A	6AV6 641-0BA11-0AX1
Functionality under WinCC flexible (continued)	
Recording	
• Recording / Printing	-
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	WinCC flexible Standard, symbol languages
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, serial, automatic transfer recognition
Process coupling	
• Connection to controller	S7-200, S7- 300 / 400, Win AC see section on "System interfaces"
Expandability / openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	150 x 186
Mounting cutout / device depth (W x H)	135 mm x 171 mm / 38.5 mm device depth
Weight	
Weight	0.5 kg

Operator control and process monitoring devices

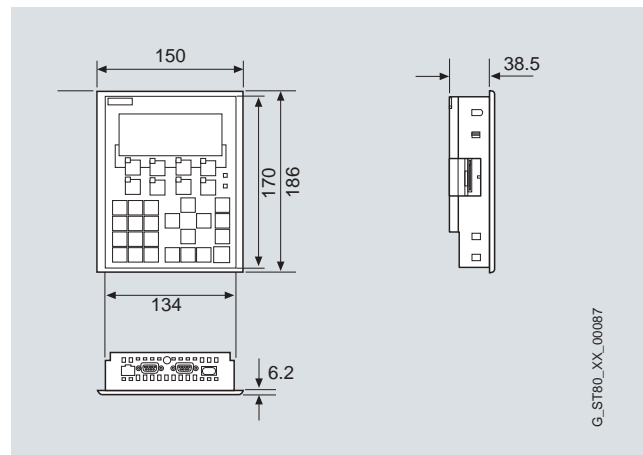
Panels – 70 series

SIMATIC OP 77A

Ordering data	Order No.
SIMATIC OP 77A C Operator Panel with 4.5" display, monochrome, including mounting accessories	6AV6 641-0BA11-0AX1
OP 77A starter package G Consisting of: <ul style="list-style-type: none"> • Operator Panel OP 77A • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (CD), 5 languages (En, Fr, Ger, It, Sp), comprising all currently available user manuals, manuals and communication manuals for SIMATIC HMI • MPI cable (5 m) (for download and test purposes only) • RS232/PPI multi-master cable (for download and image booting) 	6AV6 651-1BA01-0AA0
Configuring with SIMATIC WinCC flexible see HMI software chapter 4	
Configuration set G Consisting of: SIMATIC WinCC flexible Compact engineering software, SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, and Spanish), USB/PPI cable Multimaster, PC/PPI cable Multimaster, MPI cable (5 m)	6AV6 621-0AA01-0AA0
Documentation (to be ordered separately)	
User Manual WinCC flexible Compact / Standard / Advanced <ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication <ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection A Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
Accessories for supplementary ordering	see HMI Accessories page 2/160 onwards

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 77A

Further information

Further information is available in the Internet under:

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



- Compact Operator Panel for operator control and monitoring of machines and plants
- Graphics in a new dimension – small and smart
- Pixel-graphics 4,5" LCD, monochrome
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- All interfaces (e.g. MPI, PROFIBUS DP) are onboard interfaces.
- Non-Siemens PLCs can be connected using easy-to-use drivers
- Combined with OP 77A successor of the successful OP 7

Benefits

- High-contrast display for good legibility
- Large keys for improved operational reliability
- Easy to handle and configure
- Integral component of Totally Integrated Automation (TIA): Increased productivity, minimum engineering overhead, reduction in life-cycle costs
- Reduction of service and commissioning costs through:
 - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network)
 - Maintenance-free design (no battery) and long service life of the backlighting
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Up to 5 languages can be switched online
 - Language-dependent texts and graphics
- Graphics library available with off-the-shelf picture objects
- Standard hardware and software interfaces for increasing flexibility:
 - Optional SD Card, can be used for recipe data sets and for backup of configuration / system data
- Integrated printer port (USB)

Application

The OP 77B Operator Panels can be used wherever direct operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

Compatibility with OP7

- Same installation cutout as OP7
- The OP7 configurations can be loaded from ProTool/Lite, ProTool and ProTool/Pro

Migration manual with description of the important differences over OP7 or ProTool

Design

- 4.5" LC display, 160 x 64 pixels, monochromatic
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- Numeric and alphanumeric input options
- Compact design with low mounting depth
- Rugged plastic enclosure
- The front is resistant to various oils, greases and standard detergents
- Plug-in terminals for 24 V DC power supply
- Interfaces:
 - RS 485 / 422 interface for process connections (MPI, PROFIBUS DP up to 12 Mbit/s)
 - RS 232 interface for process connections
 - USB printer interface
- Slot for Multi Media Card
- Slot for SD Card

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 77B

Function

- Permanent window and template concept for creating screen templates
- Input / output fields for displaying and changing process parameters
- Function keys for directly actuating functions and actions. Up to 16 functions can be configured simultaneously on function keys. They can be used directly as PROFIBUS DP input peripherals.
- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as simple on-screen graphics. In the configuration tool, a library is available containing an extensive range of graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Predefined texts for labeling function keys, process images and process values in any character size
- Bars are used for the graphical display of dynamic values
- Display selection from the PLC supports operator prompting from the PLC
- Language selection during runtime
 - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
 - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Signalling system
 - Analog alarms
 - Bit messages as well as the Alarm S message frame procedure for SIMATIC S7
 - Freely definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of message events
 - Message history
- Recipe management
 - With additional data storage (on optional multi-media card)
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Help texts for process images, messages and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication
- Scheduler (timer) for cyclic function execution
- Print hard copy, messages and user-configurable reports
- Template concept
Picture elements configured in the template appear in every picture

- User-friendly maintenance and configuration thanks to:
 - Backup and restoring of the configuration, operating system, data records and firmware on the optional Multi Media Card
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Configuration download / upload via MPI / PROFIBUS DP / RS 232 / USB
 - Automatic transfer identification
 - Individual contrast settings
 - Configuration simulation directly on the configuration computer
 - No batteries are necessary

Configuration

SIMATIC WinCC flexible Compact, Standard or Advanced configuration software Version 2004 and higher is used for configuration.

For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible.

Integration

The OP 77B can be connected to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- Non-Siemens PLCs:
 - Allen Bradley
 - Mitsubishi
 - LG GLOFA GM
 - Modicon
 - GE Fanuc
 - Omron

Note:

Further information can be found under "System interfaces".

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 77B

2

Technische Daten

OP 77B	6AV6 641-0CA01-0AX1
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.2 A
Memory	
Type	Flash / RAM
Usable memory for user data	1 000 KByte usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Compact Version 2004 or higher (to be ordered separately)
Display	
Display type	STN, black / white
Size	4.5"
Resolution (WxH in pixel)	160 x 64
Backlighting	
• MTBF backlighting (at 25 °C)	about 100 000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	8 function keys, 4 with LEDs
Connection for mouse / keyboard / barcode reader	- / - / -
Touch operation	
• System keys	23
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 80 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2 (available soon), EX-Zone 22 (available soon), C-TICK, NEMA 4x, NEMA 12
I/O	
I/O devices	Printer
Type of output	
LED colors	Green

OP 77B	6AV6 641-0CA01-0AX1
Interfaces	
Interfaces	1 x RS232, 1 x RS422, 1 x RS485 (max. 12 Mbit/s)
Multi Media Card Slot	1 x Multi Media Card Slot
USB port	1 x USB
Industrial Ethernet interface	No
Operating systems	
Operating system	Windows CE
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	1 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), non-retentive
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries per data record	200
• Recipe memory	32 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	2,500 text elements
• Graphics object	Bit maps, icons, icon (full-screen)
• dynamic objects	Bar graphs
Lists	
• Text lists	300
• Graphics list	0
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes
• SD Card Slot	Yes

Operator control and process monitoring devices

Panels – 70 series

SIMATIC OP 77B

Technical specifications (continued)

OP 77B	6AV6 641-0CA01-0AX1
Functionality under WinCC flexible (continued)	
Recording	
• Recording / Printing	Alarms, report (shift report), hardcopy
• Printer driver	ESC/P2, PCL3/PCL6
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, by means of external storage medium, automatic transfer recognition
Process coupling	
• Connection to controller	S5, S7-200, S7-300 / 400, TI 505, Win AC, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	150 mm x 186 mm
Mounting cutout / device depth (W x H)	135 mm x 171 mm / 38.5 mm device depth
Weight	
Weight	0.5 kg

Ordering data

Order No.

SIMATIC OP 77B	H	6AV6 641-0CA01-0AX1
Operator Panel with 4.5" display, monochrome, including mounting accessories		
OP 77B starter package	H	6AV6 651-1CA01-0AA0
Consisting of:		
• Operator Panel OP 77B		
• SIMATIC WinCC flexible Compact engineering software		
• SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp)		
• RS 232 cable (5 m)		
• MPI cable (5 m)		
Configuring		
with SIMATIC WinCC flexible		see HMI software chapter 4
Configuration set	G	6AV6 621-0AA01-0AA0
Consisting of:		
Engineering software SIMATIC WinCC flexible Compact, SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian and Spanish), USB/PPI cable Multimaster, PC/PPI cable Multimaster, MPI cable (5 m)		
Documentation (to be ordered separately)		
User Manual WinCC flexible Compact / Standard / Advanced		
• German		6AV6 691-1AB01-3AA0
• English		6AV6 691-1AB01-3AB0
• French		6AV6 691-1AB01-3AC0
• Italian		6AV6 691-1AB01-3AD0
• Spanish		6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication		
• German		6AV6 691-1CA01-3AA0
• English		6AV6 691-1CA01-3AB0
• French		6AV6 691-1CA01-3AC0
• Italian		6AV6 691-1CA01-3AD0
• Spanish		6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection	A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, equipment manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI Accessories page 2/160 onwards

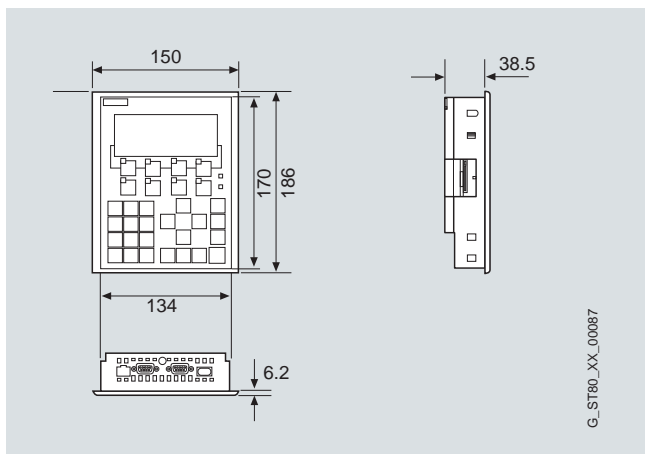
A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 77B

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-panels>

Note:

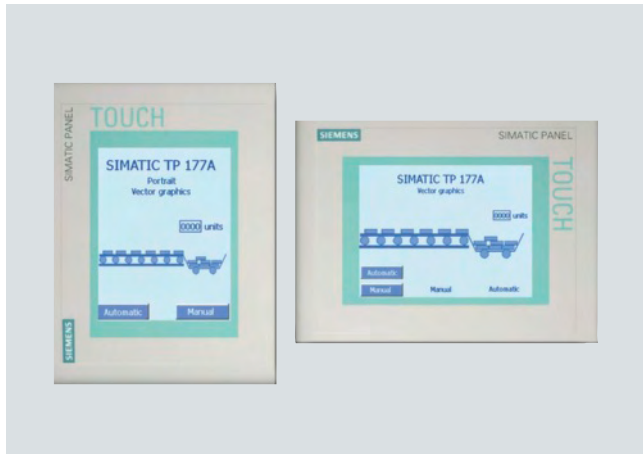
Do you need a specific modification or option for the products described here? Then look up "customer-specific products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177A

Overview



- Touch Panel for operator control and monitoring of small machines and plants
- Low-cost entry-level product in the category of touch panels with graphics capability and all the basic functions required for simple tasks
- Pixel graphics 5.7" STN touch screen (analog / resistive), Bluemode (4 levels)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- SIMATIC TP 177A is the innovative successor of Touch Panel TP 170A

Benefits

- Can also be used in a vertical position where installation space is restricted
- Integral component of Totally Integrated Automation (TIA): Increased productivity, minimum engineering overhead, reduction in life-cycle costs
- Reduction of service and commissioning costs through:
 - Maintenance-free design (no battery) and long service life of the backlit display
- Graphics library available with off-the-shelf picture objects
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - You can switch between up to 5 languages online
 - Language-dependent texts and graphics

Application

The TP 177A Touch Panels can be used wherever direct operator control and monitoring of small machines and installations is required locally – whether in production automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

With its quick response times, the TP 177A is also ideally suited to jog mode.

Compatible to TP 170A

- Installation cutout identical to TP 170A
- The TP 170A configurations can be loaded from ProTool/Lite, ProTool and ProTool/Pro
- Migration manual with descriptions of the main differences over TP 170A or ProTool

Design

- 5.7" STN, CCFL¹⁾-backlit display, Bluemode (4 shades of blue)
- Analog resistive Touch
- Numerical system keyboard for decimal, binary and hexadecimal number formats
- OnScreen alphabetic keyboard
- Compact design with low mounting depth
- Robust plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-in terminals for 24 V DC power supply
- RS 485 interface for process connections (MPI, PROFIBUS DP up to 1.5 Mbit/s) and for the configuration download

¹⁾ Cold Cathode Fluorescence Lamps

Function

- Templates concept for the creation of screen templates
- Input / output fields for displaying and changing process parameters
- Buttons are used for directly actuating functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics can be used as icons instead of text to "label" function keys or buttons. They can also be used as background displays (wallpaper). In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors, e.g. PaintShop, Designer or CorelDraw, etc.
- Vector graphics Simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Predefined for labeling function keys, process screens and process values in different font sizes
- Curve functions and bars are used for the display of dynamic values in graphics-based format
- Language selection:
 - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
 - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Signaling system
 - Discrete alarms
 - Analog alarms
 - Freely-definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of alarm events
 - Message history
- Recipe management
- Help texts for process images, messages and variables

Function (continued)

- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Indicator light for machine and plant status indication
- Scheduler for cyclic function execution
- Template concept
Creation of picture templates (display elements configured in the template appear in every image)
- Simple maintenance and configuration thanks to:
 - Backup and restoration of configuration, operating system and firmware on a PC using ProSave
 - Configuration download via MPI / PROFIBUS DP and serially via RS485
 - Automatic transfer identification
 - Individual contrast setting and calibration
 - Clean screen
 - No batteries are necessary

Configuration

SIMATIC WinCC flexible Compact, Standard or Advanced engineering software Version 2004 SP1 and higher plus HSP is used for configuration.

Projects created with ProTool can be transferred to WinCC flexible.

For more information about engineering software, see HMI software / engineering software SIMATIC WinCC flexible.

Integration

The TP 177A can be connected to:

- SIMATIC S7-200 / -300-400
- SIMATIC WinAC Software/Slot PLC

Note:

For further information see "System interfaces".

Technical specifications

TP 177A	6AV6 642-0AA11-0AX1
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Rated current	0.24 A
Memory	
Type	Flash / RAM
Usable memory for user data	512 KB usable memory for user data
Time of day	
Clock	
• Type	Software clock, not battery backed
Configuring	
Configuring tool	WinCC flexible Compact Version 2004 SP1 or higher (to be ordered separately)
Display	
Display type	STN, 4 shades of blue
Size	5.7"
Resolution (W x H in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 50 000 hours
Operating mode	
Control elements	Touchscreen
Connection for mouse / keyboard / barcode reader	- / - / -
Touch operation	
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20

Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177A

Technical specifications (continued)

TP 177A	6AV6 642-0AA11-0AX1
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2 (available soon), EX-Zone 22 (available soon), C-TICK, NEMA 4x
Type of output	
LED colors	None
Interfaces	
Interfaces	1 x RS422, 1 x RS485 (max. 1.5 Mbit/s)
PC card slot	No
CF card slot	No
Multi Media Card slot	No
USB port	No
Industrial Ethernet interface	No
Operating systems	
Operating system	LINUX
Processor	
Processor	ARM
Functionality under WinCC flexible	
Number of Visual Basic Scripts	Not possible
Task planner	Yes
Help system	Yes
Status / control	Not possible
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	1 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), non-retentive
Recipes	
• Recipes	5
• Data records per recipe	20
• Entries per data record	20
• Recipe memory	32 KB integrated Flash
Number of process images	
• Process images	250
• Variables	500
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1,000 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics
• Dynamic objects	Diagrams, bar graphs

TP 177A	6AV6 642-0AA11-0AX1
Functionality under WinCC flexible	
(continued)	
Lists	
• Text lists	300
• Graphics list	100
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• PC card	No
• CF card	No
• Multi Media Card	No
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, 1 additional character set can be loaded
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, serial, automatic transfer recognition
Process coupling	
• Connection to controller	S7-200, S7-300 / 400, Win AC see section on "System interfaces"
Expandability / openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	198 mm x 142 mm /+ 44 mm device depth
Weight	
Weight	0.75 kg

Ordering data		Order No.	Order No.
SIMATIC TP 177A	C	6AV6 642-0AA11-0AX1	<i>Documentation (to be ordered separately)</i>
Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories			
TP 177A starter kit	G	6AV6 651-2AA01-0AA0	Operating Instructions TP 177A, TP 177B, OP 177B
Consisting of:			<ul style="list-style-type: none"> German 6AV6 691-1DG01-0AA1 English 6AV6 691-1DG01-0AB1 French 6AV6 691-1DG01-0AC1 Italian 6AV6 691-1DG01-0AD1 Spanish 6AV6 691-1DG01-0AE1
<ul style="list-style-type: none"> • Touch Panel TP 177A • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI • MPI cable (5 m) (for download and test purposes only) • RS 232/PPI multi-master cable (for download and image booting) 			User Manual WinCC flexible Compact / Standard / Advanced <ul style="list-style-type: none"> German 6AV6 691-1AB01-3AA0 English 6AV6 691-1AB01-3AB0 French 6AV6 691-1AB01-3AC0 Italian 6AV6 691-1AB01-3AD0 Spanish 6AV6 691-1AB01-3AE0
<i>Configuring</i>			User Manual WinCC flexible Communication
with SIMATIC WinCC flexible		see HMI software chapter 4	<ul style="list-style-type: none"> German 6AV6 691-1CA01-3AA0 English 6AV6 691-1CA01-3AB0 French 6AV6 691-1CA01-3AC0 Italian 6AV6 691-1CA01-3AD0 Spanish 6AV6 691-1CA01-3AE0
Configuration set			SIMATIC HMI Manual Collection A
Consisting of:			Electronic documentation, on DVD
SIMATIC WinCC flexible Compact engineering software, SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, and Spanish), PC/PPI cable Multimaster, MPI cable (5 m) (for download and test purposes only)			5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI
<ul style="list-style-type: none"> • with SIMATIC WinCC flexible Compact engineering software 	G	6AV6 621-0AA01-0AA0	<i>Accessories for supplementary ordering</i>
			see HMI Accessories page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S

C: Subject to export regulations: AL: N and ECCN: EAR99T

G: Subject to export regulations: AL: N and ECCN: 5D992

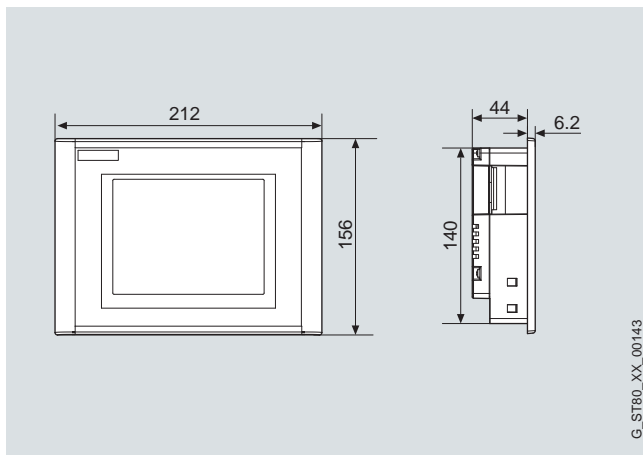
Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177A

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC TP 177A

Further information

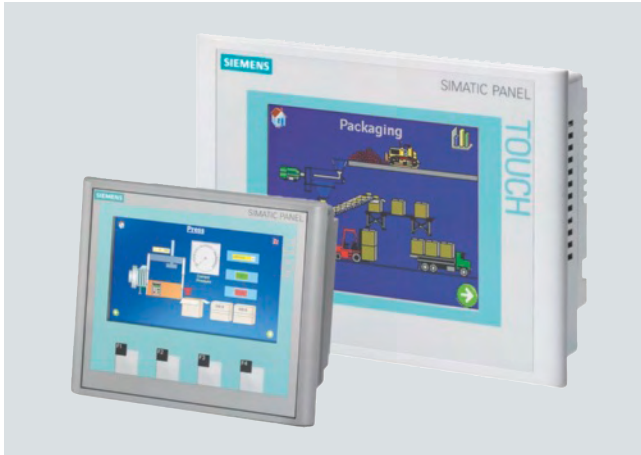
Further information is available in the Internet under:

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



- Touch Panel with comprehensive functions for operator control and monitoring of machines and plants
- Pixel-graphics display with analog touch screen
 - 4.3" TFT widescreen color display or
 - 5.7" STN blue mode / color display
- All interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- The PROFINET interface is on-board in the color version
- Drivers are also available for non-Siemens PLCs
- Content of message buffer is retained even when panel is disconnected without batteries
- The 4" version features 4 additional function keys for optimized operator control efficiency
- The SIMATIC TP 177B 6" is the innovative successor to the TP 170B Touch Panel
- The TP 177B PN / DP is also available with a stainless steel front (DIN EN 1672-2). The stainless steel front is also appropriate, for example, for the increased demands of the food and beverages industry.

Benefits

- Reduction of service and commissioning costs through:
 - Backup / restore via a process interface or optionally via a Multimedia Card / SD Card (also possible using a USB flash drive on the 4" panel)
 - Image and configuration download via all device interfaces
 - Maintenance-free structure and long service life of the backlighting
 The data in the message buffer are retained even when the panel is disconnected from the supply, without battery backup.
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Online language can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
 - External Multimedia Card / SD Card, can be used for recipe data records and for backup of configuration / system data (on the 4" panel, this is also possible using a USB flash drive)
- Integrated USB interface for connecting, for example, standard printers
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering outlay, reduces lifecycle costs
- The panel versions with stainless steel front can be optimally used in the food and beverages and pharmaceutical industries. The front panels are designed for easy cleaning and disinfecting. Liquids flow off automatically from the front panels. In addition, the stainless steel front (including gasket) provides protection against contamination by foods.

Application

Thanks to their practical functions and large user memory, TP 177B Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation.

The TP 177B is available in two display sizes: 4.3" TFT wide-screen display with 256 colors or 5.7" STN display with 256 colors or 4 blue levels. The 4" version features four additional function keys for optimized operator control efficiency. The color versions with integrated PROFINET I/O interface can be implemented with even greater flexibility. A USB interface is standard on all model types.

A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177B

Design

- Display versions
 - 4.3" TFT widescreen display with 256 colors or
 - 5.7" STN display with 256 colors or 4 blue levels
- LED or CCFL¹⁾ Backlighting with long service life
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- High performance thanks to RISC processor and 2 MB user memory, plus additional integrated recipe memory
- Data in the message buffer are retained even when panel is disconnected from the power supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- PROFINET interface is already on-board in the color versions
- Configuration of the 6" version with SIMATIC WinCC flexible 2005 Compact or higher, the 4" version as of WinCC flexible 2008 Compact
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- Multimedia Card / SD card
 - can be used for standard Multimedia Cards or standard SD Cards (for backup / restoration or for backing up recipe data sets, the configuration, and system data); the 4" version also supports USB flash drives
- The SINUMERIK, Sm@rtAccess and Sm@rtService options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

1) Cold Cathode Fluorescence Lamps

Function

- Permanent window and template concept for creating screen templates
- Input / output fields
 - for visualizing and editing process parameters
- Configurable buttons
 - with up to 16 functions are also used to directly trigger functions and actions
- Indicator light
 - for machine and plant status indication
- Predefined texts
 - for labeling function keys, process images and process values in any character size
- Help texts
 - for process images, messages and variables
- Vector graphics, graphics
 - can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background pictures. In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface (e.g., PaintShop, Designer or CorelDraw) can be used as graphics editors.
- Curve functions and bars
 - are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Arithmetic functions, limit value monitoring
 - for reliable process control with inputs and outputs
- Online language selection with 5 selectable languages, incl. Asian and Cyrillic languages,
 - this also applies to language-specific graphics

- Scheduler
 - for cyclic function execution
- Password protection (security)
 - User management – Authentication by means of user ID and password, plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system
 - Freely definable message classes (acknowledgement behavior and display can be configured) Administration of status, fault and system messages. The alarm history is retained even if the device is switched off. Analog alarms (limit value messages) in addition to discrete alarms.
- Recipe management:
 - With additional data storage (on ext. storage medium)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Multimedia Card / SD card compatibility
 - for external standard data carriers, can be used for backup / restoration or for transporting recipe data records; the 4" version also supports USB flash drives
- User-friendly maintenance and configuration thanks to:
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Option to download / upload the configuration via all device interfaces (with automatic transfer detection)
 - Individual contrast and brightness setting and calibration
 - Configuration simulation directly on the configuration computer

Configuring

Configuration is implemented using the innovative engineering tool SIMATIC WinCC flexible from version 2005 for the 6" versions or with WinCC flexible from version 2008 for the 4" version, in each case the Compact Edition or higher. SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family.

Projects generated using ProTool can be easily migrated to WinCC. When OP17 projects are implemented, the project engineer must make certain changes following conversion as a result of the innovated display technology. Support is however provided by WinCC flexible. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
 - Optionally with "SINUMERIK HMI copy license WinCC flexible CE". The SINUMERIK HMI engineering WinCC flexible package is also required for configuration. For further information see Catalog NC 60.
- Sm@rtService
 - Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rtAccess
 - Communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.

Technical specifications

SIMATIC TP 177B	6AV6 642-0BD01-3AX0 TP 177B Widescreen	6AV6 642-0BC01-1AX1 TP 177B Bluemode	6AV6 642-0BA01-1AX1 TP 177B color
Supply voltage			
Supply voltage	24 V DC	24 V DC	24 V DC
permissible range	+19.2 V ... +28.8 V DC	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC
Rated current	0.2 A	0.24 A	0.24 A
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2 048 KByte usable memory for user data	2 048 KByte usable memory for user data	2 048 KByte usable memory for user data
Time of day			
Clock			
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Protocols			
Protocols (terminal link)			
• Sm@rtAccess	Yes	Yes	Yes
Configuring			
Configuring tool	WinCC flexible Compact Version 2008 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display			
Display type	TFT, 256 colors	STN, 4 shades of blue	STN, 256 colors
Size	4.3" (95 mm x 53 mm)	5.7" (120 mm x 90 mm)	5.7" (120 mm x 90 mm)
Resolution (WxH in pixel)	480 x 272	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	Approx. 30 000 hours	about 50 000 hours	about 50 000 hours
Operating mode			
Control elements	Membrane keyboard	Touch screen	Touch screen
Function keys, programmable	4 function keys		
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes / Yes	Yes / Yes
Ambient conditions			
Mounting position	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %
Temperature			
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection			
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20	IP20
Certifications & standards			
Certifications	CE, GL, FM Class I Div. 2, cULus, C-TICK, NEMA 4, NEMA 4x, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12
I/O			
I/O devices	Printer	Printer	Printer

Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177B

Technical specifications (continued)

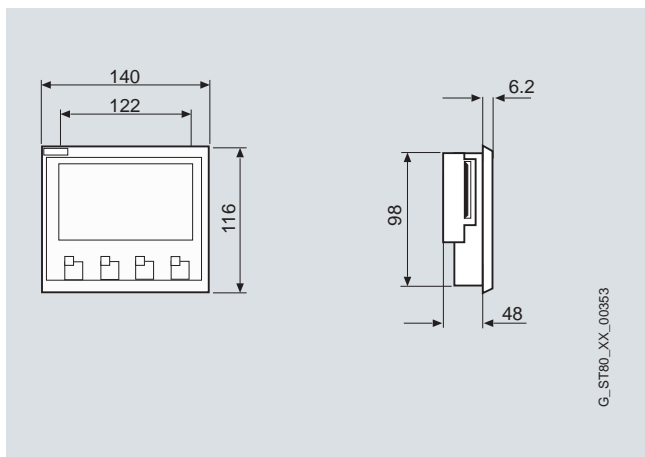
SIMATIC TP 177B	6AV6 642-0BD01-3AX0 TP 177B Widescreen	6AV6 642-0BC01-1AX1 TP 177B Bluemode	6AV6 642-0BA01-1AX1 TP 177B color
Interfaces			
Interfaces	RS232 optional, 1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	RS232 optional, 1 x RS422, 1 x RS485 (max. 12 Mbit/s)	RS232 optional, 1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)
PC card slot	No	No	No
CF card slot	No	No	No
Multi Media Card slot		1 x Multi Media Card slot	
USB port	1 x USB	1 x USB	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	No	1 x Ethernet (RJ45)
Operating systems			
Operating system	Windows CE (Version 5)	Windows CE	Windows CE
Processor			
Processor	RISC 32-bit, 266 MHz	ARM, 200 MHz	ARM, 200 MHz
Functionality under WinCC flexible			
Applications / options	Sm@rtService, Sm@rtAccess	Sm@rtService, Sm@rtAccess	Sm@rtService, Sm@rtAccess
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable	32 KByte integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	1 000	1 000	1 000
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	2 500 text elements	2 500 text elements	2 500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics
• 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
Lists			
• Text lists	300	300	300
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes

Technical specifications (continued)

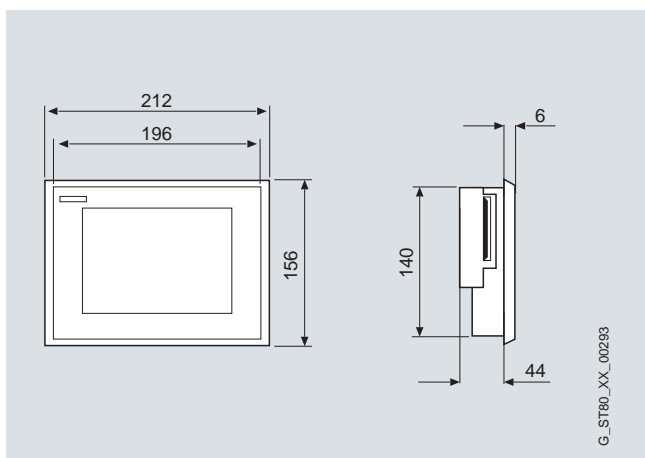
SIMATIC TP 177B	6AV6 642-0BD01-3AX0 TP 177B Widescreen	6AV6 642-0BC01-1AX1 TP 177B Bluemode	6AV6 642-0BA01-1AX1 TP 177B color
Functionality under WinCC flexible (continued)			
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes
Recording			
• Recording / Printing	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), hardcopy	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	5	5	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, 1 additional character sets can be loaded, all freely scalable	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable
Transfer (upload / download)			
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition	MPI / PROFIBUS DP, serial, USB, by means of external storage medium, automatic transfer recognition	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, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus), see chapter "System interfaces"	S5, S7-200, S7-300 / 400, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"	S5, S7-200, S7-300 / 400, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness			
• Open Platform Program	Yes	Yes	Yes
Dimensions			
Front of enclosure (W x H)	140 mm x 116 mm	212 mm x 156 mm	212 mm x 156 mm
Mounting cutout / device depth (W x H)	123 mm x 99 mm / 48 mm device depth	198 mm x 142 mm / 44 mm device depth	198 mm x 142 mm / 44 mm device depth
Weight			
Weight	0.5 kg; Max.	0.8 kg	0.8 kg

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC TP 177B, 4" version



SIMATIC TP 177B PN / DP, 6" version

Further information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-panels>

Note:

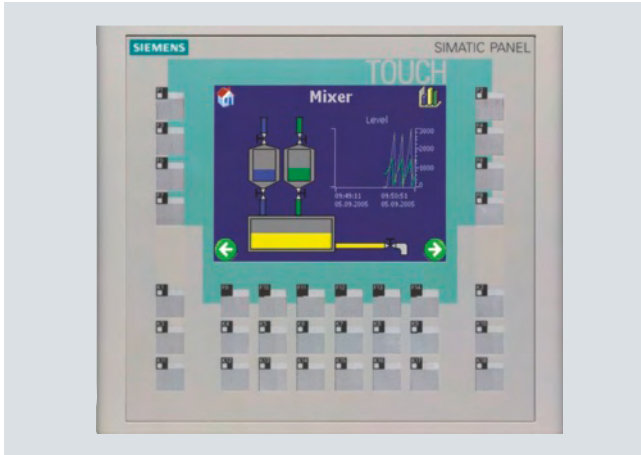
Do you need a specific modification or option for the products described here? Then refer to "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator control and process monitoring devices

Panels – 170 series

SIMATIC OP 177B

Overview



- Touch / Key Panel with comprehensive functions for operator control and monitoring of machines and plants
- Content of message buffer is retained even when panel is disconnected, without batteries
- Pixel-graphics STN blue-mode / color display with analog touch screen and additional 32 function keys
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- Ethernet is on-board in the color version
- Drivers are also available for non-Siemens PLCs
- Installation compatible with OP17

Benefits

- Reduction of service and commissioning costs through:
 - Backup / restoration via a process interface or optionally via a Multimedia Card / SD Card
 - Remote downloading of the configuration with automatic transfer recognition via all device interfaces
 - Maintenance-free design (no battery) and long service life of the backlighting
 - System keys that can be assigned to any function keys and used as an alternative to or in parallel with the on-screen keyboard
- Maintenance-free message buffer
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Online language can be selected directly on the device
- Language-dependent texts and graphics
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
 - External Multimedia Card / SD Card, used for recipe data sets and for backup of the configuration / system data
- Integrated USB interface for connecting, for example, standard printers
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD
- Integral component of Totally Integrated Automation (TIA):
 - Increases productivity, minimizes engineering outlay, reduces lifecycle costs

Application

Thanks to their practical functions and large user memory, OP 177B Operator Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation.

The OP 177B is available with a 4-color blue mode display or a 256-color STN display. The color variant complete with an integral PROFINET I/O interface can be implemented with even greater flexibility. A USB port is standard on both model types. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Design

- 256 colors with color display or 4 blue-mode monochrome STN display
- CCFL¹⁾ long-life backlighting
- Analog resistive touch screen and membrane keyboard with 32 function keys
- Numeric and alphanumeric on-screen keyboard
- High performance thanks to RISC processor and 2 MB user memory, plus additional integrated recipe memory
- The data in the message buffer are retained even when panel is disconnected from the power supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- Ethernet (PROFINET I/O-capable) with the color variant
- Integrated USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Compact and higher
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- Multimedia Card / SD Card slot
Multimedia Cards or Standard SD Cards, can be used for standard Multimedia Cards (for backing up recipe data sets, the configuration, and system data)
- Remote downloading of the configuration via all interfaces with automatic transfer recognition
- The SINUMERIK, Sm@rtAccess and Sm@rtService options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

¹⁾ Cold Cathode Fluorescent Lamps

Function

- Permanent window and template concept for creating screen templates
- Input / output fields
for visualizing and editing process parameters
- Configurable buttons
with up to 16 functions are also used to directly trigger functions and actions
- Indicator light
for machine and plant status indication
- Predefined texts
for labeling function keys, process images and process values in any character size
- Help texts
for process displays, messages, and variables
- Vector graphics, graphics
can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background images. The configuration tool contains a library with extensive graphics and diverse objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars
are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Arithmetic functions, limit value monitoring
for reliable process control with inputs and outputs

- Online language selection with 5 selectable languages, incl. Asian and Cyrillic languages
this also applies to language-specific graphics
- Scheduler
for cyclic function execution
- Password protection (security)
User management – Authentication by means of user ID and password, plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system;
Freely definable message classes (acknowledgement behavior and display can be configured), administration of status, fault and system alarms. The message history is retained even if the device is switched off.
Analog alarms (limit value messages) in addition to bit messages
- Recipe management
 - With additional data storage (on ext. storage medium)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Multimedia Card / SD Card compatibility
for external standard data carriers, can be used for backup / restoration or for transporting recipe data records
- User-friendly maintenance and configuration thanks to:
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Option to download / upload the configuration via all device interfaces (with automatic transfer detection)
 - Individual contrast setting and calibration
 - Configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible from version 2005 (Compact Edition and above). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family.

Projects generated using ProTool can be easily migrated to WinCC. When OP17 projects are implemented, the project engineer must make certain changes following conversion as a result of the innovated display technology. Support is however provided by WinCC flexible.

OP 170B projects can be loaded problem-free because all operator control actions can be performed using the on-screen keyboard. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly at the click of a mouse button when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
Optionally with "SINUMERIK HMI copy license WinCC flexible CE". For configuration, a "SINUMERIK HMI engineering package WinCC flexible" is also necessary.
For further information, see the NC 60 Catalog.
- Sm@rtService
Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rtAccess
Communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.

Operator control and process monitoring devices

Panels – 170 series

SIMATIC OP 177B

Technical specifications

	6AV6 642-0DC01-1AX1	6AV6 642-0DA01-1AX1
SIMATIC OP 177B	OP 177B Bluemode	OP 177B color
Supply voltage		
Supply voltage	24 V DC	24 V DC
permissible range	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC
Rated current	0.24 A	0.24 A
Memory		
Type	Flash / RAM	Flash / RAM
Usable memory for user data	2 048 KByte usable memory for user data	2 048 KByte usable memory for user data
Time of day		
Clock		
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Protocols		
Protocols (terminal link)		
• Sm@rtAccess	Yes	Yes
Configuring		
Configuring tool	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display		
Display type	STN, 4 shades of blue	STN, 256 colors
Size	5.7" (120 mm x 90 mm)	5.7" (120 mm x 90 mm)
Resolution (WxH in pixel)	320 x 240	320 x 240
Backlighting		
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours
Operating mode		
Control elements	Membrane keyboard	Membrane keyboard
Function keys, programmable	32 function keys, 26 with LEDs	32 function keys, 26 with LEDs
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB
Touch operation		
• Touch screen	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes / Yes	Yes / Yes
Ambient conditions		
Mounting position	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %

	6AV6 642-0DC01-1AX1	6AV6 642-0DA01-1AX1
SIMATIC OP 177B	OP 177B Bluemode	OP 177B color
Ambient conditions (continued)		
Temperature		
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection		
Front	IP65, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20
Certifications & standards		
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12
I/O		
I/O devices	Printer	Printer
Type of output		
LED colors	Green	Green
Interfaces		
Interfaces	RS232 optional, 1 x RS422, 1 x RS485 (max. 12 Mbit/s)	RS232 optional, 1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)
PC card slot	No	No
CF card slot	No	No
USB port	1 x USB	1 x USB
Multimedia Card / SD card slot		
Industrial Ethernet interface	No	1 x Ethernet (RJ45)
Operating systems		
Operating system	Windows CE	Windows CE
Processor		
Processor	ARM, 200 MHz	ARM, 200 MHz
Functionality under WinCC flexible		
Applications / options	Sm@rtService, Sm@rtAccess	Sm@rtService, Sm@rtAccess
Task planner	Yes	Yes
Help system	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7

Operator control and process monitoring devices

Panels – 170 series

SIMATIC OP 177B

Technical specifications (continued)

SIMATIC OP 177B	6AV6 642-0DC01-1AX1 OP 177B Bluemode	6AV6 642-0DA01-1AX1 OP 177B color
Functionality under WinCC flexible (continued)		
With alarm logging system (incl. buffer and acknowledgment)		
• Number of messages	2 000	2 000
• Bit messages	Yes	Yes
• Analog messages	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries per data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Number of process images		
• Process images	500	500
• Variables	1 000	1 000
• Limit values	Yes	Yes
• Multiplexing	Yes	Yes
Image elements		
• Text objects	2,500 text elements	2,500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics	Bit maps, icons, icon (full-screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists		
• Text lists	300	300
• Graphics list	100	100
• Libraries	Yes	Yes
Security		
• Number of user groups	50	50
• Passwords exportable	Yes	Yes
• Number of user rights	32	32

SIMATIC OP 177B	6AV6 642-0DC01-1AX1 OP 177B Bluemode	6AV6 642-0DA01-1AX1 OP 177B color
Functionality under WinCC flexible (continued)		
Data carrier support		
• PC card / CF card	No / No	No / No
• Multi Media Card	Yes	Yes
Recording		
• Recording / Printing	Alarms, report (shift report), hardcopy	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6
Fonts		
• Keyboard fonts	US American (English)	US American (English)
Languages		
• Online languages	5	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable
Transfer (upload / download)		
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, by means of external storage medium, automatic transfer recognition	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, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"	S5, S7-200, S7-300 / 400, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness		
• Open Platform Program	Yes	Yes
Dimensions		
Front of enclosure (W x H)	243 mm x 212 mm	243 mm x 212 mm
Mounting cutout / device depth (W x H)	229 mm x 196 mm / 45 mm device depth	229 mm x 196 mm / 45 mm device depth
Weight		
Weight	1 kg	1 kg

Operator control and process monitoring devices

Panels – 170 series

SIMATIC OP 177B

Ordering data

Order No.

Order No.

SIMATIC OP 177B

Operator panel with 5.7" STN display,

- Blue mode (4 levels)

H

6AV6 642-0DC01-1AX1

- Color (256 colors)

H

6AV6 642-0DA01-1AX1

incl. mounting accessories

OP 177B starter kit

H

6AV6 551-2HA01-1AA0

Consisting of:

- OP 177B with STN display, color
- Configuration software SIMATIC WinCC flexible Compact
- SIMATIC HMI Manual Collection (DVD), 5 languages (En, Fr, Ger, It, Sp)

Configuring software

with SIMATIC WinCC flexible Compact

see HMI software chapter 4

Configuration set

G

6AV6 621-0AA01-0AA0

Consisting of:
SIMATIC WinCC flexible Compact engineering software,
SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian and Spanish), PC/PPI cable Multimaster, MPI cable (5 m) (for download and test purposes only)

Documentation

(to be ordered separately)

Operating Instructions TP 177micro/TP 177A/TP 177B/ OP 177B (WinCC flexible)

- German
- English
- French
- Italian
- Spanish

6AV6 691-1DG01-0AA1

6AV6 691-1DG01-0AB1

6AV6 691-1DG01-0AC1

6AV6 691-1DG01-0AD1

6AV6 691-1DG01-0AE1

Documentation (to be ordered separately) (continued)

User Manual WinCC flexible Compact / Standard / Advanced

- German
- English
- French
- Italian
- Spanish

6AV6 691-1AB01-3AA0

6AV6 691-1AB01-3AB0

6AV6 691-1AB01-3AC0

6AV6 691-1AB01-3AD0

6AV6 691-1AB01-3AE0

User Manual WinCC flexible Communication

- German
- English
- French
- Italian
- Spanish

6AV6 691-1CA01-3AA0

6AV6 691-1CA01-3AB0

6AV6 691-1CA01-3AC0

6AV6 691-1CA01-3AD0

6AV6 691-1CA01-3AE0

SIMATIC HMI Manual Collection

A

6AV6 691-1SA01-0AX0

Electronic documentation,
on DVD

5 languages (English, French,
German, Italian and Spanish);
contains: all currently available
user manuals, manuals and
communication manuals for
SIMATIC HMI

Accessories for supplementary ordering

see HMI Accessories page 2/160
onwards

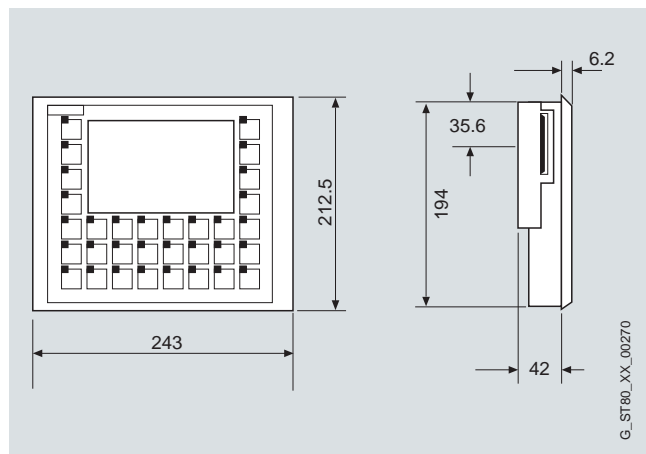
A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 177B

Further information

Further information is available in the Internet under:

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



- Touch Panel with comprehensive functions for operator control and monitoring of machines and plants
- Content of message buffer is retained even when panel is disconnected, without batteries
- Pixel graphics TFT display with 256 colors and touchscreen
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- Ethernet on-board
- Use of scripts and archives
- Drivers are also available for non-Siemens PLCs
- Installation-compatible with TP 270 6" and MP 270B 6"

Benefits

- Reduction of service and commissioning costs through:
 - Backup / restoration via a process interface or optionally via a Multi Media Card
 - Remote downloading of the configuration with automatic transfer recognition via all device interfaces
 - Maintenance-free design (no battery) and long service life of the backlighting
- Maintenance-free message buffer
- Use of scripts and archives
- Can be used all over the world:
 - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
 - 16 online languages can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
 - External multimedia card, used for recipe data sets, archive and for backup of configuration / system data
- Integrated USB interface for connecting, for example, standard printers
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering outlay, reduces lifecycle costs

Application

Thanks to their practical functions and large user memory, the TP 277 6" Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation.

The TP 277 6" offers a 256-color TFT display. The unit has an integral PROFINET I/O interface for even greater flexibility. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Operator control and process monitoring devices

Panels – 270 series

SIMATIC TP 277 6"

Design

- 256-color TFT display
- CCFL¹⁾ long-life backlighting
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- Scripts and archives
- High performance thanks to RISC processor and 4 MB user memory, plus additional integrated recipe memory
- The data in the message buffer is retained even when the panel is disconnected from the supply, without battery backup
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- Ethernet (PROFINET I/O capable)
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Standard SP1
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g., Cyrillic, traditional Chinese, simplified Chinese) and online switching between up to 16 languages
- Multi Media Card slot, can be used for standard Multi Media Cards (for backing up archives and recipe data sets, the configuration and system data)
- Remote downloading of the configuration via all interfaces with automatic transfer recognition
- Options for SINUMERIK, Sm@rtAccess and Sm@rtService can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

¹⁾ Cold Cathode Fluorescent Lamps

Function

- Permanent window and template concept for creating screen templates
- Input / output fields for visualizing and editing process parameters
- Configurable buttons with up to 16 functions are also used to directly trigger functions and actions
- Indicator light for machine and plant status indication
- Predefined texts for labeling function keys, process images and process values in any character size
- Help texts for process displays, messages, and variables
- Vector graphics, graphics can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background images. The configuration tool contains a library with extensive graphics and diverse objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Arithmetic functions, limit value monitoring for reliable process control with inputs and outputs
- Online language selection (16 selectable languages), incl. Asian and Cyrillic languages
This also applies to language-specific graphics

- Timer for cyclic function processing
- Password protection (security)
User management – Authentication by means of user ID and password plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system;
Freely definable message classes (acknowledgement behavior and display can be configured), administration of status, fault and system alarms. The message history is retained even if the device is switched off.
Analog alarms (limit value messages) in addition to bit messages
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Archiving of messages and process values (on MultiMedia card or network drives over Ethernet)
 - Various archive types: Circulating and sequence archive
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives through trend curves
 - External processing using standard tools (MS Excel and MS Access) is possible
- Recipe management
 - With additional data storage (on ext. storage medium)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Multi Media Card slot
for external standard data carrier, can be used for backup / restoration or for transporting recipe data records
- User-friendly maintenance and configuration thanks to:
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Option to download / upload the configuration via all device interfaces (with automatic transfer detection)
 - Individual contrast setting and calibration
 - Configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 SP1 (Standard version or higher). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC.

TP 270 6" projects can be transferred. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly at the click of a mouse button when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
Optionally with "SINUMERIK HMI copy license WinCC flexible CE". For configuring, a "SINUMERIK HMI engineering package WinCC flexible" is also necessary.
For further information, see Catalog NC 60.
- Sm@rtService
Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rtAccess
Communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.

Technical specifications

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Memory	
Type	Flash / RAM
Usable memory for user data	4 Mbyte usable memory for user data
Time of day	
Clock	
• Type	software clock, battery backup, synchronizable
Configuring	
Configuring tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)
Display	
Display type	TFT, 256 colors
Size	5.7"
Resolution (WxH in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 60 000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
Touch operation	
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
max. relative humidity (in %)	80 %
Temperature	
• Operation	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, UL, NEMA 4x
I/O	
I/O devices	Printer, barcode reader
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)
Multi Media Card slot	1 x Multi Media Card slot
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	RISC 32-bit

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Functionality under WinCC flexible	
Applications / options	ProAgent, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes	
• Recipes	300
• Data records per recipe	500
• Entries per data record	1000
• Recipe memory	64 KByte integrated Flash, expandable (using optional memory card)
Number of process images	
• Process images	500
• Variables	2 048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	500
• Graphics list	400
• Libraries	Yes
Archiving	
• Number of archives per project	20
• Number of measuring points per project	20
• Number of entries per archive	10 000
• Memory location	Multi Media Card
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy

Operator control and process monitoring devices

Panels – 270 series

SIMATIC TP 277 6"

Technical specifications (continued)

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Functionality under WinCC flexible (continued)	
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, USB, Ethernet, automatic transfer recognition
Process coupling	
• Connection to controller	S5, S7-200, S7- 300 / 400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK / Multilink), Modicon (Modbus), see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	197 mm x 141 mm / 45 mm device depth
Weight	
Weight	0.78 kg

Ordering data

Order No.

SIMATIC TP 277 6"	H	6AV6 643-0AA01-1AX0
Touch Panel with 5.7" TFT display, color (256 colors), incl. mounting accessories		
Configuring		
with SIMATIC WinCC flexible		see HMI software chapter 4
Configuration set	G	6AV6 622-0BA01-0AA0
Consisting of:		
• WinCC flexible Standard engineering software		
• Documentation DVD, 5 languages (En, Fr, Ger, It, Sp)		
• RS 232 cable (5 m)		
• MPI cable, 5 m (for download and test purposes only)		
Applications / Options		
When configuration with WinCC flexible		see HMI software chapter 4
• WinCC flexible /Sm@rtAccess		
• WinCC flexible /Sm@rtService		
• WinCC flexible /ProAgent		
Documentation (to be ordered separately)		
TP 277 / OP 277 Operating Instructions		
• German		6AV6 691-1DH01-0AA0
• English		6AV6 691-1DH01-0AB0
• French		6AV6 691-1DH01-0AC0
• Italian		6AV6 691-1DH01-0AD0
• Spanish		6AV6 691-1DH01-0AE0
WinCC flexible Compact / Standard / Advanced User Manual		
• German		6AV6 691-1AB01-3AA0
• English		6AV6 691-1AB01-3AB0
• French		6AV6 691-1AB01-3AC0
• Italian		6AV6 691-1AB01-3AD0
• Spanish		6AV6 691-1AB01-3AE0
WinCC flexible Communication User Manual		
• German		6AV6 691-1CA01-3AA0
• English		6AV6 691-1CA01-3AB0
• French		6AV6 691-1CA01-3AC0
• Italian		6AV6 691-1CA01-3AD0
• Spanish		6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection	A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI Accessories page 2/160 onwards

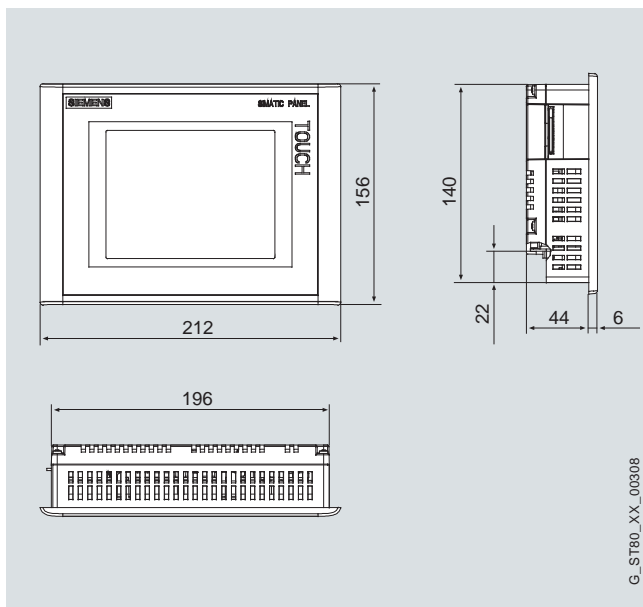
A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC TP 277 6" version

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-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 control and process monitoring devices

Panels – 270 series

SIMATIC OP 277 6"

Overview



- Operator Panel with comprehensive functions for operator control and monitoring of machines and plants
- Content of message buffer is retained even when panel is disconnected, without batteries
- Pixel graphics TFT display with 256 colors
- 36 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- Ethernet on-board
- Use of scripts and archives
- Drivers are also available for non-Siemens PLCs
- Installation-compatible with OP 270 6"

Benefits

- Reduction of service and commissioning costs through:
 - Backup / restoration via a process interface or optionally via a Multi Media Card
 - Remote downloading of the configuration with automatic transfer recognition via all device interfaces
 - Maintenance-free design (no battery) and long service life of the backlighting
- Maintenance-free message buffer
- Use of scripts and archives
- Can be used all over the world:
 - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
 - 16 online languages can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
 - External multimedia card, used for recipe data sets, archive and for backup of configuration / system data
- Integrated USB interface for connecting, for example, standard printers
- Installation-compatible with OP 270 6"
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD
- Integral component of Totally Integrated Automation (TIA):
 - Increases productivity, minimizes engineering outlay, reduces lifecycle costs

Application

Thanks to their practical functions and large user memory, the OP 277 6" Operator Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation.

The OP 277 6" offers a 256-color TFT display. The unit has an integral PROFINET I/O interface for even greater flexibility. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Design

- 256-color TFT display
- CCFL¹⁾ long-life backlighting
- Membrane keyboard with 36 system keys, 24 freely-configurable function keys (18 with LEDs)
- Rugged plastic housing with degree of protection IP65 (front)/IP20 (rear):
- High performance thanks to RISC processor and 4 MB user memory, plus additional integrated recipe memory
- The data in the message buffer is retained even when the panel is disconnected from the supply, without battery backup
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- Ethernet (PROFINET I/O capable)
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Standard SP1
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g., Cyrillic, traditional Chinese, simplified Chinese) and online switching between up to 16 languages
- Multi Media Card slot, can be used for standard Multi Media Cards (for backing up archives and recipe data sets, the configuration and system data)
- Remote downloading of the configuration via all interfaces with automatic transfer recognition
- Options for SINUMERIK, Sm@rtAccess and Sm@rtService can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

¹⁾ Cold Cathode Fluorescent Lamps

Function

- Permanent window and template concept for creating screen templates
- Input / output fields for visualizing and editing process parameters
- Function keys are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can be used directly as PROFIBUS DP input peripherals.
- Indicator light for machine and plant status indication
- Predefined texts for labeling function keys, process images and process values in any character size
- Help texts for process displays, messages, and variables
- Vector graphics, graphics can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background images. The configuration tool contains a library with extensive graphics and diverse objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Arithmetic functions, limit value monitoring for reliable process control with inputs and outputs

- Online language selection (16 selectable languages), incl. Asian and Cyrillic languages
This also applies to language-specific graphics
- Timer for cyclic function processing
- Password protection (security)
User management – Authentication by means of user ID and password plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system;
Freely definable message classes (acknowledgement behavior and display can be configured), administration of status, fault and system alarms. The message history is retained even if the device is switched off.
Analog alarms (limit value messages) in addition to bit messages
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Archiving of messages and process values (on MultiMedia card or network drives over Ethernet)
 - Various archive types: Circulating and sequence archive
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives through trend curves
 - External processing using standard tools (MS Excel and MS Access) is possible
- Recipe management
 - With additional data storage (on ext. storage medium)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools such as Excel and Access is possible
- Multi Media Card (MMC) slot for external standard data carrier, can be used for backup / restoration or for transporting recipe data records
- User-friendly maintenance and configuration thanks to:
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
 - Option to download / upload the configuration via all device interfaces (with automatic transfer detection)
 - Individual contrast setting and calibration
 - Configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 SP1 (Standard version or higher). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC. OP 270 6" projects can be transferred. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly at the click of a mouse button when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
Optionally with "SINUMERIK HMI copy license WinCC flexible CE". For configuring, a "SINUMERIK HMI engineering package WinCC flexible" is also necessary.
For further information, see Catalog NC 60.
- Sm@rtService
Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks.
- Sm@rtAccess
Communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.

Operator control and process monitoring devices

Panels – 270 series

SIMATIC OP 277 6"

Technical specifications

SIMATIC OP 277 6"	6AV6 643-0BA01-1AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Memory	
Type	Flash / RAM
Usable memory for user data	4 Mbyte usable memory for user data
Time of day	
Clock	
• Type	software clock, battery backup, synchronizable
Configuring	
Configuring tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)
Display	
Display type	TFT, 256 colors
Size	5.7"
Resolution (WxH in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 60 000 hours
Operating mode	
Control elements	Membrane keyboard
Function keys, programmable	24 function keys, 18 with LEDs
Connection for mouse / keyboard / barcode reader	USB / USB / USB
Touch operation	
• System keys	36
• Numeric / alphabetical input	Yes / Yes (only English font can be displayed, only on screen)
Ambient conditions	
Mounting position	vertical
max. relative humidity (in %)	80 %
Temperature	
• Operation	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65
Rear	IP20
Certifications & standards	
Certifications	CE, UL
I/O	
I/O devices	Printer, barcode reader
Type of output	
LED colors	Green

SIMATIC OP 277 6"	6AV6 643-0BA01-1AX0
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)
Multi Media Card slot	1 x Multi Media Card slot
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	RISC 32-bit
Functionality under WinCC flexible	
Applications / options	ProAgent, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes	
• Recipes	300
• Data records per recipe	500
• Entries per data record	1000
• Recipe memory	64 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	2 048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	10 000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	500
• Graphics list	400
• Libraries	Yes

Technical specifications (continued)

SIMATIC OP 277 6"	6AV6 643-0BA01-1AX0
Functionality under WinCC flexible (continued)	
Archiving	
• Number of archives per project	20
• Number of measuring points per project	20
• Number of entries per archive	10 000
• Memory location	Multi Media Card
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, USB, Ethernet, automatic transfer recognition
Process coupling	
• Connection to controller	S5, S7-200, S7- 300 / 400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus) see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	308 mm x 204 mm
Mounting cutout / device depth (W x H)	281 mm x 177 mm / 59 mm device depth
Weight	
Weight	1.19 kg

Ordering data

Order No.

SIMATIC OP 277 6"	H	6AV6 643-0BA01-1AX0
Operator Panel with 5.7" TFT display, color (265 colors), incl. mounting accessories		
Configuring		
with SIMATIC WinCC flexible		see HMI software chapter 4
Configuration set	G	6AV6 622-0BA01-0AA0
Consisting of:		
• WinCC flexible Standard engineering software		
• Documentation DVD, 5 languages (En, Fr, Ger, It, Sp)		
• RS 232 cable (5 m)		
Applications / Options		
When configuration with WinCC flexible		see HMI software chapter 4
• WinCC flexible /Sm@rtAccess		
• WinCC flexible /Sm@rtService		
• WinCC flexible /ProAgent		
Documentation (to be ordered separately)		
TP 277 / OP 277 Operating Instructions		
• German		6AV6 691-1DH01-0AA0
• English		6AV6 691-1DH01-0AB0
• French		6AV6 691-1DH01-0AC0
• Italian		6AV6 691-1DH01-0AD0
• Spanish		6AV6 691-1DH01-0AE0
WinCC flexible Compact / Standard / Advanced User Manual		
• German		6AV6 691-1AB01-3AA0
• English		6AV6 691-1AB01-3AB0
• French		6AV6 691-1AB01-3AC0
• Italian		6AV6 691-1AB01-3AD0
• Spanish		6AV6 691-1AB01-3AE0
WinCC flexible Communication User Manual		
• German		6AV6 691-1CA01-3AA0
• English		6AV6 691-1CA01-3AB0
• French		6AV6 691-1CA01-3AC0
• Italian		6AV6 691-1CA01-3AD0
• Spanish		6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection	A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
• 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI Accessories page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

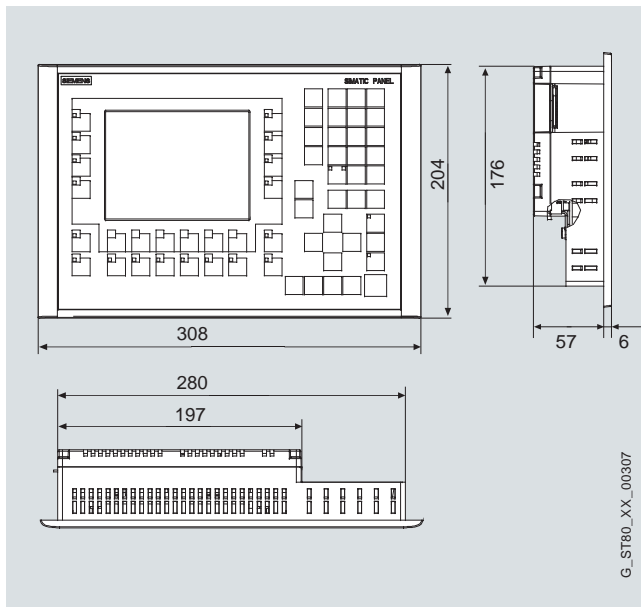
Operator control and process monitoring devices

Panels – 270 series

SIMATIC OP 277 6"

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC OP 277 6" version

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-panels>

Note:

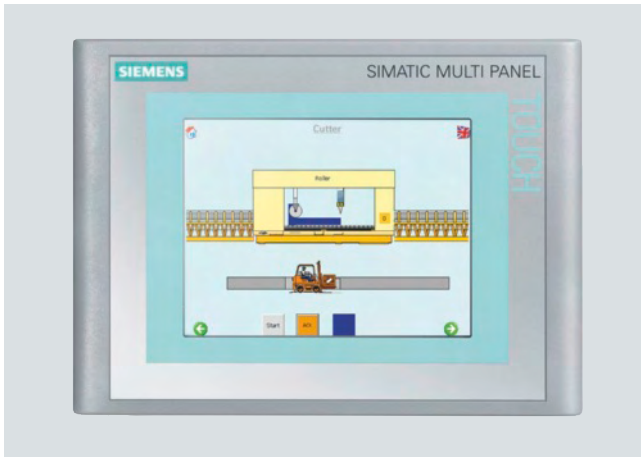
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator control and process monitoring devices

Multi Panels – 170 series

SIMATIC MP 177

Overview



- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- Message buffer contents and residual WinAC MP data are retained even when panel is disconnected, without batteries
- PLC functionality can be integrated directly into the MP 177 platform as an option
- The multi panel can be expanded with the options Sm@rtService and Sm@rtAccess
- Pixel-graphics 5.7" TFT display, color (64k colors)
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

The MP 177 6" Touch can also be delivered as a package, complete with a WinAC MP 177. WinCC flexible 2008 SP1 Compact, Standard or Advanced is required for configuring the MP 177.

Benefits

- Integral component of Totally Integrated Automation (TIA): Increased productivity, minimum engineering overhead, reduction in life-cycle costs
- Modular expansion with options such as:
 - WinAC MP 177 / software PLC (PLC programs compatible to the greatest possible extent)
 - WinCC flexible /Sm@rtAccess for communication between different SIMATIC HMI systems
 - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines / plants via the intranet / Internet
- Reduction of service and commissioning costs through:
 - Backup / Restore via Ethernet (TCP/IP), MPI, PROFIBUS DP or optionally via standard MMC / SD card or USB stick
 - HMI, PLC, system data including licenses for a standard storage medium, simplest manageability
 - Remote download / upload of the configuration and firmware (Remote = automatic transfer recognition)
 - Specific drivers for non-Siemens PLCs can be reloaded
 - Long service life of the backlighting
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
- Standard hardware and software interfaces for increasing flexibility:
 - SD / MultiMediaCard slot for memory expansions, backup / restore or additional interfaces
 - Ethernet (TCP/IP) for central data and project management Ethernet; control link possible to SIMATIC S7
 - A cross cable or normal LAN cable can be used for the point-to-point connection
 - Standard Windows storage formats (CSV) for recipes permit further processing with standard tools (e.g. Microsoft Excel)

Application

Multi panels are used in the most diverse industries and applications. Their usage can be expanded by means of options, e.g. integration of the PLC functionality by means of WinAC MP 177. The software PLC is customized for small and mid-sized applications.

The diskless and fanless design enables implementation in areas where high vibration or dust load limits the operation of a PC. Maintenance-free data management ensures backup of all important data even when disconnected.

Operator control and process monitoring devices

Multi Panels – 170 series

SIMATIC MP 177

Design

- Compact design with low mounting depth
 - Display resolution (320 x 240 pixels) with 64k colors, dimmable
- The front is resistant to various oils, greases and standard detergents
- Degree of protection IP65 / NEMA 4x / NEMA 12 (front) or IP20 (rear)
- All connections are pluggable
- Interfaces:
 - RS 485 / RS 422 interface for process connections (PPI, MPI, PROFIBUS DP up to 12 Mbit/s)
 - USB interface for memory, mouse, keyboard, printer, and downloading / uploading of the configuration
 - Ethernet (TCP/IP) for data exchange with a higher-level PC
 - Slot for SD Card / Multi Media Card

Function

- Display and modification of process parameters
- Process display:
 - Vector graphics (various line and surface objects)
 - Dynamic positioning and dynamic showing / hiding of objects
 - Pixel-graphic displays and bar displays
 - Curve graphics with paging and zoom functions for access to the history and for flexible selection of the presentation time; reading ruler for determining the current values and displaying them in a table
 - Extensive symbol libraries (SIMATIC HMI Symbol Library)
 - Screen objects: Slider, analog instrument, date and time display
 - Timer for cyclical function processing
- Multiplex function for variables
- Signaling system
 - Bit messages and analog messages (limit value messages)
 - Message history for status and fault messages
 - Message buffer stores even when panel is disconnected, without batteries
 - Message window and message line
- Message log and shift log
- Print functions (see "Recommended printers")
- Fully developed language switching for texts and graphics including Asian and Cyrillic character sets
- Recipe management
 - Internal and / or external data storage
 - Export of recipe data in standard Windows format (CSV)
- TIA Runtime Functionalities
 - A collective data management for PLC and HMI of data, bit memories, inputs / outputs, etc.
 - Collective usage of symbolic object names
 - Report system errors with Alarm S to SIMATIC S7 and SIMOTION with a mouse click
 - STATUS / FORCE-VAR in conjunction with SIMATIC S7
- Password system
 - Authentication and assignment of user rights with user ID and password

Configuring

Configuration is implemented using the engineering software SIMATIC WinCC flexible, from version 2008 SP1 Compact, Standard or Advanced.

A Getting Started video is available under :

<http://support.automation.siemens.com/WW/view/en/32010673>

free of charge.

Applications / Options

- WinAC MP software PLC for Multi Panels
 - WinAC MP 177 option for MP 177 (software PLC similar to the performance class of CPU 314)
 - The I/O devices can be connected via PROFIBUS DP
 - Note: Utilization of the software PLC requires WinCC flexible 2008 SP1, STEP7 V5.4 SP4 and an MP177 6" Touch
- Service functions with option "Sm@rtService" can be used
 - E-mail generation and web server can be used
 - Remote control of the SIMATIC HMI panel using a standard Internet Explorer
- Client / server functions with the option "Sm@rtAccess" can be used
 - Remote operation and monitoring from one SIMATIC HMI system to another SIMATIC HMI system
 - Plant-wide polling of information
 - Central archiving of process data

Integration

The MP 177 6" Touch is multi-protocol-capable and can be connected to some extent simultaneously to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC RTX/Slot PLC
- SIMATIC WinAC MP
- SIMOTION
- SINUMERIK

(optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuration; for further information see Catalog NC 60)

- PLCs from other manufacturers
 - Allen Bradley
 - Mitsubishi
 - LG GLOFA GM
 - Modicon
 - GE-Fanuc
 - Omron
 - Telemecanique Uni-Telway
- Over Ethernet (TCP/IP) to a higher-level PC, with enabled network printer

Note:

Further information is available under "System interfaces".

Operator control and process monitoring devices

Multi Panels – 170 series

SIMATIC MP 177

2

Technical specifications

SIMATIC MP 177	6AV6 642-0EA01-3AX0 6" Touch
Supply voltage	
Supply voltage	24 V DC
permissible range	+19.2 V ... +28.8 V DC
Memory	
Type	Flash / RAM
Usable memory for user data	2 MB usable memory for user data
Time of day	
Clock	
• Type	hardware clock, battery backup, synchronizable
Protocols	
Protocols (terminal link)	
• Sm@rtAccess	Yes
Configuring	
Configuring tool	WinCC flexible Compact Version 2008 SP1 or higher (to be ordered separately)
Display	
Display type	TFT, 65 536 colors
Size	5.7"
Resolution (W x H in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 50 000 hours
Operating mode	
Control elements	Touchscreen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
Touch operation	
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes (on-screen keyboard) / Yes (on-screen keyboard)
EMVC	
Emission of radio interference acc. to EN 55 011	
• Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
Ambient conditions	
Mounting position	vertical
max. relative humidity (in %)	90 %
Temperature	
• Operation	0 °C ... +50 °C
• Transport, storage	-20 °C ... +70 °C
Degree of protection	
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, FM Class I Div. 2, cULus, C-TICK, NEMA 4, NEMA 4x, NEMA 12
I/O	
I/O devices	Printer, barcode reader

SIMATIC MP 177	6AV6 642-0EA01-3AX0 6" Touch
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE (Version 5)
Processor	
Processor	RISC 32-bit, 520 MHz
Functionality under WinCC flexible	
Applications / options	Soft PLC, Sm@rtService, Sm@rtAccess
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	2 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries per data record	200
• Recipe memory	32 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	2,500 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	300
• Graphics list	100
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes

Operator control and process monitoring devices

Multi Panels – 170 series

SIMATIC MP 177

Technical specifications (continued)

SIMATIC MP 177	6AV6 642-0EA01-3AX0 6" Touch
Functionality under WinCC flexible (continued)	
Recording	
• Recording/Printing	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload / download)	
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, Ethernet, automatic transfer recognition
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), see section on "System interfaces"
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	198 mm x 142 mm / 45 mm device depth
Weight	
Weight	0.85 kg; max.

Ordering data

Order No.

SIMATIC HMI MP 177 6" Touch min. WinCC flexible 2008 necessary	H	6AV6 642-0EA01-3AX0
SIMATIC MP 177 6" Touch package	H	6AV6 652-2JC01-2AA0
Consisting of:		
• SIMATIC MP 177 6" Touch		
• SIMATIC WinAC MP ²⁾		
• Single License for WinAC MP 177 on USB flash drive ¹⁾		
• Electronic documentation for WinAC MP		
• Standard SD card 256 MB (empty)		
Starter package 613 WinAC MP	H	6AV6 652-2JD01-2AA0
Consisting of:		
• SIMATIC MP 177 6" Touch with installation accessories, mounting seal, power supply connector		
• SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation		
• SD card 256 KB (empty)		
• ET 200M incl.		
- 16 DI, 16 DO, 8 AI, 2 AO		
- FM350-2 8-channel counter		
- Front connector, bus connector, and mounting rail		
Starter package 635T WinAC MP	H	6AV6 652-2JD01-2AA1
Consisting of:		
• SIMATIC MP 177 6" Touch with installation accessories, mounting seal, power supply connector		
• SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation		
• SD card 256 KB (empty)		
• ET 200M incl.		
- 32 DI, 16 DO, 8 AI, 2 AO		
- FM350-2 8-channel counter		
- Front connector, bus connector, and mounting rail		

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Operator control and process monitoring devices

Multi Panels – 170 series

SIMATIC MP 177

Ordering data	Order No.
SIMATIC HMI MP 177 6" Touch min. WinCC flexible 2008 necessary	6AV6 642-0EA01-3AX0
Configuring with SIMATIC WinCC flexible <ul style="list-style-type: none"> WinCC flexible /Sm@rtAccess WinCC flexible /Sm@rtService WinAC MP/software PLC 	see HMI software chapter 4
Documentation (to be ordered separately) User manual MP 177 6" Touch <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1DP02-0AA0 6AV6 691-1DP02-0AB0 6AV6 691-1DP02-0AC0 6AV6 691-1DP02-0AD0 6AV6 691-1DP02-0AE0
WinCC flexible Compact / Standard / Advanced User Manual <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
Accessories for supplementary ordering	see HMI Accessories page 2/160 onwards

1) Can only be used for license handling

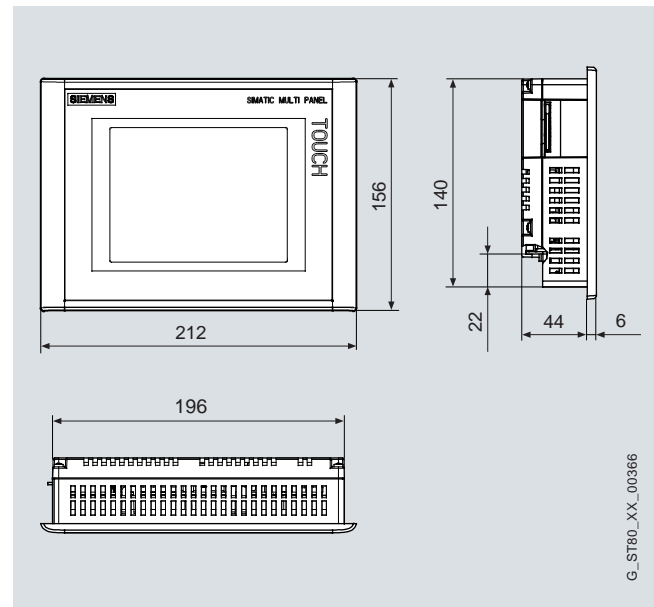
2) WinCC flexible 2008 SP1 required

A: Subject to export regulations: AL: N and ECCN: EAR99S

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC MP 177 6" Touch version

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-multi-panels>

Note:

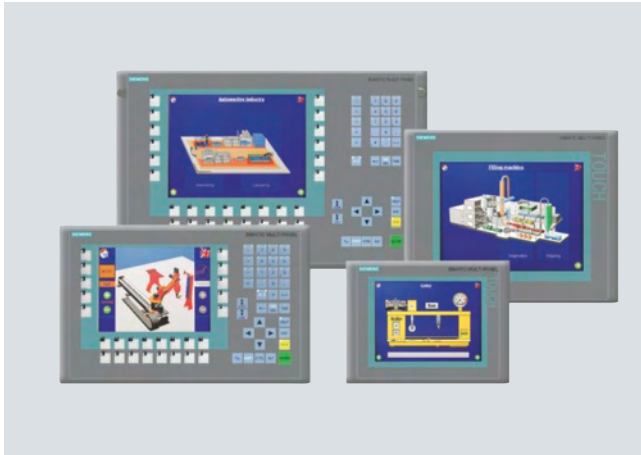
Do you require specific modification or extension to the products described here? Then have a look under "Customer-specific Products." There you will find information about additional and general industry products available for order as well as options for customized modifications and adaptations.

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

Overview



- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- Content of message buffer is retained even when panel is disconnected, without batteries
- PLC functionality can be integrated directly into the MP277 platform with Option
- Their functionality can be expanded by the installation of 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 7.5" or 10.4" TFT display, color (64k colors)
- *MP 277 8" and MP 277 10" Touch:*
Touch screen (analog / resistive)
MP 277 8" Key:
38 system keys, 26 user-configurable and freely inscribable function keys (18 with LEDs)
MP 277 10" Key:
38 system keys, 36 user-configurable and freely inscribable function keys (28 with LEDs)
- The MP 277 is also available *with a stainless steel front panel*, and therefore meets the high requirements of, e.g., the food and beverage industry.
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are onboard

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Modular expansion with options such as:
 - WinAC MP 277 /Software PLC
 - WinCC flexible /Sm@rtAccess for communication between different SIMATIC HMI systems
 - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines / plants via the intranet / Internet
 - WinCC flexible /OPC-Server for communication with applications from various manufacturers
 - MS Pocket Internet Explorer (already included in the scope of delivery)
 - Internet Explorer for Win CE is included with WinCC flexible 2007.
 - WinCC flexible /ProAgent for selective and fast process fault diagnostics in systems and machines
 - WinCC flexible /Audit for user management (tracing and user operations)
- Reduction of service and commissioning costs through:
 - Backup / restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP or optionally via SD / Multi Media Card
 - Remote download / upload of the configuration and firmware (Remote = automatic transfer recognition)
 - Specific drivers can be reloaded
 - Long service life of backlit display
- Graphics library available with off-the-shelf picture objects
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Up to 16 languages can be switched online
- Standard hardware and software interfaces for increasing flexibility:
 - SD / MultiMediaCard slot for memory expansions, backup / restore or additional interfaces
 - Ethernet (TCP/IP) for central data and project management
 - Ethernet; control link possible to SIMATIC S7
 - Standard Windows storage formats (CSV) for archives and recipes permit further processing with standard tools (e.g. Microsoft Excel)

Application

These are used in the most diverse industries and applications and can be expanded in their applications with the Multi Panel options, e.g. by displaying HTML documents via the MS Pocket Internet Explorer, or by integrating the control functionality with WinAC MP 277.

The diskless and fanless design permits their use even where dust or vibration limits the use of a PC. Short power-up times mean the Multi Panels are soon ready to use.

Design

- Compact design with low mounting depth
- The front is resistant to various oils, greases and standard detergents
- Degree of protection IP65 / NEMA 4x / NEMA 12 (front) or IP20 (rear)
- Plug-in terminals for 24 V DC power supply
- Interfaces:
 - RS 485 / RS 422 interface for process connections (PPI, MPI, PROFIBUS DP up to 12 Mbit/s)
 - USB for memory stick, mouse, keyboard, printer, barcode reader, UPS and downloading / uploading the configuration
 - Ethernet (TCP/IP) for exchanging data with a higher-level PC, connection of a network printer and downloading / uploading the configuration; a control link to SIMATIC S7 is possible
- Slot for SD / MultiMedia card

Function

- Display and modification of process parameters
- Function keys (for MP 277 8" Key and MP 277 10" Key only) for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on function keys.
- Process display:
 - VGA resolution (640 x 480 pixels) each with 64k colors for pixels
 - Vector graphics (various line and surface objects)
 - Dynamic positioning and dynamic showing / hiding of objects
 - Pixel-graphic displays, curves and bar displays
 - Presentation of up to 8 curves in a curve field; curve graphics with paging and zoom functions for access to the history and for flexible selection of the presentation time;
 - reading ruler for determining the current values and displaying them in a table
 - Extensive symbol libraries (SIMATIC HMI symbol library)
 - Screen objects: Slider, gauge, clock
 - Cyclic function processing using timers
- Multiplex function for variables
- Signaling system
 - Bit messages and analog messages (limit value messages)
 - Freely-definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of message events
 - Status and fault messages with message history
 - Non-volatile, maintenance-free message buffer
 - Message window and message line
- Archiving of messages and process values (on CF / SD / MultiMedia card / USB, etc., or network drives over Ethernet)
 - Various archive types: Circulating and sequence archive
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives through trend curves
 - External processing using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "Recommended printers")
- Language selection
 - 16 online languages, 32 configuration languages incl. Asian and Cyrillic character sets; language-dependent texts and graphics
- Recipe management
 - With additional data storage (on SD / MultiMedia card)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools (Microsoft Excel and Access) is possible

- TIA Runtime Functionalities
 - Direct keys (fast keys; with Key as keyboard image, with Touch freely customizable) used directly as PROFIBUS DP or PROFINET IO input peripherals
 - With Key variants, LEDs additional as output peripherals
 - In addition, message process Alarm S with SIMATIC S7 and SIMOTION
 - Programming device functionality STATUS/FORCE-VAR in conjunction with SIMATIC S7
 - SIMATIC barcode scanner
 - Direct activation and evaluation of a SITOP UPS via USB
- Display selection from the PLC supports operator prompting from the PLC
- Presentation of HTML documents with MS Pocket Internet Explorer / WinCC flexible 2007 or higher
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Help texts for process displays, messages, and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Permanent window; Fixed top area of screen for outputting non-screen-specific information (e.g., important process values, date and time)
- Simple maintenance and configuration thanks to:
 - Save and load (Backup / Restore -> Image) complete (incl. License Keys as of WinCC flexible 2007) panels on an SD / MultiMedia Card (optional), also possible with remote access (Sm@rtService)
 - Save and load (Backup / Restore -> Image) complete (besides License Key) panels on a PC
 - Configuration download via Ethernet / USB / MPI / PROFIBUS DP / Modem / http
 - Configuration upload over Ethernet / USB / MPI / PROFIBUS DP / modem / http, the project is compressed during the download and transferred to the SD / Multi Media Card or USB stick (optional)
 - Automatic Transfer Recognition (Remote Transfer)
 - Configuration simulation directly on the configuration computer
 - Import / export of all texts incl. messages in CSV format for translation using standard text processing programs
 - Centrally modifiable project-specific faceplates
- Template
 - Creation of screen templates:
 - Position-independent configuration of background objects

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

Function (continued)

- Password system
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Service functions (optionally with "WinCC flexible /Sm@rtService")
 - Email generation
 - Remote control of the SIMATIC HMI system based on Internet Explorer
 - Web server with status HTML pages and control functions
- Client / server functions (optionally with "WinCC flexible /Sm@rtAccess")
 - Remote operation and monitoring from other SIMATIC HMI systems
 - Plant-wide requests for information and archiving of process data

Configuring

Configuration is carried out with the SIMATIC WinCC flexible SP1 Standard or Advanced engineering software (see SIMATIC WinCC flexible HMI software / engineering software).

Projects (of earlier panels) created with ProTool can be transferred to WinCC flexible.

Applications / Options

- WinAC MP Software PLC for Multi Panels
WinAC MP277 option for MP277 (software PLC similar to the performance class of CPU 315)
The I/O devices can be connected via PROFIBUS DP
Note: Utilization of the Software PLC requires WinCC flexible 2007 or higher and MP 277 hardware with integrated retentive memory
- WinCC flexible /Sm@rtAccess;
Remote operation and monitoring as well as communication between different SIMATIC HMI systems
(see HMI software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
Remote maintenance and servicing of machines / plants via the intranet / Internet (see HMI software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /OPC server
Communication with applications (e.g. MES, ERP, or applications in the office sector) from various manufacturers (see HMI software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /Audit
- WinCC flexible /ProAgent
- SINUMERIK

Integration

The MP 277 can in certain cases be connected simultaneously (multiprotocol-capable) to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC WinAC MP
- SIMATIC S5
- SIMATIC 505
- http communication to other SIMATIC HMI systems (optionally with "WinCC flexible /Sm@rtAccess" option)
- SIMOTION
- SINUMERIK (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring; For further details, see Catalog NC 60)
- OPC XML Server (optionally with "WinCC flexible /OPC-Server")
- Third-party controllers
 - Allen Bradley
 - Mitsubishi
 - LG GLOFA GM
 - Modicon
 - GE-Fanuc
 - Omron
 - Telemecanique Uni-Telway
- Via Ethernet (TCP/IP) to a higher-level PC, with enabled network printer

Note:

Further information can be found under "System interfaces".

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

2

Technical specifications

SIMATIC MP 277	6AV6 643-0CB01-1AX1 8" Touch	6AV6 643-0CD01-1AX1 10" Touch	6AV6 643-0DB01-1AX1 8" Key	6AV6 643-0DD01-1AX1 10" Key
Supply voltage				
Supply voltage	24 V DC	24 V DC	24 V DC	24 V DC
permissible range	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data	6 Mbyte usable memory for user data
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
Configuring				
Configuring tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)
Display				
Display type	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors
Size	7.5"	10.4"	7.5"	10.4"
Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting				
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operating mode				
Control elements	Touch screen	Touch screen	Membrane keyboard	Membrane keyboard
Function keys, programmable			26 function keys, 18 with LEDs	36 function keys, 28 with LEDs
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch operation				
• Touch screen	analog, resistive	analog, resistive		
• System keys			36	36
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Ambient conditions				
Mounting position	vertical	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %	90 %
Temperature				
• Operation	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection				
Front	IP65, NEMA 4x, (when installed)	IP65, NEMA 4x, (when installed)	IP65, NEMA 4x, (when installed)	IP65, NEMA 4x, (when installed)
Rear	IP20	IP20	IP20	IP20
Certifications & standards				
Certifications	CE, FM Class I Div. 2, UL, cULus, EX-Zone 22, NEMA 4x (Enclosure Type 4X, Type 12)	CE, FM Class I Div. 2, UL, cULus, EX-Zone 22, NEMA 4x (Enclosure Type 4X, Type 12)	CE, UL, cULus, NEMA 4x (Enclosure Type 4X, Type 12)	CE, FM Class I Div. 2, UL, cULus, EX-Zone 22, NEMA 4x (Enclosure Type 4X, Type 12)
I/O				
I/O devices	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Type of output				
LED colors			Green	Green

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

Technical specifications (continued)

SIMATIC MP 277	6AV6 643-0CB01-1AX1 8" color Touch	6AV6 643-0CD01-1AX1 10" color Touch	6AV6 643-0DB01-1AX1 8" color Key	6AV6 643-0DD01-1AX1 10" color Key
Interfaces				
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB port	2 x USB	2 x USB	2 x USB	2 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Processor				
Processor	ARM	ARM	ARM	ARM
Functionality under WinCC flexible				
Applications / options	ProAgent, Internet Explorer, Soft-PLC, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50	50	50	50
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes				
• Recipes	300	300	300	300
• Data records per recipe	500	500	500	500
• Entries per data record	1000	1000	1000	1000
• Recipe memory	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable	64 KByte integrated Flash, expandable
Number of process images				
• Process images	500	500	500	500
• Variables	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• 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
• 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				
• Text lists	500	500	500	500
• Graphics list	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

Technical specifications (continued)

SIMATIC MP 277	6AV6 643-0CB01-1AX1 8" color Touch	6AV6 643-0CD01-1AX1 10" color Touch	6AV6 643-0DB01-1AX1 8" color Key	6AV6 643-0DD01-1AX1 10" color Key
Functionality under WinCC flexible (continued)				
Archiving				
• Number of archives per project	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
• Memory location	SD and Multi Media Card	SD and Multi Media Card	SD and Multi Media Card	SD and Multi Media Card
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32
Data carrier support				
• Multi Media Card	Yes	Yes	Yes	Yes
Recording				
• 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
Fonts				
• Keyboard fonts	US American (English)	US American (English)	US American (English)	US American (English)
Languages				
• Online languages	16	16	16	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
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, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus) see section on "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) see section on "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) see section on "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) see section on "System interfaces"
Expandability / openness				
• Open Platform Program	Yes	Yes	Yes	Yes
Dimensions				
Front of enclosure (W x H)	240 mm x 180 mm	325 mm x 263 mm	352 mm x 221 mm	483 mm x 310 mm
Mounting cutout / device depth (W x H)	226 mm x 166 mm / 60 mm device depth	310 mm x 248 mm / 61 mm device depth	338 mm x 206 mm / 61 mm device depth	434 mm x 291 mm / 60 mm device depth
Weight				
Weight	1.61 kg	2.65 kg	2.25 kg	4.95 kg

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

2

Ordering data

Order No.

Order No.

SIMATIC MP 277

Multi Panel (including installation accessories) with

- 8" color TFT display, Touch H **6AV6 643-0CB01-1AX1**
- 10" color TFT display, Touch H **6AV6 643-0CD01-1AX1**
- 8" color TFT display, keyboard H **6AV6 643-0DB01-1AX1**
- 10" color TFT display, keyboard H **6AV6 643-0DD01-1AX1**

SIMATIC MP 277 8" Touch Starter Package

Consisting of:

- SIMATIC MP 277 8" Touch
- SIMATIC WinCC flexible 2007
- SIMATIC HMI Manual Collection 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI
- MPI cable, 5 m (for download and test purposes only)
- PC/PPI cable (RS 232)

SIMATIC MP 277 10" Touch Starter Package

Consisting of:

- SIMATIC MP 277 10" Touch
- SIMATIC WinCC flexible 2007
- SIMATIC HMI Manual Collection 5 languages (En, Fr, Ger, It, Sp), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI
- MPI cable, 5 m (for download and test purposes only)
- PC/PPI cable (RS 232)

Promotion package

Consisting of:

- SIMATIC MP 277 10" Touch
- SIMATIC THIN CLIENT 10" Touch
- SIMATIC WinCC flexible 2008
- SIMATIC HMI Manual Collection
- Ethernet cable, 2 m
- MPI cable, 5 m (for download and test purposes only)
- Sm@rtAccess (Single License)

Starter package 635K WinAC MP

Consisting of:

- SIMATIC MP 277 8" Key with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. single license on USB stick and electronic documentation
- SD card 256 KB (empty)
- ET200M incl.
 - 32 DI, 16 DO, 8 AI, 2 AO
 - FM350-2 8-channel counter
 - Front connector, bus connector, and mounting rail

Starter package 636K WinAC MP

Consisting of:

- SIMATIC MP 277 8" Key with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. single license on USB stick and electronic documentation
- SD card 256 KB (empty)
- ET200M incl.
 - 32 DI, 16 DO, 8 AI, 2 AO
 - Front connector, bus connector, and mounting rail

Starter package 636T WinAC MP

Consisting of:

- SIMATIC MP 277 10" Touch with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. single license on USB stick and electronic documentation
- SD card 256 KB (empty)
- ET200M incl.
 - 32 DI, 16 DO, 8 AI, 2 AO
 - Front connector, bus connector, and mounting rail

H **6AV6 652-3LD01-1AA1**H **6AV6 652-3LD01-1AA0**H **6AV6 652-3PD01-1AA0**

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Operator control and process monitoring devices

Multi Panels – 270 series

SIMATIC MP 277

Ordering data		Order No.	Order No.	
Complete pre-assembled packages SIMATIC MP 277 with WinAC MP 2007			Documentation (to be ordered separately)	
Package MP 277 8" Touch	H	6AV6 652-3MC01-1AA0	MP 277 Operating Instructions	
<ul style="list-style-type: none"> • MP 277 8" Touch • Electronic documentation • Single license for MP 277 on USB flash drive¹⁾ • Standard SD Card (empty) 			<ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 691-1DJ01-0AA0 6AV6 691-1DJ01-0AB0 6AV6 691-1DJ01-0AC0 6AV6 691-1DJ01-0AD0 6AV6 691-1DJ01-0AE0
Package MP 277 8" Key	H	6AV6 652-3LC01-1AA0	WinCC flexible Compact / Standard / Advanced User Manual	
<ul style="list-style-type: none"> • MP 277 8" Key • Electronic documentation • Single license for MP 277 on USB flash drive¹⁾ • Standard SD Card (empty) 			<ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
Package MP 277 10" Touch	H	6AV6 652-3PC01-1AA0	User Manual WinCC flexible Communication	
<ul style="list-style-type: none"> • MP 277 10" Touch • Electronic documentation • Single license for MP 277 on USB flash drive¹⁾ • Standard SD Card (empty) 			<ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
Package MP 277 10" Key	H	6AV6 652-3NC01-1AA0	SIMATIC HMI Manual Collection	A
<ul style="list-style-type: none"> • MP 277 10" Key • Electronic documentation • Single license for MP 277 on USB flash drive¹⁾ • Standard SD Card (empty) 			Electronic documentation, on DVD	6AV6 691-1SA01-0AX0
Configuring			5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	
with SIMATIC WinCC flexible		see HMI software chapter 4		
Configuration set	G	6AV6 622-0BA01-0AA0	Accessories for supplementary ordering	see HMI Accessories page 2/160 onwards
Consisting of:				
<ul style="list-style-type: none"> • WinCC flexible Standard engineering software • Documentation DVD, 5 languages (En, Fr, Ger, It, Sp) • RS 232 cable (5 m) • MPI cable, 5 m 				
Applications / Options				
For configuration with WinCC flexible		see HMI software chapter 4		
<ul style="list-style-type: none"> • WinCC flexible /Sm@rtAccess • WinCC flexible /Sm@rtService • WinCC flexible /OPC server • WinCC flexible /ProAgent • WinCC flexible /Audit • WinAC MP 2007/Software PLC 				

¹⁾ Can only be used for license handling

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

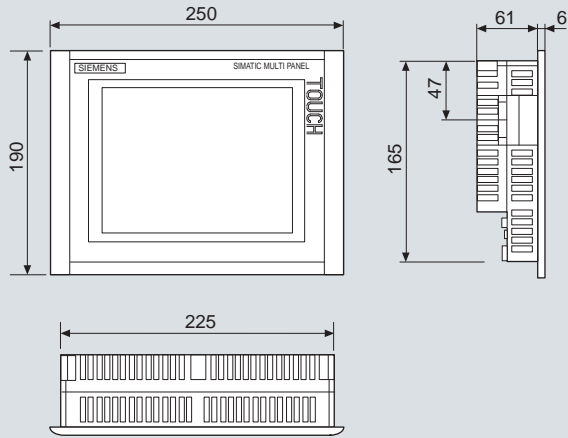
Operator control and process monitoring devices

Multi Panels – 270 series

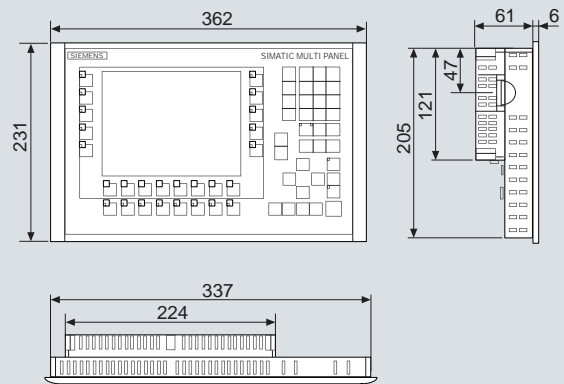
SIMATIC MP 277

Dimensions

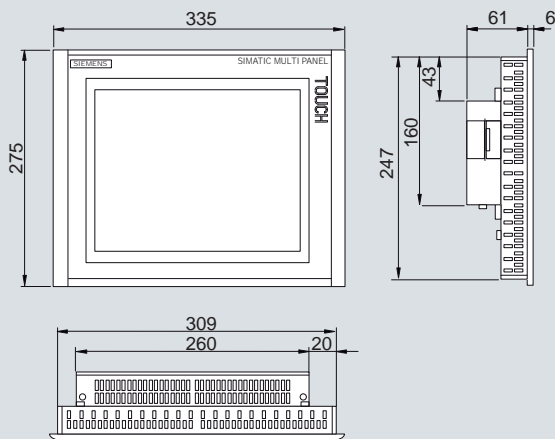
All specifications in mm. Panel cutout see technical specifications.



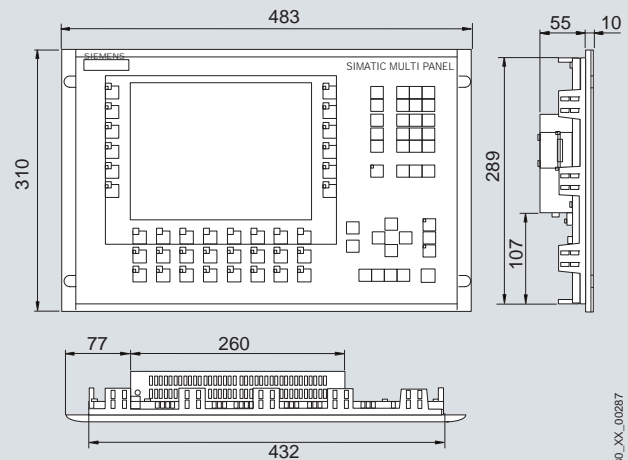
SIMATIC MP 277 8" Touch version



SIMATIC MP 277 8" Key



SIMATIC MP 277 10" Touch version



SIMATIC MP 277 10" Key

Further information

Further information is available in the Internet under:

<http://www.siemens.com/simatic-multi-panels>

Note:

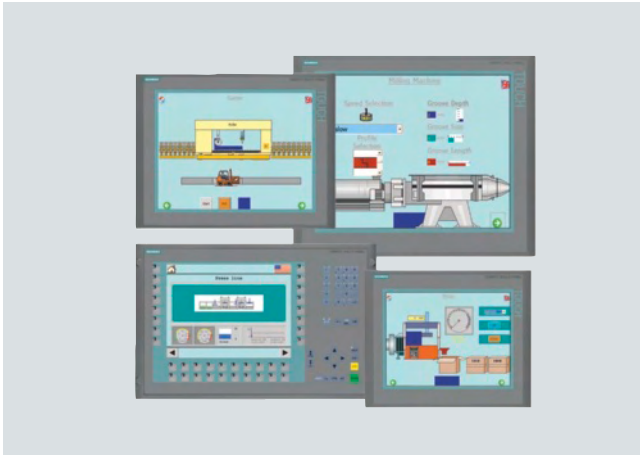
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Overview



- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- Their functionality can be expanded by installing additional Windows CE applications (Multi Panel and Panel options)
- SIMATIC MP 377 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 with Option
- Pixel-graphics 12.1" or 15" or 19" TFT display, color (64k colors)
- *MP 377 12" Touch, MP 377 15" Touch and MP 377 19" Touch:* Touch screen (analog / resistive)
MP 377 12" Key: 38 system keys, 36 user-configurable and freely inscribable function keys (36 with LEDs)
- *SIMATIC MP 377 PRO 15" Touch:* with a rugged and very compact aluminum enclosure which is completely IP65 protected and therefore suitable for harsh ambient conditions.
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board
- *SIMATIC MP 377 INOX 15" Touch (stainless steel front):* The MP 377 15" Touch is also available with a stainless steel front (DIN EN 1672-2) and as Fully Enclosed HMI (IP65). These versions expand the application area of the Multi Panel 377 for special applications, ambient conditions, and special sectors (e.g. food and beverages industries).

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Modular expansion possible with options such as
 - Software PLC SIMATIC WinAC MP
 - WinCC flexible /Sm@rtAccess for communication between different SIMATIC HMI systems
 - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines / plants via the intranet / Internet
 - WinCC flexible /OPC-Server for communication with applications from various manufacturers
 - MS Pocket Internet Explorer 6.0 (already included in the scope of delivery)
 - MS Multi Media Player (already included in the scope of delivery)
 - MS Viewer for Word, Excel and PDF files (already included in scope of delivery)
- Reduction of service and commissioning costs through:
 - Backup / restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP or optionally via CF / SD / Multi Media Card
 - Remote download / upload for configuration and firmware
 - Specific drivers can be reloaded
 - Long service life of backlit display
- Graphics library with off-the-shelf picture objects
- Can be used worldwide:
 - 32 languages can be configured (incl. Asian and Cyrillic character sets)
 - Up to 16 languages can be switched online
- Standard hardware and software interfaces for increasing flexibility:
 - CF Card Slot and SD / Multi Media Card Slot for memory expansions, Backup / Restore
 - Ethernet (TCP/IP) for central data and project management and control link possible to SIMATIC S7
 - Standard Windows storage formats (CSV) for archives and recipes permit further processing with standard tools (e.g. Microsoft Excel)

Application

The Multi Panels SIMATIC MP 377 can be used wherever machines and systems are operated and monitored directly on-site – whether in production, process or building automation. These are used in the most diverse industries and applications and can be expanded in their applications with the Multi Panel options, e.g. by displaying HTML documents via the MS Pocket Internet Explorer, or by integrating the control functionality with WinAC MP 377.

Windows CE meets the basic prerequisites for application in rough industrial environments. The diskless and fanless design permits their use even where dust or vibration limits the operation of a PC. Short power-up times mean the Multi Panels are sooner ready to use.

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Design

- Compact design with low mounting depth
- The front is resistant to various oils, greases and standard detergents
- Degree of protection IP65 / NEMA 4x / NEMA 12 (front) or IP20 (rear)
- Plug-in terminals for 24 V DC power supply
- Interfaces:
 - RS 485 / RS 422 interface for process connections (MPI, PROFIBUS DP up to 12 Mbit/s)
 - USB for mouse, keyboard, printer, barcode reader, and downloading / uploading the configuration
 - Ethernet (TCP/IP) for exchanging data with a higher-level PC, connection of a network printer and downloading / uploading the configuration; a control link to SIMATIC S7 is possible
- Slot for Compact Flash Card (CF Card)
- Slot for SD / Multi Media Card
- Retentive memory for WinAC MP 377 data (data, timers, counters and bit memories)

Function

- Display and modification of process parameters
- Function keys (for MP 377 12" Keys) for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can be used directly as PROFIBUS DP input peripherals.
- Process display:
 - Vector graphics (various line and surface objects)
 - Dynamic positioning and dynamic showing / hiding of objects
 - Pixel-graphic displays, curves and bar displays
 - Presentation of up to 8 curves in a curve field; curve graphics with paging and zoom functions for access to the history and for flexible selection of the presentation time;
 - reading ruler for determining the current values and displaying them in a table
 - Extensive symbol libraries (SIMATIC HMI symbol library)
 - Screen objects: Slider, gauge, clock
 - Cyclic function processing using timers
- Multiplex function for variables
- Signaling system
 - Bit messages and analog messages (limit value messages) as well as the ALARM_S message frame procedure for SIMATIC S7 and SIMOTION
 - Freely-definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of message events
 - Status and fault messages with message history
 - Pre-configured message image, message window and message line
- Archiving of messages and process values (on CF / SD / MultiMedia card / USB, etc., or network drives over Ethernet)
 - Various archive types: Circulating and sequence archive
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives through trend curves
 - External processing using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "Recommended printers")

- Language switching
16 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Recipe management
 - With additional data storage (on CF / SD / Multi Media card / USB, etc.)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools (Microsoft Excel and Access) is possible
- Programming device functionality STATUS/FORCE-VAR in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC supports operator prompting from the PLC
- Presentation of HTML documents with MS Pocket Internet Explorer
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Help texts for process displays, messages, and variables
- Arithmetic functions
- Limit value monitoring for reliable process control of inputs and outputs
- Permanent window;
 - Fixed area of screen for outputting non-screen-specific information (e.g. important process values, date and time)
 - Permanent window expanded by template concept for creating screen templates
- Simple maintenance and configuration thanks to:
 - Saving and loading (Backup / Restore) configurations, operating system, data records and firmware on an optional memory card (CF / SD / Multi Media Card) or via Ethernet
 - Backup and restoration of the configuration, operating system, data records and firmware on a PC
 - Configuration download / upload via Ethernet / USB/MPI / PROFIBUS DP / modem and CF or SD / Multi Media Card
 - Automatic transfer identification
 - Configuration simulation directly on the configuration computer
- Import / export of all texts incl. messages in CSV format for translation using standard text processing programs
- Centrally modifiable project-specific faceplates
- User administration (security)
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Visual Basic Runtime object model
- Service functions (optionally with "WinCC flexible /Sm@rtService")
 - Email generation
 - Remote control of the SIMATIC HMI system based on Internet Explorer
 - Web server with status HTML pages and control functions
- Client / server functions (optionally with "WinCC flexible /Sm@rtAccess")
 - Remote operation and monitoring from other SIMATIC HMI systems
 - Plant-wide requests for information and archiving of process data

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Integration

The MP 377 can be connected to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- Ethernet communication with SIMATIC S7
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens controllers:
 - Allen Bradley
 - Mitsubishi
 - Telemecanique
 - LG GLOFA GM
 - Modicon
 - GE-Fanuc
 - Omron
- Over Ethernet (TCP/IP) to a higher-level PC, network printer
- Multi-protocol capability
- OPC XML server (optional with "WinCC flexible /OPC server")
- http communication with other SIMATIC HMI systems (optional with "WinCC flexible /Sm@rtAccess")
- SINUMERIK
 - (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuration)

Note:

For further information, see "System interfaces".

Configuring

The configuration is done with the SIMATIC WinCC flexible Standard or Advanced engineering software (see HMI Software / SIMATIC WinCC flexible engineering software).

Projects created with ProTool can be transferred to WinCC flexible.

Applications / Options

- WinCC flexible /ProAgent
Targeted and fast process error diagnostics in systems and machines for SIMATIC S7 and SIMATIC HMI (see HMI Software / process diagnostics software SIMATIC ProAgent)
- WinAC MP Software PLC for Multi Panels
- The I/O can be connected using PROFIBUS DP.
- WinCC flexible /Sm@rtAccess;
Remote operation and monitoring as well as communication between different SIMATIC HMI systems (see HMI Software / runtime software SIMATIC WinCC flexible /WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
Remote maintenance and servicing of machines / plants via the intranet / Internet (see HMI Software / runtime software SIMATIC WinCC flexible /WinCC flexible RT options)
- WinCC flexible /OPC server
Communication with applications (e.g. MES, ERP, or applications in the Office sector) from various manufacturers (see HMI Software / runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- MS Word Viewer, MS Excel Viewer and PDF Viewer reloaded

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Technical specifications

SIMATIC MP 377	6AV6 644-0AA01-2AX0 12" Touch	6AV6 644-0BA01-2AX1 12" Key	6AV6 644-0AB01-2AX0 15" Touch	6AV6 644-0AC01-2AX1 19" Touch
Supply voltage				
Supply voltage	24 V DC	24 V DC	24 V DC	24 V DC
permissible range	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC	+19.2 V ... +28.8 V DC
Rated current	1.3 A	1.3 A	1.7 A	2.2 A
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	12 288 KByte usable memory for user data / 12 288 KByte additional memory for options	12 288 KByte usable memory for user data / 12 288 KByte additional memory for options	12 288 KByte usable memory for user data / 12 288 KByte additional memory for options	12 288 KByte usable memory for user data / 12 288 KByte additional memory for options
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
Protocols				
Protocols (terminal link)				
• Sm@rtAccess	Yes	Yes	Yes	Yes
Configuring				
Configuring tool	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)	WinCC flexible Standard Version 2007 or higher (to be ordered separately)
Display				
Display type	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors	TFT, 65 536 colors
Size	12.1" (246 mm x 184.5 mm)	12.1" (246 mm x 184.5 mm)	15" (304.1 mm x 228.1 mm)	19" (357.3 mm x 301.1 mm)
Resolution (WxH in pixel)	800 x 600	800 x 600	1024 x 768	1280 x 1024
• MTBF backlighting (at 25 °C)	about 50 000 hours	about 50 000 hours	about 50 000 hours	about 50 000 hours
Operating mode				
Control elements	Touch screen	Membrane keyboard	Touch screen	Touch screen
Function keys, programmable		26 function keys, 18 with LEDs		
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
• Touch screen	analog, resistive		analog, resistive	analog, resistive
• System keys		38		
• Numeric / alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
EMC				
• Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes	Yes	Yes	
Ambient conditions				
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %	90 %
Temperature				
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Technical specifications (continued)

SIMATIC MP 377	6AV6 644-0AA01-2AX0 12" Touch	6AV6 644-0BA01-2AX1 12" Key	6AV6 644-0AB01-2AX0 15" Touch	6AV6 644-0AC01-2AX1 19" Touch
Degree of protection				
Front	IP65, NEMA 4, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 12 (when installed)
Rear	IP20	IP 20	IP20	IP 20
Certifications & standards				
Certifications	CE, FM Class I Div. 2, cULus, EX-Zone 22, C-TICK, NEMA 4, NEMA 12	CE, FM Class I Div. 2, cULus, EX-Zone 22, C-TICK, NEMA 4, NEMA 12	CE, FM Class I Div. 2, cULus, EX-Zone 22, C-TICK, NEMA 4, NEMA 12	FM Class I Div. 2, cULus, EX-Zone 22, C-TICK, NEMA 4, NEMA 12
I/O				
I/O devices	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Type of output				
Acoustics	WAV sound signal	WAV sound signal	WAV sound signal	WAV sound signal
Interfaces				
Interfaces	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)
CF card slot	1 x CF card slot	1 x CF card slot	1 x CF card slot	1 x CF card slot
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	2 x USB	2 x USB	2 x USB	2 x USB
Ethernet	2 x Ethernet (RJ45)	2 x Ethernet (RJ45)	2 x Ethernet (RJ45)	2 x Ethernet (RJ45)
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Functionality under WinCC flexible				
Applications / options	ProAgent, Internet Explorer, Soft-PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess	ProAgent, Internet Explorer, Soft-PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	100	100	100	100
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status / control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
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
• Message buffer	Ring buffer (n x 1024 entries), retentive, maintenance-free	Ring buffer (n x 1024 entries), retentive, maintenance-free	Ring buffer (n x 1024 entries), retentive, maintenance-free	Ring buffer (n x 1024 entries), retentive, maintenance-free
Recipes				
• Recipes	500	500	500	500
• Data records per recipe	1 000	1 000	1 000	1 000
• Entries per data record	1000	1000	1000	1000
• Recipe memory	128 KByte integrated Flash, expandable	128 KByte integrated Flash, expandable	128 KByte integrated Flash, expandable	128 KByte integrated Flash, expandable

2

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Technical specifications (continued)

SIMATIC MP 377	6AV6 644-0AA01-2AX0 12" Touch	6AV6 644-0BA01-2AX1 12" Key	6AV6 644-0AB01-2AX0 15" Touch	6AV6 644-0AC01-2AX1 19" Touch
Functionality under WinCC flexible (continued)				
Number of process images				
• Process images	500	500	500	500
• Variables	4 096	4 096	4 096	4 096
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• Text objects	30,000 text elements	30,000 text elements	30,000 text elements	30,000 text elements
• Graphics object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
• 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				
• Text lists	500	500	500	500
• Graphics list	500	500	500	500
• Libraries	Yes	Yes	Yes	Yes
Archiving				
• Number of archives per project	50	50	50	50
• Number of measuring points per project	50	50	50	50
• Number of entries per archive	50 000	50 000	50 000	50 000
• Archiving types	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive
• Memory location	CF card, SD / MMC card, Ethernet, USB memory stick	CF card, SD / MMC card, Ethernet, USB memory stick	CF card, SD / MMC card, Ethernet, USB memory stick	CF card, SD / MMC card, Ethernet, USB memory stick
• Data storage format	CSV file, readable, e.g. with MS Excel, MS Access	CSV file, readable, e.g. with MS Excel, MS Access	CSV file, readable, e.g. with MS Excel, MS Access	CSV file, readable, e.g. with MS Excel, MS Access
• external evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	Depending on free memory on ext. card / stick or on free hard disk memory via network drive	Depending on free memory on ext. card / stick or on free hard disk memory via network drive	Depending on free memory on ext. card / stick or on free hard disk memory via network drive	Depending on free memory on ext. card / stick or on free hard disk memory via network drive
• Online evaluation	Using trend curves	Using trend curves	Using trend curves	Using trend curves
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32

¹⁾ WinCC flexible 2008 and higher

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

Technical specifications (continued)

SIMATIC MP 377	6AV6 644-0AA01-2AX0 12" Touch	6AV6 644-0BA01-2AX1 12" Key	6AV6 644-0AB01-2AX0 15" Touch	6AV6 644-0AC01-2AX1 19" Touch
Functionality under WinCC flexible (continued)				
Data carrier support				
• CF card	Yes	Yes	Yes	Yes
• Multi Media Card	Yes	Yes	Yes	Yes
Recording				
• 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
• Printer driver	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6
Fonts				
• Keyboard fonts	US American (English)	US American (English)	US American (English)	US American (English)
Languages				
• Online languages	16	16	16	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable
Transfer (upload / download)				
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition	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), see section on "System interfaces"	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), see section on "System interfaces"	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), see section on "System interfaces"	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), see section on "System interfaces"
Expandability / openness				
• Open Platform Program	Yes	Yes	Yes	Yes
Dimensions				
Front of enclosure (W x H)	335 mm x 275 mm	483 mm x 310 mm	400 mm x 310 mm	483 mm x 400 mm
Mounting cutout / Device depth (W x H / D) in mm	310 mm x 248 mm / 72 mm device depth	450 mm x 290 mm / 59 mm device depth	367 mm x 289 mm / 72 mm device depth	449 mm x 379 mm / 75 mm device depth
Weight				
Weight	3.8 kg	5.5 kg	4.7 kg	7.7 kg

2

Operator control and process monitoring devices

Multi Panels – 370 series

SIMATIC MP 377

2

Ordering data		Order No.	Order No.	
SIMATIC MP 377			Configuring	
Multi Panel (including installation accessories) with			with SIMATIC WinCC flexible	
• 12" color TFT display, Touch	H	6AV6 644-0AA01-2AX0	Configuration set MP 377	G 6AV6 622-0BA01-0AA0
• 12" color TFT display, keyboard	H	6AV6 644-0BA01-2AX1	Consisting of:	
• 15" color TFT display, Touch	H	6AV6 644-0AB01-2AX0	• WinCC flexible Standard engineering software	
• 19" color TFT display, Touch	H	6AV6 644-0AC01-2AX1	• Documentation DVD, 5 languages (En, Fr, Ger, It, Sp)	
Starter packages			• RS 232 cable (5 m)	
SIMATIC MP 377 12" Touch Starter Package	H	6AV6 652-4FA01-0AA0	• MPI cable, 5 m (for download and test purposes only)	
Consisting of:			Applications / Options	
• SIMATIC MP 377 12" Touch			For configuration with WinCC flexible	see HMI software chapter 4
• SIMATIC WINCC flexible Standard 2008			• WinCC flexible /ProAgent	
• SIMATIC HMI Manual Collection			• WinCC flexible /Sm@rtAccess	
• MPI cable, 5 m (for download and test purposes only)			• WinCC flexible /Sm@rtService	
SIMATIC MP 377 15" Touch Starter Package	H	6AV6 652-4GA01-0AA0	• WinCC flexible /OPC server	
Consisting of:			• WinCC flexible /Audit	
• SIMATIC MP 377 15" Touch			• WinAC MP 2007 /Software PLC	
• SIMATIC WINCC flexible Standard 2008			Documentation (to be ordered separately)	
• SIMATIC HMI Manual Collection			MP 377 Operating Instructions	
• MPI cable, 5 m (for download and test purposes only)			• German	6AV6 691-1DR01-0AA0
Complete pre-assembled packages SIMATIC MP 377 with WinAC MP 2007			• English	6AV6 691-1DR01-0AB0
Package MP 377 12" Touch	H	6AV6 652-4FC01-2AA0	• French	6AV6 691-1DR01-0AC0
• MP 377 12" Touch			• Italian	6AV6 691-1DR01-0AD0
• Single license for MP 377 on USB flash drive ¹⁾			• Spanish	6AV6 691-1DR01-0AE0
• Standard Multi Media Card (empty)			WinCC flexible Compact / Standard / Advanced User Manual	
Package MP 377 12" Key	H	6AV6 652-4EC01-2AA0	• German	6AV6 691-1AB01-3AA0
• MP 377 12" Key			• English	6AV6 691-1AB01-3AB0
• Single license for MP 377 on USB flash drive ¹⁾			• French	6AV6 691-1AB01-3AC0
• Standard Multi Media Card (empty)			• Italian	6AV6 691-1AB01-3AD0
Package MP 377 15" Touch	H	6AV6 652-4GC01-2AA0	• Spanish	6AV6 691-1AB01-3AE0
• MP 377 15" Touch			User Manual WinCC flexible Communication	
• Single license for MP 377 on USB flash drive ¹⁾			• German	6AV6 691-1CA01-3AA0
• Standard Multi Media Card (empty)			• English	6AV6 691-1CA01-3AB0
Package MP 377 19" Touch	H	6AV6 652-4HC01-2AA0	• French	6AV6 691-1CA01-3AC0
• MP 377 19" Touch			• Italian	6AV6 691-1CA01-3AD0
• Single license for MP 377 on USB flash drive ¹⁾			• Spanish	6AV6 691-1CA01-3AE0
• Standard Multi Media Card (empty)			SIMATIC HMI Manual Collection	A 6AV6 691-1SA01-0AX0
			Electronic documentation, on DVD	
			5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	
			Accessories for supplementary ordering	see HMI Accessories page 2/160 onwards

¹⁾ Can only be used for license handling

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

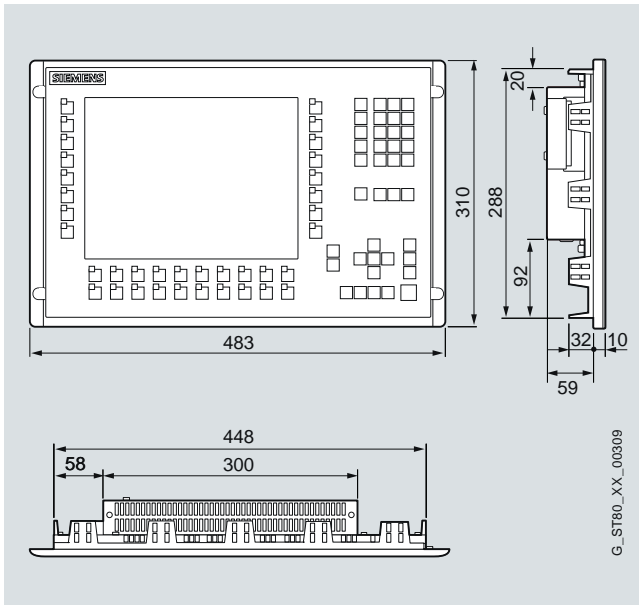
Operator control and process monitoring devices

Multi Panels – 370 series

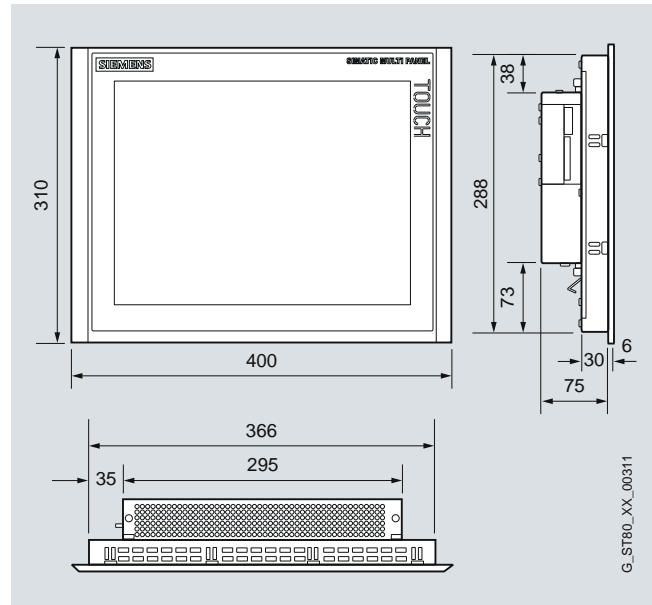
SIMATIC MP 377

Dimensions

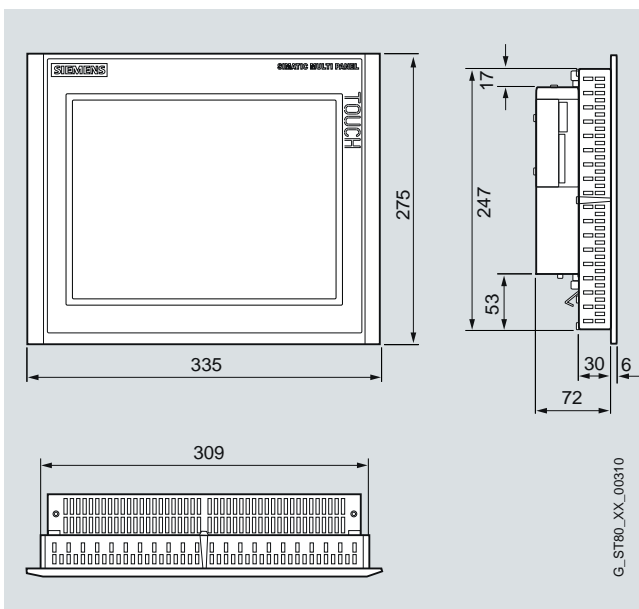
All specifications in mm. Panel cutout see technical specifications.



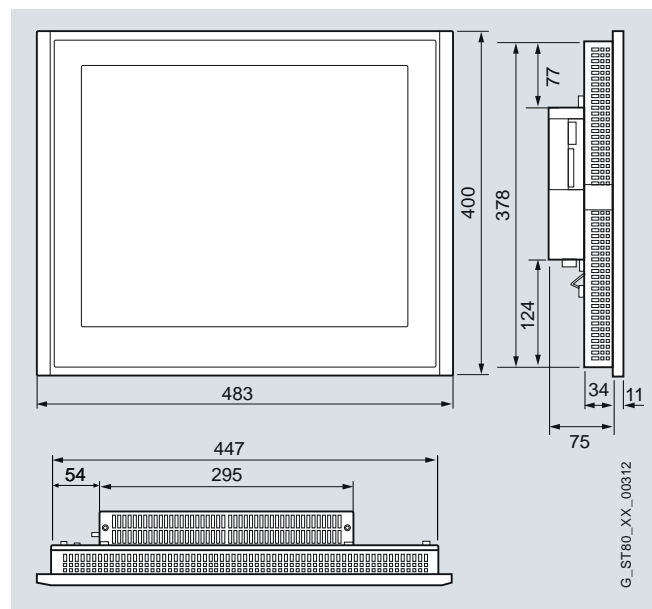
SIMATIC MP 377 12" Key



SIMATIC MP 377 15" Touch



SIMATIC MP 377 12" Touch



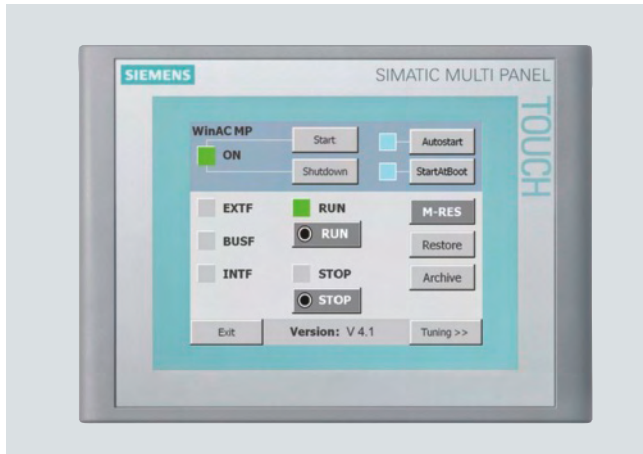
SIMATIC MP 377 19" Touch

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

Overview



- WinAC MP, the software PLC based on Windows CE
- An optimized version is available for all current MP platforms
- The economical solution for all applications in combination with a rugged hardware platform
- Ideal for tasks on the machine level, saves space and costs
- Best service concept, backup / restore of all data on a standard SD card, standard Multi Media Card or standard USB stick

Application

The WinAC MP is a new, rugged software PLC for all SIMATIC HMI Multi Panel platforms. It has been developed for smaller and medium-sized applications that do not depend on the last milli-second and costs are in the forefront.

WinAC uses proven tools such as STEP 7 (V5.4 / SP4 or higher) and WinCC flexible 2008 SP1 (Standard version or higher). This makes it possible to upgrade or switch without any extra training for new tools.

The operator interface of the WinAC MP is included. Users can thus copy the required operator controls into their project. Of course, all operator functions of the WinAC MP are available in the function list after installing the option on the configuring PC in WinCC flexible 2008 SP1! The peripherals are connected via PROFIBUS DP. Here, ET I/O modules up to technology modules are available.

Processing WinCC flexible projects

WinCC flexible projects are processed with WinCC flexible 2008 SP1 (Standard version or higher) and STEP 7 V5.4 from SP4.

If WinCC flexible is integrated and operated in STEP 7, a common database offers the highest degree of programming comfort, which ensures an optimal continuity when creating your applications. Program faults are therefore avoided from the outset.

Service concept

All data, operating systems, HMI data, PLC data, archives, recipes, licenses, etc. can be stored on a standard storage medium¹⁾ at the touch of a button. The only exception is the content of the M-RAM memory (current status of bit memories, timers, counters and data blocks). This is not necessary for the restore procedure, however. The function Backup / Restore therefore offers an extensive and perfect service concept.

¹⁾ Memory media released by Siemens is preferred

Design

The WinAC MP is functionally very closely based on a hardware CPU and is a real alternative for price-sensitive applications that require the stability and ruggedness of a hardware solution.

The functions of the WinAC MP are integrated directly in WinCC flexible and STEP 7 during the installation on the configuration computer. This ensures that every user can freely configure and if necessary block access to, for example, the start / stop button or the LEDs in the SIMATIC HMI project. Of course a prefabricated user interface will be delivered as an example.

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

2

Design (continued)

Retentivity of the timers, counters, flags and data blocks is ensured by the Multi Panel hardware as with a hardware CPU. A UPS is not required.

The time distribution on the Multi Panel between WinAC MP and HMI Runtime is predefined and can be adapted to the relevant application.

For time-critical applications, an OB35 time block (min. clock-pulse rate 1 ms) is available for processing the time-critical signals. Direct responses can be integrated into the process with OB40 (I/O alarms) as well. For service and optimization purposes, there are diverse functions available such as a histogram for cycle times that can be embedded in the user's SIMATIC HMI project.

Versions

Different WinAC MP versions are available. The versions define new CPU performance classes.

- The versions are optimized for the Multi Panel platforms. These versions, namely WinAC MP 177, 277 to 377 are based roughly on the hardware CPUs 314, 315 and 317. They have similar quantity frameworks but are not a 1:1 copies.
- All limit values, e.g. number of bit memories, DBs, FCs, I/Os, etc., are preset as with a hardware CPU and cannot be changed by the user. Detailed technical data is provided in chapter "Technical Data".

Function

The principle of operation and the instruction set of the WinAC MP is basically identical to a hardware CPU. The settings for the WinAC MP-specific parameters are implemented by means of the Hardware Config. Since WinAC MP and HMI application share a processor, however, there is a special response regarding the timing of the WinAC MP. All PLC commands are more quickly processed multiple times faster than on a hardware CPU, but this is required to create time reserves for the HMI application. The potential for time optimization improves with larger PLC programs. In WinAC MP 2008, a fixed processing time must be set for HMI-RT, HMI options, and communications. The default for this time is 50 ms. Users can change this time to achieve optimal performance of the application.

In practice, this means an OB1 executes faster on a soft CPU and the time gained can be used for HMI Runtime. Another advantage of the WinAC MP is that the HMI application can always be interrupted by WinAC MP time and process alarms.

Fast key response times can also be used with the implemented function "DP direct keys" with the WinAC MP. This provides another performance advantage of the WinAC MP.

Integration

Installation / licensing

The installation conceivably easy. With ProSave (integrated in WinCC flexible), the WinAC MP option is simply loaded onto the panel. The WinAC MP then reacts similarly to an integrated hardware CPU.

A license key is required for the WinAC MP. The license key is always provided together with the WinAC MP. The license key is located on a standard USB stick and must be loaded separately on the Multi Panel after installation of the WinAC MP option.

Software bus

In addition to WinAC MP, a software bus is installed at the same time on a SIMATIC HMI Multi Panel. This is required to coordinate communication between the SIMATIC HMI application and WinAC MP. The software bus also includes an entire range of advantages for the user. For example, diverse upload and download routing mechanisms are supported. This enables, among other things, updating of SIMATIC products that are connected with the PROFIBUS DP side of the Multi Panel, even if the programming device is connected on the PROFINET side (Ethernet / LAN). Similar connections are naturally also possible for STEP 7.

I/Os

The I/O can be connected via PROFIBUS DP. Standard components such as ET 200 and the modules that can be used within are utilized. Diverse technological components can also be used with the ET 200M in this constellation. In addition to normal standard ET I/Os, the following FM modules are released on the PROFIBUS:

- FM 350-1 counter module
- FM 350-2 counter module (8-channel)
- FM 351 positioning module
- FM 352 cam controller
- FM 355-2 temperature control module
- FM 352-5 high-speed Boolean processor
- FM 353 positioning module for stepper motors
- FM 354 positioning module for servo motors
- FM 355 closed-loop control module

Programming

Programming in accordance with IEC 6 1131-3 and configuration of WinAC MP are done with STEP 7 V5.4 / SP4 (or higher) and the SIMATIC Engineering Tools for production technology. Thus all SIMATIC programming languages for WinAC MP are available as well.

The SIMATIC programming languages comply with the standard DIN EN 6.1131-3. This reduces the familiarization and training overhead. CFC, SCL, as well as S7-Graf¹⁾ and ProAgent¹⁾ are also supported.

In addition, program modules that have been programmed for SIMATIC S7 hardware CPUs can be reused in WinAC MP without modifications as long as they were not designed for special features of a SIMATIC S7 CPU.

¹⁾ Not with the WinAC MP 177 version.

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

Technical specifications

SIMATIC WinAC MP	6ES7 671-4EE00-0YA0 WinAC MP 177	6ES7 671-5EF01-0YA0 WinAC MP 277	6ES7 671-7EG01-0YA0 WinAC MP 377
Memory			
Work memory			
• integrated	128 KByte	256 KByte	512 KByte
• expandable	No	No	No
Load memory			
• integrated RAM, max.	8 Mbyte	8 Mbyte	8 Mbyte
CPU / blocks			
DB			
• Number, max.	512; FBs+FCs+DBs=512	1 024; FBs+FCs+DBs=1024	2 048; FBs+FCs+DBs=2048
• Size, max.	64 KByte	64 KByte	64 KByte
FB			
• Number, max.	512; FBs+FCs+DBs=512	1 024; FBs+FCs+DBs=1024	2 048; FBs+FCs+DBs=2048
• Size, max.	64 KByte	64 KByte	64 KByte
FC			
• Number, max.	512; FBs+FCs+DBs=512	1 024; FBs+FCs+DBs=1024	2 048; FBs+FCs+DBs=2048
• Size, max.	64 KByte	64 KByte	64 KByte
OB			
• Number, max.	18	18	18
• Size, max.	64 KByte	64 KByte	64 KByte
Nesting depth			
• per priority class	8	8	16
• additional within an error OB	2	2	2
Counters, timers and their retentivity			
S7 counter			
• Number	128	256	512
• of which retentive without battery			
- can be set	Yes	Yes	Yes
- lower / upper limit	0 / 127	0 / 255	0 / 511
• Retentivity			
- can be set	Yes	Yes	Yes
- preset	8	8	8
• Counting range			
- lower / upper limit	0 / 999	0 / 999	0 / 999
IEC counter			
• present	Yes; SFB0, SFB1, SFB2	Yes; SFB0, SFB1, SFB2	Yes; SFB0, SFB1, SFB2
S7 times			
• Number	128	256	512
• of which retentive without battery			
- can be set	Yes	Yes	Yes
- lower / upper limit	0 / 127	0 / 255	0 / 511
• Retentivity			
- can be set	Yes	Yes	Yes
- preset	0	0	0
• Time range			
- lower / upper limit	10 ms / 9 990 s	10 ms / 9 990 s	10 ms / 9 990 s
IEC timer			
• present	Yes; SFB3, SFB4, SFB5	Yes; SFB3, SFB4, SFB5	Yes; SFB3, SFB4, SFB5

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

Technical specifications (continued)

SIMATIC WinAC MP	6ES7 671-4EE00-0YA0 WinAC MP 177	6ES7 671-5EF01-0YA0 WinAC MP 277	6ES7 671-7EG01-0YA0 WinAC MP 377
Data areas and their retentivity			
retentive data area in total (incl. times, counters, flags), max.	64 KByte	128 KByte	256 KByte
Flag			
• Number, max.	2 KByte	2 KByte	4 KByte
• Retentivity available	Yes	Yes	Yes
Data blocks			
• Number, max.	512	1 024	2 048
• Size, max.	64 KByte	64 KByte	64 KByte
Local data			
• per priority class, max.	16 384 byte; for all priority classes	16 384 byte; for all priority classes	16 384 byte; for all priority classes
Address area			
I/O address area			
• overall	2 KByte	4 KByte	8 KByte
• Outputs	2 KByte	4 KByte	8 KByte
Process image			
• Inputs	1 KByte	2 KByte	2 KByte
• Outputs	1 KByte	2 KByte	2 KByte
• Inputs, adjustable	1 KByte	2 KByte	2 KByte
• Outputs, adjustable	1 KByte	2 KByte	2 KByte
• Inputs, default	512 byte	512 byte	512 byte
• Outputs, default	512 byte	512 byte	512 byte
• consistent data, max.	32 byte	32 byte	32 byte
Hardware configuration			
Number of DP masters			
• integrated	1	1	1
Time of day			
Runtime meter			
• Number	8	8	8
• Number / Number range	0 ... 7	0 ... 7	0 ... 7
S7 message functions			
Process diagnostic messages	Yes	Yes	Yes
Test commissioning functions			
Status / control			
• Status / control variable	Yes; Status blocks, single step, breakpoint	Yes; Status blocks, single step, breakpoint	Yes; Status blocks, single step, breakpoint
Forcing			
• Forcing	No	No	No
Diagnostic buffer			
• present	Yes	Yes	Yes
• Number of entries, max.	1 000; preset 120	1 000; preset 120	1 000; preset 120
- can be set	Yes	Yes	Yes
Communication functions			
Number of logical connections (also in network), max.	8	16	32
PG / OP communication	Yes	Yes	Yes
Routing	Yes	Yes	Yes
Global data communication			
• supported	No	No	No

2

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

Technical specifications (continued)

SIMATIC WinAC MP	6ES7 671-4EE00-0YA0 WinAC MP 177	6ES7 671-5EF01-0YA0 WinAC MP 277	6ES7 671-7EG01-0YA0 WinAC MP 377
Communication functions (continued)			
S7 basic communication			
• supported	No	No	No
S7 communication			
• supported	Yes; PUT / GET, BSEND / BRCV, USEND / URCV	Yes; PUT / GET, BSEND / BRCV, USEND / URCV	Yes; PUT / GET, BSEND / BRCV, USEND / URCV
• as server / client	Yes / Yes	Yes / Yes	Yes / Yes
• User data per job, max.	480 byte	480 byte	480 byte
Number of connections			
• overall	8; (max. 8 DP, rest PROFINET)	16; (max. 8 DP, rest PROFINET)	32; (max. 8 DP, rest PROFINET)
• usable for PG communication			
- reserved for PG communication	1	1	1
• usable for OP communication	1	1	1
- reserved for OP communication	1	1	1
• usable for routing	6	14	30
1st interface			
DP master			
• Number of connections, max.	4	8	8
• Services			
- PG / OP communication	Yes	Yes	Yes
- Routing	Yes	Yes	Yes
- Global data communication	No	No	No
- S7 basic communication	No	No	No
- S7 communication	Yes	Yes	Yes
- Equidistance mode support	No	No	No
- SYNC / FREEZE	Yes	Yes	Yes
- Activation / deactivation of DP slaves	Yes	Yes	Yes
- DPV1	Yes	Yes	Yes
• Transmission speeds, max.	12 Mbit/s	12 Mbit/s	12 Mbit/s
• Number of DP slaves, max.	32	32	32
• Address area			
- Inputs / Outputs, max.	2 KByte / 2 KByte	4 KByte / 4 KByte	8 KByte / 8 KByte
CPU / programming			
Configuring software			
• STEP 7	Yes; STEP7 V5.4 SP4 or higher	Yes; STEP7 V5.4 SP4 or higher	Yes; STEP7 V5.4 SP4 or higher
• WinCC flexible Compact	Yes; WinCC flexible 2008 SP1	No	No
• WinCC flexible Standard	Yes; WinCC flexible 2008 SP1	Yes; WinCC flexible 2008 SP1	Yes; WinCC flexible 2008 SP1
• WinCC flexible Advanced	Yes; WinCC flexible 2008 SP1	Yes; WinCC flexible 2008 SP1	Yes; WinCC flexible 2008 SP1
Programming language			
• LAD / FBD / STL / SCL / CFC	YES / YES / YES / YES / Yes	YES / YES / YES / YES / Yes	YES / YES / YES / YES / Yes
Software libraries			
• Process diagnostics	Yes; System error messages	Yes; System error messages, ProAgent (S7-Graph)	Yes; System error messages, ProAgent (S7-Graph)
Cycle time monitoring			
• can be set	Yes	Yes	Yes
• preset	6 000 ms	6 000 ms	6 000 ms
Operating systems			
• Windows CE	Yes; Version 5.0 or higher	Yes; Version 5.0 or higher	Yes; Version 5.0 or higher
Online languages			
Number	1; English	1; English	1; English

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

2

Ordering data		Order No.		Order No.
WinAC MP, version WinAC MP 177²⁾		6ES7 671-4EE00-0YA0		
incl. a Single License for MP 177 on USB stick ¹⁾ and electronic documentation				
WinAC MP, version WinAC MP 277²⁾		6ES7 671-5EF01-0YA0		
incl. a Single License for MP 277 on USB stick ¹⁾ and electronic documentation				
WinAC MP, version WinAC MP 377²⁾		6ES7 671-7EG01-0YA0		
incl. a Single License for MP 377 on USB stick ¹⁾ and electronic documentation				
Complete pre-assembled packages				
Package MP 177 6" Touch	H	6AV6 652-2JC01-2AA0	Package MP 277 10" Key	H 6AV6 652-3NC01-1AA0
<ul style="list-style-type: none"> • MP 177 6" Touch • WinAC MP Version 177 • Electronic documentation • Single License for MP 177 on USB flash drive¹⁾ • Standard SD card 256 MB (empty) 			<ul style="list-style-type: none"> • MP 277 10" Key • WinAC MP Version 277 • Electronic documentation • Single License for MP 277 on USB stick¹⁾ • Standard SD card 256 MB (empty) 	
Package MP 277 8" Touch	H	6AV6 652-3MC01-1AA0	Package MP 377 12" Touch	H 6AV6 652-4FC01-2AA0
<ul style="list-style-type: none"> • MP 277 8" Touch • WinAC MP Version 277 • Electronic documentation • Single License for MP 277 on USB stick¹⁾ • Standard SD card 256 MB (empty) 			<ul style="list-style-type: none"> • MP 377 12" Touch • WinAC MP Version 377 • Electronic documentation • Single License for MP 377 on USB stick¹⁾ • Standard SD card 256 MB (empty) 	
Package MP 277 8" Key	H	6AV6 652-3LC01-1AA0	Package MP 377 12" Key	H 6AV6 652-4EC01-2AA0
<ul style="list-style-type: none"> • MP 277 8" Key • WinAC MP Version 277 • Electronic documentation • Single License for MP 277 on USB stick¹⁾ • Standard SD card 256 MB (empty) 			<ul style="list-style-type: none"> • MP 377 12" Key • WinAC MP Version 377 • Electronic documentation • Single License for MP 377 on USB stick¹⁾ • Standard SD card 256 MB (empty) 	
Package MP 277 10" Touch	H	6AV6 652-3PC01-1AA0	Package MP 377 15" Touch	H 6AV6 652-4GC01-2AA0
<ul style="list-style-type: none"> • MP 277 10" Touch • WinAC MP Version 277 • Electronic documentation • Single License for MP 277 on USB stick¹⁾ • Standard SD card 256 MB (empty) 			<ul style="list-style-type: none"> • MP 377 15" Touch • WinAC MP Version 377 • Electronic documentation • Single License for MP 377 on USB stick¹⁾ • Standard SD card 256 MB (empty) 	
			Package MP 377 19" Touch	H 6AV6 652-4HC01-2AA0
			<ul style="list-style-type: none"> • MP 377 19" Touch • WinAC MP Version 377 • Electronic documentation • Single License for MP 377 on USB stick¹⁾ • Standard SD card 256 MB (empty) 	

¹⁾ Can only be used for license handling

²⁾ UCL version on request

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Operator control and process monitoring devices

Multi Panel options

SIMATIC WinAC MP

Ordering data

Order No.

Order No.

Starter packages

Starter package 613 WinAC MP

H

6AV6 652-2JD01-2AA0

- SIMATIC MP 177 6" Touch with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation
- SD card 256 KB (empty)
- ET 200M incl.
- 16 DI, 16 DO, 8 AI, 2 AO
- FM 350-2 8-channel counter
- Front connector, bus connector, and mounting rail

Starter package 635T WinAC MP

H

6AV6 652-2JD01-2AA1

- SIMATIC MP 177 6" Touch with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation
- SD card 256 KB (empty)
- ET 200M incl.
- 32 DI, 16 DO, 8 AI, 2 AO
- FM 350-2 8-channel counter
- Front connector, bus connector, and mounting rail

Starter package 635K WinAC MP

H

6AV6 652-3LD01-1AA1

- SIMATIC MP 277 8" Key with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation
- SD card 256 KB (empty)
- ET 200M incl.
- 32 DI, 16 DO, 8 AI, 2 AO
- FM 350-2 8-channel counter
- Front connector, bus connector, and mounting rail

Starter package 636K WinAC MP

H

6AV6 652-3LD01-1AA0

- SIMATIC MP 277 8" Key with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation
- SD card 256 KB (empty)
- ET 200M incl.
- 32 DI, 16 DO, 8 AI, 2 AO
- Front connector, bus connector, and mounting rail

Starter package 636T WinAC MP

H

6AV6 652-3PD01-1AA0

- SIMATIC MP 277 10" Touch with installation accessories, mounting seal, power supply connector
- SIMATIC WinAC MP incl. Single License on USB flash drive and electronic documentation
- SD card 256 KB (empty)
- ET 200M incl.
- 32 DI, 16 DO, 8 AI, 2 AO
- Front connector, bus connector, and mounting rail

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Introduction

Overview

SIMATIC Touch Panels (TP), Operator Panels (OP), Mobile Panels, Multifunctional Platforms (MP)¹⁾ and the SIMATIC HMI software package for PC WinCC flexible Runtime support HMI functionality in conjunction with:

- SIMATIC S7
- SIMATIC S5
- SIMATIC 505
- SIMOTION
- SINUMERIK²⁾
- Non-Siemens controllers:
 - Allen Bradley - DF1 protocol, DH485 protocol, Ethernet IP protocol
 - GE Fanuc - SNP / SNPX protocol
 - LG GLOFA GM - dedicated protocol
 - Mitsubishi FX - FX protocol, MP 4 protocol
 - Modicon - MODBUS protocol, MODBUS TCP/IP protocol
 - Omron - Link / MultiLink protocol
 - Telemecanique - UNI-TELWAY protocol

For more detailed information, refer to the WinCC flexible user manual, the "Windows-based systems communication" manual, and the WinCC flexible online help.

- ¹⁾ For the sake of simplicity, SIMATIC TP / OP / MP is always used in the text below. This is not restrictive, as the information is valid for all systems referred to above. If there are constraints, direct reference is made to them in the text.
- ²⁾ Required under WinCC flexible: "SINUMERIK HMI copy license WinCC flexible CE" and "SINUMERIK HMI copy license OA". For configuring, a "SINUMERIK HMI engineering package WinCC flexible" is also necessary.

Note:

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

Extended functionality with WinCC flexible

WinCC flexible supports OPC communication for Multi Panel and WinCC flexible Runtime and HTTP communication for all panels with integrated Ethernet interface. Both OPC and HTTP communication can be used in parallel with the process links to SIMATIC S7 / S5 / 505 or non-Siemens PLCs.

OPC Data Access (MP 277, MP 377, WinCC flexible Runtime only)

OPC Data Access is an open standard for exchanging both local and remote variables between various applications via Industrial Ethernet. The original version of OPC is based on Microsoft COM / DCOM and, therefore, requires a Microsoft Windows-based PC operating system (not Windows CE) on both clients and servers. As OPC XML, communication is based on the Internet standard SOAP/XML and is, therefore, suitable for embedded systems with Windows CE.

Options that are required: WinCC flexible /OPC server

HTTP communication for the variable exchange between SIMATIC HMI systems

(only TP 177B DP / PN, OP 177B DP / PN, Mobile Panel 177 PN, TP 277, OP 277, Mobile Panel 277, Mobile Panel 277 IWLAN, MP 277, MP 377, WinCC flexible Runtime)

Communication based on HTTP message frames enables variables to be exchanged between SIMATIC HMI systems. Options that are required: WinCC flexible /Sm@rt Access

Communication standard	SIMATIC HMI				
Version	TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 PN	TP 277 OP 277	Mobile Panel 277 ⁶⁾ Mobile Panel 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
OPC Data Access V2.0 + V1.1 (COM) / V1.0 (XML)					
OPC client (COM / DCOM)	–	–	–	•	Industrial Ethernet (see Catalog IK PI)
OPC server (COM / DCOM)	–	–	–	• ¹⁾	Industrial Ethernet (see Catalog IK PI)
OPC XML client (SOAP/XML)	–	–	–	• ²⁾	Industrial Ethernet (see Catalog IK PI)
OPC XML server (SOAP/XML)	–	–	• ³⁾	–	Industrial Ethernet (see Catalog IK PI)
HTTP communication for variable exchange between SIMATIC HMI systems					
HTTP client	• ⁴⁾	• ⁴⁾	• ⁴⁾	• ⁵⁾	Industrial Ethernet (see Catalog IK PI)
HTTP server	• ⁴⁾	• ⁴⁾	• ⁴⁾	• ⁵⁾	Industrial Ethernet (see Catalog IK PI)

- System interface possible
- System interface not possible

- ¹⁾ Option WinCC flexible /OPC Server for WinCC flexible Runtime required
- ²⁾ Only with DCOM / XML gateway included in the scope of delivery of WinCC flexible for access to MP 277, MP 377 and MP 370 OPC XML servers
- ³⁾ Option WinCC flexible /OPC Server for SIMATIC Multi Panel required
- ⁴⁾ Option WinCC flexible /OPC Server for SIMATIC Multi Panel required
- ⁵⁾ Option WinCC flexible /Sm@rtAccess for WinCC flexible Runtime required
- ⁶⁾ Depending on the terminal box used

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC S7

Overview

The following types of interface are supported in respect of the link between SIMATIC HMI Panels and SIMATIC WinCC flexible Runtime with SIMATIC S7:

- **PPI interface:**
Interface between SIMATIC HMI Panels and SIMATIC S7-200 via PPI. Communication runs on the PPI protocol, a standard FB as with SIMATIC S5 is not required.
- **MPI interface:**
Interface between SIMATIC HMI Panels and SIMATIC S7 via the integrated PPI interface with S7-200 or MPI interface with S7-300 / -400 or alternatively via the MPI interface of a separate interface module and the backplane bus to the SIMATIC S7-CPU. Communication runs on the MPI protocol (PG / OP communication), a standard FB as with SIMATIC S5 is not required.
- **PROFIBUS interface:**
Interface between SIMATIC HMI Panels and SIMATIC S7 via the integrated PROFIBUS interface on the CPU or alternatively via the PROFIBUS interface on a separate interface module and the backplane bus to the SIMATIC S7-CPU. Communication runs on the MPI protocol (PG / OP communication), a standard FB as with SIMATIC S5 is not required.
- **PROFINET interface:**
Interface between SIMATIC HMI Panels and SIMATIC S7 via the integrated PROFINET interface on the CPU or alternatively via the Industrial Ethernet interface on a separate interface module and the backplane bus to the SIMATIC S7-CPU. Communication runs on the MPI protocol (PG / OP communication), a standard FB as with SIMATIC S5 is not required.

The maximum possible number of S7 connections of a CPU is determined by its power (see Catalog ST 70); from the point of view of SIMATIC HMI Panels the following restrictions apply:

- OP 73micro, TP 177micro: 1 connection
- OP 73: max. 2 connections
- OP 77A, TP 177A, Basic Panel, OP 77B, TP177B, OP 177B, Mobile Panel 177: max. 4 connections
- TP 277, OP 277; Mobile Panel 277, MP 177, MP 277, MP 377: max. 6 connections
- PC with WinCC flexible Runtime: max. 8 connections

PPI interface

From the point of view of the concept, the PPI interface is a point-to-point connection between a SIMATIC HMI Panel (PPI master) or alternatively a PG (PPI master), and an S7-200 (PPI slave).

MPI interface / PROFIBUS interface / Industrial Ethernet interface

The multipoint-enabled communication interfaces of SIMATIC HMI Panels and SIMATIC S7 are used. Options are:

- Interface between one or a number of SIMATIC HMI Panels (MPI master) and one or a number of S7-1200 / 300 / 400s or WinAC (MPI master).
(possible network topology: *MPI / PROFIBUS / Industrial Ethernet*)
- Interface between one or a number of SIMATIC HMI 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 in the meantime 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 HMI Panels and SIMATIC S7 is independent of the network used, PPI, MPI, PROFIBUS or Industrial Ethernet: SIMATIC HMI Panels are S7 clients and SIMATIC S7 CPUs are S7 servers.

¹⁾ Constraints with regard to baud rate for S7-200; see Catalog ST 70.

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC S7

Overview (continued)

Controller	SIMATIC HMI				Connection via
Target hardware (PROTOCOL) (physics)	TD 100C TD 200 TD 200C TD 400C	OP 73 micro TP 177micro	OP 73	OP 77A TP 177A	
SIMATIC S7 (PPI / MPI) via PPI on S7-200 (PPI)	• 1)	–	–	–	MPI cable ⁵⁾
via MPI or PROFIBUS (PG / OP communication) with S7-200	–	• 2)	• 3)	• 4)	MPI cable ⁵⁾
via MPI or PROFIBUS (PG / OP communication) with S7-300, -400	–	–	• 3)	• 4)	MPI cable ⁵⁾
via PPI network (PPI) with max. 1 x S7-200	• 1)	–	–	–	PPI network ⁶⁾ (see Catalog ST 70 and IK PI)
via PPI network (PG / OP communication) with max. 4 x S7-200	• 1)	• 2)	• 3)	• 4)	PPI network ⁶⁾ (see Catalog ST 70 and IK PI)
via MPI or PROFIBUS network (PG / OP communication) with max. 4 x S7-200	–	• 2)	• 3)	• 4)	MPI or PROFIBUS network ⁶⁾ (see Catalogs ST 70 and IK PI)
via MPI or PROFIBUS network (PG / OP communication) with max. 4 x S7-300, -400, WinAC	–	–	• 3)	• 4)	MPI or PROFIBUS network ⁶⁾ (see Catalogs ST 70 and IK PI)
via Industrial Ethernet (TCP/IP) (PG / OP communication) with max. 4 x S7-200, -300, -400, WinAC	–	–	–	–	Industrial Ethernet (see Catalog IK PI)

• System interface possible

– System interface not possible

¹⁾ TD series can only be interfaced with max. 1 x S7-200 via PPI (PPI/MPI); network operation (parallel PG, etc.) possible; max. data transfer rate 187.5 kbit/s; cable included in scope of supply

²⁾ OP 73micro, TP 177 micro can only be interfaced with max. 1 x S7-200 (MPI); network operation (parallel PG, etc.) possible; max. data transfer rate 187.5 kbit/s

³⁾ OP 73 can only be interfaced with max. 2 x SIMATIC S7 (MPI); network operation (parallel PG, etc.) possible; max. data transfer rate 1.5 Mbit/s

⁴⁾ Max. transmission rate 1.5 Mbit/s

⁵⁾ MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 Kbit/s) included in PG scope of delivery

⁶⁾ Bus connector 6GK1 500-0EA02

2

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC S7

Overview (continued)

Controller	SIMATIC HMI				
Target hardware (PROTOCOL) (physics)	Basic Panel	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP Mobile Panel 177 PN	TP 277 OP 277 Mobile Panel 277 Mobile Panel 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
SIMATIC S7 (PPI / MPI)					
via PPI on S7-200 (PPI)	–	● 1) 2)	● 1) 2)	● 1) 3)	MPI cable ¹¹⁾
via MPI or PROFIBUS (PG / OP communication) on S7-200	● 2)	● 2) 5)	● 2) 5)	● 3) 5)	MPI cable ¹¹⁾
via MPI or PROFIBUS (PG / OP communication) with S7-300, -400	● 2)	● 2)	● 2)	● 3)	MPI cable ¹¹⁾
via PPI network (PPI) with max. 1 x S7-200	–	● 1) 2)	● 1) 2)	● 1) 3)	PPI network ¹²⁾ (see Catalog ST 70 and IK PI)
via PPI network (PG / OP communication) with max. 4 x S7-200	● 2)	● 6)	–	–	PPI network ¹²⁾ (see Catalog ST 70 and IK PI)
via MPI or PROFIBUS network (PG / OP communication) with max. 4 x S7-200	● 2)	● 2) 5)	● 2) 5)	● 3) 5)	MPI or PROFIBUS network ¹²⁾ (see Catalogs ST 70 and IK PI)
via MPI or PROFIBUS network (PG / OP communication) with max. 4 x S7-300, -400, WinAC	● 2)	● 2)	● 2)	● 3)	MPI or PROFIBUS network ¹²⁾ (see Catalogs ST 70 and IK PI)
via Industrial Ethernet (TCP/IP) (PG / OP communication) with max. 4 x S7-200, -300, -400, WinAC	– 7)	● 7) 8)	● 8) 9)	● 10)	Industrial Ethernet (see Catalog IK PI)

● System interface possible

– System interface not possible

¹⁾ Can only be interfaced with max. 1 x S7-200 via PPI (PPI); network operation (parallel PG, etc.) possible

²⁾ Not Basic Panel PN, Mobile Panel 177 PN, Mobile Panel 277 IWLAN; Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); Please refer to the manual for cable assignment

³⁾ Connection via integrated MPI / PROFIBUS interface; use the CP 5611 A2 with a standard PC.

⁴⁾ Max. transmission rate 1.5 Mbit/s

⁵⁾ Only on passive S7-200; OP 77B (MPI) also on active S7-200

⁶⁾ Only OP 77B (MPI)

⁷⁾ Only Basic Panel PN, TP 177B DP / PN, OP 177B DP / PN, Mobile Panel 177 PN

⁸⁾ Mobile Panel 177 PN, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); Please refer to the manual for cable assignment

⁹⁾ Mobile Panel 277 IWLAN (wireless interface, see Mobile Panel)

¹⁰⁾ Connection via integrated Industrial Ethernet interface; use the CP 1612 with a standard PC

¹¹⁾ MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 Kbit/s) included in PG scope of delivery (for download and test purposes only)

¹²⁾ Bus connector 6GK1 500-0EA02

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC S5

Overview

A variety of interfaces differing in respect of type and performance are available for linking SIMATIC HMI Panels to SIMATIC S5 (not S5-150U). However, a feature common to all is that from the point of view of the connected SIMATIC HMI Panel, the connection is always a logical point-to-point one, i.e. there is always a fixed assignment between a SIMATIC HMI Panel and a PLC.

AS511 interface (not for OP 77A, TP 177A, Basic Panel, Mobile Panel 177, Mobile Panel 277)

S5-90U to -135U, -155U
(except CPU 922 < Version 9,
except CPU 928 [6ES5 928-3UA11],
except CPU 946 / 947 [6ES5 94-3UA11],
except CPU 946 / 947 [6ES5 94-3UA21],
except CPU 946 / 947 [6ES5 94-3UA22] < Version 5)

The AS511 interface is implemented via the PG interface of SIMATIC S5 and uses the associated CPU resources, that is, the performance capability of the SIMATIC HMI Panel is determined by the performance capability of the SIMATIC CPU used.

PROFIBUS DP interface (not for OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

S5-115U, -135U, -155U via IM 308C or CP 5431 FMS / DP
(except CPU 922 < Version 9,
except CPU 928 [6ES5 928-3UA11],
except CPU 946 / 947 [6ES5 94-3UA11],
except CPU 946 / 947 [6ES5 94-3UA21],
except CPU 946 / 947 [6ES5 94-3UA22] < Version 5)

The PROFIBUS DP interface supports the connection of:

- Up to 2 SIMATIC HMI Panels as SLAVES via a PROFIBUS network to a SIMATIC S5-95U with integrated PROFIBUS DP / master interface [6ES5 095-8ME01]
- Up to 30 SIMATIC HMI Panels as SLAVES via a PROFIBUS network to a SIMATIC S5 with separate PROFIBUS DP / master interface IM 308C, or CP 5431 FMS / DP

Communication between SIMATIC HMI Panels (DP slaves) and SIMATIC S5 (DP master) runs via PROFIBUS DP message frames in accordance with EN 50170 with higher-level "HMI profile". A function block which must be called for each connected SIMATIC HMI Panel is required in the PLC (FB is included in scope of delivery).

Controller	SIMATIC HMI				
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A Basic Panels	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN	TP 277 OP 277 MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
SIMATIC S5 (AS511)					
S5-90U to 155U • except CPU 922 < version 9, • except CPU 928 (6ES5 928-3UA11) • except CPU 946 / 947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < version 5) (TTY)	–	– • 2)	–	•	6ES5 734-1BD20 ¹⁾ (3.2 m) 6XV1 440-2A... (see HMI accessories / connecting cables)
S5-90U to 155U • except CPU 922 < version 9, • except CPU 928 (6ES5 928-3UA11) • except CPU 946 / 947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < version 5) (TTY)	–	• 3)	• 3)	–	6AV6 671-8XJ00-0AX0 (RS422-TTY Adapter) 6XV1 440-2A... (see HMI accessories / connecting cables)

• System interface possible

– System interface not possible

¹⁾ PC cable with integrated level converter RS 232 / TTY

²⁾ OP 77B only

³⁾ WinCC flexible 2008 ServicePack 2 and higher

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC S5

Overview (continued)

Controller	SIMATIC HMI				
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A Basic Panels	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP Mobile Panel 177 PN	TP 277 OP 277 Mobile Panel 277 Mobile Panel 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via

SIMATIC S5 (PROFIBUS DP + HMI)

via <i>PROFIBUS DP</i> with 1 x S5-95U / L2-DP / master (6ES5 095-8ME02)	–	• 3)	• 3)	• 4)	PROFIBUS ⁴⁾ (see Catalog IK PI)
via <i>PROFIBUS DP</i> with <i>IM 308C</i> on S5-115U, -135U, -155U except CPU 922 < version 9, except CPU 928 (6ES5 928-3UA11), except CPU 946 / 947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < version 5)	–	• 3)	• 3)	• 4)	PROFIBUS ⁴⁾ (see Catalog IK PI)
via <i>PROFIBUS DP</i> with <i>CP 5431 FMS / DP</i> on S5-115U, -135U, -155U except CPU 922 < version 9, except CPU 928 (6ES5 928-3UA11), except CPU 946 / 947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < version 5)	–	• 3)	• 3)	• 4)	PROFIBUS ⁴⁾ (see Catalog IK PI)

• System interface possible

– System interface not possible

¹⁾ PC cable with integrated level converter RS 232 / TTY

²⁾ Not Mobile Panel 177, Mobile Panel 277, TP 277, OP 277

³⁾ Not Mobile Panel 177 PN, Mobile Panel 277 IWLAN;
Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable
and junction box (see Mobile Panel); see manual for cable assignment.

⁴⁾ Connection via integrated MPI / PROFIBUS interface; use the CP 5611 A2
with a standard PC

⁵⁾ Bus connector 6GK1 500-0EA02

⁶⁾ WinCC flexible 2008 ServicePack 2 and higher

Operator control and process monitoring devices

System interfaces: Panels and runtime software

SIMATIC 505

Overview

A variety of interfaces differing in respect of type and performance are available for linking SIMATIC HMI Panels to SIMATIC 505. However, a feature common to all is that from the point of view of the connected SIMATIC HMI Panel, the connection is always a logical point-to-point one, that is, there is always a fixed assignment between an HMI Panel and a PLC.

NITP interface (not for OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

The NITP interface runs via the PG interface of the SIMATIC 505 and uses the associated CPU resources, that is, the performance capability of the SIMATIC HMI Panel is determined by the performance capability of the SIMATIC CPU used.

PROFIBUS DP interface (not for OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

SIMATIC 505 PLC or SIMATIC 545, SIMATIC 555 with CP 5434

With the PROFIBUS DP interface, up to 30 SIMATIC HMI Panels can be connected as SLAVES to one SIMATIC 545, 555 via a PROFIBUS network, with plug-in PROFIBUS DP / master interface type CP 5434.

Communication between SIMATIC HMI Panels (DP slaves) and SIMATIC 505 (DP master) runs via PROFIBUS DP message frames in accordance with EN 50170 with higher-level "HMI profile". An application ladder which must be called for each connected SIMATIC HMI Panel is required in the PLC (example of application ladder included in ProTool scope of delivery).

Controller	SIMATIC HMI				
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A Basic Panels	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP Mobile Panel 177 PN	TP 277 OP 277 Mobile Panel 277 Mobile Panel 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
SIMATIC 505 (NITP)					
PLC 525, 535, 565T (RS 232) see online help ⁶⁾	–	• 1) 2)	• 1) 2)	•	PPX: 2601 094-8001 ³⁾
PLC 545, 555 (RS 232)	–	• 1) 2)	• 1) 2)	•	PPX: 2601 094-8001 ³⁾ 6XV1 440-2K... (see HMI Accessories / connecting cables)
PLC 535, 545 / CPU 1101, 565T (RS 422)	–	• 1)	• 1)	• 4)	see online help ⁶⁾
PLC 545 / CPU 1102, 555 (RS 422)	–	• 1)	• 1)	• 4)	see online help ⁶⁾
SIMATIC 505 (PROFIBUS DP + HMI)					
via PROFIBUS DP to 1 x PLC 545, 555 with CP 5434	–	• 1)	• 1)	• 5)	PROFIBUS ⁷⁾ (see Catalog IK PI)

• System interface possible

– System interface not possible

¹⁾ Not Mobile Panel 177 PN, Mobile Panel 277 IWLAN;
Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting
cable and junction box (see Mobile Panel); see manual for cable assign-
ment.

²⁾ The RS 422 / RS 232 adapter 6AV6 671-8XE00-0AX0 is required for Touch
Panels, Operator Panels, and Multi Panels

³⁾ A standard adapter (9- / 25-pin male) is required on the PLC

⁴⁾ A commercially available level converter (RS 232 / RS 422) is required on
the PC

⁵⁾ A commercially available level converter (RS 232 / RS 422) is required on
the PC

⁶⁾ Detailed information (cable assignment) can be found in the online help for
WinCC flexible and in the Communication User Manual for Windows-based
systems

⁷⁾ Bus connector 6GK1 500-0EA02

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview

Allen Bradley

Three communication protocols are available for the interface between SIMATIC TP/OP/MP and Allen Bradley:

DF1 interface (not on OP 73, Basic Panel PN, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

This communication between SIMATIC TP/OP/MP and Allen Bradley runs on the basis of the DF1 protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and the PG interface on an Allen Bradley PLC5 or the DF1 interface on an Allen Bradley SLC500 (point-to-point link)
- The integration of SIMATIC TP/OP/MP via Allen Bradley KF2 gateway in an Allen Bradley DH+ network. Communication is possible between SIMATIC TP/OP/MP and up to 4 SLC 500 PLCs or PLC5s (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)
- The integration of SIMATIC TP/OP/MP via Allen Bradley KF3 gateway in an Allen Bradley DH485 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 PLCs type SLC 500 or MicroLogix (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

DH485 interface (not on OP 73, OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

This communication between SIMATIC TP/OP/MP and Allen Bradley runs on the basis of the DH485 protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and an Allen Bradley SLC500 or MicroLogix (point-to-point link)
- The integration of SIMATIC TP/OP/MP via Allen Bradley AIC adapter in an Allen Bradley DH485 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 PLCs type SLC 500 or MicroLogix (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)
- The integration of SIMATIC TP/OP/MP (not PC with WinCC flexible Runtime) in an Allen Bradley DH485 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 PLCs type SLC 500 or MicroLogix (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

Ethernet IP protocol (not on OP 73, OP 77A, TP 177A, Basic Panel, OP 77B, TP 177B DP, OP 177B DP, Mobile Panel 177 DP, Mobile Panel 277 IWLAN)

This communication between SIMATIC TP/OP/MP and Allen Bradley runs based on the Ethernet IP protocol; SIMATIC TP/OP/MP integration is tested and released in an Ethernet IP network. Communication is possible between SIMATIC TP/OP/MP and up to 4 ControlLogix or CompactLogix PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP)

GE-Fanuc (not on OP 73, OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

Communication between SIMATIC TP/OP/MP and GE-Fanuc runs on the basis of the SNP protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and a GEF 90-Micro, 90-30 or 90-70 (point-to-point link)
- Integration of SIMATIC TP/OP/MP in an RS 422 network via adapter. Communication is possible between SIMATIC TP/OP/MP and up to 4 GEF 90-Micro, 90-30 or 90-70 PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)
- The integration of SIMATIC TP/OP/MP (not PC with ProTool/Pro Runtime or WinCC flexible Runtime) in an RS 422 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 GEF 90-Micro, 90-30 or 90-70 PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

LG GLOFA GM (not on OP 73, OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

Communication between SIMATIC TP/OP/MP and LG GLOFA GM runs on the basis of the dedicated protocol; the following have been tested and released:

- Connection between a SIMATIC TP/OP/MP and an LG GLOFA GM with Cnet module (point-to-point link)
- Integration of SIMATIC TP/OP/MP in an RS 422 network via LG Cnet module. Communication is possible between SIMATIC TP/OP/MP (not PC with ProTool/Pro Runtime) and up to 4 LG GLOFA GM PLCs on the network (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

Mitsubishi (not with OP 73, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

Two communication protocols are available for the interface between SIMATIC TP/OP/MP and Mitsubishi:

FX protocol

This communication between SIMATIC TP/OP/MP and Mitsubishi runs on the basis of the FX protocol; the direct connection between a SIMATIC TP/OP/MP and the PG interface of a Mitsubishi FX / FX0 (logical point-to-point link) has been tested and released.

MP4 protocol

This communication between SIMATIC TP/OP/MP and Mitsubishi runs on the basis of the MP4 protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and a Mitsubishi Series FX, Series A or Series Q (point-to-point link)
- Integration of SIMATIC TP/OP/MP in an RS 422 network via Mitsubishi converter FX-48SC-IF. Communication is possible between SIMATIC TP/OP/MP and up to 4 Series FX, Series A or Series Q PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 70A)
- The integration of SIMATIC TP/OP/MP (not PC with ProTool / Pro Runtime or WinCC flexible Runtime) in an RS 422 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 Series FX, Series A or Series Q PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview (continued)

Modicon

Two communication protocols are available for the interface between SIMATIC TP/OP/MP and Modicon:

MODBUS protocol (not with OP 73, Basic Panel PN, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

Communication between SIMATIC TP/OP/MP and Modicon runs on the basis of the MODBUS protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and the MODBUS interface on a Modicon 984, TSX Quantum or TSX Compact (point-to-point link)
- The integration of a SIMATIC TP/OP/MP via Modicon MODBUS PLUS bridge BM85-000 / the bridge function on a MODICON 984-145 / TSX Quantum in a MODBUS PLUS network and communication between SIMATIC TP/OP/MP (MODBUS / master) and up to 4 Modicon 984 or TSX Quantum PLCs (MODBUS/slave) on the network (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A).

MODBUS TCP/IP protocol (not on OP 73, OP 77A, TP 177A, Basic Panel DP, OP77B, TP 177B DP, OP 177B DP, Mobile Panel 177 DP, Mobile Panel 277 IWLAN)

Communication between SIMATIC TP/OP/MP and Modicon runs on the basis of the MODBUS TCP/IP protocol; the following have been tested and released:

- Integration of SIMATIC TP/OP/MP in a MODBUS TCP/IP network. Communication is possible between SIMATIC TP/OP/MP and up to 4 Momentum, TSX Micro (TSX 37), TSX Premium (TSX 57), TSX Unity Premium, TSX Quantum or TSX Unity Quantum PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP)
- The communication between SIMATIC TP/OP/MP via TCP/IP Modbus Plus Bridge 174 CEV 200 40 / MODBUS PLUS network and Modicon 984 (except 984A, 984B, 984X), TSX Compact, TSX Quantum or TSX Unity Quantum (multipoint link from the point of view of the SIMATIC TP/OP/MP)

Omron (not with OP 73, Basic Panel PN, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

Communication between SIMATIC TP/OP/MP and Omron runs on the basis of the Link / MultiLink protocol; the following have been tested and released:

- Direct connection between a SIMATIC TP/OP/MP and an Omron Sysmac C, Sysmac α or Sysmac CV (point-to-point link)
- Integration of SIMATIC TP/OP/MP in an RS 422 network via Omron converter NT-AL001. Communication is possible between SIMATIC TP/OP/MP and up to 4 Sysmac C, Sysmac α or Sysmac CV PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)
- The integration of SIMATIC TP/OP/MP (not PC with ProTool / Pro Runtime or WinCC flexible Runtime) in an RS 422 network. Communication is possible between SIMATIC TP/OP/MP and up to 4 Sysmac C, Sysmac α or Sysmac CV PLCs (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A)

Telemecanique (not on OP 73, OP 77A, TP 177A, Basic Panel, Mobile Panel 177 PN, Mobile Panel 277 IWLAN, WinCC flexible Runtime)

Data exchange between SIMATIC TP/OP/MP and Telemecanique runs on the basis of the UNI-TELWAY protocol; the following have been tested and released:

- Connection between a SIMATIC TP/OP/MP (UNI-T / slave) via Telemecanique outlet TSX SCA62 and a Telemecanique TSX 17 or TSX 47 / 67 / 87 / 107 (UNI-T / master) (logical point-to-point link)
- Connection between a SIMATIC TP/OP/MP (UNI-T / slave) via Telemecanique outlets TSX SCA62 + ACC01 and a Telemecanique TSX 37 or TSX 57 (UNI-T / master) (logical point-to-point link)
- The integration of a SIMATIC TP/OP/MP via Telemecanique outlet TSX SCA62 in a UNI-TELWAY network and communication between SIMATIC TP/OP/MP (UNI-T / slave) and up to 4 TSX 17, TSX 37, TSX 57 or TSX 47 / 67 / 87 / 107 PLCs (UNI-T / master or slave) on the network (multipoint link from the point of view of the SIMATIC TP/OP/MP; only one connection possible with TP 170A).

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview (continued)

Controller	SIMATIC HMI					WinCC flexible Runtime	Connection via
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A	Basic Panel	OP 77B TP 177B DP OP 177B DP / PN TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP / 177 PN	TP 277 OP 277 Mobile Panel 277 / 277 IWLAN MP 177 MP 277 MP 377			
Allen Bradley (DF1)							
SLC 500 / 03,04,05 or MicroLogix (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●		1747 CP3 ⁷⁾ see FAQ ⁹⁾
PLC 5 / 11,20,30,40,60,80 (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●		1784 CP10 ⁷⁾ see FAQ ⁹⁾
PLC 5 / 11,20,30,40, 60, 80 (RS 422)	● 1)	● 1)	● 1)	● 1)	—		see FAQ ⁹⁾
via KF2 gateway and DH+ network with up to 4 x SLC 50 / 04 or PLC 5 / 11,20,30,40,60,80 (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●		1784 CP10 ^{7) 8)} see FAQ ⁹⁾
via KF2 gateway and DH+ network with up to 4 x SLC 50 / 04 or PLC 5 / 11,20,30,40,60,80 (RS 422)	● 1)	● 1)	● 1)	● 1)	—		see FAQ ⁹⁾
via KF3 gateway and DH485 network with up to 4 x SLC 500 / 00,01,02,03,04,05 or MicroLogix (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●		1784 CP10 ^{7) 8)} see FAQ ⁹⁾
Allen Bradley (DH485)							
SLC 500 / 03,04,05 or MicroLogix (RS 232)	—	—	● 1) 2)	● 1) 2)	●		see FAQ ⁹⁾
via AIC adapter and DH485 network with up to 4 x SLC 500 or MicroLogix (RS 232)	—	—	● 1) 2)	● 1) 2)	●		see FAQ ⁹⁾
via DH485 network with up to 4 x SLC 500 / 00,01,02,03,04,05 or MicroLogix (RS 485)	—	—	● 1)	● 1)	—		see FAQ ⁹⁾
Allen Bradley (Ethernet IP)							
via Ethernet IP network with up to 4 x ControlLogix (1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L65, each with Ethernet module 1756-ENBT) GuardLogix (1756-L61S, 1756-L62S, 1756-L61S, each with Ethernet module 1756-ENBT) or CompactLogix (1769-L32E, 1769-L35E, each with Ethernet interface onboard)	—	—	● 3) 4)	● 4)	●		see FAQ ⁹⁾

● System interface possible

— System interface not possible

¹⁾ Not Basic Panel PN, Mobile Panel 177 PN, Mobile Panel 277 IWLAN; Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

²⁾ The RS 422 / RS 232 adapter 6AV6 671-8XE00-0AX0 is required for Basic Panel, Touch Panel, Operator Panel, and Multi Panel

³⁾ Only TP 177B DP / PN, OP 177B DP / PN, Mobile Panel 177 PN

⁴⁾ Mobile Panel 177 PN, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

⁵⁾ Not Mobile Panel 277 IWLAN (wireless interface, see Mobile Panel)

⁶⁾ Connection via integrated Industrial Ethernet interface; use the CP 1612 with a standard PC

⁷⁾ Allen Bradley PC cable

⁸⁾ Cable for connection to KF2 / KF3 gateway; a gander changer (25-pin socket / 25-pin socket) is required on the gateway side

⁹⁾ Detailed information (cables used) see FAQ: <http://support.automation.siemens.com/WW/view/en/29034071> in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview (continued)

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A	Basic Panel	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP / 177 PN	TP 277 OP 277 Mobile Panel 277 / 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
GE-Fanuc (SNP)						
GEF 90-Micro, 90-30, 90-70 (RS 232)	–	–	• 1) 2)	• 1) 2)	•	see FAQ 4)
via adapter with up to 4 x GEF 90-Micro, 90-30, 90-70 (RS 232)	–	–	• 1) 2)	• 1) 2)	•	see FAQ 4)
via adapter with up to 4 x GEF 90-Micro, 90-30, 90-70 (RS 422)	–	–	• 1)	• 1)	–	see FAQ 4)
LG GLOFA (Dedicated)						
GLOFA-GM with Cnet module (RS 232)	–	–	• 1) 2)	• 1) 2)	•	see FAQ 4)
With up to 4 x GLOFA-GM with Cnet module (RS 422)	–	–	• 1)	• 1)	–	see FAQ 4)
Mitsubishi FX						
FX0 (RS 422)	–	–	–	–	•	SC-09 6)
	–	–	• 1)	• 1)	–	see FAQ 4)
FX0n, FX1n, FX2n (RS 422)	–	–	–	–	•	SC-09 6)
	–	–	• 1)	• 1)	–	see FAQ 4)
• FX1N-14MR-DS	• 1) 6)	• 1) 6)	–	–	–	SC-09 6)
• FX1S-10MR-DS						
• FX2N-16MR-DS (RS 422)						
Mitsubishi (MP4)						
• Series FX with communications module	–	–	• 1) 2)	• 1) 2)	•	see FAQ 4)
• Series A (AnN, AnA, AnU, AnS) with interface module						
• Series Q (QnA, QnAS) with interface module (RS 232)						
via FX-48SC-IF converter with up to 4 PLCs	–	–	• 1) 2)	• 1) 2)	•	see FAQ 4)
• Series FX with communications module						
• Series A (AnN, AnA, AnU, AnS) with interface module						
• Series Q (QnA, QnAS) with interface module (RS 232)						
with up to 4 PLCs	–	–	• 1)	• 1)	–	see FAQ 4)
• Series FX with communications module						
• Series A (AnN, AnA, AnU, AnS) with interface module						
• Series Q (QnA, QnAS) with interface module (RS 422)						

• System interface possible

– System interface not possible

1) Not Mobile Panel 177 PN, Mobile Panel 277 IWLAN; Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

2) The RS 422 / RS 232 adapter 6AV6 671-8XE00-0AX0 is required for Touch Panels, Operator Panels, and Multi Panels

3) With connection using a Mitsubishi PC cable, an 15-pin / 9-pin adapter 6XV1 440-2UE32 is required

4) Detailed information (cables used) see FAQ: <http://support.automation.siemens.com/WW/view/en/29034071> in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

5) Mitsubishi PC cable with integrated level converter RS 232 / RS422

6) WinCC flexible 2008 ServicePack 2 and higher

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview (continued)

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A	Basic Panel	OP 77B TP 177B DP OP 177B DP TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP / Mobile Panel 177 PN	TP 277 OP 277 Mobile Panel 277 / 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
Modicon (MODBUS)						
984-120, 130, 131, 141, 145, 380, 381, 185, 480, 485, 680, 685, 780, 785, bzw. TSX-Quantum-CPU 113, 213, 424, 434, 534 (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●	see FAQ ⁷⁾
via bridge BM85-000 or PLC with bridge function. / MODBUS PLUS – network with up to 4 x 984-120, ... or TSX Quantum - CPU 113, or TSX Contact (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●	see FAQ ⁷⁾
TSX Compact (RS 232)	● 1) 2)	● 1) 2)	● 1) 2)	● 1) 2)	●	see FAQ ⁷⁾
Modicon (MODBUS TCP/IP)						
via MODBUS TCP/IP – network with up to 4 x TSX Unity Quantum or TSX Unity Premium or TSX Quantum or TSX Quantum with TCP/IP module 140 NOE 771 01 or TSX Unity Premium or TSX Premium with TCP/IP module TSX ETY 110 or TSX Micro with TCP/IP module TSX ETY 410 or Momentum with CPU adapter 171 CCC 980 30	–	–	● 3) 4)	● 4) 5)	●	see FAQ ⁷⁾
via TCP/IP modbusplus bridge 174 CEV 200 40 / MODBUS PLUS – network with up to 4 x TSX Unity Quantum or TSX Quantum or TSX Compact or 984-120, ... (except 984A, 984B, 984X)	–	–	● 3) 4)	● 4) 5)	●	see FAQ ⁷⁾
via MODBUS TCP/IP – network with up to 4 x TSX Unity Quantum or TSX Unity Premium or TSX Quantum or TSX Quantum with TCP/IP module 140NOE 771 01 or TSX Unity Premium or TSX Premium with TCP/IP module TSX ETY 110 or TSX Micro with TCP/IP module TSX ETY 410 or Momentum with CPU adapter 171 CCC 980 30	● 3) 8)	● 3) 8)	–	–	–	see FAQ ⁷⁾
via TCP/IP modbusplus bridge 174 CEV 200 40 / MODBUS PLUS – network with up to 4 x TSX Unity Quantum or TSX Quantum or TSX Compact	● 3) 8)	● 3) 8)	–	–	–	see FAQ ⁷⁾

• System interface possible

– System interface not possible

¹⁾ Not Mobile Panel 177 PN, Mobile Panel 277 IWLAN; Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

²⁾ The RS 422 / RS 232 adapter 6AV6 671-8XE00-0AX0 is required for Touch Panels, Operator Panels, and Multi Panels

³⁾ Only TP 177B DP / PN, OP 177B DP / PN, Mobile Panel 177 PN

⁴⁾ Mobile Panel 177 PN, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

⁵⁾ Not Mobile Panel 277 IWLAN (wireless interface, see Mobile Panel)

⁶⁾ Connection via integrated Industrial Ethernet interface; use the CP 1612 with a standard PC

⁷⁾ Detailed information (cables used) see FAQ: <http://support.automation.siemens.com/WW/view/de/29034071> in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

⁸⁾ WinCC flexible 2008 ServicePack 2 and higher

Operator control and process monitoring devices

System interfaces: Panels and runtime software

Third-party controllers

Overview (continued)

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	OP 77A TP 177A	Basic Panel	OP 77B TP 177B DP OP 177B DP / PN TP 177B DP / PN OP 177B DP / PN Mobile Panel 177 DP Mobile Panel 177 PN	TP 277 OP 277 Mobile Panel 277 / 277 IWLAN MP 177 MP 277 MP 377	WinCC flexible Runtime	Connection via
Omron (Link / Multi Link)						
<ul style="list-style-type: none"> • SYSMAC C (except CPU CQM1 – CPU 11 / 21) • SYSMAC Alpha • SYSMAC CV (RS 232) 	–	–	• 1) 2)	• 1) 2)	•	see FAQ ³⁾
via NT-AL001 converter with up to 4 PLCs	–	–	• 1) 2)	• 1) 2)	•	see FAQ ³⁾
<ul style="list-style-type: none"> • SYSMAC C (except CPU CQM1 – CPU 11 / 21) • SYSMAC Alpha • SYSMAC CV (RS 232) 	–	–	• 1)	• 1)	–	see FAQ ³⁾
with up to 4 PLCs	–	–	• 1)	• 1)	–	see FAQ ³⁾
<ul style="list-style-type: none"> • SYSMAC C (except CPU CQM1 – CPU 11 / 21) • SYSMAC Alpha • SYSMAC CV (RS 422) • CP1L-L14DT1-D • C1H-Y20DT-D • CJ1M CPU11 	• 1) 4)	• 1) 4)	–	–	–	
Telemecanique (UNI-TELWAY)						
via TSX SCA62 outlet with TSX 17 or TSX 47 / 67 / 87 / 107 (RS 485)	–	–	• 1)	• 1)	–	see FAQ ³⁾
via TSX SCA62 + ACC01 outlets with TSX 37 / 57 (RS 485)	–	–	• 1)	• 1)	–	see FAQ ³⁾
via TSX SCA62 outlet and UNI-TELWAY network with 4 x TSX 17 or TSX 37 / 57 (+ACC 01) or TSX 47 / 67 / 87 / 107 (RS 485)	–	–	• 1)	• 1)	–	see FAQ ³⁾

• System interface possible

– System interface not possible

¹⁾ Not Mobile Panel 177 PN, Mobile Panel 277 IWLAN; Mobile Panel 177 DP, Mobile Panel 277 connection via special connecting cable and junction box (see Mobile Panel); see manual for cable assignment.

²⁾ The RS 422 / RS 232 adapter 6AV6 671-8XE00-0AX0 is required for Touch Panels, Operator Panels, and Multi Panels

³⁾ Detailed information (cables used) see FAQ: <http://support.automation.siemens.com/WW/view/en/29034071> in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

⁴⁾ WinCC flexible 2008 ServicePack 2 and higher

Operator control and process monitoring devices

HMI Accessories

Industrial USB Hub 4

Overview



Industrial USB Hub 4, open

- The Industrial USB Hub 4 is used as a USB hub for the connection of peripheral devices to Multi Panels, Panel PCs and standard PCs.
- The industrial USB Hub 4 with IP65 degree of protection on the front (Service Kit required) can be mounted in a control cabinet. This simplifies the use of USB peripherals in harsh industrial environments.
- USB peripherals can be connected to the panel and operated via the Industrial USB Hub 4 without opening the cabinet door. The ports are also accessible from the rear even in the control cabinet.

Technical specifications

Industrial USB Hub 4	6AV6 671-3AH00-0AX0
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Ambient conditions	
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
IP65 at front	Yes
IP20 rear	Yes
Certifications & standards	
Certifications	CE
Interfaces	
Number of interfaces / according to USB	4; 500 mA each, e.g. mouse, keyboard, printer, USB stick
General information	
belongs to product / product range	MP 277, Panel PC
Dimensions	
External dimensions (W x H x D) in mm	212 x 156 x 50
Weight	
Weight	0.5 kg

Ordering data

Order No.

Industrial USB Hub 4	B	6AV6 671-3AH00-0AX0
Service pack for Industrial USB Hub 4		See HMI Accessories Service packages (incl. IP65 expansion) page 2/175 onwards

B: Subject to export regulations: AL: N and ECCN: EAR99H

Further information

Note for SIMATIC Panel PCs:

The Industrial USB Hub 4 is approved for the Windows CE / 2000 / XP operating systems. The appropriate drivers are supplied with the operating system software.

Operator control and process monitoring devices

HMI Accessories

Connecting cables

Overview



Example – connecting cables

Key

P = PROCESS COUPLING

K = optional process coupling (option required)

D = DOWNLOAD (update operating system, project, ...)

U = booting (factory setting in the case of a missing or damaged operating system)

MBP = Mobile Panel

2

	S5-TTY (PG-S5)	S5-TTY (TD / OP-S5) (15/15-pole)	S7 PG702	RS232 external (15/9-pole)	TD-PPI (incl. voltage)	RS232 zero modem	RS232 / PPI multi-master cable	USB / PPI multi-master cable	MPI (PG-S7) to 187.5 kbaud
	6ES5 734- 2xxxx	6XV1 440- 2Axxx	6ES7 705- 0AA00-7BA0	6XV1 440- 2Kxxx	6ES7 901- 3EB10-0XA0	6ES7 901- 1BF00-0XA0	6ES7 901- 3CB30-0XA0	6ES7 901- 3DB30-0XA0	6ES7 901- 0BF00-0AA0
PP7	-	-	-	-	-	-	-	-	-
PP17 I	-	-	-	-	-	-	-	-	-
PP17-II	-	-	-	-	-	-	-	-	-
TD100C	-	-	-	-	P	-	D/U	-	-
TD200	-	-	-	-	P	-	D/U	-	P
TD200C	-	-	-	-	P	-	D/U	-	P
TD17	D	P	-	P	-	D/U	-	-	P
TP070	-	-	-	-	-	-	D/U	-	-
TP170micro	-	-	-	-	-	-	D/U	-	-
TP170A	-	-	-	-	-	D/U	-	-	P/D
TP177micro	-	-	-	-	-	-	D/U	D/U	-
TP177A	-	-	-	-	-	-	D/U	D/U	P/D
KTP400 mono PN	-	-	-	-	-	-	-	-	-
KTP600 mono PN	-	-	-	-	-	-	-	-	-
KTP600 color DP	-	-	-	-	-	-	D/U	D/U	P/D
KTP600 color PN	-	-	-	-	-	-	-	-	-
KTP1000 color DP	-	-	-	-	-	-	D/U	D/U	P/D
KTP1000 color PN	-	-	-	-	-	-	-	-	-
KTP1500 color PN	-	-	-	-	-	-	-	-	-
TP170B mono	-	-	-	P	-	D/U	-	-	P/D
TP170B color	-	-	-	P	-	D/U	-	-	P/D
TP177B DP	-	-	-	P ³⁾	-	-	D/U	-	P/D
TP177B PN/DP	-	-	-	P ³⁾	-	-	D/U	-	P/D
TP177B 4"	-	-	-	P ³⁾	-	D	D	-	P/D
TP270-6	-	-	-	P	-	D/U	-	-	P/D
TP277-6	-	-	-	P ³⁾	-	-	D/U	-	P/D
MP177-6 T	-	-	-	P ³⁾	-	-	D/U	-	P/D
MP270-6 T	-	-	-	P	-	D/U	-	-	P/D
MP277-8 T	-	-	-	P ³⁾	-	-	D/U	-	P/D
TP270-10	-	-	-	P	-	D/U	-	-	P/D
MP277-10 T	-	-	-	P ³⁾	-	-	D/U	-	P/D

Operator control and process monitoring devices

HMI Accessories

Connecting cables

Overview (continued)

	S5-TTY (PG-S5)	S5-TTY (TD/OP-S5) (15/15-pole)	S7 PG702	RS232 external (15/9-pole)	TD-PPI (incl. volt- age)	RS232 zero modem	RS232/PPI multi-master cable	USB/PPI multi-master cable	MPI (PG-S7) to 187.5 kbaud
	6ES5 734- 2xxxx	6XV1 440- 2Axxx	6ES7 705- 0AA00-7BA0	6XV1 440- 2Kxxx	6ES7 901- 3EB10-0XA0	6ES7 901- 1BF00-0XA0	6ES7 901- 3CB30-0XA0	6ES7 901- 3DB30-0XA0	6ES7 901- 0BF00-0AA0
MP370-12 T	-	P	-	P ³⁾	-	D/U	-	-	P/D
MP370-15 T	-	P	-	P ³⁾	-	D/U	-	-	P/D
MP377-12 T	-	-	-	P ³⁾	-	-	D	-	P/D
MP377-15 T	-	-	-	P ³⁾	-	-	D	-	P/D
MP377-19 T	-	-	-	P ³⁾	-	-	D	-	P/D
OP3	-	-	P	-	P ¹⁾	-	-	-	-
OP73micro	-	-	-	-	P	-	D/U	D/U	P
OP73	-	-	-	-	P	-	D/U	D/U	P7d
OP7 PP	D	P	-	P	-	-	-	-	-
OP7 DP	-	-	-	-	-	-	-	-	P
OP7 DP12	D	P	-	P	-	-	-	-	P
OP77A	-	-	-	-	-	-	D/U	D/U	P/D
OP77B	-	-	-	P	-	D/U	-	-	P/D
OP17 PP	D	P	-	P	-	-	-	-	-
OP17 DP	-	-	-	-	-	-	-	-	P
OP17 DP12	D	P	-	P	-	-	-	-	P
OP170B	-	-	-	-	-	D/U	-	-	P/D
OP177B DP	-	-	-	P ³⁾	-	-	D/U	-	P/D
OP177B PN/DP	-	-	-	P ³⁾	-	-	D/U	-	P/D
OP270-6	-	-	-	P	-	D/U	-	-	P/D
OP277-6	-	-	-	P ³⁾	-	-	D/U	-	P/D
MP277-8 K	-	-	-	P ³⁾	-	-	D/U	-	P/D
OP270-10	-	-	-	P	-	D/U	-	-	P/D
MP270-10 K	-	-	-	P	-	D/U	-	-	P/D
MP277-10 K	-	-	-	P ³⁾	-	-	D/U	-	P/D
MP370-12 K	-	P	-	P	-	D/U	-	-	P/D
MP377-12 K	-	-	-	P ³⁾	-	-	D	-	P/D
MBP 170	-	-	-	-	-	-	-	-	-
MBP 177 DP	-	-	-	-	-	-	D/U	-	-
MBP 177 PN	-	-	-	-	-	-	D/U	-	-
MBP 277	-	-	-	-	-	-	D/U	-	-

Operator control and process monitoring devices

HMI Accessories

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)	Conv. RS422-RS232	Conv. RS232-TTY (20 mA)	90° angular (9-pin 1:1)
	6XV1 830-0Axxx	Standard PROFIBUS (2 contact)	6XV1 440-4Axxx	6XV1 870-3RH20	Standard Ethernet CAT5	6XV1 440-4Bxxx	6AV6 671-8XE00-0AX0	6ES5 734-1BD20	6AV6 671-8XD00-0AX0
PP7	P	P	-	-	-	-	-	-	-
PP17 I	P	P	-	-	-	-	-	-	-
PP17-II	P	P	-	-	-	-	-	-	-
TD100C	-	-	-	-	-	-	-	-	-
TD200	-	-	-	-	-	-	-	-	-
TD200C	-	-	-	-	-	-	-	-	-
TD17	P	P	-	-	-	-	-	-	P/D/U
TP070	P	P	-	-	-	-	-	-	P/D/U
TP170micro	P	P	-	-	-	-	-	-	P/D/U
TP170A	P	P	-	-	-	-	-	P	P/D/U
TP177micro	P	P	-	-	-	-	-	-	P/D/U
TP177A	P	P	-	-	-	-	-	-	P/D/U
KTP400 mono PN	-	-	-	P/D/U	P/D/U	-	-	-	-
KTP600 mono PN	-	-	-	P/D/U	P/D/U	-	-	-	-
KTP600 color DP	P/D	P/D	-	-	-	-	-	-	P/D/U
KTP600 color PN	-	-	-	P/D/U	P/D/U	-	-	-	-
KTP1000 color DP	P/D	P/D	-	-	-	-	-	-	P/D/U
KTP1000 color PN	-	-	-	P/D/U	P/D/U	-	-	-	-
KTP1500 color PN	-	-	-	P/D/U	P/D/U	-	-	-	-
TP170B mono	P/D	P/D	-	-	-	-	-	P	P/D/U
TP170B color	P/D	P/D	-	-	-	-	-	P	P/D/U
TP177B DP	P/D	P/D	-	-	-	-	P	-	P/D/U
TP177B PN/DP	P/D	P/D	-	P/D	P/D	-	P	-	P/D/U
TP177B 4"	P/D	P/D	-	P/D/U	P/D/U	-	P	-	P/D/U
TP270-6	P/D	P/D	-	K/D	K/D	-	-	P	P/D/U
TP277-6	P/D	P/D	-	P/D	P/D	-	P	-	P/D/U
MP177-6 T	P/D	P/D	-	P/D	P/D	-	P	-	P/D/U
MP270-6 T	P/D	P/D	-	P/D	P/D	-	-	P	P/D/U
MP277-8 T	P/D	P/D	-	P/D	P/D	-	P	-	P/D/U
TP270-10	P/D	P/D	-	K/D	K/D	-	-	P	P/D/U
MP270-10 T	P/D	P/D	-	P/D	P/D	-	-	P	P/D/U
MP277-10 T	P/D	P/D	-	P/D	P/D	-	P	-	P/D/U
MP370-12 T	P/D	P/D	-	P/D	P/D	-	-	P	P/D/U
MP370-15 T	P/D	P/D	-	P/D	P/D	-	-	P	P/D/U
MP377-12 T	P/D	P/D	-	P/D/U	P/D/U	-	P	-	P/D
MP377-15 T	P/D	P/D	-	P/D/U	P/D/U	-	P	-	P/D
MP377-19 T	P/D	P/D	-	P/D/U	P/D/U	-	P	-	P/D
OP3	P	-	-	-	-	-	-	-	-
OP73micro	P	-	-	-	-	-	-	-	-

¹⁾ With gender changer

²⁾ PROFINET IRT (Isochronous Runtime); isochronous mode only possible with IRT-enabled switch

³⁾ Only in conjunction with the RS422 / RS232 converter

Note:

This table is for basic orientation only. Technical characteristics are described in the communication manual or in the respective user manual.

Operator control and process monitoring devices

HMI Accessories

Connecting cables

2

Ordering data

Order No.

Order No.

Connecting cables 6ES7 901-0...

for SIMATIC S7
MPI cable between
SIMATIC S7 and programming
device via MPI max. 187.5 kbaud

Standard length

- 5.0 m ¹⁾

6ES7 901-0BF00-0AA0

Connecting cables 6ES7 901-1BF00-0XA0

Between the HMI adapter and
PC/TS adapter (RS 232
cable / null-modem cable) for
OP77B, TP177A/B, OP177B,
TP/OP270, MP270, MP370

- 5.0 m

6ES7 901-1BF00-0XA0

Connecting cables 6ES7 901-3...

Process connecting cable

For connecting TD 100C or
TD 200C to S7-200

6ES7 901-3EB10-0XA0

Connecting cables 6XV1 440-2A...

Connecting cable between
TD/TP/OP and PLC S5-90U to
S5-155U

6XV1 440-2A...

PROFIBUS connecting cable 830-1C

For connection of data terminal,
precut / preassembled with two
sub D connectors, 9-pin, termi-
nated at both ends

for PP, OP 73micro, TP 070,
OP73, TP 170micro, TP 177micro,
OP 77A/B, TP 170A, TP 177A,
TP/OP 170B, TP/OP 177B,
MP 270B

- 1.5 m
- 3.0 m

6XV1 830-1CH15

6XV1 830-1CH30

USB / PPI multi-master cable

For connecting the S7-200 to the
serial PC / OP interface

6ES7 901-3DB30-0XA0

PROFIBUS FC Standard Cable

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

6XV1 830-0EH10

Industrial Ethernet TX XP Cord RJ45 / RJ45

Crossed TP cable 4 x 2,
preassembled with 2 x RJ45
connectors

- 1.0 m
- 6.0 m
- 10.0 m

6XV1 870-3RH10

6XV1 870-3RH60

6XV1 870-3RN10

¹⁾ Included in PG scope of delivery

²⁾ Other *cable lengths* (3.2 m, 5 m, 10 m, 20 m, 32 m and 50 m) see length
key below

Note:

Cable pin assignments can be found on the Internet in the online
help of WinCC flexible and under FAQs.

Operator control and process monitoring devices

HMI Accessories

RS485 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 6ES7 972-0BA30-0XA0)
- PG connection with special bus connector possible without additional installation of network nodes.

Ordering data

Order No.

RS485 bus connector with axial cable outlet (180°)

for industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbit/s

6GK1 500-0EA02

RS485 bus connector with cable outlet (90°)

with screw-terminals, max. transmission rate 12 Mbit/s

- without PG interface

6ES7 972-0BA12-0XA0

- with PG interface

6ES7 972-0BB12-0XA0

RS485 bus connector with angled cable outlet (35°)

with screw-terminals, max. transmission rate 12 Mbit/s

- without PG interface

6ES7 972-0BA41-0XA0

- with PG interface

6ES7 972-0BB41-0XA0

RS485 bus connector with cable outlet (30°)

with screw-terminals, low-cost variant, max. transmission rate 1.5 Mbit/s

6ES7 972-0BA30-0XA0

PROFIBUS bus connector RS485 with FastConnect technology

PROFIBUS FastConnect bus connector RS485 with 90° cable outlet

with insulation displacement terminals, max. transmission rate 12 Mbit/s

without PG interface

- 1 item
- 100 items

6ES7 972-0BA52-0XA0

6ES7 972-0BA52-0XB0

with PG interface

- 1 item
- 100 items

6ES7 972-0BB52-0XA0

6ES7 972-0BB52-0XB0

PROFIBUS FastConnect RS485 bus connector with angled cable outlet (35°)

with insulation displacement terminals, max. transmission rate 12 Mbit/s

- without PG interface

6ES7 972-0BA60-0XA0

- with PG interface

6ES7 972-0BB60-0XA0

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

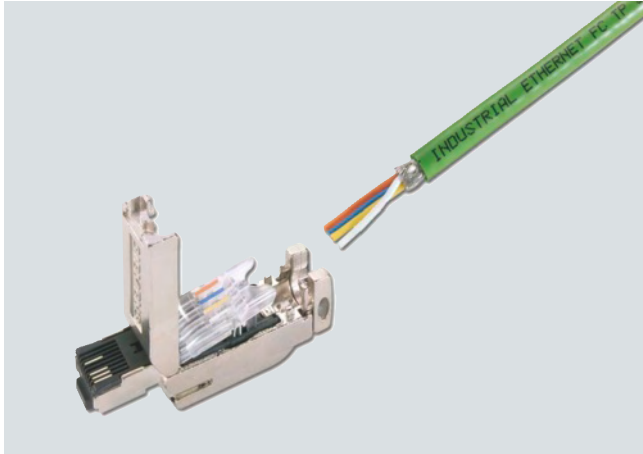
6GK1 500-0FC10

Operator control and process monitoring devices

HMI Accessories

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

Order 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 item
- 1 pack = 10 items
- 1 pack = 50 items

6GK1 901-1BB10-2AA0**6GK1 901-1BB10-2AB0****6GK1 901-1BB10-2AE0**

IE FC RJ45 Plug 90

90° cable outlet; e.g. for ET 200S

- 1 pack = 1 item
- 1 pack = 10 items
- 1 pack = 50 items

6GK1 901-1BB20-2AA0**6GK1 901-1BB20-2AB0****6GK1 901-1BB20-2AE0**

IE FC RJ45 Plug 145

145° cable outlet; e.g. for SIMOTION and SINAMICS

- 1 pack = 1 item
- 1 pack = 10 items
- 1 pack = 50 items

6GK1 901-1BB30-0AA0**6GK1 901-1BB30-0AB0****6GK1 901-1BB30-0AE0**

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. quantity 1,000 m; minimum order 20 m

Preferred length

- 1000 m

6XV1 840-2AH10**6XV1 840-2AU10**

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. quantity 1000 m, minimum order 20 m

6XV1 870-2B

Operator control and process monitoring devices

HMI Accessories

Accessories for SIMATIC Mobile Panels

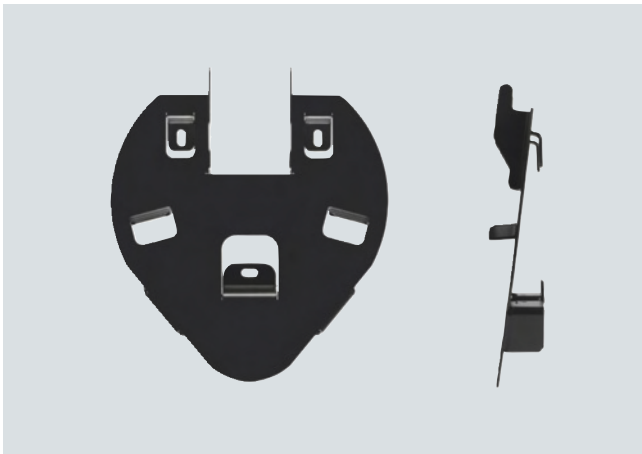
Overview



Connecting cable DP (PROFIBUS) for Mobile Panels



Connecting cable PN (PROFINET) for Mobile Panels



Device for wall fastening for Mobile Panel, front and side view

Ordering data

Order No.

Connecting cable DP (MPI/PROFIBUS) for Mobile Panels

Standard lengths

2 m

6XV1 440-4AH20

5 m

6XV1 440-4AH50

10 m

6XV1 440-4AN10

15 m

6XV1 440-4AN15

25 m

6XV1 440-4AN25Custom lengths ¹⁾

8 m

6XV1 440-4AH80

20 m

6XV1 440-4AN20

Connecting cable PN (PROFINET) for Mobile Panels

Standard lengths

2 m

6XV1 440-4BH20

5 m

6XV1 440-4BH50

8 m

6XV1 440-4BH80

10 m

6XV1 440-4BN10

15 m

6XV1 440-4BN15

20 m

6XV1 440-4BN20

25 m

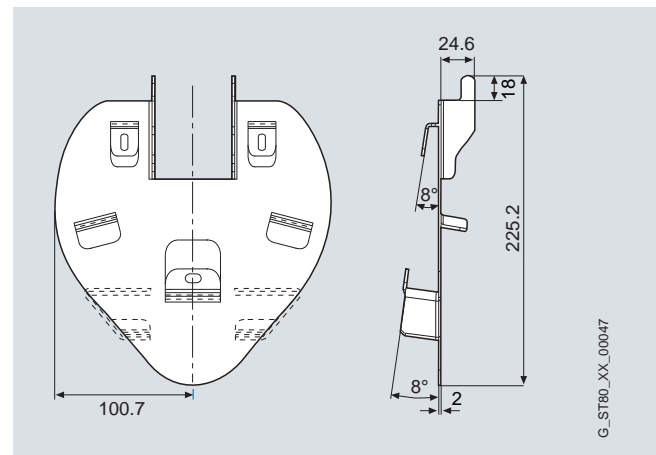
6XV1 440-4BN25

Wall mounting bracket for Mobile Panels

6AV6 574-1AF04-4AA0¹⁾ Extended delivery time

Dimensions

All specifications in mm. Panel cutout see technical specifications.



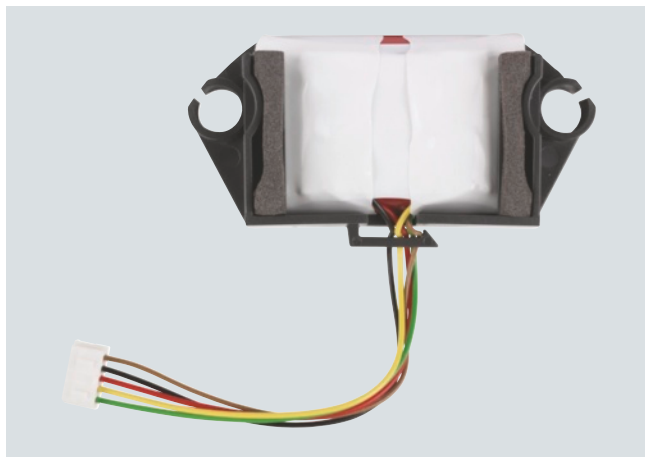
SIMATIC Mobile Panel wall-mounting bracket

Operator control and process monitoring devices

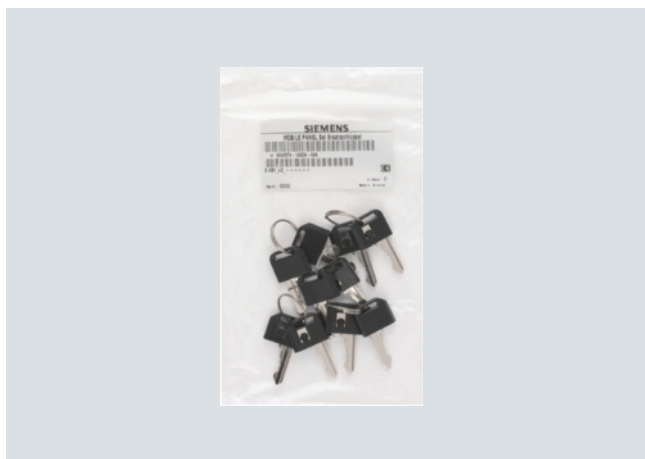
HMI Accessories

Accessories for SIMATIC Mobile Panel

Overview (continued)



Option package: Battery for Mobile Panels



Replacement key for Mobile Panel

Ordering data

Order No.

Accumulator option pack for Mobile Panels (DP and PN)

6AV6 671-5AD00-0AX0

Spare key for Mobile Panels

6AV6 574-1AG04-4AA0

(pack of 10 keys)

Touch pen

B

6AV6 645-7AB14-0AS0

including nylon line for securing it to the Mobile Panel 277 10" (set of 5, packed ready for shipping)

Extra battery

B

6AV6 671-5CL00-0AX0

for Mobile Panel 277(F) IWLAN

B: Subject to export regulations: AL: N and ECCN: EAR99H

Overview



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

Technical specifications

Terminal Box DP for Mobile Panels 177 / 277	6AV6 671-5AE00-0AX0 (MPI / PROFIBUS) Basic	6AV6 671-5AE10-0AX0 (MPI / PROFIBUS) Plus	6AV6 671-5AE01-0AX0 (PROFINET) Basic	6AV6 671-5AE11-0AX0 (PROFINET) Plus
Supply voltage	24 V DC	24 V DC	24 V DC	24 V DC
permissible range	+20.4 V to +28.8 V DC	+20.4 V to +28.8 V DC	+20.4 V to +28.8 V DC	+20.4 V to +28.8 V DC
Rated current	0.4 A	0.5 A	0.4 A	0.5 A
Power	10 W	12 W		
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
Ambient conditions				
max. relative humidity (in %)	85 %	85 %	85 %	85 %
Temperature				
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Transport, storage	-20 °C ... +70 °C	-20 °C ... +70 °C	-20 °C ... +70 °C	-20 °C ... +70 °C
Degree of protection				
Enclosure according to EN 60529	IP65	IP65	IP65	IP65
Certifications & standards				
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
Interfaces				
Interfaces	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)
Functionality under WinCC flexible				
Applications / options				
• Connection point identification	Yes	Yes	Yes	Yes
Dimensions				
External dimensions (W x H x D) in mm	160 x 120 x 70	160 x 120 x 70	230 x 120 x 80	230 x 120 x 80
Weight				
Weight	0.35 kg	0.4 kg	0.45 kg	0.5 kg

Operator control and process monitoring devices

HMI Accessories

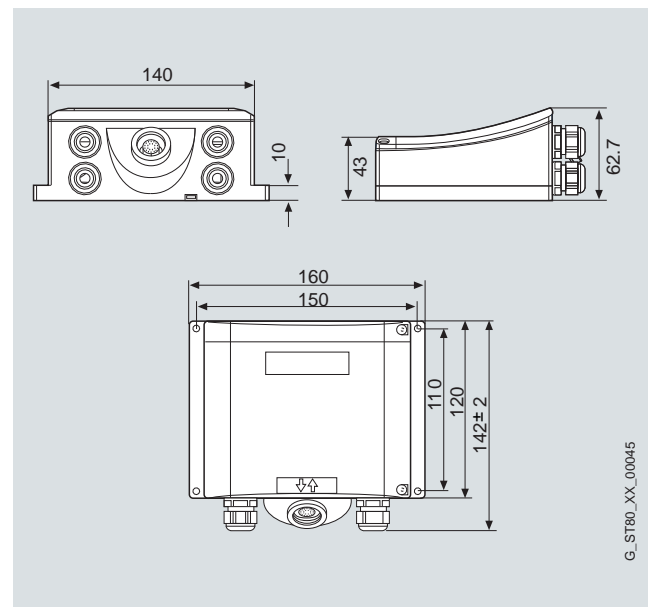
Accessories for SIMATIC Mobile Panel – Terminal boxes

Ordering data	Order No.
DP junction box for Mobile Panels 177 / 277 (MPI / PROFIBUS)	
• Basic	6AV6 671-5AE00-0AX0
• Plus	B 6AV6 671-5AE10-0AX0
PN junction box for Mobile Panels 177 / 277 (PROFINET)	
• Basic	B 6AV6 671-5AE01-0AX0
• Plus	B 6AV6 671-5AE11-0AX0

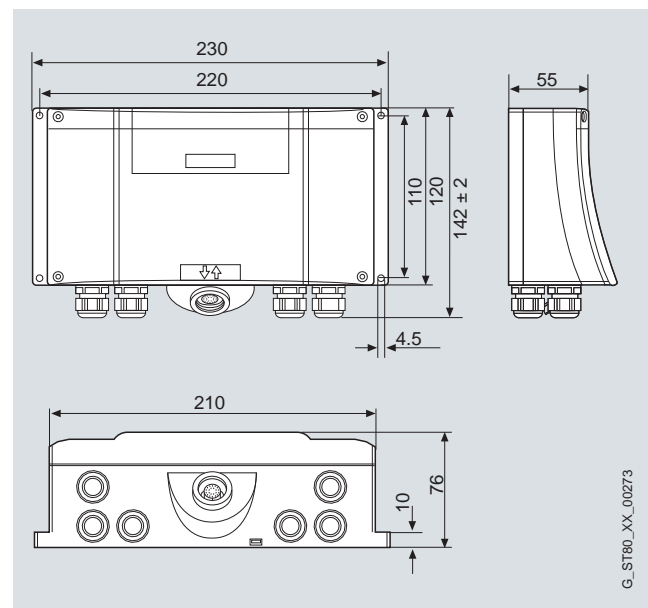
B: Subject to export regulations: AL: N and ECCN: EAR99H

Dimensions

All specifications in mm. Panel cutout see technical specifications.



DP connection box for SIMATIC Mobile Panel



PN connection box for SIMATIC Mobile Panel

Overview



Charging station for SIMATIC Mobile Panel

Ordering data

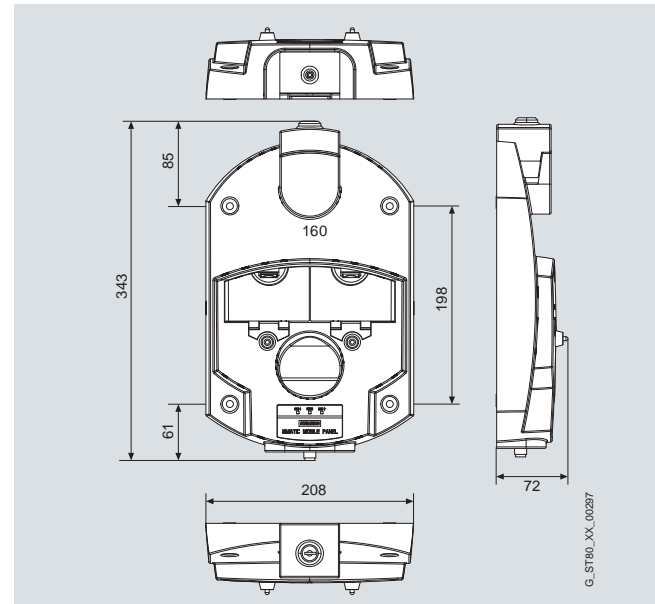
Order No.

Charging station for
Mobile PanelsB **6AV6 671-5CE00-0AX0**

B: Subject to export regulations: AL: N and ECCN: EAR99H

Dimensions

All specifications in mm. Panel cutout see technical specifications.



Charging station for SIMATIC Mobile Panel

Technische Daten

Charging station for Mobile Panels 277	6AV6 671-5CE00-0AX0
Supply voltage	24 V DC
permissible range	+19.2 V ... +28.8 V DC
Rated current	3.2 A
Power	77 W
Ambient conditions	
max. relative humidity (in %)	85 %
Temperature	
• Operation (vertical installation)	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
IP65 at front	Yes
IP65 rear	Yes
Enclosure according to EN 60529	IP65
Certifications & standards	
Certifications	CE, cULus, C-TICK
Dimensions	
External dimensions (W x H x D) in mm	208 x 333 x 75
Weight	
Weight	1.1 kg

Operator control and process monitoring devices

HMI Accessories

Accessories for SIMATIC Mobile Panel – Transponder

Overview



Transponder for SIMATIC Mobile Panel

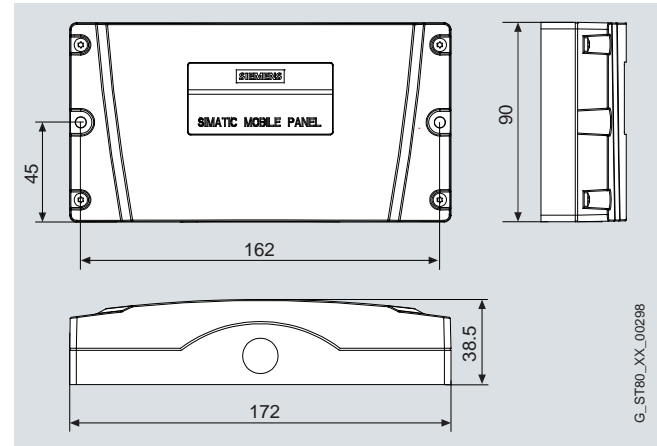
Ordering data

Order No.

**Transponder for
Mobile Panels 277**
6AV6 671-5CM00-0AX0

Dimensions

All specifications in mm. Panel cutout see technical specifications.



Transponder for SIMATIC Mobile Panel

Technical specifications

Transponder for Mobile Panels 277	6AV6 671-5CM00-0AX0
Supply voltage	
Via battery	Yes
• Number of batteries	3
• Battery type	Type AA
- Type AA	Yes
• Lifetime of battery, typ.	5 a
Ambient conditions	
max. relative humidity (in %)	85 %
Temperature	
• Operation (vertical installation)	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
IP65 at front / rear	Yes / Yes
NEMA	4x / 12
IP65 rear	Yes
Enclosure according to EN 60529	IP65
Enclosure according to NEMA	NEMA 4x, NEMA 12
Certifications & standards	
Certifications	CE, cULus, C-TICK, NEMA 4x, NEMA 12
Transponder	
Transmit frequency	2.4 GHz; Passive, frequency range: 2400 to 2483.5 MHz
Range of transmitter	8 m
Transmission angle	93°
Number of adjustable identifiers, max.	65 534
Functionality under WinCC flexible	
Applications / options	
• Zones / Effective range	Yes / Yes
Dimensions	
External dimensions (W x H x D) in mm	172 x 90 x 38.5
Weight	
Weight	0.3,3 kg

G_ST80_XX_00298

Operator control and process monitoring devices

HMI Accessories

Memory media

Overview

The following memory media are available:



Multimedia Card, 64 Mbyte / SD Card



CompactFlash Card, 128 Mbyte



USB 2.0 Flash Drive

Ordering data

Order No.

Memory media

Multimedia Card, 128 Mbyte

B

6AV6 671-1CB00-0AX2

for Mobile Panel 177 / 277,
OP 77B, TP/OP 177B,
TP/OP 277 and MP 177 / 277 / 377

CompactFlash Card, 512 Mbyte

6AV6 574-2AC00-2AA1

for Mobile Panel 170,
TP/OP 170B, TP/OP/MP 270,
MP 370, MP 377 and C7-635,
C7-636

USB 2.0 memory stick (USB Flash Drive) with 2 Gbyte memory

B

6ES7 648-0DC40-0AA0

for Mobile Panel 277, TP 177B 4",
MP 177 6", MP 277 and MP 377

SD Card, 512 Mbyte

B

6AV6 671-8XB10-0AX1

for Mobile Panel 277, MP 177,
MP 277, MP 377 and
WinCC flexible 2008 SP1 for
OP 77, TP/OP 177 / 277, MP 177,
with SD / MMC Slot or higher

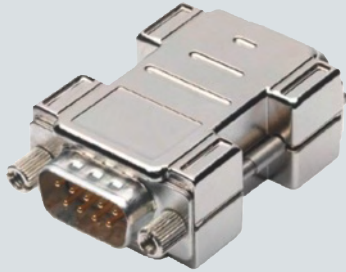
B: Subject to export regulations: AL: N and ECCN: EAR99H

Operator control and process monitoring devices

HMI Accessories

Converters/adapters

Overview



RS422 / RS232 converter, 9-pin



90° angle adapter, 9-pin 1:1

Ordering data

Order No.

Converter / adapter

RS422 to RS232 converter, 9-pin pin - pin

B

6AV6 671-8XE00-0AX0

between Panel and non-Siemens
PLC with RS232 interface, for
TP 177B, OP 177B, TP/OP 277-6,
MP 277-8T/K, MP 277-10T/K

90° angle adapter, 9-pin 1:1 pin (on Panel) - socket

6AV6 671-8XD00-0AX0

between TD/OP and connecting
cable

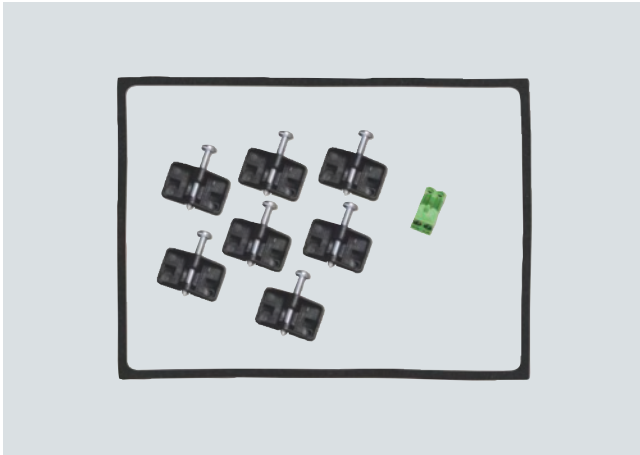
B: Subject to export regulations: AL: N and ECCN: EAR99H

Operator control and process monitoring devices

HMI Accessories

Service packs

Overview



Example: Service pack for SIMATIC Panel

The service packs listed below are available:

- PP7, PP17
- TD 17, OP 7, OP 17
- OP 73micro, OP 73, OP 77A, OP 77B
- TP 170micro, TP 070, TP 170A/B, OP 170B, TP/OP 270 6", TP/OP 277 6", MP 177 6" Touch, MP 270B 6" Touch
- TP 177micro, TP 177A, TP/OP 177B
- Mobile Panels 177 / 277
- Mobile Panels 277(F) IWLAN
- OP 270 10", MP 270B 10" Key
- TP 270 10", MP 270B 10" Touch, MP 370 12" Touch, C7-636 Touch, MP 370 15" Touch
- MP 277 8" Touch, MP 277 8" Key, MP 277 10" Touch, MP 277 10" Key
- MP 277 INOX 10" Touch
- MP 370 12" Key, MP 377 12" Key
- MP 377 INOX 15" Touch
- MP 377 12" Touch, MP 377 15" Touch, MP 377 19" Touch
- Industrial USB Hub 4
- 24 V DC power supply connector set

Ordering data

Order No.

Service pack for PP7, PP17

6AV3 678-3XC30

Consisting of:

- 1 x PP7 gasket
- 1 x PP17-I / PP17-II gasket
- 5 x mounting clamps
- 1 x 24 V PP7 plug-in terminal strip (2-pin)
- 1 x 24 V PP17-I / PP17-II plug-in terminal strip (3-pin)

Service pack for TD17, OP7, OP17

6AV3 678-1CC10

Consisting of:

- 1 x TD17 gasket
- 1 x OP7 gasket
- 1 x OP17 gasket
- 5 x mounting clamps
- 1 x 24 V plug-in terminal strip (2-pin)

Service pack for OP 73micro, OP 73, OP 77A, OP 77B

6AV6 671-1XA00-0AX0

Consisting of:

- 1 x OP 73micro, OP 73 mounting seal
- 1 x OP 77A, OP 77B mounting seal
- 4 x mounting clamps
- 1 x 24 V plug-in terminal strip (2-pin)

Service pack for TP 170micro, TP070, TP 170A/B, OP 170B, TP/OP 270 6", TP/OP 277 6", MP 177 6" Touch, MP 270B 6" Touch

6AV6 574-1AA00-4AX0

Consisting of:

- 1 x TP 170micro, TP070, TP 170A/B, TP 270 6", TP 277 6", MP 177 6" Touch mounting seal
- 1 x OP 170B mounting seal
- 1 x OP 270 6", OP 277 6" mounting seal
- 1 x set of labeling strips for OP 170B
- 1 x set of labeling strips for OP 270 6", OP 277 6"
- 7 x mounting clamps
- 1 x 24 V plug-in terminal strip (2-pin)

Service pack for TP 177micro, TP 177A, TP 177B, OP 177B

6AV6 671-2XA00-0AX0

Consisting of:

- 1 x TP 177micro, TP 177A, TP 177B mounting seal
- 1 x OP 177B mounting seal
- 7 x mounting clamps
- 1 x 24 V plug-in terminal strip (2-pin)

Operator control and process monitoring devices

HMI Accessories

Service packs

Ordering data	Order No.		Order No.
Service pack for OP 270 10", MP 270B 10" Key Consisting of: <ul style="list-style-type: none">• 1 x OP 270 10", MP 270B 10" Key mounting seal• 10 x mounting clamps• 1 x 24 V plug-in terminal strip (2-pin)	6AV6 574-1AA00-2DX0	Service pack for TP 270 10", MP 270B 10", C7-636 Touch, MP 370 12" Touch, MP 370 15" Touch Consisting of: <ul style="list-style-type: none">• 1 x TP 270 10", MP 270 10", C7-636 Touch, MP 370 12" mounting seal• 1 x MP 370 15" mounting seal• 10 x tensioning clamps• 1 x 24 V plug-in terminal strip (2-pin)• 1 x Allen key	6AV6 574-1AA00-2CX0
Service pack for MP 277 8" up to E14 ¹⁾, MP 277 10" Touch up to E14 ¹⁾ and MP 277 10" Key, TP/OP 277 6" Consisting of: <ul style="list-style-type: none">• 1 x TP 277 6" Touch mounting seal• 1 x OP 277 6" Key mounting seal• 1 x MP 277 8" Touch mounting seal up to E14 ¹⁾• 1 x MP 277 8" Key mounting seal up to E14 ¹⁾• 1 x MP 277 10" Touch mounting seal up to E14 ¹⁾• 1 x MP 277 10" Key mounting seal• 14 x screw tensioning clamps• 1 x 24 V plug-in terminal strip (2-pin)	6AV6 671-3XA01-0AX0	Service pack for MP 370 12" Key Consisting of: <ul style="list-style-type: none">• 2 x sets of labeling strips for OPs• 6 x tensioning clamps• 1 x mounting bracket for CF memory card• 1 x mounting bracket for PC memory card• 1 x 24 V DC plug-in terminal strip (2-pin)• 1 x Allen key	6AV6 574-1AA00-2BX0
Service pack for MP 277 8", E14 and higher ¹⁾ and MP 277 10" Touch, E14 and higher ¹⁾ Consisting of: <ul style="list-style-type: none">• 1 x MP 277 8" Touch mounting seal, E14 and higher ¹⁾• 1 x MP 277 8" Key mounting seal, E14 and higher ¹⁾• 1 x MP 277 10" Touch mounting seal, E14 and higher ¹⁾• 10 x spring tensioning clamps• 1 x 24 V plug-in terminal strip (2-pin)	6AV6 671-3XA01-0AX1	Service pack for MP 377 INOX 15" Touch Consisting of: <ul style="list-style-type: none">• 1 x mounting seal• 1 x mounting bracket for memory card• 12 x tensioning clamps• 1 x 24 V plug-in terminal strip (2-pin)• 1 x Allen key	6AV6 671-4CA00-0AX0
Service pack for MP 277 INOX 10" Touch Consisting of: <ul style="list-style-type: none">• 1 x mounting seal• 10 x tensioning clamps• 1 x 24 V plug-in terminal strip (2-pin)• 1 x Allen key	6AV6 675-3AA00-0AX0	Service pack for MP 377 12" Touch, MP 377 15" Touch, MP 377 19" Touch Consisting of: <ul style="list-style-type: none">• 1 x MP 377 12" Touch mounting seal• 1 x MP 377 12" Key mounting seal• 1 x MP 377 15" Touch mounting seal• 1 x MP 377 19" Touch mounting seal• 18 x tensioning clamps• 1 x 24 V DC plug-in terminal strip (2-pin)• 1 x Allen key	6AV6 671-4XA00-0AX0

¹⁾ E14 = Development Status 14

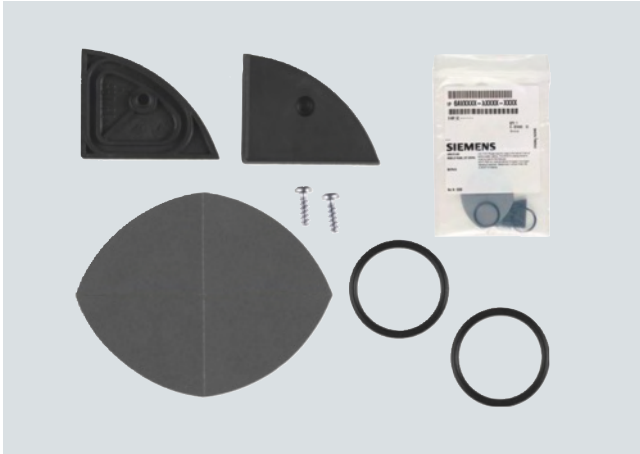
B: Subject to export regulations: AL: N and ECCN: EAR99H

Operator control and process monitoring devices

HMI Accessories

Service packs

Overview



Service pack for Mobile Panel

Ordering data

Order No.

Service pack for Mobile Panels 177 / 277

6AV6 574-1AA04-4AA0

Consisting of:

- Blanking plugs for cable duct
- 2 x cable glands for connectivity box
- 1 set of screws for connectivity box cover
- 2 x terminal box (12-pin)
- 1 x terminal box (3-pin)
- 1 x blanking cap for connectivity box

Service pack for Mobile Panels 277(F) IWLAN

B 6AV6 671-5CA00-0AX1

Consisting of:

- 1 x battery slot cover (device)
- 1 x left / right cover (charging station)
- 1 x 24 V DC power supply mating connector (charging station)
- 1 x spare key (charging station)

Service pack for Industrial USB Hub 4

6AV6 671-3EA01-0AX0

Consisting of:

- 1 x mounting seal
- 1 x rear metal frame (for achieving IP65 with mounting plates that are less than 3 mm thick)
- 5 x tensioning clamps
- 1 x 24 V plug-in terminal strip (2-pin)

Power supply connector set

B 6AV6 671-8XA00-0AX0

Consisting of:

- 10 x 24 V DC power supply connectors (2-pin)

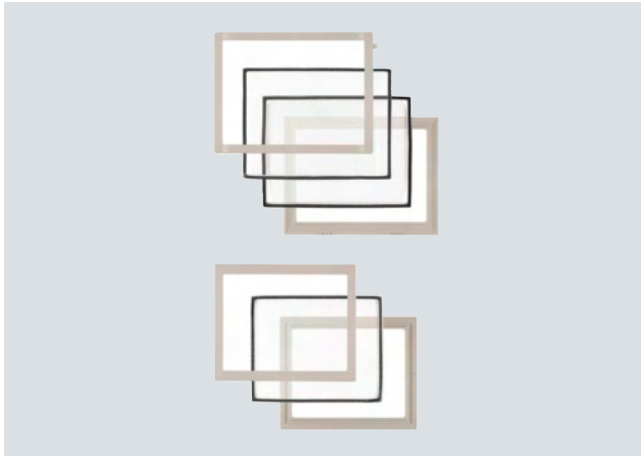
B: Subject to export regulations: AL: N and ECCN: EAR99H

Operator control and process monitoring devices

HMI Accessories

Protective covers

Overview



Protective covers with degree of protection IP65 provide complete frontal protection of the panel against dirt and scratches; the protective covers can be kept clean using high-pressure cleaning equipment.

Own frame designs can be created and printed out at low cost (ready-made Word templates can be downloaded) between panel and protective cover.

For simple display protection, adhesive protective foils are available.

Protective covers for:

- TP 070, TP 170micro, TP 177micro, TP 170A/B, TP 177A/B, TP 270 6", TP 277 6", MP 177 6" Touch, MP 270B 6" Touch
- OP 77 A/B
- OP 177B
- MP 277 8" Touch
- MP 277 10" Touch, Thin Client 10"

Ordering data

Order No.

Protective covers 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

(2 sets per pack)

Consisting of:

- 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)

6AV6 574-1AE00-0AX0

Protective covers for OP 77A/B

(2 sets per pack)

Consisting of:

- 2 cover frames
- 2 base frames
- 2 protective covers

6AV6 671-1AJ00-0AX0

Protective covers for OP 177B

(2 sets per pack)

Consisting of:

- 2 cover frames
- 2 base frames
- 2 protective covers

6AV6 671-2DJ00-0AX0

Protective covers for MP 277 8" Touch

(2 sets per pack) for MP 277 8" Touch

6AV6 643-0CB01-1AX1 up to E05¹⁾ and 6AV6 643-0CB01-1AX5 E05¹⁾ and higher

Consisting of:

- 2 cover frames
- 2 base frames
- 2 protective covers

6AV6 671-3CK01-0AX0

Protective covers for MP 277 10" Touch, Thin Client 10"

(2 sets per pack) for MP 277 10" Touch

6AV6 643-0CD01-1AX1 up to E06²⁾ and 6AV6 643-0CD01-1AX5 E06²⁾ and higher, as well as Thin Client 10" for 6AV6 646-0AA21-2AX0 up to E03³⁾

Consisting of:

- 2 cover frames
- 2 base frames
- 2 protective covers

6AV6 671-3CK00-0AX0

¹⁾ E05 = Development Status 05

²⁾ E06 = Development Status 06

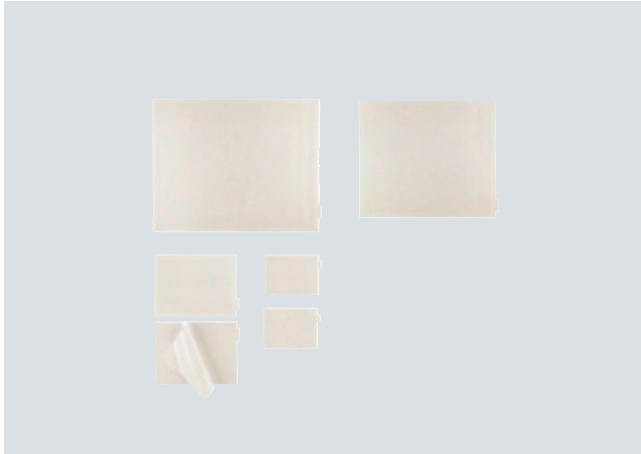
³⁾ E03 = Development Status 03

Operator control and process monitoring devices

HMI Accessories

Protective membranes

Overview



Protective foils serve to protect the display from dirt and scratching during use. The labeling strips, blank foils, and protective foils should be printed at a printing works. Ready-made Word templates can be used to create labeling strips for SIMATIC HMI touch devices.

For complete protection of the front side, protective covers are available.

Cover foils for:

- TD 200C
- TD 400C
- TP 070, TP 170micro, TP 170A/B, C7-635 Touch
- TP 177micro, TP 177A/B, OP 177B
- KTP400, TP 177B 4"
- Mobile Panel 177
- Mobile Panel 277 8", Mobile Panel 277 10"
- TP 270 6", TP 277 6", MP 177 6" Touch, MP 270B 6" Touch, C7-635 Touch
- TP 270 10", MP 270B 10", MP 370 12" Touch, MP 377 12" Touch, C7-636 Touch
- MP 277 8" and 10", Thin Client 10"
- MP 370 15" Touch, MP 377 15" Touch, Thin Client 15"
- MP 377 19" Touch

Ordering data	Order No.		Order No.
Blank faceplates for TD 200C for customer-specific keyboard layouts; 3 perforated foils per sheet (10 sheets per pack)	B 6ES7 272-1AF00-7AA0	Cover foil for TP 270 10", MP 270B 10", MP 370 12" Touch, MP 377 12" Touch, C7-636 Touch (pack of 10)	6AV6 574-1AD00-4CX0
Blank foils for TD 400C for customer-specific keyboard layouts; 3 perforated foils per sheet (10 sheets per pack)	6AV6 671-0AP00-0AX0	Cover foil for MP 277 8" MP 277 8" Touch / Key up to E14¹⁾ (pack of 10)	6AV6 671-3CC00-0AX0
Cover foil for TP 070, TP 170micro, TP 170A/B, C7-635 Touch (pack of 10)	6AV6 574-1AD00-4AX0	Cover foil for MP 277 10" Touch, Thin Client 10" for 6AV6 646-0AA21-2AX0, MP 277 10" Touch up to E14¹⁾ (pack of 10)	6AV6 671-3DC00-0AX0
Cover foil for TP 177micro, TP 177A, TP 177B	6AV6 671-2XC00-0AX0	Cover foil for MP 370 15" Touch, MP 377 15" Touch, Thin Client 15" (pack of 10)	6AV6 574-1AD00-4EX0
Cover foil for KTP400, TP 177B 4" (pack of 10)	6AV6 671-2EC00-0AX0	Cover foil for MP 377, 19" Touch (pack of 10)	6AV7 672-1CE00-0AA0
Cover foil for Mobile Panel 177 (pack of 10)	6AV6 574-1AD04-4AA0	Protective pocket for labeling strips for Mobile Panel 170 and Mobile Panel 177 (5 units per pack) for labeling strips for Mobile Panel 177 and 277	6AV6 574-1AB04-4AA0
Cover foil for Mobile Panel 277 8" Tough film to protect the touch display from dirt and scratches (pack of 2)	6AV6 671-5BC00-0AX0	Key labeling strips for Mobile Panel 277 Packet for labeling 6 devices (2 sheets per pack), incl. spare stickers for cover caps	6AV6 671-5BF00-0AX0
Cover foil for Mobile Panel 277 10" Tough film to protect from dirt and scratches (pack of 10)	6AV6 645-7AB15-0AS0	Key labeling strips MP 370 12" Key / MP 377 12" Key For function keys, (2 sheets per pack) (plastic)	6AV6 574-1AB00-2BA0
Cover foil for TP 270 6", TP 277 6", MP 177 6" Touch, MP 270B 6" Touch, C7-635 Touch (pack of 10)	6AV6 574-1AD00-4DX0		

¹⁾ E14 = Development Status 14

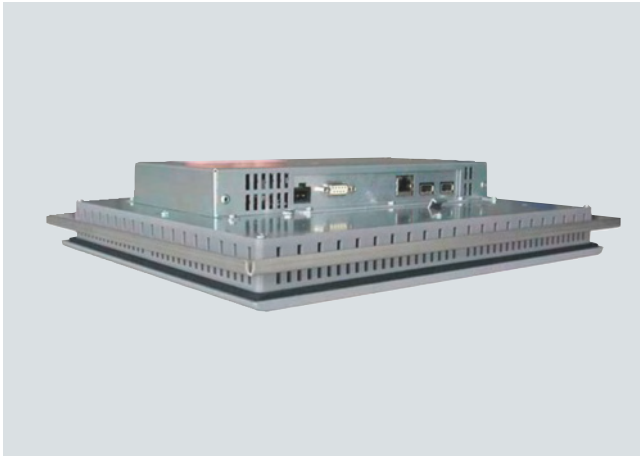
B: Subject to export regulations: AL: N and ECCN: EAR99H

Operator control and process monitoring devices

HMI Accessories

Fixing elements

Overview



The clamping frames enable compliance with 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 manual. The clamping frame has been specially developed for plate thicknesses of less than 2 mm. Aluminum and plastic spring-type clamping fixtures are available for attaching the panel.

For the Thin Client 10" Touch, the clamping frame is needed for plate thicknesses of less than 2 mm, for both degrees of protection IP54 and IP65.

The clamping frames are available for the following products:

- KTP1000 Basic color
- SIMATIC MP 277 8" Touch
- SIMATIC MP 277 8" Key
- SIMATIC MP 277 10" Touch
- SIMATIC MP 377 12" Touch
- SIMATIC Thin Client 10" Touch

Ordering data

Order No.

Clamping frame

for MP 277 8" Touch
for MP 277 8" Key
for 10" / 12" Touch,
can be used for:
KTP1000, MP 277 10" Touch,
MP 377 12" Touch,
Thin Client 10"

6AV6 671-3CS00-0AX0

6AV6 671-3CS01-0AX0

6AV6 671-8XS00-0AX0

Clamping fixture

Spring-type clamping fixture

Can be used with all SIMATIC HMI Panels 6" or larger with plastic enclosure and all Basic Panels

- 20 x spring-type clamping fixtures

6AV6 671-8XK00-0AX1

Aluminum clamps

for MP 177, TP/OP/MP 277, MP 377 and all Basic Panels

- 20 x spring-type clamping fixtures

6AV6 671-8XK00-0AX0

Overview

Printing functions of SIMATIC HMI Panels

	Hardcopy	Print log ¹⁾	Alarm logging	Fault message buffer	Event message buffer	Event record with filter	Print data record	Print all data records	Header / footer
OP 77B	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)
OP/TP 177B	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)
OP/TP 277	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)
MP 177	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)
MP 277	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)
MP 377	•	•	•	• 2)	• 2)	• 2)	• 2)	• 2)	• 2)

• Functionality possible

¹⁾ Variable, messages, recipes

²⁾ Included in log

Note:

The OP 73micro, OP 73, OP 77A, TP 177micro and TP177A do not include a printer interface.

Approved printers, sources of supply and printer settings

You will find an overview of approved printers, sources of supply and printer settings in the Internet under:

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

Operator control and process monitoring devices

Printers



2

HMI devices for special requirements



3/2

Introduction

3/3

Fully enclosed HMI devices

3/5

SIMATIC MP 377 PRO

3/8

SIMATIC Thin Client PRO

3/10

SIMATIC Flat Panel PRO

3/12

SIMATIC HMI IPC477C PRO

3/16

Accessories for fully enclosed HMI devices

3/16

Adapter sets

3/17

Extension Units

3/18

IP65 keyboards

3/19

Single-port USB interface

3/20

Devices with stainless steel front

3/21

SIMATIC TP 177B INOX

3/26

SIMATIC MP 277 INOX

3/31

SIMATIC MP 377 INOX

3/36

SIMATIC Panel PC 677B INOX

3/42

SIMATIC HMI IPC677C INOX

3/48

HMI devices for hazardous devices

3/49

SIMATIC HMI Panel PC Ex

3/52

SIMATIC HMI Thin Client Ex

HMI devices for special requirements

Introduction

Overview

Fully enclosed HMI devices

The fully enclosed SIMATIC HMI devices (MP 377 PRO, Thin Client PRO, Flat Panel PRO, and HMI IPC477C 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, HMI devices with stainless steel fronts (TP 177B INOX, MP 277 INOX, MP 377 INOX, Panel PC 677B INOX and HMI IPC677C INOX) are offered for use in the food & beverage industry.

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.

HMI devices for special requirements

Fully enclosed HMI devices

Introduction

Overview



The new SIMATIC fully enclosed HMI devices have been specially designed for mounting on a support arm / supporting foot. Thanks to their extremely rugged design, the devices are ideal for industrial applications even in harsh environments.

The following are available as SIMATIC fully enclosed HMI devices:

- SIMATIC MP 377 PRO 15" Touch
- SIMATIC Thin Client PRO 15" Touch
- SIMATIC Flat Panel PRO 15" / 19" Touch
- SIMATIC HMI IPC477C PRO 15" / 19" Touch

Benefits

- For direct mounting on supporting arm / supporting foot
- Fully enclosed with IP65, enclosure type 4X
- Low depth and weight of the device
- Connection of the device optionally from above or below
- Total flexibility in the selection of supporting arm components thanks to direct connection to well-known supporting arm manufacturers
- Supports the globally established VESA 75 / VESA 100 standard
- Service-friendly – device must not have to be removed from the supporting arm for servicing or replacing memory cards.
- Rugged and extremely compact aluminum enclosure
- Functionally 100%-compatible with the field-proven built-in units
- Standard connecting cables can be used

Application

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 have all-round IP65 protection and are also suitable for use in harsh environments. The separation of HMI and control cabinet allows flexible design concepts.

The new SIMATIC HMI PRO devices are used wherever the HMI device cannot be installed directly in the control cabinet due to restricted space, or whenever an operator unit is required directly at the machine.

The devices stand out not only due to their compact and appealing industrial design, but also due to their refined mechanical features. This enables the device to be connected to the support arm system optionally from above or below. A host of support arm systems from well-known manufacturers are supported here. The SIMATIC HMI PRO devices are also suitable for connection to systems in accordance with VESA 75 and VESA 100.

With the extension units, the range of possible on-site operations can be extended. 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 push-buttons, emergency stop button, RFID reader, etc.

The SIMATIC HMI PRO devices are extremely light-weight at between 6.5 kg and 10 kg (depending on the device) and can thus be installed quickly and easily.

All the devices are fan-free, and only standard connecting cables are used.

HMI devices for special requirements

Fully enclosed HMI devices

Introduction

Design

General

- Degree of protection IP65 (front and rear)
- Degree of protection Enclosure Type 4X (front and rear)
- Die-cast aluminum housing
- Compact design with low mounting depth
- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- 19" TFT color display, 1280 x 1024 pixels (SXGA)
- Resistive analog touch screen
- Terminals for 24 V DC power supply

Flat Panel PRO / HMI IPC477C PRO

- Also available as 19" TFT color display, 1280 x 1024 pixels (XGA)
- Additional 230 V AC power supply (only Flat Panel PRO)

Accessories

For fully enclosed HMI devices there are

- Adapter sets
- Extension units
- IP65 keyboards and
- 1 x 1-port USB interface

available.

Function

- SIMATIC MP 377 PRO:
Multi Panel for operator control and monitoring of machines and plants
- SIMATIC Thin Client PRO:
Operator panel for terminal and web client applications
- SIMATIC Flat Panel PRO:
Industrial monitor with touch functionality, can be located up to 30 m from the operator control unit (as with Flat Panel Extended)
- SIMATIC HMI IPC477C PRO:
Compact, rugged and maintenance-free embedded IPC

Integration

Mechanical integration

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 and an adapter plate to be ordered separately. The basic adapter is attached to the device optionally from below or from above. The connecting cables are run through the support arm.

More information

Additional information is available in the Internet under:

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

Note:

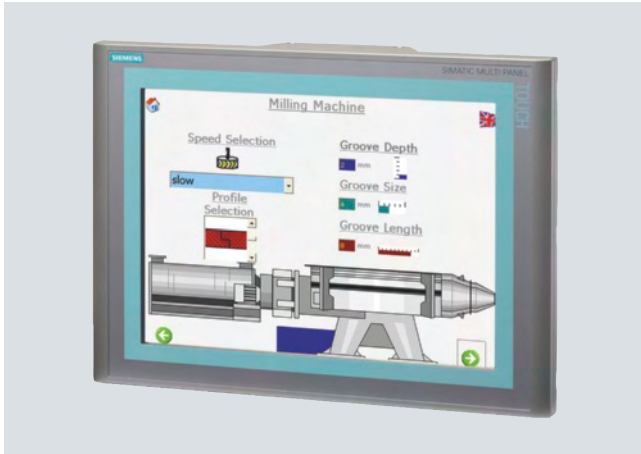
Do you require specific modification or extension to the products described here? Under "Customized products" you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC MP 377 PRO

Overview



SIMATIC MP 377 PRO 15"

Application

The SIMATIC Multi Panel 377 PRO can be used wherever operation and monitoring of machines and plants are required. As an especially high-performance device, the Multi Panel is suitable for demanding HMI tasks. However, in addition to visualization, the devices can also handle other automation tasks such as providing the platform for a software PLC.

The SIMATIC Thin Client PRO is ideally suitable as a second, low-cost operator console on a MP 377 PRO.

Integration

Integral interfaces SIMATIC MP 377 PRO:

- 2 x Ethernet
The integral Ethernet interfaces are used for IT communication and for data exchange with programmable controllers such as SIMATIC S7
- PROFIBUS/MPI (RS 485 / RS 422)
The floating PROFIBUS interface (12 Mbit/s) is used for connecting distributed field devices or for connecting to SIMATIC S7
- Further interfaces
Two USB 2.0 interfaces (Universal Serial Bus), one CompactFlash Card interface, and one SD / MMC slot are available for connecting further I/O devices.

Technical specifications

MP 377 PRO	6AV6 644-2AB01-2AX0 15" Touch
Supply voltage	
Supply voltage	24 V DC
permissible range	+19.2 V to +28.8 V DC
Rated current	1.7 A
Memory	
Type	Flash / RAM
Usable memory for user data / additional memory for options	12 288 KByte / 12 288 KByte
Time of day	
Clock	
• Type	Hardware clock, battery backed, synchronizable
Protocols	
Protocols (terminal link)	
• Sm@rtAccess	Yes
Configuration	
Configuration tool	WinCC flexible Standard Version 2007 or higher (to be ordered separately)
Display	
Display type	TFT, 65,536 colors
Size	15" (304.1 mm x 228.1 mm)
Resolution (WxH in pixel)	1024 x 768
• MTBF backlighting (at 25 °C)	about 50,000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 45 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C to +45 °C
• Operation (max. tilt angle)	0 °C to +45 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP65, NEMA 4 (when installed)
Rear	IP65
Certifications & standards	
Certifications	CE, cULus, C-TICK, NEMA 4
I/O	
I/O devices	Printer, card reader, barcode reader

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC MP 377 PRO

Technical specifications (continued)

MP 377 PRO	6AV6 644-2AB01-2AX0 15" Touch
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45)
CF card slot	1 x CF card slot
Multi Media Card slot	1 x Multi Media Card slot
USB port	2 x USB
Industrial Ethernet interface	2 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Functionality under WinCC flexible	
Applications / options	ProAgent, Internet Explorer, Soft PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	100
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 1024 entries), retentive, maintenance-free
Recipes	
• Recipes	500
• Data records per recipe	1 000
• Entries per data record	1 000
• Recipe memory	128 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	4 096 ¹⁾
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	30,000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists / graphic lists	500 / 500
• Libraries	Yes
• Data storage format	CSV file, readable, e.g. with MS Excel, MS Access
• external evaluation	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	Depending on free memory on ext. card / stick or on free hard disk memory via network drive
• Online evaluation	Using trend curves

MP 377 PRO	6AV6 644-2AB01-2AX0 15" Touch
Functionality under WinCC flexible (continued)	
Archiving	
• Number of archives per project	50
• Number of measuring points per project	50
• Number of entries per archive	50 000
• Archiving types	Sequence archive, short-term archive, alarm log, process value archive
• Memory location	CF card, SD / MMC card, Ethernet, USB stick
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• CF card	Yes
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable
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, DF485, Ethernet/IP), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Modbus), see section on "System interfaces
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Mounting cutout / device depth (W x H)	400 mm x 310 mm / 98.5 mm device depth

¹⁾ as of WinCC flexible 2008

Ordering data

Order No.

**SIMATIC MP 377 PRO
15" Touch**

H

6AV6 644-2AB01-2AX0

15" color TFT display,
12 MByte configuration memory,
configurable from WinCC flexible
2007

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Note:

An adapter plate is necessary for installation.

More information

Additional information is available in the Internet under:

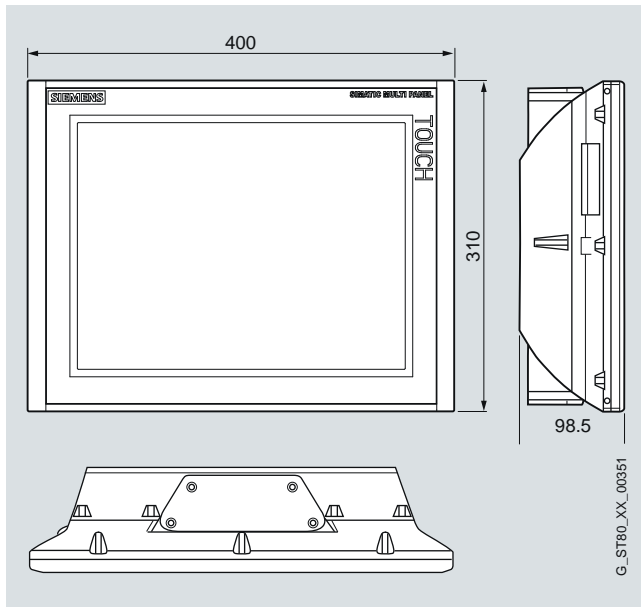
<http://www.siemens.com/ip65-hmi-devices>

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.

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC MP 377 PRO 15" Touch

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC Thin Client PRO

Overview



SIMATIC Thin Client PRO 15"

Application

The SIMATIC Thin Client PRO is ideal as a second, low-cost operator console for terminal and client applications.

Design

Thin Client PRO 15" Touch

- All-round IP65 protection
- Enclosure type 4x/type 12 (indoor use only)
- For mounting on support arm / pedestal
- 15" touch display
- Rugged die-cast aluminum enclosure
- Adaptation of the device optionally from above or below
- Direct connection to support arm systems of well-known manufacturers (Rittal, Bernstein, Rose, Haseke, and Rolec)
- Supports the globally established VESA 75 / VESA 100 standard

Integration

Integrated interfaces SIMATIC Thin Client PRO:

- 1 x Ethernet interface
For operating on PROFINET and Ethernet networks
- 1 x USB interface
For connecting mouse and keyboard as external input devices

Technical specifications

6AV6 646-2AB21-2AX0	
SIMATIC Thin Client PRO	15" Touch
Supply voltage	
Supply voltage	24 V DC
permissible range	+19.2 V to +28.8 V DC
Memory	
Type	Flash / RAM
Protocols	
Protocols (terminal link)	
• Sm@rtAccess / RDP / VNC / Citrix ICA Client / SINUMERIK connection	Yes / Yes / Yes / Yes / Yes
WEB characteristics	
• LLDP / HTTP / XML / HTML / CSS / Java Script	Yes / Yes / Yes / Yes / Yes / Yes
Display	
Display type	TFT, 65,536 colors
Size	15.1"
Resolution (WxH in pixel)	1024 x 768
• MTBF backlighting (at 25 °C)	about 50,000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB
• Touch screen	analog, resistive
EMC	
Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.)
Ambient conditions	
maximum permissible angle of inclination without external ventilation	+/- 45 °
max. relative humidity (in %)	85 %; (Storage)
Temperature	
• Operation (vertical installation)	0 °C to +45 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP65, Enclosure Type 4X / 12 (when installed)
Rear	IP65
Certifications & standards	
Certifications	CE, cULus, C-TICK, Enclosure Type 4X / 12
Interfaces	
Interfaces	1 x Ethernet (RJ45)
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Processor	
Processor	ARM, 266 MHz
Dimensions	
Front of enclosure (W x H x D) in mm	400 x 310 x 91
Weight	
Weight	6.5 kg

Ordering data

Order No.

**SIMATIC Thin Client PRO
15" Touch**G **6AV6 646-2AB21-2AX0****Starter packages****SIMATIC Thin Client with
Sm@rtAccess**Touch device 15" PRO with
Sm@rtAccess license (panels)G **6AV6 653-6CA01-2AA0**Touch device 15" PRO with
Sm@rtAccess license for
WinCC flexible 2008 RuntimeG **6AV6 653-6FA01-2AA0**

G: subject to export regulations: AL: N and ECCN: 5D992

Note:

An adapter plate is necessary for installation.

More information

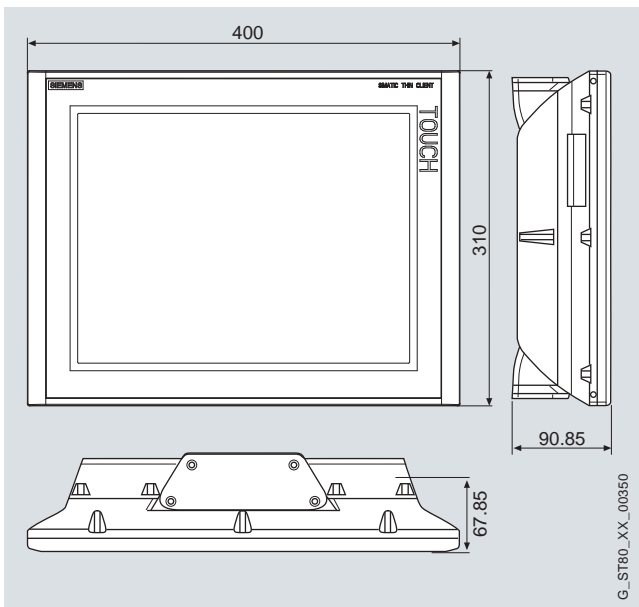
Additional information is available in the Internet under:

<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.

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



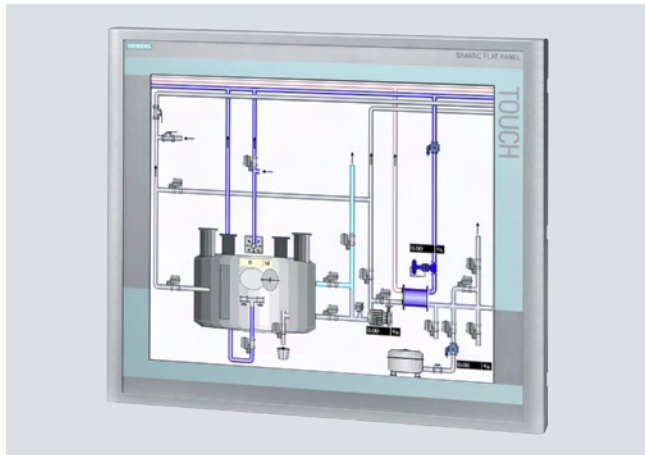
SIMATIC Thin Client PRO 15" Touch

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)

Design

SIMATIC Flat Panel monitors are highly suitable as remote operator stations for Rack / Box IPCs.

They can be mounted directly on a supporting bracket up to 30 m away from the IPC. Alternatively, Flat Panel monitors can be used as a 2nd operator control unit on a Panel PC such as the HMI IPC477C.

Integration

Integral interfaces SIMATIC Flat Panel PRO:

- Standard VGA interface, 15-pin Sub-D
- Digital DVI-D interface
- USB interface up to max. 30 m distance from PC unit
- 2 x USB interfaces for connecting local peripherals (e.g. mouse, keyboard) or mass storage devices such as USB FlashDrives

Technical specifications

	6AV7 861-5TB10-1AA0	6AV7 861-6TB10-1AA0
Flat Panel PRO	15"	19"
Supply voltage		
Supply voltage	24 V DC and 230 V AC combined	24 V DC and 230 V AC combined
permissible frequency range	47 to 63 Hz	47 to 63 Hz
Power consumption, max.	35 VA	35 VA
General features		
Line side switch	No	No
Can be separate from the computer	up to 30 m	up to 30 m
Display		
On-screen display (OSD) configuration	Yes	Yes
Display version	15" TFT	19" TFT
visible area (H x W) in mm	304 x 228	376 x 301
Viewing angle	140° x 120° (min)	140° x 120° (min)
Pixel pitch in mm	0.297 x 0.297	0.297 x 0.297
Resolution (W x H in pixels)	1024 x 768	1280 x 1024
Refresh rate	60 to 75 Hz	60 to 75 Hz
Line frequency	46.7 - 80 KHz	46.7 - 80 KHz
Brightness / contrast	> 260 cd/m ² / 350:1	> 300 cd/m ² / 300:1
Number of colors	16.7 million	16.7 million
MTBF of backlit display (at 25 °C, 24 hours continuous operation)	50,000 h	50,000 h
Operating mode		
Touch screen	analog-resistive	analog-resistive
Connection for mouse / keyboard / barcode reader	Yes, optionally via USB	Yes, optionally via USB
Degree of protection		
	Overall device IP65 / enclosure type 4x/type 12 (indoor use only)	Overall device IP65 / enclosure type 4x/type 12 (indoor use only)
Certifications & standards		
Certifications	cULus (UL 508), NEMA4-tested	cULus (UL 508), NEMA4-tested
EMC	CE EN 55011 class A	CE EN 55011 class A

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC Flat Panel PRO

Technical specifications (continued)

Flat Panel PRO	6AV7 861-5TB10-1AA0 15"	6AV7 861-6TB10-1AA0 19"
Standards, approvals, certificates		
CE mark	Yes	Yes
UL approval	Yes	Yes
CCC marking	No	No
Ambient conditions		
Vibration load during operation	1 g (10 m/s ²)	1 g (10 m/s ²)
Shock loading during operation	5 g (50 m/s ²)	5 g (50 m/s ²)
Temperature		
• Ambient temperature during operation	5 to +45 °C	5 to +45 °C
Mounting		
Inclination angle	+/- 45° from the vertical	+/- 45° from the vertical
• Rack-mounting	No	No
• Front mounting	No	No
• Inclined position for mounting in console	-45°/+45°	-45°/+45°
Interfaces		
Graphics interface	Standard VGA interface 15-pole sub-D / digital DVI-D interface	Standard VGA interface 15-pole sub-D / digital DVI-D interface
Interface for Touch	USB (V1.1)	USB (V1.1)
USB interface for touch screen	Yes	Yes
Dimensions		
External dimensions (W x H x D) in mm	400 x 310 x 91	483 x 400 x 105
Weight		
Weight	6.7 kg	10 kg

Ordering data

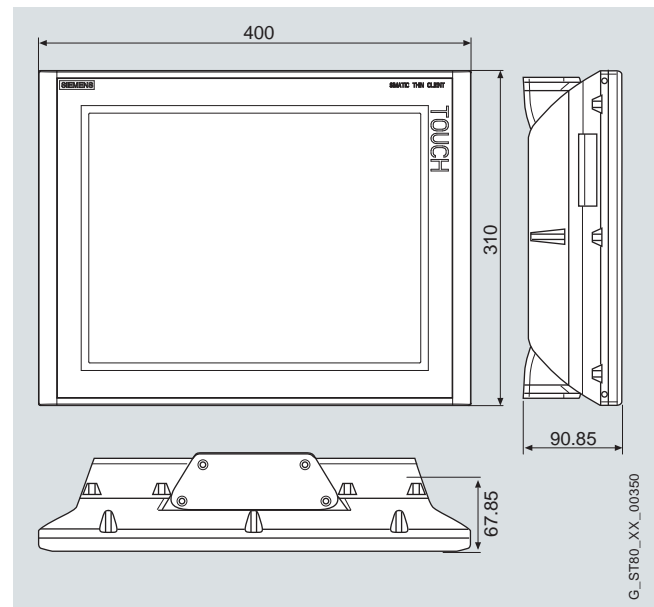
Order No.

SIMATIC Flat Panel PRO 15" Touch	B	6AV7 861-5TB10-1AA0
SIMATIC Flat Panel PRO 19" Touch	B	6AV7 861-6TB10-1AA0

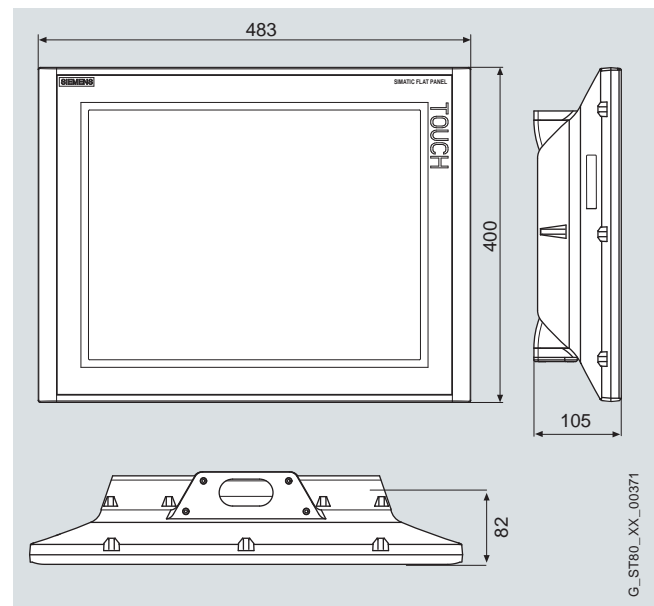
B: subject to export regulations; AL: N and ECCN: EAR99H

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC Flat Panel PRO 15" Touch



SIMATIC Flat Panel PRO 19" Touch

More information

Additional information is available in the Internet under:

<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 HMI IPC477C PRO

Overview



SIMATIC HMI IPC477C PRO 19"



SIMATIC HMI IPC477C PRO 19" (rear view)

Application

The SIMATIC HMI IPC477C PRO is a compact, high-performance and maintenance-free embedded Panel PC – the ideal platform for PC-based Automation on the support arm with WinCC flexible, WinAC RTX / WinAC RTX F or WinCC Client / single-user station.

Integration

Configuration and integrated interfaces SIMATIC HMI IPC477C PRO:

- Intel Core2 Duo to Celeron 1.2 GHz (all without fan)
- 1 GByte to 4 GByte RAM
- 2 GByte to 8 GByte CF card or 32 GByte SSD with Windows XP embedded
- PROFIBUS or PROFINET with IRT onboard (each optional)
- 2 x or 1 x Ethernet on board (10 / 100 / 1000 Mbit)
- 4 x USB 2.0 connection
- 1 x DVI-I
- Preinstalled SIMATIC WinCC flexible, WinAC RTX, or WinCC 7 client or single-user system

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC HMI IPC477C PRO

Technical specifications

SIMATIC HMI IPC477C PRO	6AV7 883-6.....0 15" Touch	6AV7 883-7.....0 19" Touch
General features		
Supply voltage	24 V DC	24 V DC
Processors	Intel Celeron M 1.2 GHz, Intel Core2 Solo 1.2 GHz or Core2 Duo 1.2 GHz	Intel Celeron M 1.2 GHz, Intel Core2 Solo 1.2 GHz or Core2 Duo 1.2 GHz
Memory type	DDR3-RAM	DDR3-RAM
Main memory	1 GByte, 2 GByte or 4 GByte	1 GByte, 2 GByte or 4 GByte
free slots	1 x CF card slot (externally accessible)	1 x CF card slot (externally accessible)
Operating system	Windows Embedded Standard 2009 or Windows XP Professional Multi Language	Windows Embedded Standard 2009 or Windows XP Professional Multi Language
Additional OS information	Language: en / ger	Language: en / ger
SIMATIC Software	Optionally with preinstalled bundle software SIMATIC WinCC flexible 2008 SP1 and / or WinAC RTX 2009 SIMATIC WinAC RTX F SIMATIC WinCC as web client or standard client	
Drives		
Floppy drive	optional via external USB floppy drive	optional via external USB floppy drive
Optical drives	possible as an external drive via USB	possible as an external drive via USB
Hard disk / mass storage	Compact Flash Drive with 2, 4 or 8 GByte and / or SSD (Solid State Disk) with 32 GByte	Compact Flash Drive with 2, 4 or 8 GByte and / or SSD (Solid State Disk) with 32 GByte
Interfaces		
Graphics interface	DVI-I can be used for additional display unit (only VGA via adapter); 32-bit color depth, graphics memory up to 128 MByte; resolution as for integrated display in each case	DVI-I can be used for additional display unit (only VGA via adapter); 32-bit color depth, graphics memory up to 128 MByte; resolution as for integrated display in each case
Connection for keyboard / mouse	USB / USB	USB / USB
serial interface	COM1: 1 x V.24 (RS232)	COM1: 1 x V.24 (RS232)
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card required, CP5611-compatible, not upgradable	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card required, CP5611-compatible, not upgradable
PROFINET (RT / IRT)	Optional: 3 x RJ45, CP1616-compatible; not for retrofitting	Optional: 3 x RJ45, CP1616-compatible; not for retrofitting
USB	4 x on rear, USB 2.0 (500 mA)	4 x on rear, USB 2.0 (500 mA)
PROFINET (IE), Ethernet	onboard, 2 x 10 / 100 / 1000 Mbit (RJ45 without / with PROFIBUS), 1 x 10 / 100 / 1000 Mbit (RJ45 with PROFINET), no plug-in card necessary	onboard, 2 x 10 / 100 / 1000 Mbit (RJ45 without / with PROFIBUS), 1 x 10 / 100 / 1000 Mbit (RJ45 with PROFINET), no plug-in card necessary
Multimedia	No	No
Monitoring functions		
Temperature	Yes	Yes
Watchdog	Yes	Yes
DiagBit (similar to S.M.A.R.T.)	Yes (for CF cards and SSD)	Yes (for CF cards and SSD)
Status LEDs	Yes	Yes
Front side according to EN 60529	IP65 all-round to EN 60529 and NEMA4	IP65 all-round to EN 60529 and NEMA4
Ambient conditions		
Vibration load during operation	Tested according to DIN IEC 60068-2-6: 10 to 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s² (1 g)	Tested according to DIN IEC 60068-2-6: 10 to 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s² (1 g)
Shock loading during operation	Tested according to DIN IEC 60068-2-7: 50 m/s² (5 g), 30 ms, 100 shocks	Tested according to DIN IEC 60068-2-7: 50 m/s² (5 g), 30 ms, 100 shocks
Relative humidity	Tested according to DIN IEC 68-78, DIN IEC 60068-2-30: 5 % to 80 % at 25 °C (no condensation)	Tested according to DIN IEC 68-78, DIN IEC 60068-2-30: 5 % to 80 % at 25 °C (no condensation)
maximum permissible installation angle +/-	+/- 45° from the vertical	+/- 45° from the vertical
Ambient temperature	0°C to 45°C	0°C to 40°C
Approvals	CE, cULus(508)	CE, cULus(508)
EMC	CE, 55022A, EN 61000-6-4, EN 61000-6-2	CE, 55022A, EN 61000-6-4, EN 61000-6-2
Degree of protection	Overall device IP65 / enclosure type 4x/type 12 (indoor use only)	Overall device IP65 / enclosure type 4x/type 12 (indoor use only)
Dimensions (W x H x D)	400 mm x 310 mm x 98 mm	483 mm x 400 mm x 115 mm
Weight	7.4 kg	10.9 kg

HMI devices for special requirements

Fully enclosed HMI devices

SIMATIC HMI IPC477C PRO

Ordering data

Order No.

Order No.

Configuration

SIMATIC HMI IPC477C PRO

H 6AV7 883 - A - - - - 0

embedded and without fan, fully enclosed according to IP65 5 x (500 mA), one of which on the front, 24 V DC power supply with On / Off switch

Front Panels

- 15" TFT Touch (IP65 enclosure; PRO)
- 19" TFT Touch (IP65 enclosure; PRO)

6

7

Main memory (DDR3 RAM), 1 database

- 1 GByte
- 2 GByte
- 4 GByte

1

2

3

Second mass storage (installed and formatted)

- without
- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid State Disk), min. 32 GByte

0

2

3

4

6

Mass Storage (installed, Windows Embedded Standard 2009 (en / ger) preinstalled, optionally with SIMATIC software)

- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid State Disk), min. 32 GByte

2

3

4

6

Operating system (preinstalled and activated)

- Windows Embedded Standard 2009
- Windows XP Professional Multi-Language, only with SSD; without SIMATIC software

B A

D A

Configuration (continued)

SIMATIC HMI IPC477C PRO

H 6AV7 883 - A - - - - 0

embedded and without fan, fully enclosed according to IP65 5 x (500 mA), one of which on the front, 24 V DC power supply with On / Off switch

Software packages with CF 4 GByte or higher capacity

- with operating system and RTX¹⁾ Windows XP embedded pre-installed, WinAC RTX 2009 pre-installed and configured for PROFIBUS

B

- with operating system and HMI Windows XP embedded pre-installed, WinCC flexible 2008 SP1 RT (incl. archives / recipes) pre-installed and configured

- Number of tags 128 PT

- Number of tags 512 PT

- Number of tags 2048 PT

- Number of tags 4096 PT

C

D

E

F

- with operating system and HMI/RTX¹⁾ Windows XP embedded pre-installed, WinCC flexible 2008 SP1 RT (incl. archives / recipes) and WinAC RTX 2009 pre-installed and configured

- Number of tags 128 PT

- Number of tags 512 PT

- Number of tags 2048 PT

- Number of tags 4096 PT

K

L

M

N

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

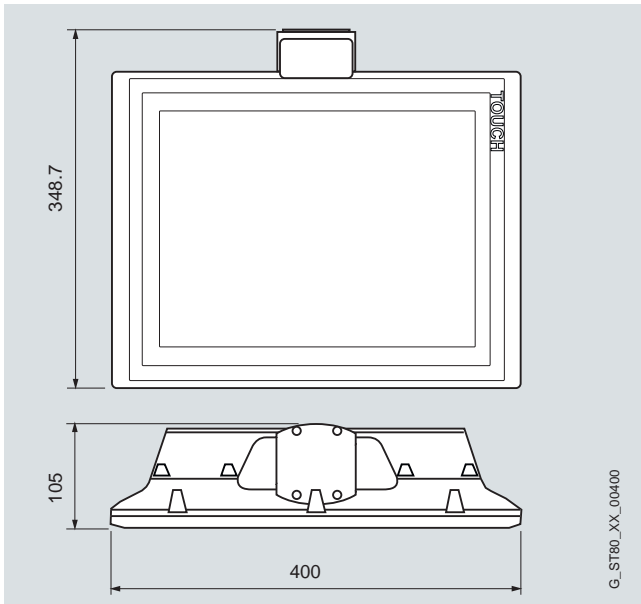
HMI devices for special requirements

Fully enclosed HMI devices

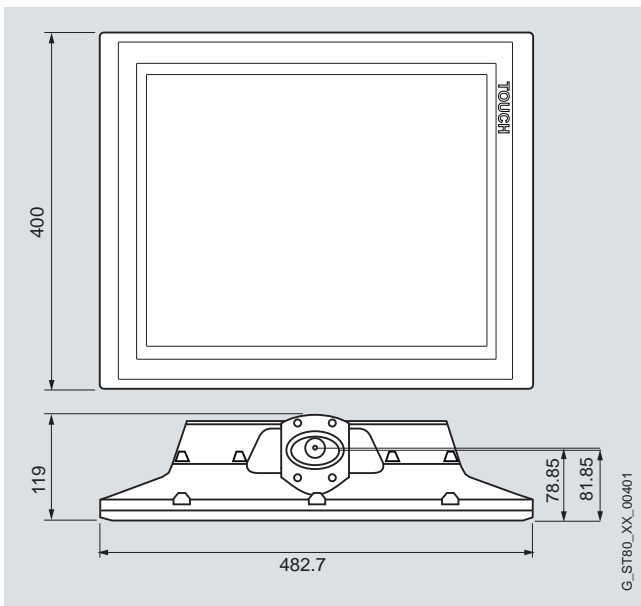
SIMATIC HMI IPC477C PRO

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC HMI IPC477C PRO 15" Touch version



SIMATIC HMI IPC477C PRO 19" Touch version

More information

Additional information is available in the Internet under:

<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

Accessories for fully enclosed HMI devices

Overview Adapter sets

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

Extension units

With the extension units, the range of possible on-site operations can be extended. They can be equipped individually, e.g. with illuminated pushbuttons, key-operated switches, emergency stop units, or an RFID reader.

- They can be mounted on the left or right side of the PRO device, as required
- IP65 cable routing
- Individual configuration possibilities
- Available for all 15" / 19" PRO devices
- Easy installation and maintenance: When devices are replaced, the wired extension units can remain on the base adapter and thus on the support arm

IP65 keyboards

- With the stainless steel IP65 keyboards, the range of possible on-site operations can be extended. They are mounted on the SIMATIC HMI PRO device underneath the base adapter

1-port USB interface

- The USB interface is used for connecting external peripheral devices to the MP 377 PRO, the Thin Client PRO, the Flat Panels PRO, and the HMI IPC477C PRO.
- USB peripheral devices can thus be connected and operated without opening the device
- Extension of the internal USB interface externally

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

Integration

The adapter sets are connected to the SIMATIC HMI PRO devices by means of the basic adapter. The support arm head is connected directly to the adapter plate.

Ordering data

Order No.

Adapter set Plus for	A	6AV7 674-0KB00-0AA0
<ul style="list-style-type: none"> • Rose GT48/2 • Rolec taraPLUS • Rittal CP-S • Bernstein CS3000 Coupling 48 • Rose GTK electronic 		
VESA 100 adapter set¹⁾ for	B	6AV7 674-0KD00-0AA0
<ul style="list-style-type: none"> • VESA 100 • Rose GTN II 		
Adapter set VESA 75 for	B	6AV7 674-0KE00-0AA0
<ul style="list-style-type: none"> • VESA 75 		

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

A: subject to export regulations: AL: N and ECCN: EAR99S

B: subject to export regulations: AL: N and ECCN: EAR99H

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:

- 1 adapter plate
- Mounting hardware

More information

Additional information is available in the Internet under:

<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

Accessories for fully enclosed HMI devices

Extension Units

Overview



With the extension units, the range of possible on-site operations can be extended. They are mounted on the SIMATIC HMI PRO devices and can be equipped individually, e.g. with 3SB elements, emergency stop buttons, key-operated switches, RFID reader, etc.

- They can be mounted on the left or right side of the PRO device, as required
- IP65 cable routing
- Can be equipped individually
- For all 15" / 19" PRO devices

Integration

The extension unit is mounted on the left and / or right side of the SIMATIC PRO device, as required. The cable is routed through the "connecting tube", which connects the extension unit to the basic adapter and thus to the support arm.

Ordering data

Order No.

Extension Unit 15"

B

6AV7 674-0KG00-0AA0

- For mounting on all 15" PRO devices

Extension unit 19" right

B

6AV7 674-0KJ00-0AA0

- For support arm mounting from top:
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

Extension unit 19" left

B

6AV7 674-0KH00-0AA0

- For support arm mounting from top:
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

Spare front plate for the extension unit

B

6AV7 674-0KH30-0AA0

- Suits all extension units 15" and 19"
- Required if the front plate supplied with the extension unit must be replaced

B: subject to export regulations: AL: N and ECCN: EAR99H

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 in the Internet under:

<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

Accessories for fully enclosed HMI devices

IP65 keyboards

Overview

IP65 keyboards

The range of possible on-site operations can be extended with the stainless steel IP65 keyboards. They are mounted on the SIMATIC HMI PRO device underneath the base adapter, and they are available in two versions.

- Anti-twist and non-removable stainless steel key caps
- Abrasion-resistant laser labeling (depth engraving with annealing marking)
- Secure, pleasant key feel
- Maximum user-friendliness thanks to withdrawable long-stroke key
- Windows layout (EN / US) with two additional keys (left and right mouse key function) via cursor block
- USB interface
- Angle-adjustable connection for optimal ergonomics
- Water and dust protection in accordance with degree of protection IP65
- For all 15" / 19" PRO devices

Integration

The stainless steel IP65 keyboard is mounted on the SIMATIC PRO device under the base adapter. The cable is run via the keyboard adapter in the base adapter.

Ordering data

Order No.

Stainless steel IP65 keyboard 15"

B

6AV7 674-0NC00-0AA0

- Width: 400 mm (adapted to 15" SIMATIC HMI PRO)
- Windows layout (EN / US) without NUM block
- Angle-adjustable adapter

Stainless steel IP65 keyboard 19"

B

6AV7 674-0NE00-0AA0

- Width: 483 mm (adapted to 19" SIMATIC HMI PRO)
- Windows layout (EN / US) with NUM block
- Angle-adjustable adapter

B: subject to export regulations: AL: N and ECCN: EAR99H

Scope of delivery:

- 1 stainless steel IP65 keyboard incl. mounting adapter for PRO devices
- Mounting accessories

More information

Additional information is available in the Internet under:

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

HMI devices for special requirements

Accessories for fully enclosed HMI devices

1-port USB interface

Overview

- The USB interface is used for connecting external peripheral devices to the MP 377 PRO, the Thin Client PRO, the Flat Panels PRO, and the HMI IPC477C PRO.
- USB peripheral devices can thus be connected and operated without opening the device
- Extension of the internal USB interface externally

Design

The installation of the USB interface is especially practical if external input devices or mass storage devices frequently have to be connected to the 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. The backplane of the SIMATIC HMI PRO device no longer has to be opened in order to connect IO devices. The device can thus be operated without interruption.

The USB interface offers the following advantages:

- Accessible without tools
- For retrofitting in enclosure
- Can be mounted either above or below
- IP65 protection if protective cover is closed
- Undetachable protective cover

Integration

The USB interface is suitable, for example, for the connection of:

- Mouse
- Keyboard

Suitable for SIMATIC MP 377 PRO, SIMATIC Thin Client PRO, SIMATIC Flat Panel PRO, and the HMI IPC477C PRO.

Ordering data

Order No.

1-port USB interface B **6AV7 674-0LX00-0AA0**

B: subject to export regulations: AL: N and ECCN: EAR99H

More information

Additional information is available in the Internet under:

<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

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 TP 177B INOX

Touch Panel with stainless steel front (DIN EN 1672-2) for the additionally higher requirements from the food and beverages sector, for example.

- 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 PLCs
- Data in the message buffer is retained even if panel is switched off, without battery

SIMATIC MP 277 INOX

Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring.

- Data in the message buffer is retained even if panel is switched off, without battery
- 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, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

SIMATIC MP 377 INOX

Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring.

- 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 with 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 Panel PC 677B INOX

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

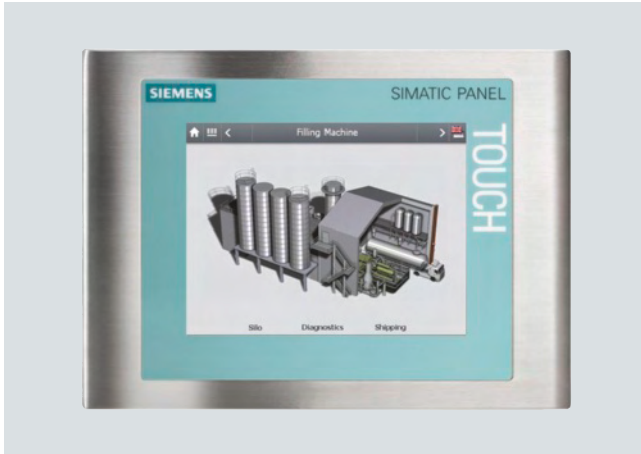
- Rugged construction:
The PC is resistant to the harshest mechanical stress and is reliable in operation.
- Compact design
- High degree of investment protection
- Fast integration capability
- 15" TFT Touch, stainless steel / INOX
- The operator control unit and computing unit can be placed 30 m apart (optional)

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

Overview



- Touch Panel with stainless steel front (DIN EN 1672-2) for additional increased requirements, e.g. in the food and beverages industry
- 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 for controls from other manufacturers are also available
- Data in the message buffer is retained even if panel is switched off, without battery

Benefits

- Reduction of service and commissioning costs due to:
 - Backup / restore via a process interface or optionally via a Multi Media Card
 - Download of the image and configuration across all device interfaces
 - Maintenance-free design and long service life of backlit display
- Data in the message buffer is retained even if panel is switched off, without battery.
- Can be used worldwide:
 - 32 online languages (incl. Asian and Cyrillic character sets) can be configured
 - Online languages can be selected direct on the device
- Graphics library with preconfigured screen objects
- Standard interfaces for increasing flexibility:
 - ext. Multi Media Card, can be used for recipe data records and backing up of configuration / system data;
- Integrated USB interface for connecting standard printers, for example
- Simple engineering supported by detailed documentation on the SIMATIC HMI Manual Collection DVD
- Integrated component of Totally Integrated Automation (TIA):
- Increase of productivity, minimization of engineering overhead, reduction of lifecycle costs
- Due to the stainless steel front of the panel, it can also be optimally used in the food and beverages and pharmaceutical sectors. Its front is designed such that it can be cleaned and disinfected easily. Furthermore, liquids flow off automatically from the front. In addition, the stainless steel front (incl. seal) provides protection against contamination with foodstuff.

Application

Thanks to their practical functions and large user memory, TP 177B INOX Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation, or building-services automation.

The TP 177B INOX has a *5.7" STN display* with 256 colors and features an integrated PROFINET I/O interface. A USB interface is standard. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

The *TP 177B INOX* has been designed for all industries that require a stainless steel front. The front can be disinfected and does not affect the quality e.g. of foods (assuming regular cleaning). Cleaning can be carried out using pressurized water with a jet of 100 l/min at 1 bar from a distance of 2.5 to 3 m. Liquids flow off automatically from the front.

HMI devices for special requirements

Devices with stainless steel front

SIMATIC TP 177B INOX

Design

- Display
 - 5.7" STN display with 256 colors
- LED or CCFL¹⁾ backlighting with long service life
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- High performance due to RISC processor and 2 MByte user memory, plus additional integrated recipe memory
- Data in the message buffer is retained even if panel is switched off, without battery
- Interfaces MPI, PROFIBUS DP (up to 12 MBaud) and USB 1.1 (max. 100 mA) on board
- PROFINET interface
- Configuration SIMATIC WinCC flexible 2005 Compact or higher
- Complete functionality for complex tasks
- Comprehensive Reichert graphics library
- Multi Media Card slot, can be used for standard Multi Media Cards (for backup / restore and for backup of recipe data records of the configuration as well as of the system data)
- SINUMERIK, Sm@rtAccess and Sm@rtService options can be used
- Service-friendly due to maintenance free design and long service life of the backlit display

¹⁾ Cold Cathode Fluorescence Lamps

Function

- Permanent window and templates concept for creating screen models
- Input / output fields for visualizing and editing of process parameters
- Configurable buttons with up to 16 functions simultaneously for direct triggering of functions and actions
- Indicator light for indicating machine and plant states
- Predefined texts for labeling function keys, mimics, and process values with characters in any size
- Help texts for mimics, alarms, and variables
- Vector graphic, graphics can be used as icon instead of text for "labeling" buttons. They can also be created as screen background images. A library with many graphics and diverse objects is available in the configuration tool. All editors with "OLE" interface can be used a graphic editor, e.g. Paint-Shop, Designer, Corel Draw, etc.
- Trend functions and bar graphs are used for the graphic display of dynamic values
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Computing functions, limit monitoring for reliable process control at inputs and outputs
- Online language switching with 16 selectable languages, incl. Asian and Cyrillic languages, also for language-dependent graphics
- Scheduler for cyclic function processing

- Password protection (security) user administration – log on through user ID and password, in addition user group-specific rights as integral part of SIMATIC
- Signaling system
 - Freely-definable message classes (acknowledgment response and display can be configured). Administration of status messages, fault messages, and system alarms. The alarm history is retained even when device is switched off. Analog alarms (limit alarms) in addition to discrete alarms.
- Recipe management:
 - with additional data storage (on ext. memory medium)
- Online / offline processing on the panel
- Storage of recipe data in standard Windows format (CSV)
- External processing using standard tools such as Excel, Access is possible
- Multi Media Card slot
 - for external standard data carriers, can be used for backup / restore or for transporting recipe data records;
- Facilitates service and configuration due to:
 - Backup and restoring of configuration, operating system, data records, and firmware on a PC using ProSave
 - Possible download / upload of configuration via all device interfaces (with automatic transfer detection)
 - Individual contrast setting and calibration
 - Simulation of the configuration direct on the configuring PC

Configuration

Configuration is implemented using the innovative engineering tool SIMATIC WinCC flexible 2005, Compact Edition or higher.

SIMATIC WinCC flexible is the consistent further development of the tried and tested ProTool family. Projects created using ProTool can be easily migrated to WinCC.

When implementing OP17 projects, the project engineer must implement corresponding adaptations after the conversion due to the innovated display technology. However, WinCC flexible provides support for this!

If WinCC flexible is started direct from SIMATIC Manager, the data in Step 7 can be accessed directly when configuring the panel. Double data entries and data storage is thus avoided.

Additional options

- SINUMERIK
 - Optionally with "Sinumerik HMI copy license WinCC flexible CE". The "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuration. For further information, see Catalog NC 60.
- Sm@rtService
 - Remote control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rtAccess
 - Communication between HMI systems based on TCP/IP networks. Remote access to recipe data records, passwords, HMI system-specific information, and much more.

HMI devices for special requirements

Devices with stainless steel front

SIMATIC TP 177B INOX

Technical specifications

SIMATIC TP 177B	6AV6 642-8BA10-0AA0 6" Touch color INOX (with stainless steel front)
Supply voltage	
Supply voltage	24 V DC
permissible range	+18 V to +30 V DC
Rated current	0.24 A
Memory	
Type	Flash / RAM
Usable memory for user data	2048 KByte
Time of day	
Clock	
• Type	Hardware clock, battery backed, synchronizable
Protocols	
Protocols (terminal link)	
• Sm@rtAccess	Yes
Configuration	
Configuration tool	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display	
Display type	STN, 256 colors
Size	5.7" (120 mm x 90 mm)
Resolution (WxH in pixel)	320 x 240
• MTBF backlighting (at 25 °C)	about 50,000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / -
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C to +50 °C
• Operation (max. tilt angle)	0 °C to +40 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP66K, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2/22, Gost-R, C-TICK, NEMA 4, NEMA 4x, NEMA 12

SIMATIC TP 177B	6AV6 642-8BA10-0AA0 6" Touch color INOX (with stainless steel front)
I/O	
I/O devices	Printer
Interfaces	
Interfaces	RS232 optional, 1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 MBit/s)
PC card slot	No
CF card slot	No
Multi Media Card slot	1 x Multi Media Card slot
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	ARM, 200 MHz
Functionality under WinCC flexible	
Applications / options	Sm@rtService, Sm@rtAccess
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	2 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries per data record	200
• Recipe memory	32 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	2,500 text elements
• Graphics object	Bit maps, icons, icon (full-screen), vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons

HMI devices for special requirements

Devices with stainless steel front

SIMATIC TP 177B INOX

Technical specifications (continued)

SIMATIC TP 177B	6AV6 642-8BA10-0AA0 6" Touch color INOX (with stainless steel front)
Functionality under WinCC flexible (continued)	
Lists	
• Text lists	300
• Graphics list	100
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• PC card	No
• CF card	No
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	5
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable
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, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	198 mm x 142 mm / 46 mm device depth
Weight	
Weight	0.9 kg

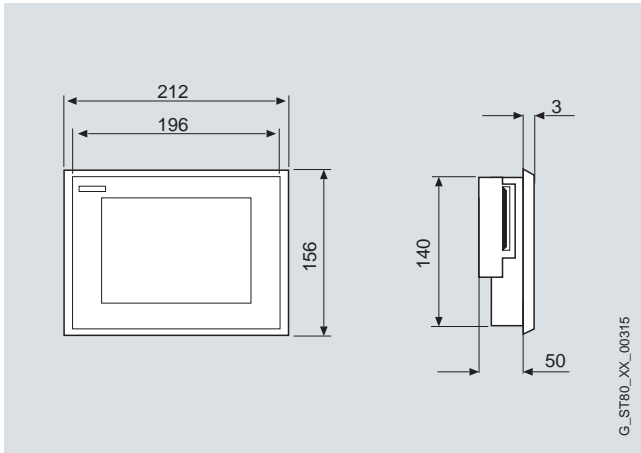
Ordering data

Order No.

SIMATIC TP 177B INOX	H	6AV6 642-8BA10-0AA0
Touch Panel with		
• 5.7" STN color display (256 colors) with stainless steel front		
incl. mounting accessories		
Configuration software		
• with SIMATIC WinCC flexible		see HMI software chap. 4
Configuration set		
Consisting of: SIMATIC WinCC flexible Compact engineering software, SIMATIC HMI Manual Collection (DVD), 5 languages (en, fr, ger, it, sp), PC/PPI cable Multimaster, MPI cable (5 m) (for download and test purposes only)		
• with SIMATIC WinCC flexible Compact engineering software	G	6AV6 621-0AA01-0AA0
Documentation (to be ordered separately)		
Operating Instructions TP 177micro / TP 177A / TP 177B/OP 177B(WinCC flexible)		
• German		6AV6 691-1DG01-0AA1
• English		6AV6 691-1DG01-0AB1
• French		6AV6 691-1DG01-0AC1
• Italian		6AV6 691-1DG01-0AD1
• Spanish		6AV6 691-1DG01-0AE1
User Manual WinCC flexible Compact / Standard / Advanced		
• German		6AV6 691-1AB01-3AA0
• English		6AV6 691-1AB01-3AB0
• French		6AV6 691-1AB01-3AC0
• Italian		6AV6 691-1AB01-3AD0
• Spanish		6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication		
• German		6AV6 691-1CA01-3AA0
• English		6AV6 691-1CA01-3AB0
• French		6AV6 691-1CA01-3AC0
• Italian		6AV6 691-1CA01-3AD0
• Spanish		6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection	A	6AV6 691-1SA01-0AX0
Electronic documentation, on DVD		
5 languages (en, fr, ger, it, sp); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		see HMI accessories starting page 2/160
A: subject to export regulations: AL: N and ECCN: EAR99S		
G: subject to export regulations: AL: N and ECCN: 5D992		
H: Subject to export regulations: AL: N and ECCN: 5D002ENC3		

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC TP 177B PN / DP INOX

More information

Additional information is available in the Internet under:

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

Note:

Do you need a specific modification or expansion 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

Devices with stainless steel front

SIMATIC MP 277 INOX

Overview



- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- Data in the message buffer is retained even if panel is switched off, without battery
- 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)
- The MP 277 INOX is available with stainless steel front (DIN EN 1672-2). These versions expand the application area of the Multi Panel 277 for special applications, ambient conditions, and special sectors, e.g. in the food, beverages and tobacco industries.
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

Benefits

- Integrated component of Totally Integrated Automation (TIA): Increase of productivity, minimization of engineering overhead, reduction of lifecycle costs
- Modular expansion capability with options such as:
 - WinAC MP for MP 277 / software PLC
 - WinCC flexible / Sm@rtAccess for communication between different SIMATIC HMI systems
 - WinCC flexible / Sm@rtService for remote maintenance and servicing of machines / plants via the Internet / intranet
 - WinCC flexible / OPC server for communication with applications from different manufacturers
 - MS Pocket Internet Explorer (included in scope of delivery) IE6 for Win CE is integrated for WinCC flexible 2007 or higher.
 - WinCC flexible / ProAgent for targeted and quick process fault diagnostics in plants and machines
 - WinCC flexible / Audit for user administration (traceability of all operator actions)
- Reduction of service and commissioning costs due to:
 - Backup/restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP or optionally via SD / Multi Media Card
 - Remote download / upload of the configuration and firmware (remote = automatic transfer detection)
 - Specific drivers can be reloaded
 - Long service life of the backlit display
- Graphics library with preconfigured screen objects
- Can be used worldwide:
 - 32 online languages (incl. Asian and Cyrillic character sets) can be configured
 - Up to 16 languages can be selected online
- Standard hardware and software interfaces for increasing flexibility:
 - SD / MultiMediaCard slot for memory expansions, backup / restore, or additional interfaces
 - Ethernet (TCP/IP) possible for central data and project administration; control interfacing to SIMATIC S7 possible
 - Standard Windows storage formats (CSV) for archives and recipes permits further processing using standard tools (e.g. MS Excel)

Application

They are used in the most diverse branches and applications and can be expanded in their applications with the Multi Panel options, e.g. for displaying HTML documents via the MS Pocket Internet Explorer.

The diskless and fanless design enables implementation in areas where high vibration or dust load limits the operation of a PC. Short boot-up times make the Multi Panels ready for operation sooner as well.

Design

- Compact design with low mounting depth
- The front is resistant to various oils, greases and standard detergents
- Degree of protection IP66 / NEMA 4x / NEMA 12 (front) or IP20 (rear)
- Plug-in terminals for 24 V DC power supply
- Interfaces:
 - RS 485 / RS 422 interface for process connections (PPI, MPI, PROFIBUS DP up to 12 Mbit/s)
 - USB for flash drive, mouse, keyboard, printer, barcode reader, UPS, and downloading / uploading the configuration
 - Ethernet (TCP/IP) for exchanging data with a higher-level PC, connection of a network printer and downloading / uploading the configuration; a control link to SIMATIC S7 is possible
- Slot for SD / MultiMedia Card

Function

- Display and changing of process parameters
- Process display:
 - VGA resolution (640 x 480 pixels) with 64k colors each for display elements
 - Vector graphic (various line and plane objects)
 - Dynamic positioning and dynamic showing / hiding of objects
 - Pixel graphics images, trend and bar graph display
 - Representation of up to 8 curves in a trend field;
- Trend curve graphic with scroll and zoom functions for accessing the history and flexible selection of the representation period; read ruler for determining current values and display in a table
 - Comprehensive graphics libraries (SIMATIC HMI Symbol Library)
 - Icons: slider, gauge, clock
 - Cyclic function processing by alarm clock
- Multiplex function for variables
- Signaling system
 - Discrete alarms and analog alarms (limit alarms)
 - Freely-definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of message events
 - Status and fault messages with message history
 - Non-volatile, maintenance-free message buffer
 - Alarm window and message line
- Archiving of messages and process values (on CF / SD / multimedia card / USB flash drive, etc. or network drives via Ethernet)
 - Various archive types: Circular buffer and sequential buffer
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives using trend curves
 - External evaluation using standard tools (MS Excel, MS Access) is possible
- Alarm log and shift log
- Print functions (see "Recommended printers")
- Language switching
 - 16 online languages, 32 configuring languages, incl. Asian and Cyrillic character sets; language-dependent texts and graphics
- Recipe management
 - With additional data storage (on SD / MultiMediaCard)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools (MS Excel, MS Access) is possible
- TIA runtime functionalities
 - Direct keys (fast keys; for Key as keyboard image, can be defined by user for Touch) can be used directly as PROFIBUS DP or PROFINET IO input peripherals
 - For Key versions, LEDs additionally as output peripherals
 - As well as Alarm S message frame procedure for SIMATIC S7 and SIMOTION
 - PG functionality STATUS FORCE-VAR in combination with SIMATIC S7
 - SIMATIC barcode scanner
 - Direct connection and evaluation of a SITOP UPS via USB
- Screen selection from PLC permits operator control from the PLC
- Display of HTML documents using MS Pocket Internet Explorer
- Visual Basic Script, flexibility through implementing new functions incl. interfacing to variables (comparison operations, loop-through, etc.)
- Help texts for mimics, alarms, and variables
- Computing functions
- Limit monitoring for reliable process control at inputs and outputs
- Permanent window; fixed upper screen area for output of screen-independent information (e.g. important process variables, data, and time-of-day)
- Facilitates service and configuration due to
 - Backup and restoring (Backup / Restore -> Image) of the complete (incl. license keys with WinCC flexible 2007 or higher) Panel on an SD / multimedia card (optional) possible, also through remote access (Sm@rtService)
 - Backup and restoring (Backup/Restore -> Image) of the complete Panel (except license keys) on a PC
 - Download of configuration via Ethernet / USB / MPI / PROFIBUS DP / modem / http
 - Upload via Ethernet / USB / MPI / PROFIBUS DP / modem / http; for downloading, the project is optionally compressed and transferred to the SD / multimedia card or USB flash drive (optional)
 - Automatic transfer detection (Remote Transfer)
 - Simulation of the configuration direct on the configuring PC
 - Import / export of all texts including alarms in CSV format for compiling using standard word processing programs
 - Project-specific faceplates which can be changed centrally
- Template
 - Creation of screen templates
 - Position-independent configuration of background objects
- Password system
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Service functions (optionally with "WinCC flexible/ Sm@rtService")
 - E-mail generation
 - Remote control of the SIMATIC HMI system based on the Internet Explorer
 - Web server with status HTML pages and control functions
- Client / server functions (optionally with "WinCC flexible/ Sm@rtAccess")
 - Remote control and monitoring of other SIMATIC HMI systems
 - Plant-wide retrieval of information and archiving of process data

Configuration

Configuration is carried out with the SIMATIC WinCC flexible SP1 Standard or Advanced engineering software (see SIMATIC WinCC flexible HMI Software/ engineering software).

Projects (on previous panels) created using ProTool can be migrated to WinCC flexible.

HMI devices for special requirements

Devices with stainless steel front

SIMATIC MP 277 INOX

Function (continued)

Applications / options

- WinAC MP software PLC for Multi Panels
WinAC MP option for MP 277 (software PLC similar to performance class CPU 315)
The I/O can be connected via Profibus DP

Note:

WinCC flexible 2007 or higher and MP 277 hardware with integrated retentive memory is required for using the software PLC

- WinCC flexible /Sm@rtAccess;
remote control and monitoring as well as communication between different SIMATIC HMI systems (see HMI Software/Runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
remove maintenance and servicing for machines / plants via the Internet / intranet (see HMI Software/Runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /OPC server
Communication with applications (e.g. MES, ERP, or office applications) of different manufacturers (see HMI Software/Runtime software SIMATIC WinCC flexible / WinCC flexible RT options)
- WinCC flexible /Audit
- WinCC flexible /ProAgent
- SINUMERIK

Integration

The MP 277 can in certain cases be connected simultaneously (multi-protocol capable) to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC WinAC MP 2007
- SIMATIC S5
- SIMATIC 505
- http communication with other SIMATIC HMI systems (optional with "WinCC flexible /Sm@rtAccess" option)
- SIMOTION
- SINUMERIK
(optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring; for further details, see Catalog NC 60)
- OPC XML Server
(optionally with "WinCC flexible /OPC server")
- Third-party controllers
 - Allen Bradley
 - Mitsubishi
 - LG GLOFA GM
 - Modicon
 - GE-Fanuc
 - Omron
 - Telemecanique Uni-Telway
- Via Ethernet (TCP/IP) to a higher-level PC, with enabled network printer

Note:

Further information can be found under "System interfaces".

Technical specifications

SIMATIC MP 277	6AV6 643-0ED01-2AX0 10" color Touch INOX (with stainless steel front)
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V to +28.8 V DC
Memory	
Type	Flash / RAM
Usable memory for user data	6 MByte usable memory for user data
Time of day	
Clock	
• Type	Hardware clock, battery backed, synchronizable
Configuration	
Configuration tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)
Display	
Display type	TFT, 65,536 colors
Size	10.4"
Resolution (WxH in pixel)	640 x 480
• MTBF backlighting (at 25 °C)	about 50,000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	90 %
Temperature	
• Operation	0 °C to +50 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP66K, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2, EX-Zone 22, NEMA 4x (Enclosure Type 4X, Type 12)
I/O	
I/O devices	Printer, card reader, barcode reader

HMI devices for special requirements

Devices with stainless steel front

SIMATIC MP 277 INOX

Technical specifications (continued)

SIMATIC MP 277	6AV6 643-0ED01-2AX0 10" color Touch INOX (with stainless steel front)
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)
Multi Media Card slot	1 x Multi Media Card slot
USB port	2 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	ARM
Functionality under WinCC flexible	
Applications / options	ProAgent, Internet Explorer, Soft PLC, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes	
• Recipes	300
• Data records per recipe	500
• Entries per data record	1 000
• Recipe memory	64 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	2 048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	500
• Graphics list	400
• Libraries	Yes

SIMATIC MP 277	6AV6 643-0ED01-2AX0 10" color Touch INOX (with stainless steel front)
Functionality under WinCC flexible (continued)	
Archiving	
• Number of archives per project	20
• Number of measuring points per project	20
• Number of entries per archive	10 000
• Memory location	SD and Multi Media Card
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (Upload / Download)	
• Transfer of configuration	MPI / PROFIBUS DP, USB, Ether- net, automatic transfer recognition
Process coupling	
• Connection to controller	S5, S7-200, S7- 300 / 400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK / Multilink), Modicon (Mod- bus) see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	325 mm x 263 mm
Mounting cutout / device depth (W x H)	310 mm x 248 mm / 61 mm device depth
Weight	
Weight	4.2 kg

HMI devices for special requirements

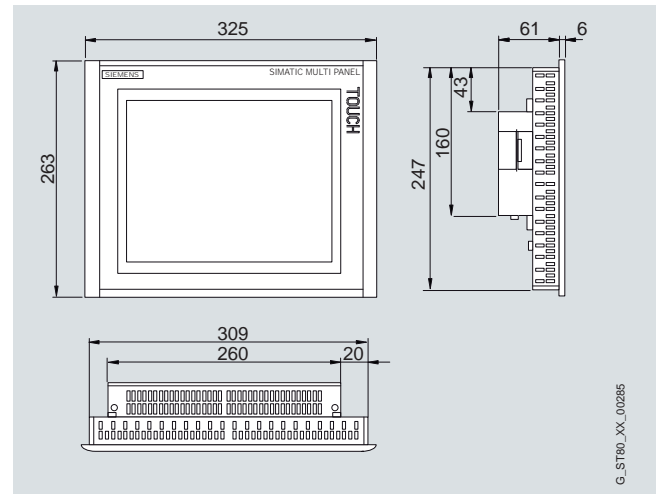
Devices with stainless steel front

SIMATIC MP 277 INOX

Ordering data	Order No.
SIMATIC MP 277 INOX H Multi Panel (including installation accessories) with <ul style="list-style-type: none"> 10" color TFT display, Touch, INOX (with stainless steel front panel) 	6AV6 643-0ED01-2AX0
Configuration with SIMATIC WinCC flexible Configuration set G	see HMI Software Chap. 4 6AV6 622-0BA01-0AA0
Applications / options For configuration with WinCC flexible <ul style="list-style-type: none"> WinCC flexible /Sm@rtAccess WinCC flexible /Sm@rtService WinCC flexible /OPC-Server WinCC flexible /ProAgent WinCC flexible /Audit WinAC MP 2007 /Software SPS 	see HMI Software Chap. 4
Documentation MP 277 Operating Instructions <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1DJ01-0AA0 6AV6 691-1DJ01-0AB0 6AV6 691-1DJ01-0AC0 6AV6 691-1DJ01-0AD0 6AV6 691-1DJ01-0AE0
WinCC flexible Compact / Standard / Advanced User Manual <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection A Electronic documentation, on DVD, 5 languages (en, fr, ger, it, sp); contains: all currently avail. user manuals, manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
Accessories for supplementary ordering	see HMI Accessories starting page 2/160

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



MP 277 10" Touch with stainless steel front

More information

Additional information is available in the Internet under:

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

Note:

Do you need a specific modification or expansion 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.

1) Can only be used for license handling

A: subject to export regulations: AL: N and ECCN: EAR99S

G: subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Overview



- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- 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 with Option
- Pixel graphics 15" TFT display, color (64k colors)
- Touch screen (analog / resistive)
- The MP 377 INOX is available with a stainless steel front (DIN EN 1672-2). These versions expand the application area of the Multi Panel 377 for special applications, ambient conditions, and special sectors (e.g. food, beverages and tobacco industries).
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

Benefits

- Integral component of Totally Integrated Automation (TIA): Increased productivity, minimum engineering overhead, reduction in life-cycle costs
- Modular expansion capability with options such as:
 - Software PLC SIMATIC WinAC MP 2007
 - WinCC flexible /Sm@rtAccess for communication between different SIMATIC HMI systems
 - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines / plants via the Internet / Intranet
 - WinCC flexible/ OPC server for communication with applications from different manufacturers
 - MS Pocket Internet Explorer 6.0 (included in scope of delivery)
 - MS Multi Media Player (included in scope of delivery)
 - MS Viewer for Word, Excel and PDF files (included in scope of delivery)
- Reduction of service and commissioning costs due to:
 - Backup / restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP or optionally via CF / SD / Multi Media Card
 - Remote download / upload of the configuration and firmware
 - Specific drivers can be reloaded
 - Long service life of the backlit display
- Graphics library with preconfigured screen objects
- Can be used worldwide:
 - 32 online languages (incl. Asian and Cyrillic character sets) can be configured
 - Up to 16 languages can be selected online
- Standard hardware and software interfaces for increasing flexibility:
 - CF Card slot and SD / Multi Media Card slot for language expansions, backup / restore
 - Ethernet (TCP/IP) for central data and project administration, and control interfacing to SIMATIC S7 possible
 - Standard Windows storage formats (CSV) for archives and recipes permits further processing using standard tools (e.g. MS Excel)

Application

The Multi Panels SIMATIC MP 377 INOX can be used wherever machines and systems are operated and monitored directly on-site – whether in production, process or building automation. These are used in the most popular branches and applications and can be expanded in their applications with the Multi Panel options, e.g. by displaying HTML documents via the Microsoft Pocket Internet Explorer.

Windows CE meets the basic prerequisites for application in rough industrial environments. The diskless and fanless design enables implementation in areas where high vibration or dust load limits the operation of a PC. Short boot-up times make the Multi Panels ready for operation sooner as well.

The Multi Panel 15" Touch with stainless steel front is designed for all industries that require such a front. The front can be disinfected and does not affect the quality e.g. of foods (assuming regular cleaning). Cleaning can be carried out using pressurized water with a jet of 100 l/min at 1 bar from a distance of 2.5 to 3 m. Liquids flow off automatically from the front panels.

HMI devices for special requirements

Devices with stainless steel front

SIMATIC MP 377 INOX

Design

- Compact design with low mounting depth
- The front is resistant to various oils, greases and standard detergents
- Degree of protection IP66K / NEMA 4x / NEMA 12 (front) or IP20 (rear)
- Plug-in terminals for 24 V DC power supply
- Interfaces:
- RS 485 / RS 422 interface for process connections (MPI, PROFIBUS DP up to 12 Mbit/s)
- USB for mouse, keyboard, printer, barcode reader, and downloading / uploading the configuration
- Ethernet (TCP/IP) for exchanging data with a higher-level PC, connection of a network printer and downloading / uploading the configuration; a control link to SIMATIC S7 is possible
- Slot for CompactFlash card (CF card)
- Slot for SD / multimedia card
- Retentive memory for WinAC MP 377 data (data, timers, counters and bit memories)

Function

- Display and changing of process parameters
- Process display:
 - Vector graphic (various line and plane objects)
 - Dynamic positioning and dynamic showing / hiding of objects
 - Pixel graphics images, trend and bar graph display
 - Display of up to 8 trends per trend field; trend curve graphic with scroll and zoom functions for accessing the history and flexible selection of the representation period; read ruler for determining current values and display in a table
 - Comprehensive graphics libraries (SIMATIC HMI Symbol Library)
 - Icons: slider, gauge, clock
 - Cyclic function processing by alarm clock
- Multiplex function for variables
- Signaling system
 - Discrete alarms and analog messages (limit alarms) as well as Alarm S message frame procedure for SIMATIC S7 and SIMOTION
 - Freely-definable message classes (e.g. status / fault messages) for definition of acknowledgment response and display of message events
 - Status and fault messages with message history
 - Preconfigured message screen, message window, and message line
- Archiving of messages and process values (on CF / SD / MultiMedia Card / USB flash drive, etc. or network drives via Ethernet)
 - Various archive types: Circular buffer and sequential buffer
 - Storage of archive data in standard Windows format (CSV)
 - Online evaluation of process value archives using trend curves
 - External evaluation using standard tools (MS Excel, MS Access) is possible
- Alarm log and shift log
- Print functions (see "Recommended printers")
- Language switching
 - 16 online languages, 32 configuring languages, incl. Asian and Cyrillic character sets can be configured
- Recipe management
 - With additional data storage (on CF / SD / MultiMedia Card / USB flash drive, etc.)
 - Online / offline processing on the panel
 - Storage of recipe data in standard Windows format (CSV)
 - External processing using standard tools (MS Excel, MS Access) is possible
- PG functionality STATUS FORCE-VAR in combination with SIMATIC S5 and SIMATIC S7
- Screen selection from PLC permits operator control from the PLC
- Display of HTML documents using MS Pocket Internet Explorer
- Visual Basic Script, flexibility through implementing new functions incl. interfacing to variables (comparison operations, loop-through, etc.)
- Help texts for mimics, alarms, and variables
- Computing functions
- Limit monitoring for reliable process control at inputs and outputs
- Fixed window
 - Fixed screen area for output of screen-independent information (e.g. important process variables, data, and time-of-day)
 - Permanent window expanded with templates concept for creating screen models
- Facilitates service and configuration due to
 - Backup and restoring of configuration, operating system, data records, and firmware on an optional memory card (CF / SD / Multi Media Card) or via the Ethernet
 - Backup and restoring of configuration, operating system, data records, and firmware on a PC
 - Download / upload of configuration via Ethernet / USB / MPI / PROFIBUS DP / modem and CF or SD / Multi Media Card
 - Automatic transfer detection
 - Simulation of the configuration direct on the configuring PC
- Import / export of all texts including alarms in CSV format for compiling using standard word processing programs
- Project-specific faceplates which can be changed centrally
- User administration (security)
 - User-oriented access protection according to requirements of specific sectors
 - Authentication with user ID and password
 - User-group-specific rights
- Visual Basic Runtime object model
- Service functions (optionally with "WinCC flexible/ Sm@rtService")
 - E-mail generation
 - Remote control of the SIMATIC HMI system based on the Internet Explorer
 - Web server with status HTML pages and control functions
- Client / server functions (optionally with "WinCC flexible/ Sm@rtAccess")
 - Remote control and monitoring of other SIMATIC HMI systems
 - Plant-wide retrieval of information and archiving of process data

HMI devices for special requirements

Devices with stainless steel front

SIMATIC MP 377 INOX

Integration

The MP 377 can be connected to:

- SIMATIC S7-200 / -300 / -400
- SIMATIC WinAC Software/Slot PLC
- Ethernet communication with SIMATIC S7
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens controllers:
 - Allen Bradley
 - Mitsubishi
 - Telemecanique
 - LG GLOFA GM
 - Modicon
 - GE-Fanuc
 - Omron
- Over Ethernet (TCP/IP) to a higher-level PC, network printer
- Multi-protocol capability
- OPC XML server (optional with "WinCC flexible /OPC server")
- http communication with other SIMATIC HMI systems (optional with "WinCC flexible/ Sm@rtAccess")
- SINUMERIK (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuration)

Note:

For further information, see "System interfaces".

Configuration

Configuration is implemented using the SIMATIC WinCC flexible Standard or Advanced engineering software (see HMI Software/SIMATIC WinCC flexible engineering software).

Projects created using ProTool can be migrated to WinCC flexible.

Applications / options

- WinCC flexible /ProAgent
Precise and rapid process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI Software/SIMATIC ProAgent process fault diagnostics software)
- WinAC MP software PLC for Multi Panels
- Peripherals can be connected via Profibus DP.
- WinCC flexible /Sm@rtAccess;
remote control and monitoring as well as communication between different SIMATIC HMI systems (see HMI Software/Runtime software SIMATIC WinCC flexible/ WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
remove maintenance and servicing for machines / plants via the Internet / intranet (see HMI Software/Runtime software SIMATIC WinCC flexible/ WinCC flexible RT options)
- WinCC flexible /OPC server
Communication with applications (e.g. MES, ERP, or office applications) of different manufacturers (see HMI software/ Runtime software SIMATIC WinCC flexible/ WinCC flexible RT options)

Technical specifications

SIMATIC MP 377	6AV6 644-0CB01-2AX0 15" Touch INOX (with stainless steel front)
Supply voltage	
Supply voltage	24 V DC
permissible range	+19.2 V to +28.8 V DC
Rated current	1.7 A; Typical
Memory	
Type	Flash / RAM
Usable memory for user data	12288 KByte usable memory for user data / 12288 KByte additional memory for options
Time of day	
Clock	
• Type	Hardware clock, battery backed, synchronizable
Protocols	
Protocols (terminal link)	
• Sm@rtAccess	Yes
Configuration	
Configuration tool	WinCC flexible Standard Version 2007 or higher (to be ordered separately)
Display	
Display type	TFT, 65,536 colors
Size	15" (304.1 mm x 228.1 mm)
Resolution (WxH in pixel)	1024 x 768
• MTBF backlighting (at 25 °C)	about 50,000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
EMV	
Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes
Ambient conditions	
maximum permissible angle of inclination without external ventilation	+/- 35 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C to +50 °C
• Operation (max. tilt angle)	0 °C to +35 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP66K
Rear	IP20
Certifications & standards	
Certifications	CE, FM Class I Div. 2, UL, cULus, EX-Zone 2, EX-Zone 22, C-TICK
I/O	
I/O devices	Printer, card reader, barcode reader

HMI devices for special requirements

Devices with stainless steel front

SIMATIC MP 377 INOX

Technical specifications (continued)

SIMATIC MP 377	6AV6 644-0CB01-2AX0 15" Touch INOX (with stainless steel front)
Type of output	
Acoustics	WAV sound signal
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 2 x Ethernet (RJ45) (max. 12 Mbit/s)
PC card slot	No
CF card slot	1 x CF card slot
Multi Media Card slot	1 x Multi Media Card slot
USB port	2 x USB
Industrial Ethernet interface	2 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Functionality under WinCC flexible	
Applications / options	ProAgent, Internet Explorer, Soft PLC, Word Viewer, Excel Viewer, PDF Viewer, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	100
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 1024 entries), retentive, maintenance-free
Recipes	
• Recipes	500
• Data records per recipe	1 000
• Entries per data record	1 000
• Recipe memory	128 KByte integrated Flash, expandable
Number of process images	
• Process images	500
• Variables	2 048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	30,000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	500
• Graphics list	500
• Libraries	Yes

SIMATIC MP 377	6AV6 644-0CB01-2AX0 15" Touch INOX (with stainless steel front)
Archiving	
• Number of archives per project	50
• Number of measuring points per project	50
• Number of entries per archive	50 000
• Archiving types	Yes
• Memory location	Yes
• Data storage format	Yes
• external evaluation	Yes
• Size of archive	Yes
• Online evaluation	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• PC card / CF card / Multi Media Card	No / Yes / Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, symbol languages, 4 additional character sets can be loaded, all freely scalable
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), see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	400 mm x 310 mm
Mounting cutout / device depth (W x H)	368 mm x 290 mm/75 mm device depth
Weight	
Weight	6.2 kg

HMI devices for special requirements

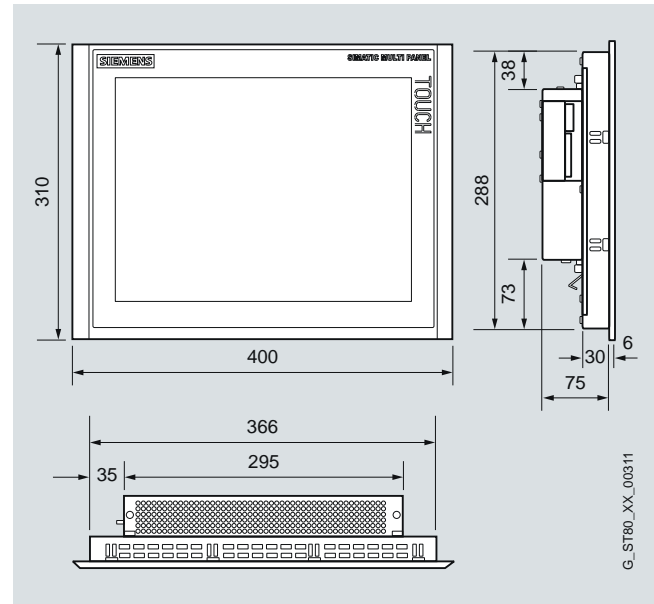
Devices with stainless steel front

SIMATIC MP 377 INOX

Ordering data	Order No.
SIMATIC MP 377 INOX H Multi Panel (incl. installation accessories) with <ul style="list-style-type: none"> 15" color TFT display, Touch, INOX (with stainless steel front) 	6AV6 644-0CB01-2AX0
Configuration with SIMATIC WinCC flexible Configuration set MP 377 G <ul style="list-style-type: none"> WinCC flexible Standard engineering software Documentation DVD, 5 languages (English, French, German, Italian, Spanish) RS 232 cable (5 m) MPI cable, 5 m (for download and test purposes only) 	see HMI software chap. 4 6AV6 622-0BA01-0AA0
Applications / options For configuration with WinCC flexible <ul style="list-style-type: none"> WinCC flexible/ ProAgent WinCC flexible/ Sm@rtAccess WinCC flexible/ Sm@rtService WinCC flexible/ OPC server WinCC flexible/ Audit WinAC MP 2007/software PLC 	see HMI software chap. 4
Documentation (to be ordered separately) MP 377 Operating Instructions <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1DR01-0AA0 6AV6 691-1DR01-0AB0 6AV6 691-1DR01-0AC0 6AV6 691-1DR01-0AD0 6AV6 691-1DR01-0AE0
WinCC flexible Compact / Standard / Advanced User Manual <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1AB01-3AA0 6AV6 691-1AB01-3AB0 6AV6 691-1AB01-3AC0 6AV6 691-1AB01-3AD0 6AV6 691-1AB01-3AE0
User Manual WinCC flexible Communication <ul style="list-style-type: none"> German English French Italian Spanish 	6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0
SIMATIC HMI Manual Collection A Electronic documentation, on DVD, 5 languages (en, fr, ger, it, sp); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
Accessories for supplementary ordering	see HMI accessories starting page 2/160

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC MP 377 15" Touch with stainless steel front

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 extension 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.

¹⁾ Can only be used for license handling

A: subject to export regulations: AL: N and ECCN: EAR99S

G: subject to export regulations: AL: N and ECCN: 5D992

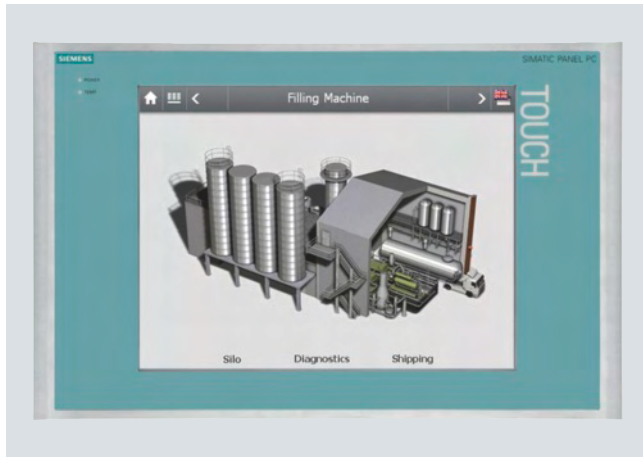
H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

HMI devices for special requirements

Devices with stainless steel front

SIMATIC Panel PC 677B INOX

Overview



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
- Front panel versions:
 - 15" TFT Touch, stainless steel / INOX
- The operator control unit and computing unit can be placed 30 m apart (optional).

Benefits

- High industrial compatibility due to rugged design, even if subjected to strong vibrations and shocks
- High degree of investment protection due to guaranteed availability of spare parts (for 5 years after end of active marketing)
- High degree of continuity of components for long-lasting machine concepts without new engineering overhead
- Time and cost savings due to service-friendly hardware configuration:
 - Operator control unit and computer unit can be opened easily for fast replacement of components or subsequent expansions
 - USB 2.0 interfaces on the rear for simple and quick connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI or PROFINET (CP1616-compatible) and 2 Gigabit Ethernet interfaces
- Operational reliability:
 - With the optional direct key module, the process can be operated without delay via PROFIBUS DP independent of the operating system
- 2 x ≥80 GByte SATA hard disk system (configured as single-disk system or RAID1)
- Minimization of downtimes due to high system availability
- Efficient on-board diagnostics (SIMATIC IPC DiagMonitor):
 - Solutions for preventive data backup
- Integrated component of Totally Integrated Automation (TIA):
 - Increase of productivity, minimization of engineering overhead, reduction of lifecycle costs
 - Spatially separated installation of computer unit and operator control unit possible by means of Remote Kit (up to 30 m, optional accessory)

Application

The SIMATIC Panel PC 677B INOX is designed for use direct at the machine. The small mounting depth of only 121 / 142 mm means that it can also be used where space is limited.

The PC is used both in manufacturing automation and process automation, installed in control cabinets and consoles, in 19" cabinets / racks and on swing arms (booms).

The Dual Core CPUs with Intel Core2 Duo technology support simultaneous high-performance control and visualization.

With PCIe (x4), the new PCI express (PCIe) cards (x1 and x4) are also supported.

The integrated NVRAM (battery-backed) is supported from WinAC RTX 2005 SP2 and with DC power supply.

A SIMATIC Panel PC is the ideal platform for PC-based automation:

- PC-based visualization at the machine level on site with SIMATIC WinCC flexible
- Complex solutions with SIMATIC WinCC process visualization
- PC-based control with SIMATIC WinAC software PLC

Siemens offers a complete range of automation components that perfectly complement each other.

SIMATIC Panel PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI Packages at a price advantage (see SIMATIC HMI complete systems).

Design

The Panel PC 677B INOX comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
 - Mobile Intel 945G chip set
 - Intel Celeron M 440 / 1.86 GHz or
 - Intel Core2 Duo T5500 / Dual Core, 1.66 GHz or
 - Intel Core2 Duo T7400 / Dual Core, 2.16 GHz
- Basic main memory configuration: 1 GByte
- 3.5" SATA hard disk: ≥ 160 GByte; the special vibration-absorbing hard disk support ensures reliable operation even under extreme mechanical stress
- Onboard graphics
- Interfaces:
 - 2 x 10 / 100 / 1000 Ethernet
 - PROFIBUS DP / MPI on board, floating
 - PROFINET (IRT-capable), 3-port, switching-enabled, CP1616-compatible
 - 4 x USB 2.0 connection
 - 1 x serial V.24 (9-pin)
- Retentive memory:
 - 512 KByte NVRAM, can be used with WinAC RTX 128 KByte (DC versions)
- Free slots for expansions:
 - 2 x PCI (slots with card retainer)
 - 1 x slot for CompactFlash card
- Power supply: 110 / 230 V AC (autorange), 50 / 60 Hz or 24 V DC
- DVI-I interface for connecting a further monitor (DVI or VGA) or Flat Panel

Optional additional components:

- Main memory expansion to 2, 3 or 4 GByte
- SATA hard disk ≥ 250 GByte
- Dual hard disk module 2 x ≥ 80 GByte SATA preconfigured as single disk configuration or RAID1
- Internal CF card slot (empty, instead of hard disk and optical drive; only with Windows XP embedded operating system)
- DVD±RW±R combo drive
- 1 x PCIe x 4 / 1 x PCI instead of 2 x PCI slots (with card retainers)

Components of the operator control unit:

The operator control unit is available in the following version:

15" Touch, stainless steel / INOX

- 15.1" TFT color display, 1024 x 768 (XGA)
- Resistive analog touch screen
- Stainless steel front, designed for use in the food, beverages and tobacco industries
- Developed on the basis of DIN EN 1672-2
- Polished surface (stainless steel 1.4301, line pattern, grain-size 240)
- IP66k on front
- Without USB front interface

- Shatter-protection for the display
- Optimized frame surface to allow liquids to run off
- Minimized grooves and gaps
- Decorative foil tested against chemicals in accordance with DIN 42115, Part 2
- Mounting with clamping frame only. Sealing material food-safe (EDPM, in accordance with FDA 21 CFR 177.2006)
- Prepared for EHEDG certification for the entire machine

The operator control unit complies with the requirements of degrees of protection IP66K and NEMA 4.

The computer unit is connected to the rear of the operator control unit using cables.

Expansion componentsSIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (English / German)
- Network-wide monitoring via SNMP and OPC interface possible
- Integrated Web server for monitoring over the network using a Web browser

SIMATIC IPC Image & Partition Creator

- Software tool for quick and easy back-up and restoring of the content of hard disks (images of individual partitions or complete hard disks) and for simple subsequent modification of the hard disk partitioning without loss of data.

SIMATIC IPC USB-FlashDrive

- Mobile memory medium for SIMATIC PC / PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

SIMATIC IPC Service USB-FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Pre-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

3.5" USB 1.1 disk drive 3.5"

The USB disk drive is provided for the high-speed transfer of user data, such as recipes, or files. The drive must not be used as a cyclic archiving drive.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

HMI devices for special requirements

Devices with stainless steel front

SIMATIC Panel PC 677B INOX

Design (continued)

SIMATIC Panel PC Remote Kit

- Spatially separated configuration of computer and operator control unit
- At a maximum distance of up to 30 m
- Pure hardware solution, no need to install additional software
- Maintaining the Panel PC front functionality
- Additional USB interface on the rear
- Centralized and distributed configuration with only one basic unit
- Can be retrofitted

Industrial USB Hub 4

USB I/O can be connected and operated without opening the control cabinet door using the Industrial Hub 4.

- Industry-standard USB 2.0 hub, front IP65
- Mounting in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

For further information, see "Expansion components".

Function

- Integrated, parameterizable monitoring functions (program execution (watchdog), temperature inside enclosure, fan speed)
- Expanded diagnostics / messages via Ethernet, e-mail, text message and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC IPC DiagMonitor)
- RAID1 for automatic data mirroring on two SATA hard disks

Integration

Integrated interfaces

- **Ethernet**
The integrated Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages).
- **PROFIBUS**
The floating PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- **PROFINET**
The three (IRT-capable) PROFINET ports can be used to connect distributed I/O, SIMATIC S7, and drives. The switching-capable ports of the CP1616-compatible PROFINET option support line and tree topologies (WinAC RTX Version 2008 or higher). Alternatively, the interface can be used as standard Windows interface.
- **Further interfaces**
For connecting additional I/O devices, 2 spare slots are available for PCI modules or alternatively 1 x PCI and 1 x PCIe x4 modules, as well as a CompactFlash Card interface, 4 USB 2.0 interfaces (Universal Serial Bus), and one serial interface.

Technical specifications

	6AV7 872-.....-...0
SIMATIC Panel PC 677B INOX	15" Touch
Operator control and monitoring	
Accessory components	Touch protective foil (not for Inox front), remote kit
General features	
Front panel	15" TFT Touch
Display	
Screen diagonal	15"
Resolution (WxH in pixel)	1024 x 768
• MTBF backlighting (at 25 °C)	50 000 h in 24 h permanent operation, temperature-dependent
Operating mode	
Touch screen	Yes
Design	
central design	Yes
distributed design	Yes; by means of remote kit
Dimensions	
Mounting cutout / device depth (W x H)	450 x 290 / 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 mm
Operator control unit (W x H) in mm	483 x 310 (19", 7 HU)
Install. dimensions, operator panel with distributed design (W x H x D) in mm	450 x 290 x 85
Install. dimensions, computer unit with distributed design (W x H x D) in mm	298 x 301 x 100; (298 x 301 x 80 without CD)
Weight	
Weight	
• Panel PC in central design, approx.	14 kg

HMI devices for special requirements

Devices with stainless steel front

SIMATIC Panel PC 677B INOX

Ordering data	Order No.	Order No.
Panel PC configurator (job-oriented production and delivery)		
SIMATIC Panel PC 677B INOX	6AV7 87 - - - - - 0	6AV7 87 - - - - - 0
Front options	6AV7 872 - 2	
<ul style="list-style-type: none"> 15" Touch INOX front, without front USB 		
Power supply		
<ul style="list-style-type: none"> 24 V DC 110 / 230 V AC, power cable for Europe 110 / 230 V AC (without power cable) 110 / 230 V AC, power cable for UK 110 / 230 V AC, power cable for CH 110 / 230 V AC, power cable for the USA 110 / 230 V AC, power cable for Italy 110 / 230 V AC, power cable for China 	A B C D E F G H	
Processor		
<ul style="list-style-type: none"> Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MByte SLC, slots (spare): 2 x PCI Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI Intel Core2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MByte SLC, slots (spare): 2 x PCI Intel Core2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI Intel Core2 Duo T7400 / Dual Core, 2.16 GHz, 677 MHz FSB, 4 MByte SLC, slots (spare): 2 x PCI Intel Core2 Duo T7400 / Dual Core, 2.16 GHz, 677 MHz FSB, 4 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI 	A B C D E F	
Main memory		
<ul style="list-style-type: none"> 1 GByte DDR2 2 GByte DDR2 3 GByte DDR2 4 GByte DDR2 	2 3 4 5	
Panel PC configurator (job-oriented production and delivery)		
SIMATIC Panel PC 677B INOX	6AV7 87 - - - - - 0	6AV7 87 - - - - - 0
Mass storage		
<ul style="list-style-type: none"> 160 GByte SATA hard disk 250 GByte SATA hard disk RAID1 dual hard disk module 2 x 80 GByte SATA, preconfigured Dual hard disk module 2 x 80 GByte SATA Second CF card slot (only in combination with Windows XP embedded), internal, not fitted, only with version without opt. drive and without HDD 	0 1 2 3 4	
Optical drives		
<ul style="list-style-type: none"> Without DVD±RW±R combo drive 	0 1	
Communication interfaces		
<ul style="list-style-type: none"> PROFIBUS / MPI; 2 x GBit Ethernet, 512 KByte NV-RAM PROFINET (3 x RJ45, CP1616-compatible); 2 x Gbit Ethernet, 512 KByte NVRAM⁶⁾ 	A B	
Operating system		
<ul style="list-style-type: none"> Without operating system²⁾ Windows 2000 Professional Multi-Language¹⁾²⁾³⁾ Windows XP Professional Multi-Language¹⁾²⁾ Windows Vista Ultimate Multi-Language Windows Server 2003 Standard Edition incl. 5 clients⁷⁾ MUI⁵⁾, SP1 (SP2 enclosed) Windows XP embedded (English)⁴⁾ on 2 GByte CF card 	A B C D E F	

¹⁾ Multi-Language means: D / E / F / I / SP / CHIN traditional / CHIN simplified / Korean / Japanese

²⁾ Not with internal second CF card slot

³⁾ Windows 2000 does not support dual core CPUs; under Windows 2000, only one core is activated.

⁴⁾ Only without RAID 1 option

⁵⁾ Multi-Language means: D / E / F / I / SP; other languages only by downloading from Microsoft

⁶⁾ Not with Windows 2000 Professional or Windows 2003 Server

⁷⁾ Only with Core2 Duo CPUs, not with PROFINET option

G: subject to export regulations: AL: N and ECCN: 5D992

HMI devices for special requirements

Devices with stainless steel front

SIMATIC Panel PC 677B INOX

Order No.	Order No.		Order No.	
Accessories			Expansion components (continued)	
Memory expansion			SIMATIC Panel PC Remote Kit	
• 1 GByte DDR2	B	6ES7 648-2AG40-0HA0	for the separate configuration of control unit and PC	
• 2 GByte DDR2	B	6ES7 648-2AG50-0HA0		
Non-heating apparatus cable for SIMATIC Box and Panel PC				
SIMATIC PC power cable, 230 V AC, angled, 3 m, for:				
• Germany		6ES7 900-1AA00-0XA0	• 24 V DC, 5 m	B 6AV7 671-1EA00-5AA1
• United Kingdom		6ES7 900-1BA00-0XA0	• 24 V DC, 10 m	B 6AV7 671-1EA01-0AA1
• Switzerland		6ES7 900-1CA00-0XA0	• 24 V DC, 15 m	B 6AV7 671-1EA01-5AA1
• USA		6ES7 900-1DA00-0XA0	• 24 V DC, 20 m	B 6AV7 671-1EA02-0AA1
• Italy		6ES7 900-1EA00-0XA0	• 24 V DC, 30 m	B 6AV7 671-1EA03-0AA1
• China		6ES7 900-1FA00-0XA0	• 110 / 230 V AC, 5 m	B 6AV7 671-1EA10-5AA1
Touch pen	B	6AV7 672-1JB00-0AA0	• 110 / 230 V AC, 10 m	B 6AV7 671-1EA11-0AA1
Captive pen for operation of the touch devices, mounting of the support on the control cabinet			• 110 / 230 V AC, 15 m	B 6AV7 671-1EA11-5AA1
			• 110 / 230 V AC, 20 m	B 6AV7 671-1EA12-0AA1
			• 110 / 230 V AC, 30 m	B 6AV7 671-1EA13-0AA1
			Industrial USB Hub 4	B 6AV6 671-3AH00-0AX0
			4 x USB 2.0 interfaces, IP65 for mounting on control cabinet door or DIN rail	
Expansion components			Uninterruptible power supplies	
SIMATIC IPC DiagMonitor V4.2	A	6ES7 648-6CA04-2YX0	SITOP power, 15 A DC UPS module with USB interface	6EP1 931-2EC42
Software tool for monitoring SIMATIC IPCs, incl. manual, on CD-ROM (German / English)			with charger unit for 24 V lead battery, input 24 V DC 16 A, output 24 V DC 15 A	
SIMATIC IPC Image & Partition Creator V3.1	G	6ES7 648-6AA03-1YA0	SITOP power, battery module 24 V 3.2 Ah	6EP1 935-6MD11
Software tool for preventive data backup and hard disk partitioning for SIMATIC IPCs, incl. manual on CD-ROM (German, English)			for DC UPS module 15 A	
SIMATIC IPC USB FlashDrive	B	6ES7 648-0DC40-0AA0	Communication components	
2 GByte, USB 2.0; metal enclosure, bootable			PCI interface card	
3.5" USB 1.1 disk drive		6FC5 235-0AA05-1AA2	With COM1, COM2 and LPT interfaces	B 6ES7 648-2CA01-0AA0
With 1 m connecting cable				

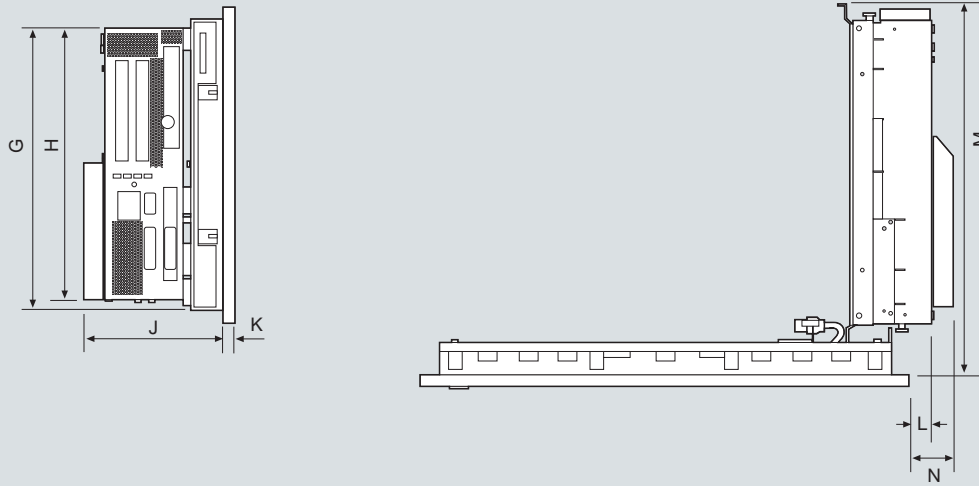
A: subject to export regulations: AL: N and ECCN: EAR99S

B: subject to export regulations: AL: N and ECCN: EAR99H

G: subject to export regulations: AL: N and ECCN: 5D992

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



Operator panel PC 677 INOX	G	H	J	K	L	M	N
Touch panels 15"	289	271	138	11	24	367	42

G_ST60_XX_00394

SIMATIC Panel PC677B INOX 15" Touch

More information

Additional information is available in the Internet under:

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

Note:

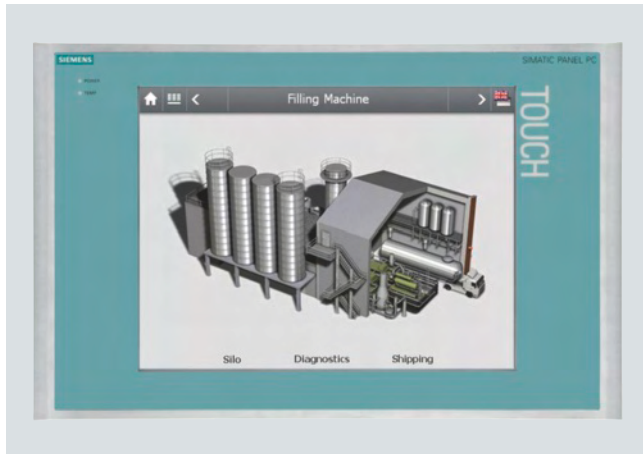
Do you need a specific modification or expansion to the products described here? Then refer to "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

HMI devices for special requirements

Devices with stainless steel front

SIMATIC HMI IPC677C INOX

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

Benefits

- High industrial compatibility due to rugged design, even with high vibration and shock loads
- High safeguarding of investments as result of guaranteed availability of spare parts (further 5 years following end of active marketing)
- High degree of continuity of components for long-lasting machine concepts without new engineering overhead
- Saving of time and costs due to service-friendly device design:
 - Operator control unit and computer unit can be opened easily for fast replacement of components or subsequent expansions
 - USB 2.0 interfaces at rear for simple and fast connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI or PROFINET (CP1616-compatible) and 2 Gigabit Ethernet interfaces
- 2 x 250 GByte SATA hard disk system (configured as single-disk system or RAID1)
- Minimization of downtimes thanks to high system availability
- Efficient self-diagnostics (SIMATIC IPC DiagMonitor):
 - Solutions for preventive data backup
- Integral component of Totally Integrated Automation (TIA):
 - Increase in productivity, minimization of engineering overhead, reduction in lifecycle costs

Application

The SIMATIC HMI IPC 677C INOX is designed for use directly on site on the machine. The small mounting depth of only 121 / 142 mm means that it can also be used where space is limited.

The PC is used both in manufacturing automation and process automation, installed in control cabinets and consoles, 19" cabinets / racks and swing arms (booms).

Thanks to the Dual Core CPUs with Intel Core technology, high-performance control and visualization are possible simultaneously.

With PCIe (x16), the new PCI express (PCIe) cards (x1, x4 and x8) are also supported.

The integral NVRAM (battery-backed) is supported by WinAC RTX, for device versions with integrated PROFIBUS or PROFINET (IRT-capable) interfaces.

A SIMATIC Panel PC is the ideal platform for PC-based Automation:

- PC-based visualization on site on the machine with SIMATIC WinCC flexible
- Complex solutions with SIMATIC WinCC process visualization
- PC-based control with SIMATIC WinAC software PLC

Siemens offers a complete modular system of perfectly matched automation components.

The SIMATIC Panel PCs can be ordered together with WinCC flexible or WinCC as SIMATIC HMI Packages with a price advantage (see SIMATIC HMI all-in-one systems).

Design

The Panel PC 677C INOX consists of a computer unit and operator control unit.

Components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
 - Intel Celeron P4505, 1.86 GHz, 2 cores
 - Intel Core i3-330E, 2.16 GHz, 2 cores, hyper-threading
 - Intel Core i7-610E, 2.53 GHz, 2 cores, hyper-threading, turbo boost
- Main memory basic configuration: 1 GByte
- 3.5" SATA hard disk: 250 GByte; the special vibration-absorbing hard disk support ensures reliable operation even under extreme mechanical stress
- Graphics integrated on CPU (Intel Graphics Media Accelerator)
- Interfaces:
 - 2 x 10 / 100 / 1000 Ethernet
 - PROFIBUS DP / MPI on board, floating
 - PROFINET (IRT-capable), 3-port, switching-enabled, CP 1616-compatible
 - 4 x USB 2.0 connection
 - 1 x serial V.24 (9-pin)
- Retentive memory:
 - 512 KByte NVRAM; 128 KByte can be used with WinAC RTX (AC and DC versions)
- Free slots for expansions:
 - 2 x PCI (slots with card retainer)
 - 1 x slot for CompactFlash card
- Power supply: 110 / 230 V AC (autorange), 50 / 60 Hz or 24 V DC
- DVI-I interface for connecting a further monitor (DVI or VGA) or Flat Panel

Optional accessories:

- Main memory expansion to 2, 3, or 4 GByte, or 2 or 4 GByte with ECC
- SATA hard disk ≥ 500 GByte
- Dual hard disk module 2 x ≥ 250 GByte SATA as single disk configuration or RAID1 preconfigured
- Internal CF card slot (empty, instead of hard disk and optical drive; only with Windows XP embedded operating system)
- DVD \pm RW \pm R combo drive
- 1 x PCIe x 16 / 1 x PCI instead of 2 x PCI slots (with card retainers)
- Different Microsoft Windows operating systems incl. Windows 7 Ultimate

Components of the operator control unit:

The operator control unit is available in the following version:

15" Touch, stainless steel / INOX

- 15.1" TFT color display, 1024 x 768 (XGA)
- Resistive analog touch screen
- Stainless steel front, designed for use in the food, beverages and tobacco industries
- Developed based on DIN EN 1672-2
- Polished surface (stainless steel 1.4301, hairline polish, grain 240)
- IP66K at front
- Without USB front interface
- Shatter protection for the display
- Optimized frame surface to allow liquids to run off
- Minimized grooves and gaps
- Decorative foil protected against chemicals in accordance with DIN 42115, Part 2
- Mounting with clamping frame only. Sealing material food-safe (EDPM, in accordance with FDA 21 CFR 177.2006)
- Prepared for EHEDG certification of complete machine

The operator control unit complies with the requirements of degrees of protection IP66K and NEMA 4. The computer unit is connected to the rear of the operator control unit using cables.

Expansion componentsSIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (English / German)
- Network-wide monitoring via SNMP and OPC interface possible
- Integral Web server for monitoring via the network using a Web browser

SIMATIC IPC Image & Partition Creator

- Software tool for simple and fast saving and restoring of hard disk contents (images of individual partitions or complete hard disks) and for simple subsequent modification of the hard disk partitioning without data loss.

SIMATIC IPC USB FlashDrive

- Mobile memory medium for SIMATIC PC / PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

3.5" USB 1.1 disk drive

The USB disk drive is provided for fast exchange of user data, e.g. recipes, or of files. The drive must not be used as a cyclic archiving drive.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

HMI devices for special requirements

Devices with stainless steel front

SIMATIC HMI IPC677C INOX

Design (continued)

Industrial USB Hub 4

USB I/O can be connected and operated via the industrial USB Hub 4 without opening the control cabinet door.

- Industry-standard USB 2.0 hub, front IP65
- Installation in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

Further information can be found under "Expansion components".

Function

- Integral, parameterizable monitoring functions (program execution (watchdog), internal temperature of enclosure, fan speed)
- Expanded diagnostics / alarms over Ethernet, by e-mail, as text message, and for direct infeed in SIMATIC software over OPC (optionally through SIMATIC IPC DiagMonitor)
- RAID1 for automatic data mirroring on two SATA hard disks

Integration

Integrated interfaces

- **Ethernet**
The integral Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with software package "SOFTNET S7").
- **PROFIBUS**
The floating PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with software package "SOFTNET for PROFIBUS").
- **PROFINET**
The three PROFINET ports (with IRT capability) can be used to connect distributed I/O, SIMATIC S7, and drives. The ports with switching capability of the CP1616-compatible PROFINET option support line and tree topologies (WinAC RTX from version 2008). The interface can be alternatively used as a standard Windows interface.
- **Further interfaces**
For connecting additional I/O devices, 2 spare slots are available for PCI modules or alternatively 1 x PCI and 1 x PCIe x16 modules, as well as a CompactFlash Card interface, 4 USB 2.0 interfaces (Universal Serial Bus), and one serial interface.

Technical specifications

	6AV7 89-.....-...0
SIMATIC HMI IPC677C INOX	15" Touch
General features	
Front panel	15" TFT Touch
Display	
Screen diagonal	15"
Resolution (WxH in pixel)	1024 x 768
MTBF backlighting (at 25 °C)	50 000 h at 24 h continuous operation, temperature-dependent
Operating mode	
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	
Weight	
• HMI IPC in a centralized configuration approx.	14 kg

HMI devices for special requirements

Devices with stainless steel front

SIMATIC HMI IPC677C INOX

Ordering data		Order No.	
Panel PC configurator (job-oriented production and delivery)		Panel PC Configurator (continued)	
SIMATIC HMI IPC677C INOX G	6AV7 89 ■ - ■ ■ ■ ■ ■ - ■ ■ ■ ■ 0	SIMATIC HMI IPC677C INOX G	6AV7 89 ■ - ■ ■ ■ ■ ■ - ■ ■ ■ ■ 0
Front options		Main memory	
• 15" Touch INOX front, without front USB	6AV7 89 2 - 2	• 1 GByte DDR3	0
		• 2 GByte DDR3	1
		• 3 GByte DDR3	2
		• 4 GByte DDR3	3
		• 2 GByte DDR3 with ECC	5
		• 4 GByte DDR3 with ECC	6
<u>Power supply</u>		<u>Mass storage</u>	
• 24 V DC	A	• 250 GByte SATA hard disk	0
• 110 / 230 V AC, power cable for Europe	B	• 500 GByte SATA hard disk	1
• 110 / 230 V AC (without power cable)	C	• RAID1 dual hard disk module	2
• 110 / 230 V AC, power cable for UK	D	2 x 250 GByte SATA, preconfigured	
• 110 / 230 V AC, power cable for CH	E	• Dual hard disk module 2 x 250 GByte SATA	3
• 110 / 230 V AC, power cable for the USA	F		4
• 110 / 230 V AC, power cable for Italy	G	• Second CF card slot (only in combination with Windows XP embedded), internal, not fitted, only with version without opt. drive and without HDD	
• 110 / 230 V AC, power cable for China	H		
<u>Processor</u>		<u>Optical drives</u>	
• Intel Celeron P4505, 1.86 GHz (2 Mbyte shared cache), 2 cores	A	• Without	0
• Intel Celeron P4505, 1.86 GHz (2 MByte shared cache), 2 cores, PROFIBUS MPI, 2 MByte buffered SRAM	B	• DVD±RW±R combo drive	1
• Intel Celeron P4505, 1.86 GHz (2 MByte shared cache), 2 cores, PROFINET (3 x RJ45, CP 1616-compatible), 2 MByte buffered SRAM	C		
• Intel Core i3-330E, 2.16 GHz (3 MByte shared cache), 2 cores, hyper-threading	D	<u>Slots</u>	
• Intel Core i3-330E, 2.16 GHz (3 MByte shared cache), 2 cores, hyper-threading, PROFIBUS MPI, 2 MByte buffered SRAM	E	• 2 x PCI free	A
• Intel Core i3-330E, 2.16 GHz (3 MByte shared cache), 2 cores, hyper-threading, PROFINET (3 x RJ45, CP 1616-compatible), 2 MByte buffered SRAM	F	• 1 x PCI, 1 x PCIe (x16) free	B
• Intel Core i7-610E, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost	G	<u>Operating system</u>	
• Intel Core i7-610E, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost, PROFIBUS MPI, 2 MByte buffered SRAM	H	• Without operating system	A
• Intel Core i7-610E, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost, PROFINET (3 x RJ45, CP 1616-compatible), 2 MByte buffered SRAM	J	• Windows XP Professional Multi-Language ¹⁾²⁾	B
		• Windows 7 Ultimate Multi-Language ²⁾	C
		• Windows Embedded Standard on 8 GByte CF card ³⁾	D

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

²⁾ Not with internal second CF card slot

³⁾ Only without RAID 1 option

G: subject to export regulations: AL: N and ECCN: 5D992

HMI devices for special requirements

Devices with stainless steel front

SIMATIC HMI IPC677C INOX

Order No.	Order No.	Order No.
Accessories		Expansion components
Memory expansion <ul style="list-style-type: none"> • 1 GByte DDR3 DIMM • 2 GByte DDR3 DIMM • 1 GByte DDR3 DIMM with ECC • 2 GByte DDR3 DIMM with ECC 	6ES7 648-2AJ40-0KA0 6ES7 648-2AJ50-0KA0 6ES7 648-2AJ40-1KA0 6ES7 648-2AJ50-1KA0	SIMATIC IPC DiagMonitor V4.2 A 6ES7 648-6CA04-2YX0 Software tool for monitoring SIMATIC IPCs, incl. manual, on CD-ROM (German / English)
Non-heating apparatus cable for SIMATIC Box and Panel PC SIMATIC PC power cable, 230 V AC, angled, 3 m, for: <ul style="list-style-type: none"> • Germany • United Kingdom • Switzerland • USA • Italy • China 	6ES7 900-1AA00-0XA0 6ES7 900-1BA00-0XA0 6ES7 900-1CA00-0XA0 6ES7 900-1DA00-0XA0 6ES7 900-1EA00-0XA0 6ES7 900-1FA00-0XA0	SIMATIC IPC Image & Partition Creator V3.1 G 6ES7 648-6AA03-1YA0 Software tool for preventive data backup and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (German, English)
Touch pen B Captive pen for operation of the touch devices, mounting of the support on the control cabinet	6AV7 672-1JB00-0AA0	SIMATIC IPC USB FlashDrive B 6ES7 648-0DC40-0AA0 2 GByte, USB 2.0; metal enclosure, bootable
Expansion components		3.5" USB 1.1 disk drive With 1 m connecting cable
PCI Interface card B With COM1, COM2 and LPT interfaces	6ES7 648-2CA01-0AA0	Industrial USB Hub 4 B 6AV6 671-3AH00-0AX0 4 x USB 2.0 interfaces, IP65 for mounting on control cabinet door or DIN rail
		Uninterruptible power supplies SITOP power, 15 A DC UPS module with USB port with charger unit for 24 V lead battery, input 24 V DC / 16 A, output 24 V DC / 15 A
		SITOP power, battery module 24 V / 3.2 Ah for DC UPS module 15 A

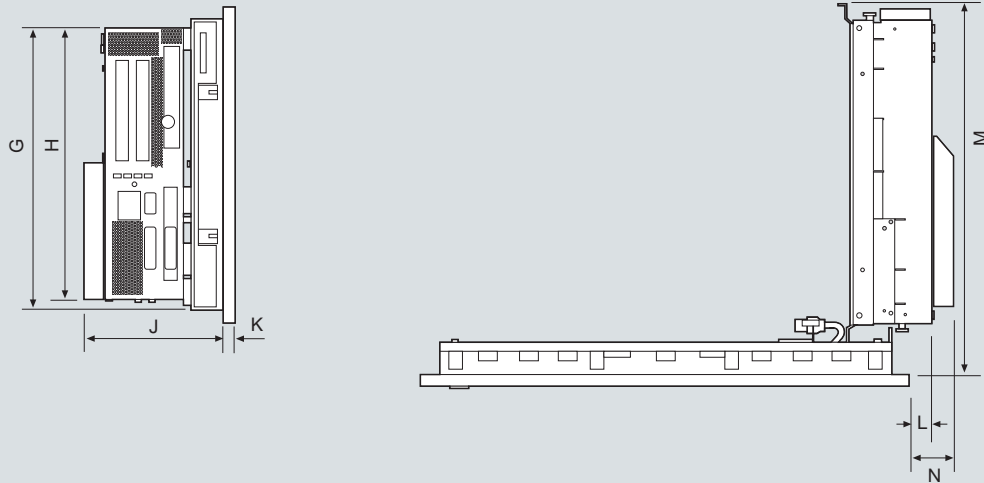
A: subject to export regulations: AL: N and ECCN: EAR99S

B: subject to export regulations: AL: N and ECCN: EAR99H

G: subject to export regulations: AL: N and ECCN: 5D992

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



Operator panel PC 677 INOX	G	H	J	K	L	M	N
Touch panels 15"	289	271	138	11	24	367	42

G_ST80_XX_00394

SIMATIC HMI IPC677C INOX 15" Touch

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 devices

Introduction

Overview

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

The following are available as HMI devices for hazardous areas:

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

Benefits

- Intrinsically-safe design for direct use in various areas with potentially explosive atmospheres
- Various certification such as ATEX 1/21/2/22, GOST-R, marine engineering, etc.
- Extended temperature range from -20 °C to +50 °C (in operation) – with supplementary heating and additional enclosure down to -30 °C
- For natural-light viewing with optional 15" daylight display
- Completely maintenance-free – no fan, hard disk or battery
- Thin Client concept also allows operation as remote monitor (with digital KVM)

Application

The SIMATIC HMI Ex devices have been designed for installation directly in 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.

Two versions are available for use in different Ex zones:

- "Zone 1" with ATEX 1 / 21, UL-Inmetro and GOST-R certification
- "Zone 2" with ATEX 2 / 22 and GOST-R certification

The devices can be used directly in ambient temperatures from -20 °C to +50 °C (cold start down to -10 °C). In combination with a stainless steel enclosure and the integral heater even down to -30 °C! This special enclosure is available in various designs and mounting styles, and permits fast installation without further assembly steps.

With a weight of 15 to 23 kg, the devices are very light for this class. The devices are fanless and permit completely maintenance-free installation without batteries or rotating parts.

Design

General

- IP66 protection at front, IP65 at rear
- Energy-saving design
- 15" TFT color display, 1024 x 768 pixels (XGA)
- 15" TFT color display, 1024 x 768 pixels (XGA), high-brightness display
- 19" TFT color display, 1280 x 1024 pixels (SXGA)
- Analog touch screen, resistive
- Function keys, tactile, F1-F8
- Terminals for 24 V DC power supply

Accessories

- Additional enclosure with various mounting styles
- Handles for enclosure
- Heaters for extension of temperature range
- Keyboards in various languages – also with trackball
- USB sticks (some of which intrinsically-safe)

Technical specifications

	SIMATIC HMI Panel PC Ex	SIMATIC HMI Thin Client Ex
Design	Panel PC with Intel Atom CPU	Thin Client
Operating system	Windows XP Embedded or XP Professional	closed system, based on XP Embedded
Temperature	-20 °C to +50 °C (cold start down to -10 °C) with additional heating down to -30 °C	-20 °C to +50 °C (cold start down to -10 °C) with additional heating down to -30 °C
Degree of protection	IP66 at front, IP65 at rear	IP66 at front, IP65 at rear
Approvals		
Version "Zone 1"	II 2 (2) G Ex d e mb ib [ib] [op is] IIC T4 II 2 D Ex tD A21 IP65 T90 °C DNV (marine engin.) GOST-R UL-Inmetro	II 2 (2) G Ex d e mb ib [ib] [op is] IIC T4 II 2 D Ex tD A21 IP65 T90 °C DNV (marine engin.) GOST-R
Version "Zone 2"	II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4 II 3 (2) D Ex tD A22 IP65 [ibD] T90 °C GOST-R, DNV (marine engin.)	II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4 II 3 (2) D Ex tD A22 IP65 [ibD] T90 °C GOST-R
Dimensions		
Panel cut-out in mm (W x H x D)	15": 427.5 x 327.5 x 165 19": 522.5 x 412.5 x 165	15": 427.5 x 327.5 x 165 19": 522.5 x 412.5 x 165
Front (W x H) in mm	15": 440 x 340 19": 535 x 425	15": 440 x 340 19": 535 x 425
Weight	15": 15 kg 19": 23 kg	15": 15 kg 19": 23 kg

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 devices

SIMATIC HMI Panel PC Ex

Overview



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

Application

The SIMATIC HMI Panel PC Ex is a Panel PC for use directly in hazardous areas.

The device is both an ideal platform for (maintenance-free) embedded applications, as well as a flexible platform for applications under Windows XP Professional.

Integration

Configuration and integrated interfaces with SIMATIC HMI Panel PC Ex:

- Intel Atom N270 CPU with 1.6 GHz and 1 GByte DDR2 RAM
- Mass memory 4 GByte or 16 GByte Flash with Windows XP Embedded or 60 GByte or 120 GByte hard disk with Windows XP Professional
- 10 / 100 Mbit 100 base TX (Ex e) or 100 base FX (Ex op is) fiber-optic network
- 1 x RS232 or 1 x RS422 / 485
- 4 x USB 2.0 (2 x Ex I, 2 x Ex e (version Zone 1) or 2 x Ex nA (version Zone 2))

Technical specifications

	6AV7 200-1....-..A0
SIMATIC HMI Panel PC Ex	15" / 19" Touch
General features	
Design	Panel PC built-in unit, protective enclosure available as an option
Front	15" and 19", optional 15" high-brightness display
Operation	Touch with 8 function keys
Processor	Intel Atom N270 with 1.6 GHz
Main memory	1 GByte DDR2 SDRAM
Operating system, preinstalled and configured	Windows XP Professional, Windows XP Embedded
Mass storage	CompactFlash 4 GByte / 16 GByte, hard disk 60 GByte / 120 GByte
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"	II 2 (2) G Ex d e mb ib [ib] [op is] IIC T4 II 2 D Ex tD A21 IP65 T90 °C DNV (marine engineering), GOST-R, UL-Inmetro
Devices in version "Zone 2"	II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4 II 3 (2) D Ex tD A22 IP65 [ibD] T90°C, GOST-R
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 (W x H) in mm	15": 440 x 340 19": 535 x 425
Weight	15": 15 kg 19": 23 kg

HMI devices for special requirements

HMI devices for hazardous devices

SIMATIC HMI Panel PC Ex

Ordering data

Order No.

Order No.

Configuration

SIMATIC HMI Panel PC Ex H **6AV7 20 0 - 1** ■ ■ ■ ■ ■ - ■ ■ ■ **A 0**

Design / display size

- Zone 2: 15" Touch with function keys
- Zone 2: 19" Touch with function keys
- Zone 1: 15" Touch with function keys
- Zone 1: 19" Touch with function keys
- Zone 1: 15" Touch, high-brightness with function keys

A**B****D****E****F**

Communication interfaces

- 10 / 100 base Tx, Ex e
- 100 base Fx FOC (SC), Ex op is

A**B**

Mass storage

- CF 4 GByte
- CF 16 GByte
- HDD 60 GByte
- HDD 120 GByte

1**2****3****4**

Operating system (preinstalled)

- Windows XP Embedded on CF (language package 1) ¹⁾
- Windows XP Embedded on CF (language package 2) ²⁾
- Windows XP Professional MUI (only on HDD)

1**2****3**

Enclosure options (device is delivered already fitted)

- without
- Stainless steel enclosure
- Stainless steel enclosure for:
 - Wall mounting
 - Stand (incl. coupling, 300° rotation possible)
 - Suspension bracket (incl. coupling, 300° rotation possible)
 - Support arm (incl. coupling, 300° rotation possible)

0**1****2****3****4****5**

External keyboard for stainless steel enclosure (incl. keyboard enclosure)

- without
- QWERTZ keyboard
- QWERTY keyboard
- AZERTY keyboard
- QWERTZ keyboard with trackball
- QWERTY keyboard with trackball
- AZERTY keyboard with trackball

A**B****C****D****E****F****G**

Configuration

Further options together with stainless steel enclosure

- Breather glands
- Heater
- Handles
- Front USB (at bottom)

-z A01**-z B01****-z C01****-z D01**

Accessories

Digital KVM for HMI Thin Client Ex

B**6AV7 675-0EX00-0AA0**

USB drive

- Intrinsically-safe, 8 GByte
- Intrinsically-safe, 8 GByte with recovery function
- Not intrinsically-safe, 8 GByte with recovery function

B**6AV7 675-0FX00-0AA0****B****6AV7 675-0FX10-0AA0****B****6AV7 675-0FX20-0AA0**

Ethernet Switch

B**6AV7 675-0PX00-0AA0**
 with FOC 4 x 100 Base Tx,
 1 x 100 Base (MTRJ) Fx Ex op is

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

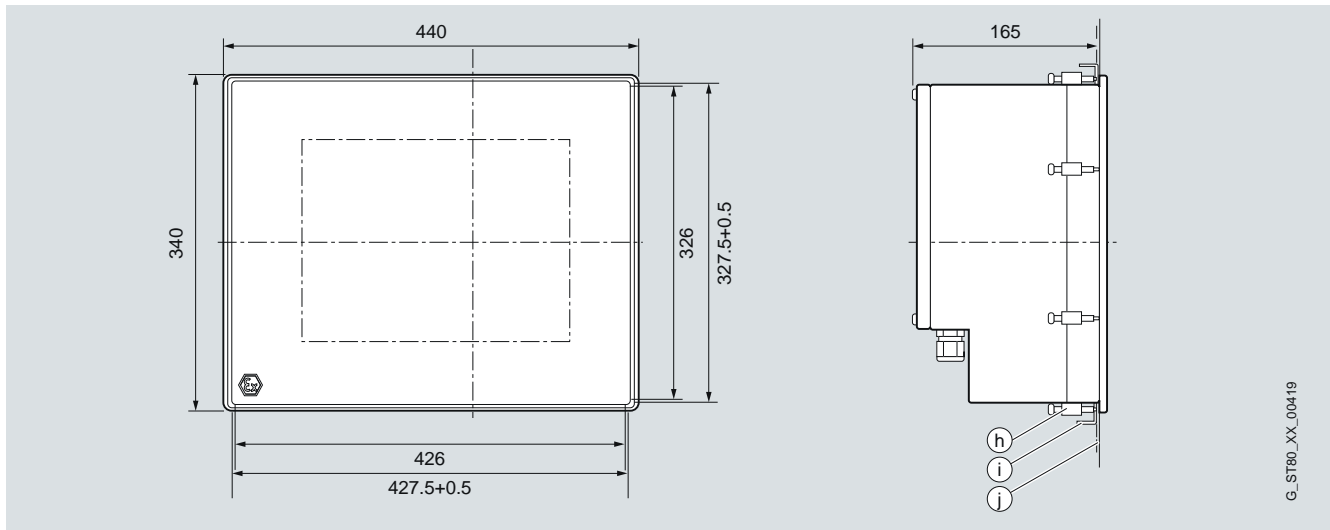
²⁾ Package 2:
upon initial startup, select the language from: English, German, Turkish, Hebrew, Arabic, Chinese, Japanese, Korean, Thai

B: subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC HMI Panel PC Ex 15"

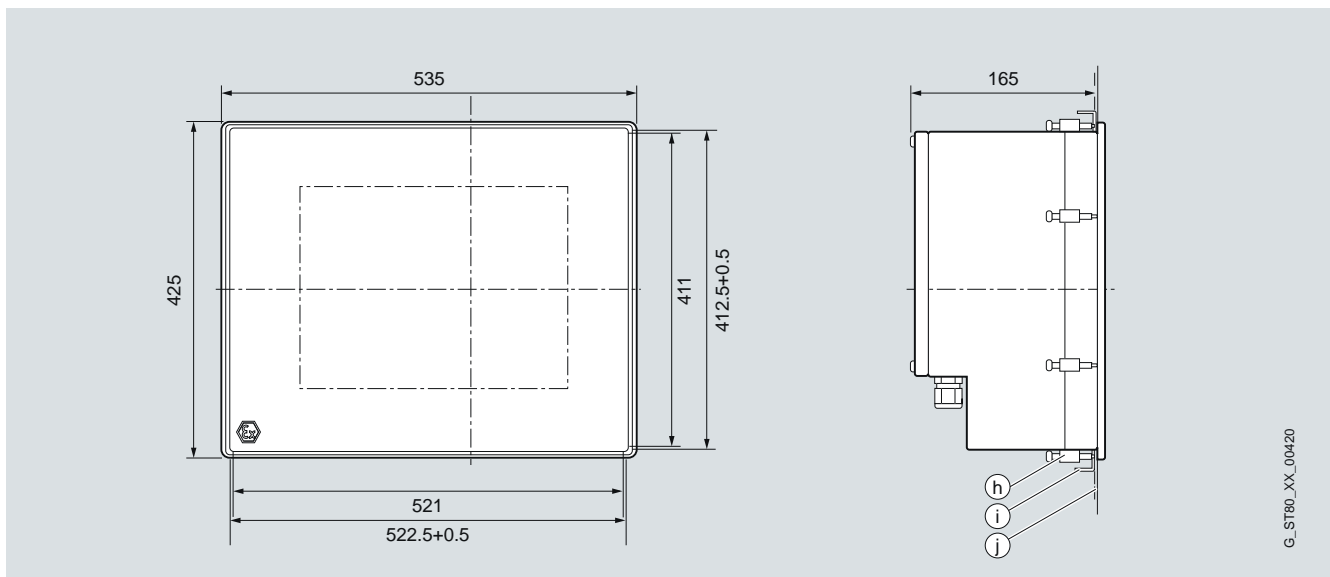
15" touch front	Width in mm	Height in mm	Depth in mm
Operating unit	440	340	165
Installation cut-out	427.5 ± 0.5	327.5 ± 0.5	-

Legend:

h = Mounting clamp (10 x)

i = Clamping frame

j = Control cabinet or enclosure



SIMATIC HMI Panel PC Ex 19"

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

More information

Additional information is available in the Internet under:

<http://www.siemens.com/ex-zone-hmi-devices>

HMI devices for special requirements

HMI devices for hazardous devices

SIMATIC HMI Thin Client Ex

Overview



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

Application

The SIMATIC HMI Thin Client Ex is designed for use as an operator station for terminal and client applications in hazardous areas, and in particular for applications for which the performance of the SIMATIC HMI Panel PC Ex is insufficient, or when the server is located in a protected area of the plant. The widely-used RDP and Real VNC protocols are supported.

Together with the digital KVM Box, the device functions as a flexible monitor with touch functionality for PCs e.g. in control rooms.

Integration

Integrated interfaces with SIMATIC HMI Thin Client Ex:

- 10 / 100 Mbit 100 base TX (Ex e) or 100 base FX (Ex op is) network
- 1 x RS232 or 1 x RS422 / 485
- 4 x USB 2.0 (2 x Ex I, 2 x Ex e (version Zone 1) or 2 x Ex nA (version Zone 2))

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" high-brightness displays
Operation	Touch with 8 function keys
MTBF backlight	50 000 h
Operating system	Closed system on Windows XP Embedded basis
Mass storage	Integrate
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 version "Zone 1"	II 2 (2) G Ex d e mb ib [ib] [op is] IIC T4 II 2 D Ex tD A21 IP65 T90 °C DNV (marine engineering), GOST-R
Devices in version "Zone 2"	II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4 II 3 (2) D Ex tD A22 IP65 [ibD] T90°C, GOST-R
Protocols	RDP, RealVNC
Digital KVM Switch	Input: DVI / VGA, PS2 / 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

B: subject to export regulations: AL: N and ECCN: EAR99H
H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

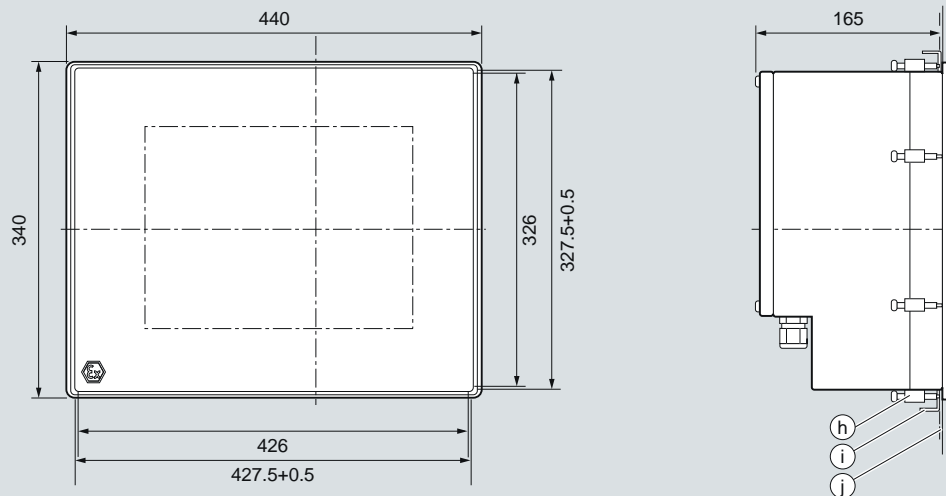
HMI devices for special requirements

HMI devices for hazardous devices

SIMATIC HMI Thin Client Ex

Dimensions

All dimensions in mm. Panel cutout see technical specifications.



SIMATIC HMI Thin Client Ex 15"

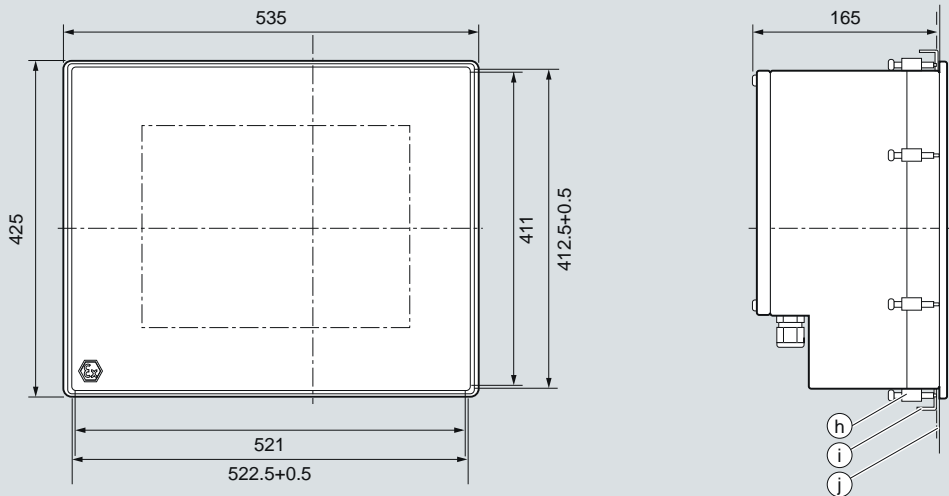
15" touch front	Width in mm	Height in mm	Depth in mm
Operating unit	440	340	165
Installation cut-out	427.5 ± 0.5	327.5 ± 0.5	-

Legend:

h = Mounting clamp (10 x)

i = Clamping frame

j = Control cabinet or enclosure



SIMATIC HMI Thin Client Ex 19"

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

More information

Additional information is available on the Internet at:

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

G_ST80_XX_00419

G_ST80_XX_00420

HMI Software



4/2	Introduction
4/5	SIMATIC WinCC flexible
4/5	SIMATIC WinCC flexible ES
4/10	SIMATIC WinCC flexible RT
4/17	SIMATIC WinCC flexible options
4/18	WinCC flexible /ChangeControl
4/19	WinCC flexible /Archives
4/20	WinCC flexible /Recipes
4/21	WinCC flexible /Audit
4/22	SIMATIC Logon for WinCC flexible
4/24	WinCC flexible /Sm@rtAccess
4/28	WinCC flexible /Sm@rtService
4/31	WinCC flexible /OPC Server
4/33	WinCC flexible /ProAgent
4/34	SCADA system SIMATIC WinCC
4/34	SIMATIC WinCC
4/52	SIMATIC WinCC options
4/53	WinCC/Server
4/54	WinCC/Web Navigator
4/59	WinCC/Central Archive Server (CAS)
4/60	WinCC/Redundancy
4/61	SIMATIC Maintenance Station
4/64	WinCC/ProAgent
4/65	WinCC/DataMonitor
4/67	WinCC/DowntimeMonitor
4/69	WinCC/Connectivity Pack & WinCC Connectivity Station
4/71	WinCC/IndustrialDataBridge
4/73	WinCC/Client Access License (CAL)
4/74	WinCC/User Archives
4/75	WinCC/Calendar Scheduler
4/76	SIMATIC BATCH for WinCC
4/78	WinCC/ChangeControl & WinCC/Audit
4/80	SIMATIC Logon
4/81	WinCC/IndustrialX
4/82	WinCC/Open Development Kit (ODK)
4/83	WinCC add-ons and partner management
4/85	SIMATIC ProAgent process diagnostics software
4/85	SIMATIC ProAgent

HMI Software

Introduction

HMI Software

Overview

With the SIMATIC WinCC flexible and SIMATIC WinCC product families, SIMATIC HMI offers visualization and configuration software for the complete scope of applications:

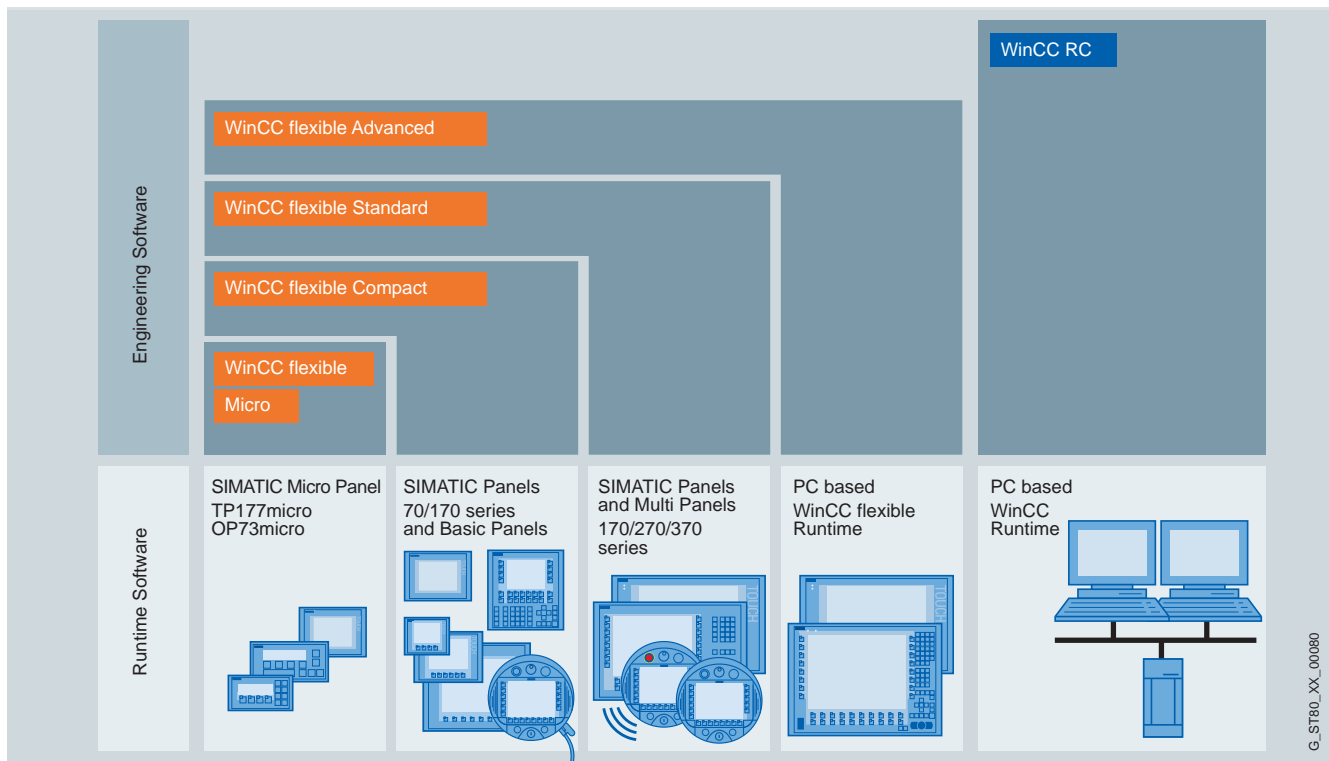
- **SIMATIC WinCC flexible** covers *applications directly at the machine ranging from* PC-based HMI solutions for single-user systems based on WinCC flexible Runtime through to the SIMATIC HMI operator panels. For configuration the WinCC flexible Runtime for PCs as well as SIMATIC HMI devices, the WinCC flexible family also offers the integrated and scalable configuration tools WinCC flexible Micro, WinCC flexible Compact, WinCC flexible Standard and WinCC flexible Advanced.
- **SIMATIC WinCC** is the *process visualization or SCADA system* (PC-based HMI system) for visualizing and controlling processes, production flows, machines and plants in all sectors – from the simple single-user system through to the distributed multi-user system with redundant servers and remote solutions with web clients. WinCC is, at the same time, the information hub for company-wide vertical integration (process visualization and platform for IT and business integration).

SIMATIC WinCC flexible

is the consistent further development of SIMATIC HMI software products for the low-end performance range. WinCC flexible offers a significant boost in configuration efficiency and innovative automation concepts for machine-level applications. For process-oriented plant and mechanical engineering as well as series production of machines, SIMATIC WinCC flexible also offers:

- Further productivity improvements (configuration efficiency) when creating HMI projects
- Implementation of innovative TCP/IP and web-based automation and HMI concepts
- Increase of the availability of the machines and systems through new service concepts
- Secure, flexible and world-wide access to process data
- Configuration of SIMATIC HMI devices

4



Overview (continued)

SIMATIC WinCC flexible ES engineering software

- Family of configuration systems with WinCC flexible Micro / Compact / Standard / Advanced for SIMATIC HMI operator panels, the HMI part of SIMATIC C7, as well as for the PC-based visualization software WinCC flexible Runtime
 - SIMATIC Micro Panels
 - SIMATIC Mobile Panels
 - SIMATIC Basic Panels
 - SIMATIC Panels of the 70 / 170 / 270 series as well as C7-635 and C7-636
 - SIMATIC Multi Panels of the 170 / 270 / 370 series
 - SIMATIC WinCC flexible RT
- Runs under Windows XP Professional / Windows 7 Professional, Ultimate, Enterprise
- Expanded integration into Totally Integrated Automation (TIA):
 - STEP 7
 - SIMOTION
- Maximum configuration efficiency thanks to preconfigured objects, modular system, intelligent tools and mass data processing
- Optionally expandable with functions for version administration and logging changes (WinCC flexible / ChangeControl)

SIMATIC WinCC flexible Runtime visualization software

- Modular PC-based HMI solution for single-user systems directly at the machine (further development of ProTool/Pro Runtime)
- Runs under Windows XP Professional / Windows 7 Professional, Ultimate, Enterprise
- Basic package providing a cost-effective means of getting started in respect of visualization, signaling and logging; can be expanded specifically with option packages
- Flexible expansion possible with VB scripts and customized ActiveX controls created with OPP (Open Platform Program)
- Can be integrated into innovative automation solutions based on TCP/IP networks
- Expanded service concepts with remote operation, diagnostics and administration over the intranet and Internet as well as e-mail communication (using options)
- Can be expanded with WinCC flexible / Audit for recording operations in an audit trail
- Central, system-wide user management based on the SIMATIC Logon option

SIMATIC WinCC process visualization system

- 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 company-wide, vertical integration (process visualization and platform for IT & business integration).
- For universal use thanks to solutions for all sectors, e.g. conforming to FDA 21 CFR Part 11, and multiple languages for worldwide use
- 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).
- Configuring is easy and efficient using object libraries, modular systems, tools for mass data processing and online loading of changes
- 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 2005, standard and programming interfaces and tools and clients for evaluation
- Modular expansion with options and add-ons as well as individual function expansions with VB Script, Visual Basic for Applications, C-API (ODK) and integration of ActiveX elements
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering outlay, reduces lifecycle costs

HMI Software

Introduction

HMI Software

Overview (continued)

	SIMATIC WinCC flexible Runtime	SIMATIC WinCC
Field of application	<ul style="list-style-type: none"> HMI software designed primarily for use in process applications in (series) machine production 	<ul style="list-style-type: none"> Process visualization software for controlling and monitoring both simple and complex automation solutions
Configurations	<ul style="list-style-type: none"> Single-user system, frequently based on a Panel PC Support of simple distributed operating stations in TCP/IP networks Innovative service concepts featuring e-mail, remote control, monitoring and administration via intranet / the Internet 	<ul style="list-style-type: none"> Single-user and multi-user system as well as distributed systems Internet capability using the WinCC/Web Navigator option Data security with redundant solutions Integrated historian functionality Processing of large quantity frameworks
Philosophy / strategies	Integrated solution, from Operator Panels all the way to PC-based operator stations based on WinCC flexible Runtime	High-quality SCADA functionality and integration platform for ERP / MES solutions based on the integrated historian functionality (IT & business integration)
Configuration	<ul style="list-style-type: none"> An integrated family of configuration tools permits integrated solutions Fast configuration due to preconfigured objects and referenced faceplates Tabular editors for efficient mass data processing Intelligent tools to simplify the configuration of complex tasks, e.g. operator prompting, automatic compilation 	<ul style="list-style-type: none"> Flexibility thanks to individual dynamization options Object library and function block technology (incl. referencing) Efficient configuration of mass data thanks to configuration tool Simple configuration of control system applications; text library for signaling system Online loading of changes in active projects
Functional scope	<ul style="list-style-type: none"> HMI basic functionality can be expanded using option packages Standard functions can be expanded quickly and easily using VB scripts Jog mode is possible 	<ul style="list-style-type: none"> High-performance and comprehensive SCADA functionality Standard functions can be expanded quickly and easily using VB scripts and C scripts Integral component of the PCS 7 process control system
Openness / expansion capability	<ul style="list-style-type: none"> Customer-specific solutions based on ActiveX controls are possible (Open Platform Program) Access to runtime display objects using VB scripts 	<ul style="list-style-type: none"> Can be expanded with open Windows interfaces for integration into a factory / company-wide information system Standard SQL database with WinCC OLE DB Provider C-APIs (ODK), access to the COM object model of WinCC RT using VB script and WinCC CS using VBA OPC: Access to WinCC RT data using OPC DA, OPC HDA and OPC A&E (Connectivity Pack) Extensive range of options and add-ons

SIMATIC ProAgent process diagnostics software

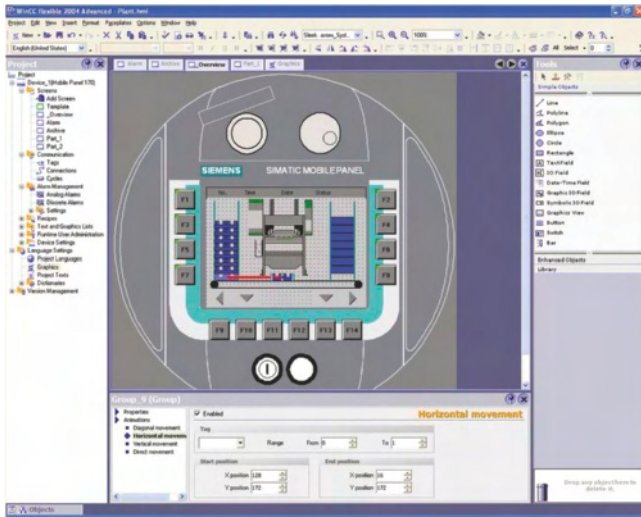
- Process diagnostics software for fast, targeted fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:
Optimized interaction between STEP 7 engineering tools and SIMATIC HMI
- Standardized user interface
- Integral component of Totally Integrated Automation (TIA):
Increases productivity, minimizes engineering outlay, reduces 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

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible ES

Overview



- Integrated family of *engineering tools* for configuring SIMATIC HMI Operator Panels, the operating device 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 Service Pack 2 Advanced
 - SIMATIC WinCC flexible 2008 Service Pack 2 Standard
 - SIMATIC WinCC flexible 2008 Service Pack 2 Compact
 - SIMATIC WinCC flexible 2008 Service Pack 2 Micro

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 the configuration tools of the ProTool family
 - Import of static screen contents and tags from WinCC V6.2

Application

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

Various target systems can be configured depending on the selected product:

- WinCC flexible Micro**
 - Micro Panels: OP 73micro, TP 170micro, TP 177micro
- WinCC flexible Compact**
 - Micro Panels: OP 73micro, TP 170micro, TP 177micro
 - Mobile Panels: Mobile Panel 170, Mobile Panel 177
 - Basic Panels: KTP400 Basic, KTP600 Basic, KTP1000 Basic, TP1500 Basic
 - 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**
 - Micro Panels: OP 73micro, TP 170micro, TP 177micro
 - Mobile Panels: Mobile Panel 170, Mobile Panel 177, Mobile Panel 277
 - Basic Panels: KTP400 Basic, KTP600 Basic, KTP1000 Basic, TP1500 Basic
 - 70 series Panels: OP 73, OP 77A, OP 77B
 - 170 series Panels: TP 170A, TP 177A, TP 170B, TP 177B, OP 170B, OP 177B
 - 270 series Panels: TP 270, TP 277, OP 270, OP 277
 - 170 series Multi Panels: MP 177
 - 270 series Multi Panels: MP 270B, MP 277
 - 370 series Multi Panels: MP 370, MP 377
 - C7 devices: C7-635 (Touch / Key), C7-636 (Touch / Key)
- WinCC flexible Advanced**
 - Micro Panels: OP 73micro, TP 170micro, TP 177micro
 - Mobile Panels: Mobile Panel 170, Mobile Panel 177, Mobile Panel 277
 - Basic Panels: KTP400 Basic, KTP600 Basic, KTP1000 Basic, TP1500 Basic
 - 70 series Panels: OP 73, OP 77A, OP 77B
 - 170 series Panels: TP 170A, TP 177A, TP 170B, TP 177B, OP 170B, OP 177B
 - 270 series Panels: TP 270, TP 277, OP 270, OP 277
 - 170 series Multi Panels: MP 177
 - 270 series Multi Panels: MP 270B, MP 277
 - 370 series Multi Panels: MP 370, MP 377
 - C7 devices: C7-635 (Touch / Key), C7-636 (Touch / Key)
 - 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>

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible ES

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.

Function

Integration into automation systems

- Integration into SIMATIC STEP 7 / 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

- Innovative engineering tools based on the latest SW technology, Microsoft.NET
- 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

Tabular editors

- Quick and easy generation and modification of configuration objects of the same type, e.g., variables, texts or messages, in tabular editors
- Intelligent defaults, depending on previously configured data, e.g., automatic upcounting of addresses when generating consecutive variables
- Modification of properties by means of easy access to Properties dialog without excessive user intervention ("Always on Top")
- Simultaneous modification of common object properties

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

Project documentation

- Selective project documentation printout or save to file (rtf, htm, tif, txt)

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

Graphics-based configuration of operator prompting

- Simple operator prompting concept based on hierarchical menu tree

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible ES

Function (continued)

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

Scheduler for the definition of all global tasks

- Configuration of global system functions or time-driven events

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

Migration of existing HMI projects

- Complete data transfer in projects for ProTool/Pro RT as well as 170, 270 and 370 Series control units
- Conversion of configuring data on OP/TP27, e.g. to OP 277, and on OP/TP37, e.g. to MP 377
- Conversion of OP3 or OP7 / OP17 configuring data to OP 73 or OP 77B / OP 177B
- Transfer of WinCC V6.2 project components (static picture components and tags only)

Compatibility

- Integrated upward compatibility:
Further processing of WinCC flexible configuration data with future versions without loss of data
- Integrated downward compatibility:
Creation of configuration data for older versions of WinCC flexible engineering tools.

WinCC flexible Engineering Software

System requirements (minimum requirements)

Operating system	Windows XP Professional SP3 (32 bit), Windows 7 Professional, Ultimate, Enterprise (32 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 GByte, ≥ 512 MByte for WinCC flexible Micro
Hard disk (free memory space) ¹⁾	≥ 2 GByte ²⁾ ≥ 1,2 GByte 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 the RAM. For further information, refer to your Windows documentation

²⁾ When installing one language. 200 MByte are additionally required for each further language. In the case of different partitions for system and configuration: System partition approx. 700 MByte, project partition approx. 1.3 GByte.

³⁾ When installing one language. 80 MByte are additionally required for each further language. In the case of different partitions for system and configuration: System partition approx. 600 MByte, project partition approx. 600 MByte.

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible ES

Ordering data		Order No.	Order No.		
WinCC flexible 2008 Advanced incl. SP2 Floating license, on DVD incl. license key, includes: <ul style="list-style-type: none">• Engineering software for configuring WinCC flexible Runtime on basic PCs / Panel PCs 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) in German, English, French, Italian, Spanish, simplified Chinese, traditional Chinese, Korean, Japanese	G	6AV6 613-0AA51-3CA5	WinCC flexible 2008 Micro incl. SP2 Floating license, on DVD without license key, includes: <ul style="list-style-type: none">• Engineering software for configuration Micro Panels• Electronic documentation (.pdf) in English, German, French, Italian, Spanish	G	6AV6 610-0AA01-3CA8
			WinCC flexible / ChangeControl for WinCC flexible 2008 Compact / Standard / Advanced ¹⁾³⁾ Floating license, option, license key only	G	6AV6 613-6AA01-3AB5
			Power Packs SIMATIC WinCC flexible Power Packs Single license, license key only		
			<ul style="list-style-type: none">• WinCC flexible 2008 Standard to 2008 Advanced	G	6AV6 613-2CD01-3AD5
			<ul style="list-style-type: none">• WinCC flexible 2008 Compact to 2008 Advanced	G	6AV6 613-2BD01-3AD5
			<ul style="list-style-type: none">• WinCC flexible 2008 Compact to 2008 Standard	G	6AV6 612-2BC01-3AD5
			Software Update Service Software Update Service SIMATIC WinCC flexible ^{2) 4)} <ul style="list-style-type: none">• WinCC flexible Advanced• WinCC flexible Standard• WinCC flexible Compact	G	6AV6 613-0AA00-0AL0 6AV6 612-0AA00-0AL0 6AV6 611-0AA00-0AL0
			Upgrades SIMATIC ProTool to SIMATIC WinCC flexible 2008 incl. SP2 <ul style="list-style-type: none">• ProTool/Lite to WinCC flexible 2008 Compact• ProTool to WinCC flexible 2008 Standard• ProTool/Pro to WinCC flexible 2008 Advanced	G	6AV6 611-3AA51-3CE5 6AV6 612-3AA51-3CE5 6AV6 613-3AA51-3CE5
			SIMATIC WinCC flexible 2004 / 2005 / 2007 to SIMATIC WinCC flexible 2008 incl. SP2 <ul style="list-style-type: none">• Upgrade to WinCC flexible 2008 Compact, incl. ChangeControl option ¹⁾• Upgrade to WinCC flexible 2008 Standard, incl. ChangeControl option ¹⁾• Upgrade to WinCC flexible 2008 Advanced, incl. ChangeControl option ¹⁾• Upgrade to WinCC flexible 2008 Micro ⁴⁾	G	6AV6 611-0AA51-3CE5 6AV6 612-0AA51-3CE5 6AV6 613-0AA51-3CE5 6AV6 610-0AA01-3CE8
			SIMATIC WinCC flexible ASIA 2004 / 2005 / 2007 to SIMATIC WinCC flexible ASIA 2008 incl. SP2 <ul style="list-style-type: none">• Upgrade to WinCC flexible 2008 ASIA Standard, incl. ChangeControl option ¹⁾• Upgrade to WinCC flexible 2008 ASIA Advanced, incl. ChangeControl option ¹⁾	G	6AV6 612-0AA11-3CE5 6AV6613-0AA11-3CE5

G: Subject to export regulations: AI · N and 5D992

G: Subject to export regulations: AL: N and 5D992

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible ES

Ordering data	Order No.	Order No.
Versions for China / Taiwan / Korea / Japan WinCC flexible 2008 ASIA Standard incl. SP2 Floating license, on DVD incl. license key, includes: <ul style="list-style-type: none"> • 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) in German, English, French, Italian, Spanish, simplified Chinese, traditional Chinese, Korean, Japanese 	G 6AV6 612-0AA11-3CA5	Documentation (must be ordered separately) User Manual WinCC flexible Communication <ul style="list-style-type: none"> • German 6AV6 691-1CA01-3AA0 • English 6AV6 691-1CA01-3AB0 • French 6AV6 691-1CA01-3AC0 • Italian 6AV6 691-1CA01-3AD0 • Spanish 6AV6 691-1CA01-3AE0 WinCC flexible Micro User Manual <ul style="list-style-type: none"> • German 6AV6 691-1AA01-3AA0 • English 6AV6 691-1AA01-3AB0 • French 6AV6 691-1AA01-3AC0 • Italian 6AV6 691-1AA01-3AD0 • Spanish 6AV6 691-1AA01-3AE0
WinCC flexible 2008 ASIA Advanced incl. SP2 Floating license, on DVD incl. license key, includes: <ul style="list-style-type: none"> • 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) in German, English, French, Italian, Spanish, simplified Chinese, traditional Chinese, Korean, Japanese 	G 6AV6 613-0AA11-3CA5	User Manual WinCC flexible Compact/ Standard / Advanced <ul style="list-style-type: none"> • German 6AV6 691-1AB01-3AA0 • English 6AV6 691-1AB01-3AB0 • French 6AV6 691-1AB01-3AC0 • Italian 6AV6 691-1AB01-3AD0 • Spanish 6AV6 691-1AB01-3AE0 SIMATIC HMI Manual Collection A 6AV6 691-1SA01-0AX0 Electronic documentation, on DVD 5 languages (English, French, German, Italian, Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI

¹⁾ A separate license for WinCC flexible / ChangeControl must be purchased for each engineering station.

²⁾ 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 flexible engineering system or option. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiration.

³⁾ The ChangeControl option has not been released for integrated operation with STEP 7.

⁴⁾ Original delivery note or Certificate of License (CoL) from previous WinCC flexible Micro required

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and 5D992

More information

Additional information is available in the Internet under:

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

Note:

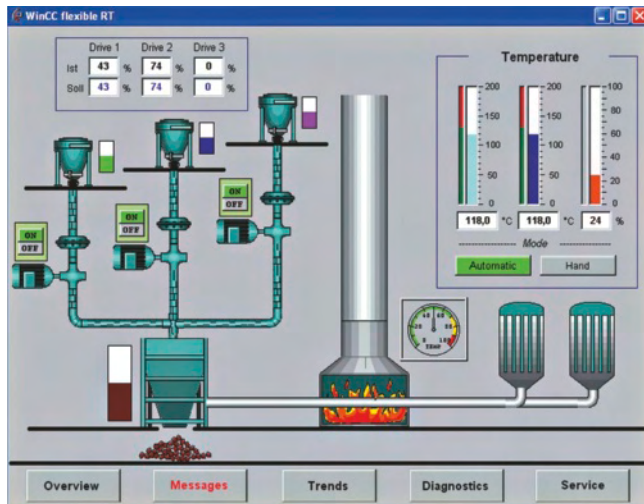
Do you require a specific modification or extension to the products described here? You will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible under "Customized Products".

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible RT

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 Runtime with Service Pack 2

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 manufacturing 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 PC 477
 - Panel PC 577
 - Panel PC 670 / 677
 - Panel PC 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, 1024 x 768, 1280 x 1024, 1600 x 1200
 - Widescreen format: 1440 x 900, 1680 x 1050, 1920 x 1080, 1920 x 1200

Design

SIMATIC WinCC flexible Runtime is available as a software package with 128, 512, 2048 or 4096 PowerTags. The term PowerTags is used exclusively to identify process variables and range pointers that have a process link to the controller. Variables without process link, constant limit values of variables, and messages (up to 4000 bit-triggered messages) are also available for additional system performance.

The range of functions of WinCC flexible Runtime includes the centralized HMI components for visualizing and reporting, and it can be expanded to suit requirements and costs by using optional packages.

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

Function

Visualization via Windows-compliant user 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

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible RT

Function (continued)

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 acknowledgment response and display of message events

Archiving 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 using 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".

WinCC flexible Runtime	
System requirements	
Operating system	Windows XP Professional SP2 / SP3 (32 Bit) Windows XP Embedded ²⁾ Windows 7 Professional / Ultimate / Enterprise (32 Bit)
Processor ⁵⁾	
• Minimum	Windows XP: 300 MHz Windows 7: 1 GHz
• Recommended	Windows XP: ≥ Pentium III, 500 MHz Windows 7: ≥ 1 GHz
Graphics	
• Minimum	SVGA
• Resolution	640 x 480 to 1600 x 1200 or 1440 x 900, 1920 x 1200
RAM ³⁾	
• Minimum	Windows XP: 128 MByte Windows 7: 1 GByte
• Recommended	Windows XP: ≥ 512 MByte Windows 7: ≥ 1 GByte
Hard disk ⁴⁾ (free memory space)	≥ 250 MByte

²⁾ Only for enabled platforms (e.g. Panel PC 477). You can get information from your Siemens contact.

³⁾ RAM requirements are determined primarily by the size of the graphics used.

⁴⁾ 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

⁵⁾ More powerful systems (Pentium 4 and higher) may be required in order to use options

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible RT

Integration

SIMATIC WinCC flexible Runtime supports linking to:

Protocol	PC interfaces
SIMATIC S5 via AS511 (TTY)	
S5-90U	COM1 / COM2 ¹³⁾
S5-90U	
S5-100U (CPU 100, 102, 103)	
S5-115U (CPU 941, 942, 943, 944, 945)	
S5-135U (CPU 928A, 928B)	
S5-155U (CPU 946 / 947, 948)	
SIMATIC S5 via PROFIBUS DP ¹⁾	
S5-95U/L2-DP-Master	CP 5512 ²⁾ 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 5512 ²⁾ CP 5611 A2 ²⁾ CP 5621 ¹⁾ CP 5613 A2 CP 5614 A2 PC / PPI adapter ³⁾
SIMATIC S7 via MPI	
S7-200 (except CPU 212) ⁴⁾	CP 5512 ²⁾ CP 5611 A2 ²⁾ CP 5621 ¹⁾
S7-300	CP 5613 A2
S7-400	CP 5614 A2
WinAC Basis (V3.0 and higher)	PC / MPI adapter ⁶⁾
WinAC RTX	PC adapter USB ⁶⁾ Teleservice V6.1
SIMATIC S7 via PROFIBUS DP ⁵⁾	
S7-215 ⁴⁾	CP 5512 ²⁾ CP 5611 A2 ²⁾ CP 5621 ¹⁾
S7-300 CPUs with integr. PROFIBUS interface	CP 5613 A2
S7-300 with CP 342-5	CP 5614 A2
S7-400 CPUs with integr. PROFIBUS interface	
S7-400 with CP 443-5 or IM 467	
WinAC Basis (V3.0 and higher)	
WinAC RTX	
SIMATIC S7 via Ethernet (TCP/IP)	
S7-200 with CP 243-1	CP 1612 ⁷⁾ CP 1613 A2
S7-300 CPUs with integral Ethernet interface	
S7-300 with CP 343-1	
S7-400 CPUs with integral Ethernet interface	
S7-400 with CP 443-1	
WinAC Basis (V3.0 and higher)	
WinAC RTX	

Protocol	PC interfaces
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 mit CP 5434	CP 5512 ²⁾ CP 5611 A2 ²⁾
SIMOTION ⁸⁾	
SINUMERIK ⁹⁾	
Third-party controllers	
Allen Bradley (DF1/DH485)	COM1 / COM2
Allen Bradley (Ethernet)	CP 1612 ⁷⁾
GE Fanuc (SNP / SNPX)	COM1 / COM2
LG GLOFA GM	COM1 / COM2
Mitsubishi (FX / MP4)	COM1 / COM2
Modicon (Modbus)	COM1 / COM2
Modicon (Modbus TCP/IP)	CP 1612 ⁷⁾
OMRON (Link / Multilink)	COM1 / COM2
OPC (Client + Server) ^{10) 12)}	
Data Access V2.0 + V1.1 (COM) / V1.0 (XML) client only	CP 1612 ⁷⁾
HTTP communication for data exchange between SIMATIC HMI (client + server) ^{11) 12)}	
	CP 1612 ⁷⁾

- 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 420 / 427 and Panel PC 477 / 677 via internal MPI/DP interface
- ³⁾ Only point-to-point to S7-200; no configuration download, operating systems: Windows 2000 / XP; Order number: 6ES7 901-3CB30-0XA0
- 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 2000 / XP; Order number: 6ES7 972-0CA23-0XA0 (COM) or 6ES7 972-0CB20-0XA0 (USB)
- ⁷⁾ For MicroBox 420 and Panel PC 477 / 577 / 677 / 877 via internal Ethernet interface
- ⁸⁾ For further information, see Catalog PM 10
- ⁹⁾ "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60
- ¹⁰⁾ 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
- ¹¹⁾ "WinCC flexible / SmartAccess for WinCC flexible Runtime" license required
- ¹²⁾ OPC and HTTP communication are additive, i.e. can be used in conjunction with the PLC links listed above
- ¹³⁾ Via PC cable with integrated level converter RS 232 / TTY; Order number: 6ES5 734-1BD20

Note:

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

Integration (continued)

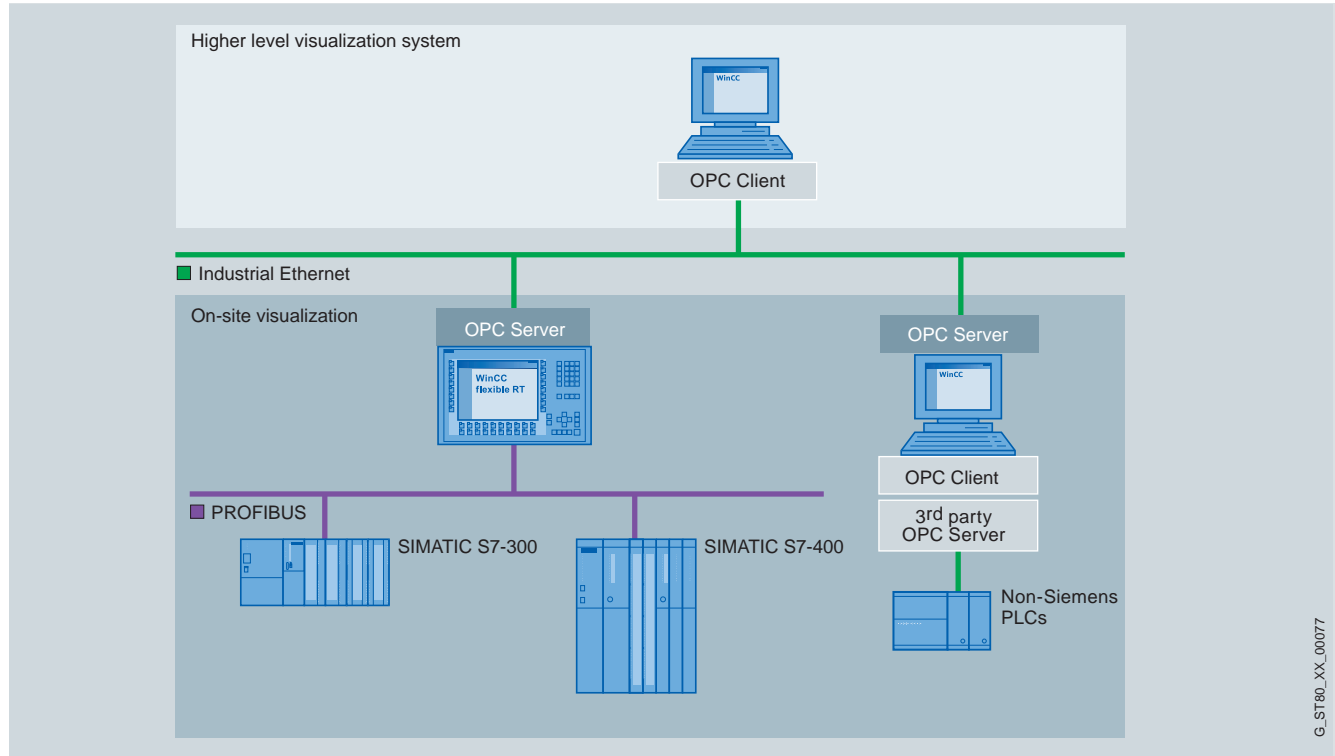
Application note

In parallel with each and every PLC link, WinCC flexible Runtime supports the use of the OPC Client channel; this enables, for example, connection to an SNMP OPC Server for the purpose of visualizing the data stored there.

The SNMP OPC Server provides a means of monitoring network components of any type (e.g. switches) which support the SNMP protocol. For further information, see Catalog IK PI.

Note:

For further information, see "HMI devices/System interfaces"



SIMATIC WinCC flexible Runtime application example

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
• Graphics lists ¹⁾	800 / 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 (Comma Separated Variable), RDB (Runtime Data Base), 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	
Number of connectable stations, max.	
• SIMATIC S7 MPI interface/ PROFIBUS DP interface	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	1 from viewpoint of WinCC flexible Runtime
• SIMATIC S5 PROFIBUS DP interface	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

Order No.

SIMATIC WinCC flexible 2008 Runtime

for PC systems; incl. SW for PC systems options ⁵⁾ Single license, on CD-ROM incl. licensing, for:

• 128 PowerTags (RT 128)	G	6AV6 613-1BA51-3CA0
• 512 PowerTags (RT 512)	G	6AV6 613-1DA51-3CA0
• 2,048 PowerTags (RT 2,048)	G	6AV6 613-1FA51-3CA0
• 4,096 PowerTags (RT 4,096)	G	6AV6 613-1GA51-3CA0

Power Packs

SIMATIC WinCC flexible 2008 Runtime

Single license, only license key for PowerTags, from

• 128 to 512 PowerTags	G	6AV6 613-4BD01-3AD0
• 128 to 2,048 PowerTags	G	6AV6 613-4BF01-3AD0
• 512 to 2,048 PowerTags	G	6AV6 613-4DF01-3AD0
• 128 to 4,096 PowerTags	G	6AV6 613-4BG01-3AD0
• 512 to 4,096 PowerTags	G	6AV6 613-4DG01-3AD0
• 2,048 to 4,096 PowerTags	G	6AV6 613-4FG01-3AD0

Upgrades

SIMATIC ProTool/Pro RT to SIMATIC WinCC flexible 2008

• ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2008 Runtime 128 PowerTags ⁶⁾	G	6AV6 613-3BB51-3CE0
• ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2008 Runtime 512 PowerTags ⁶⁾	G	6AV6 613-3CD51-3CE0
• ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2008 Runtime 512 PowerTags ⁶⁾	G	6AV6 613-3DD51-3CE0
• ProTool/Pro Runtime 2,048 PowerTags to WinCC flexible 2008 Runtime 2,048 PowerTags ⁶⁾	G	6AV6 613-3FF51-3CE0

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:	G	6AV6 613-1XA51-3CE0
Options for:		
- WinCC flexible /Archives		
- WinCC flexible /Recipes		
- WinCC flexible /Audit		
- WinCC flexible /Sm@rtAccess		
- WinCC flexible /Sm@rtService		
- WinCC flexible /OPC-Server		
- WinCC flexible /ProAgent		

⁵⁾ Runtime licenses for WinCC flexible Runtime options must be purchased separately for each target system.

⁶⁾ Including a single license WinCC flexible / Archives and WinCC flexible / Recipes

G: Subject to export regulations: AL: N and 5D992

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible RT

Ordering data	Order No.	Order No.
SIMATIC WinCC flexible 2004 / 2005 / 2007 Runtime to SIMATIC WinCC flexible 2008 Runtime (continued) <ul style="list-style-type: none"> Upgrade of the SIMATIC WinCC G flexible Panel options: <ul style="list-style-type: none"> 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 	6AV6 618-7XX01-3AF0	SIMATIC Net Edition 2007 IE S7-1613 <p>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 a USB stick, Class A, for 32-bit Windows XP Professional SP1, 2; Windows 2003 Server SP1, R2, SP2; Windows Vista Business / Ultimate for CP 1613 / CP 1613 A2 / CP 1623; German / English</p> <ul style="list-style-type: none"> Single license for 1 installation G 6GK1 716-1CB70-3AA0 Software Update Service for one year, with automatic extension; requirement: Current software version 6GK1 716-1CB00-3AL0 Upgrade S7-1613 from V6.4 to S7-1613 Edition 2007 G 6GK1 716-1CB00-3AE0 Upgrade S7-1613 from V6.0, V6.1, V6.2 or V6.3 to S7-1613 Edition 2007 G 6GK1 716-1CB00-3AE1
Documentation (must be ordered separately) User Manual WinCC flexible Runtime <ul style="list-style-type: none"> German 6AV6 691-1BA01-3AA0 English 6AV6 691-1BA01-3AB0 French 6AV6 691-1BA01-3AC0 Italian 6AV6 691-1BA01-3AD0 Spanish 6AV6 691-1BA01-3AE0 User Manual WinCC flexible Communication <ul style="list-style-type: none"> German 6AV6 691-1CA01-3AA0 English 6AV6 691-1CA01-3AB0 French 6AV6 691-1CA01-3AC0 Italian 6AV6 691-1CA01-3AD0 Spanish 6AV6 691-1CA01-3AE0 SIMATIC HMI Manual Collection A <p>Electronic documentation, on DVD</p> <p>5 languages (English, French, German, Italian, Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI</p>	 6AV6 691-1BA01-3AA0 6AV6 691-1BA01-3AB0 6AV6 691-1BA01-3AC0 6AV6 691-1BA01-3AD0 6AV6 691-1BA01-3AE0 6AV6 691-1CA01-3AA0 6AV6 691-1CA01-3AB0 6AV6 691-1CA01-3AC0 6AV6 691-1CA01-3AD0 6AV6 691-1CA01-3AE0 6AV6 691-1SA01-0AX0	 6GK1 716-1CB70-3AA0 6GK1 716-1CB00-3AL0 6GK1 716-1CB00-3AE0 6GK1 716-1CB00-3AE1
Communication via Industrial Ethernet CP 1613-A2 <p>PCI card (32 bit) for connecting a PG / PC to Industrial Ethernet (communications software must be ordered separately)</p>	6GK1 161-3AA01	 Communication via PROFIBUS CP 5613-A2 <p>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).</p> CP 5614-A2 <p>PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).</p> SIMATIC Net Edition 2007 PB S7-5613 <p>Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; runtime software, software and electronic manual on a USB stick, license key on diskette, Class A, for 32-bit Windows XP Professional SP1, 2; Windows 2003 Server SP1, R2, SP2; Windows Vista Business / Ultimate for CP 5613, CP 5613 A2, CP5613 FO, CP 5614, CP5614 A2; German / English</p> <ul style="list-style-type: none"> Single license for 1 installation G 6GK1 713-5CB70-3AA0 Software Update Service for one year, with automatic extension; requirement: Current software version 6GK1 713-5CB00-3AL0 Upgrade S7-5613 from V6.4 to S7-5613 Edition 2007 G 6GK1 713-5CB00-3AE0 Upgrade S7-5613 from V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2007 G 6GK1 713-5CB00-3AE1

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and 5D992

HMI Software

SIMATIC WinCC flexible HMI System

SIMATIC WinCC flexible RT

Ordering data

Order No.

Communication via PROFIBUS (continued)

CP 5512

PCMCIA card (32-bit CARDBUS) for connecting a PG / Notebook to PROFIBUS or MPI (communications software included in WinCC flexible).

6GK1 551-2AA00

CP 5611-A2

PCI card (32-bit) for connecting a PG / PC to PROFIBUS (communications software included in WinCC flexible basic package)

6GK1 561-1AA01

CP 5611 MPI

Comprising CP 5611 A2 (32-bit) and MPI cable, 5 m

B

6GK1 561-1AM01

CP 5621

PCI Express X1 card (32-bit) for connection of PG / PC to PROFIBUS or MPI (communications software included in WinCC flexible basic package)

H

6GK1 562-1AA00

PC / PPI adapter

RS 232, 9-pin; male with RS 232 / PPI converter, max. 19.2 kbit/s

6ES7 901-3CB30-0XA0

PC / MPI-Adapter

RS 232, 9-pin; male with RS 232 / MPI converter

6ES7 972-0CA23-0XA0

PC-Adapter USB

For use with Windows 2000 / XP

6ES7 972-0CB20-0XA0

B: Subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

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

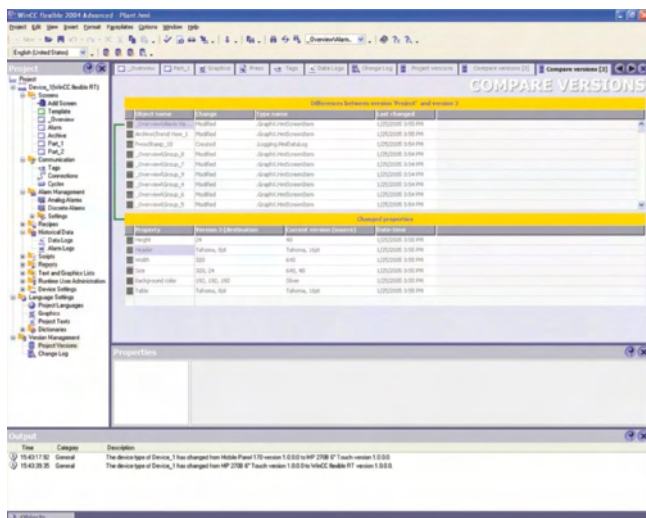
- Precise and rapid process fault diagnostics in plant and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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

Order No.

WinCC flexible /ChangeControl for WinCC flexible 2008 Compact / Standard / Advanced ¹⁾

Floating License, option, license key only

6AV6 613-6AA01-3AB5

¹⁾ The ChangeControl option has not been released for integrated operation with STEP 7.

G: Subject to export regulations: AL: N and 5D992

More information

Note:

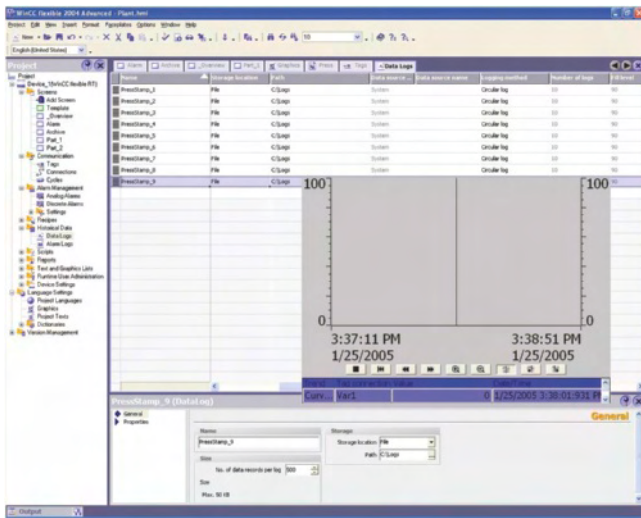
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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

Technical specifications

Type	WinCC flexible /Archives
	The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Archive	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	<ul style="list-style-type: none"> • 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

Order No.

WinCC flexible /Archives for WinCC flexible 2008 Runtime ²⁾ G **6AV6 618-7ED01-3AB0**

Single License, license key only

WinCC flexible /Archives+ Recipes for WinCC flexible 2008 Runtime ²⁾ G **6AV6 618-7GD01-3AB0**

Single License for each option, license key only

²⁾ One license is required for each operator station.

G: Subject to export regulations: AL: N and 5D992

More information

Note:

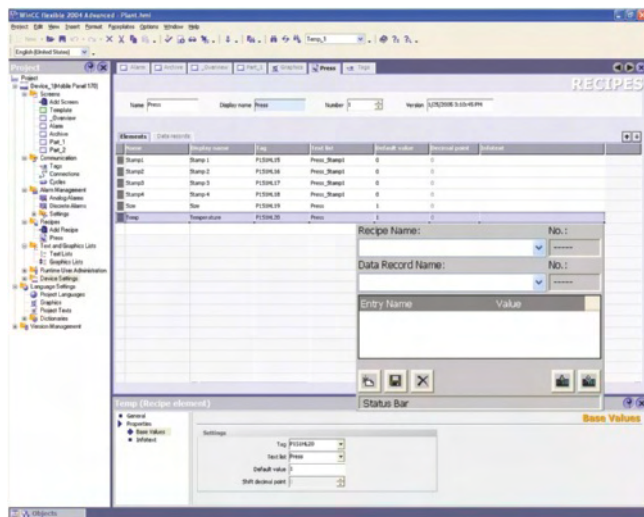
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

HMI Software

SIMATIC WinCC flexible HMI System

Option: 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	1.000
• Entries per recipe	2,000 ¹⁾
• Data records per recipe	5,000 ²⁾
• User data length in bytes per data record	8,000 KB ²⁾

¹⁾ Dependent on number of licensed PowerTags

²⁾ Dependent on memory medium used

Ordering data	Order No.
WinCC flexible /Recipes for WinCC flexible 2008 Runtime ³⁾	6AV6 618-7FD01-3AB0
Single License, license key only	
WinCC flexible /Archives+ Recipes for WinCC flexible 2008 Runtime ³⁾	6AV6 618-7GD01-3AB0
Single License, license key only	

³⁾ One license is required for each operator station.
A license is not required for the engineering system for configuring the runtime option.

G: Subject to export regulations: AL: N and 5D992

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.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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	<ul style="list-style-type: none"> • 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

Order No.

WinCC flexible /Audit for SIMATIC Panel

G

6AV6 618-7HB01-3AB0

Single License, license key only

WinCC flexible /Audit for WinCC flexible Runtime 2008

G

6AV6 618-7HD01-3AB0

Single License, license key only

G: Subject to export regulations: AL: N and 5D992

More information

Note:

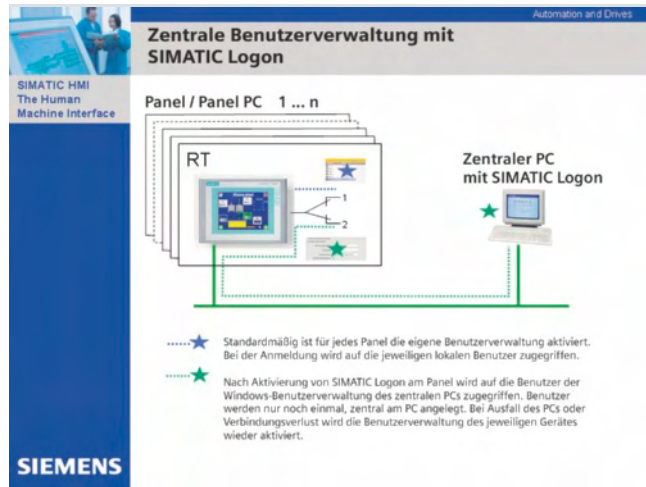
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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 on one PC of all access authorizations of a distributed system avoids unnecessary travel times. Time-consuming multiple configurations for each individual local station become unnecessary. Accordingly, changes of user 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 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.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
SIMATIC Logon for WinCC flexible

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.

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

Order No.

SIMATIC Logon V1.4 incl. SP2

6ES7 658-7BX41-2YA0

Basic license;
single license for 1 installation,
7 languages (German, English,
French, Spanish, Italian, Chinese,
Japanese);
Type of delivery:
CD, license key disk, Certificate
of License, Terms and Conditions
For connecting WinCC flexible
clients, the corresponding number
of additional SIMATIC logon
remote access licenses is
required.

SIMATIC Logon Remote Access for WinCC flexible (3 clients)

6ES7 658-7BA00-2YB0

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.

SIMATIC Logon Remote Access for WinCC flexible (10 clients)

6ES7 658-7BB00-2YB0

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.

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.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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.

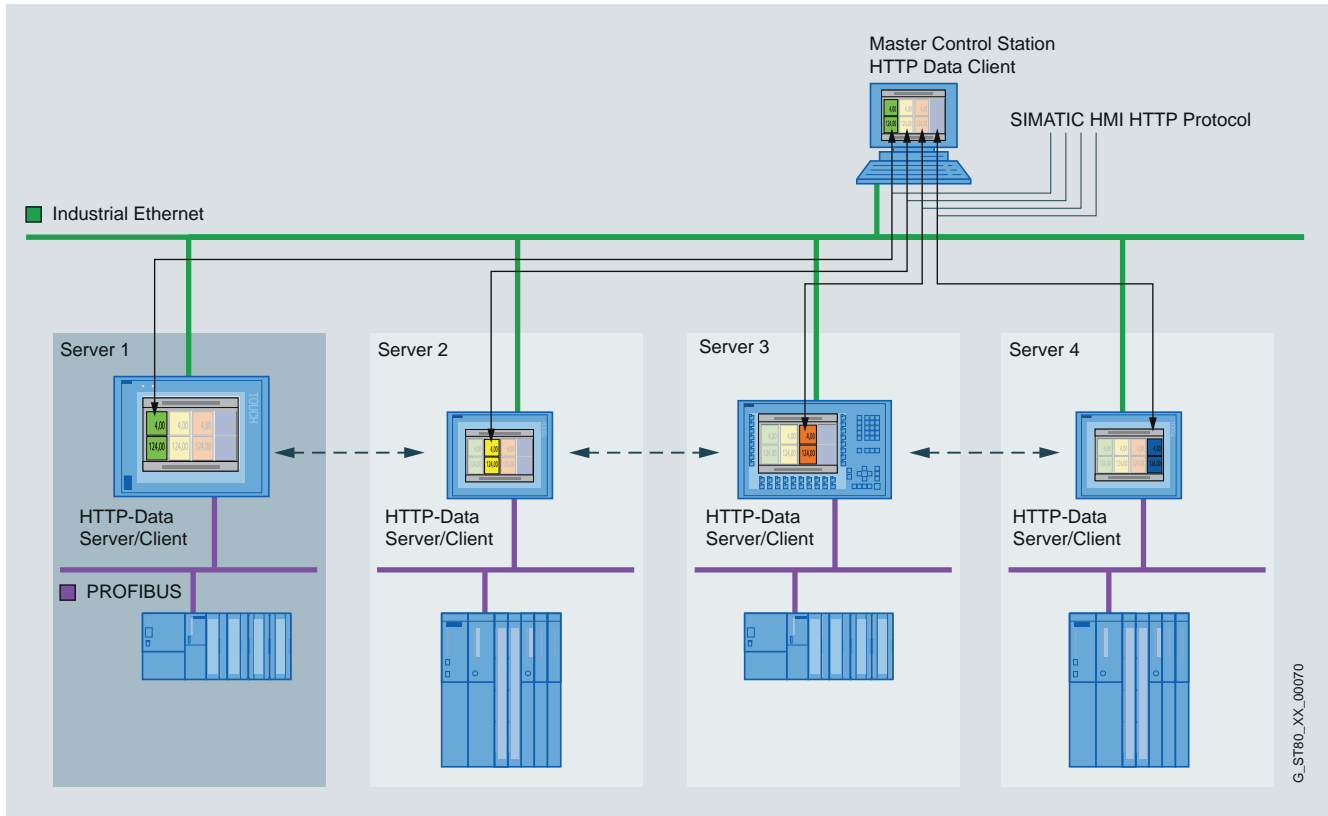
Benefits

- 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

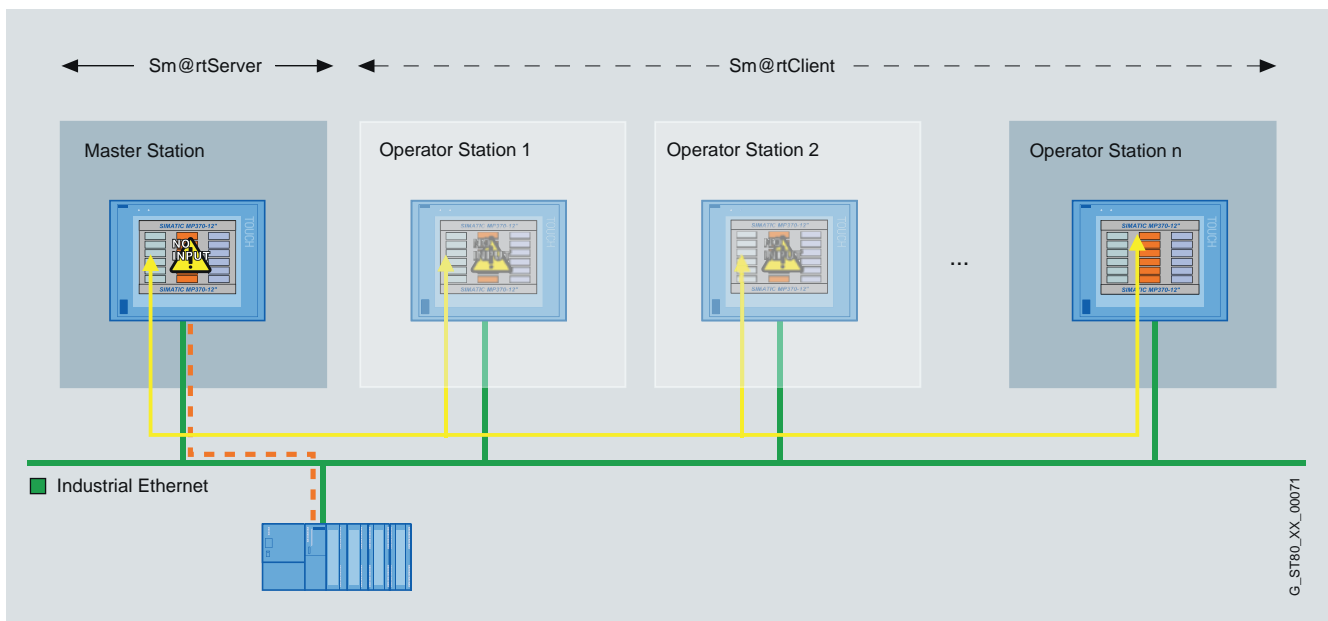
Application

- 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)

Application (continued)



Communication between HMI systems via Industrial Ethernet: Use of machine-level HMI systems as data servers for higher-level automation components



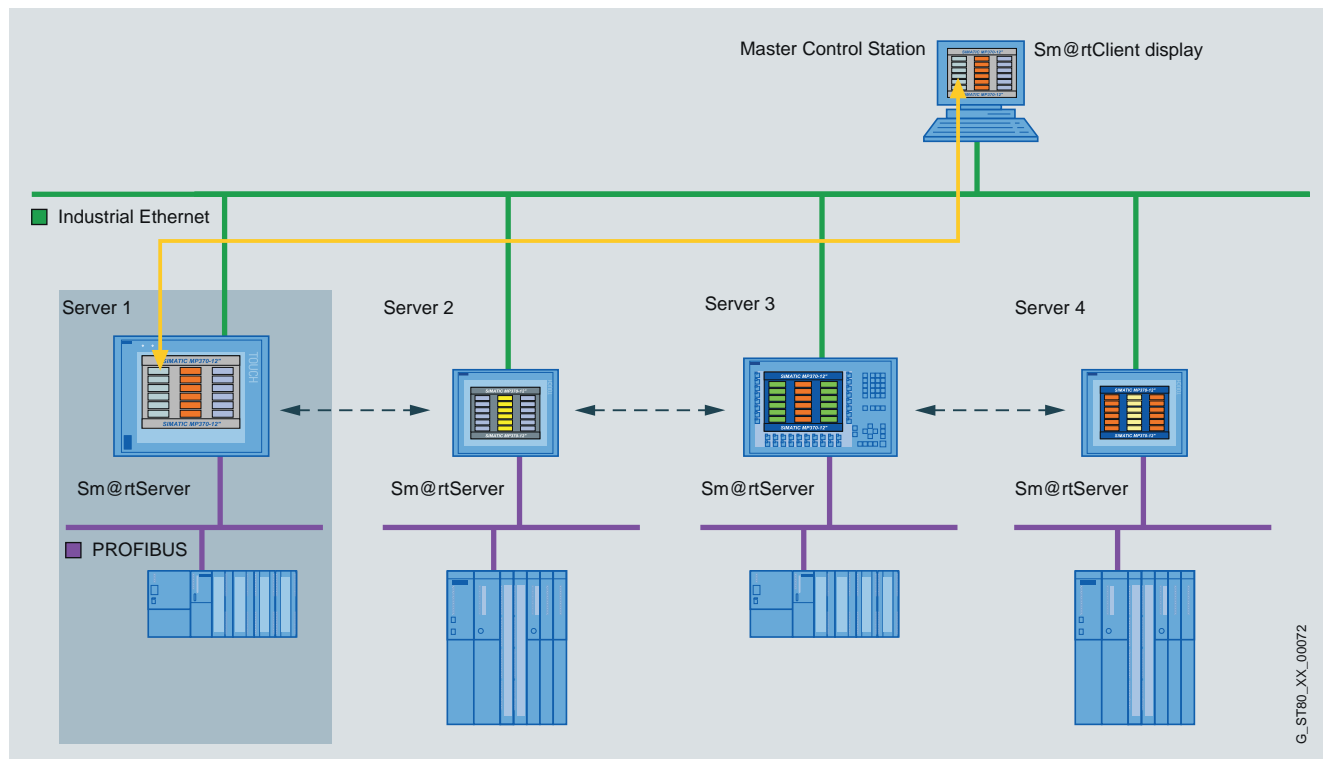
Application of the Sm@rtClient concept: Coordinated operation of several operator stations

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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.

G_ST80_XX_00072

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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 177B 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, M177 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

Order No.

WinCC flexible /Sm@rtAccess for SIMATIC Panel ³⁾	G	6AV6 618-7AB01-3AB0
Single license, license key only		
WinCC flexible /Sm@rtAccess for WinCC flexible 2008 Runtime ³⁾	A	6AV6 618-7AD01-3AB0
Single license, license key only		

³⁾ 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 configuration the runtime option.

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and 5D992

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.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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), email.
The remote service PC and engineering system do not require a license for configuration the runtime option.

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.

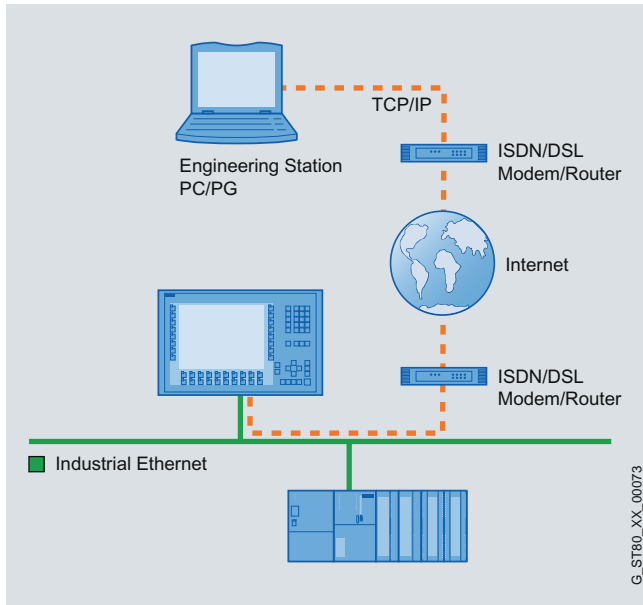
Password protection can be activated as an option for accessing the HMI system. Different passwords may be configured for different functions.

HMI Software

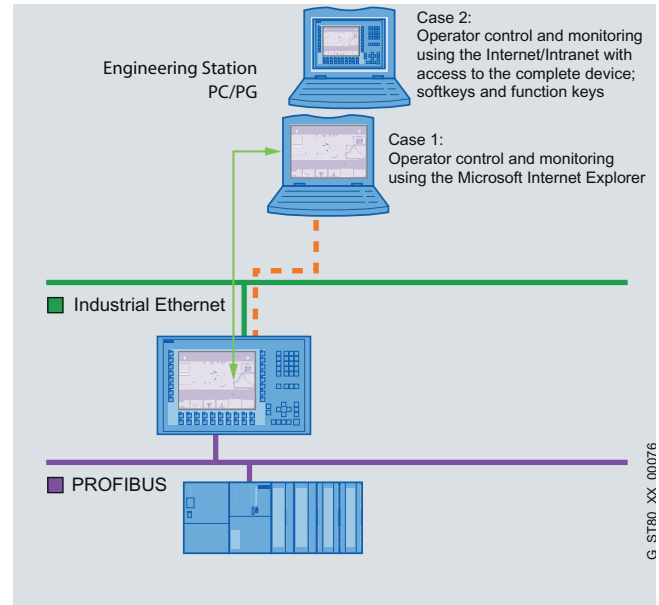
SIMATIC WinCC flexible HMI System

Option:
WinCC flexible /Sm@rtService

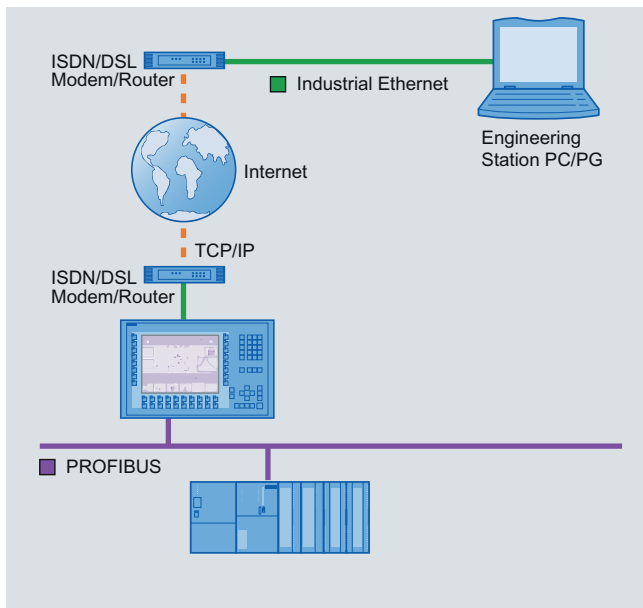
Function (continued)



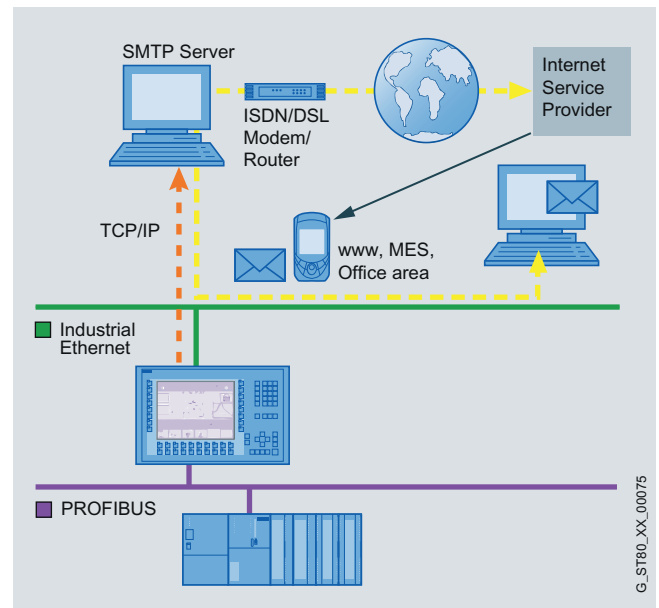
Remote operator control and monitoring of SIMATIC HMI systems using Industrial Ethernet and / or via the Intranet / Internet



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)

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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	<ul style="list-style-type: none"> • 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

Order No.

WinCC flexible /Sm@rtService for SIMATIC Panels ²⁾ G **6AV6 618-7BB01-3AB0**

Single license, license key only

WinCC flexible /Sm@rtService for WinCC flexible Runtime 2008 ²⁾ G **6AV6 618-7BD01-3AB0**

Single license, license key only

²⁾ 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, email. The remote service PC and engineering system do not require a license for configuration the runtime option.

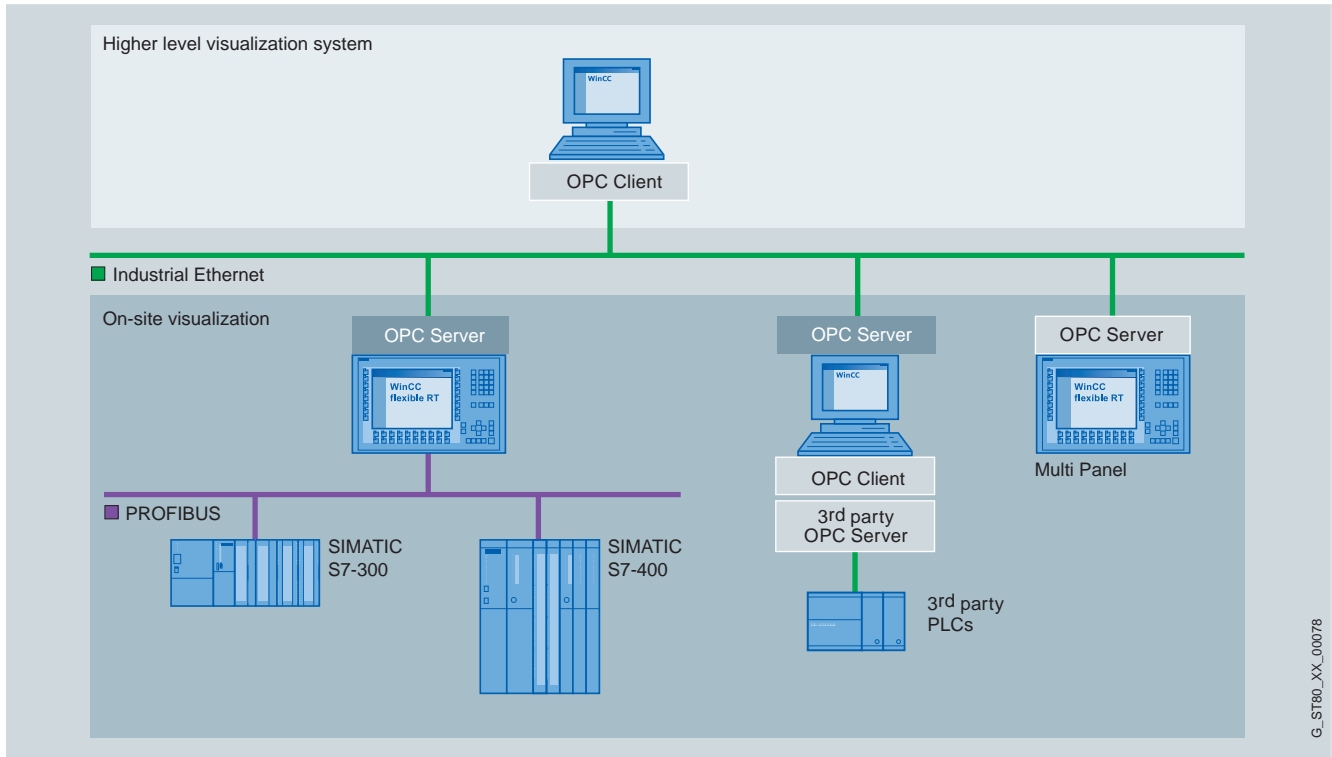
G: Subject to export regulations: AL: N and 5D992

More information

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

Overview



- Option for SIMATIC WinCC flexible Runtime 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:
 - 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

Additional information is available in the Internet under:

<http://www.opcfoundation.org>

HMI Software

SIMATIC WinCC flexible HMI System

Option:
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 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

Order No.

WinCC flexible /OPC Server for SIMATIC Multi Panels ²⁾

G **6AV6 618-7CC01-3AB0**

Single license, license key only

WinCC flexible /OPC Server for WinCC flexible Runtime 2008 ²⁾

G **6AV6 618-7CD01-3AB0**

Single license, license key only

²⁾ A license is required for each operator station.
The engineering system does not require a license for configuration the runtime option

G: Subject to export regulations: AL: N and 5D992

More information

Note:

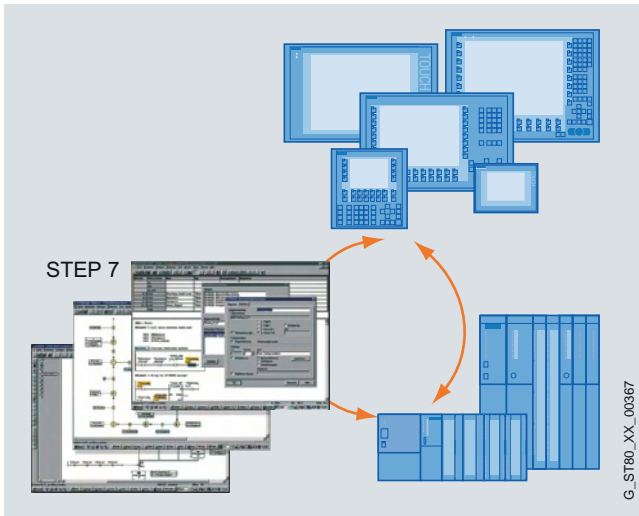
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

HMI Software

SIMATIC WinCC flexible HMI System

Option:
WinCC flexible /ProAgent

Overview



- Targeted and rapid process diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time

Note:

For further information, refer to "SIMATIC ProAgent Process Diagnostics Software".

Ordering data

Order No.

WinCC flexible /ProAgent

Software option package for process diagnostics based on Functional enhancement for SIMATIC WinCC flexible; electronic documentation in English, French, German, Italian, and Spanish

- | | | |
|---|---|----------------------------|
| • WinCC flexible /ProAgent for SIMATIC Panels ¹⁾
Runtime license (Single License) executable on Mobile Panel 277, TP / OP / MP 270 / 277 and MP 370 / 377 | G | 6AV6 618-7DB01-3AB0 |
| • WinCC flexible /ProAgent for WinCC flexible Runtime 2008 ¹⁾
Runtime license (Single License) | G | 6AV6 618-7DD01-3AB0 |

¹⁾ One license is required for each operator console. For the engineering system, no license is required for configuring the runtime option.

G: Subject to export regulations: AL: N and 5D992

More information

Note:

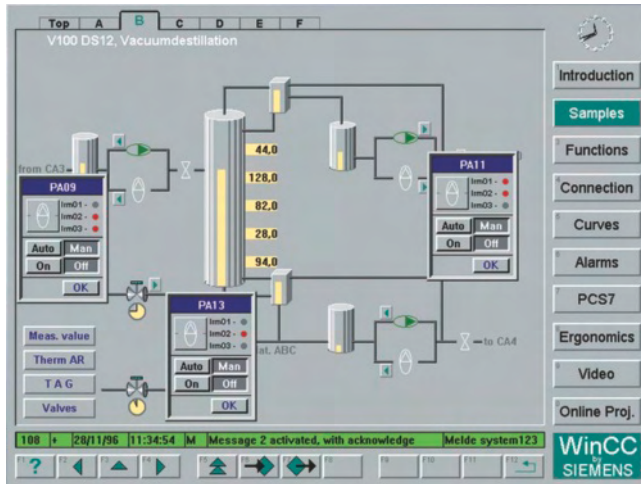
Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

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 product range of the SIMATIC Panel PC and SIMATIC Rack PC is available in particular for the industrial usage of WinCC systems. SIMATIC PCs stand out due to their powerful PC technology, are designed for round-the-clock operation, and can be operated in both harsh industrial environments and office areas.
- Together with the Panel PC 477B, there are turnkey solutions as WinCC Standard Client and with the SIMATIC HMI IPC477C as WinCC Standard Client or Single Station. (See also Chapter 5, Packages and HMI IPC477C)

Current versions:

- *SIMATIC WinCC V7.0 SP1:*
Executable with
 - Windows VISTA 32-bit Ultimate, Business and Enterprise
 - Windows XP Professional
 - Windows 2003 Server and Windows 2003 Server R2
 Contains the Microsoft SQL Server 2005 SP2
- *SIMATIC WinCC V6.2 SP3:*
Executable with
 - Windows XP Professional
 - Windows 2000 Professional

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
 - Efficient real-time database MS SQL Server 2005
 - 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 2005
 - 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
- Part of Totally Integrated Automation
 - Direct access to the tag and message configuration of the SIMATIC control system
 - Integrated diagnostic functions for increasing productivity

Benefits (continued)

Innovations of V7.0

- Innovated runtime user interface
 - New graphical options such as transparency, color gradients, shades, and much more
 - Central management of switching between graphic designs
 - Central management of switching between color palettes
 - New graphical objects: combo boxes, list boxes, text fields with multiple lines, multimedia control and much more
- New, revised runtime controls
 - An unlimited number of alarms can be displayed in Alarm Control
 - User-specific filter options in Alarm Control
 - Identical, expanded layout for messages, trend curves, tables and UserArchive Control
- New, centrally modifiable graphic objects / faceplates
 - New, easy to configure faceplates with the option of centralized modification.
 - Can be used and configured on a cross-project basis in the Graphics Designer
- Additional configuration options
 - Can run as service and is thus suitable for use in existing IT server environments.
 - The standard client without Microsoft SQL Server installation reduces the installation costs and the hardware requirements
 - Revised and simplified WinCC setup with one-click installation option
- Improved support for multi-language projects
 - New, central editor for importing and exporting all WinCC texts
 - New filter mechanisms in the text library for simplified management of texts
- SIMATIC Logon centralized user administration (included in the scope of supply) ... and more

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 PowerTags¹⁾.

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 server. In the basic configuration, an RT128 license is sufficient for the clients. In order to configure on clients, an RC128 license is required.

¹⁾ V6: 128, 256, 1024, 8192, 65536 Power Tags

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.

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Function (continued)

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)

Integration

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

WinCC is strictly based on Microsoft technology, which provides for the greatest possible compatibility and integration ability. ActiveX and .net ¹⁾ controls support technology and sector-specific expansions. Cross-manufacturer communication is also a simply 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 the 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 the Microsoft SQL Server 2005 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. With the help of the option Central Archive Server, this can be created within the framework of a WinCC solution. Versatile clients and tools for evaluation, the open interfaces, special options (Connectivity Pack, Connectivity Station, IndustrialDataBridge) provide the basis for an effective IT and business integration.

¹⁾ Only supported by WinCC V7.0

Integration in automation solutions

WinCC 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.

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Integration (continued)

Number of connectable controls

For the number of the connectable controls via Industrial Ethernet CP 1613, the following applies for a message frame length of 512 byte:

Type of coupling	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 with CP 5611 and a maximum of 44 controls with CP 5613 can be connected. With approx. 10 or more controls, the usage of Industrial Ethernet is recommended.

Mixed mode with different controls

With their multi-protocol stack, the communications processors CP 1613 and CP 5613 allow for the parallel operation of two protocols, e.g. 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 for communication with SIMATIC S7 via MPI can be used in each case.

Client-server communication

The communication between the clients and the server is achieved 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 the 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 a redundant operation of two WinCC stations is not possible with the use of the PROFIBUS DP coupling.

Connection to controls from other manufacturers

For the connection of controls from other manufacturers, OPC (OLE for Process Control) is recommended.

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 1.1
- OPC Data Access 2.05a
- OPC Data Access 3.0
- OPC XML Data Access 1.01 (Connectivity Pack / Connectivity Station)
- OPC HDA 1.2 (Connectivity Pack / Connectivity Station)
- OPC A&E 1.1 (Connectivity Pack / Connectivity Station)

Coupling 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 via AS511 protocol to programmers port
SIMATIC S5 Serial 3964R	Channel DLL and driver for serial communication with S5 via 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 via 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
Third-party controllers (from WinCC V7.0)	
Allen Bradley -Ethernet IP	Channel DLL and drivers for communication with Allen Bradley ControlLogix controllers via Ethernet TCP/IP with Ethernet IP protocol
Modbus TCP/IP	Channel DLL and drivers for communication with Modicon controllers via Ethernet TCP/IP using Modbus TCP/IP protocol
Cross-manufacturer	
Windows DDE	Channel DLL for DDE communication, WinCC can acquire data from DDE server applications.
OPC-Client ¹⁾	Channel DLL for OPC communication, WinCC can acquire data from OPC server applications.
OPC Server	Server applications for OPC communication; WinCC provides process data for OPC client
PROFIBUS FMS	Channel DLL for PROFIBUS FMS
PROFIBUS DP	Channel DLL for PROFIBUS DP

Application note:

The parallel usage of the OPC client channel allows, for example, the connection to an SNMP-OPC server for visualization of the data contained there. The SNMP-OPC server enables monitoring of any network components (e.g. switch) that support the protocol SNMP. You can find more information under SIMATIC NET Communications Systems / SNMP OPC Server.

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Integration (continued)

Communications components for PG / PC for SIMATIC (for WinCC V7.0)

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⁾	Order 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

Communications components for extension of the OS / OP

CP 1612 PCI card for connecting a PG / PC to Industrial Ethernet (SOFTNET-S7 or SOFTNET-S7 Lean communications software must be ordered separately)		•	•		•	6GK1 161-2AA00
SOFTNET-S7 2008 ²⁾ communications software for S7 functions (max. 64 connections)		•	•			6GK1 704-1CW71-3AA0
SOFTNET-S7 Lean 2008 ^{2) 3)} Communications software for S7 functions (max. 8 connections) • For Windows XP / 2003 Server / Vista 32 bit		•	•			6GK1 704-1LW71-3AA0
CP 1613 PCI card for connecting a PG / PC to Industrial Ethernet (S7-1613 communications software must be ordered separately)	•	•	•	•	•	6GK1 161-3AA00
CP 1613 A2 PCI card (32-bit) for connecting a PG / PC to Industrial Ethernet (S7-1613 communications software required)	•	•	•	•	•	6GK1 161-3AA01
CP 1623 PCI Express X1 card (32 bit) for connecting a PG / PC to Industrial Ethernet (S7-1613 communications software required)	•	•	•	•	•	6GK1 162-3AA00
S7-1613 2008 ²⁾ communications software for S7 functions and S5 / 505 Layer 4 communication with TCP/IP • For Windows XP / 2003 Server / Vista 32 bit	•	•	•	•		6GK1 716-1CB71-3AA0

- System coupling is possible

¹⁾ Via any interface board with NDIS 3.0 interface; no separate communications software required

²⁾ Upgrade packages, see order data

³⁾ SOFTNET-S7 Lean 2007 included in the scope of supply of WinCC V7.0

Integration (continued)

Communications components for PG / PC for SIMATIC (for WinCC V7.0)

PROFIBUS	SIMATIC S5 PROFIBUS FDL	SIMATIC S7 Protocol Suite	PROFIBUS DP	PROFIBUS FMS	Order No.
<i>WinCC – channel DLL</i>					
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

Communications components for extension of the OS / OP

CP 5611 A2 PCI card (32 bit) for the connection of PG / PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		•			6GK1 561-1AA01
CP 5621 PCI Express X1 card (32-bit) for connecting a PG / PC to PROFIBUS or MPI		•			6GK1 562-1AA00
CP 5512 PCMCIA card (Cardbus 32 bit) for the connection of PG / PC to PROFIBUS or MPI (communications software included in WinCC basic package)		•			6GK1 551-2AA00
CP 5613 A2 PCI card (32 bit) for connecting a PC to PROFIBUS (S7-5613 communications software or DP-5613 or FMS-5613 required)	•	•	•	•	6GK1 561-3AA01
S7-5613 2008 ¹⁾ Communications software for S7 functions + FDL • For Windows XP / 2003 Server / Vista 32 bit	•	•			6GK1 713-5CB71-3AA0
DP-5613 2008 ¹⁾ Communications software for DP-Master + FDL • For Windows XP / 2003 Server / Vista 32 bit	•		•		6GK1 713-5DB71-3AA0
FMS-5613 2008 ¹⁾ Communications software for PROFIBUS-FMS + FDL • For Windows XP / 2003 / Vista 32 bit	•			•	6GK1 713-5FB71-3AA0

- System coupling is possible

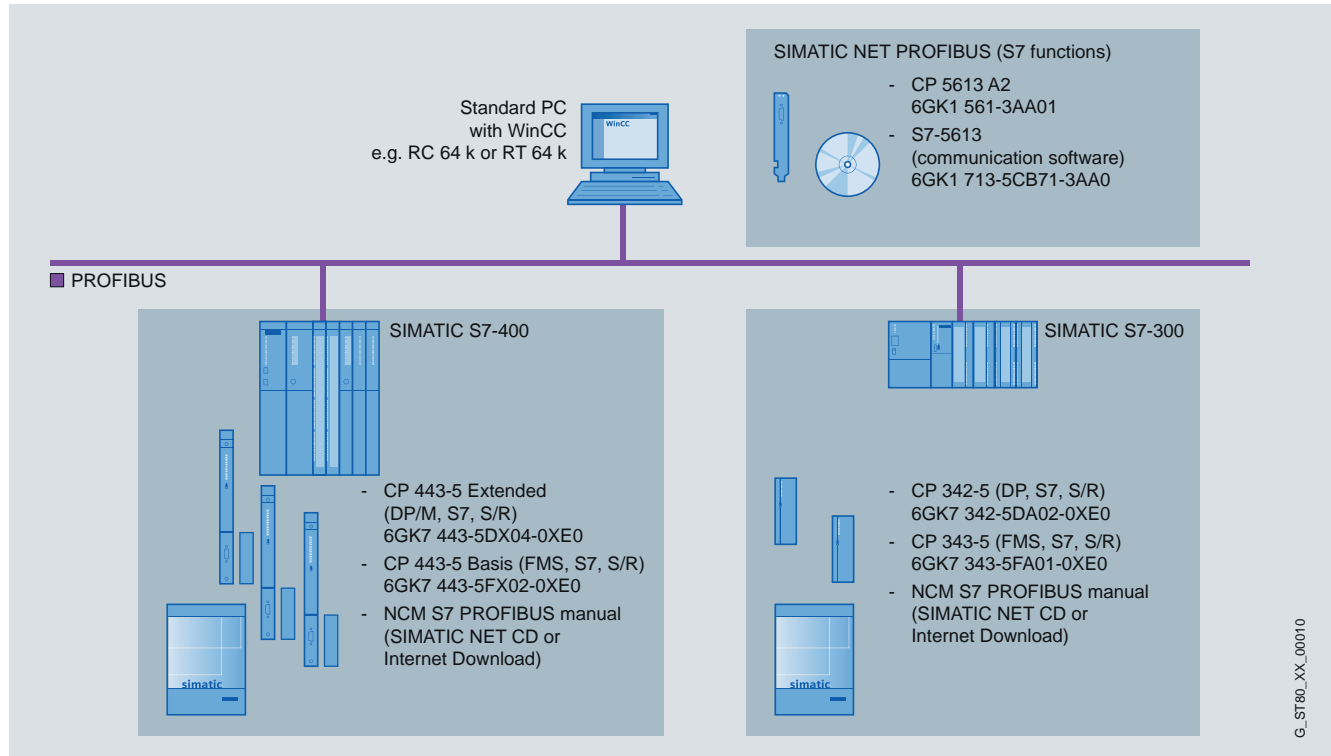
¹⁾ See ordering data for upgrade package

HMI Software

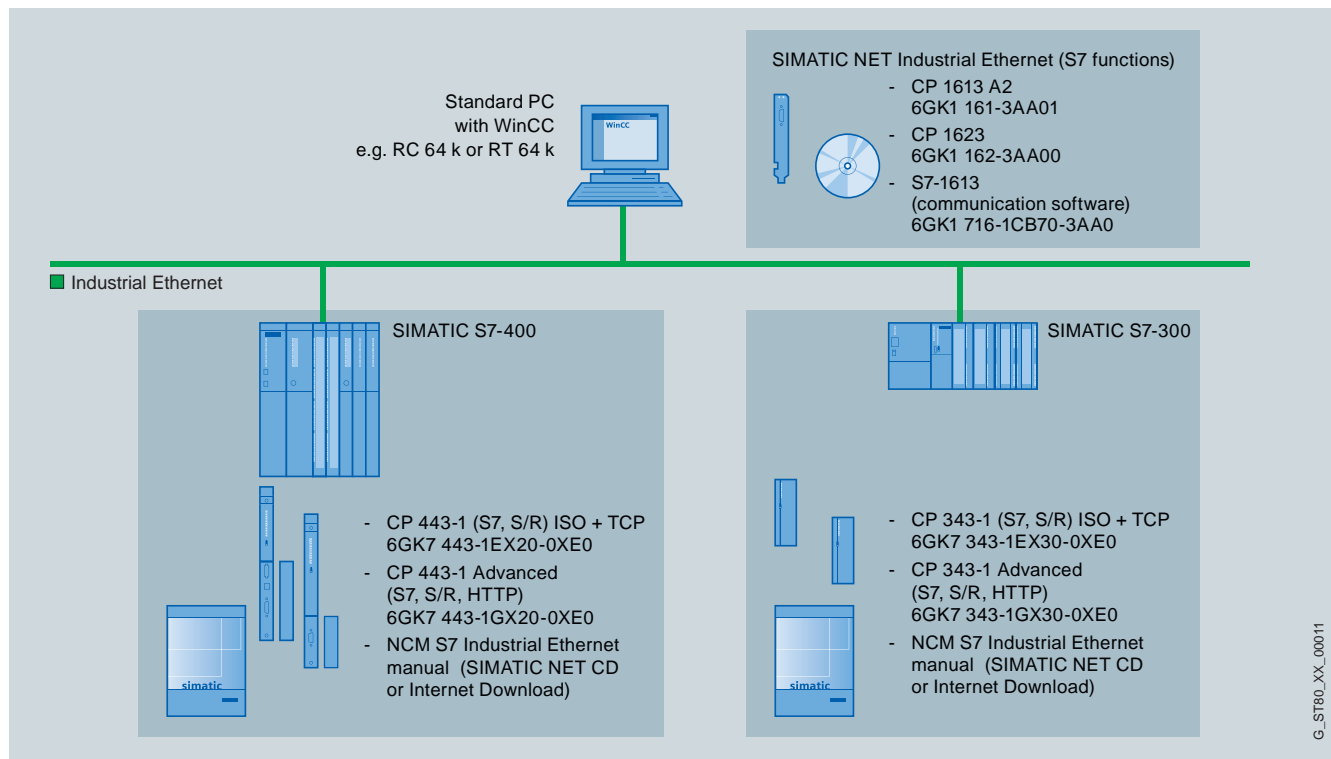
SCADA system SIMATIC WinCC

SIMATIC WinCC

Integration – Communications examples (continued)

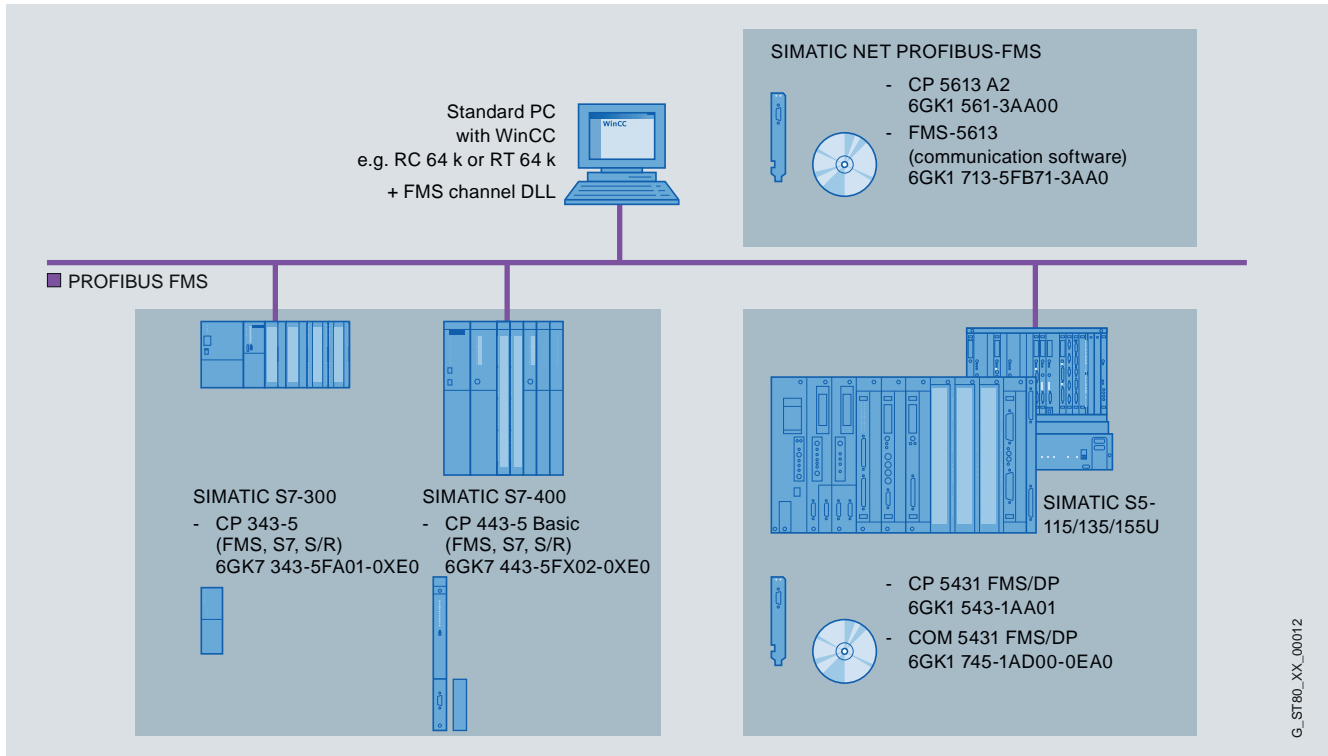


WinCC single-user system: PROFIBUS with S7 communication

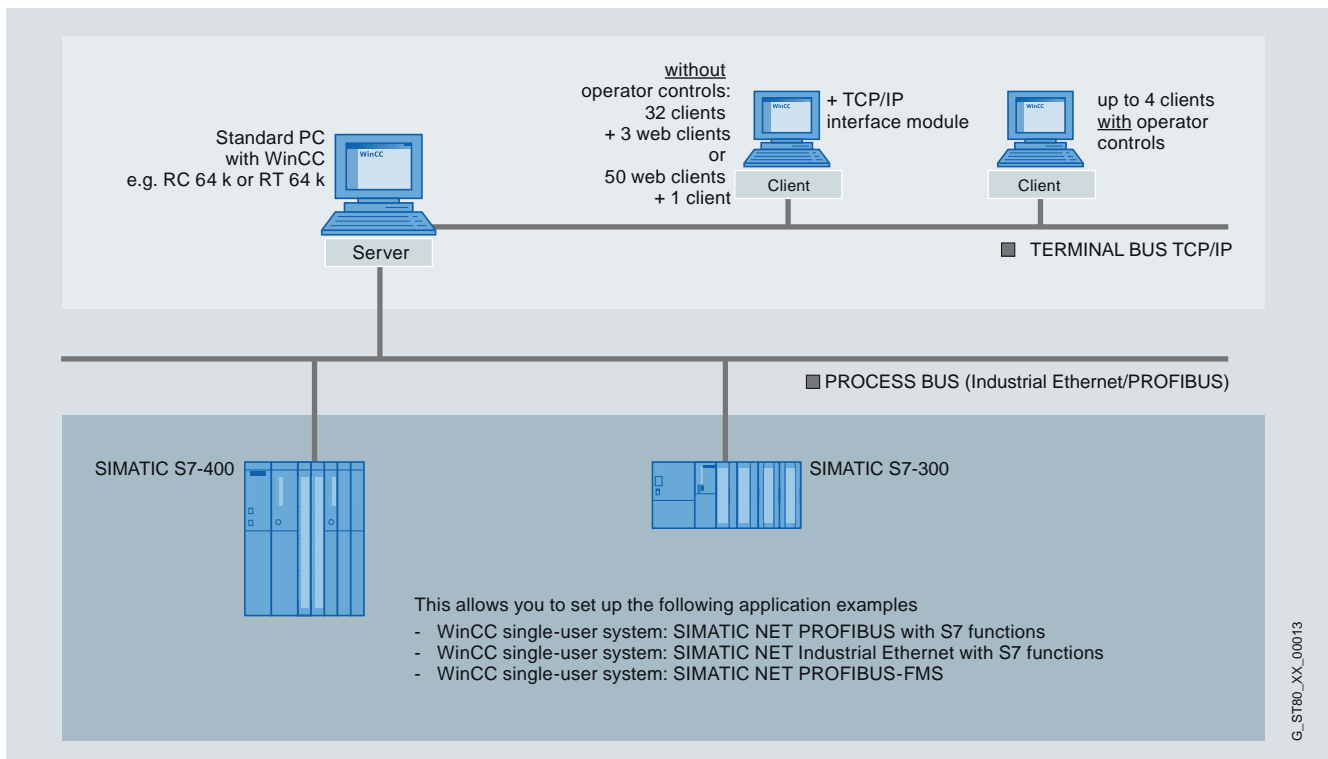


WinCC single-user system: Industrial Ethernet with S7 communication

Integration – Communications examples (continued)



WinCC single-user system: PROFIBUS FMS



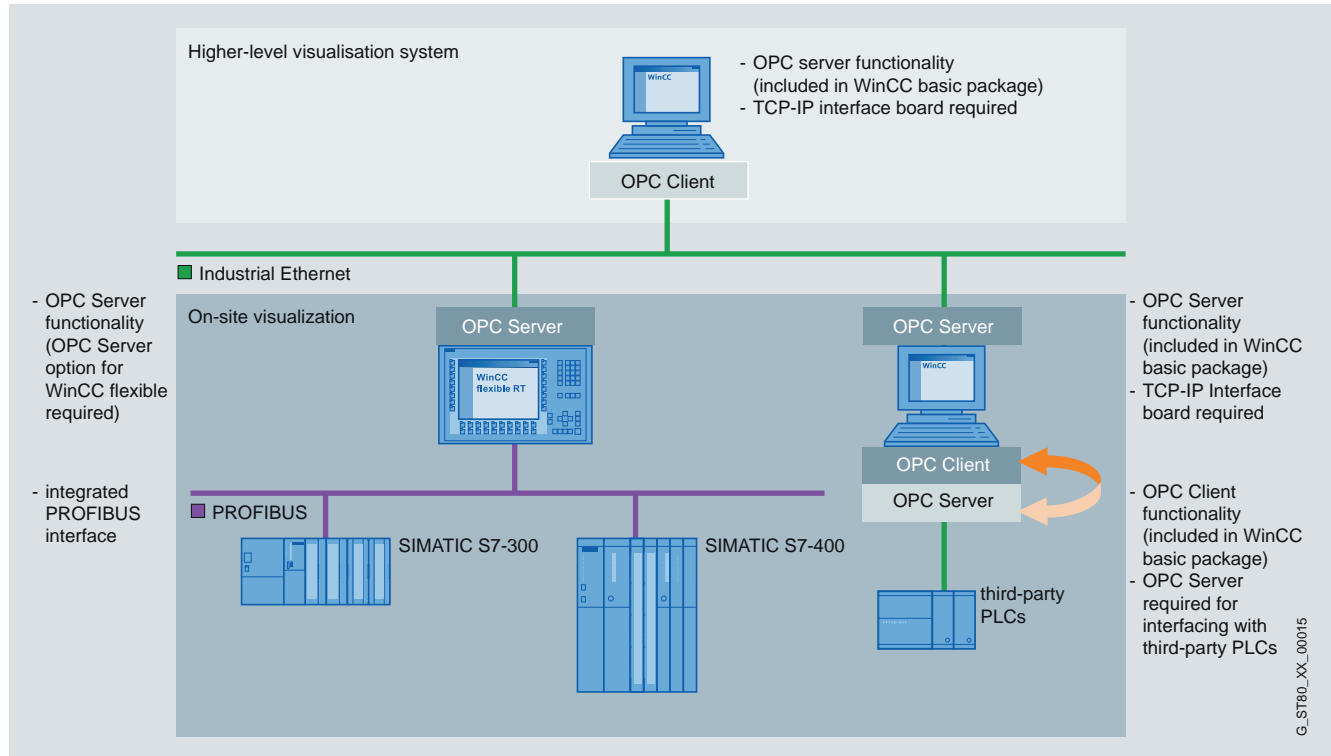
WinCC multi-user system with operable server

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Integration – Communications examples (continued)



OPC coupling

Technical specifications

Type	SIMATIC WinCC V7.0 SP1	SIMATIC WinCC V6.2 SP3
Operating system	<ul style="list-style-type: none"> • Windows VISTA Ultimate, Business and Enterprise SP1 • Windows XP Professional SP2 / SP3 • Windows 2003 Server SP2 and Windows 2003 Server R2 SP2 	<ul style="list-style-type: none"> • Windows XP Professional SP3, • Windows 2000 Professional SP4, • Windows Server 2003 SP2, • Windows Server 2003 R2 SP2
PC hardware requirements		
Processor type ¹⁾		
• Minimum	Single-user station / server: Pentium 3, 1 GHz ²⁾ Central Archive Server: Pentium 4, 2,5 GHz Client: Pentium 3, 800 MHz ²⁾ WebClient/DataMonitor Client: Pentium III, 600 MHz ²⁾	Single-user station / server: Pentium III, 1 GHz Central Archive Server: Pentium 4, 2 GHz Client: Pentium III, 600 MHz
• Recommended	Single-user station / server: Pentium 4, 2,5 GHz ²⁾ Central Archive Server: Pentium 4 or Dual Core, 3 GHz Client: Pentium 4, 2 GHz ²⁾ WebClient/DataMonitor Client: Pentium III, 1 GHz	Single-user station / server: Pentium 4, 2 GHz Central Archive Server: Pentium 4, 2,5 GHz Client: Pentium III, 1 GHz WebClient/DataMonitor Client: Pentium III, 1 GHz

Technical specifications (continued)

Type	SIMATIC WinCC V7.0 SP1	SIMATIC WinCC V6.2 SP3
Operating system	<ul style="list-style-type: none"> Windows VISTA Ultimate, Business and Enterprise SP1 Windows XP Professional SP2 / SP3 Windows 2003 Server SP2 and Windows 2003 Server R2 SP2 	<ul style="list-style-type: none"> Windows XP Professional SP3, Windows 2000 Professional SP4, Windows Server 2003 SP2, Windows Server 2003 R2 SP2
RAM		
• Minimum	Single-user station / server: 1 GByte ²⁾ Central Archive Server: 2 GByte Client: 512 MByte ²⁾ WebClient/DataMonitor Client: 256 MByte ²⁾	Single-user station: 512 MByte, server: 1 GByte Central Archive Server: 1 GByte Client: 512 MByte WebClient/DataMonitor Client: 256 MByte
• Recommended	Single-user station / server: 2 GByte ²⁾ Central Archive Server: ≥ 2 GByte Client: 1 GByte ²⁾ WebClient/DataMonitor Client: 512 MByte ²⁾	Single-user station: ≥ 1 GByte, server: >1 GByte Central Archive Server: ≥ 2 GByte Client: 512 MByte WebClient/DataMonitor Client: 512 MByte
Graphics card		
• Minimum	16 MByte, 800 x 600 ²⁾	16 MByte, 800 x 600
• Recommended	32 MByte, 1280 x 1024 ²⁾	32 MByte, 1280 x 1024
Hard disk		
• Minimum	Single-user station / server: 20 GByte Client: 5 GByte Central Archive Server: 40 GByte WebClient/DataMonitor Client: 5 GByte	Single-user station / server: 20 GByte Client: 5 GByte Central Archive Server: 40 GByte WebClient/DataMonitor Client: 5 GByte
• Recommended	Single-user station / server: 80 GByte Client: 20 GByte Central Archive Server: 2 x 80 GByte WebClient/DataMonitor Client: 10 GByte	Single-user station / server: 80 GByte Client: 20 GByte Central Archive Server: 2 x 80 GByte WebClient/DataMonitor Client: 10 GByte
• Hard disk (free memory space for installation)		
- Minimum	Server: > 1,5 GByte Client: 1,5 GByte	Server: 1,5 GByte Client: 1 GByte
- Recommended	Server: > 10 GByte Client: > 1,5 GByte	Server: > 10 GByte Client: > 1,5 GByte
CD ROM / DVD ROM / diskette drive / USB interface	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

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Technical specifications (continued)

Type	SIMATIC WinCC
Functionality / quantity structure	
Number of messages	150,000
• Message text (number of characters)	10 x 256
• Alarm log	> 500,000 messages ¹⁾
• Process values per message	10
• Constant load of messages, max.	Central Archive Server: 100/s 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. 120,000 per server ²⁾
• Archive types	Short-term archive with and without long-term archiving
• Data storage format	Microsoft SQL Server 2005
• 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 (ger, en, fr, 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	12
• 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	Order No.		Order No.
<div><i>SIMATIC WinCC system software V7.0 SP1</i></div> <div>Runtime packages on DVD</div> <div>Language / script versions: ger, en, fr, it, sp; with license for</div> <div><ul style="list-style-type: none">128 PowerTags (RT 128)512 PowerTags (RT 512)2048 PowerTags (RT 2 048)8192 PowerTags (RT 8192)65536 PowerTags (RT 65536)102400 PowerTags (RT 102400)153600 PowerTags (RT 153600)262144 PowerTags (RT 262144)Incl. 512 archive tags each</div>	<div>6AV6 381-2BC07-0AX0</div> <div>6AV6 381-2BD07-0AX0</div> <div>6AV6 381-2BE07-0AX0</div> <div>6AV6 381-2BH07-0AX0</div> <div>6AV6 381-2BF07-0AX0</div> <div>6AV6 381-2BJ07-0AX0</div> <div>6AV6 381-2BK07-0AX0</div> <div>6AV6 381-2BL07-0AX0</div>		
<div><i>SIMATIC WinCC system software V7.0 SP1 ASIA</i></div> <div>Runtime packages on DVD</div> <div>Language / script versions: ger, en, fr, it, sp; with license for</div> <div><ul style="list-style-type: none">128 PowerTags (RT 128)512 PowerTags (RT 512)2 048 PowerTags (RT 2 048)8192 PowerTags (RT 8192)65536 PowerTags (RT 65536)102400 PowerTags (RT 102400)153600 PowerTags (RT 153600)262144 PowerTags (RT 262144)Incl. 512 archive tags each</div>	<div>6AV6 381-2BM07-0AX0</div> <div>6AV6 381-2BN07-0AX0</div> <div>6AV6 381-2BP07-0AX0</div> <div>6AV6 381-2BS07-0AX0</div> <div>6AV6 381-2BQ07-0AX0</div> <div>6AV6 381-2BT07-0AX0</div> <div>6AV6 381-2BU07-0AX0</div> <div>6AV6 381-2BV07-0AX0</div>		
<div><i>SIMATIC WinCC system software V7.0 SP1 ASIA</i></div> <div>Runtime packages on DVD</div> <div>Language / script versions: ger, en, fr, it, sp; with license for</div> <div><ul style="list-style-type: none">128 PowerTags (RT 128)512 PowerTags (RT 512)2 048 PowerTags (RT 2 048)8192 PowerTags (RT 8192)65536 PowerTags (RT 65536)102400 PowerTags (RT 102400)153600 PowerTags (RT 153600)262144 PowerTags (RT 262144)Incl. 512 archive tags each</div>	<div>6AV6 381-2BC07-0AV0</div> <div>6AV6 381-2BD07-0AV0</div> <div>6AV6 381-2BE07-0AV0</div> <div>6AV6 381-2BH07-0AV0</div> <div>6AV6 381-2BF07-0AV0</div> <div>6AV6 381-2BJ07-0AV0</div> <div>6AV6 381-2BK07-0AV0</div> <div>6AV6 381-2BL07-0AV0</div>		
<div><i>SIMATIC WinCC system software V7.0 SP1 ASIA</i></div> <div>Complete packages on DVD</div> <div>Language versions: ger, en, fr, it, sp; with license for</div> <div><ul style="list-style-type: none">128 PowerTags (RC 128)512 PowerTags (RC 512)2048 PowerTags (RC 2 048)8192 PowerTags (RC 8192)65536 PowerTags (RC 65536)102400 PowerTags (RC 102400)153600 PowerTags (RC 153600)262144 PowerTags (RC 262144)</div>	<div>6AV6 381-2BM07-0AV0</div> <div>6AV6 381-2BN07-0AV0</div> <div>6AV6 381-2BP07-0AV0</div> <div>6AV6 381-2BS07-0AV0</div> <div>6AV6 381-2BQ07-0AV0</div> <div>6AV6 381-2BT07-0AV0</div> <div>6AV6 381-2BU07-0AV0</div> <div>6AV6 381-2BV07-0AV0</div>		
<div><i>SIMATIC WinCC V7.0 Power Packs</i></div> <div>For upgrading from:</div> <div>Runtime packages</div> <div><ul style="list-style-type: none">128 to 512 PowerTags128 to 2048 PowerTags128 to 8192 PowerTags128 to 65536 PowerTags512 to 2048 PowerTags512 to 8192 PowerTags512 to 65536 PowerTags2048 to 8192 PowerTags2048 to 65536 PowerTags8192 to 65536 PowerTags65536 to 102400 PowerTags102400 to 153600 PowerTags153600 to 262144 PowerTags</div> <div>Complete packages</div> <div><ul style="list-style-type: none">128 to 512 PowerTags128 to 2048 PowerTags128 to 8192 PowerTags128 to 65536 PowerTags512 to 2048 PowerTags512 to 8192 PowerTags512 to 65536 PowerTags2048 to 8192 PowerTags2048 to 65536 PowerTags8192 to 65536 PowerTags65536 to 102400 PowerTags102400 to 153600 PowerTags153600 to 262144 PowerTags</div>		<div>6AV6 371-2BD07-0AX0</div> <div>6AV6 371-2BE07-0AX0</div> <div>6AV6 371-2BK07-0AX0</div> <div>6AV6 371-2BF07-0AX0</div> <div>6AV6 371-2BG07-0AX0</div> <div>6AV6 371-2BL07-0AX0</div> <div>6AV6 371-2BH07-0AX0</div> <div>6AV6 371-2BM07-0AX0</div> <div>6AV6 371-2BJ07-0AX0</div> <div>6AV6 371-2BN07-0AX0</div> <div>6AV6 371-2BP07-0AX0</div> <div>6AV6 371-2BQ07-0AX0</div> <div>6AV6 371-2BR07-0AX0</div>	
<div><i>SIMATIC WinCC V7.0 Archive</i></div> <div><ul style="list-style-type: none">1500 archives5000 archives10000 archives30000 archives80000 archives120000 archives</div>		<div>6AV6 371-1DQ17-0AX0</div> <div>6AV6 371-1DQ17-0BX0</div> <div>6AV6 371-1DQ17-0CX0</div> <div>6AV6 371-1DQ17-0EX0</div> <div>6AV6 371-1DQ17-0GX0</div> <div>6AV6 371-1DQ17-0JX0</div>	
<div><i>SIMATIC WinCC V7.0 Archive Power Packs</i></div> <div>For upgrading archiving from</div> <div><ul style="list-style-type: none">1500 to 5000 archive tags5000 to 10000 archive tags10000 to 30000 archive tags30000 to 80000 archive tags80000 to 120000 archive tags</div>		<div>6AV6 371-1DQ17-0AB0</div> <div>6AV6 371-1DQ17-0BC0</div> <div>6AV6 371-1DQ17-0CE0</div> <div>6AV6 371-1DQ17-0EG0</div> <div>6AV6 371-1DQ17-0GJ0</div>	

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

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Ordering data

Order No.

Order No.

Standard Client

SIMATIC Panel PC 477B - WinCC V7.0 Standard Client

see Panel PC 477B

Bundles with SIMATIC HMI IPC477C and WinCC V7.0 SP1

SIMATIC HMI IPC477C

Without fan
4 x USB 2.0 on rear, 1 x USB 2.0 on front, 2 x 10 / 100 / 1000 Mbit/s Ethernet (RJ45);
software preinstalled on CF / SSD:
Windows Embedded Standard,
SIMATIC WinCC V7.0 SP1

Client

H 6AV7 884 - A A 1 0 - 4 B X 0

Celeron processor M 1.2 GHz,
1 GByte DDR3 RAM, CF Card
8 GByte, RT license 128 PT on
USB stick

- 15" TFT Touch
- 19" TFT Touch

2
5

Client and Single Station

H 6AV7 884 - A E 2 0 - 4 B X 0

Core2 Solo processor 1.2 GHz,
PROFIBUS DP,
2 GByte DDR3 RAM,
CF Card 8 GByte,
RT license 128 PT

- 15" TFT Touch
- 19" TFT Touch

2
5

SIMATIC HMI IPC477C

H 6AV7 884 - A H 3 0 - B B 0

Single Station

Core2 Duo processor 1.2 GHz,
PROFIBUS DP,
4 GByte DDR3 RAM

- 15" TFT Touch
- 19" TFT Touch
- 8 GByte CF Card
- 32 GByte SSD
- Runtime license 128 PT on USB flash drive
- Runtime license 2048 PT on USB flash drive

2
54
6

X

W

SIMATIC WinCC Upgrade / Software Update Service

SIMATIC WinCC V7 Upgrade ¹⁾

For upgrading the RT version

- from V6.0 to V7.0 SP1 A 6AV6 381-2AA07-0AX4
- from V6.2 to V7.0 SP1 A 6AV6 381-2AA07-0AX3
- from V6.0 ASIA to V7.0 SP1 ASIA 6AV6 381-2AA07-0AV4
- from V6.2 ASIA to V7.0 SP1 ASIA 6AV6 381-2AA07-0AV3

For upgrading the Client RT version

- from V6.0 to V7.0 SP1 A 6AV6 381-2BC07-0AX4
- from V6.2 to V7.0 SP1 A 6AV6 381-2BC07-0AX3
- from V6.0 ASIA to V7.0 SP1 ASIA 6AV6 381-2BC07-0AV4
- from V6.2 ASIA to V7.0 SP1 ASIA 6AV6 381-2BC07-0AV3

For upgrading the RC version

- from V6.0 to V7.0 SP1 A 6AV6 381-2AB07-0AX4
- from V6.2 to V7.0 SP1 A 6AV6 381-2AB07-0AX3
- from V6.0 ASIA to V7.0 SP1 ASIA 6AV6 381-2AB07-0AV4
- from V6.2 ASIA to V7.0 SP1 ASIA 6AV6 381-2AB07-0AV3

SIMATIC WinCC Software Update Service ^{2) 3)}

Software Update Service

Software Update Service for
WinCC basic software and
options:

- 1 license 6AV6 381-1AA00-0AX5
- 3 licenses 6AV6 381-1AA00-0BX5
- 10 licenses 6AV6 381-1AA00-0CX5

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

A: Subject to export regulations: AL: N and ECCN: EAR99S

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Ordering data	Order No.	Order No.
SIMATIC WinCC system software V6.2 SP3 Runtime packages on CD-ROM Language / script versions: ger / en / fr / it / sp; with license for <ul style="list-style-type: none"> 128 PowerTags (RT 128) 256 PowerTags (RT 256) 1 024 PowerTags (RT 1 024) 8 192 PowerTags (RT 8 192) 65 536 PowerTags (RT 65 536) 102 400 PowerTags (RT 102 400) 153 600 PowerTags (RT 153 600) 262 144 PowerTags (RT 262 144) Incl. 512 archive tags each	6AV6 381-1BC06-2AX0 6AV6 381-1BD06-2AX0 6AV6 381-1BE06-2AX0 6AV6 381-1BH06-2AX0 6AV6 381-1BF06-2AX0 6AV6 381-1BJ06-2AX0 6AV6 381-1BK06-2AX0 6AV6 381-1BL06-2AX0	SIMATIC WinCC V6.2 Power Packs For upgrading from: Runtime packages <ul style="list-style-type: none"> 128 to 256 PowerTags 128 to 1024 PowerTags 128 to 8192 PowerTags 128 to 65536 PowerTags 256 to 1024 PowerTags 256 to 8192 PowerTags 256 to 65536 PowerTags 1024 to 8192 PowerTags 1024 to 65536 PowerTags 8192 to 65536 PowerTags 65536 to 102400 PowerTags 102400 to 153600 PowerTags 153600 to 262144 PowerTags Complete packages <ul style="list-style-type: none"> 128 to 256 PowerTags 128 to 1024 PowerTags 128 to 8192 PowerTags 128 to 65536 PowerTags 256 to 1024 PowerTags 256 to 8192 PowerTags 256 to 65536 PowerTags 1024 to 8192 PowerTags 1024 to 65536 PowerTags 8192 to 65536 PowerTags 65536 to 102400 PowerTags 102400 to 153600 PowerTags 153600 to 262144 PowerTags
Complete packages on CD-ROM Language versions: ger / en / fr / it / sp; with license for <ul style="list-style-type: none"> 128 PowerTags (RC 128) 256 PowerTags (RC 256) 1 024 PowerTags (RC 1 024) 8 192 PowerTags (RC 8 192) 65 536 PowerTags (RC 65 536) 102 400 PowerTags (RC 102 400) 153 600 PowerTags (RC 153 600) 262 144 PowerTags (RC 262 144) Incl. 512 archive tags each	6AV6 381-1BM06-2AX0 6AV6 381-1BN06-2AX0 6AV6 381-1BP06-2AX0 6AV6 381-1BS06-2AX0 6AV6 381-1BQ06-2AX0 6AV6 381-1BT06-2AX0 6AV6 381-1BU06-2AX0 6AV6 381-1BV06-2AX0	6AV6 371-1BD06-2AX0 6AV6 371-1BE06-2AX0 6AV6 371-1BK06-2AX0 6AV6 371-1BF06-2AX0 6AV6 371-1BG06-2AX0 6AV6 371-1BL06-2AX0 6AV6 371-1BH06-2AX0 6AV6 371-1BM06-2AX0 6AV6 371-1BJ06-2AX0 6AV6 371-1BN06-2AX0 6AV6 371-1BP06-2AX0 6AV6 371-1BQ06-2AX0 6AV6 371-1BR06-2AX0
SIMATIC WinCC system software V6.2 SP3 ASIA Runtime packages on CD-ROM Language versions: English / simplified and traditional Chinese / Korean / Taiwanese / Japanese; with license for <ul style="list-style-type: none"> 128 PowerTags (RT 128) 256 PowerTags (RT 256) 1 024 PowerTags (RT 1 024) 8 192 PowerTags (RT 8 192) 65 536 PowerTags (RT 65 536) Incl. 512 archive tags each	6AV6 381-1BC06-2AV0 6AV6 381-1BD06-2AV0 6AV6 381-1BE06-2AV0 6AV6 381-1BH06-2AV0 6AV6 381-1BF06-2AV0	SIMATIC WinCC V6.2 Archive <ul style="list-style-type: none"> 1500 archives 5000 archives 10000 archives 30000 archives 80000 archives 120000 archives
Complete packages on CD-ROM Language versions: English / simplified and traditional Chinese / Korean / Taiwanese, Japanese; with license for <ul style="list-style-type: none"> 128 PowerTags (RC 128) 256 PowerTags (RC 256) 1 024 PowerTags (RC 1 024) 8 192 PowerTags (RC 8 192) 65 536 PowerTags (RC 65 536) Incl. 512 archive tags each	6AV6 381-1BM06-2AV0 6AV6 381-1BN06-2AV0 6AV6 381-1BP06-2AV0 6AV6 381-1BS06-2AV0 6AV6 381-1BQ06-2AV0	SIMATIC WinCC V6.2 Archive Power Packs For upgrading archiving from <ul style="list-style-type: none"> 1500 to 5000 archive tags 5000 to 10000 archive tags 10000 to 30000 archive tags 30000 to 80000 archive tags 80000 to 120000 archive tags
		6AV6 371-1DQ16-2AX0 6AV6 371-1DQ16-2BX0 6AV6 371-1DQ16-2CX0 6AV6 371-1DQ16-2EX0 6AV6 371-1DQ16-2GX0 6AV6 371-1DQ16-2JX0 6AV6 371-1DQ16-2AB0 6AV6 371-1DQ16-2BC0 6AV6 371-1DQ16-2CE0 6AV6 371-1DQ16-2EG0 6AV6 371-1DQ16-2GJ0

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Ordering data

Order No.

Order No.

*SIMATIC WinCC V6.2 Upgrade*¹⁾

For upgrading the RT version

- from V5.x to V6.2 SP3 A **6AV6 381-1AA06-2AX4**
- from V6.x to V6.2 SP3 A **6AV6 381-1AA06-2AX3**
- from V5.x ASIA to V6.2 SP3 ASIA A **6AV6 381-1AA06-2AV4**
- from V6.x ASIA to V6.2 SP3 ASIA A **6AV6 381-1AA06-2AV3**

For upgrading the RC version

- from V5.x to V6.2 SP3 A **6AV6 381-1AB06-2AX4**
- from V6.x to V6.2 SP3 A **6AV6 381-1AB06-2AX3**
- from V5.x ASIA to V6.2 SP3 ASIA A **6AV6 381-1AB06-2AV4**
- from V6.x ASIA to V6.2 SP3 ASIA A **6AV6 381-1AB06-2AV3**

¹⁾ According to licensing provisions, 1 upgrade package must be ordered for each WinCC station.

A: Subject to export regulations: AL: N and ECCN: EAR99S

SIMATIC WinCC V7.0 SP1 communication

Communication via Industrial Ethernet

CP 1612 A2

6GK1 161-2AA00

PCI card (32 bit) for connecting a PG / PC to Industrial Ethernet (communications software must be ordered separately)

CP 1613 A2

6GK1 161-3AA01

PCI card (32 bit) for connecting a PG / PC to Industrial Ethernet (communications software must be ordered separately)

CP 1623

6GK1 162-3AA00

PCI Express X1 card (32-bit) for connection of PG / PC to Industrial Ethernet (communications software to be ordered separately)

SOFTNET-S7 Edition 2008

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, for 32-bit: Windows XP Professional, Windows 2003 Server, VISTA Ultimate / Business; for CP 1612; German/English

- Single license for 1 installation G **6GK1 704-1CW71-3AA0**
- Upgrade package for SIMATIC NET Edition 2006 or higher G **6GK1 704-1CW00-3AE0**
- Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 G **6GK1 704-1CW00-3AE1**

Communication via Industrial Ethernet

(continued)

SOFTNET-S7 Lean Edition 2008 (included in the scope of delivery of WinCC V7.0 SP1)

Software for S7 and S5-compatible communication, incl. OPC server, PG / OP communication and NCM PC; up to 8 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for 32-bit: Windows XP Professional, Windows 2003 Server, VISTA Ultimate / Business; for CP 1612; German / English

- Single license for 1 installation G **6GK1 704-1LW71-3AA0**
- Upgrade package for SIMATIC NET Edition 2006 or higher G **6GK1 704-1LW00-3AE0**
- Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 G **6GK1 704-1LW00-3AE1**

S7-1613 Edition 2008

Software for S7 and S5-compatible communication, incl. OPC server, PG / OP communication and NCM PC; up to 120 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 1613, CP 1613 A2, CP 1623; German / English

- Single license for 1 installation G **6GK1 716-1CB71-3AA0**
- Upgrade package for SIMATIC NET Edition 2006 or higher G **6GK1 716-1CB00-3AE0**
- Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 G **6GK1 716-1CB00-3AE1**

Communication via PROFIBUS

CP 5611 A2

6GK1 561-1AA01

PCI card (32 bit) for connecting a PG / PC to PROFIBUS (communications software included in the WinCC basic package)

CP 5621

6GK1 562-1AA00

PCI Express X1 card (32-bit) for connection of PG / PC to PROFIBUS (communications software included in WinCC basic package)

CP 5611 MPI

6GK1 561-1AM01

Comprising CP 5611 A2 and MPI cable, 5 m

CP 5621 MPI

6GK1 562-1AM00

Comprising CP 5621 (32 bit) and MPI cable, 5 m

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Ordering data	Order No.		Order No.
Communication via PROFIBUS (continued)			
CP 5512 PCMCIA card (CARDBUS 32 bit) for the connection of a PG / notebook to PROFIBUS or MPI (communications software included in WinCC basic package)	6GK1 551-2AA00		
CP 5613 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	6GK1 561-3AA01		
S7-5613 Edition 2008 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, for 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 5613 A2; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Upgrade package for SIMATIC NET Edition 2006 or higher • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 	6GK1 713-5CB71-3AA0 6GK1 713-5CB00-3AE0 6GK1 713-1CB00-3AE1		
DP-5613 Edition 2008 Software for DP 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 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 5613 A2, German / English <ul style="list-style-type: none"> • Single license for 1 installation • Upgrade package for SIMATIC NET Edition 2006 or higher • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 	6GK1 713-5DB71-3AA0 6GK1 713-5DB00-3AE0 6GK1 713-1DB00-3AE1		
FMS-5613 Edition 2008 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 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 5613 A2, German / English <ul style="list-style-type: none"> • Single license for 1 installation • Upgrade package for SIMATIC NET Edition 2006 or higher • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 	6GK1 713-5FB71-3AA0 6GK1 713-5FB00-3AE0 6GK1 713-5FB00-3AE1		
		SIMATIC WinCC V6.2 communication via Industrial Ethernet	
		CP 1612 A2 PCI card (32 bit) for connecting a PG / PC to Industrial Ethernet (communications software must be ordered separately)	6GK1 161-2AA00
		SOFTNET-S7 Edition 2006 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, for 32-bit: Windows XP Professional / 2000 Professional / Server for CP 1512 / CP 1612; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Upgrade package for SIMATIC NET Edition 2007 • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾ 	6GK1 704-1CW64-3AA0 6GK1 704-1CW00-3AE1
		SOFTNET-S7 Lean Edition 2006 (included in the scope of supply of WinCC V6.2) Software for S7 and S5-compatible communication, incl. OPC server, PG / OP communication and NCM PC; up to 8 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for 32-bit: Windows XP Professional / 2000 Professional / Server for CP 1512 / CP 1612; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Upgrade package for SIMATIC NET Edition 2007 • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾ 	6GK1 704-1LW64-3AA0 6GK1 704-1LW00-3AE1
		CP 1613 A2 PCI card (32 bit) for connecting a PG / PC to Industrial Ethernet (communications software must be ordered separately)	6GK1 161-3AA01
		S7-1613 Edition 2006 Software for S7 and S5-compatible communication, incl. OPC server, PG / OP communication and NCM PC; up to 120 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB stick, Class A, for 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 1613, CP1613 A2, CP 1623; German / English <ul style="list-style-type: none"> • Single license for 1 installation • for SIMATIC NET Edition 2007 • Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾ 	6GK17 16-1CB64-3AA0 6GK17 16-1CB00-3AE1

¹⁾ The licenses supplied with SIMATIC NET Edition 2007 are also valid for the version SIMATIC NET Edition 2006. The software SIMATIC NET Edition 2006 is supplied with WinCC V6.

G: Subject to export regulations: AL: N and 5D992

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC

Ordering data

Order No.

Order No.

Communication via Industrial Ethernet (continued)

T7-1613 Edition 2006

Software for TF protocol, S5-compatible communication, incl. OPC, PG / OP communication (S5/S05 Layer 4 communication with TCP/IP), for Windows XP Professional / 2003 Server / 2000 Professional / Server

- Single license for 1 installation
- Upgrade package for SIMATIC NET Edition 2007 Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾

6GK1 716-1TB64-3AA0

G 6GK1 716-1CB00-3AE1

Communication via PROFIBUS

CP 5611 A2

PCI card (32 bit) for connecting a PG / PC to PROFIBUS (communications software included in the WinCC basic package)

6GK1 561-1AA01

CP 5621

H

6GK1 562-1AA00

PCI Express X1 card (32-bit) for connection of PG / PC to PROFIBUS (communications software included in WinCC basic package)

CP 5611 MPI

B

6GK1 561-1AM01

Comprising CP 5611 A2 and MPI cable, 5 m

CP 5621 MPI

H

6GK1 562-1AM00

Comprising CP 5621 (32 bit) and MPI cable, 5 m

CP 5512

6GK1 551-2AA00

PCMCIA card (CARDBUS 32 bit) for the connection of a PG / notebook to PROFIBUS or MPI (communications software included in WinCC basic package)

CP 5613 A2

6GK1 561-3AA01

PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).

Communication via PROFIBUS (continued)

S7-5613 Edition 2006

Software for S7 communication incl. PG / OP communication, FDL, OPC server; for Windows XP Professional / 2003 Server / 2000 Professional / Server for CP 5613 / CP 5614; English / German

- Single license for 1 installation
- Upgrade package for SIMATIC NET Edition 2007 Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾

6GK1 713-5CB64-3AA0

6GK1 713-1CB00-3AE1

DP-5613 Edition 2006

Software for DP 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 32-bit: Windows XP Professional, Windows 2003 Server, Windows VISTA Ultimate / Business; for CP 5613 A2; German / English

- Single license for 1 installation
- Upgrade package for SIMATIC NET Edition 2007 Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾

6GK1 713-5DB64-3AA0

6GK1 713-1DB00-3AE1

FMS-5613 Edition 2006

Software for FMS protocol incl. PG / OP communication, FDL, FMS-OPC server, for Windows XP Professional / 2003 Server / 2000 Professional / Server for CP 5613 / CP 5614; English / German

- Single license for 1 installation
- Upgrade package for SIMATIC NET Edition 2007 Upgrade package for SIMATIC NET V6.0, V6.1, V6.2, and Edition 2005 ¹⁾

6GK1 713-5FB64-3AA0

G 6GK1 713-5FB00-3AE1

¹⁾ The licenses supplied with SIMATIC NET Edition 2007 are also valid for the version SIMATIC NET Edition 2006. The software SIMATIC NET Edition 2006 is supplied with WinCC V6.

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and 5D992

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

Ordering data	Order No.
Hardware for process control functions	
DCF-77 receiver	
for time synchronization	
• DCF77 (Europe)	2XV9 450-1AR14
• GPS (worldwide)	O 2XV9 450-1AR13
Multi-VGA	
• 2 Screens	B 6ES7 652-0XX03-1XE0
• 4 Screens	B 6ES7 652-0XX03-1XE1
B: Subject to export regulations: AL: N and ECCN: EAR99H	
O: Subject to export regulations: AL: N und ECCN: 7A994A	
<u>Note:</u>	
For further information about process control options, see Catalog ST PCS 7	

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.

WinCC ASIA is delivered on a separate DVD which contains all of the above mentioned language versions. The corresponding documentation can be obtained from the national subsidiaries in China, Korea, Taiwan and Japan.

The runtime licenses are language-neutral. The English handling program (Automation License Manager – ALM) is executable under the Chinese, Korean and Japanese Windows versions.

Additional information is available in the Internet under:

<http://www.siemens.com/wincc>

Separate configurators are available for PC hardware:

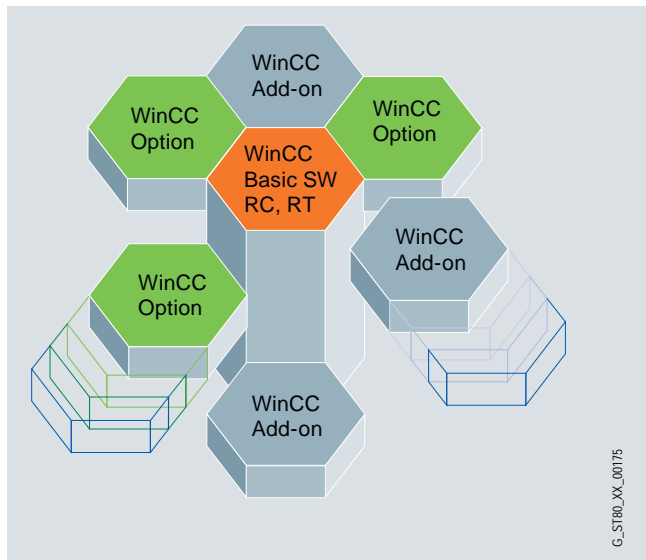
- SIMATIC IPC547C, SIMATIC Rack PC 547B
- SIMATIC IPC647C, SIMATIC Rack PC 647B
- SIMATIC IPC847C, SIMATIC Rack PC 847B
- SIMATIC IPC427C
- SIMATIC IPC627C, SIMATIC Box PC 627B
- SIMATIC Box PC 827B
- SIMATIC HMI IPC577C, SIMATIC Panel PC 577B
- SIMATIC HMI IPC677C, SIMATIC Panel PC 677B

HMI Software

SCADA system SIMATIC WinCC

SIMATIC WinCC options

Overview



G_ST80_XX_00175

- The universal WinCC basic software is the basis for modular expansions. These functional expansions can be obtained in the form of WinCC options and as WinCC Premium add-ons.
- WinCC options are created by WinCC Development and are Siemens Industry Automation products. You can obtain support from our Advisory Services and via the central hotline.

Options for scalable plant configurations

- *WinCC/Server*
 - To set up a powerful client / server system
- *WinCC/Web Navigator*
 - To control and monitor plants via the Internet, in-house intranet or LAN
- *WinCC/Central Archive Server (CAS)*
 - For configuring a central archive server

Options for increasing the availability

- *WinCC/Redundancy*
 - For increased system availability through redundancy
- *SIMATIC Maintenance Station*
 - For system-integrated diagnostics and system-based asset management
- *WinCC/ProAgent*
 - For reliable process diagnostics

Options for IT and Business Integration – Plant Intelligence

- *WinCC/DataMonitor*
 - For display and analysis of current process states and historical data on office PCs with standard tools
- *WinCC/DowntimeMonitor*
 - For the detection and analysis of standstill times for machines and systems
- *WinCC/Connectivity Pack*
 - Access to WinCC archive 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 link to databases and IT systems

Options for SCADA expansions

- *WinCC/User Archives*
 - To manage data sets in user archives
- *WinCC/Calendar Scheduler*
 - Calendar-based planning of events

Options for sector-specific expansions

- *SIMATIC BATCH for WinCC*
 - WinCC in combination with the SIMATIC BATCH products offers the solution for implementation of batch processes in accordance with ISA S88.
 - Batch processes which place heterogeneous demands on the interfacing of different types of PLC, such as S7-400 / 300, S5 and third-party PLCs, are automated using SIMATIC BATCH (for WinCC).
- *WinCC/ChangeControl*
 - Change and version management
 - Generation of audit trails for engineering
- *WinCC/Audit*
 - Change management
 - Generation of audit trails for engineering and runtime
- *SIMATIC Logon*
 - Central management of WinCC users, plant-wide (to CFR 21 Part 11)

Options for individual system expansions

- *WinCC/IndustrialX*
 - For the creation of customized WinCC ActiveX objects in a VB development environment and .net.
- *WinCC/ODK*
 - For the use of open programming interfaces (Open Development Kit)

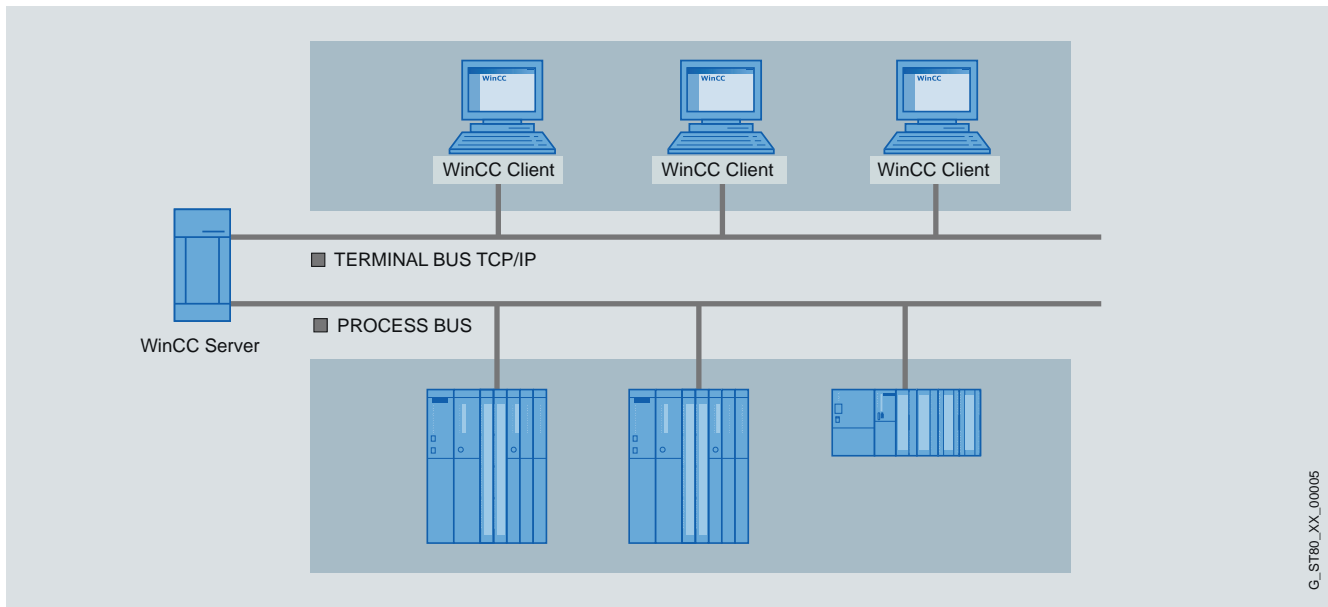
More information

WinCC options

Additional information is available in the Internet under:

<http://www.siemens.com/wincc/options>

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). Up to 3 clients can be connected when using Windows XP Professional.
- 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 and 32 clients can be used
- Requirement: Network connection (TCP/IP) between the server PC and the connected clients¹⁾
- One license is required for each server.

¹⁾ One of the following operating systems is installed on one WinCC server: Windows 2000 Server, Windows 2000 Advanced Server, Windows Server 2003 or Windows Server 2003 R2. Up to 3 clients with Windows XP Professional.

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.

Only the smallest runtime license RT128 is required for the clients, or if configuring is also to be handled on the client, the smallest complete license RC128 is sufficient. This makes it possible to configure inexpensive operator and configuration stations in a network.

Ordering data

Order No.

WinCC/Server

- for WinCC V7.0
- for WinCC V6.2

6AV6 371-1CA07-0AX0

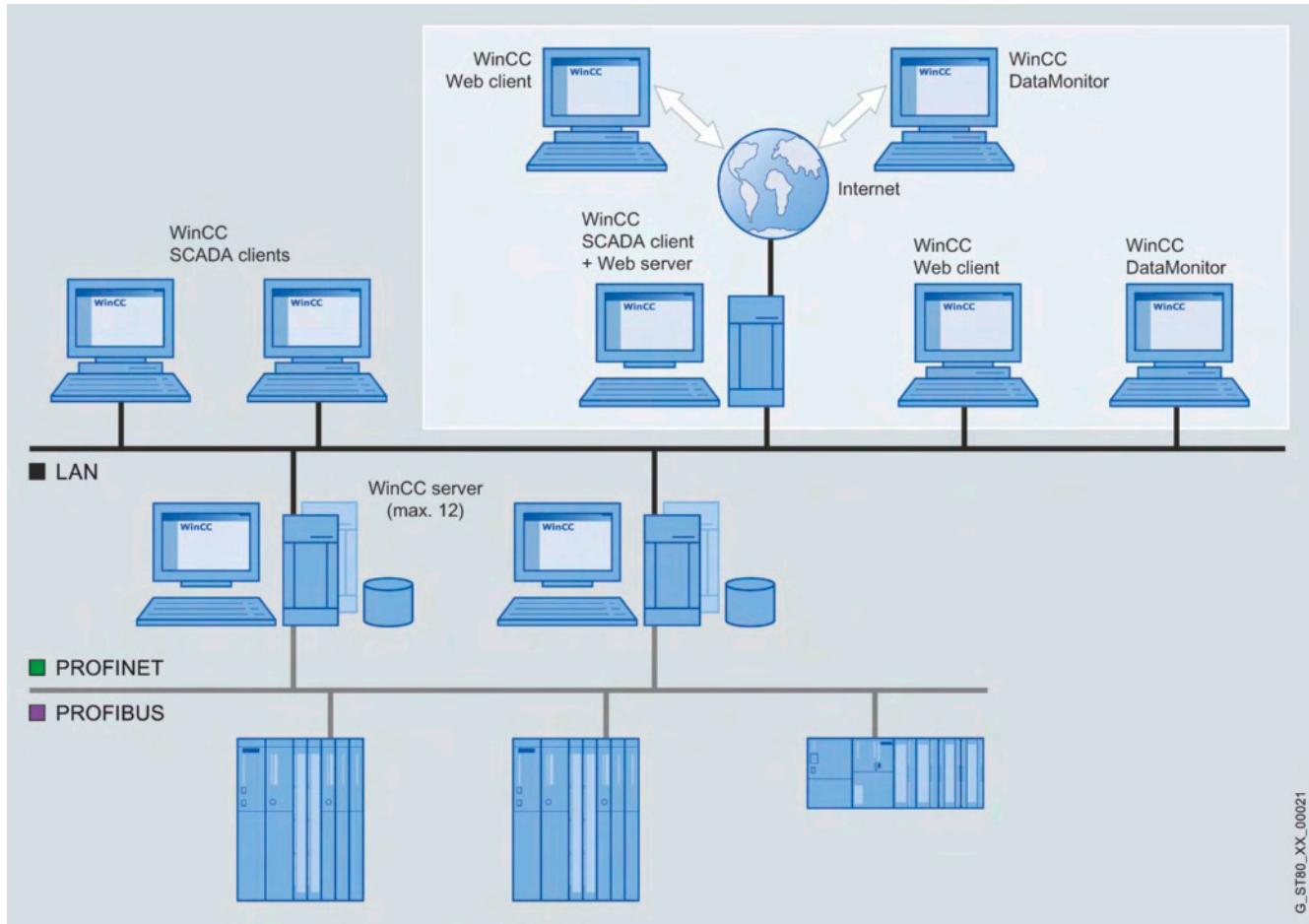
6AV6 371-1CA06-2AX0

HMI Software

SCADA system SIMATIC WinCC

WinCC/Web Navigator

Overview



G_ST80_XX_00021

- 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
- Licensing:
 - A license is required in order to use the Web Server.
 - Licenses are available for access to the Web Server by 3, 10, 25 or 50 clients.
 - Low-cost Web Navigator Diagnostics licenses are available for remote diagnostics via a number of distributed Web Servers.

Highlights

- Installation of the Web Server - in distributed systems - also on a WinCC Client;
 - Access to up to 12 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 WinCC Client running as Web Server).
 - 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 V6: The configured WinCC operator authorizations are taken into account on the Web Client.
- Access to user archives
- VB scripts are supported in the same way as the new objects and RT functions in WinCC V6
- 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.

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 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

Innovations of V7.0

- Version 7 supports Microsoft Internet Explorer Version 7.0, 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.
 - Address, user name and password.
 - Runtime language, disable keys, hotkey property sheets.
 - Start screen, menu and toolbars, Windows attributes.
 - Activate monitor keyboard, <Ctrl> <ALT> , automatic logout.
- The WinCC Web Viewer can also be used in conjunction with the MS Terminal Service.
- The Web Navigator client can also be used over WLAN with the Panel PC 12. (Recommended hardware: SCALANCE W788-1PRO Access Point, SCALANCE W746-1PRO Ethernet Client Module).
- From version 7 on, the Web Navigator 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 VISTA operating system in which selected WinCC process screens can be displayed. The gadget does not require any additional Web Navigator license. The Web Navigator 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.

Application

Apart from the typical application of the Web Navigator in the WAN field (**W**ide **A**rea **N**etwork), the Web Navigator can also be used for extremely cost-effective solutions. This particularly includes applications that have a widely distributed structure (water / sewage, oil and gas), or in which there is only sporadic accessing of process information (buildings management).

The Web Navigator also supports vertical integration, i.e. a networked IT landscape with company-wide data flow between the planning and operational levels of a company. The only tool that is required for direct access to up-to-date process information is a standard browser.

The Web server can have its own direct process connection. Alternatively coupling is possible by means of OPC or a Web server subordinate to a WinCC client. This not only increases reliability, but also reduces the data traffic within the system.

In addition to the standard Web navigator license, a so-called diagnostics client exists which basically has the same functions but which is particularly suitable for the following applications:

- Remote diagnostics / operation by several unmanned WinCC stations
- Central control rooms with multiple Web server support through a single user interface
- Power users who require guaranteed access to the server at any time, regardless of how many users are already logged on

HMI Software

SCADA system SIMATIC WinCC

WinCC/Web Navigator

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 3, 10, 25 or 50 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.

ThinClient solutions

The Web Navigator can also run under Windows 2003 terminal services. A Windows 2003 Server (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 2003 Server (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

WebNavigator 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

HMI Software

SCADA system SIMATIC WinCC

WinCC/Web Navigator

Ordering data	Order No.		Order No.
<i>WinCC/Web Navigator V7.0</i>		<i>WinCC/Web Navigator V6.2</i>	
V7.0; for WinCC V7.0, WinCC V7.0 SP1 and WinCC V7.0 SP1 ASIA		V6.2 SP3; for WinCC V6.2 SP3	
<ul style="list-style-type: none">• Base Pack (3 client licenses)• 10 client licenses• 25 client licenses• 50 client licenses	6AV6 371-1DH07-0AX0 6AV6 371-1DH07-0BX0 6AV6 371-1DH07-0CX0 6AV6 371-1DH07-0DX0	<ul style="list-style-type: none">• Base Pack (3 client licenses)• 10 client licenses• 25 client licenses• 50 client licenses	6AV6 371-1DH06-2AX0 6AV6 371-1DH06-2BX0 6AV6 371-1DH06-2CX0 6AV6 371-1DH06-2DX0
WinCC/Web Navigator Power Packs V7.0		V6.2 SP3 ASIA; for WinCC V6.2 SP3 ASIA	
<ul style="list-style-type: none">• From 3 to 10 clients• From 10 to 25 clients• From 25 to 50 clients	6AV6 371-1DH07-0AB0 6AV6 371-1DH07-0BC0 6AV6 371-1DH07-0CD0	<ul style="list-style-type: none">• Base Pack (3 Client Licenses)• 10 client licences• 25 client licences• 50 client licences	6AV6 371-1DH06-2AV0 6AV6 371-1DH06-2BV0 6AV6 371-1DH06-2CV0 6AV6 371-1DH06-2DV0
WinCC/Web Navigator Diagnostics Client		<i>WinCC/Web Navigator Power Packs</i>	
<ul style="list-style-type: none">• for WinCC V7.0	6AV6 371-1DH07-0EX0	V6.2 (for ASIA variants as well)	
WinCC/Web Navigator Diagnostics Server		<ul style="list-style-type: none">• From 3 to 10 clients• From 10 to 25 clients• From 25 to 50 clients	6AV6 371-1DH06-2AB0 6AV6 371-1DH06-2BC0 6AV6 371-1DH06-2CD0
<ul style="list-style-type: none">• for WinCC V7.0	6AV6 371-1DH07-0FX0		
<i>WinCC/Web Navigator Upgrade</i>		WinCC/Web Navigator Diagnostics Client	
V6.0 to V7.0		<ul style="list-style-type: none">• For WinCC V6.2 SP3• For WinCC V6.2 SP3 ASIA	6AV6 371-1DH06-2EX0 6AV6 371-1DH06-2EV0
<ul style="list-style-type: none">• For 3 clients• For 10 clients• For 25 clients• For 50 clients	6AV6 371-1DH07-0AX4 6AV6 371-1DH07-0BX4 6AV6 371-1DH07-0CX4 6AV6 371-1DH07-0DX4		
V6.2 to V7.0		WinCC/Web Navigator Diagnostics Server	
<ul style="list-style-type: none">• For 3 clients• For 10 clients• For 25 clients• For 50 clients	6AV6 371-1DH07-0AX3 6AV6 371-1DH07-0BX3 6AV6 371-1DH07-0CX3 6AV6 371-1DH07-0DX3	<ul style="list-style-type: none">• For WinCC V6.2 SP3• For WinCC V6.2 SP3 ASIA	6AV6 371-1DH06-2FX0 6AV6 371-1DH06-2FV0
V6.x to V7.0		<i>WinCC/Web Navigator Upgrade</i>	
<ul style="list-style-type: none">• For Web Navigator Diagnostics Client• For Web Navigator Diagnostics Server	6AV6 371-1DH07-0EX4 6AV6 371-1DH07-0FX4	V1.x to V6.2 SP3	
		<ul style="list-style-type: none">• For 3 clients• For 10 clients• For 25 clients• For 50 clients	6AV6 371-1DH06-2AX4 6AV6 371-1DH06-2BX4 6AV6 371-1DH06-2CX4 6AV6 371-1DH06-2DX4
WinCC / Web Load Balancing V7.0		V6.x to V6.2 SP3	
<ul style="list-style-type: none">• Load Balancing• Load Balancing Step Up	6AV6 371-1DH07-0JX0 6AV6 371-1DH07-0FJ0	<ul style="list-style-type: none">• For 3, 10, 25, 50 clients ¹⁾• For Web Navigator Diagnose Client• For Web Navigator Diagnose Server	6AV6 371-1DH06-2XX3 6AV6 371-1DH06-2EX3 6AV6 371-1DH06-2FX3
		V6.x ASIA to V6.2 SP3 ASIA	
		<ul style="list-style-type: none">• For 3, 10, 25, 50 clients ¹⁾	6AV6 371-1DH06-2XV3
		WinCC/Web Load Balancing V6.2 SP3	
		<ul style="list-style-type: none">• Web Load Balancing (2 licenses)• Web Load Balancing Step Up (2 licenses)	6AV6 371-1DH06-2JX0 6AV6 371-1DH06-2FJ0

¹⁾ Including upgrade for diagnostics client, diagnostics server, Web Load Balancing and Web Load Balancing Step Up.

A: Subject to export regulations: AL: N and ECCN: EAR99S

HMI Software

SCADA system SIMATIC WinCC

WinCC/Web Navigator

More information

System requirements – web server

For WinCC/Web Navigator V7.0

- Windows Vista (Business, Enterprise and Ultimate)
- Windows XP Professional Service Pack 2 (max. 3 clients)
- Windows Server 2003 SP2 and Windows Server R2 SP2
- Internet Explorer V6.0 SP1 or SP2 as well as Internet Explorer V7.0.
- Microsoft SQL Server 2005 SP2 (scope of supply of WinCC)
- WinCC basic system V7.0

For WinCC/Web Navigator V6.2 SP3

- Windows 2000 Professional Service Pack 4 (max. 3 clients)
- Windows XP Professional or Service Pack 2 (max. 3 clients)
- Windows Server 2003 SP2 or Windows Server 2003 R2 SP2
- Internet Explorer 6.0 SP1, SP2 or 7.0 (without multitabbing)
- Microsoft SQL Server 2005 SP1 (scope of supply of WinCC)
- WinCC basic system V6.2 SP3

System requirements – Web-Client

For WinCC/Web Navigator V7.0

- Windows Vista (Business, Enterprise and Ultimate)
- Additional operating systems include Microsoft Windows Vista 32bit HomeBasic and HomePremium
- Windows XP Professional Service Pack 2 (max. 3 clients)
- Windows Server 2003 SP2 and Windows Server R2 SP2
- Windows Server 2003 terminal services
- Windows XP embedded (only when using Panel PC 477)
- Internet Explorer V6.0 SP1 or SP2 as well as Internet Explorer V7.0

For WinCC/Web Navigator V6.2 SP3

- Windows XP Professional Service Pack 2
- Windows 2000 Professional Service Pack 4
- Windows Server 2003 SP2 or Windows Server 2003 R2 SP2
- Windows Server 2003 terminal services
- Windows XP embedded (only when using Panel PC 477)
- Internet Explorer 6.0 SP1, SP2 or 7.0 (without multitabbing)

WinCC Web Navigator V6.2 SP3 ASIA (requires SIMATIC WinCC V6.2 SP3 ASIA)

The functions included in this version differ from the standard version of WinCC/Web Navigator V6.2 SP3 as follows:

- This version does not allow an Asian Web Navigator client to access a non-Asian server and vice versa.

HMI Software

SCADA system SIMATIC WinCC

WinCC/Central Archive Server (CAS)

Overview

Central data management, reliable, high-performance archiving and central backup mechanisms form the basis of a Process Historian solution: Integration in the SCADA world, data interfaces for access to archived data and analysis functions are the component parts.

The option CAS was designed for this purpose and is used to export the archived data of all servers in the system to a computer and manage it. Integration of CAS in the WinCC world means that the data remains available for the WinCC clients as well as for the WinCC standard interfaces.

WinCC/CAS contains all licenses for the central archive server including 1500 archive tags. The number of archive tags can be increased to 120000 using Power Packs or further WinCC archives.

Benefits

- Central data management of all archived alarms and process values
- Integrated back-up system for the archive data
- Transparent access to the data from all WinCC clients and over the open interfaces
- Integrated Web viewer for analyzing data

Function

Both the process value archive and alarm log are created on the separate WinCC servers and transferred to CAS when individual database segments have been closed.

With "Store&Forward", when the network is interrupted between the WinCC server and CAS, data will be reliably transferred as soon as the network is operating again.

Data access is transparent for display and analysis and is still possible through the standard WinCC clients. For the clients, it is of no consequence whether the data are on the WinCC server or already on CAS. Data saved in CAS can also be viewed using the Web viewer included in the package.

The data of the distributed WinCC system can also be accessed through the familiar interfaces (OPC DA, OPC A&E, OPC HDA and Ole-DB) with the help of the Connectivity Pack or the Connectivity Station. In this manner, the data saved in CAS can be efficiently transferred to higher-level systems or used for the purposes of analysis.

Ordering data

Order No.

WinCC/CAS V7.0 SP1 basic packages

- WinCC/CAS V7.0 SP1
- WinCC/CAS V7.0 SP1 ASIA

6AV6 371-1DQ17-0XX0

6AV6 371-1DQ17-0XV0

WinCC/CAS upgrade

- V6.2 to V7.0 SP1
- V6.2 ASIA to V7.0 SP1 ASIA

6AV6 371-1DQ17-0XX3

6AV6 371-1DQ17-0XV3

WinCC/CAS V6.2 SP3 basic packages

- WinCC/CAS V6.2 SP3
- WinCC/CAS V6.2 SP3 ASIA

6AV6 371-1DQ16-2XX0

6AV6 371-1DQ16-2XV0

Note:

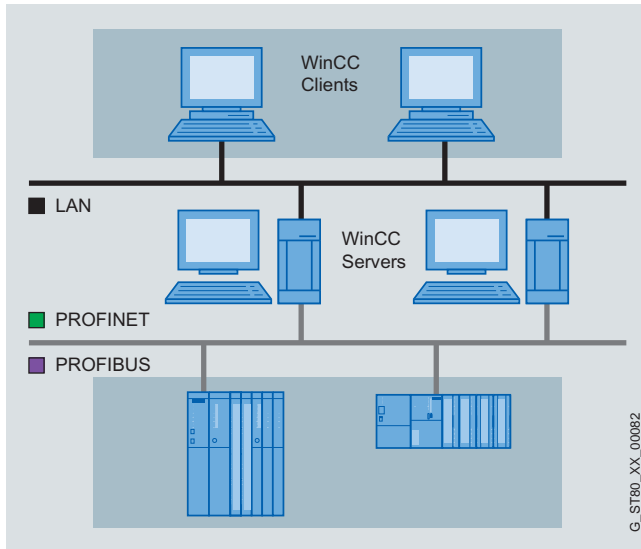
Standard Archive Power Packs (see WinCC ordering data) can also be used for WinCC/Central Archive Server (CAS)

HMI Software

SCADA system SIMATIC WinCC

WinCC/Redundancy

Overview



- 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

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

Order No.

WinCC/Redundancy

- for WinCC V7.0
- for WinCC V6.2

6AV6 371-1CF07-0AX0

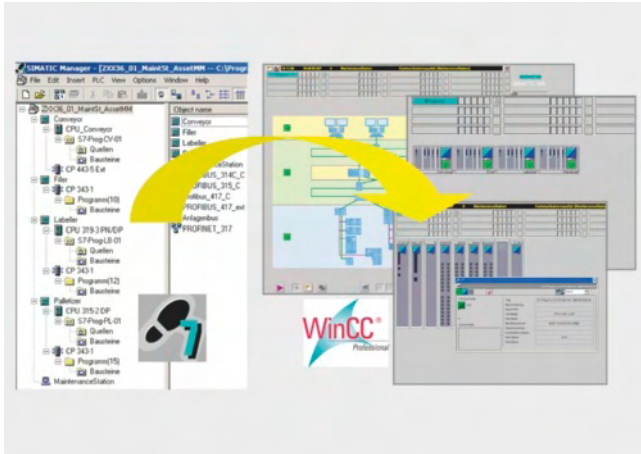
6AV6 371-1CF06-2AX0

HMI Software

SCADA system SIMATIC WinCC

SIMATIC Maintenance Station

Overview



System-integrated plant asset management system

- Automatic generation of a maintenance view in WinCC from the STEP 7 hardware configuration
- Plant-wide visualization of all automation components from the management level to the field level in ready linked, hierarchically arranged WinCC displays
- Mapping of central and distributed SIMATIC S7 components, PROFIBUS and PROFINET networks as well as associated bus nodes
- Ethernet network components and industrial PCs can be integrated through SIMATIC NET SNMP OPC Server
- Display of device status with group status generation in overview and detail displays
- The device statuses "Maintenance required" and "Maintenance request" are supported for status-based maintenance
- Provision of uniform faceplates showing detailed information for all components displayed
- Display of the device identification data (electronic rating plate)
- Integrated display of the status of the request

Benefits

- Reducing down times:
 - problems in the plant are detected sooner due to the uniform presentation and clear overview of all information that is important for maintenance.
- Avoiding downtimes:
 - support of condition-based maintenance.
- Reduced maintenance costs:
 - optimization of the flow of information between production and maintenance by submitting maintenance requests and presenting the status of requests.
- Transparency and traceability:
 - all procedures are based on messages and can therefore be archived and traced.
 - a comprehensive database is generated that can be analyzed with WinCC functions or external tools.
- Scalability:
 - support of WinCC single-user stations and client / server configurations.
 - the SIMATIC Maintenance Station can be added to an existing WinCC project.

- Consistency:
 - The maintenance view is generated from the control project and is consistent with it.
- Flexibility in selection of devices:
 - use of the PROFIBUS and PROFINET standards for device interfacing.
 - an additional proxy concept allows devices to be displayed that are not included in the STEP 7 hardware configuration or that do not support the standard diagnostics of PROFIBUS / PROFINET.

Application

The SIMATIC Maintenance Station is a tool for the diagnostics and maintenance of machines and plants.

This is an option package for STEP 7 V5.4 and WinCC V6.2 or V7.0 that generates a WinCC maintenance view for a STEP 7 project / multiproject.

Design

The SIMATIC Maintenance Station is available in various different packages:

- Basic package:
 - Contains all the tools needed to configure a Maintenance Station and a license for the display of 100 devices.
- Powerpacks:
 - For larger quantities, powerpacks are available with licenses for 100, 500 or 1000 devices. These can be added to the existing licenses and can be combined as required.

In this context, devices can be:

- AS systems
- Distributed devices (PROFIBUS / PROFINET)
- PCs
- Network components
- Asset proxies

Requirements for configuring a SIMATIC Maintenance Station

- STEP 7 license (V5.4 upwards)
- WinCC RC license (V6.2 or V7.0)
- The SIMATIC NET licenses required for the plant configuration

Requirements for operation of a SIMATIC Maintenance Station

- The WinCC licenses (V6.2 or V7.0) complying with the plant configuration

HMI Software

SCADA system SIMATIC WinCC

SIMATIC Maintenance Station

Function

Hierarchic visualization of plant components in WinCC

- Generation of a WinCC picture tree for hierarchic display of the plant components.
- Automatic creation and linking of displays, equipment symbols, status indicators, faceplates and the required variables.
- Presentation of the detailed data in faceplates with selectable views.
- Easy navigation in the plant using the WinCC Picture Tree Manager.
- Generated pictures can be enhanced using the WinCC Graphic Designer.
- Switchover between a WinCC SCADA project and the picture tree of the SIMATIC Maintenance Station can be configured using standard WinCC functions.

Display of the current status of the plant and its components

- Clearly understandable status displays through the use of uniform symbols.
- Display of no-fault status, fault, maintenance requirement and maintenance request
- Display of status of request for submitted repair requests.
- Display of order status.
- Display of the alarm status of the components.

Display of the identification data of the plant components

- Display of the identification data available for a device in the faceplate for the device.
- Automatic loading of the data available in the configuration into the maintenance station.
- Reading of the "Identification & Maintenance functions (I&M¹⁾)" in accordance with the PROFIBUS International specification.
- Export²⁾ of I&M data for all devices in the form of an XML file.

Displaying alarms

- Loading of system error messages from STEP 7. STEP 7 provides the messages in 5 languages³⁾, translation into additional languages is possible in STEP 7.
- Display of the most recent message in a message line.
- Presentation of the active / archived messages of the selected device in the faceplate.

Calling the STEP 7 hardware configuration

- The STEP 7 hardware configuration can be opened for a selected device using a button in the faceplate. STEP 7 and the project must be installed on the maintenance station for this purpose.

¹⁾ The Maintenance Station 2007 supports reading of I&M data for PROFIBUS devices with C1 channel access.

²⁾ The I&M data loaded from the configuration are exported.

³⁾ For Siemens components that are included in the STEP 7 hardware catalog. In the case of components that are integrated in STEP 7 using GSD files, the GSD files must support the relevant languages.

Technical specifications

Hardware requirements

System	Clock frequency	Main memory	Free hard disk space
Engineering station	2,8 GHz	1 GByte	15 GByte
Maintenance Station Stand-alone / WinCC-Station "Single-user Workstation"	2,8 GHz	1 GByte	15 GByte
Maintenance Station Server / WinCC Server	2,8 GHz	1 GByte	15 GByte
Maintenance Station Client / WinCC Client	2,8 GHz	512 MByte	3 GByte

Software requirements

System	Operating system
Engineering station "ES"	Windows XP Professional SP2 Windows Server 2003 SP1
Maintenance Station Stand-alone / WinCC-Station "Single-user Workstation"	Windows XP Professional SP2 Windows Server 2003 SP1
ES with Maintenance Station Stand-alone	Windows XP Professional SP2 Windows Server 2003 SP1
Maintenance Station Server / WinCC Server	Windows Server 2003 SP1
Maintenance Station Client / WinCC Client	Windows XP Professional SP2 Windows Server 2003 SP1

Technical specifications (continued)*Requirements for the integration of devices*

Type	Integration	Comment
SIMATIC S7 controllers / I/O		
• S7-300 ¹⁾	Yes	
• S7-400	Yes	
• Win AC	Yes	
Distributed devices		
• ET 200	Yes	PROFIBUS DP and PROFINET IO according to STEP 7 hardware catalog
• PROFIBUS standard slaves	Yes	Integration using a GSD file
• PROFINET standard devices	Yes	Integration using a GSD file
Network components		
Ethernet network components	Yes	SIMATIC NET SNMP OPC Server and MIB also required
PROFINET network components	Yes	
PROFIBUS diagnostic repeater	Yes	
Personal Computer		
PC / Industrial PC	Yes	SIMATIC NET SNMP OPC Server also required
Drives		
Drives with PROFIBUS connection	Yes	For integrating devices designed to the PROFIDRIVE profile, Drive ES SIMATIC (V5.4 SP1 or higher) is required
Drives with PROFINET connection	Yes	For integrating devices designed to the PROFIDRIVE profile, Drive ES SIMATIC (V5.4 SP1 or higher) is required
Accessory devices		
Devices not configured in STEP 7 Hardware Config	Yes	Integrated via function block (asset proxy)

¹⁾ With S7-300, PROFIBUS / PROFINET systems are supported if they are connected to the internal CPU interfaces

Ordering data

Order No.

SIMATIC Maintenance Station 2007

Software for implementation of a plant-oriented asset management system

Can be used with STEP 7 V5.4 or higher and WinCC V6.2

• Basic package with engineering software (Floating License) and Runtime License for 100 devices	G	6ES7 840-0WD00-0YA0
• Powerpack 100 Runtime License for 100 additional devices	G	6ES7 840-0WD10-0YD0
• Powerpack 500 Runtime License for 500 additional devices	G	6ES7 840-0WD20-0YD0
• Powerpack 1000 Runtime License for 1000 additional devices	G	6ES7 840-0WD30-0YD0
• Basic demo package 2007	G	6ES7 840-0WD00-0YA7

SIMATIC Maintenance Station 2009

Can be used with STEP 7 V5.4 or higher and WinCC V7

• Basic package with engineering software (Floating License) and Runtime License for 100 devices	G	6ES7 840-0WD01-0YA0
• Powerpack 100 Runtime License for 100 additional devices	G	6ES7 840-0WD11-0YD0
• Powerpack 500 Runtime License for 500 additional devices	G	6ES7 840-0WD21-0YD0
• Powerpack 1000 Runtime License for 1000 additional devices	G	6ES7 840-0WD31-0YD0
• Basic demo package 2009	G	6ES7 840-0WD01-0YA7
• Upgrade from SIMATIC Maintenance Station 2007 to SIMATIC Maintenance Station 2009	G	6ES7 840-0WD01-0YE0

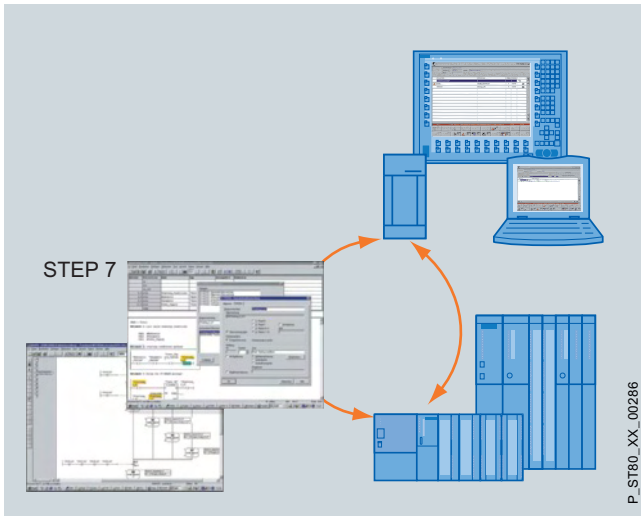
G: Subject to export regulations: AL: N and 5D992

HMI Software

SCADA system SIMATIC WinCC

WinCC/ProAgent

Overview



- Precise and rapid process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration for diagnostics functionality
- Reduces PLC memory and processor usage

Note:

For further details, see "SIMATIC ProAgent process diagnostics software"

Ordering data

Order No.

SIMATIC WinCC/ProAgent

- V7.0 SP1; for WinCC V7.0 SP1
- V6.0 SP4; for WinCC V7.0 and V6.2

6AV6 371-1DG07-0AX0

6AV6 371-1DG06-0EX0

SIMATIC WinCC/ProAgent Upgrade

- to SIMATIC WinCC/ProAgent V7.0 SP1
- to SIMATIC WinCC/ProAgent V6.0 SP4

6AV6 371-1DG07-0AX4

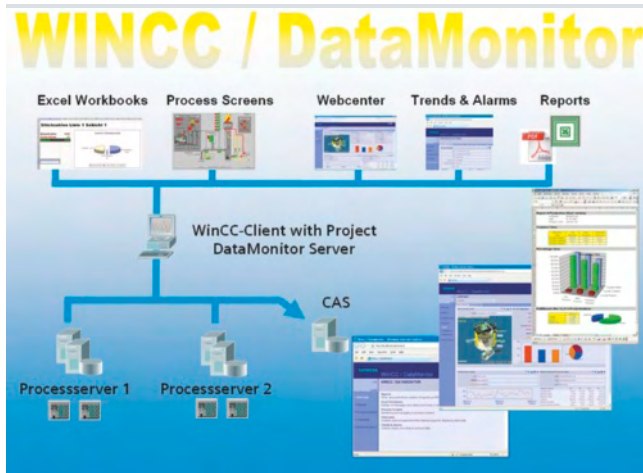
6AV6 371-1DG06-0EX4

HMI Software

SCADA system SIMATIC WinCC

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 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.

- DataMonitor is a suite of Internet-capable tools:
 - Process Builder - Tool for simple visualization and navigation through WinCC screens using Internet Explorer (view only)
 - 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
 - Web center - Individual configuration of Internet pages and summary of information within a portal in terms of WinCC applications
 - Trends and Alarms (tables and graphs) for WinCC Archive as well as for relocated data
- DataMonitor does not require manual client installation because it loads the required components from the web server. Additional administration is unnecessary as a result.
- 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.
- Pre-created Webcenter pages

Benefits

- Informal 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.
- 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 jpg format
 - Visualization of the WinCC process screens without installation download
- 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 e-mailed 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 swapped-out archives

4

HMI Software

SCADA system SIMATIC WinCC

WinCC/DataMonitor

Benefits (continued)

Innovations of V7.0

- DataMonitor
 - Supports Internet Explorer V 7.0 including tabbed browsing.
 - The Client is enabled for VISTA Home Basic and Home Premium.
 - User-friendly web interface for all DataMonitor functions.
- DataMonitor/ProcessScreens
 - The cursor for the "view only" mode can be selected as required.
- DataMonitor/Webcenter
 - 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
 - Representation of preprocessed process data
 - 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.
 - Automatic pre-assignment of the colors for representation in the value display tools.
 - Expansion of the display area in the Webcenter (Menu Hide function)
 - Delete layout, Webcenter pages
- DataMonitor/Reports
 - Excel reports created offline can be loaded onto the DataMonitor server and are thus made available to selected user groups or for automatic distribution.

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 supports a display function only (local access to the process sequence is prevented).
- 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.

Ordering data

Order No.

WinCC/DataMonitor V7.0 for WinCC V7.0, WinCC V7.0 SP1 and WinCC V7.0 SP1 ASIA

• 1 client license	6AV6 371-1DN07-0LX0
• 3 client licenses	6AV6 371-1DN07-0AX0
• 10 client licenses	6AV6 371-1DN07-0BX0
• 25 client licenses	6AV6 371-1DN07-0CX0
• 50 client licenses	6AV6 371-1DN07-0DX0

WinCC/DataMonitor Power Packs V7.0

• from 1 to 3 clients	6AV6 371-1DN07-0LA0
• from 3 to 10 clients	6AV6 371-1DN07-0AB0
• from 10 to 25 clients	6AV6 371-1DN07-0BC0
• from 25 to 50 clients	6AV6 371-1DN07-0CD0

WinCC/DataMonitor, Upgrade

• from V6.0 to V7.0	6AV6 371-1DN07-0XX4
• from V6.2 to V7.0	6AV6 371-1DN07-0XX3
• from V6.x to V6.2 SP3	6AV6 371-1DN06-2XX3
• from V6.x ASIA to V6.2 SP3 ASIA	6AV6 371-1DN06-2XV3

WinCC/DataMonitor V6.2 SP3 for WinCC V6.2 SP3

• 1 client license	6AV6 371-1DN06-2LX0
• 3 client licenses	6AV6 371-1DN06-2AX0
• 10 client licenses	6AV6 371-1DN06-2BX0
• 25 client licenses	6AV6 371-1DN06-2CX0
• 50 client licenses	6AV6 371-1DN06-2DX0

WinCC/DataMonitor V6.2 SP3 ASIA for WinCC V6.2 SP3 ASIA

• 1 client license	6AV6 371-1DN06-2LV0
• 3 client licenses	6AV6 371-1DN06-2AV0
• 10 client licenses	6AV6 371-1DN06-2BV0
• 25 client licenses	6AV6 371-1DN06-2CV0
• 50 client licenses	6AV6 371-1DN06-2DV0

WinCC/DataMonitor, Power Packs V6.2

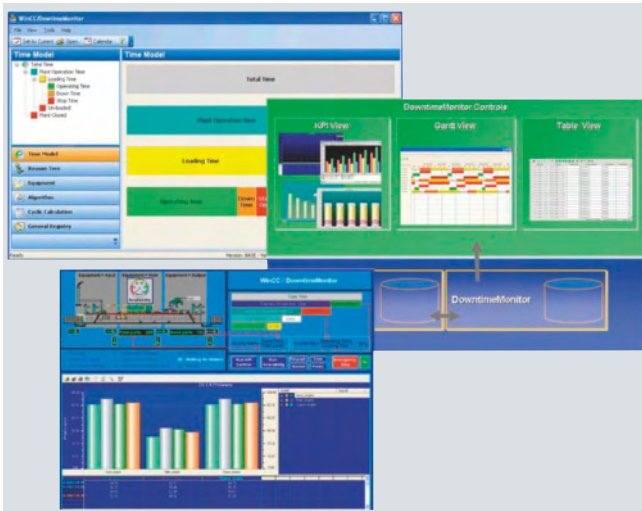
• from 1 to 3 clients	6AV6 371-1DN06-2LA0
• from 3 to 10 clients	6AV6 371-1DN06-2AB0
• from 10 to 25 clients	6AV6 371-1DN06-2BC0
• from 25 to 50 clients	6AV6 371-1DN06-2CD0

HMI Software

SCADA system SIMATIC WinCC

WinCC/DowntimeMonitor

Overview



The entry point to SIMATIC Plant Intelligence can be through options for the SIMATIC WinCC process visualization system. The WinCC/DowntimeMonitor is a component of WinCC Plant Intelligence and is used for monitoring the efficiency and performance of individual machine modules, subsystems and production lines. The combined elements to be monitored are designated as equipment.

Using the WinCC/DowntimeMonitor, the machine data management software, standstill time can be recorded and analyzed centrally in production. For individual devices, machines or entire production lines, the specific parameters can be determined this way. Integration into WinCC ensures complete transparency of all machine and plant data as a basis for optimizing the plant's productivity.

The process values are read directly from WinCC and are connected with the respective analysis function.

- The SIMATIC WinCC DowntimeMonitor can be installed on a WinCC single station, WinCC Server or WinCC Client with project, and consists of an Engineering Client as well as a Runtime User interface.
- All engineering operations are performed using a graphic Engineering Client. The Engineering Client is called up from the WinCC Explorer.
- SIMATIC WinCC DowntimeMonitor provides ActiveX control elements. These are used for displaying the determined parameters and the progress of the various status over a certain time period. These controls are integrated in WinCC process images for presenting results.
- The recorded data is stored in an online database set and can be moved to an offline database set.
- The basic package consists of the Engineering and Runtime software and 5 licensed equipment units. Other licenses are available for up to 25, up to 50, 100 and up to 200 equipment units.

Benefits

- Recording failure times, localizing causes and reasons for failure times, and monitoring of equipment efficiency.
- Weak-point analysis in production processes and recording of undesirable process activities.
- Basis for decision making based on performance indicators.
- Identification of the events that lead to cost-intensive failures.
- Entry point for an extended downtime analysis with upgrade options in the MES software SIMATIC IT.
- Identification of speed and quality losses.
- Complete transparency for all machines as basis for optimizing the plant's productivity. Faults and bottlenecks are prevented to increase availability.
- Derivation of specific parameters (KPI - Key Performance Indicators).
- Integration of respective display instruments (controls) in WinCC process images.
- Can be utilized for individual machines or even complete production plants.
- Distribution of evaluations to various people over the web.

Function

- Creation of a time model by defining various time categories as a basis for the KPI calculation for elements (equipment) to be evaluated.
- Creation of equipment, as central components for the evaluation by dividing the system into individual groups.
- Creation of a Reason Tree for detailed display of reasons for downtimes.
- Allocation of the system status in the controller to the time categories and Reason Trees defined in the DowntimeMonitor.
- Storing the system status for calculating and presenting Key Performance Indicators.
- The following pre-defined Key Performance Indicators are available: Availability, change-over, cycle time, failure time loss, duration, effective performance, maintenance, Mean Time Between Assist (MTBA), Mean Time Between Failures (MTBF), Mean Time To Assists (MTTA), Mean Time To Repair (MTTR), failure time frequency, Overall Equipment Effectiveness (OEE), performance rate, production duration, quality rate, speed loss, Total Efficient Equipment Performance (TEEP), utilization.
- Integration of three new controls Gantt View, KPI View, and Table View in WinCC for the display of results for one or more equipment units.
- The WinCC DowntimeMonitor Gantt View presents the equipment status development within a certain time period.
- The WinCC DowntimeMonitor KPI View shows the distribution of failure times and the Key Performance Indicators in a trend, bar, segmented bar charts or Pareto chart using historical data.
- The WinCC DowntimeMonitor Table View shows raw data for failure times and analyzes it in the selected time period. The user can utilize these control elements to enter, change, distribute or combine and comment on failure times manually.
- The controls can be displayed on intranet or Internet using the option WinCC/Web Navigator.

HMI Software

SCADA system SIMATIC WinCC

WinCC/DowntimeMonitor

Ordering data

Order No.

WinCC/DowntimeMonitor V7.0 SP1 for WinCC V7.0 SP1 and WinCC V7.0 SP1 ASIA

• 5 equipment units	6AV6 372-1DB07-0BX0
• 25 equipment units	6AV6 372-1DB07-0DX0
• 50 equipment units	6AV6 372-1DB07-0FX0
• 100 equipment units	6AV6 372-1DB07-0HX0
• 200 equipment units	6AV6 372-1DB07-0KX0

WinCC/DowntimeMonitor Powerpacks V7.0

• from 5 to 25 equipment units	6AV6 372-1DB07-0BD0
• from 25 to 50 equipment units	6AV6 372-1DB07-0DF0
• from 50 to 100 equipment units	6AV6 372-1DB07-0FH0
• from 100 to 200 equipment units	6AV6 372-1DB07-0HX0

WinCC/DowntimeMonitor upgrade

• V1.x to V7.0 SP1	6AV6 372-1DB07-0XX4
--------------------	----------------------------

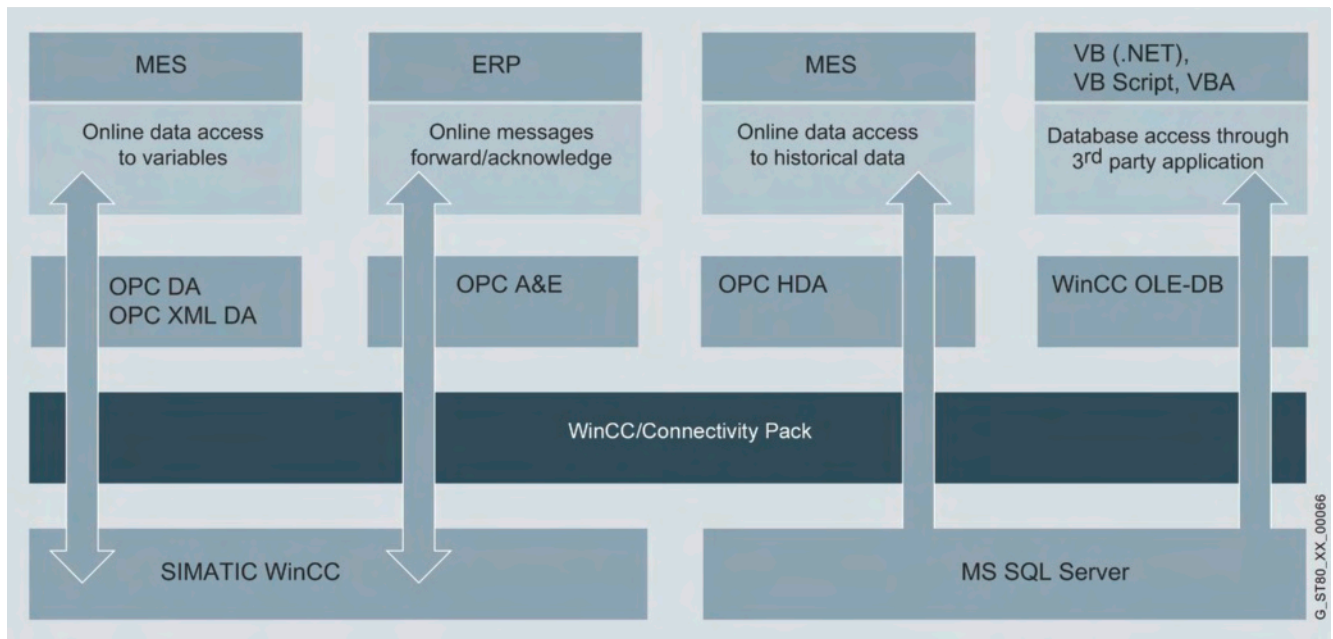
WinCC/DowntimeMonitor V1.0 SP1 for WinCC V6.2 SP2 and WinCC V6.2 SP2 ASIA

• 5 equipment units	6AV6 372-1DB06-2BX0
• 25 equipment units	6AV6 372-1DB06-2DX0
• 50 equipment units	6AV6 372-1DB06-2FX0
• 100 equipment units	6AV6 372-1DB06-2HX0
• 200 equipment units	6AV6 372-1DB06-2KX0

WinCC/DowntimeMonitor Powerpacks V1.0

• from 5 to 25 equipment units	6AV6 372-1DB06-2BD0
• from 25 to 50 equipment units	6AV6 372-1DB06-2DF0
• from 50 to 100 equipment units	6AV6 372-1DB06-2FH0
• from 100 to 200 equipment units	6AV6 372-1DB06-2HX0

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 1.01, OPC HDA 1.20 (Historical Data Access), OPC A&E 1.10 (Alarm & Events) and a WinCC OLE-DB interface which even allows remote computers without WinCC to access WinCC archive and alarm data.
- The function of the OPC servers (XML DA, HDA and A&E) 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. OPC HDA servers also support the generation of a variety of aggregate functions on the server itself (e.g. standard deviation, variance, mean values, integral values, etc.), thereby helping to relieve the load on the network, as only preprocessed data are transmitted.

OPC A&E servers are used to forward WinCC messages (along with all associated process values) to any client at production or enterprise control level. Filter mechanisms and subscriptions ensure that only selected modified data are transmitted. Acknowledgement is of course also supported.

The WinCC OPC XML DA server makes cross-platform communication between Windows and non-Windows systems possible, even via the Internet. This enables read and write WinCC online values (external and internal WinCC variables) to be exchanged with non-Siemens systems.

WinCC OLE-DB makes standardized and user-friendly access to WinCC archive data possible (MS SQL Server 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.

HMI Software

SCADA system SIMATIC WinCC

WinCC/Connectivity Pack & WinCC Connectivity Station

Function (continued)

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 Connec- tivity 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

The Connectivity Station is planned over NCM PC Manager or SIMATIC Manager. In Version 7, the Connectivity Station does not run as service.

Ordering data

Order No.

WinCC/Connectivity Pack & WinCC/Connectivity Station

V7.0; for WinCC V7.0, WinCC V7.0 SP1 and WinCC V7.0 SP1 ASIA

Basic packages

- WinCC/Connectivity Pack V7.0 ¹⁾
- WinCC/Connectivity Station V7.0 ¹⁾

6AV6 371-1DR07-0AX0

6AV6 371-1DR17-0AX0

V6.2 SP3; for WinCC V6.2 SP3 and WinCC V6.2 SP3 ASIA

Basic packages

- WinCC/Connectivity Pack V6.2 SP3
- WinCC/Connectivity Station V6.2 SP3
- WinCC/Connectivity Pack V6.2 SP3 ASIA
- WinCC/Connectivity Station V6.2 SP3 ASIA

6AV6 371-1DR06-2AX0

6AV6 371-1DR16-2AX0

6AV6 371-1DR06-2AV0

6AV6 371-1DR16-2AV0

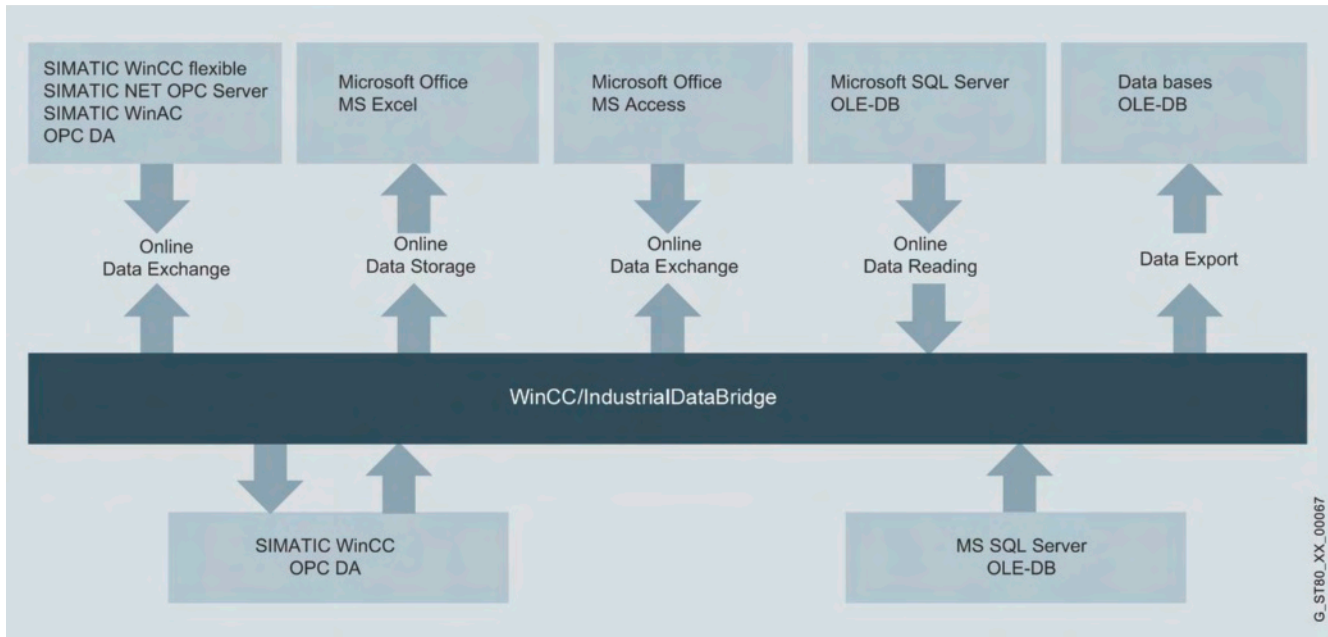
Upgrade¹⁾

- WinCC/Connectivity Pack V6.x -> V6.2 SP3

6AV6 371-1DR06-2AX3

¹⁾ Upgrades from V6.x to V7.x are included in the WinCC V7.x upgrades

Overview



- The WinCC/IndustrialDataBridge option uses standard interfaces 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.
- For example, SIMATIC WinCC with its OPC DA server interface is the data source and an external database is the data destination.
- In addition to access to WinCC variables, access to messages, process values and user archive data (in the WinCC database) is also supported.
- As a stand-alone application with its standard interfaces, such as OPC DA and OLE-DB, WinCC/IndustrialDataBridge can be also be used in conjunction with SIMATIC NET and SIMATIC WinAC, for example.
- Option from WinCC V6
- For versions below V7.0
A WinCC Client Access license is required for a computer without installed license for the WinCC basic system or a WinCC option and to which the WinCC/IndustrialDataBridge option has read / write access. (see WinCC/Client Access License for more information).

Benefits

- Connecting the automation level with the IT world
- Integration of systems from different manufacturers via a host of standard interfaces (including OPC, OLE-DB, Office formats)
- Simple configuration with standard software without programming and thus at low cost
- High-performance data transfer between several systems simultaneously

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.

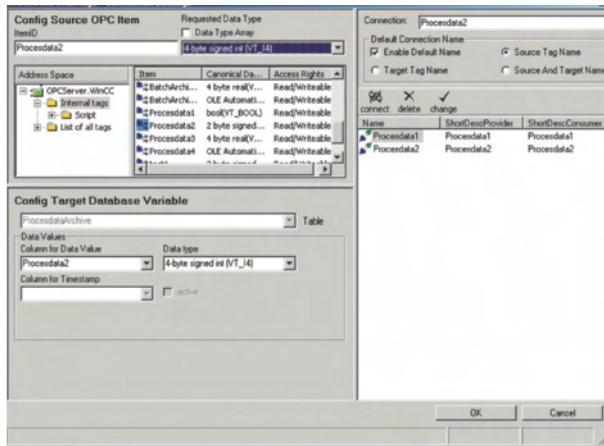
The connections between data source and data destination are created in the configuration environment. In the runtime environment, the IndustrialDataBridge establishes the connection autonomously and transfers the data of the linked variables.

HMI Software

SCADA system SIMATIC WinCC

WinCC/IndustrialDataBridge

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.

Interfaces:

The table below shows the possible data sources and destinations:

Provider (data sources)	Consumer (data destinations)
<ul style="list-style-type: none"> MS Access MS SQL server MySQL ODBC (new) Oracle 8i, 9i and 10i OPC Data Access V2 Send / Receive WinAC Send/Receive WinCC OLE DB WinCC UserArchive 	<ul style="list-style-type: none"> CSV, TXT MS Access MS SQL server MySQL ODBC (new) Oracle 8i, 9i and 10i MS Excel OPC Data Access Server (internal) OPC Data Access V2 Send / Receive WinAC Send/Receive WinCC UserArchive

4

Ordering data

Order No.

WinCC/IndustrialDataBridge

V7.0 SP1, option for WinCC V7.0 SP1

for data exchange with databases and OPC servers, language versions: German / English

• with 128 tags	6AV6 371-1DX07-0AX0
• with 512 tags	6AV6 371-1DX07-0BX0
• with 2 048 tags	6AV6 371-1DX07-0CX0
• with 10 000 tags	6AV6 371-1DX07-0DX0

WinCC/IndustrialDataBridge Powerpack V7.0

• from 128 to 512 tags	6AV6 371-1DX07-0AB0
• from 512 to 2048 tags	6AV6 371-1DX07-0BC0
• from 2 048 to 10 000 tags	6AV6 371-1DX07-0CD0

WinCC/IndustrialDataBridge Upgrade

from V6.1 to V7.0 SP1

6AV6 371-1DX07-0XX4

WinCC/IndustrialDataBridge

V6.1, option for WinCC V6. 2

for data exchange with databases and OPC servers, language versions: German / English

• with 128 tags	6AV6 371-1DX06-1AX0
• with 512 tags	6AV6 371-1DX06-1BX0
• with 2 048 tags	6AV6 371-1DX06-1CX0
• with 10 000 tags	6AV6 371-1DX06-1DX0

WinCC/IndustrialDataBridge Powerpack V6.1

• from 128 to 512 Tags	6AV6 371-1DX06-1AB0
• from 128 to 2 048 Tags	6AV6 371-1DX06-1AC0
• from 128 to 10 000 Tags	6AV6 371-1DX06-1AD0
• from 512 to 2 048 Tags	6AV6 371-1DX06-1BC0
• from 512 to 10 000 Tags	6AV6 371-1DX06-1BD0
• from 2 048 to 10 000 Tags	6AV6 371-1DX06-1CD0

HMI Software

SCADA system SIMATIC WinCC

WinCC/Client Access License (CAL)

Overview

- For a system on which WinCC (WinCC basic system or WinCC Option) has not been installed, WinCC data can be accessed through the interfaces of the options WinCC/Connectivity Pack, WinCC/Connectivity Station or WinCC/IndustrialDataBridge.
- For any number of systems (multi-processor systems) without WinCC (WinCC basic system or WinCC Option), WinCC data can be accessed through the interfaces of the options WinCC/Connectivity Pack, WinCC/Connectivity Station or WinCC/IndustrialDataBridge with one WinCC/Client Access License (CAL) per processor. One CAL must be purchased for each processor of the WinCC system.
- Option only for WinCC V6

Function

With the integrated MSSQL Server, WinCC V6 offers an excellent basis for integrated data management and diverse methods of integration into modern IT structures.

Access to the data available in WinCC requires the relevant license on all accessing computers - the WinCC Client Access License.

The WinCC/CAL is installed on these accessing systems along with a WinCC basic package or a WinCC option.

On all other systems, a WinCC/CAL must be obtained separately. It allows users to further process WinCC data with their own tools and make them available to other users and applications. Use of the "Per Processor License" allows access by any number of computers to this WinCC system.

Ordering data

Order No.

WinCC/Client Access License
for access to historic WinCC data
by client

6AV6 371-1ES06-0AX0

**WinCC/Client Access License
per Prozessor**
for access to historic WinCC data;
any number of clients per
processor

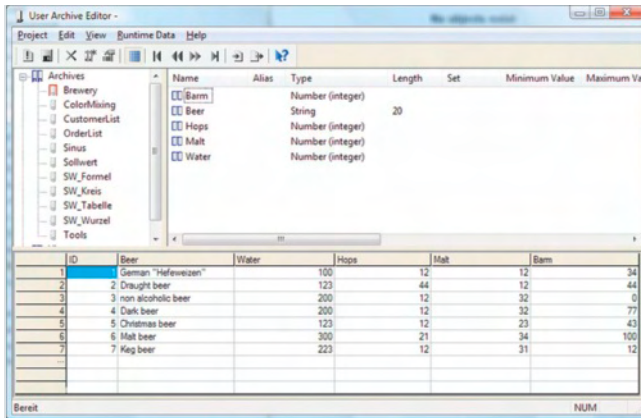
6AV6 371-1ES06-0CX0

HMI Software

SCADA system SIMATIC WinCC

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 re-set, 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

Order No.

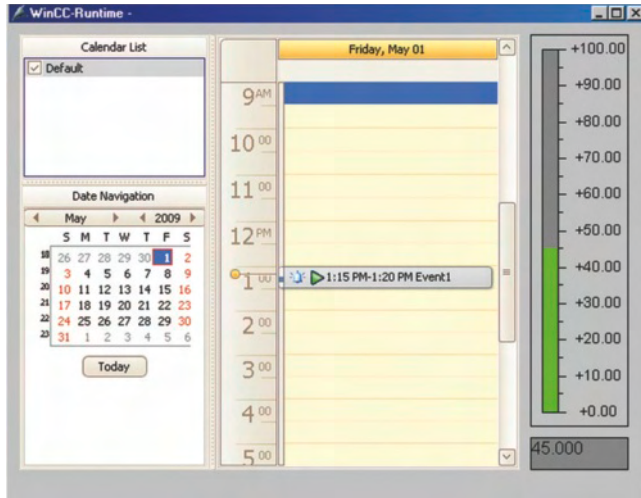
WinCC/User Archives

- for WinCC V7.0
- for WinCC V6.2

6AV6 371-1CB07-0AX0

6AV6 371-1CB06-2AX0

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

Order No.

WinCC/Calendar Scheduler

- for WinCC V7.0 SP1

A **6AV6 372-1DC07-0AX0**

A: Subject to export regulations: AL: N and ECCN: EAR99S

HMI Software

SCADA system SIMATIC WinCC

SIMATIC BATCH for WinCC

Overview

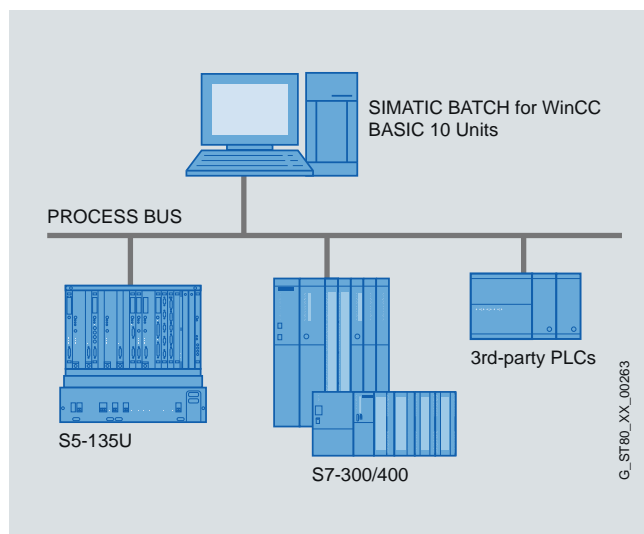
- WinCC in connection with the SIMATIC BATCH product range offers a solution for the implementation of batch processes in accordance with ISA S88.
- SIMATIC BATCH (for WinCC) is of particular interest where different PLCs such as S7-400 / 300, S5 or non-Siemens PLCs are to be used in a BATCH system.
- SIMATIC BATCH (for WinCC) is offered as a bundle that includes the SIMATIC BATCH components as well as the WinCC components.
- SIMATIC BATCH (for WinCC) contains the software for SIMATIC BATCH including options, as well as for SIMATIC WinCC including options. These products are released for any combinations.
 - SIMATIC BATCH (for WinCC) includes the licenses SIMATIC BATCH Server (10 units ¹⁾, SIMATIC BATCH BATCH CC, and SIMATIC BATCH Recipe.
 - All other SIMATIC BATCH and SIMATIC WinCC products require the purchase of the relevant license or licenses.

¹⁾ Units are the number of subsystems that can be operated with this license.

Current versions:

- SIMATIC BATCH for WinCC V7.1 SP1
 - WinCC V7.0 SP1
 - SIMATIC BATCH V7.1 SP1

Configuration



SIMATIC BATCH for WinCC

Benefits

- SIMATIC BATCH (for WinCC) supports the user in the implementation of batch processes in accordance with ISA S88
- Modular architecture with flexible scalability and optimal adaptation to plant size and individual requirements, especially with regard to the use of PLCs such as SIMATIC S7-400 / 300, SIMATIC S5 and non-Siemens devices
- High availability via redundant system configurations provides protection against loss of batch data
- Cross-subsystem recipes with significant simplification of recipe management
- Hierarchical recipes in accordance with ISA S88.01 for the creation of recipes oriented toward process engineering

- Storage, archiving and extensive logging of batch data in XML format
- Formula support
- Validation in accordance with 21 CFR Part 11 is significantly simplified by functions such as Audit Trail (change log), versioning of recipes, recipe operations and formulas, electronic signature and access protection.

Application

SIMATIC BATCH (for WinCC) has been designed for:

- Batch processes in the WinCC environment in accordance with ISA S88
- Users of S7-300, S7-400, S5 or non-Siemens controllers
- Users of STEP 5 / STEP 7

Design

SIMATIC BATCH (for WinCC) ships with the following 3 software components and licenses:

- SIMATIC BATCH Server for 10 units
- SIMATIC BATCH Recipe system (Floating License)
- SIMATIC BATCH CC (Floating License)

The following SIMATIC BATCH options can be used to expand or configure a plant or the relevant licenses can be purchased:

- SIMATIC BATCH Recipe system (Floating License)
- SIMATIC BATCH Planning (Floating License)
- SIMATIC BATCH CC (Floating License)
- SIMATIC BATCH Library
- SIMATIC BATCH Hierarchical Recipe
- SIMATIC BATCH Formula
- SIMATIC BATCH Power Packs (20, 40, 100, unlimited)

The following basic products and SIMATIC WinCC options can be used to expand or configure a plant or the relevant licenses can be purchased.

- SIMATIC WinCC RT/RC (incl. Power Packs)
- SIMATIC WinCC/Server
- SIMATIC WinCC/Redundancy
- SIMATIC WinCC/Archives (incl. Power Packs)
- SIMATIC Logon

All previously listed software components including options of SIMATIC BATCH and SIMATIC WinCC are supplied with the product SIMATIC BATCH (for WinCC). In addition, supplementary components for configuring the interfaces between WinCC and SIMATIC BATCH are included in the basic package. The use and compatibility of WinCC and SIMATIC BATCH is only guaranteed for the software versions that come with SIMATIC BATCH (for WinCC).

Function

The functions of SIMATIC BATCH (for WinCC) are based on the SIMATIC BATCH range of products. SIMATIC BATCH (for WinCC) includes the following licenses or functions:

- SIMATIC BATCH Server for 10 units
- SIMATIC BATCH CC (BATCH Control Center)
- SIMATIC BATCH Recipe System (recipe editor)

It can be used to run a SIMATIC BATCH project with 10 sub-systems on a single-user station or a client / server combination (Batch Client and Batch Server).

The capacity of the Server Basic Packages with 10 units can be expanded to 20, 40, 100 or unlimited units using SIMATIC BATCH Power Packs.

SIMATIC BATCH CC offers powerful functions for the following tasks:

- Reading in and updating the plant data of the basic automation
- Defining user privileges for all functions, for clients or subsystems
- Definition of material names and codes
- Managing master recipes and starting the recipe editor
- Management of libraries with recipe elements (library operations)
- Editing of formula categories and management of associated formulas (parameter sets)
- Creation of batches with master recipes
- Starting of batch processing and controlling of batches
- Monitoring and diagnostics of batch processing
- Recording and archiving of recipes and batch data

The hierarchical recipe structure is mapped on the plant module as follows:

- Recipe procedure for controlling the process or the production in a plant
- Partial recipe procedure for controlling a process step in a plant unit
- Recipe operation / function to implement the process engineering task / function in a technical facility

SIMATIC BATCH *Separation, Procedures* and *Formulas* offers powerful functions for the following tasks:

The flexibility achieved by recipes which are independent of plant units can be increased even further if the procedure and parameter sets (formulas) are separated from one another.

Various master recipes can be created by linking several formulas using a recipe procedure. This enables central modification of procedures. The formula structure is determined by the formula category defined by the user.

Compatibility

In respect of compatibility, please note that only the SIMATIC WinCC and SIMATIC BATCH versions included in the product package are compatible with each other. Only predecessor products of the product bundle SIMATIC BATCH (for WinCC) are upward compatible, not single components of the product range SIMATIC WinCC and SIMATIC BATCH.

Integration

A detailed description of how to integrate SIMATIC Batch in WinCC appears in the interface description "SIMATIC BATCH Configuration Guide".

Ordering data

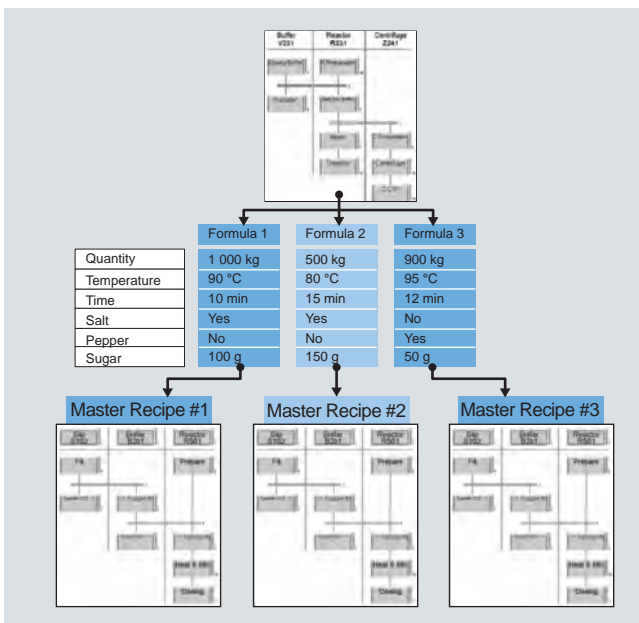
Order No.

SIMATIC BATCH for WinCC

6ES7 657-1SA17-0YA0

Software bundle for the creation of recipes and control of batch processes in accordance with ISA S88 based on SIMATIC BATCH.

- SIMATIC BATCH Server 10 units
- SIMATIC BATCH Recipe system (Floating License)
- SIMATIC BATCH CC (Floating License)

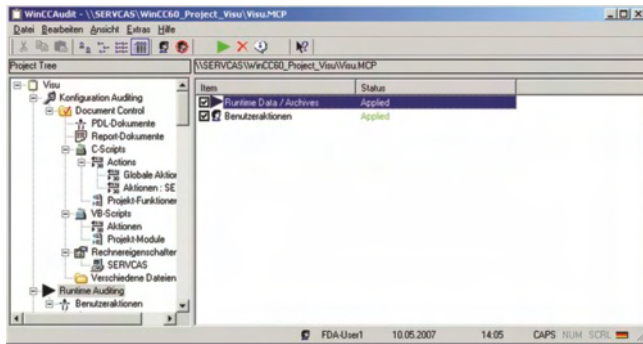


HMI Software

SCADA system SIMATIC WinCC

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.

HMI Software

SCADA system SIMATIC WinCC

WinCC/ChangeControl & WinCC/Audit

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

Order No.

WinCC/ChangeControl

For the configuration of the audit trail incl. RT

- | Version | Order No. |
|---|------------------------------|
| • V7.0, for WinCC V7.0 and WinCC V7.0 SP1 | A 6AV6 371-1DV27-0AX0 |
| • V6.2, for WinCC V6.2 and WinCC V6.2 SP2 / SP3 | A 6AV6 371-1DV26-2AX0 |

WinCC/Audit RC

For the configuration of the audit trail incl. RT

- | Version | Order No. |
|---|------------------------------|
| • V7.0, for WinCC V7.0 and WinCC V7.0 SP1 | A 6AV6 371-1DV17-0AX0 |
| • V6.2, for WinCC V6.2 and WinCC V6.2 SP2 / SP3 | A 6AV6 371-1DV16-2AX0 |

WinCC/Audit RT

Creation of the audit trail in RT

- | Version | Order No. |
|---|------------------------------|
| • V7.0, for WinCC V7.0 and WinCC V7.0 SP1 | A 6AV6 371-1DV07-0AX0 |
| • V6.2, for WinCC V6.2 and WinCC V6.2 SP2 / SP3 | A 6AV6 371-1DV06-2AX0 |

Upgrades

V6.x to V7.0

- | Version | Order No. |
|---|------------------------------|
| • for WinCC/Audit RT | A 6AV6 371-1DV07-0BX4 |
| • for WinCC/Audit RC or WinCC/ChangeControl | A 6AV6 371-1DV17-0BX4 |

V6.x to V6.2

- | Version | Order No. |
|---|------------------------------|
| • for WinCC/Audit RC and WinCC/Audit RT | A 6AV6 371-1DV06-2AX3 |

A: Subject to export regulations: AL: N and ECCN: EAR99S

More information

Information about FDA can be found in a White Paper: Declaration of conformity of SIMATIC WinCC to FDA21 CFR Part 11.

Additional information is available in the Internet under:

http://www.siemens.com/automation/hmi/html_00/products/software/wincc/fda01.htm

HMI Software

SCADA system SIMATIC WinCC

SIMATIC Logon

Overview



- *SIMATIC Logon (SL)* for WinCC is a software option package supporting the central administration of all WinCC users on a plant-wide basis. The central user management with SL uses the Windows mechanisms and is to be installed on all participating WinCC stations. The user management actions such as logging in and out are automatically supplied in the audit trail of WinCC/Audit and WinCC/ChangeControl by SL.
- 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

- Central, system-wide user management
- Conforms with the requirements of the Food and Drug Administration (FDA) for the pharmaceuticals and food processing industry

Design

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

Function

SIMATIC Logon

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

In the case of the SIMATIC Logon, user administration is integrated into the security system and user administration of MS Windows.

To meet in particular the Food and Drug Administration (FDA) requirements for the pharmaceuticals and food processing industry, all user and administrator actions, such as log in, log out, password changes, incorrect password inputs, and creating and deleting users, are recorded with timestamp in a secure database or are available in the audit trail of WinCC/ChangeControl or WinCC/Audit.

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

Ordering data

Order No.

SIMATIC Logon V1.4-SP1

6ES7 658-7BX41-2YA0

Central user management for WinCC V6.2 and WinCC V7.0
Runtime license for an operator station ¹⁾

¹⁾ SIMATIC Logon V1.4 included in scope of supply of WinCC V7.0

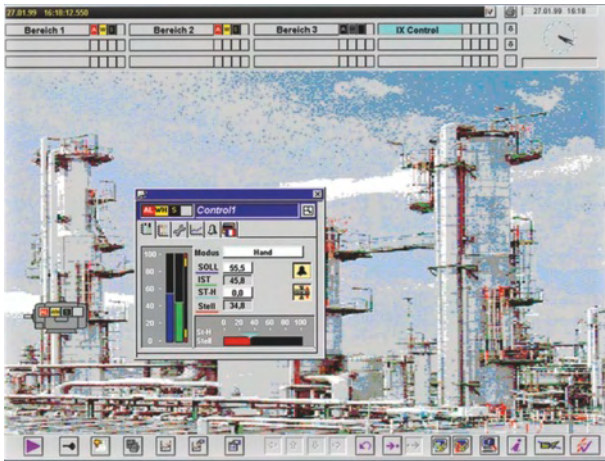
More information

Information on FDA can be found in a White Paper:
Declaration of conformity of SIMATIC WinCC for FDA21 CFR Part 11.

Additional information is available in the Internet under:

http://www.siemens.com/automation/hmi/html_00/products/software/wincc/fda01.htm

Overview



- WinCC/IndustrialX makes it easier to develop a solution for a visualization task by allowing customized objects to be standardized
- A license must be installed on each development computer (current version of Visual Basic must be installed on the development computer)

Benefits

- Easy creation using configuration wizards
- Quick entry due to the use of standards: ActiveX technology, creating with the aid of Visual Basic
- Central creating and changing of object displays of the same type (typing) saves time and money
- Configuring of intelligent, sector-specific objects (graphic illustration and logical processing) with know-how protection
- Can be used in versatile ways: in WinCC screens and other Windows applications (e.g. Internet Explorer, Excel)

Innovations of V7.0

- Support of Visual Studio 2005 (.NET)

Application

IndustrialX controls create standardized presentations and allow flexible customization to the requirements of a wide range of applications, e.g. applications in the chemical, glass or paper manufacturing industries.

Function

- Configuring intelligent, industry-specific objects (graphic illustration and logical processing) with know-how protection
- Automatic object supply with WinCC data structures (templates)
- Creation of Web Navigator-compatible, customer-specific ActiveX components with active process data supply
- Integration into WinCC via structure names

Ordering data

Order No.

WinCC/IndustrialX

- V7.0; for WinCC V7.0 and V6.x

6AV6 371-1EL17-0AX0

HMI Software

SCADA system SIMATIC WinCC

WinCC/Open Development Kit (ODK)

Overview

WinCC/ODK (Open Development Kit)

- WinCC option for utilization of the exposed programming interfaces that can be used to access data and functions of the WinCC configuration and WinCC runtime system
- The interfaces are designed as "C-Application Programming Interface" (C-API)
- 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

Innovations of V7.0

- Support for Visual Studio 2005 (.NET)

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

Order No.

WinCC/ODK

- V7.0; for WinCC V7.0 and V6.x

6AV6 371-1CC07-0AX0

WinCC/ODK upgrade

- to V7.0

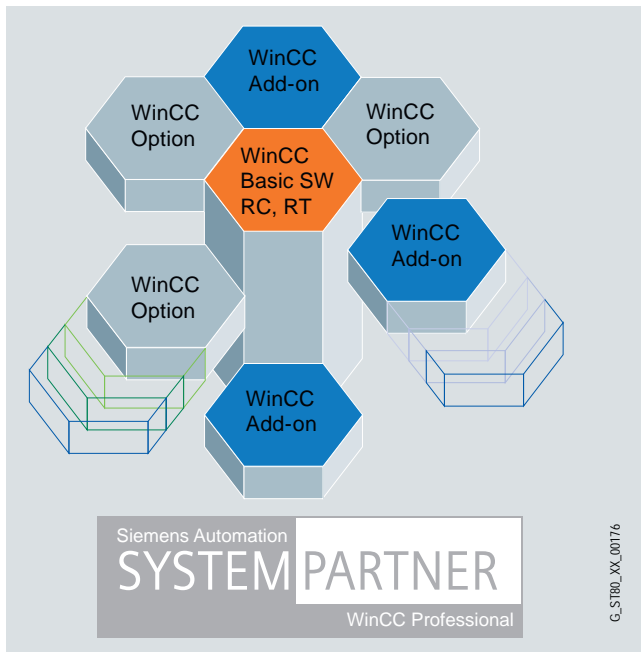
6AV6 371-1CC07-0AX4

HMI Software

SCADA system SIMATIC WinCC

WinCC add-ons and partner management

Overview



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 specific sectors and technologies and represent interesting expansions for WinCC.

WinCC Premium Add-ons are not IA (Siemens Industry Automation) 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* for importing WinCC flexible archives into the WinCC 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 flexible into the SIMATIC IT Historian.
- *WinCC OPC Alarm & Event Client* is used to transfer alarms and messages from any OPC A&E server complying with the specification to the WinCC signaling system.
- *TOP Server/TOP Server UCON* expands OPC-based the connection capability for WinCC & WinCC flexible Advanced (PC based runtime)

Premium Add-on for process management:

- *PM CONTROL system software* is a recipe system for user-friendly generation and modification 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:

- *B.Data energy management system* is a modular and cross-sector energy management and plant information system for industrial power companies.
- *SIMATIC WinCC powerrate* provides the basis for continuous reduction of the power consumption, and thus also of the energy costs.
- *Library SENTRON PAC3200 for SIMATIC WinCC* permits seamless integration of the SENTRON PAC3200 multifunctional measuring instrument in WinCC.
- *Sm@rtlib HVAC function library* offers control and component blocks for heating, ventilation and air-conditioning systems.
- *ACRON for WinCC/PCS 7* 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.

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:

- *Management System Alarm Control Center* for transmitting fault 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 system software* for analysis of fault and operating messages, as well as process values.
- *ShutDown WinCC system software* terminates the WinCC Runtime software in the event of a power failure, minimizes plant downtimes, and increases data integrity.
- *System diagnostics instrumentation and control* for reading out the status of the instrumentation and control.

HMI Software

SCADA system SIMATIC WinCC

WinCC add-ons and partner management

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, we implement and support the Siemens-internal WinCC Competence Centers and the WinCC Professionals external system integrators on the basis of WinCC customer- and industry-specific and economic solutions.

WinCC Competence Center

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

Stuttgart

Emphasis on production technology

- Solutions for maintenance management
- Web-based solutions with WinCC

Erlangen

Emphasis on process automation

- MES connectivity
- Plant information, maintenance, batch and quality management
- Web-based solutions with WinCC
- Customized database interfacing

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, Excel Workbook, and all WinCC topics as required by the customer (the latter with lead time)

Barcelona

Emphasis on production automation and logistics

- Solutions for integration of WinCC into MES and ERP
- Development of WinCC add-ons

Nice

Solutions in the food and beverages sector, pharmaceuticals and process engineering

- Batch processes
- Migration of SIMATIC TI, Teleperm M and PCS systems to WinCC
- Customized expansions
- FDA support
- Migration of TI systems

More information

WinCC Competence Center

Additional information is available in the Internet under:

<http://www.siemens.com/winCC/competencecenter>

Siemens Solution Partner Automation

Additional information is available in the Internet under:

<http://www.siemens.com/automation/solutionpartner>

WinCC Premium Add-on

Additional information is available in the Internet under:

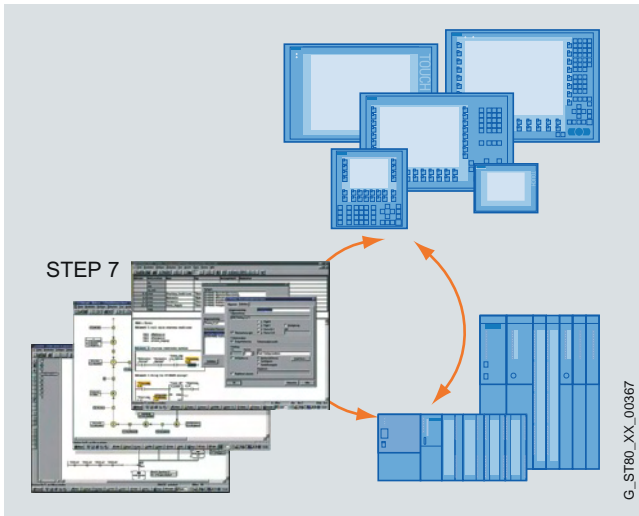
<http://www.siemens.com/winCC/addons>

SIMATIC ProAgent process diagnosis software

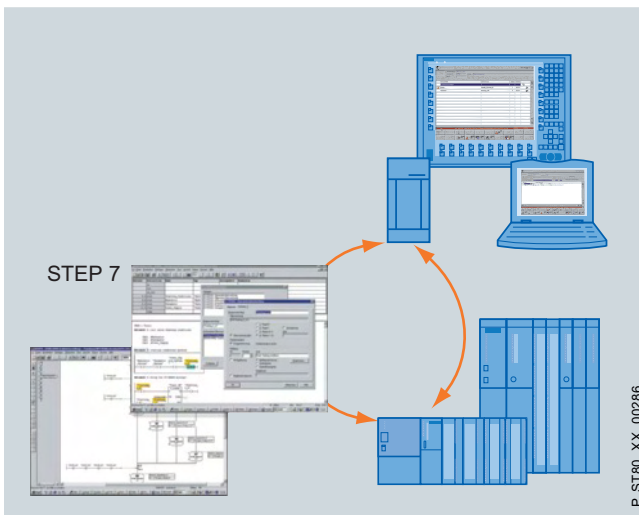
SIMATIC ProAgent process diagnosis software

Overview

- Process error diagnostics software for quick and precise diagnostics of faults / errors in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components: optimum interaction of STEP 7 engineering tools and SIMATIC HMI
- Standardized user interface



Process error diagnostics with ProAgent for WinCC flexible/ProAgent and with the STEP 7 engineering tools



Process error diagnostics with WinCC/ProAgent and the STEP 7 engineering tools

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- ProAgent:
 - Provides optimum support for plant and machine personnel in respect of troubleshooting and fault rectification
 - Increases plant availability
 - Reduces downtimes
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time
- No special operator know-how is required thanks to clearly comprehensible indication of the cause of error

Application

Increased productivity is being achieved more and more by cutting costs. In this context, the focus is increasingly on maintenance. The emphasis here is on rectifying faults as quickly and efficiently as possible. Ideally, the operating personnel should also perform part of the maintenance tasks. The operating personnel are on-site, they are familiar with the procedures and can intervene quickly. This saves time and reduces costs. It is precisely here that ProAgent can assist operating personnel in identifying faults quickly, in particular in the automotive and machine tool industries.

In the event of a process fault, process fault diagnostics with SIMATIC ProAgent will provide information about the location and cause of that fault and support personnel with troubleshooting.

The ProAgent solution has been optimized specifically for use with SIMATIC S7-300 / S7-400 and SIMATIC WinAC. It can be used in combination with the S7-PDIAG, S7-GRAPH and S7-HiGraph¹⁾ 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.

HMI Software

SIMATIC ProAgent process diagnosis software

SIMATIC ProAgent

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 comment¹⁾
- 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-GGRAPH, HW CONFIG (upon system error messages), supported fully automatically²⁾
- Unit or message-related entry to STEP 7), supported fully automatically³⁾
- 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-GGRAPH as of V5.1 (OCX is delivered as of S7-GGRAPH 5.1)

Standardized user interface with standard displays

- Message display
- Unit overview
- Diagnostics detail display
- Motion display
- Sequencer operating display

The image contents displayed 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.

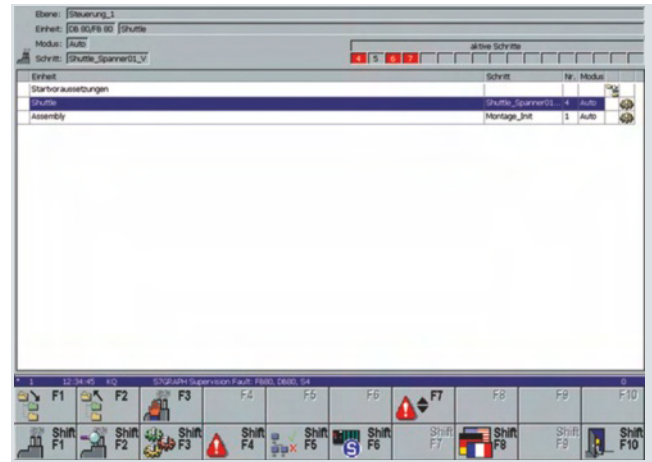
WinCC flexible permits this function on the Windows CE-based devices TP/OP/MP 270 / 277, MP 370 / 377, and on PC Runtime systems. The function is available as of version 6.0 for WinCC/ProAgent.

Unit overview

The units overview displays all technological units and the respective sub-units (system / machine components) in table form.

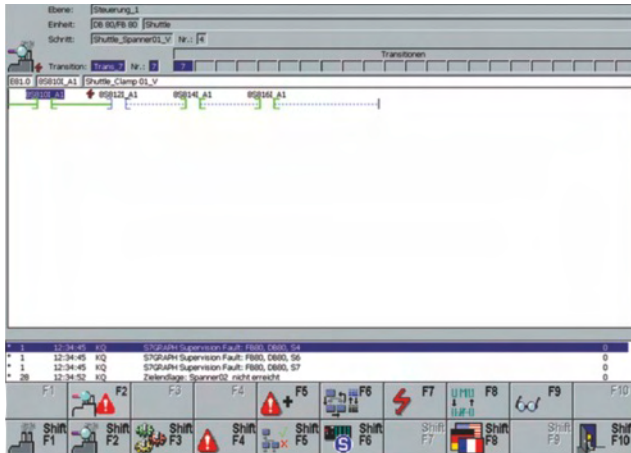
In this display, the user is able to recognize, for example, which operating mode or which status the respective unit is in. The operating mode can be changed by the user if required.

Faulty units are marked with attributes.



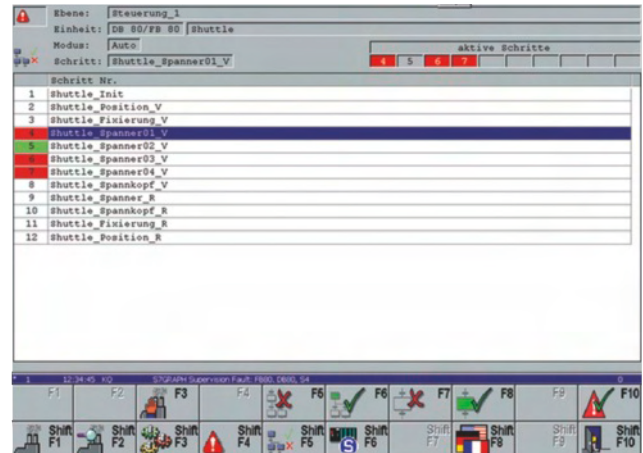
Function (continued)

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.

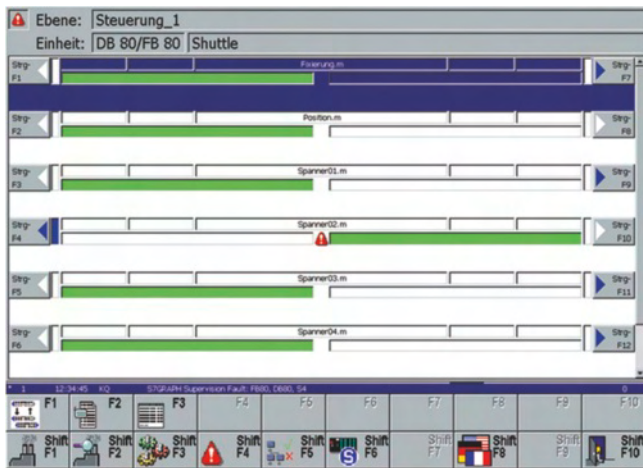
Sequencer operating display



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.

4

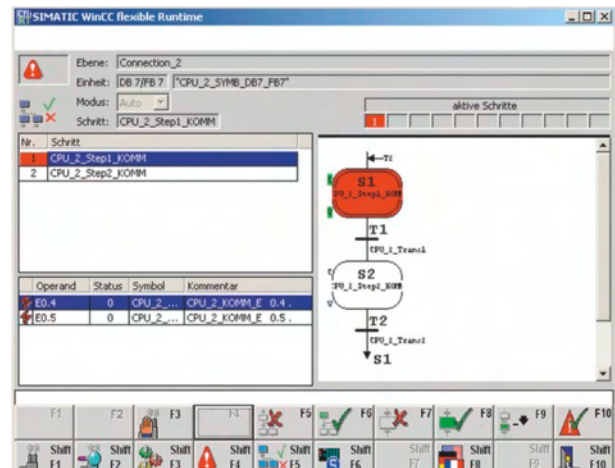
Motion display



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 diagnostic display



WinCC flexible /ProAgent and WinCC/ProAgent¹⁾ 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)

HMI Software

SIMATIC ProAgent process diagnosis software

SIMATIC ProAgent

Technical specifications

	WinCC/ProAgent	WinCC flexible /ProAgent
Interfaces		
• Can be used in conjunction with programmable controllers	SIMATIC S7: S7-300 / S7-400; WinAC	SIMATIC S7: S7-300 / S7-400; WinAC
• Types of connection	SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP, Industrial Ethernet, TCP/IP	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 (ger / en / fr)	5 (ger / en / fr / it / sp)
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	Yes	Yes
• Display STL / LAD / signal list	Yes / Yes / Yes	Yes / Yes / Yes
• Display of operands with symbol and comment	Yes	Yes
Criteria analysis	When fault occurs / current status / can be archived	When fault occurs / current status
Motion display		
• Number of viewable movements	6	6
• Directions of motion	2	2
• Number of viewable end positions per movement	16	16
Documentation		
In electronic format	ger / en / fr; included in scope of delivery	ger / en / fr / it / sp; included in scope of delivery
Requirements		
HMI software	WinCC V6.2 (ProAgent V6.0 + SP4)	WinCC flexible 2008
Operating system: Configuration	WinCC/ProAgent V6.0 + SP4: Windows 2000 + SP3, Windows XP + SP2, Windows Server 2003 + SP1	WinCC flexible /ProAgent 2008 + SP2: Windows XP SP3, Windows 7 Professional, Ultimate, Enterprise
Operating system Runtime	WinCC/ProAgent V6.0 + SP4: Windows 2000 + SP3, Windows XP + SP2, Windows Server 2003 + SP1	WinCC flexible /ProAgent for SIMATIC Panels: WinCC flexible /ProAgent for WinCC flexible Runtime: Windows XP SP3, Windows 7 Professional, Ultimate, Enterprise
STEP 7	V5.3 and higher	V5.3 and higher
• S7-GRAPH	V5.3 and higher	V5.2 + SP3 and higher
• S7-PDIAG	V5.1 and higher	V5.1 and higher
• S7-HiGraph	No	V5.3 and higher
Type of delivery (one license is required for each target hardware)	CD-ROM / Runtime license	Runtime license

HMI Software

SIMATIC ProAgent process diagnosis software

SIMATIC ProAgent

Ordering data	Order No.	Order No.
SIMATIC WinCC/ProAgent Software option package for process error diagnosis based on S7 GRAPH V5 and higher and S7 PDIAG V5 and higher, functional enhancement for SIMATIC WinCC, electronic documentation in English, French and German; functions and standard screens for use on a PC (resolution 1024 x 768 pixels) and Panel PC 577 / 677 / 877 15" (resolution 1024 x 768 pixels) in English, French and German, runtime license (single license) WinCC version: <ul style="list-style-type: none"> • V7.0 SP1; for WinCC V7.0 SP1 • V7.0, V6.2 (ProAgent V6.0 SP4) Upgrade <ul style="list-style-type: none"> • to V7.0 SP1 • to V6.0 (SP4) 	6AV6 371-1DG07-0AX0 6AV6 371-1DG06-0EX0 6AV6 371-1DG07-0AX4 6AV6 371-1DG06-0EX4	Documentation <i>(must be ordered separately)</i> SIMATIC HMI Manual Collection A 6AV6 691-1SA01-0AX0 Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian, Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI
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 <ul style="list-style-type: none"> • WinCC flexible /ProAgent for SIMATIC Panels G 6AV6 618-7DB01-3AB0 Runtime license (Single License) executable on TP/OP/MP 270/277, Mobile Panel 277, and MP 370/377 • WinCC flexible /ProAgent for WinCC flexible Runtime G 6AV6 618-7DD01-3AB0 Runtime license (single license) 		

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and 5D992

HMI Software

SIMATIC ProAgent process diagnosis software



PC-based Automation

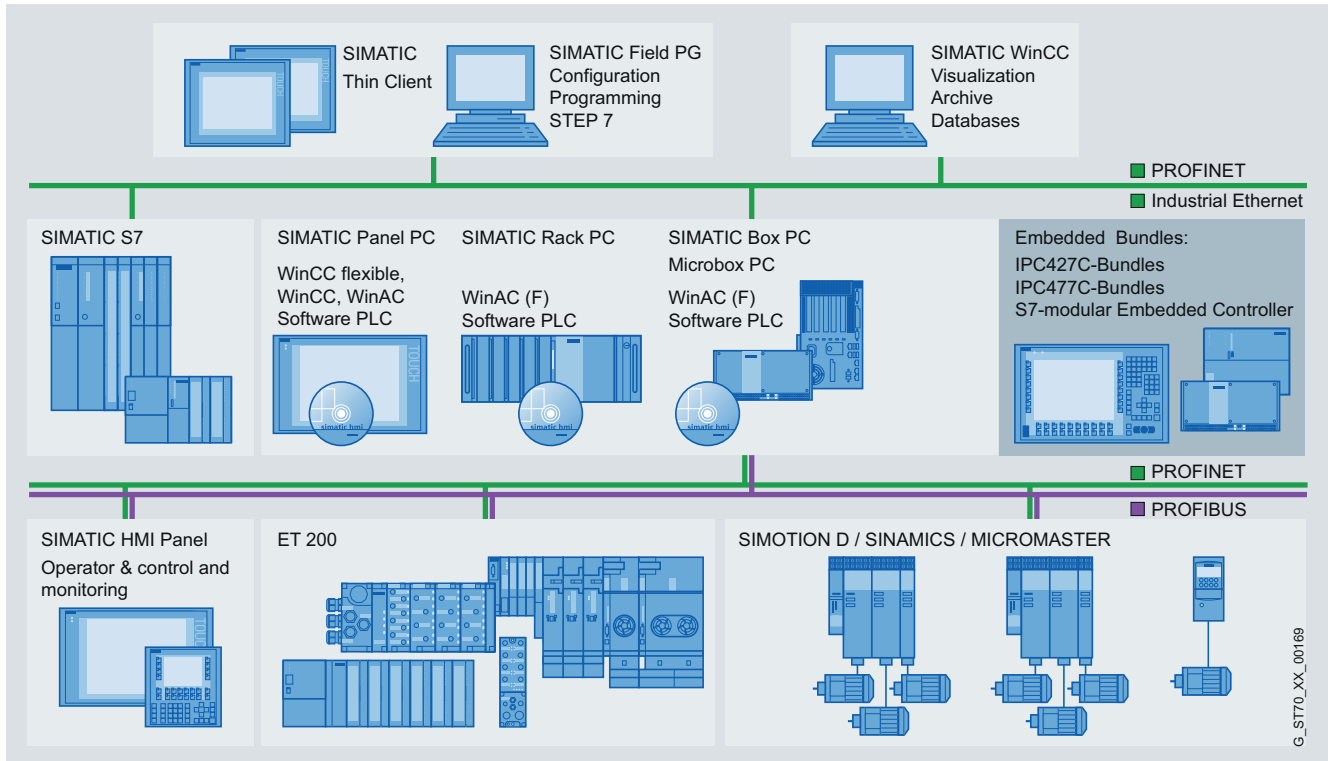


5/2	Introduction	5/222	Expansion components and accessories (continued)
5/3	Application examples	5/222	PC IO
5/9	SIMATIC Industrial PC	5/228	SIMATIC IPC (Service) USB FlashDrive
5/10	Rack PC	5/229	SINUMERIK 3.5" floppy disk drive, USB 1.1
5/15	SIMATIC IPC547C	5/230	SIMATIC Panel PC Remote Kit
5/23	SIMATIC IPC647C	5/232	Industrial USB Hub 4
5/32	SIMATIC IPC847C	5/233	DC UPS uninterruptible power supplies
5/42	SIMATIC Rack PC 647B	5/234	DC UPS with battery modules
5/51	SIMATIC Rack PC 847B	5/235	DC UPS module 6 A
5/61	Box PC	5/235	DC-USV-Modul 15 A
5/65	SIMATIC IPC427C	5/236	DC UPS module 40 A
5/73	SIMATIC IPC627C	5/236	Battery module 1,2 Ah
5/81	SIMATIC Box PC 627B	5/237	Battery module 2.5 A
5/89	SIMATIC Box PC 827B	5/237	Battery module 3,2 Ah
5/96	SIMATIC HMI IPC / Panel PC	5/238	Battery module 7 Ah
5/96	HMI IPC / Panel PC systems and monitors	5/238	Battery module 12 Ah
5/97	SIMATIC Panel PC	5/239	DC UPS with capacitors
5/101	SIMATIC HMI IPC477C	5/240	SITOP UPS500
5/112	SIMATIC HMI IPC577C	5/241	Input and output devices
5/121	SIMATIC HMI IPC677C	5/241	SIMATIC PC keyboard
5/129	SIMATIC Panel PC 677B	5/241	IP65 membrane keyboard, desk version
5/139	SIMATIC PC-based Controller	5/242	IP65 membrane keyboard, built-in version
5/141	SIMATIC WinAC RTX	5/242	IP65 membrane keyboard, slide-in version
5/151	SIMATIC WinAC RTX F	5/243	SIMATIC PC mouse
5/160	SIMATIC WinAC ODK	5/243	Operating channel extensions (active)
5/163	Embedded Controller	5/244	Printers T 2240/9, T 2240/24, T 2340/24
5/163	SIMATIC S7-modular Embedded Controller	5/245	Printers 2150, 2250
5/174	Embedded Bundles / Packages for Industrial PC	5/246	Communication
5/174	SIMATIC IPC427C Bundles	5/246	<u>Communication processors for Industrial Ethernet</u>
5/179	SIMATIC HMI IPC477C Bundles	5/247	Connection options to SIMATIC IIPC
5/189	Software packages for SIMATIC IPC and S7-mEC	5/248	Communication processor CP 1604
5/191	Monitors and Thin Clients	5/249	Communication processor CP 1616
5/191	Industrial LCD monitors – Flat Panel	5/250	Communication processor CP 1612 A2
5/195	Industrial LCD monitors – SCD monitors	5/252	Communication processor CP 1613 A2
5/198	SCD monitors 1900	5/253	Communication processor CP 1623
5/201	SIMATIC Thin Client	5/255	S7-REDCONNECT
5/205	RMOS3 real-time operating system	5/256	SOFTNET for Industrial Ethernet
5/206	RMOS3 V3.50 real-time operating system	5/257	SOFTNET PN IO
5/207	RMOS3-GRAPHX V1.0	5/258	OPC server for Industrial Ethernet
5/209	RMOS3-GNU V3.0	5/260	PN CBA OPC server
5/211	RMOS3-TCP/IP V3.0	5/262	SNMP OPC-Server
5/213	BSP-SIMATIC IPC V3.0 for RMOS3	5/263	<u>Communication processors for PROFIBUS</u>
5/215	Expansion components and accessories	5/264	Connection options to SIMATIC IPC
5/216	SIMATIC IPC DiagMonitor	5/265	Communication processor CP 5603
5/217	SIMATIC IPC BIOS Manager	5/267	Communication processor CP 5613 A2
5/218	SIMATIC IPC Image & Partition Creator	5/269	Communication processor CP 5613 FO
5/220	ADDM – Data Management	5/271	Communication processor CP 5614 A2
5/221	SIMATIC IPC CompactFlash	5/273	Communication processor CP 5623
		5/275	Communication processor CP 5624
		5/277	Communication processor CP 5512
		5/279	Communication processor CP 5611 A2
		5/281	Communication processor CP 5621
		5/283	Communication processor CP 5711
		5/285	SOFTNET for PROFIBUS
		5/286	OPC server for PROFIBUS
		5/287	SINEMA E

PC-based Automation

Introduction

Overview of SIMATIC PC-based Automation



5

Industrial PC

The optimum PC hardware platforms for PC-based Automation from Siemens are our reliable and innovative industrial PCs.

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 control for your PC-based automation solution.

Embedded controllers

SIMATIC S7-mEC is a modular controller in S7-300 design with the latest embedded PC technology. It comprises the EC31 (CPU) and optionally available expansion modules.

Embedded bundles and software packages for industrial PCs

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

Software packages for SIMATIC IPC

For a number of SIMATIC IPCs, low-cost software packages with the visualization software SIMATIC WinCC, WinCC flexible or the software controller SIMATIC WinAC RTX (F) are offered. An industrial PC must be purchased at the same time as the software package to take advantage of these offers.

Monitors and thin clients

Flexible operating concepts can be implemented via flat panel monitors and thin clients. These can be industrially compatible LCD monitors with high-luminance displays that can be placed up to 30 m from the PC, or low-cost, rugged thin clients that offer HMI functionality over the network in large-scale, widely distributed plants.

Unit-type heating power station with combined heat and power



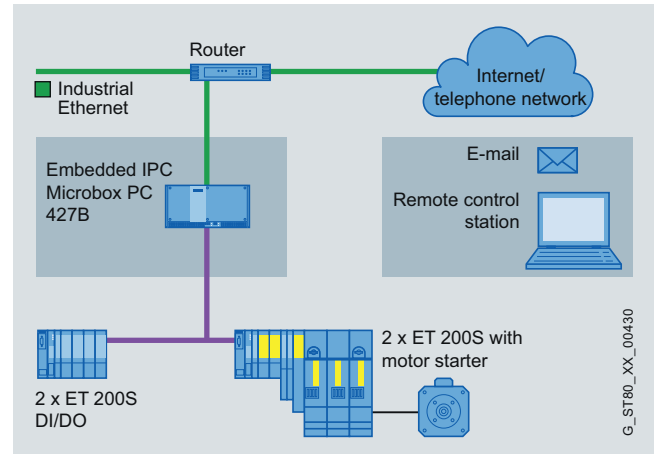
During a redesign of a unit-type heating power station, the automation concept was restructured.

The objective was to process all open-loop control, visualization and archiving tasks that were previously processed on a PLC and a PC on one compact unit. This would save space in the cabinet and reduce maintenance and training costs.

A rugged, maintenance-free unit was required that could be easily connected over the Internet.

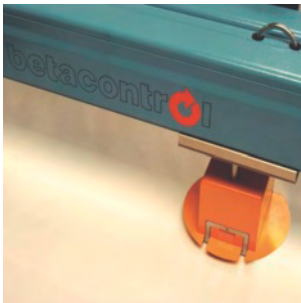
The advantages of the Siemens PC-based Automation solution

- Microbox PC 427B as a rugged, compact, embedded system
 - Control, visualization and archiving of the process parameters in one device
 - Savings in space and costs by integrating several tasks on one embedded industrial PC
 Previously: one PLC and a visualization PC
- Quick and easy access to the embedded IPC over the Internet



The system concept

Foil thickness measurement



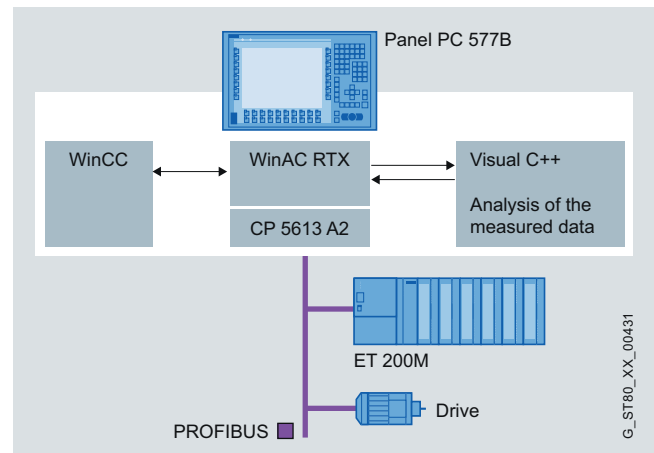
High precision, uniform thickness of the entire width is a decisive quality criterion when producing plastic foils. To achieve this high quality a measuring head with radioactive ray emitter above and a sensor below the foil are moved back and forth across the running foil.

Use of the radiation attenuation enables extensive mathematical calculations to be carried out in

order to determine the exact thickness of the foil at every position: deviations in foil position can thus be easily corrected.

The advantages of the Siemens PC-based Automation solution

- Visualization takes place using WinCC and control by using WinAC RTX on one PC.
- Evaluation of extensive measurement data requires complex mathematical algorithms.
- These are implemented using C++.
- The seamless, high performance integration of these algorithms in the STEP 7 program is achieved using the ODK (Open Development Kit).
- In order to visualize the large amount of measurement curves, data exchange between WinAC RTX and WinCC is carried out rapidly using a hard disk cache. This functionality is also implemented with ODK.
- The interconnection of the standardized technology function is carried out using a CFC (Continuous Function Chart).



The system concept

PC-based Automation

Introduction

Application examples

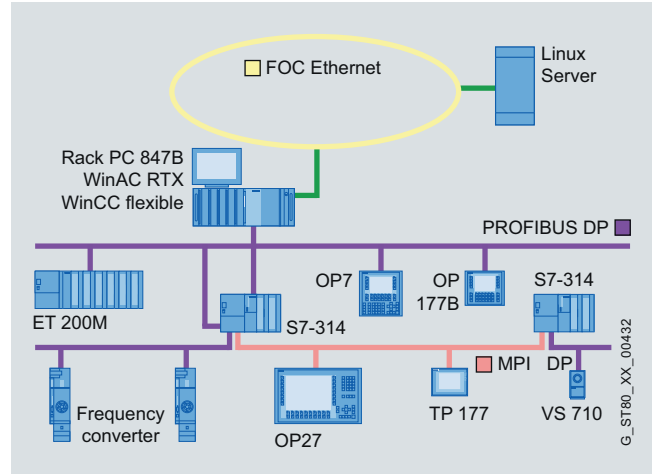
PC-based control of varnishing lines for automobile plastic parts



For reasons of quality assurance and product liability, varnishing line manufacturers decided to use a superordinated computer to archive process data of a varnishing line for flat parts which rapidly developed into a PC based Automation system with control tasks.

The advantages of the Siemens PC-based Automation solution

- Performance of the PC-based control SIMATIC WinAC
- Coupling to Linux servers using an Industrial Ethernet optical fiber net
- Open and flexible for extensions
- Integration into the available automation concept possible
- Archiving and backup of process data and production data acquisition



The system concept

Innovative PC-based solution with safety for solar panel manufacturing



In a new plant for manufacturing solar panels, the existing heterogeneous concept must be replaced with a new, modern automation solution that can fulfill the more complex requirements in an integrated, space-saving manner.

The more complex nature of the plant demands higher performance and more memory space. The control should also be able to perform the legally

required safety functions (emergency stop, access protection for dangerous areas) for the plant.

It must be possible to connect 3 different bus systems in the plant. It must also be possible to use a customized Windows application on the selected system and to interface to a higher-level MES system.

The plant will be organized for high throughput and three-shift operation.

The advantages of the Siemens PC-based Automation solution

- Extremely high performance and large memory with the SIMATIC Modular Embedded Controller EC31-RTX F. EC31 in the RTX F version (the first software PLC with safety functionality worldwide) that covers all safety requirements in the plant. This system merges seamlessly into Totally Integrated Automation and supports efficient, plant-wide engineering.
- WinAC RTX on the higher-level SCADA industrial PC offers, thanks to its openness (Open Development Kit), the ability to integrate a Windows customer application with minimal outlay and therefore serves as a data concentrator (for process, quality and diagnostics data); also combined with WinCC (SCADA) communication to the higher-level MES system can be implemented.
- Industry-compatible products of the SIMATIC family offer the highest quality for round-the-clock operation.

Safe transfer at sea



For transferring persons to wind turbines or oil platforms at high sea, a Dutch company has developed a six-pillar platform on hydraulic cylinders.

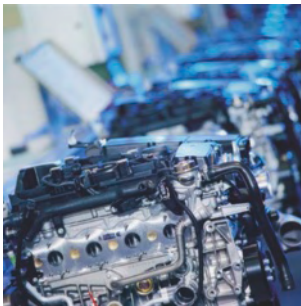
This platform is in fact an upside-down aircraft simulator which allows safe transfer from a ship even under severe weather conditions.

A SIMATIC S7 Modular Embedded Controller (S7-mEC) with fast I/O cards measures the movements of the ship and controls the motion of the cylinders so that all movements are compensated.

The advantages of the Siemens PC-based Automation solution:

- Fault-tolerant SIMATIC S7-400H in redundant design for general control tasks
- Two lower-level SIMATIC S7 modular embedded controllers that fulfill the requirements for high velocities, the integration of fast I/O cards, and a flexible, modular and rugged construction.
- An integrated programming environment with SIMATIC STEP 7
- Automation products from Siemens fulfill the demanding requirements of the offshore sector

Final inspection of tank encoder - Fuel pump module



For final inspection of fuel pump modules in the automobile sector, the following automation requirements must be fulfilled.

The advantages of the Siemens PC-based Automation solution:

- Compact automation solution comprising open-loop control with WinAC RTX and visualization with WinCC flexible installed ready to use on a Microbox PC 427B
 - Easy acquisition of the fast distance and analog signals via a C program that is integrated in the control
 - Innovative drive solution with SINAMICS S120 which allowed the linear encoder to be omitted
- Acquisition of the start-up current of the pump with a sampling rate of <1 ms with a fast PC I/O card
 - Powerful sensing of the tank encoder angle (potentiometer) with reference to the adjustment (incremental encoder) for checking for open-circuits in the potentiometer
 - Recalibration of the tank encoder by approaching specific angles
 - Control of a linear axis for the open-circuit test and calibration

PC-based Automation

Introduction

Application examples

PC-based control in automobile test bays

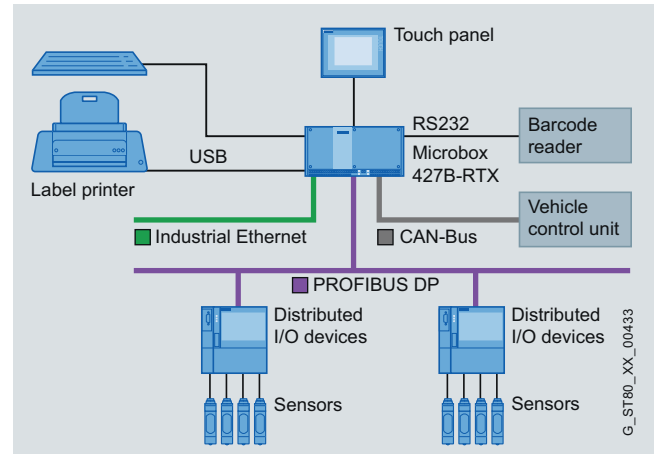


Test bays in the automobile industry require fault-free operation and high quality.

Control, processing, archiving and visualization of the measured data require a high-performance system that offers openness and flexibility for connection to different bus systems and for the use of software.

The advantages of the Siemens PC-based Automation solution

- Flexible service and maintenance-friendly system with Windows XP-Embedded in conjunction with SIMATIC WinAC
- Reduction of the integration overhead thanks to integral interfaces such as PROFIBUS, Ethernet and CAN, and flexibility in the use of modules for different bus systems, e.g. PC/104
- System availability concept assures round-the-clock operation and reduces downtime costs
- Fan-free, heat-resistant operation up to 50 °C saves on additional cooling measures
- High level of investment security thanks to long-term availability of the components



The system concept

PC-based control in the semiconductor industry



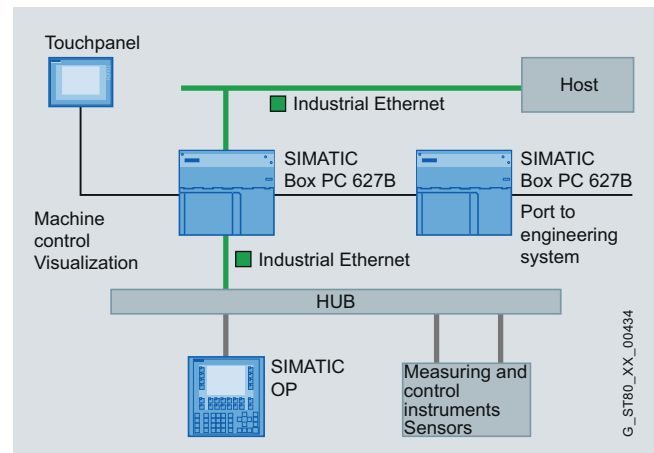
In the semiconductor industry, high quality and fault-free operation round-the-clock are decisive criteria.

A high-performance system that guarantees high-speed 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 Siemens PC-based Automation solution

- 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-hr operation
- High level of investment security thanks to long-term availability of the components
- International certification and worldwide support guarantee global use



The system concept

Track & trace line controller for the tobacco industry



To fulfill new legal requirements, a track & trace system in an existing plant was expanded.

Requirement for inspecting 100 cases per minute in 3-shift operation and, for the purposes of traceability, saving of data in an SQL database.

The automation system had to be characterized by a high degree of ruggedness, but also offer the openness to add further components such as

printers and the machine vision system.

The advantages of the Siemens PC-based Automation solution

- Compact automation solution comprising embedded industry PC, Microbox PC 427B, controller with WinAC RTX software PLC installed and ready to use and visualization with WinCC flexible
- Control of the complete track & trace system and interfacing to the control system
- Open solution with the help of WinAC ODK (Open Development Kit) through interfacing to an SQL database for managing the serial numbers and other data
- Additional openness and flexibility by connecting a printer and vision system

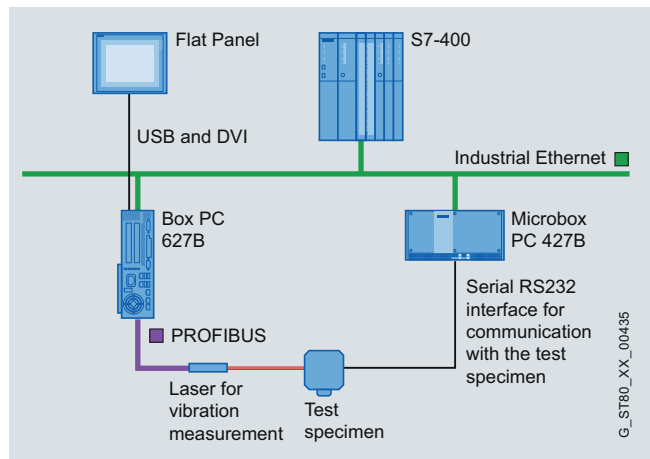
Measured value acquisition and communication with SIMATIC PC

The most important prerequisites for the acquisition of measured values are reliability, flexibility and security. The measured values must be continuously acquired and error-free. At the same time, the measuring systems should be flexible and adaptable to future products or changing products.

The measuring data must be recorded during the entire measuring cycle. At the same time, there must be communication with the devices under test, e.g. for starting a test program while the measuring values are being acquired. The measuring values should then also be saved for quality checks and documentation.

The advantages of the Siemens PC-based Automation solution

- Compact, rugged SIMATIC PC with high processor performance and the latest technology for quick acquisition and processing of measuring values, as well as communication solutions
- Can be flexibly adapted for the respective test purpose by means of expansion card slots and several onboard interfaces
- Optional, onboard industrial interfaces such as PROFINET and PROFIBUS for easy networking with industrial components, e.g. distributed I/Os
- High degree of system availability, e.g. thanks to diagnostic software and RAID1 (mirrored hard disks) to prevent downtimes
- Proven interaction with many other Siemens components, such as controllers and distributed I/Os for easy implementation of complete solutions
- High level of investment security thanks to long-term availability of the components



The system concept

PC-based Automation

Introduction

Application examples

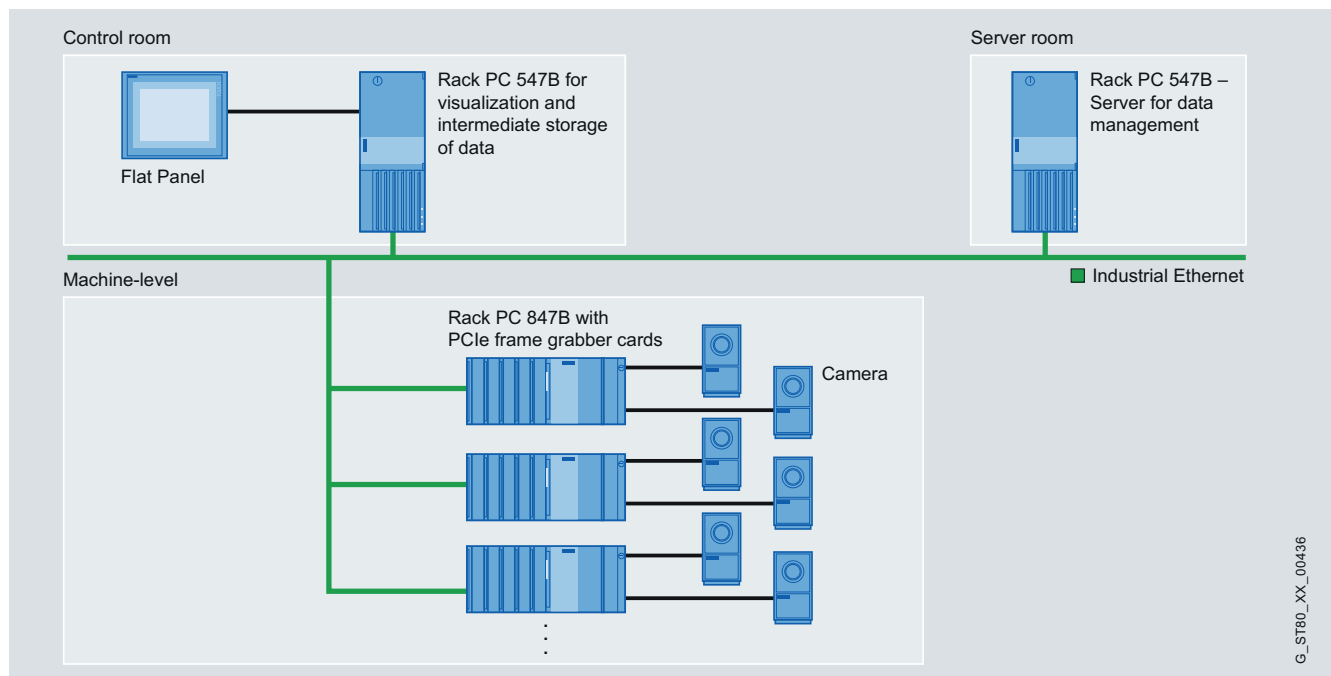
Image processing with data backup

In image processing applications, high performance computers are required due to the large volume of data to be processed. The image data must be quickly acquired, processed and saved. Frame grabber cards with high data throughput rates are used, for example, for acquiring image data. The interfaces for the expansion cards must not become bottle-necks 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.

A great deal of data is also handled in the subsequent data backup. Thus, the available storage medium must be fast and fail-safe. An open system is required for connecting to existing plants.

The advantages of the Siemens PC-based Automation solution

- 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 the acquisition of image data
- Visualization on up to two monitors with an optional, high-performance graphics card
- Communication interfaces such as Ethernet and PROFINET, e.g. for connecting to EPS systems or onboard integration in existing systems
- International certifications and global support facilitate the worldwide use of the image processing solution



The system concept

PC-based Automation

SIMATIC Industrial PC

Introduction

Overview

Professional automation solutions place a wide range of different requirements on the industrial PCs used (vibration, cold, dust, heat, steam) year in, year out and round the clock. SIMATIC IPCs are the ideal industry-standard PC platforms for this purpose.

SIMATIC IPC offers

- High system availability
- High degree of investment protection
- Best industrial functionality

A broad range of designs are available for various applications:

Rack PC

Flexible, high-performance industrial PC for installation in 19" racks

Box PC

Compact, rugged industrial PC for universal installation

Panel PC

Rugged, high-performance industrial PC with brilliant display

SIMATIC IPC

SIMATIC IPCs can be individually configured and further customer requirements such as design, hardware expansions can be implemented on a project-specific basis.

For individual expansion of the system availability, expansion components that are matched to one another are available.

Benefits

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, upright or control cabinet mounting (Box PC), rail mounting (SIMATIC IPC427C only) and horizontal or vertical mounting position in the 19" cabinet with 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 and fans using SIMATIC CompactFlash Cards or Solid State Drive (SIMATIC IPC427C and HMI IPC477C)
- Service-friendly, modular device design for replacement of defective components
- Integral industrial power supplies (according to NAMUR) for the safe power supply 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)

Reduction in standstill times thanks to high system availability

- Assured 24-hour operation as a result of high-quality parts and components (high MTBF, speed-controlled fans)
- Efficient self-diagnostics for avoidance of potential failures (front status LEDs, SIMATIC IPC DiagMonitor diagnostics software for condition monitoring, local and remote)
- Minimum downtimes thanks to mirror disk systems and preventive data backup with SIMATIC IPC Image Creator and SIMATIC IPC BIOS Manager
- "Restore CD / DVD" for restoration of the delivery state
- Installed and activated Microsoft operating systems for time savings during installation

High degree of investment security for long-term automation concepts

- Availability of 3 to 5 years (at least 1.5 years for Rack PC IPC547C)
- 5-year repair and spare parts service (3 years for Rack IPC547C) after expiration of the active marketing period
- Long-term concepts are implementable and reduce future engineering costs
- System-tested SIMATIC software (WinCC, WinAC, etc.) and connection options for distributed I/Os via an optional PROFIBUS or PROFINET interface on board link the industrial PCs with Totally Integrated Automation
- Certificates for worldwide marketing (cULus), the CE mark for use in industrial areas and in domestic, business and commercial environments
- Compatibility in hardware and software thanks to, for example, unchanged mechanical dimensions or the use of existing user software on all devices of the same generation
- Worldwide service and support (e.g. 24-hour SIMATIC Hotline)

Application

SIMATIC IPCs are the ideal platform for PC-based Automation and are used both in the production and process industry, as well as in industry-oriented sectors such as traffic engineering, building management, warehouse systems.

Typical applications include:

- Instrumentation and control tasks (e.g. with SIMATIC WinAC)
- Operator control and monitoring (e.g. with SIMATIC WinCC flexible, or WinCC)
- Data acquisition
- Image processing
- Communication, gateways

More information

Notes on the scope of delivery

Microsoft operating systems are pre-installed in an OEM version.

The scope of supply also includes:

- Recovery CD for simple reinstallation of the operating system (not for Windows 2000)
- Restore DVD (hard disk image) for fast and very easy restoration of the PC delivery status
- SIMATIC IPC documentation and driver CD
- Getting Started PC instructions in German / English / French / Spanish / Italian / Chinese
- Electronic manual on CD-ROM (German / English)

Additional information is available in the Internet under:

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

Information material can be ordered or downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

PC-based Automation

Rack PC

Introduction

Overview



Rack PCs are flexible, high-availability industrial PC systems for powerful yet compact applications using 19" technology.

Three device classes are available for various requirements:

SIMATIC Rack PC 547 - maximum performance at an attractive price

SIMATIC Rack PC 647 – maximum compactness combined with maximum industrial functionality

SIMATIC Rack PC 847 – maximum expansion capability combined with maximum industrial functionality

Shared industrial functionality

- Maximum system performance for complex automation 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" frames
- 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

SIMATIC IPC547C – maximum performance at an attractive price

- Maximum processor performance in maximum configuration without loss of power (throttling) at ambient temperatures of up to 40 °C
- Hard disks with capacities up to 500 GByte for large volumes of data
- Optional RAID5 configuration (striping with parity) in "hot swap" frames
- Low noise output thanks to controlled fan
- Status and alarm LEDs at the front for signaling critical alarm states
- Availability for at least 1.5 years
- Guaranteed spare parts availability for at least 3 years

SIMATIC IPC647C and SIMATIC Rack PC 647B – maximum compactness combined with maximum industrial functionality

- Maximum compactness due to 3 free PCI / PCI Express slots for installing long expansion cards and integrated interfaces for communication, e.g. integrated PROFIBUS / MPI or PROFINET interface
- High thermal stability up to 50°C even at maximum processor performance
- High vibration / shock resistance thanks to special hard disk holders
- 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 the hard disks in RAID1 configurators, fans or the status display for Ethernet, PROFINET and PROFIBUS.
- Integrated PROFIBUS DP / MPI or PROFINET interface (optional)
- High continuity of the components / design
- Motherboard developed and manufactured by Siemens
- Availability for 3 to 5 years
- Guaranteed spare parts availability for at least 5 years
- *NEW* with *SIMATIC IPC647C*: Intel Core i processors, hard disks with capacities up to 500 GByte for large volumes of data, ECC memory optional, SSD (Solid-State Drive) optional

SIMATIC IPC847C and SIMATIC Rack PC 847B – maximum expansion capability combined with maximum industrial functionality

- Maximum expandability due to 11 free PCI / PCI Express slots for installing long expansion cards and integrated interfaces for communication, e.g. integrated PROFIBUS / MPI or PROFINET interface
- High thermal stability up to 50°C even at maximum processor performance
- High vibration / shock resistance thanks to special hard disk holders
- 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 the hard disks in RAID1 configurators, fans or the status display for Ethernet, Profinet and Profibus.
- Integrated PROFIBUS DP / MPI or PROFINET interface (optional)
- High continuity of the components / design
- Motherboard developed and manufactured by Siemens
- 3 to 5 years availability
- Guaranteed spare parts availability for at least 5 years
- *NEW* with *SIMATIC IPC847C*: Intel Core i processors, optional RAID5 configuration (striping with parity) in "hot swap" frames, redundant AC power supply optional, hard disks with capacities up to 500 GByte for large volumes of data, ECC memory optional, SSD (Solid-State Drive) optional

Overview (continued)

	SIMATIC IPC547C	SIMATIC IPC647C	SIMATIC IPC847C
Design			
19" rack	4HU	2HU	4HU
Prepared for telescopic rails	•	•	•
Horizontal / vertical installation	• / •	• / –	• / •
19" mounting bracket can be removed from outside	•	•	•
Tower Kit (optional)	•	–	•
General features			
Processor	<ul style="list-style-type: none"> • Intel Core2 Quad Q9400 (4C / 4T, 2,66 GHz) • Intel Core2 Duo E8400 (2C / 2T, 3,0 GHz) • Intel Pentium Dual Core E5300 (2C / 2T, 2,6 GHz) 	<ul style="list-style-type: none"> • Intel Core i7-610E (2C / 4T, 2,53 GHz) • Intel Core i5-520E (2C / 4T, 2,4 GHz) • Intel Core i3-330E (2C / 4T, 2,13 GHz) 	<ul style="list-style-type: none"> • Intel Core i7-610E (2C / 4T, 2,53 GHz) • Intel Core i5-520E (2C / 4T, 2,4 GHz) • Intel Core i3-330E (2C / 4T, 2,13 GHz)
Main memory	1 GByte, expandable up to 16 GByte	1 GByte, expandable up to 8 GByte, optional ECC	1 GByte, expandable up to 8 GByte, optional ECC
Slots for expansions (all long)	<ul style="list-style-type: none"> • 4 x PCI • 1 x PCI-Express x16 • 1 x PCI-Express x8 (1-lane) • 1 x PCI-Express x1 	<ul style="list-style-type: none"> • 2 x PCI • 1 x PCI-Express x16 or <ul style="list-style-type: none"> • 1 x PCI • 1 x PCI-Express x8 (4-lane) • 1 x PCI-Express x16 	<ul style="list-style-type: none"> • 7 x PCI • 1 x PCI-Express x16 or <ul style="list-style-type: none"> • 3 x3 x PCI-Express x4 • 7 x PCI • 1 x PCI-Express x16
Onboard graphics	<ul style="list-style-type: none"> • 1 x VGA • 1 x DVI-D (via adapter card, optional) 	<ul style="list-style-type: none"> • 1 x DVI-I • 1 x VGA (over adapter cable, optional) 	<ul style="list-style-type: none"> • 1 x DVI-I • 1 x VGA (over adapter cable, optional)
Graphics card (optional)	PCI-Express x16 (2 x VGA or 2 x DVI)	PCI-Express x16 (2 x VGA or 2 x DVI)	PCI-Express x16 (2 x VGA or 2 x DVI)
Operating system			
without	•	•	•
Preinstalled / supplied on Restore CD	<ul style="list-style-type: none"> • Windows XP Professional Multi-Language • Windows Vista Ultimate Multi-Language • Windows Server 2003 R2 incl. 5 Client Multi-Language • Windows Server 2008 incl. 5 Client Multi-Language 	<ul style="list-style-type: none"> • Windows XP Professional Multi-Language • Windows 7 Ultimate Multi-Language • Windows Server 2008 incl. 5 Client Multi-Language 	<ul style="list-style-type: none"> • Windows XP Professional Multi-Language • Windows 7 Ultimate Multi-Language • Windows Server 2008 incl. 5 Client Multi-Language
Order separately	–	RMOS3 V3.4	RMOS3 V3.4
Project-specific on request	<ul style="list-style-type: none"> • Linux¹⁾ • Other 	<ul style="list-style-type: none"> • Linux¹⁾ • Other 	<ul style="list-style-type: none"> • Linux¹⁾ • Other
Interfaces			
PROFIBUS / MPI	–	12 Mbit/s (compatible with CP 5611), optional	12 Mbit/s (compatible with CP 5611), optional
PROFINET	–	3 x RJ45 (CP 1616-compatible), optional	3 x RJ45 (CP 1616-compatible), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s	2 x 10 / 100 / 1000 Mbit/s	2 x 10 / 100 / 1000 Mbit/s
USB 2.0 (high current)	9°x 2° of which at front, 1 x internal	7°x , 2° of which at front, 1 x internal	7°x , 2° of which at front, 1 x internal
VGA	•	• optional	• optional
DVI	• optional	•	•

PC-based Automation

Rack PC

Introduction

Overview (continued)

	SIMATIC IPC547C	SIMATIC IPC647C	SIMATIC IPC847C
Audio	•	•	•
Drives			
SATA hard disks			
• Internal installation	•	–	•
• Installation at the front in the swap frame	•	•	•
• Internal installation in drive holder (shock and vibration-damped)	–	•	•
RAID1 / 5-Konfiguration	• / •	• / –	• / •
SSD (Solid-State Drive)	–	•	•
Optical drives			
DVD-ROM	•	–	•
DVD±R/RW	•	•	•
AC power supply	•	•	•
Redundant (optional)	•	–	•
Ambient conditions²⁾			
Vibration / shock load during operation	0,2 g / 1 g	0,5 g / 5 g	0,5 g / 5 g
Ambient temperature during operation	With maximum configuration: 5 ... 40 °C	With maximum configuration: 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://www.siemens.de/simatic-pc/geeignet-fuer-linux> (Linux is a trademark of Linus Torvald)

²⁾ Restrictions when using DVD±R/RW and hard disks in swap frame.

Overview (continued)

	SIMATIC Rack PC 647B	SIMATIC Rack PC 847B
Design		
19" rack	2HU	4HU
Prepared for telescopic rails	•	•
Horizontal / vertical installation	• / –	• / •
19" mounting bracket can be removed from outside	•	•
Tower Kit (optional)	–	•
General features		
Processor	<ul style="list-style-type: none"> • Intel Core2 Duo T7400 (2C / 2T, 2,16 GHz) • Intel Core2 Duo T5500 (2C / 2T, 1,66 GHz) • Intel Celeron M 440 (1C / 1T, 1,86 GHz) 	<ul style="list-style-type: none"> • Intel Core2 Duo T7400 (2C / 2T, 2,16 GHz) • Intel Core2 Duo T5500 (2C / 2T, 1,66 GHz) • Intel Celeron M 440 (1C / 1T, 1,86 GHz)
Main memory	512 MByte, expandable up to 4 GByte	256 MByte, expandable up to 4 GByte
Slots for expansions (all long)	<ul style="list-style-type: none"> • 2 x PCI • 1 x PCI-Express x16 (PEG) or <ul style="list-style-type: none"> • 1 x PCI • 1 x PCI-Express x4 • 1 x PCI-Express x16 (PEG) 	<ul style="list-style-type: none"> • 7 x PCI • 1 x PCI-Express x16 (PEG) • 3 x PCI-Express x4 (optional) or <ul style="list-style-type: none"> • 7 x PCI • 1 x PCI-Express x16 (PEG)
Onboard graphics	<ul style="list-style-type: none"> • 1 x VGA • 1 x DVI-D (via adapter card, optional) 	<ul style="list-style-type: none"> • 1 x VGA • 1 x DVI-D (via adapter card, optional)
Graphics card (optional)	PCI-Express x16 (2 x VGA or 2 x DVI)	PCI-Express x 16 (2 x VGA or 2 x DVI)
Operating system		
without	•	•
Preinstalled / supplied on Restore CD	<ul style="list-style-type: none"> • Windows XP Professional Multi-Language • Windows Vista Ultimate Multi-Language • Windows Server 2003 incl. 5 Client Multi-Language 	<ul style="list-style-type: none"> • Windows XP Professional Multi-Language • Windows Vista Ultimate Multi-Language • Windows Server 2003 incl. 5 Client Multi-Language • Windows 2000 Professional Multi-Language
Order separately	RMOS3 V3.4	RMOS3 V3.4
Project-specific on request	<ul style="list-style-type: none"> • Linux¹⁾ • Other 	<ul style="list-style-type: none"> • Linux¹⁾ • Other
Interfaces		
PROFIBUS / MPI	12 Mbit/s (compatible with CP 5611), optional	12 Mbit/s (compatible with CP 5611), optional
PROFINET	3 x RJ45 (CP 1616-compatible), optional	3 x RJ45 (CP 1616-compatible), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s	2 x 10 / 100 / 1000 Mbit/s
USB 2.0 (high current)	6°x, 2°of which at front	6°x, 2°of which at front
VGA / DVI / Audio	• / • optional / •	• / • optional / •
Drives		
SATA hard disks		
• Internal installation	–	•
• Installation at the front in the swap frame	•	•
• Internal installation in drive holder (shock and vibration-damped)	•	•
RAID1 / 5 configuration	• / –	• / –

PC-based Automation

Rack PC

Introduction

Overview (continued)

	SIMATIC Rack PC 647B	SIMATIC Rack PC 847B
Optical drives		
DVD-ROM / DVD±R/RW	– / •	• / •
AC power supply		
Redundant (optional)	–	–
Ambient conditions²⁾		
Vibration / shock load during operation	0,5 g / 5 g	0,5 g / 5 g
Ambient temperature during operation	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://www.siemens.de/simatic-pc/geeignet-fuer-linux> (Linux is a trademark of Linus Torvald)

²⁾ Restrictions when using DVD±R/RW and hard disks in swap frame.

Benefits

Rugged design

The overall design aims to achieve maximum safety for electro-magnetic, vibration and shock loads. A well-designed pressurized ventilation concept ensures that even the maximum configuration can support high operating temperatures – and dust protection is included.

Service-friendly device design

Particular attention was paid to making servicing extremely simple. PC components (e.g. slots, memory modules) are readily accessible. Fan filters and fans can be replaced without tools even when unit is built-in.

Performance

Thanks to the use of the latest Intel processors from Celeron to Core i technology, SIMATIC Rack PCs are flexibly scalable for your application.

System availability

SIMATIC racks can be ordered in custom configurations and are supplied ready for use. The design's high system availability can be further extended by means of additional data backup options (e.g. RAID1 or RAID5 system, redundant power supply, SIMATIC IPC Image Creator) and efficient self-diagnostics software (SIMATIC PC DiagMonitor).

Integrated interfaces

At least one Onboard Gbit Ethernet interface is available for communication in the office world or at the control level. Integrated USB interfaces on the rear and front panels make connecting I/O devices from the PC world (e.g. external hard disks for mobile data backup, keyboard, external mouse for operation) child's play. For advanced graphics applications, a free PCI Express slot or a high-performance graphics card for the connection of two monitors are available.

Expandability

With up to 11 free PC slots, the SIMATIC Rack PC offers maximum leeway for expansions for installation in space-saving cabinets with a depth of just 500 mm.

Continuity

The SIMATIC Rack PC models can be ordered for a period of at least 1.5 years; spare parts remain obtainable for at least 3 years after active marketing is concluded. Long-term functionality of the hardware and software is also ensured. Long-term availability of PC components from the Intel embedded line ensure high investment protection.

Overview



The SIMATIC IPC547C is a rugged industrial PC in 19" rack design (4 HU).

It offers:

- Maximum performance
- Attractive price
- Intel Core 2 Quad technology

Benefits

Maximum system performance for complex automation and visualization tasks

- State-of-the-art PC technology (e.g. Intel Core 2 Quad / Duo and Extended Memory 64 (EM64T) processor technology)
- High-level performance (e.g. Intel Q45G Express Chipset, DDR2 800 memory supporting dual-channel technology)
- High data transfer rates (e.g. with Serial ATA hard disks up to 500 GByte, Gigabit Ethernet, PCI-Express technology)

Minimized downtimes thanks to high system availability

- Secure 24-hour operation (high MTBF, variable-speed fan)
- Efficient self-diagnostics (front status LED for fan and temperature, SIMATIC PC DiagMonitor)
- High degree of data security due to RAID1 (mirror disks system) or RAID5 (striping with parity)
- Fast identification and replacement of the hard disk in the event of a fault
- "Hot swap" removable frame in RAID configuration (replacement of hard disk during operation)
- Redundant power supply

High flexibility and user friendliness during commissioning, operation and service

- Preinstalled and activated operating system
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- Low noise output thanks to controlled fan
- Universal implementation as an industrial workstation or server
- RAID1 / RAID5 onboard (a PCI slot is not occupied by the RAID controller)
- Flexible applications in many different positions with telescopic rails or as tower industrial PC.
- High degree of flexibility and expandability thanks to integrated interfaces and 7 slots (PCI and PCI-Express)

Industrial compatibility and compactness for 24-hour use in an industrial environment

- Maximum processor performance (in maximum configuration) without loss of power (throttling) at ambient temperatures of up to 40 °C
- Specific product design with a new front panel design and flat, coated, dirt-repellent surfaces
- Metal enclosure with a high degree of electromagnetic compatibility for use in industrial areas and in domestic, business and commercial environments
- Suitable for installation in space-saving control cabinets only 500 mm deep
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Special hard disk holders and card retainers for protection against vibration and shock

Cost reductions through high investment security

- Minimum availability 1.5 years, guaranteed availability of spare parts for 3 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Support for legacy interfaces (PS/2, COM, LPT)
- Installation compatible for many device generations
- Worldwide service and support

PC-based Automation

Rack PC

SIMATIC IPC547C

Application

The SIMATIC IPC 547C offers system integrators, cabinet designers, plant constructors and mechanical equipment manufacturers a 19" rack PC platform for high-performance applications and IT applications at the control and cell levels. It can be used for:

- Process and visualization applications
- Industrial image processing - high-end image processing
- Quality assurance / monitoring tasks
- Measuring, open-loop and closed-loop control tasks
- Data acquisition / management

The SIMATIC IPC547C has the CE mark for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public.

Design

Basic design

- All-metal 19" enclosure for flush mounting (4 HU) for high electromagnetic compatibility and mechanical ruggedness; lacquered on the outside
- Prepared for mounting on telescopic rails
- Horizontal and vertical installation is possible. It can be used as an industrial tower PC with the appropriate kit
- Lockable front flap for authorized access to front swap media, operator controls (Reset, Power), USB interfaces, front fan and dust filter
- Card retainer for PC modules for safe transport (vibration and shock)
- Replacement of PC components (e.g. PC cards or HDD) with a single tool
- Replacement of dust filter without tools
- Dust protection by means of overpressure ventilation using bearing seated front fan through filter
- 6 slots for installing drives
 - Front: 1 x 3.5"; 3 x 5.25" or 1 x 3.5"; 1 x 5.25"; 3 x HDD swap frames (low profile)
 - Internal: 2 x 3.5"
- Graphics on-board on the PCI-Express bus, Intel GMA4500 integrated in chip set, up to 2048 x 1536 pixels, 75 Hz, 16-bit colors
- Interfaces:
 - 2 x LAN 10 / 100 / 1000 Mbit/s (RJ45, teaming-capable)
 - 9 x USB 2.0: 6 x rear, 2 x front, 1 x internal for software dongle, for example
 - 2 x PS/2, 1 x COM1, 1 x VGA
 - Audio: Line In / Out, Mic
- 7 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
- Power supply:
 - AC (100 ... 240 V, 50 ... 60 Hz)
 - AC redundant (100 ... 240 V, 50 ... 60 Hz)

Design versions

- Processor:
 - Intel Core2 Quad Q9400, 2.66 GHz, 1333 MHz FSB, 6 MByte L2 Cache with Extended Memory 64 (EM64) and virtualization technology (VT)
 - Intel Core2 Duo E8400, 3.0 GHz, 1333 MHz FSB, 6 MByte L2 Cache with Extended Memory 64 (EM64) and virtualization (VT) technology
 - Intel Pentium Dual Core E5300, 2.6 GHz, 800 MHz FSB, 2 MByte L2 Cache with Extended Memory 64 (EM64) technology
- Main memory expansion of 1 GByte up to 16 GByte, DDR2 800 SDRAM (configured as dual channel for the highest performance from 2 GByte upwards)
 - Available memory configurations: 1 GByte, 2 GByte, 4 GByte, 8 GByte²⁾
- Graphics expansion:
 - PCI-Express graphics card x16, (Dual Head: 2 x VGA or 2 x DVI-D) 256 MByte, to 2048 x 1536 pixels, 75 Hz, 32-bit colors
 - ADD card via PCI Express x16 slot, (1 x DVI-D) for connecting a digital monitor
- Drives:
 - Serial ATA 3.5" hard disks with NCQ technology
 - Internal installation:
 - 1 x 250 GByte
 - 1 x 500 GByte
 - RAID1, 500 GByte (2 x 500 GByte, mirror disks), RAID controller onboard
 - Installed on front in low-profile swap frame (hot swapping in RAID configuration)
 - 1 x 500 GByte
 - 2 x 500 GByte
 - RAID1, 500 GByte (2 x 500 GByte, mirror disks), RAID controller onboard
 - RAID5, 1 TB (3 x 500 GByte, striping with parity), RAID controller onboard
 - Optical drives: DVD-ROM or DVD±R/RW
 - Diskette drive: 1.44 MByte, 3.5" USB 1.1
- Interfaces:
 - 1 x COM2 and 1 x LPT on rear
- Country-specific power cable
- Power supply: 100 ... 240 V AC, 50 ... 60 Hz; redundant power supply
- Preinstalled and activated operating systems
 - Windows XP Professional Multi-Language
 - Windows Vista Ultimate Multi-Language
 - Windows Server 2008 Standard Edition incl. 5 Client Multi-Language
 - Windows Server 2003 R2 Standard Edition incl. 5 Client Multi-Language

¹⁾ Further information can be found under "Expansion components"

²⁾ Can only be used on 64-bit operating systems

Design (continued)



Front view of SIMATIC Rack IPC547C, with open front door



SIMATIC IPC547C rear side

A Tower Kit can be ordered as an accessory for converting the computer into an industrial tower PC. See "Ordering data for accessories"



Industrial Tower PC

Function

Multi Core processor technology

Thanks to the use of two or four processor cores, the Multi Core processors are ideally suited to multi-thread application programs and multitasking. Several demanding applications – such as visualization applications with demanding graphics or programs executing extensive calculations – can be executed at the same time to enhance the response time of the system.

Thanks to energy-optimized Multi Core technology and outstanding energy-saving properties, the Intel Core 2 Quad or Duo processors operate without any loss of performance even at increased temperatures up to 40 °C in demanding applications.

The SIMATIC IPC547C is preconfigured for Multi Core technology with Intel Core 2 Quad and Duo processors and Microsoft operating systems, and offers higher performance and better multitasking in the industrial environment.

Multi-display technology

The multi-display architecture with its modern functions for desktop and application management supports working with several screens and therefore considerably enhances productivity.

The SIMATIC IPC547C with an optional dual-head graphics card (PCI Express x16) is optimized for industrial multi-display environments. The following screen modes are supported: Native DualView, Span or Big Desktop, Clone.

Connection options: 2 x VGA or 2 x DVI-D

Monitoring functions

Integrated monitoring functions: temperature inside enclosure, fan speed (CPU, power supply and front fan), program execution (watchdog)

Expanded diagnostics / messages via Ethernet, e-mail, text message and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor):

- Runtime meter
- Hard disk status, also for RAID configuration
- System status (Heart Beat)
- Automatic logging of all alarms by means of a log file
- Capability for central monitoring of networked SIMATIC PCs

RAID controller onboard

RAID1 (mirroring) for automatic data mirroring on two SATA hard disks, or RAID5 (striping with parity) for optimized utilization of capacity with high degree of fault tolerance on three SATA hard disks

Integration

Ethernet

The integrated Ethernet interfaces (10 / 100 / 1000 Mbit/s; teaming-capable) can be used for IT communication and for exchanging data with PLCs such as SIMATIC S7 (using the "SOFTNET S7" software packages).

Other interfaces

As for connecting other I/O devices, 6 free slots for PC modules, 1 free PCI Express x16 slot for optional graphics expansions, as well as 9 USB 2.0 and serial / parallel interfaces are available.

PC-based Automation

Rack PC

SIMATIC IPC547C

Technical specifications

SIMATIC IPC547C	
General features	
Design	19" rack, 4 HU, externally painted
Processor	<ul style="list-style-type: none"> Intel Core2 Quad Q9400 (2.66 GHz, 1333 MHz FSB, 6 MByte L2 Cache, Extended Memory 64 (EM64T) and virtualization (VT-x) technology) Intel Core2 Duo E8400 (3.0 GHz, 1333 MHz FSB, 6 MByte L2 Cache, Extended Memory 64 (EM64T) and virtualization (VT-x) technology) Intel Pentium Dual Core E5300 (2.6 GHz, 800 MHz FSB, 2 MByte L2 Cache, Extended Memory 64 (EM64T))
Chipset	Intel Q45
Main memory	<ul style="list-style-type: none"> From 1 GByte DDR2 800 SDRAM Dual channel support 4 DIMM base Expandable up to 16 GByte¹⁾
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 4 x PCI 1 x PCI-Express x16 1 x PCI-Express x8 (1-lane) 1 x PCI-Express x1
Graphics	<ul style="list-style-type: none"> Onboard Intel GMA4500 graphics controller integrated into chipset; Dynamic Video Memory; up to 2048 x 1536 pixels for 75 Hz display refresh rate and 16-bit colors PCI Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot; 256 MByte; up to 2048 x 1536 pixels at 75 Hz display refresh rate and 32 bit colors (optional)
Operating system	<ul style="list-style-type: none"> None Preinstalled and activated / supplied on restore DVD Windows XP Professional MUI Windows Vista Ultimate MUI Windows Server 2008 incl. 5 Client MUI Windows Server 2003 R2 incl. 5 Client MUI <p>MUI: Multilanguage User Interface, 5 languages, English, French, German, Italian, Spanish; project-specific on request</p> <ul style="list-style-type: none"> Linux³⁾ Other
Power supply	<ul style="list-style-type: none"> 100 ... 240 V AC, 50 ... 60 Hz, with bridging of short-term power failures: Max. 16 ms at 0.85% rated voltage Redundant 100 ... 240 V AC, 50 ... 60 Hz

SIMATIC IPC547C	
Drives	
Hard disk, 3.5" Serial ATA with NCQ technology	<p>Installation in internal drive support</p> <ul style="list-style-type: none"> 250 GByte 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks) <p>Mounted in front drive support in swap frame (low profile)</p> <ul style="list-style-type: none"> 500 GByte 2 x 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks), "hot swap" 1 TB RAID5²⁾, 3 x 500 GByte (striping with parity), "hot swap"
DVD-ROM, 5,25", SATA	<ul style="list-style-type: none"> 16 x (DVD media) 48 x (CD media)
DVD±R/RW, 5,25", SATA	<ul style="list-style-type: none"> 16 x 16 x 8 x (DVD media) 48 x 32 x 48 x (CD media)
Disk	1,44 MByte
Slots for drives	<p>Front:</p> <ul style="list-style-type: none"> 3 x 5,25" 1 x 3,5" <p>Internal:</p> <ul style="list-style-type: none"> 2 x 3,5"
Interfaces	
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ45, team-capability)
USB 2.0	<ul style="list-style-type: none"> 2 x front (high current) 6 x rear (high current) 1 x internal (high current), e.g. for USB dongle
Serial	9-pole COM1 (V.24); COM2 (V.24) (optional)
Parallel	LPT1 (optional)
VGA	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line In; 1 x Line Out; 1 x Micro
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	When permitted operating temperature range is exceeded
Fan	<p>Speed monitoring</p> <ul style="list-style-type: none"> 1 x front fan 1 x CPU fan 1 x fan power supply
Watchdog	<ul style="list-style-type: none"> Monitoring of program execution Monitoring time can be parameterized in software

Technical specifications (continued)

	SIMATIC IPC547C
Monitoring functions (continued)	
Monitoring functions via the network	SIMATIC PC DiagMonitor Version V4.1.0.7 and higher (optional) Remote monitoring capability for: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System / Ethernet monitoring (Heart Beat) Communication: <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files
Front LEDs	<ul style="list-style-type: none"> • POWER (PC switched on) • HARDDISK (access to hard disk) • FAN (fan monitoring) • TEMP (temperature monitoring)
Ambient conditions	
Degree of protection	IP30 front, IP20 rear according to EN 60529
Dust protection	With front door closed: Filter class G2 EN 779, 99% of particles > 0.5 mm are filtered out according to EN 60529
Protection class	Protection class I acc. to IEC 61140
Vibration during operation	IEC 60068-2-6, 10 cycles <ul style="list-style-type: none"> • 20 ... 58 Hz: 0,015 mm • 58 ... 200 Hz: 2 m/s² (ca. 0,2 g) Note: Restrictions in use of optical drives and HDD in swap frames
Shock load during operation	IEC 60068-2-27 <ul style="list-style-type: none"> • Half-sine: 9.8 m/s², 20 ms (approx. 1 g), 100 shocks per axis Note: Restrictions in use of optical drives and HDD in swap frames

- ¹⁾ Memory information:
 In order to use a memory with more than 4 GByte, a 64-bit operating system is required. In configurations with at least 4 GByte, the visible memory can be reduced to about 3.5 GByte or less (with 32-bit operating systems) and in configurations with 8 GByte, the visible memory can be reduced to about 7.5 GByte or less.
- ²⁾ SATA RAID controller onboard in Intel CH10DO chipset
 Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).
- ³⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

	SIMATIC IPC547C
Electromagnetic compatibility (EMC)	
Emitted interference	EN 61000-6-3; EN 61000-6-4; CISPR22:2004 Class B; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ± 2 kV (IEC 61000-4-5, asymm. surge)
Immunity to interference on signal lines	<ul style="list-style-type: none"> • ± 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, symm. surge, length > 30 m)
Immunity to static discharge	<ul style="list-style-type: none"> • ± 4 kV, contact discharge (IEC 61000-4-2) • ± 8 kV, air discharge (IEC 61000-4-2)
Immunity to high radio frequency interference	<ul style="list-style-type: none"> • 1 V/m 80% AM; 2 ... 2.7 GHz (IEC 61000-4-3) • 10 V/m 80% AM; 80 MHz ... 1 GHz and 1.4 GHz and 2 GHz (IEC 61000-4-3); • 10 V, 10 kHz ... 80 MHz (IEC 61000-4-6)
Immunity to magnetic fields	100 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	
Safety regulations	IEC 60950-1; UL60950; CSA
Approvals	cULus 60950
CE mark	For use in industrial areas as well as domestic, business and commercial environments: <ul style="list-style-type: none"> • Emitted interference: EN 61000-6-3:2007 • Noise immunity: EN 61000-6-2:2005
Dimensions and weights	
Mounting dimensions (W x H x D) in mm	434 x 177 x 446
Weight, approx.	19 kg

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

PC-based Automation

Rack PC

SIMATIC IPC547C

Ordering data

Order No.

Order No.

Configuration

SIMATIC IPC547C

G 6AG4 104 - 1 ■ ■ ■ ■ - ■ ■ ■ ■

Interfaces: 2 x Gbit LAN (RJ45);
1 x serial (COM1);
6 x USB rear, 2 x USB front;
2 x PS/2; audio;
7 slots (4 x PCI long, 1 x PCIe x16, 1 x PCIe x8 (1 Lane), 1 x PCIe x1);
Mounting locations: 6 (3 x 5.25", 1 x 3.5" externally accessible; 2 x 3.5" internally accessible);
temperature and fan monitoring, watchdog, card retainer;

Processor / motherboard

- Pentium Dual Core E5300 (2.6 GHz, 800 MHz FSB, 2 MByte L2 Cache, EM64-T)
- Core2 Duo E8400 (3.0 GHz, 1333 MHz FSB, 6 MByte L2 Cache, EM64-T, VT)
- Core2 Quad Q9400 (2.66 GHz, 1333 MHz FSB, 6 MByte L2 Cache, EM64-T, VT)

Hard disks:

- 250 GByte HDD SATA; internal
- 500 GByte HDD SATA; internal
- RAID1, 500 GByte (2 x 500 GByte HDD SATA, mirror disks); internal¹⁾
- 500 GByte HDD SATA in swap frame; at the front
- 2 x 500 GByte HDD SATA in swap frame; at the front
- RAID1, 500 GByte (2 x 500 GByte HDD SATA, mirror disks) in swap frames; for hot swapping; at the front
- RAID5, 1 TB (3 x 500 GByte HDD SATA, striping with parity) in swap frame; hot swapping; at the front

Memory configuration

- 1,0 GByte DDR2 SDRAM (1 x 1 GByte), Single Channel
- 2,0 GByte DDR2 SDRAM (2 x 1 GByte), dual channel
- 4 GByte DDR2 SDRAM (2 x 2 GByte), dual channel
- 8 GByte DDR2 SDRAM²⁾ (4 x 2 GByte), dual channel

A

C

D

A

B

D

G

H

P

R

0

1

2

3

Configuration

SIMATIC IPC547C (continued)

G 6AG4 104 1 ■ ■ ■ ■ - ■ ■ ■ ■

Swap media

- DVD-ROM; without FDD;
- DVD±RW; without FDD;
- DVD-ROM and FDD;
- DVD±RW and FDD;

1

2

3

4

Expansion (hardware)

- Without expansions
- Serial (COM2) and parallel (LPT)
- Serial (COM2) and parallel (LPT) + DVI extension adapter (DVI-D)
- Serial (COM2) & parallel (LPT) + PCIe x16 graphics card (Dual Head 2 x VGA or 2 x DVI), 256 MByte

0

1

2

3

Operating system (preinstalled and activated)

- Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), SP3, 32-bit
- Windows Vista Ultimate, MUI (Eng, Fr, Ger, It, Sp), 32 bit, SP1
- Windows Server 2003 R2 Standard Edition incl. 5 clients, MUI (Eng, Fr, Ger, It, Sp), 32 bit, SP2
- Windows Server 2008 Standard Edition incl. 5 Client, MUI (Eng, Fr, Ger, It, Sp), 32 bit, SP1
- Without operating system

B

C

N

P

X

Expansion (software)

- SIMATIC IPC DiagMonitor V4.1 software included
- SIMATIC IPC Image & Partition Creator V3.0 software included
- SIMATIC IPC DiagMonitor V4.1 and Image & Partition Creator V3.0 software included
- Without software

A

B

C

X

Power supply, with country-specific cable:

- 110 / 230 V AC industrial power supply; European cable
- 110 / 230 V AC industrial power supply; Chinese cable
- 2 x 110 / 230 V AC redundant power supply; without cable

0

5

6

¹⁾ Not in combination with redundant power supply

²⁾ Can only be used on 64-bit operating systems

G: Subject to export regulations: AL: N and ECCN: 5D992

For an up-to-date overview, see the SIMATIC PC online configurator at:
<http://www.siemens.com/ipc-configurator>

Ordering data		Order No.	Order No.	
Preferred variants (ex-stock)			Accessories	
SIMATIC IPC547C			Memory Expansion	
<ul style="list-style-type: none"> • PENTIUM Dual Core E5300 (2.6 GHz, 800 MHz FSB, 2 MByte L2 Cache, EM64-T) 250 GByte GByte HDD SATA, internal 1.0 GByte DDR2 SDRAM (1 x 1.0 GByte), single channel; DVD-ROM and FDD, without operating system, interfaces: 2 x Gbit LAN (RJ45) 2 x serial, 1 x parallel, 6 x USB rear, 2 x USB front, 2 x PS/2, AUDIO 110 / 230V industrial power supply, European cable • Core2 Duo E8400 (3.0 GHz, 1333 MHz FSB, 6 MByte L2 Cache, EM64-T, VT) 250 GByte HDD SATA, internal 1.0 GByte DDR2 SDRAM (1 x 1.0 GByte), single channel; DVD+/-RW and FDD, Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), SP3, interfaces: 2 x Gbit LAN (RJ45) 2 x serial, 1 x parallel, 6 x USB rear, 2 x USB front, 2 x PS/2, AUDIO, European cable • Core2 Quad Q9400 (2.66 GHz, 1333 MHz FSB, 6 MByte L2 Cache, EM64-T, VT) 250 GByte HDD SATA, internal 2.0 GByte DDR2 SDRAM (2 x 1.0 GByte), single channel; DVD+/-RW and FDD, Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), SP3, interfaces: 2 x Gbit LAN (RJ45), 2 x serial, 1 x parallel, 6 x USB rear, 2 x USB front, 2 x PS/2, AUDIO, European cable 	G	6AG4 104-1AA03-1 xX0	• 1 GByte DDR2 800 DIMM	B 6ES7 648-2AF40-0JA0
			• 2 GByte DDR2 800, DIMM, kit for dual-channel technology	B 6ES7 648-2AF50-0JB0
			• 4 GByte DDR2 800, DIMM, kit for dual-channel technology	B 6ES7 648-2AF60-0JB0
			Tower Kit	6ES7 648-1AA00-0XC0
			for converting the computer into an industrial tower PC	
			Card retainer	6ES7 648-1AA00-0XJ0
			For mechanically locking the internal USB interface	
			Power cable, straight, 3 m long	
			• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	6ES7 900-0AA00-0XA0
			• United Kingdom	6ES7 900-0BA00-0XA0
			• Switzerland	6ES7 900-0CA00-0XA0
			• USA	6ES7 900-0DA00-0XA0
			• Italy	6ES7 900-0EA00-0XA0
			• China	6ES7 900-0FA00-0XA0
			Rack unit for low-profile HDD swap frame	6ES7 648-0EG00-1BA0
			for 3.5" hard disk, SATA (without hard disk)	
			Expansion components	
			SIMATIC PC keyboard German / international	
			• USB port	6ES7 648-0CB00-0YA0
			• incl. 4-way USB hub	B 6ES7 648-0CD00-0YA0
			SIMATIC PC mouse	B 6ES7 790-0AA01-0XA0
			(optical, 3-button) for programming device and PC with adapter	
			SIMATIC IPC USB FlashDrive	B 6ES7 648-0DC40-0AA0
			2 GByte, USB 2.0, metal enclosure, bootable	
			Communication products	see page 5/246
			Power supplies and DC UPS	see page 5/233
			RMOS real-time operating system	see page 5/205

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

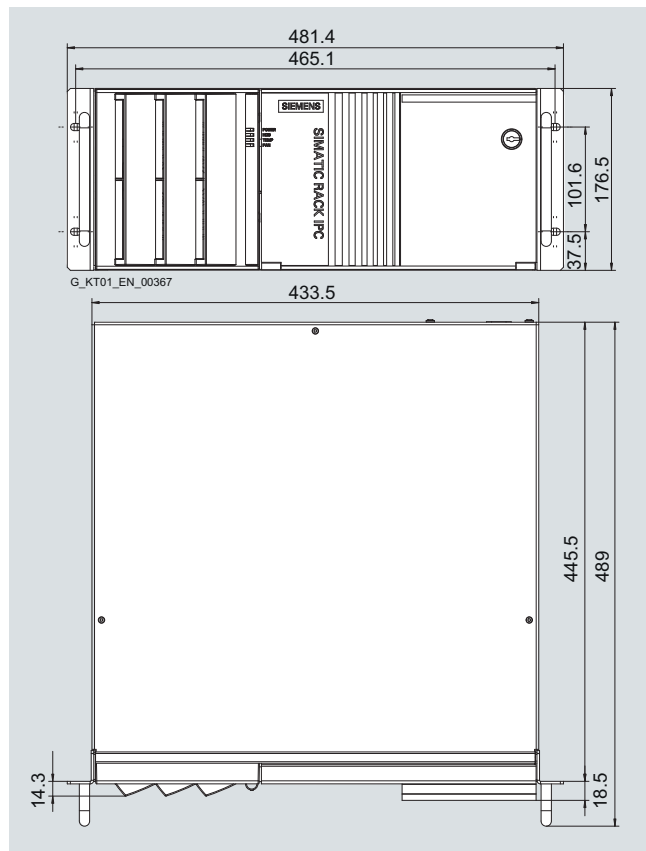
PC-based Automation

Rack PC

SIMATIC IPC547C

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC IPC547C

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

Technical specifications of the telescopic rails

Ultimate load per pair, min.	30 kg
Full extraction length, min.	470 mm
Rail thickness, max.	9,7 mm
Ultimate load per pair, min.	M5 x 6 mm

The fixing screws of the telescopic rails may not protrude 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

Overview



The SIMATIC IPC647C is a very rugged, high-performance industrial PC in 19" rack design (2 HU) with excellent industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel Core i technology

Benefits

Extremely compact and industry-compatible for 24-hour continuous use in an industrial environment

- Compact enclosure design (2 HMs)
- Suitable for installation in space-saving control cabinets only 500 mm deep
- Maximum processor performance (in maximum configuration) without loss of power (throttling) at ambient temperatures of up to 50 °C
- Distinct product design with new front design and fully-coated, dirt-resistant surfaces
- All-metal housing with high EMC for use in industrial environment
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Special hard disk holders and card retainers for protection against vibration and shock

High productivity thanks to faster data processing

- New 2010 Intel® Core™ processors – with Turbo Boost, Hyper-Threading and Virtualization technology
- Memory and graphics controller integrated into processor for extraordinary memory and graphics performance
- Maximum performance (e.g. Intel QM57 Express Chipset, DDR3 memory with the support of Dual Channel technology)
- High data transfer rates (e.g. with Serial ATA hard disks, dual Gigabit Ethernet)

Reduction in downtimes through high system availability

- Secure 24-hour operation (high MTBF, variable-speed fan)
- Efficient self-diagnostics (status display for Ethernet and PROFIBUS; alarm indication for fan, temperature, watchdog and hard disks in RAID1 configuration, SIMATIC IPC DiagMonitor)
- High degree of data security due to RAID1 (mirror disk system)
- Rapid identification and replacement of the hard disk in the event of a fault (e.g. front LEDs for HDD alarm in RAID1 configuration)
- "Hot swap" removable frame in RAID configuration (replacement of hard disk during operation)
- Solid-state drive (SSD) in single level cell (SLC) architecture and ECC memory (optional)
- Securing of the replaceable components at the front (e.g. USB software dongle) against unauthorized access by means of a lockable door
- Locked fan cover: Filter mat and front fan can only be replaced when front door is open
- The enclosure cover can only be opened if the front door is open
- Service-friendly device setup (modifications, service)

PC-based Automation

Rack PC

SIMATIC IPC647C

Benefits (continued)

Cost reductions through high investment security

- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Support for legacy interfaces (PS/2, COM, LPT)
- Installation compatible for many device generations
- Worldwide service and support

Reduced costs due to time savings for commissioning, operation and servicing

- High degree of flexibility and expansion thanks to integral interfaces and up to 3 slots (PCI and PCI Express)
- Preinstalled and activated operating system
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- Low noise output thanks to controlled fan
- Universal implementation as an industrial workstation or server
- PROFIBUS or PROFINET interface and RAID1 controller onboard (optional)
- 2 x LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- Flexible application options in locations with telescopic rails or as desktop industrial PC.

Application

The SIMATIC IPC647C provides mechanical engineers, plant engineers, and control cabinet manufacturers with a high-performance, extremely flexible 19" rack PC platform for machine-level industrial use:

- Measuring, open-loop and closed-loop control of process and machine data
- Visualization of production processes
- Image processing and editing in the context of quality inspections
- Data recording and management

The SIMATIC IPC647C has the CE mark for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can therefore also be used in building services automation or in facilities open to the public.

The SIMATIC Rack IPCs can be ordered in connection with WinCC flexible or WinCC as SIMATIC HMI packages at favorable prices.

Design

Basic Design

- All-metal 19" enclosure (2 HMs) for high mechanical robustness (vibration / shock) and high EMC
- For mounting in a horizontal and prepared for the mounting of telescopic rails
- Lockable front door for authorized access (access protection) to swap media at the front, operating controls (Reset, Power), USB interface, front fan and dust filter
- Card retainer for PC modules for safe operation and transport (vibration, shock)
- Opening of the enclosure cover with only one screw and replacement of PC components (e.g. PC cards or HDD) with a single tool
- Front fan and dust filter can be replaced without tools
- Dust protection through pressurized cooling with front fan mounted in roller bearing via filter
- 3 slots for installing drives
 - Front: 2 x HDD swap frames (low profile); 1 x optical drive (slimline) or 1 x CF drive
 - Internal: 2 x 3.5" (in optional, shock and vibration-damped disk-drive support) as an alternative to swap frames
- Graphics on-board on the PCI-Express bus, Intel GMA HD integrated in the processor, up to 2048 x 1536 pixels, 60 Hz, 16 bit colors
- Interfaces:
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45, team capability)
 - 4 x USB 2.0 at the rear, 2 x USB 2.0 at the front (one of which can be used when door is closed), 1 x internal, e.g. for software dongle
 - 2 x PS/2, COM1, COM2, LPT1, DVI-I
 - Audio: Line Out, Mic
- 3 spare slots for expansions (all long):
 - 1 x PCI
 - 1 x PCI-Express x16
 - 1 x PCI-Express x8 (4-lane)
- Power supply: 100 ... 240 V AC, 50 ... 60 Hz

Design versions

- Processor:
 - Intel Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, Turbo Boost, VT-d, EM64T)
 - Intel Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, Turbo Boost, VT-d, EM64T)
 - Intel Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache, EM64T)
- Main memory configuration
 - from 1 GByte up to 8 GByte, DDR3 1066 SDRAM (configured as dual channel for the highest performance from 2 GByte upwards)
 - ECC memory
 - Memory tip:
 - a 64-bit operating system is required to use a memory with more than 4 GByte. In configurations with at least 4 GByte, the visible memory can be reduced to about 3.5 GByte or less (with 32-bit operating systems) and in configurations with 8 GByte, the visible memory can be reduced to about 7.5 GByte or less.
- Fieldbus onboard:
 - PROFIBUS / MPI, CP 5611-compatible or PROFINET, 3 x RJ45, CP 1611-compatible
- Bus modules with 3 spare slots (2 x PCI, 1 x PCI-Express x16)

Design (continued)

- Graphics expansion:
 - PCI-Express graphics card x16, (dual head with display port: 2 x VGA or 2 x DVI-D via adapter), 256 MByte, up to 2 048 x 1 536 pixels, 75 Hz, 32-bit colors
 - Adapter cable (DVI-I to VGA) for the onboard graphics interface (1 x VGA) for connecting an analog monitor
- Drives:
- SATA 3.5" hard disks with NCQ technology or SATA 2.5" Solid-State Drive:
 - Mounted internally on the permanent hard disk support:
 - 1 x 32 GByte SSD in single level cell (SLC) architecture
 - Mounted internally in vibration / shock-absorbing hard-disk support or at the front in a swap frame (hot-swap in RAID1 configuration):
 - 1 x 250 GByte
 - 1 x or 2 x 500 GByte
 - RAID1, 500 GByte (2 x 500 GByte, mirror disks), RAID controller onboard
- Optical drive: DVD+/-R/RW, slimline
- CompactFlash drive, at front
- Country-specific power cable
- Preinstalled operating systems:
 - Windows XP Professional Multi-Language, 32-bit
 - Windows 7 Ultimate Multi-Language, 32-bit
 - Windows Server 2008 Standard Edition incl. 5 Client Multi-Language, 32-bit
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC PC / PG Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".



Front view of SIMATIC IPC647C, with open front door



Rear SIMATIC IPC647C

Function

Multi Core processor technology

Thanks to the use of two processor cores with hyper-threading, the Core i processors are ideally suited to multi-thread application programs and multitasking. Several demanding applications – such as visualization applications with demanding graphics or programs executing extensive calculations – can be executed at the same time to enhance the response time of the system. Thanks to energy-optimized Multi Core technology and outstanding energy-saving properties, the Intel Core i processors operate without any loss of performance even at increased temperatures up to 50 °C in demanding applications.

Multi-display technology

The multi-display architecture with its modern functions for desktop and application management supports working with several screens and therefore considerably enhances productivity. The SIMATIC IPC647C with an optional dual-head graphics card (PCI-Express x16) is optimized for industrial multi-display environments. The following multidisplay modes are supported: Native DualView, Span or Big Desktop, Clone.

Connection options: 2 x VGA or 2 x DVI-D

Monitoring functions

Integrated monitoring functions (program execution (watchdog), temperature, fan speed and hard disk status in RAID configuration). Extended diagnostics / alarms over Ethernet, e-mail, SMS and for direct infeed in SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor):

- Runtime meter
- Hard disk status
- System status (Heart Beat)
- Automatic logging of all alarms by means of a log file
- Capability for central monitoring of networked SIMATIC PCs
- RAID1 (RAID controller onboard) for automatic data mirroring on two SATA hard disks

Integration

- Ethernet
The two integrated Gigabit Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with the SOFTNET S7 software package).
- PROFIBUS
The optional floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or for coupling to the SIMATIC S7 (with the "SOFTNET for PROFIBUS" software package).
- PROFINET
The optional PROFINET interface can be used for connecting distributed field devices or for controlling drives.
- Other interfaces
For the connection of other I/O devices, 2 free slots are available for PC modules, 1 free PCI-Express x16 slot for optional graphics expansions, as well as seven USB 2.0 interfaces, two serial interfaces, and one parallel interface.

PC-based Automation

Rack PC

SIMATIC IPC647C

Technical specifications

SIMATIC IPC647C	
General features	
Design	19" rack, 2 HMs, external coating
Processor	<ul style="list-style-type: none"> Intel Core i7-610E (2C / 4T, 2.53 GHz, 4MB cache, Turbo Boost, VT-d, EM64T) Intel Core i5-520E (2C / 4T, 2.4 GHz, 3MB cache, Turbo Boost, VT-d, EM64T) Intel Core i3-330E (2C / 4T, 2.13 GHz, 3MB cache, EM64T)
Chipset	Intel QM57
Main memory	<ul style="list-style-type: none"> from 1 GByte DDR3 1066 SDRAM Dual channel support 2 DIMM base Expandable up to 8 GByte³⁾
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 2 x PCI 1 x PCI-Express x16 or <ul style="list-style-type: none"> 1 x PCI 1 x PCI-Express x8 (4-lane) 1 x PCI-Express x16
Graphics	<ul style="list-style-type: none"> Onboard Intel GMA HD graphics controller integrated into processor; dynamic video memory; up to 2048 x 1536 pixels with 75 Hz refresh rate and 16-bit colors PCI-Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D via display port adapter) in the PCIe x16 slot; 256 MByte; up to 2048 x 1536 pixels with 75 Hz refresh rate and 32-bit colors (optional)
Operating system	<ul style="list-style-type: none"> without Preinstalled and activated / supplied on restore DVD Windows XP Professional MUI, 32-bit Windows 7 Ultimate MUI, 32-bit Windows Server 2008 incl. 5 Client MUI, 32-bit MUI: Multilanguage User Interface; 5 languages (English, French, German, Italian, Spanish) <ul style="list-style-type: none"> Project-specific on request¹⁾ Other
Power supply	100 ... 240 V AC, 50 ... 60 Hz; with bridging of temporary power failures according to NAMUR: max. 20 ms at 0.85% rated voltage

SIMATIC IPC647C	
Drives	
Hard disk, SATA 3,5" or Solid-State Drive, SATA 2,25"	<p>Mounted in internal shock / vibration-resistant disk drive support</p> <ul style="list-style-type: none"> 250 GByte 500 GByte 2 x 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks) <p>Installation in front drive support</p> <ul style="list-style-type: none"> 32 GByte SSD, SLC <p>Mounted in front drive support in swap frame (low profile)</p> <ul style="list-style-type: none"> 250 GByte 500 GByte 2 x 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks), "hot swap" 32 GByte SSD, SLC
DVD+/-R/RW, slimline	<ul style="list-style-type: none"> 8 x 8 x 6 x (DVD media) 24 x 24 x 24 x (CD media)
Slots for drives	<p>Front:</p> <ul style="list-style-type: none"> 2 x low profile swap frames (for 3.5" HDD) 1 x 12.7 mm slimline (for ODD or CF drive) <p>Internal:</p> <ul style="list-style-type: none"> 2 x 3.5" as an alternative to swap frames (in the optional, shock and vibration-damped drive support)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible), optional
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ45, team-capability)
USB 2.0	<ul style="list-style-type: none"> 2 x front, (high current) 4 x rear; (high current) 1 x internal (high current), e.g. for USB dongle
Serial	<ul style="list-style-type: none"> 9-pole COM1 (V.24) 9-pole COM2 (V.24)
Parallel	LPT1
VGA	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line Out; 1 x Micro

Technical specifications (continued)

SIMATIC IPC647C	
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature range • Messages can be evaluated by the application program
Fan	<ul style="list-style-type: none"> • Speed monitoring • 2 x housing fan (front) • 1 x fan power supply
Watchdog	<ul style="list-style-type: none"> • 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 IPC DiagMonitor (optional) Version 4.2 and higher Remote monitoring capability for: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System / Ethernet monitoring (Heart Beat) Communication: <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files

SIMATIC IPC647C	
Monitoring functions (continued)	
Front LEDs	<ul style="list-style-type: none"> • POWER (internal power supply unit, PC switched on) • HARDDISK (access to hard disk) • ETHERNET1 (Ethernet status, "Heart Beat") • ETHERNET2 (Ethernet status, "Heart Beat") • PROFIBUS / MPI (PROFIBUS-status) • SF PROFINET (PROFINET-Status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD1 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software) • HDD2 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software)
Ambient 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 held back
Protection class	Protection class I according to IEC 61140
Vibration during operation	DIN EN 60068-2-6, 10 cycles Internal mounting of the hard disk drives in optional, internal drive supports: <ul style="list-style-type: none"> • 10 ... 58 Hz: 0.0375 mm; • 58 ... 500 Hz: 5 m/s² (ca. 0.5 g) Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Shock load during operation	DIN EN 60068-2-27, IEC 60068-2-29 Internal mounting of the hard disk drives in optional, internal drive supports: <ul style="list-style-type: none"> • Half-sine: 50 m/s², 30 ms (ca. 5 g), 100 shocks per axis Note: Limitations when DVD+/-RW and HDD are operated in a swap frame

PC-based Automation

Rack PC

SIMATIC IPC647C

Technical specifications (continued)

SIMATIC IPC647C	
Electromagnetic compatibility (EMC)	
Emitted interference (AC)	EN 61000-6-3 FCC Class A EN 61000-3-2 Class D and 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)
Immunity to interference 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 radio frequency interference	1 V/m 80% AM 1 kHz; 2 ... 2.7 GHz (IEC 61000-4-3) 10 V/m 80% AM 1 kHz; 80 MHz - 1 GHz and 1.4 GHz - 2 GHz (IEC 61000-4-3); 10 V, 10 kHz to 80 MHz (IEC 61000-4-6)
Immunity to magnetic fields	100 A/m, 50 / 60 Hz (IEC 61000-4-8)

SIMATIC IPC647C	
Ambient temperature during operation	5 ... 50 °C Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Relative humidity during operation	5 ... 85% at 30 °C (no condensation)
Approvals	
Safety regulations	IEC 60950-1 Second Edition, EN 60950-1, UL 60950, CSA C22.2 No 60950
Approvals	cULus 60950
CE mark	Use in industry: • Noise immunity: EN 61000-6-2:2005 Use in domestic environments: • Emitted interference: EN 61000-6-3:2007
Dimensions and weights	
Mounting dimensions (W x H x D) in mm	430 x 88 x 445
Weight	Minimum 16 kg, maximum 23 kg

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald)

²⁾ SATA RAID controller on board in Intel chipset

³⁾ Memory information:
In order to use a memory with more than 4 GByte, a 64-bit operating system is required. In configurations with at least 4 GByte, the visible memory can be reduced to about 3.5 GByte or less (with 32-bit operating systems) and in configurations with 8 GByte, the visible memory can be reduced to about 7.5 GByte or less.

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

Ordering data		Order No.	
Configuration ¹⁾			
SIMATIC IPC647C		G	6AG4 112- 1
Interfaces: 2 x 10 / 100 / 1000 Mbit/s 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 / motherboard			
• Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache), motherboard without fieldbus		G	
• Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache), motherboard with PROFIBUS / MPI		H	
• Core i3-330E (2C / 4T; 2.13 GHz, 3 MByte cache), motherboard with PROFINET (3 x RJ45, CP 1616-compatible) ²⁾		J	
• Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, TB, VT), motherboard without fieldbus		K	
• Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, TB, VT), motherboard with PROFIBUS/ MPI		L	
• Core i5-520E (2C / 4T; 2.4 GHz, 3 MByte cache, TB, VT), motherboard with PROFINET (3 x RJ45, CP 1616-compatible) ²⁾		M	
• Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, TB, VT), motherboard without field bus		N	
• Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, TB, VT), motherboard with PROFIBUS / MPI		P	
• Core i7-610E (2C / 4T; 2.53 GHz, 4 MByte cache, TB, VT), motherboard with PROFINET (3 x RJ45, CP 1616-compatible) ²⁾		R	
Hard disks:			
• 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal		A	
• 500 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal		B	
• 2 x 500 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal		C	
• RAID1 500 GByte (2 x 250 GByte HDD SATA, mirror disks); 0.5g vibration, 5 g shock, internal		D	
• 250 GByte HDD SATA in swap frame; front		H	
• 500 GByte HDD SATA in swap frame; front		K	
• 2 x 500 GByte HDD SATA in swap frame; front		M	
• RAID1 500 GByte (2 x 250 GByte HDD SATA) in swap frame, for hot swapping; front		P	
• 32 GByte SSD (SLC) SATA, internal		S	
• 32 GByte SSD (SLC) SATA in swap frame; front		T	

Order No.	
1) For an up-to-date overview, see the SIMATIC PC online configurator at http://www.siemens.com/pc-configurator	
2) Not in combination with Windows 7 and Windows Server 2008	
Configuration ¹⁾	
SIMATIC IPC647C	
G	6AG4 112- 1
Memory configuration	
• 1 GByte DDR3 SDRAM (1 x 1 GByte), single channel	0
• 2 GByte DDR3 SDRAM (1 x 2 GByte), single channel	1
• 4 GByte DDR3 SDRAM (2 x 2 GByte), dual channel	2
• 6 GByte DDR3 SDRAM (1 x 2 GByte, 1 x 4 GByte), dual channel	3
• 8 GByte DDR3 SDRAM (2 x 4 GByte), dual channel	4
• 2 GByte DDR3 SDRAM, ECC (2 x 1 GByte), dual channel	5
• 4 GByte DDR3 SDRAM, ECC (2 x 2 GByte), dual channel	6
• 8 GByte DDR3 SDRAM, ECC (2 x 4 GByte), dual channel	7
Swap media	
• CompactFlash drive, at front	0
• DVD±RW	1
• without swap medium	8
Bus module / hardware expansion	
• 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 (2 x DVI-D via 2 x 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 (2 x VGA via 2 x DP-VGA adapters)	7

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Rack PC

SIMATIC IPC647C

Ordering data

Order No.

Order No.

Configuration¹⁾

SIMATIC IPC647C

G

6AG4 112-1 ■■■■-■■■

Operating system (preinstalled and activated)

- Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), SP3, 32-bit
- Windows 7 Ultimate, MUI (Eng, Ger, Fr, It, Sp), 32-bit
- Windows Server 2008 Standard Edition incl. 5 clients, MUI (Eng, Fr, Ger, It, Sp), SP2, 32-bit
- Without operating system

B

E

P

X

Expansion (software)

- SIMATIC IPC DiagMonitor 4.2 included
- SIMATIC IPC Image Creator software 3.1 included
- SIMATIC IPC DiagMonitor 4.2 and Image Creator Software 3.1 included
- Without software

A

B

C

X

Power supply, with country-specific cable:

- 110 / 230 V AC industrial power supply with Namur; European cable
- 110 / 230 V AC industrial power supply unit with NAMUR; cable for United Kingdom
- 110 / 230 V AC industrial power supply Namur; cable for Switzerland
- 110 / 230 V AC industrial power supply Namur; US cable
- 110 / 230 V AC industrial power supply Namur; Italian cable
- 110 / 230 V AC industrial power supply with Namur; Chinese cable

0

1

2

3

4

5

Accessories

Memory Expansion

- 1 GByte DDR3 1066 SDRAM, DIMM
- 2 GByte DDR3 1066 SDRAM, DIMM
- 4 GByte DDR3 1066 SDRAM, DIMM
- 1 GByte DDR3 1066 SDRAM, DIMM, ECCA)
- 2 GByte DDR3 1066 SDRAM, DIMM, ECCA)
- 4 GByte DDR3 1066 SDRAM, DIMM, ECCA

6ES7 648-2AJ40-0KA0

6ES7 648-2AJ50-0KA0

6ES7 648-2AJ60-0KA0

6ES7 648-2AJ40-1KA0

6ES7 648-2AJ50-1KA0

6ES7 648-2AJ60-1KA0

Hard disk slide-in unit for swap frame

SIMATIC PC accessories, slide-in HDD swap frame, low-profile, for 3.5" hard disk, serial ATA (without hard disk)

6ES7 648-0EG00-1BA0

Power cable, straight, 3 m long

- Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden
- United Kingdom
- Switzerland
- USA
- Italy
- China

6ES7 900-0AA00-0XA0

6ES7 900-0BA00-0XA0

6ES7 900-0CA00-0XA0

6ES7 900-0DA00-0XA0

6ES7 900-0EA00-0XA0

6ES7 900-0FA00-0XA0

Expansion components

SIMATIC PC keyboard

- USB port
- incl. 4-way USB hub

6ES7 648-0CB00-0YA0

6ES7 648-0CD00-0YA0

SIMATIC PC mouse

(optical, 3-button) for programming device and PC with adapter

6ES7 790-0AA01-0XA0

SIMATIC IPC USB FlashDrive

2 GByte, USB 2.0, metal enclosure, bootable

6ES7 648-0DC40-0AA0

Communication products

see page 5/246

Power supplies and DC UPS

see page 5/233

RMOS real-time operating system

see page 5/205

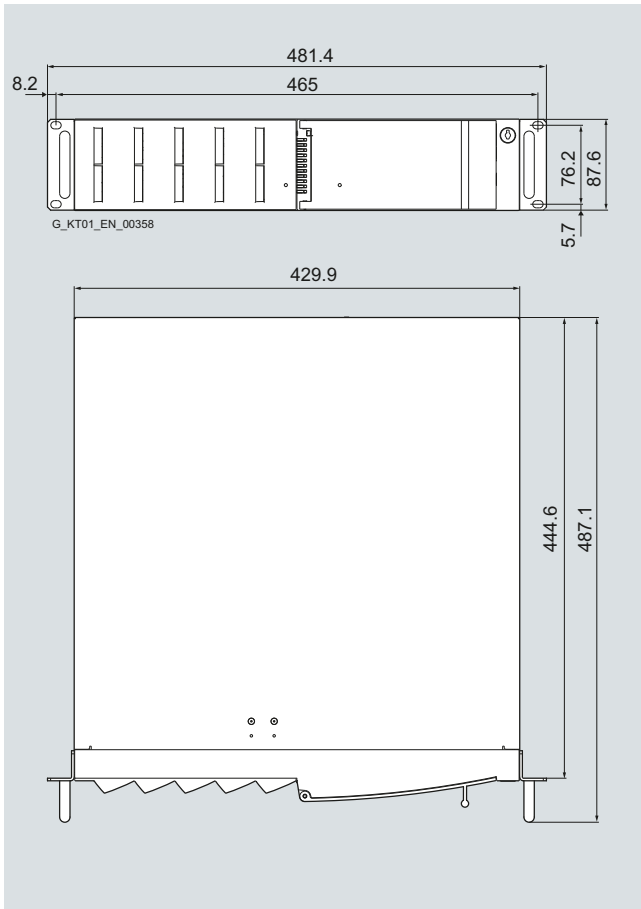
¹⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: <http://www.siemens.com/ipc-configurator>

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC IPC647C

Technical data for telescopic rails

Carrying capacity per pair, min.	30 kg
Extended length when fully withdrawn, 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

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

PC-based Automation

Rack PC

SIMATIC IPC847C

Overview



The SIMATIC IPC847C is a very robust, high-performance industrial PC in 19" rack design (4 HU) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel Core i technology

Benefits

Maximum industrial compatibility and compactness for 24-hour use in an industrial environment

- Maximum processor performance (in maximum configuration) without loss of power (throttling) at ambient temperatures of up to 50 °C
- Distinct product design with new front design and fully-coated, dirt-resistant surfaces
- All-metal housing with high EMC for use in industrial environment
- Suitable for installing in space-saving control cabinets only 500 mm deep
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Special hard disk holders and card retainers for protection against vibration and shock

High productivity thanks to faster data processing

- New 2010 Intel® Core™ processors – with Turbo-Boost, Hyper-Threading and Virtualization technology
- Memory and graphics controller integrated into processor for extraordinary memory and graphics performance
- Maximum performance (e.g. Intel QM57 Express Chipset, DDR3 memory with the support of Dual Channel technology)
- High data transfer rates (e.g. with Serial ATA hard disks, dual Gigabit Ethernet)

Reduction in downtimes through high system availability

- Secure 24-hour operation (high MTBF, variable-speed fan)
- Efficient self-diagnostics (status display for Ethernet and PROFIBUS; alarm indication for fan, temperature, watchdog and hard disks in RAID1 / 5 configurations, SIMATIC PC DiagMonitor)
- High degree of data security due to RAID1 (mirror disks system) or RAID5 (striping with parity)
- Rapid identification and replacement of the hard disk in the event of a fault (e.g. front LEDs for HDD alarm in RAID configurations)
- "Hot swap" removable frame in RAID configuration (replacement of hard disk during operation)
- Solid-State Drive (SSD) in single level cell (SLC) architecture and ECC memory (optional)
- Redundant power supply with "hot swap" functionality (replacement of power supply module during operation)
- Securing of the replaceable components at the front (e.g. USB software dongle) against unauthorized access by means of a lockable door
- Locked fan cover: Filter mat and front fan can only be replaced when front door is open
- The enclosure cover can only be opened if the front door is open
- Service-friendly device setup (modifications, service)

Benefits (continued)

Cost reductions through high investment security

- Platform with long-term stability and embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Support for legacy interfaces (PS/2, COM, LPT)
- Installation compatible for many device generations
- Worldwide service and support

Reduced costs due to time savings for commissioning, operation and servicing

- High degree of flexibility and expandability thanks to integrated interfaces and up to 11 slots (PCI and PCI-Express)
- Preinstalled and activated operating system
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- Low noise output thanks to controlled fan
- Universal implementation as an industrial workstation or server
- PROFIBUS or PROFINET interface and RAID1 / 5 controller onboard (optional)
- 2 x LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- Flexible applications in many different positions with telescopic rails or as tower industrial PC

Application

The SIMATIC IPC847C provides mechanical engineers, plant engineers, and control cabinet manufacturers with a high-performance, extremely flexible 19" rack PC platform for machine-level industrial use:

- Measuring, open-loop and closed-loop control of process and machine data
- Visualization of production processes
- Image processing and editing in the context of quality inspections
- Data recording and management

The SIMATIC IPC847C has the CE mark for use in the industrial sector.

The SIMATIC Rack IPCs can be ordered in connection with WinCC flexible or WinCC as SIMATIC HMI packages at favorable prices.

Design

Basic design

- All-metal 19" enclosure (4 HMs) for high mechanical resilience (vibration / shock) and high EMC
- Prepared for mounting of telescopic rails
- Horizontal and vertical installation is possible, can be used as an industrial tower PC by using the appropriate kit.
- Lockable front door for authorized access (access protection) to swap media at the front, operating controls (Reset, Power), USB interface, front fan and dust filter
- Card retainer for PC modules for safe operation and transport (vibration, shock)
- Opening of the enclosure cover with only one screw and replacement of PC components (e.g. PC cards or HDD) with a single tool
- Front fan and dust filter can be replaced without tools
- Dust protection by means of overpressure ventilation using bearing seated front fan through filter
- 6 slots for installing drives
 - Front: 1 x 3.5"; 3 x 5.25" or 1 x 3.5"; 1 x 5.25"; 3 x HDD swap frame (low profile)
 - Internal: 2 x 3.5" (in the optional vibration-damping drive bracket or in the fixed hard disk support)
- Graphics on-board, Intel GMA HD integrated in the processor, up to 2048 x 1536 pixels, 60 Hz, 16-bit colors
- Interfaces:
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45, team capability)
 - 4 x USB 2.0 at the rear, 2 x USB 2.0 at the front (one of which can be used when door is closed), 1 x internal, e.g. for software dongle
 - 2 x PS/2, COM1, COM2, LPT1, DVI-I
 - Audio: Line Out, Mic
- 11 spare slots for expansions (all long):
 - 7 x PCI
 - 1 x PCI-Express x16
 - 3 x PCI-Express x4
- Power supply: 100 ... 240 V AC, 50 ... 60 Hz

PC-based Automation

Rack PC

SIMATIC IPC847C

Design (continued)

Design versions

- Processor:
 - Intel Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, Turbo Boost, VT-d, EM64T)
 - Intel Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, Turbo Boost, VT-d, EM64T)
 - Intel Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache, EM64T)
- Main memory configuration
 - from 1 GByte up to 8 GByte, DDR3 1066 SDRAM (configured as dual channel for the highest performance from 2 GByte upwards)
 - ECC memory

Memory information:
In order to use a memory with more than 4 GByte, a 64-bit operating system is required. In configurations with at least 4 GByte, the visible memory can be reduced to about 3.5 GByte or less (with 32-bit operating systems) and in configurations with 8 GByte, the visible memory can be reduced to about 7.5 GByte or less.
- Fieldbus onboard:
 - PROFIBUS / MPI, CP5611-compatible or PROFINET, 3 x RJ45, CP16116-compatible
- Bus module with only 8 spare slots (7 x PCI, 1 x PCI-Express x16)
- Graphics expansion:
 - PCI-Express graphics card x16, (dual head with display port: 2 x VGA or 2 x DVI-D via adapter), 256 MByte, up to 2048 x 1536 pixels, 75 Hz, 32-bit colors
 - Adapter cable (DVI-I to VGA) for the onboard graphics interface (1 x VGA) for connecting an analog monitor
- Drives:
- SATA 3.5" hard disks with NCQ technology or SATA 2.5" Solid-State Drive:
 - Mounted internally on the permanent hard disk support:
 - 1 x 250 GByte HDD
 - 1 x 32 GByte SSD (SLC)
 - Mounted internally in vibration / shock-absorbing hard-disk support or at the front in a swap frame (hot-swap in RAID1 / 5 configuration):
 - 1 x 250 GByte
 - 1 x or 2 x 500 GByte
 - RAID1, 500 GByte (2 x 500 GByte, mirror disks), RAID controller onboard
 - RAID5, 1 TB (3 x 500 GByte, striping with parity), RAID controller onboard
 - 1 x 32 GByte SSD (SLC) at front in swap frame
- Optical drives: DVD-ROM or DVD±R/RW
- Power supply:
 - 100 to 240 V AC, 50 to 60 Hz redundant
 - Country-specific power cable
- Preinstalled and activated operating systems:
 - Windows XP Professional Multi-Language, 32-bit
 - Windows 7 Ultimate Multi-Language, 32-bit
 - Windows Server 2008 Standard Edition incl. 5 Client Multi-Language, 32-bit
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC PC / PG Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".



Front view of SIMATIC Rack IPC847C, with open front door



Rear of SIMATIC IPC847C with redundant power supply (optional)

A Tower Kit can be ordered as an accessory for converting the computer into an industrial tower PC. See "Ordering data for accessories".



SIMATIC IPC847C

Function

Multi Core processor technology

Thanks to the use of two processor cores with hyper-threading, the Core i processors are ideally suited to multi-thread application programs and multitasking. Several demanding applications – such as visualization applications with demanding graphics or programs executing extensive calculations – can be executed at the same time to enhance the response time of the system. Thanks to energy-optimized Multi Core technology and outstanding energy-saving properties, the Intel Core i processors operate without any loss of performance even at increased temperatures up to 50 °C in demanding applications.

The SIMATIC IPC847C is preconfigured for Multi Core technology with Intel Core i processors and Microsoft operating systems, and offers higher performance and better multitasking in the industrial environment.

Multi-display technology

The multi-display architecture with its modern functions for desktop and application management supports working with several screens and therefore considerably enhances productivity. The SIMATIC IPC847C with an optional dual-head graphics card (PCI Express x16) is optimized for industrial multi-display environments. The following screen modes are supported: Native DualView, Span or Big Desktop, Clone.

Connection options: 2 x VGA or 2 x DVI-D

Monitoring functions

Integrated monitoring functions: temperature inside enclosure, fan speed (CPU, power supply and front fan), program execution (watchdog)

Expanded diagnostics / messages via Ethernet, e-mail, text message and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor):

- Runtime meter
- Hard disk status, also for RAID configuration
- System status (Heart Beat)
- Automatic logging of all alarms by means of a log file
- Capability for central monitoring of networked SIMATIC IPC

RAID controller onboard

RAID1 (mirroring) for automatic data mirroring on two SATA hard disks, or RAID5 (striping with parity) for optimized utilization of capacity with high degree of fault tolerance on three SATA hard disks.

Integration

- Ethernet
The two integrated Gigabit Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with the SOFTNET S7 software package).
- PROFIBUS
The optional floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or to interface to the SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- PROFINET
The optional PROFINET interface can be used for connecting distributed field devices or for controlling drives.
- Other interfaces
For the connection of other I/O devices, 8 or 11 free slots are available for PC modules, seven USB 2.0 interfaces, two serial interfaces, and one parallel interface.

PC-based Automation

Rack PC

SIMATIC IPC847C

Technical specifications

SIMATIC IPC847C	
General features	
Design	19" rack, 4 HU, externally painted
Processor	<ul style="list-style-type: none"> Intel Core i7-610E (2C / 4T, 2,53 GHz, 4 MByte cache, Turbo Boost, VT-d, EM64T) Intel Core i5-520E (2C / 4T, 2,4 GHz, 3 MByte cache, Turbo Boost, VT-d, EM64T) Intel Core i3-330E (2C / 4T, 2,13 GHz, 3 MByte cache, EM64T)
Chipset	Intel QM57
Main memory	<ul style="list-style-type: none"> from 1 GByte DDR3 1066 SDRAM Dual channel support 2 DIMM base Expandable up to 8 GByte¹⁾
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 7 x PCI 1 x PCI-Express x16 3 x PCI-Express x4 or <ul style="list-style-type: none"> 7 x PCI 1 x PCI-Express x16
Graphics	<ul style="list-style-type: none"> Onboard Intel GMA HD graphics controller integrated into processor; dynamic video memory; up to 2048 x 1536 pixels with 75 Hz refresh rate and 16-bit colors PCI-Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D via display port adapter) in the PCIe x16 slot; 256 MByte; up to 2048 x 1536 pixels with 75 Hz refresh rate and 32-bit colors (optional)
Operating system	<ul style="list-style-type: none"> without Preinstalled and activated / supplied on restore DVD Windows XP Professional MUI, 32-bit Windows 7 Ultimate MUI, 32-bit Windows Server 2008 incl. 5 Client MUI, 32-bit MUI: Multilanguage User Interface; 5 languages (English, French, German, Italian, Spanish) Project-specific on request Linux¹⁾ Other
Power supply	<ul style="list-style-type: none"> 100 ... 240 V AC, 50 ... 60 Hz with bridging of temporary power failures according to NAMUR: max. 20 ms at 0.85% rated voltage Redundant 100 ... 240 V AC, 50 ... 60 Hz

SIMATIC IPC847C	
Drives	
Hard disk, SATA 3,5" or Solid-State Drive , SATA 2,25"	Installation in internal drive support <ul style="list-style-type: none"> 250 GByte 32 GByte SATA Solid-State Drive (SLC) Can be installed in internal shock and vibration-damped drive support (optional) <ul style="list-style-type: none"> 250 GByte 500 GByte 2 x 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks) Installation in front drive support in swap frame <ul style="list-style-type: none"> 250 GByte 2 x 500 GByte 500 GByte RAID1²⁾, 2 x 500 GByte (mirror disks), "hot swap" 1 TB RAID5²⁾, 3 x 500 GByte (mirror disks), "hot swap" 32 GByte SATA Solid-State Drive (SLC)
DVD-ROM, 5,25", SATA	<ul style="list-style-type: none"> 16 x (DVD media) 48 x (CD media)
DVD+/-R/RW, 5,25", SATA	<ul style="list-style-type: none"> 16 x 16 x 12 x (DVD media) 48 x 32 x 48 x (CD media)
Disk	-
Slots for drives	Front: <ul style="list-style-type: none"> 3 x 5.25" and 2 x 3.5" Internal: <ul style="list-style-type: none"> 2 x 3.5" (in the optional, vibration-damping drive bracket)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible), optional
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611), optional
Ethernet	12 Mbit/s (isolated, compatible with CP 5611), optional
USB 2.0	<ul style="list-style-type: none"> 2 x front (high current) 4 x rear; (high current) 1 x internal (high current), e.g. for USB dongle
Serial	<ul style="list-style-type: none"> 9-pole COM1 (V.24) 9-pole COM2 (V2.4)
Parallel	LPT1
VGA	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line Out; 1 x Micro

Technical specifications (continued)

	SIMATIC IPC847C
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature range • Messages can be evaluated by the application program
Fan	<ul style="list-style-type: none"> • Speed monitoring • 2 x housing fan • 1 x fan power supply
Watchdog	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System / Ethernet monitoring (Heart Beat) Communication: <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Configuration of client / server architectures • Layout of log files
Front LEDs	<ul style="list-style-type: none"> • POWER (internal power supply unit, PC switched on) • HARDDISK (access to hard disk) • ETHERNET1 (Ethernet status, "Heart Beat") • ETHERNET2 (Ethernet status, "Heart Beat") • PN / MPI / DP (PROFINET / PROFIBUS status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD1 ALARM (hard disk alarm in conjunction with RAID and monitoring software) • HDD2 ALARM (hard disk alarm in conjunction with RAID and monitoring software) • HDD3 ALARM (hard disk alarm in conjunction with RAID and monitoring software)

	SIMATIC IPC847C
Ambient conditions	
Degree of protection	<ul style="list-style-type: none"> • IP41 at the front, IP20 at the rear acc. to EN 60529
Dust protection	<ul style="list-style-type: none"> • With front door closed: G2 EN 779, 99% of particles > 0.5 mm are held back
Protection class	<ul style="list-style-type: none"> • Protection class I according to IEC 61140
Vibration during operation	DIN EN 60068-2-6, 10 cycles Internal mounting of the hard disk drives in optional, internal drive supports: <ul style="list-style-type: none"> • 10 ... 58 Hz: 0.0375 mm; • 58 ... 500 Hz: 5°m/s² (ca. 0.5°g) Permanently installed internal hard disk drives: <ul style="list-style-type: none"> • 10 ... 58 Hz: 0.019 mm; • 58 ... 500 Hz: 3°m/s² (ca. 0.3°g) Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Shock load during operation	DIN EN 60068-2-27, IEC 60068-2-29 Internal mounting of the hard disk drives in optional, internal drive supports: <ul style="list-style-type: none"> • Half-sine: 50°m/s², 30 ms (ca. 5°g), 100°shocks per axis Permanently installed internal hard disk drives: <ul style="list-style-type: none"> • 30°m/s², 30 ms (ca. 3°g) Note: Limitations when DVD+/-RW and HDD are operated in a swap frame

1) Memory information:

In order to use a memory with more than 4 GByte, a 64-bit operating system is required. In configurations with at least 4 GByte, the visible memory can be reduced to about 3.5 GByte or less (with 32-bit operating systems) and in configurations with 8 GByte, the visible memory can be reduced to about 7.5 GByte or less.

2) Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.com/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

3) SATA RAID controller on board in Intel chipset

PC-based Automation

Rack PC

SIMATIC IPC847C

Technical specifications (continued)

	SIMATIC IPC847C
Ambient conditions (continued)	
Immunity to interference on signal lines	<ul style="list-style-type: none"> • ± 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	<ul style="list-style-type: none"> • ± 6 kV, contact discharge (IEC 61000-4-2) • ± 8 kV, air discharge (IEC 61000-4-2)
Immunity to high radio frequency interference	<ul style="list-style-type: none"> • 1 V/m 80% AM; 2-2.7 GHz (IEC 61000-4-3) • 10 V/m 80% AM; 80 MHz to 1 GHz and 1.4 GHz and 2 GHz (IEC 61000-4-3); • 10 V, 10 kHz to 80 MHz (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 when DVD-ROM and DVD+/-RW operated in a swap frame
Relative humidity during operation	5 ... 80 % at 25 °C (no condensation)

	SIMATIC IPC847C
Electromagnetic compatibility (EMC)	
Radiated interference (AC)	EN 61000-6-3 FCC Class A EN 61000-3-2 Class D and EN 61000-3-3
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ± 2 kV (IEC 61000-4-5, asymm. surge)
Approvals	
Safety regulations	IEC 60950-1 Second Edition, EN 60950-1:2006, UL 60950-1 Second Edition CSA C22.2 No 60950-1-07 Second Edition
Approvals	cULus 60950-1 Second Edition
CE mark	<ul style="list-style-type: none"> • Emitted interference: EN 61000-6-3:2007 • Noise immunity: EN 61000-6-2:2005
Dimensions and weights	
Mounting dimensions (W x H x D) in mm	430 x 177 x 448
Weight	Minimum 16 kg, maximum 23 kg

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

Ordering data	Order No.	Ordering data	Order No.
Configuration¹⁾		Configuration¹⁾	
SIMATIC IPC847C	G	SIMATIC IPC847C	G
Interfaces: 2 x 10 / 100 / 1000Mbit/s 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;		Hard disks: (continued)	
Processor, motherboard:		• RAID1 500 GByte (2 x 500 GByte HDD SATA) in swap frame, for hot swapping; front	P
• Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache), motherboard without fieldbus	G	• RAID5 1 TB (3 x 500 GByte HDD SATA) in swap frame, for hot swapping; front	R
• Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte cache), motherboard with PROFIBUS / MPI	H	• 32 GByte SSD (SLC) SATA, internal	S
• Core i3-330E (2C / 4T; 2.13 GHz, 3 MByte cache), motherboard with PROFINET (3 x RJ45, CP 1616-compati- ble) ²⁾	J	• 32 GByte SSD (SLC) SATA in swap frame; front	T
• Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, TB, VT), motherboard without fieldbus	K		
• Core i5-520E (2C / 4T, 2.4 GHz, 3 MByte cache, TB, VT), motherboard with PROFIBUS / MPI	L	Memory configuration:	
• Core i5-520E (2C / 4T; 2.4 GHz, 3 MByte cache, TB, VT), motherboard with PROFINET (3 x RJ45, CP 1616-compatible) ²⁾	M	• 1 GByte DDR3 SDRAM (1 x 1 GByte), single channel	0
• Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, TB, VT), motherboard without field bus	N	• 2 GByte DDR3 SDRAM (1 x 2 GByte), single channel	1
• Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte cache, TB, VT), motherboard with PROFIBUS / MPI	P	• 4 GByte DDR3 SDRAM (2 x 2 GByte), dual channel	2
• Core i7-610E (2C / 4T; 2.53 GHz, 4 MByte cache, TB, VT), motherboard with PROFINET (3 x RJ45, CP 1616-compatible) ²⁾	R	• 6 GByte DDR3 SDRAM (1 x 2 GByte, 1 x 4 GByte), dual channel	3
		• 8 GByte DDR3 SDRAM (2 x 4 GByte), dual channel	4
		• 2 GByte DDR3 SDRAM, ECC (2 x 1 GByte), dual channel	5
		• 4 GByte DDR3 SDRAM, ECC (2 x 2 GByte), dual channel	6
		• 8 GByte DDR3 SDRAM, ECC (2 x 4 GByte), 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: 7 x 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 assigned; + graphics card PCIe x16, 2 x DP (2 x DVI-D via 2 x DP-DVI adapters)	2
		• Bus module, 8 slots: 7 x PCI; 1 x PCIe x16 assigned; + graphics card PCIe x16, 2 x DP (2 x VGA via 2 x DP-VGA adapters)	3
Hard disks:			
• 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal	A		
• 500 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal	B		
• 2 x 500 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal	C		
• RAID1 500 GByte (2 x 500 GByte HDD SATA, mirror disks); 0.5 g vibration, 5 g shock, internal	D		
• 250 GByte HDD SATA; 0.3 g vibration, 3 g shock, internal	G		
• 250 GByte HDD SATA in swap frame; front	H		
• 500 GByte HDD SATA in swap frame; front	K		
• 2 x 500 GByte HDD SATA in swap frame; front	M		

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 7 and Windows Server 2008

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Rack PC

SIMATIC IPC847C

Ordering data

Order No.

Order No.

Configuration¹⁾

SIMATIC IPC847C

G

6AG4 114 - 1 ■ ■ ■ ■ - ■ ■ ■ ■

Bus module / hardware expansion (continued)

- Bus module, 11 slots:
7 x PCI, 1 x PCIe x16,
3 x PCIe x4; without hardware
expansions
- Bus module, 11 slots:
7 x PCI, 1 x PCIe x16, 3 x PCIe
x4; + DVI-VGA adapter (VGA)
for onboard graphics
- Bus module, 11 slots:
7 x PCI; 1 x PCIe x16 assigned,
3 x PCIe x4; + graphics card
PCIe x16, 2 x DP (2 x DVI-D via
2 x DP-DVI adapters)
- Bus module, 11 slots:
7 x PCI; 1 x PCIe x16 assigned;
3 x PCIe x4; + graphics card
PCIe x16, 2 x DP (2 x VGA via
2 x DP-VGA adapters)

4

5

6

7

Operating system (preinstalled and activated)

- Windows XP Professional, MUI
(Eng, Ger, Fr, It, Sp), SP3, 32-bit
- Windows 7 Ultimate, MUI
(Eng, Ger, Fr, It, Sp), 32-bit
- Windows Server 2008 Standard
Edition incl. 5 clients, MUI
(Eng, Fr, Ger, It, Sp), SP2, 32-bit
- Without operating system

B

E

P

X

Software expansion

- SIMATIC IPC DiagMonitor 4.2
included
- SIMATIC IPC Image Creator
software 3.1 included
- SIMATIC IPC DiagMonitor 4.2
& Image Creator software 3.1
included
- Without software

A

B

C

X

Power supply, country-specific cable

- 110 / 230 V AC industrial power
supply with Namur;
European cable
- 110 / 230 V AC industrial power
supply unit with NAMUR;
power cable for United Kingdom
- 110 / 230 V AC industrial power
supply Namur; cable
for Switzerland
- 110 / 230 V AC industrial power
supply Namur; US cable
- 110 / 230 V AC industrial power
supply Namur;
Italian power cable
- 110 / 230 V AC industrial power
supply with Namur;
Chinese cable
- 110 / 230 V AC industrial
redundant power supply unit
with NAMUR; without cable

0

1

2

3

4

5

6

Accessories

Memory Expansion

- 1 GByte DDR3 1066 SDRAM,
DIMM
- 2 GByte DDR3 1066 SDRAM,
DIMM
- 4 GByte DDR3 1066 SDRAM,
DIMM
- 1 GByte DDR3 1066 SDRAM,
DIMM, ECC
- 2 GByte DDR3 1066 SDRAM,
DIMM, ECC
- 4 GByte DDR3 1066 SDRAM,
DIMM, ECC

6ES7 648-2AJ40-0KA0

6ES7 648-2AJ50-0KA0

6ES7 648-2AJ60-0KA0

6ES7 648-2AJ40-1KA0

6ES7 648-2AJ50-1KA0

6ES7 648-2AJ60-1KA0

Hard disk slide-in unit for swap frame

SIMATIC PC accessories, slide-in
unit for low-profile HDD swap
frame, for 3.5" hard disk, serial
ATA (without hard disk)

6ES7 648-0EG00-1BA0

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
- United Kingdom
- Switzerland
- USA
- Italy
- China

6ES7 900-0AA00-0XA0

6ES7 900-0BA00-0XA0

6ES7 900-0CA00-0XA0

6ES7 900-0DA00-0XA0

6ES7 900-0EA00-0XA0

6ES7 900-0FA00-0XA0

Tower Kit

for converting the computer
into an industrial tower PC

6ES7 648-1AA00-0XD0

Expansion components

SIMATIC PC keyboard German / international

- USB port
- incl. 4-way USB hub

6ES7 648-0CB00-0YA0

6ES7 648-0CD00-0YA0

SIMATIC PC mouse

(optical, 3-button) for
programming device and PC
with adapter

6ES7 790-0AA01-0XA0

SIMATIC IPC USB FlashDrive

2 GByte, USB 2.0, metal
enclosure, bootable

6ES7 648-0DC40-0AA0

Communication products

see page 5/246

RMOS real-time operating system

see page 5/205

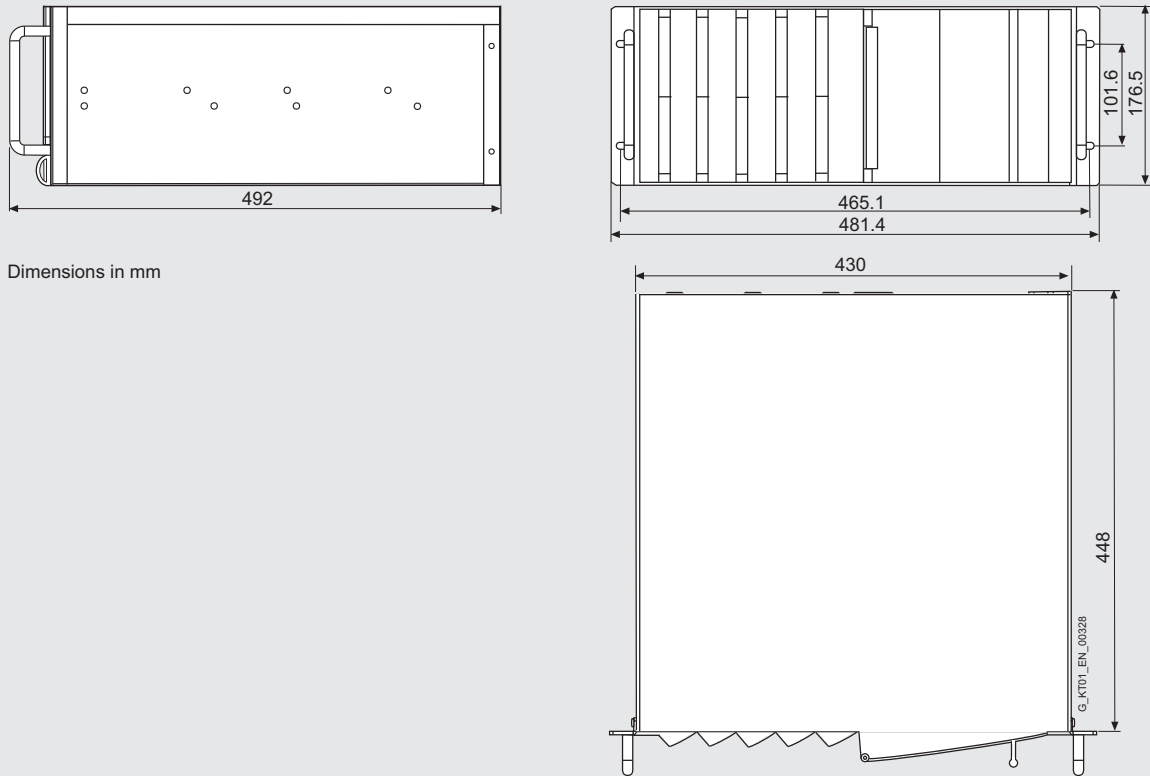
¹⁾ For an up-to-date overview, see the SIMATIC PC online configurator at
<http://www.siemens.com/ipc-configurator>

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC IPC847C

Technical data for telescopic rails

Carrying capacity per pair, min.	30 kg
Extended length when fully withdrawn, 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 in the Internet under:

<http://www.siemens.com/simatic-pc>

PC-based Automation

Rack PC

SIMATIC Rack PC 647B

Overview



The SIMATIC Rack PC 647B is an extremely rugged, powerful, industrial PC for installation in 19" racks (2 HU) with a high degree of industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel Core2 Duo technology

Benefits

Extremely compact and industry-compatible for 24-hour continuous use in an industrial environment

- Compact enclosure design (2 HU)
- Suitable for installing in space-saving control cabinets only 500 mm deep
- Maximum processor performance (in maximum configuration) without loss of power (throttling) at ambient temperatures of up to 50 °C
- Distinct product design with new front design and fully-coated, dirt-resistant surfaces
- All-metal housing with high EMC for use in industrial environment
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Special hard disk holders and card retainers for protection against vibration and shock

High productivity thanks to faster data processing

- State-of-the-art PC technology (e.g. Intel Core2 Duo and Extended Memory 64 (EM64T) processor technology)
- Maximum performance (e.g. Intel 945GM Express Chipset, DDR2 memory with the support of Dual Channel technology)
- High data transfer rates (e.g. with Serial ATA hard disks, dual Gigabit Ethernet)

Reduction in downtimes through high system availability

- Secure 24-hour operation (high MTBF, variable-speed fan)
- Efficient self-diagnostics (status display for Ethernet and PROFIBUS; alarm indication for fan, temperature, watchdog and hard disks in RAID1 configuration, SIMATIC PC DiagMonitor)
- High degree of data security due to mirrored drive system, optionally in "hot swap" frames
- Service-friendly device setup (modifications, service)

Cost reductions through high investment security

- Platform with long-term stability and embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Support for legacy interfaces (PS/2, COM, LPT)
- Installation compatible for many device generations
- Worldwide service and support

Reduced costs due to time savings for commissioning, operation and servicing

- Preinstalled and activated operating system
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- Low noise output thanks to controlled fan
- Universal implementation as an industrial workstation or server
- PROFIBUS or PROFINET interface and RAID1 controller onboard (optional)
- 2 x LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with team capability)
- Fast identification and replacement of the hard disk in the event of a fault (e.g. front LEDs for HDD alarm in RAID1 configuration)
- High degree of flexibility and expansion thanks to integral interfaces and up to 3 slots (PCI and PCI Express)

Application

The SIMATIC Rack PC 647B offers machine, plant and control cabinet builders a high-performance, highly flexible 19"-rack PC platform for industrial use at the machine:

- Measuring, open-loop control and closed-loop control of process data and machine data
- Visualization of production processes
- Image processing and evaluation in the context of quality inspection
- Data acquisition and management

The SIMATIC Rack PC 647B has CE marking for implementation in industrial environments as well as in domestic, commercial and office environments and can therefore be used in building automation or in public buildings as well as in industrial applications.

Design

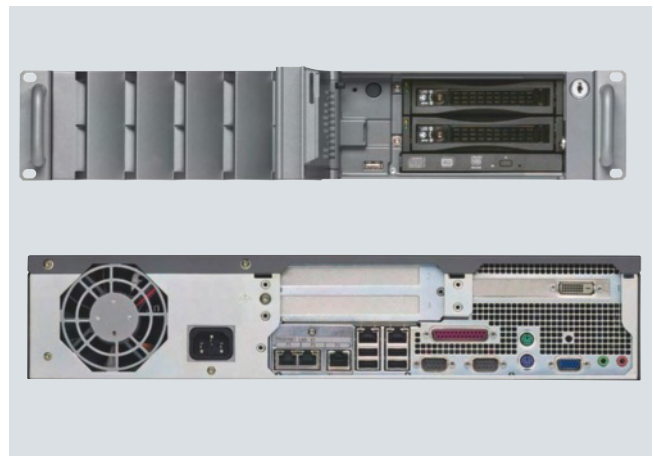
Basic design

- All-metal 19" enclosure (2 HU) for high mechanical robustness (vibration / shock) and high EMC
- For mounting in a horizontal and prepared for the mounting of telescopic rails
- Lockable front door for authorized access (access protection) to swap media at the front, operating controls (Reset, Power), USB interface, front fan and dust filter
- Card retainer for PC modules for safe operation and transport (vibration, shock)
- Opening of the enclosure cover with only one screw and replacement of PC components (e.g. PC cards or HDD) with a single tool
- Front fan and dust filter can be replaced without tools
- Dust protection through pressurized cooling with front fan mounted in roller bearing via filter
- 3 slots for installing drives
 - Front: 2 x HDD swap frames (low profile); 1 x optical drive (slimline)
 - Internal: 2 x 3.5" (in the optional, shock and vibration-damped disk-drive support) as an alternative to swap frames
- Onboard graphics on the PCI Express bus, Intel GMA950 integral to chipset, up to 2048 x 1536 pixels, 75 Hz, 16-bit colors
- Interfaces:
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45, teaming-capable)
 - 4 x USB 2.0 on the rear, 2 x USB 2.0 on the front (1 of which can be used with the door closed)
 - 2 x PS/2, COM1, COM2, LPT1, VGA
 - Audio: Line Out, Mic
- 3 spare slots for expansions (all long)
- Power supply: 100 / 240 V AC, 50 / 60 Hz, cable in country-specific design

Design versions

- Processor:
 - Intel Core2 Duo T7400, 2.16 GHz, 667 MHz FSB, 4 MByte L2 Cache with Extended Memory 64 (EM64) and virtualization technology (VT)
 - Intel Core2 Duo T5500 (1.66 GHz, 667 MHz FSB, 2 MByte L2 Cache with Extended Memory 64 (EM64) technology)
 - Intel Celeron M 440, 1.86 GHz, 533 MHz FSB, 1 MByte L2 Cache
- Main memory expansion from 512 MByte to 4 GByte DDR2 667 SDRAM (configured as dual channel for top performance from 2 GByte upwards)
- Fieldbus onboard:
 - PROFIBUS / MPI, CP5611-compatible or PROFINET, 3 x RJ45, CP1616-compatible
- Bus modules with 3 spare slots (2 x PCI or 1 x PCI, 1 x PCI Express x4; 1 x PCI Express x16)
- Graphics expansion:
 - PCI-Express graphics card x16, (Dual Head: 2 x VGA or 2 x DVI-I), 128 MByte, up to 2048 x 1536 pixels, 75 Hz, 32 bit colors
 - ADD card via PCI Express x16 slot, (1 x DVI-D) for connecting a digital monitor
- Drives:
 - Serial ATA 3.5" hard disks with NCQ technology: Mounted internally on the permanent hard disk support (1 x 160 GByte)
 - Mounted internally in vibration / shock-absorbing hard-disk support or at the front in a swap frame (hot-swap in RAID1 configuration):
 - 1 x 160 GByte
 - 1 x or 2 x 250 GByte
 - RAID1, 2 x 250 GByte (RAID controller onboard)
 - Optical drive DVD±/R/RW slimline
 - CompactFlash drive, internal
- Country-specific power cable
- Preinstalled operating systems:
 - Windows XP Professional Multi-Language
 - Windows Vista Ultimate Multi-Language
 - Windows Server 2003 Standard Edition incl. 5 Client Multi-Language
- SIMATIC PC DiagMonitor¹⁾
- SIMATIC PC / PG Image Creator¹⁾

¹⁾ Further information can be found under "Expansion".



Front SIMATIC Rack PC 647B, with opened front door and Rear

PC-based Automation

Rack PC

SIMATIC Rack PC 647B

Function

- *Dual Core processor technology*
Thanks to the use of two processor cores, the dual core processors are ideally suited to multi-thread application programs and multitasking. Several demanding applications – such as highly graphical visualization applications or highly computational programs can execute simultaneously and therefore enhance the speed of the system response. Thanks to energy-optimized dual core technology and outstanding energy-saving properties, the Intel®Core™ 2 Duo processors operate without any loss of performance even at increased temperatures up to 50 °C in very demanding applications.
The SIMATIC Rack PC 647B is preconfigured for dual core technology with Intel®Core™ 2 Duo processors and Microsoft Windows XP Professional or Windows Server 2003 operating system and offers greater performance and better multitasking in industrial applications.
- *Multi-display technologie*
The multi-display architecture with its modern functions for desktop and application management supports working with several screens and therefore enhances productivity. The SIMATIC Rack PC 647B with its optional Dual Head graphics card (PCI Express x16) is optimized for industrial multidisplay environments. The following multidisplay modes are supported: Native DualView, Span or Big Desktop, Clone.
- Connection options: 2 x VGA or 2 x DVI-D
- **Monitoring functions**
Integrated monitoring functions (program execution (watchdog), temperature, fan speed and hard disk status in RAID configuration)
- **Extended diagnostics / alarms over Ethernet, e-mail, SMS and for direct infeed in SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor):**
 - Runtime meter
 - Hard disk status
 - System status (Heart Beat)
 - Automatic logging of all alarms by means of a log file
 - Capability for central monitoring of networked SIMATIC PCs
- **RAID1 (RAID controller onboard) for automatic data mirroring on two SATA hard disks**

Integration

- **Ethernet**
The two integral Gigabit Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with PLCs, such as SIMATIC S7 (using the SOFTNET S7 software package).
- **PROFIBUS**
The optional isolated PROFIBUS interface (12 Mbit/s) can be used to connect to distributed field devices or for coupling to SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- **PROFINET**
The optional PROFINET interface can be used to connect distributed field devices or to control drives.
- **Further interfaces**
For connecting additional I/O devices, there are 2 spare slots for PCI modules, 1 spare PCI Express x16 slot for optional graphics expansions and six USB 2.0 as well as two serial interfaces and one parallel interface.

Technical specifications

SIMATIC Rack PC 647B	
General features	
Design	19" rack, 2 HU, external coating
Processor	<ul style="list-style-type: none"> Intel Core2 Duo T7400 (2.16 GHz, 667 MHz FSB, 4 MByte L2 Cache with extended memory 64 (EM64) technology) and virtualization technology (VT) software Intel Core2 Duo T5500 (1.66 GHz, 667 MHz FSB, 2 MByte L2 Cache with extended memory 64 (EM64) technology) Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1 MByte L2 Cache)
Chipset	Intel 945 GM
Main memory	<ul style="list-style-type: none"> From 512 MByte DDR2 667 SDRAM Dual channel support 2 SODIMM base Expandable up to 4 GByte
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 2 x PCI 1 x PCI-Express x16 (PEG) or <ul style="list-style-type: none"> 1 x PCI 1 x PCI-Express x4 1 x PCI-Express x16 (PEG)
Graphics	<ul style="list-style-type: none"> Onboard Intel GMA950 graphics controller integrated into chipset; Dynamic Video Memory; up to 2048 x 1536 pixels for 75 Hz display refresh rate and 16 bit colors PCI-Express graphics card (Dual Head: 2 x VGA or 2 x DVI D) in the PCIe x16 slot; 128 MByte; up to 2048 x 1536 pixels at 75 Hz display refresh rate and 32 bit colors (optional)
Operating system	<ul style="list-style-type: none"> without Preinstalled / supplied on Restore DVD <ul style="list-style-type: none"> Windows XP Professional MUI Windows Vista Ultimate MUI Windows Server 2003 incl. 5 Client MUI MUI: Multilanguage User Interface; 5 languages (English, French, German, Italian, Spanish) Project-specific on request¹⁾ Other
Power supply	100 / 240 V AC, 50 to 60 Hz; with bridging of temporary supply failures according to NAMUR: Max. 20 ms at 0.85% rated voltage

SIMATIC Rack PC 647B	
Drives	
Hard disk, 3.5" Serial ATA with NCQ technology	<u>Mounted in internal shock / vibration-resistant disk drive support</u> <ul style="list-style-type: none"> 160 GByte 250 GByte 2 x 250 GByte RAID1²⁾, 2 x 250 GByte (mirror disks) or <u>Mounted in front drive support in swap frame (low profile)</u> <ul style="list-style-type: none"> 160 GByte 250 GByte 2 x 250 GByte RAID1²⁾, 2 x 250 GByte, (mirror disks), for hot swapping
DVD+/-R/RW, slimline	<ul style="list-style-type: none"> 8 x 8 x 6 x (DVD media) 24 x 24 x 24 x (CD media)
Slots for drives	<u>Front:</u> <ul style="list-style-type: none"> 2 x low profile swap frames (for 3.5" HDD) 1 x 12.7 mm slimline (for ODD) <u>Internal:</u> <ul style="list-style-type: none"> 2 x 3.5" as an alternative to swap frames (in the optional, shock and vibration-damped disk-drive support) 1 x CompactFlash drive, optional
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible), optional
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ45, team-capability)
USB	<ul style="list-style-type: none"> 2 x at front (high current); high-speed USB 2.0 4 x at rear (high current); high-speed USB 2.0
Serial	<ul style="list-style-type: none"> 9-pole COM1 (V.24) 9-pole COM2 (V.24)
Parallel	LPT1
VGA	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line Out; 1 x Micro

PC-based Automation

Rack PC

SIMATIC Rack PC 647B

Technical specifications (continued)

SIMATIC Rack PC 647B	
Monitoring functions	
Basic functionality	Message locally via SOM (safecard on motherboard) software
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature range • Messages can be evaluated by the application program
Fan	<ul style="list-style-type: none"> • Speed monitoring <ul style="list-style-type: none"> - 2 x housing fan (front) - 1 x fan power supply
Watchdog	<ul style="list-style-type: none"> • 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) Version 3.2 and higher <u>Remote monitoring capability for:</u> <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System / Ethernet monitoring (Heart Beat) <u>Communication:</u> <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files
Front LEDs	<ul style="list-style-type: none"> • POWER (internal power supply unit, PC switched on) • HARDDISK (access to hard disk) • ETHERNET1 (Ethernet status, „Heart Beat“) • ETHERNET2 (Ethernet status, „Heart Beat“) • PROFIBUS / MPI (PROFIBUS status) • SF PROFINET (PROFINET status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD1 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software) • HDD2 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software)

SIMATIC Rack PC 647B	
Ambient 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 held back
Protection class	Protection class I according to IEC 61140
vibration during operation	DIN EN 60068-2-6, 10 cycles <u>Internal mounting of the hard disk drives in optional, internal drive supports:</u> <ul style="list-style-type: none"> • 10 ... 58 Hz: 0,0375 mm; • 58 ... 500 Hz: 5 m/s² (ca. 0,5 g) Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Shock load during operation	DIN EN 60068-2-27, IEC 60068-2-29 <u>Internal mounting of the hard disk drives in optional, internal drive supports:</u> Half-sine: 50°m/s ² , 30 ms (ca. 5°g), 100°shocks per axis Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Immunity to interference on signal lines	<ul style="list-style-type: none"> • ± 1 kV (IEC 61000-4-4, burst, length < 3 m) • ± 2 kV (IEC 61000-4-4, symm. surge, length > 3 m) • ± 2 kV (IEC 61000-4-5, asymm. surge, length > 30 m)
Immunity to static discharge	<ul style="list-style-type: none"> • ± 6 kV, contact discharge (IEC 61000-4-2) • ± 8 kV, air discharge (IEC 61000-4-2)

Technical specifications (continued)

SIMATIC Rack PC 647B	
Electromagnetic compatibility (EMC)	
Radiated interference (AC)	EN 55022 Class B; FCC Class A
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ± 2 kV (IEC 61000-4-5, asymm. surge)
Immunity to high radio frequency interference	<ul style="list-style-type: none"> • 1 V/m 80% AM 1 kHz; 2 ... 2.7 GHz (IEC 61000-4-3) • 10 V/m 80% AM 1 kHz; 80 MHz ... 1 GHz and 1.4 GHz ... 2 GHz (IEC 61000-4-3); • 10 V, 10 kHz to 80 MHz (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 when DVD+/-RW and HDD are operated in a swap frame
Relative humidity during operation	5 ... 85% at 30 °C (no condensation)

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de / simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald)

²⁾ SATA RAID controller on board in Intel ICH7R chipset

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

SIMATIC Rack PC 647B	
Approvals	
Safety regulations	IEC 60950-1, EN 60950-1, UL 60950, CSA C22.2 No 60950
Approvals	cULus 60950
CE mark	Use in industry: <ul style="list-style-type: none"> • Noise immunity: EN 61000-6-2:2005 Use in domestic environments: <ul style="list-style-type: none"> • Emitted interference : EN 61000-6-3:2007
Dimensions and weights	
Mounting dimensions (W x H x D) in mm	430 x 88 x 445
Weight	Minimum 16 kg, maximum 23 kg

PC-based Automation

Rack PC

SIMATIC Rack PC 647B

Ordering data

Order No.

Order No.

Configuration³⁾

SIMATIC Rack PC 647B

G 6AG4 112-0 - - - - -

Interfaces:
2 x 10 / 100 / 1000Mbit/s Ethernet (RJ45); 1 x graphic (VGA); 2 x COM; 1 x LPT;
2 x PS/2; 4 x USB 2.0 at rear, 2 x USB 2.0 at front; audio;
drive slots:
3 (2 x low-profile swap frame, 1 x slimline ODD externally accessible; 2 x 3.5" internally accessible, alternative to swap frame), temperature and fan monitoring, watchdog, card retainer;

Processor / motherboard

- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard without fieldbus **A**
- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard with PROFIBUS / MPI **B**
- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard with PROFINET (3 x RJ45, CP1616 compatible)¹⁾ **C**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard without fieldbus **G**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard with PROFIBUS / MPI **H**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard with PROFINET (3 x RJ45, CP1616-compatible)¹⁾ **J**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard without fieldbus **K**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard with PROFIBUS / MPI **L**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard with PROFINET (3 x RJ45, CP1616-compatible)¹⁾ **M**

Hard disks:

- 160 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **A**
- 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **B**
- 2 x 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **C**
- RAID1 (2 x 250 GByte HDD SATA, mirror disks); 0.5 g vibration, 5 g shock, internal **D**
- 160 GByte HDD SATA in swap frame; front **H**
- 250 GByte HDD SATA in swap frame; front **K**
- 2 x 250 GByte HDD SATA in swap frame; front **M**
- RAID1 (2 x 250 GByte HDD SATA) in swap frame, for hot swapping; front **P**

Configuration³⁾

SIMATIC Rack PC 647B

G 6AG4 112-0 - - - - -

Memory configuration:

- 512 MByte DDR2 SDRAM (1 x 512 MByte), single channel **1**
- 1 GByte DDR2 SDRAM (1 x 1 GByte), single channel **2**
- 2 GByte DDR2 SDRAM (2 x 1 GByte), dual channel **3**
- 4 GByte DDR2 SDRAM (2 x 2 GByte), dual channel **4**

Swap media:

- CompactFlash drive, internal **0**
- DVD±RW **1**
- Without swap medium **8**

Bus module / hardware expansion

- 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 assigned; + DVI extension adapter (DVI-D) **1**
- Bus modules 3 slots: 2 x PCI; 1 x PCIe x16 assigned; + graphics card PCIe x16, DH (2 x DVI or 2 x VGA) **2**
- Bus modules 3 slots: 1 x PCI, 1 x PCIe x4; 1 x PCIe x16; without HW expansions **3**
- Bus modules 3 slots: 1 x PCI, 1 x PCIe x4; 1 x PCIe x16 assigned; + DVI extension adapter (DVI-D) **4**
- Bus modules 3 slots: 1 x PCI, 1 x PCIe x4; 1 x PCIe x16 assigned; + graphics card PCIe x16, DH (2 x DVI or 2 x VGA) **5**

Operating system (preinstalled and activated)

- Windows XP Professional, MUI (Eng., Ger., Fr., It., Sp), SP2; SP3 assigned **B**
- Windows Vista Ultimate, MUI (Eng., Ger., Fr., It., Sp); SP1 assigned **C**
- Windows Server 2003 Standard Edition incl. 5 Client, MUI (Eng., Ger., Fr., It., Sp), SP1; SP2 assigned **M**
- Without operating system **X**

¹⁾ Not in combination with Windows 2003 Server

²⁾ Not in combination with Windows Vista Ultimate

³⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: <http://www.siemens.com/ipc-configurator>

G: Subject to export regulations: AL: N and ECCN: 5D992

Ordering data		Order No.	Order No.	
Configuration³⁾			Accessories	
SIMATIC Rack PC 647B	G	6AG4 112-0 ■ ■ ■ ■ ■ - ■ ■ ■ ■ ■	Memory Expansion	
<u>Expansion (Software)</u>			• 512 MByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG30-0HA0
• SIMATIC IPC DiagMonitor 3.2 ²⁾	A		• 1 GByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG40-0HA0
• SIMATIC IPC Image Creator 2.1	B		• 2 GByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG50-0HA0
• SIMATIC IPC DiagMonitor 3.2 ²⁾ and Image Creator 2.1 Software included	C		Power cable, straight, 3 m long	
• Without software	X		• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	6ES7 900-0AA00-0XA0
<u>Power supply, country-specific cable</u>			• United Kingdom	6ES7 900-0BA00-0XA0
• 110 / 230 V AC industrial power supply with Namur; European cable	0		• Switzerland	6ES7 900-0CA00-0XA0
• 110 / 230 V AC industrial power supply unit with NAMUR; cable for United Kingdom	1		• USA	6ES7 900-0DA00-0XA0
• 110 / 230 V AC industrial power supply Namur; cable for Switzerland	2		• Italy	6ES7 900-0EA00-0XA0
• 110 / 230 V AC industrial power supply Namur; US cable	3		• China	6ES7 900-0FA00-0XA0
• 110 / 230 V AC industrial power supply Namur; Italian cable	4		Expansion components	
• 110 / 230 V AC industrial power supply with Namur; Chinese cable	5		SIMATIC PC keyboard German / international	
			• USB port	6ES7 648-0CB00-0YA0
			• incl. 4-way USB hub	B 6ES7 648-0CD00-0YA0
			SIMATIC PC mouse	
			(optical, 3-button) for programming device and PC with adapter	B 6ES7 790-0AA01-0XA0
			SIMATIC IPC USB FlashDrive	
			2 GByte, USB 2.0, metal enclosure, bootable	B 6ES7 648-0DC40-0AA0
			Communication products	
			see page 5/246	
			Power supplies and DC UPS	
			see page 5/233	
			RMOS real-time operating system	
			see page 5/205	

²⁾ Not in combination with Windows Vista Ultimate

³⁾ For an up-to-date overview, see the SIMATIC PC online configurator at:

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

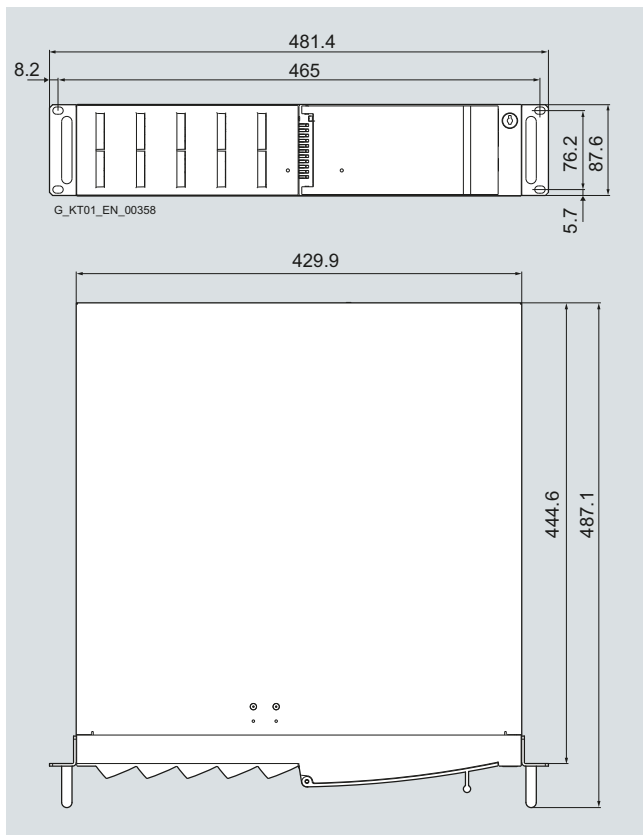
PC-based Automation

Rack PC

SIMATIC Rack PC 647B

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC Rack PC 647B

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

Technical data for telescopic rails

Carrying capacity per pair, min.	30 kg
Extension length for full extension, min.	470 mm
Rail thickness, max.	9,7 mm
Fastening screws	M5 x 6 mm

The fastening screws for the telescopic rails are permitted to extend 5 mm into the housing.

The housing is prepared for the following telescopic rails:

- Rittal: Type 3659.180 for 600 mm cabinet / Type RP 3659.190 for 800 mm cabinet

Overview



The SIMATIC Rack PC 847B is a very rugged, high-performance industrial PC in 19" rack design (4 HU) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel Core2 Duo technology

Benefits

Maximum industrial compatibility and compactness for 24-hour use in an industrial environment

- Maximum processor performance (in maximum configuration) without loss of power (throttling) at ambient temperatures of up to 50 °C
- Distinct product design with new front design and fully-coated, dirt-resistant surfaces
- All-metal housing with high EMC for use in industrial environment
- Suitable for installation in space-saving control cabinets only 500 mm deep
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Special hard disk holders and card retainers for protection against vibration and shock

High productivity thanks to faster data processing

- State-of-the-art PC technology (e.g. Intel Core2 Duo and Extended Memory 64 (EM64T) processor technology)
- Maximum performance (e.g. Intel 945GM Express Chipset, DDR2 memory with the support of Dual Channel technology)
- High data transfer rates (e.g. with Serial ATA hard disks, dual Gigabit Ethernet)

Reduction in downtimes through high system availability

- Secure 24-hour operation (high MTBF, variable-speed fan)
- Efficient self-diagnostics (status display for Ethernet and PROFIBUS; alarm indication for fan, temperature, watchdog and hard disks in RAID1 configuration, SIMATIC PC DiagMonitor)
- High degree of data security due to mirror drive system, optionally in "hot swap" frames
- Service-friendly device setup (modifications, service)

Cost reductions through high investment security

- Platform with long-term stability and embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Support for legacy interfaces (PS/2, COM, LPT)
- Installation compatible for many device generations
- Worldwide service and support

PC-based Automation

Rack PC

SIMATIC Rack PC 847B

Benefits (continued)

Reduced costs due to time savings for commissioning, operation and servicing

- Preinstalled and activated operating system
- Fast restoration of the delivery status of the HDD thanks to restore DVD
- Low noise output thanks to controlled fan
- Universal implementation as an industrial workstation or server
- PROFIBUS or PROFINET interface and RAID1 controller onboard (optional)
- 2 x LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- Fast identification and replacement of the hard disk in the event of a fault (e.g. front LEDs for HDD alarm in RAID1 configuration)
- Flexible applications in many different positions with telescopic rails or as tower industrial PC
- High degree of flexibility and expandability thanks to integrated interfaces and up to 11 slots (PCI and PCI-Express)

Application

The SIMATIC Rack PC 847B provides machine, systems and control cabinet engineering companies with a high-performance and highly flexible 19" rack PC platform for machine-oriented industrial applications:

- Measuring, open-loop control and closed-loop control of process and machine data
- Visualization of manufacturing sequences
- Computing and processing of images within the scope of quality inspections
- Data acquisition and management

The SIMATIC Rack PC 847B is certified to CE for industrial applications.

Design

Basic design

- All-metal 19" installation housing (4 HU) for high degree of mechanical ruggedness (vibration / shock) and high electromagnetic compatibility; prepared for mounting of telescopic rails
- Horizontal and vertical installation is possible, can be used as an industrial tower PC by using the appropriate kit.
- Lockable front door for authorized access (access protection) to swap media at the front, operating controls (Reset, Power), USB interface, front fan and dust filter
- Card retainer for PC modules for safe operation and transport (vibration, shock)
- Opening of the enclosure cover with only one screw and replacement of PC components (e.g. PC cards or HDD) with a single tool
- Front fan and dust filter can be replaced without tools
- Dust protection by means of overpressure ventilation using bearing seated front fan through filter
- 6 slots for installing drives
 - Front: 1 x 3.5"; 3 x 5.25"
 - Internal: 2 x 3.5" (in the optional vibration-damping drive bracket or in the fixed hard disk support)
- Graphics on-board on the PCI-Express bus, Intel GMA950 integrated in chip set, up to 2048 x 1536 pixels, 75 Hz, 16 bit colors
- Interfaces:
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45, teaming-capable)
 - 4 x USB 2.0 at the rear, 2 x USB 2.0 at the front (one of which can be used when door is closed)
 - 2 x PS/2, COM1, COM2, LPT1, VGA
 - Audio: Line Out, Mic
- 11 spare slots for expansions (all long):
 - 7 x PCI long
 - 1 x PCI-Express x16 (PEG)
 - 3 x PCI-Express x4
- Power supply: 100 / 240 V AC, 50 / 60 Hz, cable in country-specific design

Design (continued)

Design versions

- Processor:
 - Intel Core2 Duo T7400, 2.16 GHz, 667 MHz FSB, 4 MByte L2 Cache with Extended Memory 64 (EM64) and virtualization technology (VT)
 - Intel Core2 Duo T5500, 1.66 GHz, 667 MHz FSB, 2 MByte L2 Cache with Extended Memory 64 (EM64) technology
 - Intel Celeron M 440, 1.86 GHz, 533 MHz FSB, 1 MByte L2 Cache
- Main memory expansion from 256 MByte to 4 GByte DDR2 667 SDRAM (configured as dual channel for top performance from 2 GByte upwards)
- Fieldbus onboard:
 - PROFIBUS / MPI, CP5611-compatible or PROFINET, 3 x RJ45, CP1611-compatible
 - Bus module with only 8 spare slots (7 x PCI, 1 x PCI-Express x16)
- Graphics expansion:
 - PCI-Express graphics card x16, (Dual Head: 2 x VGA or 2 x DV-I), 128 MByte, up to 2048 x 1536 pixels, 75 Hz, 32 bit colors
 - ADD card via PCI Express x16 slot, (1 x DVI-D) for connecting a digital monitor
- Drives:
 - Serial ATA 3.5" hard disks with NCQ technology: Mounted internally on the permanent hard disk support (1 x 160 GByte)
 - Mounted internally in vibration / shock-absorbing hard-disk support or at the front in a swap frame (hot-swap in RAID1 configuration):
 - 1 x 160 GByte
 - 1 x or 2 x 250 GByte
 - RAID1, 2 x 250 GByte (RAID controller onboard)
 - Optical drives: DVD-ROM or DVD±R/RW
 - Diskette drive: 1.44 MByte, 3.5"
- Country-specific power cable
- Preinstalled operating systems:
 - Windows 2000 Professional Multi-Language
 - Windows XP Professional Multi-Language
 - Windows Vista Ultimate Multi-Language
 - Windows Server 2003 Standard Edition incl. 5 Client Multi-Language
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC PC / PG Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".



Front view of SIMATIC Rack PC 847B, with open front door



Rear SIMATIC Rack PC 847B

A Tower Kit can be ordered as an accessory for converting the computer into an industrial tower PC. See "Ordering data for accessories".



PC-based Automation

Rack PC

SIMATIC Rack PC 847B

Function

- **Dual core processor technology**
Thanks to the use of two processor cores, the dual core processors are ideally suited to multi-thread application programs and multitasking. Several demanding applications – such as highly graphical visualization applications or highly computational programs can execute simultaneously and therefore enhance the speed of the system response. Thanks to energy-optimized dual core technology and outstanding energy-saving properties, the Intel®Core™ 2 Duo processors operate without any loss of performance even at increased temperatures up to 50 °C in demanding applications.
The SIMATIC Rack PC 847B is preconfigured for dual core technology with Intel®Core™ 2 Duo processors and Microsoft Windows XP Professional or Windows Server 2003 operating system and offers greater performance and better multitasking in industrial applications.
- **Multi-display technology**
The multi-display architecture with its modern functions for desktop and application management supports working with several screens and therefore enhances productivity. The SIMATIC Rack PC 847B with an optional dual-head graphics card (PCI Express x16) is optimized for industrial multi-display environments. The following multidisplay modes are supported: Native DualView, Span or Big Desktop, Clone.
- Connection options: 2 x VGA or 2 x DVI-D
- **Monitoring functions**
 - Integrated monitoring functions (program execution (watchdog), temperature, fan speed and hard disk status in RAID configuration)
- **Extended diagnostics / alarms over Ethernet, e-mail, SMS and for direct infeed in SIMATIC software via OPC (optionally via SIMATIC IPC DiagMonitor):**
 - Runtime meter
 - Hard disk status
 - System status (Heart Beat)
 - Automatic logging of all alarms by means of a log file
 - Capability for central monitoring of networked SIMATIC PCs
- **RAID1 (RAID controller onboard) for automatic data mirroring on two SATA hard disks**

Integration

- **Ethernet**
The two integrated Gigabit Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with the SOFTNET S7 software package).
- **PROFIBUS**
The optional floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or to interface to the SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- **PROFINET**
The optional PROFINET interface can be used for connecting distributed field devices or for controlling drives.
- **Other interfaces**
As for connecting other I/O devices, 7 or 10 free slots are available for PC modules, 1 free PCI Express x 16 slot for optional graphics expansions as well as six USB 2.0, two serial and one parallel interfaces.

Technical specifications

SIMATIC Rack PC 847B	
General features	
Design	19" rack , 4HU, externally painted
Processor	<ul style="list-style-type: none"> Intel Core2 Duo T7400 (2.16 GHz, 667 MHz FSB, 4 MByte L2 Cache with extended memory 64 (EM64) technology) and virtualization technology (VT) software Intel Core2 Duo T5500 (1.66 GHz, 667 MHz FSB, 2 MByte L2 Cache with extended memory 64 (EM64) technology) Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1 MByte L2 Cache)
Chipset	Intel 945 GM
Main memory	<ul style="list-style-type: none"> From 256 MByte DDR2 667 SDRAM Dual channel support 2 SODIMM base Expandable up to 4 GByte
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 7 x PCI 1 x PCI-Express x16 (PEG) 3 x PCI-Express x4 or <ul style="list-style-type: none"> 7 x PCI 1 x PCI-Express x16 (PEG)
Graphics	<ul style="list-style-type: none"> Onboard Intel GMA950 graphics controller integrated into chipset; Dynamic Video Memory; up to 2048 x 1536 pixels for 75 Hz display refresh rate and 16 bit colors PCI-Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot; 128 MByte; up to 2048 x 1536 pixels at 75 Hz display refresh rate and 32 bit colors (optional)
Operating system	<ul style="list-style-type: none"> without Preinstalled / supplied on Restore DVD <ul style="list-style-type: none"> Windows 2000 Professional MUI Windows XP Professional MUI Windows Vista Ultimate MUI Windows Server 2003 incl. 5 Client MUI MUI: Multilanguage User Interface; 5 languages (English, French, German, Italian, Spanish) <u>Notes:</u> Windows Vista requires at least 512 MByte memory <ul style="list-style-type: none"> Project-specific on request¹⁾ Other
Power supply	100 / 240 V AC, 50-60 Hz; with short-term bridging of power failures in accordance with NAMUR: Max. 20 ms at 0.85% rated voltage

SIMATIC Rack PC 847B	
Drives	
Hard disk, 3,5"	Installation in internal drive support <ul style="list-style-type: none"> 160 GByte Can be installed in internal shock and vibration-damped drive support (optional) <ul style="list-style-type: none"> 160 GByte 250 GByte 2 x 250 GByte RAID1²⁾, 2 x 250 GByte (mirror disks) Installation in front drive support in swap frame <ul style="list-style-type: none"> 250 GByte 2 x 250 GByte RAID1²⁾, 2 x 250 GByte, (mirror disks), for hot swapping
Serial ATA with NCQ technology	
DVD-ROM, 5,25"	<ul style="list-style-type: none"> 16 x (DVD media) 48 x (CD media)
DVD+/-R/RW, 5,25"	<ul style="list-style-type: none"> 16 x 16 x 8 x (DVD media) 48 x 32 x 48 x (CD media)
Disk	• 1,44 MByte
Slots for drives	<u>Front:</u> <ul style="list-style-type: none"> 3 x 5.25" and 2 x 3.5" <u>Internal:</u> <ul style="list-style-type: none"> 2 x 3.5" (in the optional, vibration-damping drive bracket)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible), optional
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ45, teaming capability)
USB	<ul style="list-style-type: none"> 2 x front, (high current); high speed USB 2.0 4 x rear, (high current); high speed USB 2.0
Serial	<ul style="list-style-type: none"> 9-pole COM1 (V.24) 9-pole COM2 (V2.4)
Parallel	LPT1
VGA	1 x
Keyboard	PS/2
Mouse	PS/2
Audio	1 x Line Out; 1 x Micro
Monitoring functions	
Basic functionality	Message locally via SOM (safecard on motherboard) software
Temperature	<ul style="list-style-type: none"> Overshoot / undershoot of permissible operating temperature range Messages can be evaluated by the application program

PC-based Automation

Rack PC

SIMATIC Rack PC 847B

Technical specifications (continued)

	SIMATIC Rack PC 847B
Monitoring functions (continued)	
Monitoring functions via the network	SIMATIC IPC DiagMonitor (optional) <u>Remote monitoring capability for:</u> <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • System / Ethernet monitoring (Heart Beat) <u>Communication:</u> <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files
Front LEDs	<ul style="list-style-type: none"> • POWER (internal power supply unit, PC switched on) • HARDDISK (access to hard disk) • ETHERNET1 (Ethernet status, "Heart Beat") • ETHERNET2 (Ethernet status, "Heart Beat") • PROFIBUS / MPI (PROFIBUS status) • PROFINET SF (PROFINET status) • WATCHDOG (ready/fault indication) • TEMP (temperature status) • FAN (fan speed monitoring) • HDD1 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software) • HDD2 ALARM (hard disk alarm in conjunction with RAID1 and monitoring software)

	SIMATIC Rack PC 847B
Monitoring functions (continued)	
Fan	<ul style="list-style-type: none"> • Speed monitoring <ul style="list-style-type: none"> - 2 x housing fan (front) - 1 x fan power supply
Watchdog	<ul style="list-style-type: none"> • 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
Ambient 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 held back
Protection class	Protection class I according to IEC 61140
Vibration during operation	DIN EN 60068-2-6, 10 cycles <u>Internal mounting of the hard disk drives in optional, internal drive supports:</u> 10 ... 58 Hz: 0,0375 mm; 58 ... 500 Hz: 5 m/s ² (ca. 0,5 g) <u>Permanently installed internal hard disk drives:</u> 10 ... 58 Hz: 0,019 mm; 58 ... 500 Hz: 3 m/s ² (ca. 0,3 g) Note: Limitations when DVD+/-RW and HDD are operated in a swap frame
Shock load during operation	DIN EN 60068-2-27, IEC 60068-2-29 <u>Internal mounting of the hard disk drives in optional, internal drive supports:</u> Half-sine: 50°m/s ² , 30 ms (ca. 5°g), 100°shocks per axis <u>Permanently installed internal hard disk drives:</u> <ul style="list-style-type: none"> • 30 m/s², 30 ms ca. 3 g Note: Limitations when DVD+/-RW and HDD are operated in a swap frame

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

²⁾ SATA RAID controller on board in Intel ICH7R chipset

Technical specifications (continued)

SIMATIC Rack PC 847B	
Electromagnetic compatibility (EMC)	
Radiated interference (AC)	EN 55022 Class A, FCC Class A
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ± 2 kV (IEC 61000-4-5, asymm. surge)
Immunity to interference on signal lines	<ul style="list-style-type: none"> • ± 1 kV (IEC 61000-4-4, burst, length < 3 m) • ± 2 kV (IEC 61000-4-4, symm. surge, length > 3 m) • ± 2 kV (IEC 61000-4-5, asymm. surge, length > 30 m)
Immunity to static discharge	<ul style="list-style-type: none"> • ± 6 kV, contact discharge (IEC 61000-4-2) • ± 8 kV, air discharge (IEC 61000-4-2)
Immunity to high radio frequency interference	<ul style="list-style-type: none"> • 1 V/m 80% AM; 2-2.7 GHz (IEC 61000-4-3) • 10 V/m 80% AM; 80 MHz to 1 GHz and 1.4 GHz and 2 GHz (IEC 61000-4-3); • 10 V, 10 kHz to 80 MHz (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 when DVD+/-RW and HDD are operated in a swap frame
Relative humidity during operation	5 ... 85 % at 30 °C (no_condensation)

SIMATIC Rack PC 847B	
Approvals	
Safety regulations	IEC 60950-1, EN 60950-1, UL 60950, CSA C22.2 No 60950
Approvals	cULus 60950
CE mark	Use in industry: <ul style="list-style-type: none"> • Emitted interference: EN 61000-6-4 • Noise immunity: EN 61000-6-2
Dimensions and weights	
Mounting dimensions (W x H x D) in mm	430 x 177 x 448
Weight	Minimum 16 kg, maximum 23 kg

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

PC-based Automation

Rack PC

SIMATIC Rack PC 847B

Ordering data

Order No.

Order No.

Configuration ⁴⁾

SIMATIC Rack PC 847B

G

6ES7 643 - 8 ■ ■ ■ ■ - ■ ■ ■ ■

Interfaces:

2 x 10 / 100 / 1000 Mbit/s Ethernet (RJ45); 1 x graphic (VGA);
2 x COM; 1 x LPT; 2 x PS/2; 4 x USB 2.0 on rear; 2 x USB 2.0 on front; audio; slots: 6 (3 x 5.25", 1 x 3.5" externally accessible; 2 x 3.5" internally accessible)

Temperature monitoring and fan monitoring; watchdog; card retainer

Processor, motherboard:

- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard without fieldbus **A**
- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard with PROFIBUS / MPI **B**
- Celeron M 440 (1.86 GHz, 1 MByte L2 Cache), motherboard with PROFINET (3 x RJ45, CP 1616-compatible)¹⁾³⁾ **C**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard without fieldbus **G**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard with PROFIBUS / MPI **H**
- Core2 Duo T5500 (1.66 GHz, 2 MByte L2 Cache, EM64-T), motherboard with PROFINET (3 x RJ45, CP 1616-compatible)¹⁾³⁾ **J**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard without fieldbus **K**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard with PROFIBUS / MPI **L**
- Core2 Duo T7400 (2.16 GHz, 4 MByte L2 Cache, EM64-T, VT), motherboard with PROFINET (3 x RJ45, CP 1616-compatible)¹⁾³⁾ **M**

Hard disks:

- 160 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **A**
- 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **B**
- 2 x 250 GByte HDD SATA; 0.5 g vibration, 5 g shock, internal **C**
- RAID1 (2 x 250 GByte HDD SATA, mirror disks); 0.5 g vibration, 5 g shock, internal **D**
- 160 GByte HDD SATA; 0.3 g vibration, 3 g shock, internal **G**
- 160 GByte HDD SATA in swap frame; front **H**
- 250 GByte HDD SATA in swap frame; front **K**
- 2 x 250 GByte HDD SATA in swap frame; front **M**
- RAID1 (2 x 250 GByte HDD SATA) in swap frame, for hot swapping; front **P**

Configuration ⁴⁾

SIMATIC Rack PC 847B

G

6ES7 643 - 8 ■ ■ ■ ■ - ■ ■ ■ ■

Memory configuration

- 256 MByte DDR2 SDRAM (1 x 256 MByte), Single Channel **0**
- 512 MByte DDR2 SDRAM (1 x 512 MByte), single channel **1**
- 1 GByte DDR2 SDRAM (1 x 1 GByte), single channel **2**

Swap media

- FDD **0**
- DVD-ROM, without FDD **1**
- DVD+/-RW, without FDD **2**
- DVD-ROM and FDD **3**
- DVD+/-RW and FDD **4**

Bus module / hardware expansion

- Bus module, 8 slots: 7 x PCI, 1 x PCIe x16; without hardware expansions **0**
- Bus module, 8 slots: 7 x PCI, 1 x PCIe x16 assigned; + DVI extension adapter (DVI-D) **1**
- Bus module, 8 slots: 7 x PCI, 1 x PCIe x16 assigned; + graphics card PCIe x16, DH (2 x DVI or 2 x VGA) **2**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16, 3 x PCIe x4; without HW expansions **3**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16 assigned, 3 x PCIe x4; + DVI extension adapter (DVI-D) **4**
- Bus module, 11 slots: 7 x PCI, 1 x PCIe x16 assigned, 3 x PCIe x4; + graphics card PCIe x16, DH (2 x DVI or 2 x VGA) **5**

Operating system (preinstalled and activated)

- Windows 2000 Professional, MUI (Eng, Fr, Ger, It, Sp), SP4 **A**
- Windows XP Professional, MUI (Eng, Ger, Fr, It, Sp), SP2, SP3 assigned **B**
- Windows Vista Ultimate, MUI (Eng, Ger, Fr, It, Sp) **C**
- Windows Server 2003 Standard Edition incl. 5 clients, MUI (Eng, Fr, Ger, It, Sp), SP1, SP2 included **M**
- Without operating system **X**

¹⁾ Not in combination with Windows 2003 Server

²⁾ Not in combination with Windows Vista Ultimate

³⁾ Not in combination with Windows 2000

⁴⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: <http://www.siemens.com/ipc-configurator>

G: Subject to export regulations: AL: N and ECCN: 5D992

Ordering data		Order No.	Order No.	
Configuration ³⁾			Accessories	
SIMATIC Rack PC 847B	G	6ES7 643-8 ■ ■ ■ ■ ■ - ■ ■ ■ ■ ■	Memory Expansion	
<u>Software expansion</u>			• 256 MByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG20-0HA0
• SIMATIC IPC DiagMonitor 3.1 ²⁾ included	A		• 512 MByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG30-0HA0
• SIMATIC IPC Image Creator Software 2.1 ¹⁾²⁾ included	B		• 1 GByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG40-0HA0
• SIMATIC IPC DiagMonitor ²⁾ & Image Creator Software 2.1 ¹⁾²⁾ included	C		• 2 GByte DDR2 667 SDRAM, SO DIMM	B 6ES7 648-2AG50-0HA0
• Without software	X		Hard disk slide-in unit for swap frame	
<u>Power supply, country-specific cable</u>			SIMATIC PC accessories, slide-in HDD swap frame for 3.5" hard disk, serial ATA (without hard disk)	6ES7 648-0EB00-1BA0
• 100 / 240°V AC industrial power supply with Namur; European cable	0		Filter mats	
• 100 / 240 V AC industrial power supply unit with NAMUR; cable for United Kingdom	1		For Rack PC 847B Packing unit 10 units	A5E01064980
• 100 / 240 V AC industrial power supply Namur; cable for Switzerland	2		Power cable, straight, 3 m long	
• 100 / 240 V AC industrial power supply Namur; US cable	3		• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	6ES7 900-0AA00-0XA0
• 100 / 240 V AC industrial power supply Namur; Italian cable	4		• United Kingdom	6ES7 900-0BA00-0XA0
• 100 / 240 V AC industrial power supply with Namur; Chinese cable	5		• Switzerland	6ES7 900-0CA00-0XA0
			• USA	6ES7 900-0DA00-0XA0
			• Italy	6ES7 900-0EA00-0XA0
			• China	6ES7 900-0FA00-0XA0
			Tower Kit	
			for converting the computer into an industrial tower PC	6ES7 648-1AA00-0XD0
			Expansion components	
			SIMATIC PC keyboard German / international	
			• USB port	6ES7 648-0CB00-0YA0
			• incl. 4-way USB hub	B 6ES7 648-0CD00-0YA0
			SIMATIC PC mouse	
			(optical, 3-button) for programming device and PC with adapter	B 6ES7 790-0AA01-0XA0
			SIMATIC IPC USB FlashDrive	
			2 GByte, USB 2.0, metal enclosure, bootable	B 6ES7 648-0DC40-0AA0
			Communication products	see page 5/246
			Power supplies and DC UPS	see page 5/233
			RMOS real-time operating system	see page 5/205

¹⁾ Not in combination with Windows 2003 Server

²⁾ Not in combination with Windows Vista Ultimate

³⁾ For an up-to-date overview, see the SIMATIC PC online configurator at:
<http://www.siemens.com/ipc-configurator>

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

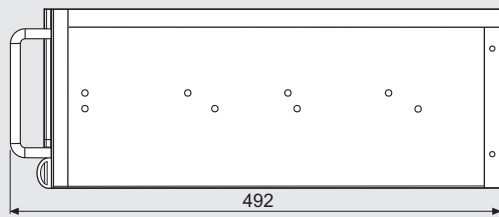
PC-based Automation

Rack PC

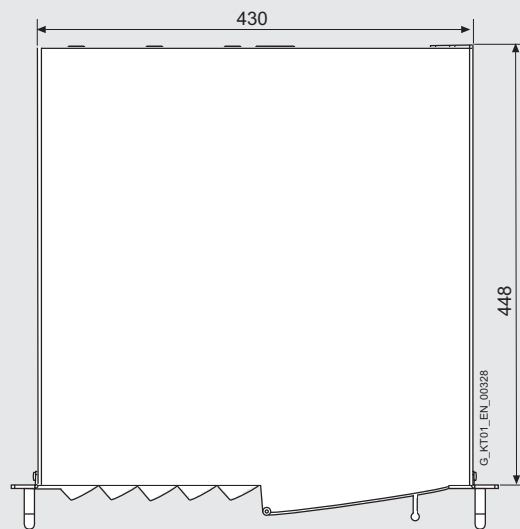
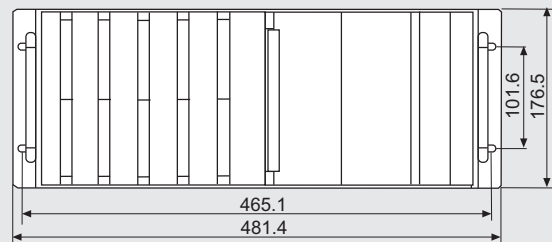
SIMATIC Rack PC 847B

Dimensions

All dimensions in mm. Panel cutout see technical specification.



Dimensions in mm



SIMATIC Rack PC 847B

Technical data of the telescopic rails

Ultimate load per pair, min.	30 kg
Full extraction length, min.	470 mm
Rail thickness, max.	9,7 mm
Mounting screws	M5 x 6 mm

The fixing screws of the telescopic rails may not protrude 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 in the Internet under:

<http://www.siemens.com/simatic-pc>

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.

Three device classes are available for various requirements:

- *SIMATIC Microbox PC 427* – ultra-compact and maintenance-free: the flexible embedded industrial PC
- *SIMATIC Box PC 627* – maximum performance in the most restricted space
- *SIMATIC Box PC 827* – maximum performance with a high degree of flexibility: Shared industrial functionality

Shared industrial functionality:

- Extreme compactness
- Certification for global marketing
- System-tested with SIMATIC components
- High vibration / shock load during operation
- Wide operational temperature range
- Integrated PROFIBUS and PROFIBUS / MPI interface (optional)
- 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
- Motherboard developed and manufactured by Siemens
- Availability for 3 to 5 years
- Repairs and spare parts service for 5 years
- High continuity of the components / design
- Installation and software compatible with predecessor model
- Long-term availability of PC components from the Intel embedded line

SIMATIC IPC427C – ultra-compact and maintenance-free: the flexible embedded industrial PC

- Operation without fan thanks to CompactFlash
- High performance with highly compact design
- Optimized for embedded applications
- Expandable with as many as 3 PC/104-Plus or PCI-104 I/O cards
- Flexible installation options due to DIN rail / wall / front upright mounting, even outside a control cabinet
- Powerful processor architecture with Core2 Duo, memory expansion up to 4 GByte, rugged data storage with Solid-State Drive

SIMATIC IPC627C and Box PC 627B – maximum performance in the smallest possible space

- Maximum system performance for complex measuring, control and visualization tasks
- Highly compact for space-saving installation with compact enclosure design (6 liters in volume)
- 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 ambient temperature of 55 °C
- High shock / vibration resistance in all possible mounting positions
- High system availability
- Battery-backed SRAM as memory for WinAC data
- 2 x 7-segment display and 2 signal LEDs (freely programmable)
- *New with SIMATIC IPC627C:* More powerful processor architecture with Core i7, rugged data storage with Solid-State Drive

SIMATIC Box PC 827B – maximum performance with a high degree of flexibility

- Maximum system performance for complex measuring, control and visualization tasks through use of Intel Core2 Duo processors
- High flexibility with 5 expansion slots and integral interfaces
- Flexible, space-saving installation with mounting brackets or portrait assembly kits
- Rugged design for direct installation in the machine
- Maximum processor performance up to ambient temperature of 55 °C
- High shock / vibration resistance in all possible mounting positions
- RAID1 controller onboard
- All interfaces on one side to allow optimum installation in control cabinet
- 2 CompactFlash drives, both accessible from the outside
- High system availability
- Battery-backed SRAM as memory for WinAC data (with 24 V DC industrial power supply)
- 2 x 7-segment display and 2 signal LEDs (freely programmable)

PC-based Automation

Box PC

Introduction

Technical specifications

SIMATIC IPC427C	
Design	
Rail or wall mounting	•
Wall or portrait mounting	•
General features	
Processor	<ul style="list-style-type: none"> • Intel Core2 Duo 1,2 GHz, 800 MHz FSB, 3 MByte SLC • Intel Core2 Solo 1,2 GHz, 800 MHz FSB, 3 MByte SLC • Intel Celeron M 1,2 GHz, 800 MHz FSB, 1 MByte SLC
Main memory	512 MByte, (1 / 2 / 4 GByte optional) DDR3 SDRAM
Static RAM	2 MByte
Spare slots for expansions (all long)	Up to 3 x PCI-104 Plus (with expansion frame)
Graphics	Onboard
Operating system	
without	•
Preinstalled / supplied on Restore CD	<ul style="list-style-type: none"> • Windows XP Embedded Standard 2009, in combination with CF card ≥ 2 GByte, Solid-State Drive, or hard drive • Windows XP Professional Multi-Language; in combination with Solid-State Drive or hard drive; MUI (Multi Language User Interface)
Order separately	RMOS3 V3.50
Project-specific on request	<ul style="list-style-type: none"> • Linux¹⁾ • Other

- 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://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

SIMATIC IPC427C	
Interfaces	
PROFINET	3 x RJ45 (CP 1616 compatible) onboard, optional
PROFIBUS / MPI	12 Mbit/s (compatible with CP5611), optional
Ethernet	2 x 10 / 100 / 1000 Mbit/s
USB 2.0 (high current)	4 x
VGA, LVDS, DVI	1 x DVI-I (DVI and VGA)
Drives	
Hard disks: (SATA)	1 x 2,5" (optional)
Solid-State Drive	1 x 2,5" SATA (optional)
Flash drive	<ul style="list-style-type: none"> • 1 x at the front, externally accessible • 1 x internal, in place of HDD, SSD (optional)
Optical drives	–
Ambient conditions	
Vibration / shock load during operation	1 g / 15 g (with flash drive)
Ambient temperature during operation	With maximum configuration: <ul style="list-style-type: none"> • 0 ... 50 / 55°C (with flash drive) • 5 ... 40°C (with hard disk)

Technical specifications (continued)

	SIMATIC Box PC 627B	SIMATIC IPC627C	SIMATIC Box PC 827B
Design			
Rail or wall mounting	–	–	–
Wall or portrait mounting	•	•	•
General features			
Processor	<ul style="list-style-type: none"> Intel Core2 Duo T7400 2,16 GHz, 667 MHz FSB, 4 MByte L2 Cache Intel Core2 Duo T5500, 1,66 GHz, 677 MHz FSB, 2 MByte L2 Cache Intel Celeron M 440 1,86 GHz, 533 MHz FSB, 1 MByte L2 Cache 	<ul style="list-style-type: none"> Intel Core i7-620E, 2,53 GHz, 2 Cores, 4 Threads, 4 MByte Cache, TB, HT, VT-x, VT-d Intel Core i3-330E, 2,13 GHz, 2 Cores, 4 Threads, 3 MByte cache, HT, VT-x Intel Celeron P4505, 1,86 GHz, 2 Cores, 2 MByte cache 	<ul style="list-style-type: none"> Intel Core2 Duo T7400 2,16 GHz, 667 MHz FSB, 4 MByte L2 Cache Intel Core2 Duo T5500, 1,66 GHz, 677 MHz FSB, 2 MByte L2 Cache Intel Celeron M 440 1,86 GHz, 533 MHz FSB, 1 MByte L2 Cache
Main memory	256 MByte, expandable up to 4 GByte	1 GByte, expandable up to 4 GByte / ECC	256 MByte, expandable up to 4 GByte
Static RAM	2 MByte	2 MByte	2 MByte
Spare slots for expansions (all long)	2 x PCI or 1 x PCI-Express x4 / 1 x PCI (175 mm / 265 mm)	2 x PCI or 1 x PCI-Express x16 / 1 x PCI (175 mm / 265 mm)	4 x PCI (265 mm), and 1 PCI-Express x4 (175 mm) 2 x PCI-Express x4, 1 x PCI-Express x4 (175 mm) and 2 x PCI (265 mm)
Graphics	Onboard	Onboard	Onboard
Operating system			
without	•	•	•
Preinstalled and activated / supplied on restore CD	<ul style="list-style-type: none"> Windows 2000 Professional MUI Windows XP Professional MUI Windows XP Embedded English on 2 GByte CompactFlash Windows Vista Ultimate MUI 	<ul style="list-style-type: none"> Windows XP Professional MUI Windows XP Embedded Standard 2009 English on 8 GByte CompactFlash Windows 7 Ultimate MUI 	<ul style="list-style-type: none"> Windows 2000 Professional MUI Windows XP Professional MUI Windows XP Embedded English on 2 GByte CompactFlash Windows Vista Ultimate MUI
Order separately	RMOS3 V3.50	RMOS3 V3.50	RMOS3 V3.50
Project-specific on request	<ul style="list-style-type: none"> Linux¹⁾ Other 	<ul style="list-style-type: none"> Linux¹⁾ Other 	<ul style="list-style-type: none"> Other
Interfaces			
PROFINET	3 x RJ45 (compatible with CP 5611) onboard, optional		
PROFIBUS / MPI	12 Mbit/s (compatible with CP 5611) onboard, optional		
Ethernet	2 x 10 / 100 / 1000 Mbit/s	2 x 10 / 100 / 1000 Mbit/s	1 x 10 / 100 / 1000 Mbit/s
USB 2.0 (high current)	4 x	4 x	4 x
VGA, LVDS, DVI	1 x DVI-I	1 x DVI-I	1 x DVI-I
Drives			
Hard disks:	<ul style="list-style-type: none"> 1 x 3,5" 2 x 2,5" RAID1 / 2 x 2,5" 	<ul style="list-style-type: none"> 1 x 3,5" 2 x 2,5" RAID1 / 2 x 2,5" 	<ul style="list-style-type: none"> 1 x 3,5" 2 x 2,5" RAID1 / 2 x 2,5"
Solid-State Drive	–	1 x 2,5" SATA (optional)	–
Flash drive	• 1 x at the front, externally accessible, 1 x internal, instead of HDD, ODD (optional)		
Optical drives	DVD+/-RW (optional)	DVD+/-RW (optional)	DVD+/-RW (optional)
Ambient conditions²⁾			
Vibration / shock load during operation	1 g / 5 g	1 g / 5 g	1 g / 5 g
Ambient temperature during operation	<ul style="list-style-type: none"> 5 ... 50 / 55 °C (with 20 / 10 W load on PCI / PCI-Express bus) 5 ... 45 °C, fully configured 		

- 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://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

²⁾ Restrictions when using DVD±R/RW and hard disks in swap frame.

PC-based Automation

Box PC

Introduction

Benefits

Compact dimensions

The SIMATIC IPC427C is an ultra-compact and rugged device for DIN rail mounting, portrait or wall mounting and for use in the machine: mounting depth from 47 mm.

With a maximum mounting depth of 100 mm (80 mm without DVD drive), the SIMATIC Box PC 627B / IPC627C can be used even in the smallest of spaces. The space-saving portrait mounting is possible with the SIMATIC Box PC 627B, 827B and IPC627C.

Rugged design

All designs aim to achieve maximum safety in the case of vibration and shock loads. For example, a special vibration-absorbing suspension of the hard disk ensures absolute operational reliability, even at high mechanical loads. A Flash drive slot, easily accessible from outside, or the Solid-State Drive (SSD) in single level cell (SLC) architecture is available for setting up low-maintenance, fault-tolerant, diskless systems. Thanks to its fan-free design and use of CompactFlash Cards, the Microbox PC is especially suitable for maintenance-free 24-hour continuous operation.

Service-friendly device design

The Box PC can simply be folded out for speedy component replacement. The inside of the device is easily accessible for future expansions.

Integrated interfaces

On SIMATIC Box PCs, all interfaces are located on one side. Box PCs can be interfaced with the control / cell level via onboard Ethernet interfaces and communicate in the field via an integrated PROFIBUS interface, which is available as an option. External monitors or displays can be connected through a VGA or DVI-I interface (VGA and DVI) and LVDS (Box PC 627B).

Flexibility

With its 5 free PC slots, the SIMATIC Box PC 827B in particular offers considerable leeway for expansions.

All Box PCs have CE certification for use in industrial applications and domestic / commercial applications and can therefore be used in building automation or public installations in addition to industrial applications.

Continuity

Thanks to motherboards developed and manufactured in-house, the SIMATIC Box PCs offer very high continuity and security of investment. The SIMATIC Box PC models can normally be ordered for a period of three years and spare parts are obtainable for at least 5 years after active marketing is concluded.

System availability

SIMATIC Box PCs can be ordered in custom configurations and are supplied ready for use. The high system availability by design can be further extended by means of additional data backup options (e.g. RAID system, SIMATIC IPC Image & Partition Creator) and efficient software for self-diagnostics (SIMATIC IPC DiagMonitor).

More information

Information material can be ordered or downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

Overview



The Microbox PC SIMATIC IPC427C is the powerful embedded industrial PC for use at the machine:

- Ultra-compact
- Maintenance-free
- Intel Core2 Duo technology

Benefits

High data processing speed for high productivity

- Up to Core2 Duo 2 x 1.2 GHz, fanless
- DDR3 memory technology up to 4 GByte
- Graphics performance for Vista Aero user interface

Maximum compactness and ruggedness for use directly on the machine

- Low mounting depth, up to 55 °C ambient temperature
- Upright mounting as second standard mounting position (50 °C ambient temperature)
- Solid-State Drive (SSD) (32 GByte, in single level cell (SLC) architecture, optional), SATA hard disk, or up to FlashDrive 2-CompactFlash with 8 GByte

High degree of industrial functionality and flexibility for implementing the Embedded solution

- Flexible memory concepts (e.g. 2 mass storage units are possible)
- 2 LAN 10 / 100 / 1000 Mbit/s connections; teaming capability
- Onboard PROFIBUS or PROFINET interface (optional)
- 4 high-speed USB 2.0 ports; 2 serial interfaces (2nd interface is optional)
- Flexible installation with mounting options (rail, wall, front upright mounting)
- Easy expansion (up to 3 PCI-104 slots), e.g. high-speed, central I/O
- On / Off switch

High system availability in order to reduce the risk of potential failures and maintenance costs

- Maintenance-free since no rotating parts (fans, hard disks) and no battery are installed
- 2 MByte buffered SRAM, of which 256 KB can be written within the buffer time
- Front LED for efficient self-diagnostics; optimized for headless operation through special BIOS properties
- SIMATIC software system-tested

High investment security in order to reduce engineering costs

- Long-term availability: Service and support period of 8 to 10 years after market launch
- Mounting compatibility and interface compatibility with predecessor versions as of 2004

PC-based Automation

Box PC

SIMATIC IPC427C

Application

The SIMATIC IPC427C provides mechanical engineers, plant engineers and control cabinet manufacturers with a high-performance, compact PC platform for use at machine or process level, or in the industrial environment for:

- Measuring and checking, open-loop and closed-loop control of process and machine data
- Acquisition, further processing and visualization of data
- All applications at the machine level – created in C/C++ or with WinAC / WinCC flexible – which require rugged, ultra-compact IPCs with high computing power
- Additional new applications such as shipbuilding, building automation, water treatment, RFID

The application spectrum ranges from automation computers fully integrated in TIA with, for example, WinAC, through C/C++-based automation solutions with the tried and tested SIMATIC RMOS3 operating system with real-time and multi-tasking capability, all the way to "standalone" applications in general IT use.

For software products that require Windows XP Professional, the combination of Windows XP Professional Multi-Language is available preinstalled on the hard disk.

The SIMATIC IPC427C has the CE mark for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public. The device also has the most important marine approvals (available soon), provided that configurations with CompactFlash memory are used.

Due to the fan-free design and use of SIMATIC PC CompactFlash memories, there are no rotating parts and the system availability is increased. It is possible to order the CompactFlash memory either accessible externally so that it can be swapped, or integrated so that it is protected against access.

Design

Basic design

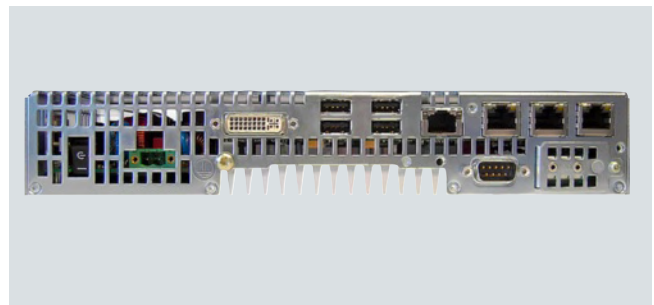
- All-metal enclosure, resistant to vibrations and shocks, also with high electromagnetic compatibility
- Graphics onboard, on AGP bus: DVI-I: VGA (analog) and DVI (digital)
 - CRT resolution: Up to 1920 x 1200 pixels / true color / 60 to 120 Hz
 - DVI-D resolution: Up to 1920 x 1200 pixels / true color
- Optical drives can be connected externally via USB interface, not included in scope of supply
- Interfaces (accessible from one side):
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45)
 - 4 x high-speed USB V2.0
 - 1 x COM1 (RS232)
- Free slots (when using the expansion rack):
 - Up to 3 x PCI104-Plus cards
- Isolated power supply: 24 V DC (19.2 to 28.8 V)

Design versions

- Processor:
 - Intel Core2 Duo 1.2 GHz, 800 MHz FSB, 3 MByte SLC
 - Intel Core2 Solo 1.2 GHz, 800 MHz FSB, 3 MByte SLC
 - Intel Celeron M 1.2 GHz, 800 MHz FSB, 1 MByte SLC
- Main memory configuration from 512 MByte (1 / 2 / 4 GByte optional), DDR3 SDRAM
- Fieldbus
 - PROFINET onboard, 3 x RJ45, CP16116-compatible
 - PROFIBUS DP / MPI on board, compatible with CP 5611
- Hardware expansion:
 - Second RS232 interface (COM2) in expansion rack
- Drives:
 - Solid-State Drive, 32 GByte, rugged alternative to hard disk
 - Flash drive (replaceable, accessible): 256 MByte, 2 GByte, 4 GByte or 8 GByte
 - Flash drive (internal, not accessible): 256 MByte, 2 GByte, 4 GByte, 8 GByte
 - Hard disk Serial ATA; 2.5"
- Preinstalled operating systems:
 - Windows XP Embedded Standard 2009 (successor to Windows XP Embedded)
 - Windows XP Professional Multi-Language



SIMATIC IPC427C (bottom side), PROFIBUS version



SIMATIC IPC427C (bottom side), PROFINET version

Function

- Integrated and parameterizable monitoring functions (program execution / watchdog, processor and board temperature)
- Expanded diagnostics / messages via Ethernet, e-mail, SMS and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor)
 - Runtime meter
 - Hard disk status
 - System status (heartbeat)
 - Automatic logging of all alarms by means of a log file
 - Possibility for central monitoring of a networked SIMATIC PC

Integration

Ethernet

The two integrated Gigabit Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with PLCs such as SIMATIC S7 (using the "SOFTNET S7" software package).

PROFIBUS

The optional isolated PROFIBUS interface (12 Mbit/s) can be used to connect to distributed field devices or for coupling to SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").

PROFINET

The PROFINET interface can be used to connect distributed field devices or to control drives.

Other interfaces

For connecting additional I/O devices, up to 3 free slots are available for PCI-104 modules (with expansion frames), as well as 4 high-speed USB interfaces and two serial interfaces

Technical specifications

SIMATIC IPC427C	
General features	
Design	DIN rail or wall mounting, front upright mounting, mounting position preferably horizontal, vertical possible
Processor	<ul style="list-style-type: none"> • Intel Core2 Duo 1,2 GHz, 800 MHz FSB, SLC 3 MByte • Intel Core2 Solo 1,2 GHz, 800 MHz FSB, SLC 3 MByte • Intel Celeron M 1,2 GHz, 800 MHz FSB, SLC 1 MByte
Chipset	Intel GM45 / ICH9M
Main memory	512 MByte, (1 / 2 / 4 GByte) DDR3 SDRAM
Buffered SRAM	2 MByte, of which 256 KB can be written within the buffer time
Spare slots for expansions	Up to 3 x PCI-104, 3 W per slot
Graphics	<ul style="list-style-type: none"> • Integrated Intel GMAX4500 graphics • 8 ... 512 MByte shared graphics memory (managed dynamically) • CRT resolution: 640 x 480 pixels up to max. 1920 x 1200 pixels at 32 bit colors • DVI-D resolution: 640 x 480 pixels up to max. 1920 x 1200 pixels at 32 bit colors
Operating system	<ul style="list-style-type: none"> • without • Windows XP Embedded Standard 2009 preinstalled, in combination with CF card of 2 GByte or more, Solid-State Drive, or hard drive • Windows XP Professional MUI (in combination with Solid-State Drive or hard drive; MUI: Multi Language User Interface) • RMOS3 (order separately) • Linux¹⁾ (project-specific, on request) • Others on request project-specifically
Power supply	<ul style="list-style-type: none"> • 24 V DC (19.2 V ... 28.8 V) • Isolated • With buffering of temporary power failures: Max. 10 ms at 0.85% rated voltage • Line side switch • With power failure indication by means of Power Fail signal

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

PC-based Automation

Box PC

SIMATIC IPC427C

Technical specifications (continued)

SIMATIC IPC427C		SIMATIC IPC427C	
Drives		Monitoring functions (continued)	
Flash drive	<u>Optional; replaceable, accessible, diagnosable</u> <ul style="list-style-type: none"> • 256 MByte • 2 GByte • 4 GByte • 8 GByte <u>Optional; internal, not accessible, diagnosable</u> <ul style="list-style-type: none"> • 256 MByte • 2 GByte • 4 GByte • 8 GByte 	Watchdog	<ul style="list-style-type: none"> • Monitoring of program execution • Monitoring time can be parameterized in software • Can be parameterized for a fault or restart • Messages can be evaluated by the application program.
Solid-State Drive (SSD)	<u>Optional</u> <ul style="list-style-type: none"> • 32 GByte SATA, 2,5" in single level cell (SLC) architecture 	Monitoring functions via the network	<ul style="list-style-type: none"> • DiagBase • SIMATIC PC DiagMonitor <u>Remote monitoring capability for:</u> <ul style="list-style-type: none"> • Watchdog • Temperature • Mass memory monitoring (SMART) • System / Ethernet monitoring (Heart Beat) • Runtime meter <u>Communication:</u> <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Configuration of client / server architectures • Layout of log files
Hard disk	<u>Optional</u> <ul style="list-style-type: none"> • > 80 GByte SATA 	Ambient conditions	
CD-ROM	Via USB (not included in scope of delivery)	Degree of protection acc. to EN 60529 (front / rear)	IP20
DVD-RW	Via USB (not included in scope of delivery)	Vibration during operation	<u>Devices without hard disk:</u> <ul style="list-style-type: none"> • Requirements according to: IEC 61131-2 • Tested according to: IEC 60068-2-6, Test Fc • Devices without drive: <ul style="list-style-type: none"> - 5-9 Hz, 3.5 mm deviation, 10x/axis, 1 octave/min - 9-150 Hz, 9.8 m/s², 10x/axis, 1 octave/min <u>Devices with hard disk:</u> <u>Wall mounting</u> <ul style="list-style-type: none"> • Requirements according to: IEC 61131-2 • Tested according to: IEC 60068-2-6, Test Fc • 10 ... 58 Hz, 0.0375 mm deviation, 10x/axis, 1 octave/min • 58 ... 200 Hz, 4.9 m/s², 10x/axis, 1 octave/min
Disk	Via USB (not included in scope of delivery)		
Interfaces			
PROFINET	Via USB (not included in scope of delivery)		
PROFIBUS / MPI	12 Mbit/s (isolated, compatible to CP 5611) optional		
Ethernet	<ul style="list-style-type: none"> • 2 x 10 / 100 / 1000 Mbit/s (RJ 45) • Two independent Intel 82574L controllers (via PCI-Express) • One controller with none-shared interrupt • Team capability 		
USB	V2.0 / High Speed: 4 x		
Serial	COM1 (V.24) COM2 (V.24) optional (in expansion frame)		
DVI-I	1 x DVI-I 1 x VGA		
Keyboard	Via USB (not included in scope of delivery)		
Mouse	Via USB (not included in scope of delivery)		
Monitoring functions			
Temperature	<ul style="list-style-type: none"> • Processor temperature • Motherboard • Messages can be evaluated by the application program 		

Technical specifications (continued)

SIMATIC IPC427C	
Ambient conditions (continued)	
Shock load during operation	<div>Devices without hard disk:</div> <ul style="list-style-type: none">• Requirements according to: IEC 61131-2• Tested according to: IEC 60068-2-27, Test Ea• Module / rack: 150 m/s², power-up, 11 ms shock duration <div>Devices with hard disk: Wall mounting</div> <ul style="list-style-type: none">• Requirements according to: IEC 61131-2• Tested according to: IEC 60068-2-27, Test Ea• Devices with drive: 50 m/s², power-up, 30 ms shock duration
Electromagnetic compatibility (EMC)	
Emitted interference	EN 55022 Class B
Interference immunity, burst	EN 61000-6-2 or IEC 61131-2: <ul style="list-style-type: none">• 2 kV - Tested acc. to IEC 61000-4-4• 1 kV symmetrical / 2 kV asymmetrical - Tested acc. to IEC 61000-4-5
Interference immunity, surge	1 kV to IEC 61000-4-5; symmetrical 2 kV to IEC 61000-4-5; asymmetrical
ESD interference immunity	According to NAMUR Recommendation NE 21 and EN 61000-6-2: <ul style="list-style-type: none">• 6 kV contact discharge - Tested acc. to IEC 61000-4-2• 8 kV air discharge - Tested acc. to IEC 61000-4-2
Immunity to high radio frequency interference	According to EN 61000-6-2 or IEC 61131-2: <ul style="list-style-type: none">• Interference immunity 80 ... 1000 MHz: 10 V/m with 80% AM (1 kHz); tested acc. to IEC 61000-4-3;• 1.4 GHz ... 2 Hz: 10 V/m with 50% pulse modulation; tested according to IEC 61000-4-3
Immunity to high-frequency current feed	Acc. to NAMUR Recommendation NE 21 and EN 61000-6-2 or IEC 61131-2: <ul style="list-style-type: none">• 10 kHz ... 80 MHz: 10 V with 80% AM (1 kHz) tested acc. to IEC 61000-4-6
Immunity to magnetic fields	Acc. to NAMUR Recommendation NE 21 and EN 61000-6-2 or IEC 61131-2: 50 / 60 Hz; 100 A/m rms value - tested acc. to IEC 61000-4-8

SIMATIC IPC427C	
Electromagnetic compatibility (EMC)	
(continued)	
Ambient temperature during operation	<ul style="list-style-type: none">• 0 ... 55 °C with flash drive / SSD (horizontal; preferred mounting position; with derating)• 0 ... 50 °C with flash drive / SSD (horizontal; preferred mounting position; maximum configuration)• 0 ... 50 °C with flash drive / SSD (vertical)• 5 ... 40 °C with hard disk (horizontal and vertical)
Moist heat	<ul style="list-style-type: none">• With CompactFlash Card / SSD: 95 %• With hard drive 80%
System-tested SIMATIC Industrial Software	WinAC RTX
Approvals	
Marine approval (available soon) Only for configurations with CompactFlash or SSD memory	<ul style="list-style-type: none">• GL - Germanische Lloyd• BV - Bureau Veritas• LR - Lloyds Register of Shipping• ABS - American Bureau of Shipping• DNV - Det Norske Veritas• NKK - Nippon Kaiji Kyokai
Safety regulations	IEC 61131-2 IEC 61010-1 EN 60950-1
Approvals	UL508, UL60950, cULus
CE mark	<ul style="list-style-type: none">• EC Directive 89 / 336 / EEC (EMC Directive)• Use in industry:<ul style="list-style-type: none">- Emitted interference: EN 61000-6-4- Noise immunity: EN 61000-6-2• Applications in residential areas, business and trade environments as well as in workshops:<ul style="list-style-type: none">- Emitted interference: EN 61000-6-3- Noise immunity: EN 61000-6-1
Dimensions and weights	
Equipment dimensions (in mm)	<ul style="list-style-type: none">• Width x height: 262 x 134• Depth of basic unit: 47• Depth of basic unit above rail: 50• Additional depth per expansion (1-3): 17 each
Weight, approx.	2 kg

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

PC-based Automation

Box PC

SIMATIC IPC427C

Ordering data

Order No.

Order No.

Configuration¹⁾

SIMATIC IPC427C

G 6ES7 647-7 B ■ ■ ■ - ■ ■ ■ 0

Intel Celeron M 1.2 MHz, 800 MHz FSB, SLC 0 KB; 512 MByte DDR3 RAM; without HD; without flash drive; without operating system; 24 V DC industrial power supply

Processor:

- Intel Celeron M 1,2 GHz, 800 MHz FSB **A**
- Intel Celeron M 1,2 GHz, 800 MHz FSB, PROFIBUS **B**
- Intel Celeron M 1,2 GHz, 800 MHz FSB, CAN **D**
- Core2 Solo 1,2 GHz, 800 MHz FSB SLC, 3 MByte **E**
- Core2 Solo 1,2 GHz, 800 MHz FSB SLC, 3 MByte, PROFIBUS **F**
- Core2 Solo 1,2 GHz, 800 MHz FSB SLC, 3 MByte, PROFINET **G**
- Core2 Duo 1,2 GHz, 800 MHz FSB SLC, 3 MByte **J**
- Core2 Duo 1,2 GHz, 800 MHz FSB SLC, 3 MByte, PROFIBUS **K**
- Core2 Duo 1,2 GHz, 800 MHz FSB SLC, 3 MByte, PROFINET **L**

Memory configuration:

- 512 MByte DDR3 1066, SODIMM **1**
- 1 GByte DDR3 1066, SODIMM **2**
- 2 GByte DDR3 1066, SODIMM **3**
- 4 GByte DDR3 1066, SODIMM **4**

Expansion (HW):

- No expansion (HW) **0**
- Second RS232 interface in expansion rack **1**

Drives exchangeable (accessible)

- Without drive **0**
- 256 MByte CompactFlash **1**
- 2 GByte CompactFlash **2**
- 4 GByte CompactFlash **3**
- 8 GByte CompactFlash **4**

Drives internal (not accessible)

- Without internal drive **X**
- 80 GByte HDD SATA **A**
- 32 GByte Solid-State Drive SATA **D**
- 256 MByte CompactFlash internal **M**
- 2 GByte CompactFlash internal **N**
- 4 GByte CompactFlash internal **P**
- 8 GByte CompactFlash internal **Q**

Operating system (preinstalled and activated)²⁾

- Without operating system **X**
- Windows Embedded Standard 2009 preinstalled on internal drive **A**
- Windows XP Professional MUI preinstalled on internal drive **B**

Accessories

Memory Expansion

- 512 MByte DDR3 1066 SDRAM, B SODIMM **6ES7 648-2AH30-0KA0**
- 1 GByte DDR3 1066 SDRAM, B SODIMM **6ES7 648-2AH40-0KA0**
- 2 GByte DDR3 1066 SDRAM, B SODIMM **6ES7 648-2AH50-0KA0**
- 4 GByte DDR3 1066 SDRAM, B SODIMM **6ES7 648-2AH60-0KA0**

Expansion kit PC/104

For integration of PC/104 modules in the SIMATIC Microbox PC; packing unit contains 6 expansion frames

SIMATIC PC adapter cable

DVI-I to VGA, 250 mm

Portrait assembly kit

Interfaces nach vorne

SIMATIC PC keyboard

- German / international, USB port **6ES7 648-0CB00-0YA0**
- German / international, USB port, incl. 4-way USB hub **6ES7 648-0CD00-0YA0**

SIMATIC PC mouse

(optical, 3-button) for programming device and PC with adapter

SIMATIC IPC CompactFlash

- 256 MByte **B 6ES7 648-2BF02-0XC0**
- 2 GByte **B 6ES7 648-2BF02-0XF0**
- 4 GByte **B 6ES7 648-2BF02-0XG0**
- 8 GByte **B 6ES7 648-2BF02-0XH0**

SIMATIC IPC USB FlashDrive

2 GByte, USB 2.0, metal enclosure, bootable

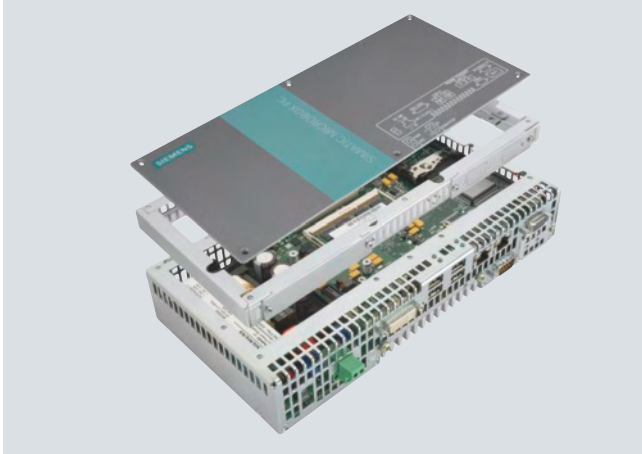
¹⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: : <http://www.siemens.com/ipc-configurator>

²⁾ XP Embedded on 2 GByte CompactFlash or hard disk. XP Professional or Vista only with hard disk.

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

Accessories



SIMATIC IPC427C with expansion rack; a maximum of 4 PC-IO expansion racks can be stacked.

For particularly fast and real-time-capable measuring, open-and closed-loop control tasks, the SIMATIC IPC427C can be modularly and flexibly expanded by a central I/O.

By means of PCI-104 expansion slots, encoders / counters as well as digital and analog I/O modules can be integrated using expansion racks in an extremely compact configuration.

The base module PC I/O Base 400 is plugged directly into the PC104 slot of the SIMATIC IPC427C, and any encoders / counters required are routed externally via the KIT 040 (encoder expansion rack).

One or two I/O modules are screwed into the KIT 030 and attached with this to the enclosure of the SIMATIC IPC427C, while the electrical connection to the PC IO Base 400 is made using flat ribbon cables. The I/O can be connected by means of direct connectors.

Module	Description
PC IO Base 400 (base module)	<ul style="list-style-type: none"> • PCI104 interface to the host • 4 encoder inputs, optionally usable individually as counters • 4 digital inputs • Management of the encoder inputs and associated counters, as well as up to 4 I/O modules via their own communications interfaces • Power supply distribution for 4 encoders
PC IO MOD digital 010 (digital I/O module 0)	<ul style="list-style-type: none"> • 24 binary inputs 24 V • 16 binary outputs 24 V
PC IO MOD analog 020 (analog I/O module 0)	<ul style="list-style-type: none"> • 8 analog inputs, 12 bit, 0 ... 5 V, 0 ... 10 V ± 5 V, ± 10 V • 8 analog outputs, 16 bit, ± 10 V • 4 Pt100 connections, 2-wire
PC IO KIT 040 (encoder expansion rack)	Connection unit for: <ul style="list-style-type: none"> • 4 encoder inputs • 4 digital inputs • Encoder voltage feed
PC IO KIT 030 (I/O expansion rack)	Expansion rack for accepting <ul style="list-style-type: none"> • max. 2 I/O modules in the SIMATIC IPC427C system

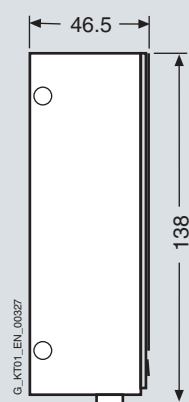
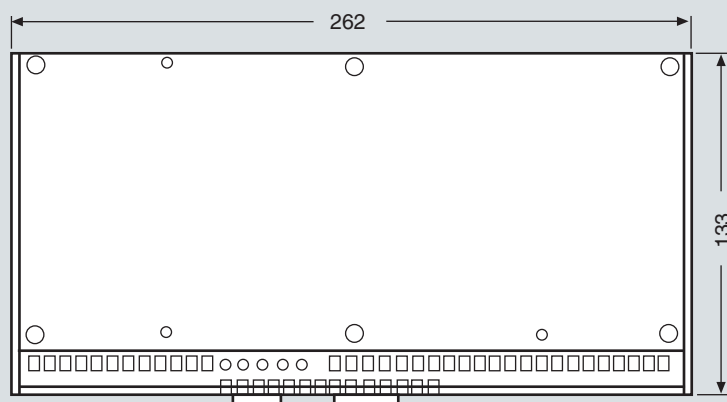
PC-based Automation

Box PC

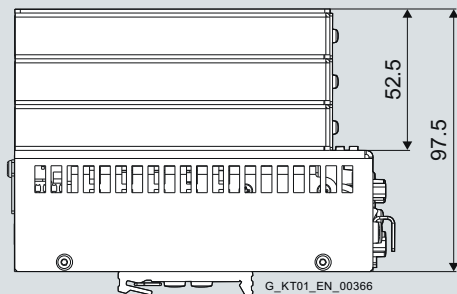
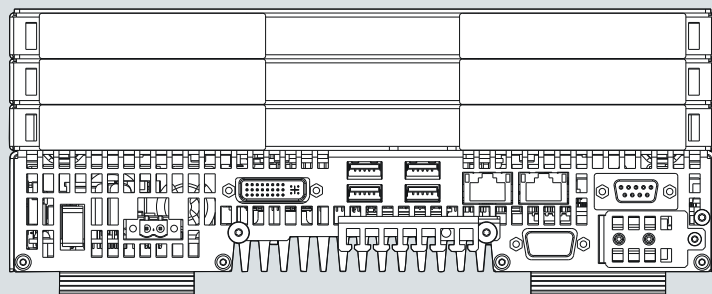
SIMATIC IPC427C

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC IPC427C



SIMATIC IPC427C

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

Overview



SIMATIC IPC627C is ideally suited to high-performance PC applications installed at the machine.

It offers:

- Maximum performance in the smallest space
- Intel Core i7 technology

Benefits

Maximum system performance for complex measuring, control and visualization tasks

- Intel processors: Core i7-610E with Turbo Boost technology, Core i3-330E or Celeron P4505, Intel Platform Controller Hub BD82QM57, Intel HD graphics
- PCI-Express technology, DDR3 1066 memory technology up to 8 GByte, SATA hard disks up to 500 GByte

Highly compact design for space-saving and flexible installation

- Compact housing design (volume 6 liters)
- Flexible installation in many different positions with mounting brackets or portrait installation kits
- On-board: PROFINET or PROFIBUS interface and RAID1 controller (optional)
- 2 x PCI or optionally 1 x PCI-Express x16 and 1 x PCI
- 2 LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- 4 USB ports 2.0 (high current)

Rugged design for direct installation in the machine

- Maximum processor performance up to ambient temperature of 55 °C
- High shock / vibration resistance in all possible mounting positions
- SATA Solid-State Drive 32 GByte (SSD, optional) in single level cell architecture (SLC)
- 2 CompactFlash drives (optional)

High system availability, fast startup, maintenance and servicing

- High data security thanks to mirror disk system (RAID1, optional) or Solid-State Drive (SSD, optional)
- ECC memory (optional)
- Battery-backed SRAM as memory for WinAC data (with 24 V DC industrial power supplies)
- 2 x 7-segment display and 2 signal LEDs (freely programmable) for diagnostics purposes
- CMOS battery compartment accessible from outside
- Operating system preinstalled, ready to run, and already activated (eliminates need for usual product activation via the Internet or by telephone)
- Following system failure, fast restoration of hard disk contents to as-delivered status using supplied recovery and restore CD
- Worldwide service and support

Cost reductions through high investment security

- Platform with long-term stability and embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Installation compatible for all device generations, software compatible with predecessor model

PC-based Automation

Box PC

SIMATIC IPC627C

Application

The SIMATIC IPC627C provides mechanical engineers, plant engineers, and control cabinet makers with a high-performance, compact PC platform for application at the machine or in the industrial environment for:

- Measuring and controlling of process and machine data (e.g. automated washing systems, robot controls)
- Operating and visualization tasks with separate display / monitor solutions (e.g. information terminals, large-scale displays in automotive production)
- Data acquisition and processing (e.g. production data acquisition, distributed process control)
- Motion Control

The SIMATIC IPC627C has CE certification for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public.

It can also be integrated in confined spaces thanks to the low mounting depth of 100 mm (80 mm without CD drive).

The SIMATIC Box PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a reduced price.

Design

Basic design

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Card retainer for reliable operation of PC modules in the event of vibrations and shocks
- Graphics onboard 1600 x 1200, 85 Hz, 32-bit colors
- Interfaces (accessible from one side):
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45)
 - DVI-I graphics interface
 - 4 x USB 2.0
 - 1 x serial (COM1)
- CompactFlash drive (can be operated from the outside)
- Two 7-segment displays and two LEDs for status indication (freely programmable)

Design versions

- Processor:
 - Intel Core i7-610E processor (2C / 4T, 2.53 GHz, TB, HT, VT, 4 MByte cache)
 - Intel Core i3-330E processor (2C / 4T, 2.13 GHz, HT, VT, 3 MByte cache)
 - Intel Celeron P4505 processor (2C / 2T, 1.86 GHz, 2 MByte cache)
- Main memory configuration from 1 GByte to 4 GByte, DDR3 1066
- ECC memory 2 GByte / 4 GByte, DDR3 1066
- Fieldbus:
 - PROFINET on-board, 3 x RJ45, CP1616-compatible, PROFINET versions feature 2 MByte battery-backed SRAM on-board
 - PROFIBUS / MPI on-board, CP5611-compatible, PROFIBUS versions feature 2 MByte SRAM with battery back-up on-board

- Drives:
 - SATA hard disks: 250 / 500 GByte, 3.5"; RAID1
 - 2 x x 250 GByte, 2.5"
 - Solid-State Drive (SSD) SATA 32 GByte SLC
 - CompactFlash drive (internal) instead of HDD, ODD, without CF
 - Optical drives SATA DVD+/-RW/-RAM/-DL
- Free slots for expansions:
 - 2 x PCI (175 / 265 mm)
 - 1 x PCI-Express x16 (175 mm) and 1 x PCI (265 mm)
 - PCI interface card for COM2, LPT
- Power supply:
 - 100 / 240 V AC (wide range), 50 / 60 Hz
 - 24 V DC industrial power supply
- Preinstalled operating systems:
 - Windows XP Professional, Multi-Language
 - Windows 7 Ultimate, Multi-Language
 - Windows Embedded Standard 2009 English (on 8 GByte CompactFlash)
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC IPC Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".

Function

- Integrated, parameterizable monitoring functions (program execution (watchdog), internal enclosure temperature, external enclosure temperature, speed monitoring of fans, CMOS battery)
- Extended diagnostics / alarms via Ethernet, e-mail, SMS and for direct feed into the SIMATIC software via OPC and logging (optionally via SIMATIC PC DiagMonitor):
 - Runtime meter
 - Hard disk status
 - Automatic logging of all alarms by means of a log file
 - Long-term recording and graphic display of measured values (temperature, fan)
 - Capability for central monitoring of networked SIMATIC PCs
- RAID1 for automatic data mirroring on two serial ATA hard disks
- CompactFlash Drive or Solid-State Drive, for especially rugged data storage and systems without hard drive
- CMOS batteries are externally accessible and therefore easily replaced
- Flash BIOS with the ability to store customer-specific CMOS settings in a non-volatile memory area
- The PROFINET and PROFIBUS versions offer 2 MByte of battery-backed SRAM for application data
- After an unexpected power interruption, up to 128 KB of important process data can be written to the battery-backed SRAM
- Two 7-segment displays (Port 80) for the power-up display and for customer outputs (user-programmable)
- Two 2-color LEDs (green / red) for the indication of status messages (user-programmable)

Integration

- **Ethernet**
Two integrated Ethernet interfaces (10 / 100 / 1000 Mbit/s) for IT communication and for exchanging data with automation devices such as SIMATIC S7 (with the software package "SOFTNET S7").
- **PROFINET**
The optional PROFINET interface for connecting distributed field devices or for controlling drives.
- **PROFIBUS**
The optional, isolated PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for connection to SIMATIC S7 (with software packages "SOFTNET for PROFIBUS").
- **Additional interfaces**
There are 2 spare slots for PC modules, 4 USB (Universal Serial Bus) and a serial interface for connecting additional I/O devices.

Technical specifications

SIMATIC IPC627C	
General features	
Design	Panel mounting device, box
Processor	<ul style="list-style-type: none"> • Intel Core i7-620E, 2.53 GHz, 2 cores, 4 threads, 4 MByte cache, TB, HT, VT-x, VT-d • Intel Core i3-330E, 2.13 GHz, 2 cores, 4 threads, 3 MByte cache, HT, VT-x • Intel Celeron P4505, 1.86 GHz, 2 cores, 2 threads, 2 MByte cache
Chipset	Intel Platform Controller Hub BD82QM57
Main memory	<ul style="list-style-type: none"> • 1 GByte; DDR3 1066, DIMM; expandable up to 4 GByte, (2 memory bases) • ECC memory 2 / 4 GByte optional
Spare slots for expansions	<ul style="list-style-type: none"> • 1 x PCI (265 mm) and 1 x PCI (175 mm) or <ul style="list-style-type: none"> • 1 x PCI (265 mm) and 1 x PCI express x16 (175 mm)
Graphics	Onboard, Intel HD graphics, 256 MByte (Dynamic Shared Memory), VGA: 1600 x 1200 / 32 bit colors / 85 Hz, DVI-I: 1600 x 1200 / 32 bit colors / 60 Hz, LCD: 1280 x 1024 / 18 bit
Operating system	<ul style="list-style-type: none"> • without Preinstalled and activated / supplied on restore DVD: <ul style="list-style-type: none"> • XP Prof. MUI, SP3 • Windows 7 Ultimate MUI • Windows Embedded Standard 2009 English on 8 GByte CompactFlash MUI: Multi-user interface; 5 languages (English, French, German, Italian, Spanish) <ul style="list-style-type: none"> • RMOS3 V3.40 to be ordered separately Project-specific on request <ul style="list-style-type: none"> • Linux¹⁾ • Other
Power supply	<ul style="list-style-type: none"> • 100 / 240V AC, 190W; wide range; with short-term bridging of power failures in accordance with NAMUR: max. 20 ms at 93 V or 264 V 50 to 60 Hz (47 to 63 Hz) • 24 V DC, 210 W isolated (optional)

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

PC-based Automation

Box PC

SIMATIC IPC627C

Technical specifications (continued)

SIMATIC IPC627C	
Drives	
Hard disk	<ul style="list-style-type: none"> • without • 250 GByte SATA, 3,5" • 500 GByte SATA, 3,5" • 2 x 250 GByte SATA, 2,5" • RAID1, 2 x 250 GByte SATA, 2,5"
Solid-State Drive	• 32 GByte SATA in single level cell (SLC) architecture
Flash drive	<ul style="list-style-type: none"> • CompactFlash drive No. 1 at front • CompactFlash drive No. 2 internally, instead of HDD, ODD
DVD+/-RW	Optional (depth is increased from 80 mm to 100 mm)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible, optional) <u>Note:</u> The PROFINET options are supplied with 2 MByte battery-backed SRAM.
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611, optional) <u>Note:</u> The PROFIBUS / MPI options are supplied with 2 MByte SRAM with battery back-up.
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ 45, teaming capability)
USB	4 x USB 2.0 (high current), high speed
Serial	1 x COM1
Parallel	PCI interface module (available as accessory)
DVI-I	1 x (analog, digital)
VGA	Via adapter cable, DVI-I to VGA adapter (available as accessory)
Dual Monitor	Via adapter cable, DVI-I to VGA & DVI (available as accessory)
Monitoring functions	
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature • Outside temperature • Messages can be evaluated by the application program
Watchdog	<ul style="list-style-type: none"> • 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

SIMATIC IPC627C	
Monitoring functions (continued)	
Fan	• Speed monitoring
Local displays	<ul style="list-style-type: none"> • Port 80 display: • Two 7-segment displays for monitoring the PC power-up (user-programmable) • Two 2-color LEDs for status outputs (user-programmable)
Monitoring functions via the network	SIMATIC IPC DiagMonitor (optional) Remote monitoring capability for: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • Runtime meter Communication: <ul style="list-style-type: none"> • Internet (Web server) • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture Layout of log files • Long-term recording of measured values (temperature, fan) and graphic display
Ambient conditions	
Degree of protection (front / rear)	IP20 acc. to EN 60529
Ambient temperature during operation	With maximum configuration: <ul style="list-style-type: none"> • 5 to 45 °C • 5 to 50 °C (up to 20 Watt load on PCI bus) • 5 to 55 °C (up to 10 Watt load on PCI bus)
Vibration during operation	<ul style="list-style-type: none"> • 10 to 58 Hz: 0,75 mm; • 58 to 500 Hz: 9,8 m/s² (ca. 1 g) With DVD operation : <ul style="list-style-type: none"> • 10 to 58 Hz: 0,018 mm; • 58 to 500 Hz: 2,5 m/s² (ca. 0,25 g) <u>Note:</u> No vibration permitted when burning DVDs
• Storage / transport	5 ... 9 Hz: 3,5 mm, 9 ... 500 Hz: 9,8 m/s ²
Shock during operation	<ul style="list-style-type: none"> • 50 m/s² During DVD operation: <ul style="list-style-type: none"> • 50 m/s², 11 ms (ca. 5 g) <u>Note:</u> No vibration permitted when burning DVDs
• Storage / transport	250 m/s ² , 6 ms

Technical specifications (continued)

SIMATIC IPC627C	
Ambient conditions (continued)	
Relative humidity during operation	<ul style="list-style-type: none"> • 5 % to 80 % at 25 °C (no condensation) • 5 % to 95 % at 25 °C (no condensation)
Protection class	Protection class I acc. to VDE 0106 Part 1 (IEC 536)
Electromagnetic compatibility (EMC)	
Emitted interference	EN 55022 Class B
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ±2 kV (IEC 61000-4-4, burst) • ±1 kV (IEC 61000-4-5, symm. surge.) • ±2 kV (IEC 61000-4-5, asymm. surge)
Immunity to interference on signal lines	<ul style="list-style-type: none"> • ±1 kV (IEC 61000-4-4, burst length < 3 m) • ±2 kV (IEC 61000-4-4, burst length > 3 m) • ±2 kV (IEC 61000-4-5, surge, length > 30 m)
Immunity to static discharge	<ul style="list-style-type: none"> • ±6 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)
<ul style="list-style-type: none"> • Immunity to high radio frequency interference 	<ul style="list-style-type: none"> • 10 V/m 80 ... 1000 MHz, 80 % AM (acc. to IEC 61000-4-3) • 10 V/m 1,4 ... 2,0 GHz, 50 % ED (acc. to IEC 61000-4-3) • 10 V 80 % AM, 9 KHz ... 8 MHz (acc. to IEC 61000-4-6)
<ul style="list-style-type: none"> • Immunity to magnetic fields 	100 A/m, 50 MHz (IEC 61000-4-6)
System-tested SIMATIC Industrial Software	<ul style="list-style-type: none"> • STEP 7 • WinAC • ProTool/Pro • WinCC • SOFTNET <p>Note: Compliance with system configuration rules is essential</p>
Approvals	
Safety regulations	IEC 60950-1
Approvals	cULus508, cULus1950, FCC Class A

SIMATIC IPC627C	
Approvals (continued)	
CE mark	<p>Use in industry:</p> <ul style="list-style-type: none"> • Emitted interference : EN 61000-6-4:2001 • Noise immunity: EN 61000-6:2001 <p>Applications in residential areas, business and trade environments as well as in workshops:</p> <ul style="list-style-type: none"> • Emitted interference : EN 61000-6-1, 2001 • Noise immunity: EN 61000-6-1:2000 <p>Other standards:</p> <ul style="list-style-type: none"> • EN 61000-3-2:2000 (harmonic currents) • EN 61000-3-3:1995 (voltage variations and flicker)
Dimensions	
Equipment dimensions (in mm)	<ul style="list-style-type: none"> • 298 x 301 (incl. mounting rail) x 100 without DVD drive: • 298 x 301 (incl. mounting rail) x 80
Weight, approx.	7 kg
Other	
Battery-backed SRAM	2 MByte onboard (in the case of motherboard with PROFIBUS / PROFINET variant)
CMOS battery	Service-friendly, simple replacement from outside. Warning for timely replacement
DiagBase Diagnose-SW	Software for local PC diagnostics (temperature, battery, HDD, ...)
Interface module	PCI interface card for COM2, LPT (accessory)
Portrait assembly	Accessories for especially space-saving PC installation in control cabinets: Assembly kit for interface outlet on front, Assembly kit for interface outlet top or bottom
Component sticker	Sticker on enclosure for identifying the PC components (processor, HDD, MAC addresses, ...)
Fan	<p>For active device heat dissipation on the device</p> <ul style="list-style-type: none"> • 1 x enclosure • 1 x power supply <p>This is a requirement for flexible installation options</p>
Mounting positions	5 installation options underline this flexibility
Cable grips	<ul style="list-style-type: none"> • 1 x power cable for 100 / 240 V AC / 24 V DC • 1 x for all USB and Ethernet interfaces (LAN FastConnect connectors are supported)

PC-based Automation

Box PC

SIMATIC IPC627C

Ordering data

Order No.

Order No.

Configuration¹⁾

SIMATIC IPC627C

G 6ES7 647 - 6 C - - - - -

HD graphics onboard,
128 MByte 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 onboard;
CompactFlash drive No. 1 at front
(without CF); watchdog,
temp. / fan monitoring;

Processor

- Celeron P4505 (2C / 2T,
1,86 GHz, 2 MByte cache) **A**
- Celeron P4505 (2C / 2T,
1,86 GHz, 2 MByte cache),
PROFIBUS / MPI, 2 MByte
battery-backed SRAM **B**
- Celeron P4505 (2C / 2T,
1,86 GHz, 2 MByte cache),
PROFINET (3 x RJ45,
CP1616-compatible),
2 MByte battery-backed SRAM **C**
- 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,
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, 4 MByte cache) **G**
- Core i7-610E (2C / 4T, 2,53
GHz, TB, HT, VT, 4 MByte
cache), PROFIBUS / MPI,
2 MByte battery-backed SRAM **H**
- Core i7-610E (2C / 4T, 2,53
GHz, TB, HT, VT, 4 MByte
cache), PROFINET (3 x RJ45,
CP1616-compatible),
2 MByte battery-backed SRAM **J**

Memory configuration

- 1 GByte DDR3 1066 DIMM **0**
- 2 GByte DDR3 1066 DIMM **1**
- 3 GByte DDR3 1066 DIMM **2**
- 4 GByte DDR3 1066 DIMM **3**
- 2 GByte DDR3 1066 DIMM, ECC **5**
- 4 GByte DDR3 1066 DIMM, ECC **6**

Configuration¹⁾

SIMATIC IPC627C

G 6ES7 647 - 6 C - - - - -

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; CH cable **2**
- AC100 / 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**

PC slots

- 2 x PCI free **0**
- 1 x PCI, 1 x PCIe (x16) free **1**

Drives

- 250 GByte HDD SATA **A**
- 250 GByte HDD SATA; DVD+/-RW **B**
- 500 GByte HDD SATA **C**
- 500 GByte HDD SATA; DVD+/-RW **D**
- 2 x 250 GByte SATA (2,5") **E**
- 2 x 250 GByte SATA (2,5");
DVD+/-RW **F**
- RAID1 2 x 250 GByte SATA (2,5") **G**
- RAID1 2 x 250 GByte SATA
(2,5"); DVD+/-RW **H**
- Solid-State Drive
SATA 32 GByte **J**
- Solid-State Drive SATA
32 GByte; DVD+/-RW **K**
- CompactFlash drive No.2 built-in
(instead of HDD, ODD, without CF) **V**
- DVD+/-RW **W**
- without drives **X**

Operating system (preinstalled and activated)¹⁾

- Windows XP Prof. SP3, MUI
(Eng, Ger, Fr, It, Sp) **A**
- Windows 7 Ultimate, MUI
(Eng, Ger, Fr, It, Sp) **B**
- Windows Embedded Standard
2009 English on 8 GByte
CompactFlash **F**
- without operating system **X**

Expansion

- without expansion (SW) **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 :
www.siemens.com/ipc-configurator

G: Subject to export regulations: AL: N and ECCN: 5D992

Ordering data		Order No.	Order No.	
Accessories			Expansion components	
Memory Expansions			SIMATIC PC keyboard	6ES7 648-0CB00-0YA0
• 1 GByte DDR3 1066, DIMM		6ES7 648-2AJ40-0KA0	German / international, USB port	
• 2 GByte DDR3 1066, DIMM		6ES7 648-2AJ50-0KA0		
• 1 GByte DDR3 1066, DIMM; ECC		6ES7 648-2AJ40-1KA0	SIMATIC PC mouse	6ES7 790-0AA01-0XA0
• 1 GByte DDR3 1066, DIMM; ECC		6ES7 648-2AJ50-1KA0	(optical, 3-button); for programming device and PC with adapter	
PCI expansion card	B	6ES7 648-2CA01-0AA0	CompactFlash Card	
with COM1 and LPT			• CompactFlash, 4 GByte, Industrial Grade - DIAG	6ES7 648-2BF02-0XG0
Graphics adapter cable			• CompactFlash, 8 GByte, Industrial Grade - DIAG	6ES7 648-2BF02-0XH0
• DVI-I to VGA, 250 mm long		6ES7 648-3AB00-0XA0	SIMATIC USB Flash Drive	6ES7 648-0DC40-0AA0
• DVI-I to VGA and DVI-D, 250 mm long (Y cable)		6ES7 648-3AE00-0XA0	2 GByte, USB 2.0, metal enclosure, bootable	
Portrait assembly kit			Communication products	see page 5/246
• Interfaces upward / downward		6ES7 648-1AA10-0YA0	Power supply units and UPS	see page 5/233
• Interfaces to the front	B	6ES7 648-1AA10-0YB0	RMOS3 real-time operating system	see page 5/205
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		6ES7 900-1AA00-0XA0		
• United Kingdom		6ES7 900-1BA00-0XA0		
• Switzerland		6ES7 900-1CA00-0XA0		
• USA		6ES7 900-1DA00-0XA0		
• Italy		6ES7 900-1EA00-0XA0		
• China		6ES7 900-1FA00-0XA0		

B: Subject to export regulations: AL: N and ECCN: EAR99H+

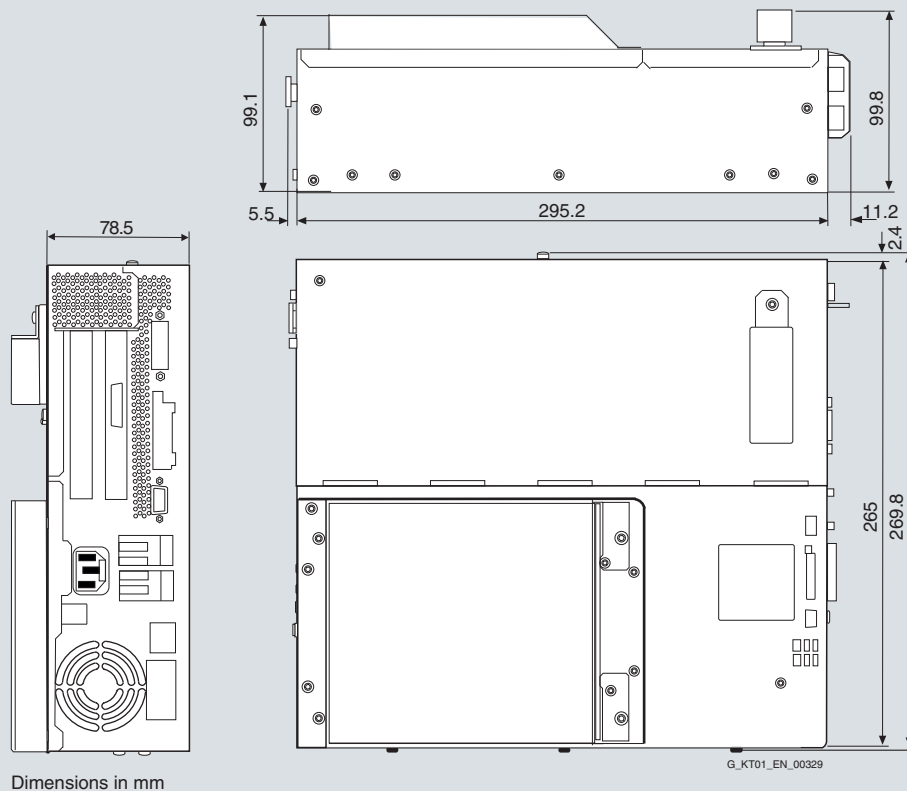
PC-based Automation

Box PC

SIMATIC IPC627C

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC IPC627C

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

Overview



The SIMATIC Box PC 627B is optimized for high-performance PC applications and for installation direct at the machine:

It offers:

- Maximum performance in the smallest space
- Intel Core2 Duo technology

Benefits

Maximum system performance for complex measuring, control and visualization tasks

- Intel processors: Core2 Duo or Celeron M, Intel chipset: 945GM Express + ICH7R, Intel GMA 950 graphic media accelerator
- PCI-Express technology, DDR2 667 memory technology up to 4 GByte, SATA hard disks up to 250 GByte

Highly compact design for space-saving and flexible installation

- Compact housing design (volume 6 liters)
- Flexible installation in many different positions with mounting brackets or portrait installation kit
- On-board: PROFINET or PROFIBUS interface and RAID1 controller (optional)
- 2 x PCI or optionally 1 x PCI-Express x4 and 1 x PCI
- 2 LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- 4 USB ports 2.0 (high current)

Rugged design for direct installation in the machine

- Maximum processor performance up to ambient temperature of 55 °C
- High shock / vibration resistance in all possible mounting positions
- High EMC for safe operation
- 2 Flash drives (optional)

High system availability, fast startup, maintenance and servicing

- High degree of data security thanks to mirror disk system (RAID1 onboard, optional)
- Battery-backed SRAM as memory for WinAC data (with 24 V DC industrial power supplies)
- 2 x 7-segment display and 2 signal LEDs (freely programmable) for diagnostics purposes
- CMOS battery compartment accessible from outside
- Operating system preinstalled, ready to run, and already activated (eliminates need for usual product activation via the Internet or by telephone)
- Following system failure, fast restoration of hard disk contents to as-delivered status using supplied recovery and restore CD
- Worldwide service and support

Cost reductions through high investment security

- Platform with long-term stability and embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- System-tested with SIMATIC components
- Certification for worldwide marketing (cULus)
- Installation compatible for all device generations, software compatible with predecessor model

PC-based Automation

Box PC

SIMATIC Box PC 627B

Application

The SIMATIC Box PC 627B provides mechanical engineers, plant engineers, and control cabinet makers with a high-performance, compact PC platform for application at the machine or in the industrial environment for:

- Measuring and controlling of process and machine data (e.g. automated washing systems, robot controls)
- Operating and visualization tasks with separate display / monitor solutions (e.g. information terminals, large-scale displays in automotive production)
- Data acquisition and processing (e.g. production data acquisition, distributed process control)
- Motion Control

The SIMATIC Box PC 627B has CE certification for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public.

It can also be integrated in confined spaces thanks to the low mounting depth of 100 mm (80 mm without CD drive).

The SIMATIC Box PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a reduced price.

Design

Basic design

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Card retainer for reliable operation of PC modules in the event of vibrations and shocks
- Graphics onboard 1600 x 1200, 85 Hz, 32-bit colors
- Interfaces (accessible from one side):
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45)
 - DVI-I graphics interface
 - 4 x USB 2.0
 - 1 x serial (COM1)
- CompactFlash drive (can be plugged in from the outside)
- Two 7-segment displays and two LEDs for status indication (freely programmable)
- Flash drive: SIMATIC PC CompactFlash (can be plugged in from the outside)

Design versions

- Processor:
 - Intel Celeron M 440 1.86 GHz, 533 MHz FSB, 1 MByte L2 cache
 - Intel Core2 Duo T5500 1.66 GHz, 677 MHz FSB, 2 MByte L2 Cache
 - Intel Core2 Duo T7400 2.16 GHz, 677 MHz FSB, 4 MByte L2 Cache
- Main memory configuration from 256 MByte to 4 GByte, DDR2 677
- Fieldbus:
 - PROFINET on-board, 3 x RJ45, CP1611-compatible, PROFINET versions feature 2 MByte SRAM with battery back-up on-board
 - PROFIBUS / MPI on-board, CP5611-compatible, PROFIBUS versions feature 2 MByte SRAM with battery back-up on-board
- Drives:
 - Hard disks Serial ATA: 160 / 250 GByte, 3.5" RAID1, 2 x 80 GByte, 2.5"
 - Optical drives DVD+/-RW/-RAM/-DL
 - CompactFlash drive (internal) instead of HDD, ODD, without CF
- Free slots for expansions:
 - 2 x PCI (175 / 265 mm)
 - 1 x PCI-Express x 4 (175 mm) and 1 x PCI (265 mm)
 - PCI interface card for COM2, LPT
- Power supply:
 - 100 / 240 V AC (autorange), 50 / 60 Hz
 - 24 V DC industrial power supply
- Preinstalled operating systems:
 - Windows 2000 Professional, Multi-Language
 - Windows XP Professional, Multi-Language
 - Windows XP Embedded English (on 2 GByte CompactFlash Card)
 - Windows Vista Ultimate, Multi-Language
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC IPC Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".

Function

- Integrated and parameterizable monitoring functions (program execution (watchdog), internal enclosure temperature, external enclosure temperature, fan speed monitoring)
- Enhanced diagnostics / messages via Ethernet, e-mail, text message, and for direct input in SIMATIC software via OPC and logging (optional via SIMATIC PC DiagMonitor):
 - Runtime meter
 - Hard disk status
 - Automatic logging of all messages to a log file
 - Long-term recording and graphic display of measured values (temperature, fan)
 - Options for central monitoring of networked SIMATIC PCs
- RAID1 for automatic data mirroring of two serial ATA hard drives
- Flash Drive, via CompactFlash Card that can be accessed externally, for extremely rugged data storage and for configuring systems without hard disks
- Externally accessible CMOS battery supports easy battery replacement
- Flash BIOS with capability for saving customer-specific CMOS settings in a non-volatile memory area
- The PROFINET and PROFIBUS variants offer 2 MByte SRAM for application data with battery back-up
- After an unexpected interruption in the supply, up to 128 KByte of important process data can be written to the SRAM with battery back-up
- When using the DC power supply, important process data can still be written into the battery-backed SRAM following an unforeseen power interruption
- Two 7-segment displays (Port 80) for the startup display and for customer outputs (user-programmable)
- Two 2-color LEDs (green / red) for the indication of status messages (user-programmable)

Integration

- Ethernet
Two integrated Ethernet interfaces (10 / 100 / 1000 Mbps) can be used for IT communication and for data exchange with automation devices, such as SIMATIC S7 (with the software package "SOFTNET S7").
- PROFINET
The optional PROFINET interface can be used for connecting distributed field devices or for controlling drives.
- PROFIBUS
The optional floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or to interface to the SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- Other interfaces
For connecting additional I/O devices, 2 free slots are available for PC modules as well as 4 USB (Universal Serial Bus) interfaces and one serial interface.

Technical specifications

SIMATIC Box PC 627B	
General features	
Design	Panel mounting device, box
Processor	<ul style="list-style-type: none"> • Intel Core2 Duo 7400, 2,16 GHz, 677 MHz FSB, 4 MByte L2 Cache • Intel Core2 Duo 5500, 1,66 GHz, 677 MHz FSB, 2 MByte L2 Cache • Intel Celeron M 440, 1,86 GHz, 533 MHz FSB, 1 MByte Second Level Cache
Chipset	Mobile Intel 945 GM Express + ICH7R
Main memory	256 MByte; DDR2 677, SODIMM; expandable up to 4 GByte, (2 memory bases)
Spare slots for expansions	<ul style="list-style-type: none"> • 1 x PCI (265 mm) and 1 x PCI (175 mm) or <ul style="list-style-type: none"> • 1 x PCI (265 mm) and 1 x PCI express x4 (175 mm)
Graphics	<ul style="list-style-type: none"> • Onboard, Intel GMA 950 Graphics Controller • 8 to 128 MByte SDRAM (Dynamic Shared Memory) • VGA: 1600 x 1200 / 32 bit colors / 85 Hz • DVI-I: 1600 x 1200 / 32 bit colors / 60 Hz • LCD: 1280 x 1024 / 18 bit

PC-based Automation

Box PC

SIMATIC Box PC 627B

Technical specifications (continued)

	SIMATIC Box PC 627B
Operating system	
Preinstalled and activated / supplied on restore DVD:	<ul style="list-style-type: none"> • without • Windows 2000 Professional MUI²⁾; SP2 • Windows XP Professional MUI²⁾; SP2 • Windows Vista Ultimate MUI²⁾ • Windows XP Embedded (SP2) English on 2 GByte CompactFlash³⁾
Order separately	• RMOS3 V3.40
Project-specific on request	<ul style="list-style-type: none"> • Linux¹⁾ • Other
Power supply	<ul style="list-style-type: none"> • 100 / 240°V AC, 190°W; autorange; with short-term bridging of power failures in accordance with NAMUR: max. 20 ms at 93 V or 264 V 50 to 60 Hz (47 to 63 Hz) • 24 V DC, 210 W isolated (optional)
Drives	
Hard disk	<ul style="list-style-type: none"> • without • 160 GByte Serial ATA, 3,5" • 250 GByte Serial ATA, 3,5" • 2 x 80 GByte, Serial ATA, 2,5" • RAID1, 2 x 80 GByte, Serial ATA, 2,5"
Flash drive	<ul style="list-style-type: none"> • CompactFlash drive No. 1 at front • CompactFlash drive No. 2 internally, instead of HDD, ODD
DVD+/-RW	Optional (depth is increased from 80 mm to 100 mm)
Disk	External diskette drive via USB interface (not included in supply)
Interfaces	
PROFINET	3 x RJ45 (CP 1616-compatible, optional) Note: The PROFINET options are supplied with 2 MByte battery-backed SRAM.
PROFIBUS / MPI	12 Mbit/s (isolated, compatible with CP 5611, optional) Note: The PROFIBUS / MPI options are supplied with 2 MByte SRAM with battery back-up.
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ 45, teaming capability)
USB	4 x USB 2.0 (high current), high speed
Serial	1 x COM1
Parallel	PCI interface module (optional)
DVI-I	1 x (analog, digital)
VGA	Via DVI-I to VGA adapter (available as accessory)

	SIMATIC Box PC 627B
Monitoring functions	
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature • Outside temperature • Messages can be evaluated by the application program
Watchdog	<ul style="list-style-type: none"> • 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
Fan	• Speed monitoring
Local displays	<ul style="list-style-type: none"> • Port 80 display: • Two 7-segment displays for monitoring the PC power-up (user-programmable) • Two 2-color LEDs for status outputs (user-programmable)
Monitoring functions via the network	SIMATIC IPC DiagMonitor (optional) Remote monitoring capability for: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • Runtime meter Communication: <ul style="list-style-type: none"> • Internet (Web server) • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files • Long-term recording of measured values (temperature, fan) and graphic display

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

²⁾ MUI: Multi-user interface, 5 languages (English, French, German, Italian, Spanish)

³⁾ XPe and Vista require at least 512 MByte of memory. XPe does not support RAID1 function.

Technical specifications (continued)

SIMATIC Box PC 627B	
Ambient conditions	
Degree of protection (front / rear)	IP20 acc. to EN 60529
Ambient temperature during operation (With maximum configuration)	<ul style="list-style-type: none"> • 5 to 45 °C • 5 to 50 °C (up to 20 Watt load on PCI bus) • 5 to 55 °C (up to 10 Watt load on PCI bus)
Vibration	
• During operation	<ul style="list-style-type: none"> • 10 to 58 Hz: 0,75 mm; • 58 to 500 Hz: 9,8 m/s² (ca. 1 g) During DVD operation: <ul style="list-style-type: none"> • 10 to 58 Hz: 0,018 mm; • 58 to 500 Hz: 2,5 m/s² (ca. 0,25 g) Note: No vibration permitted when burning DVDs
• Storage / transport	5 ... 9 Hz: 3,5 mm, 9 ... 500 Hz: 9,8 m/s ²
Shock	
• During operation	<ul style="list-style-type: none"> • 50 m/s² During DVD operation: <ul style="list-style-type: none"> • 50 m/s², 11 ms (ca. 5 g) Note: No shock permitted when burning DVDs
• Storage / transport	250 m/s ² , 6 ms
Relative humidity	
• During operation	5 % to 80 % at 25 °C (no condensation)
• Storage / transport	5 % to 95 % at 25 °C (no condensation)
Protection class	Protection class I g5 % to 95 % at 25 °C (no condensation acc. to VDE 0106 Part 1 (IEC 536))
Electromagnetic compatibility (EMC)	
Emitted interference	EN 55022 Class B
Noise immunity	
• to conducted interference on the supply cables	<ul style="list-style-type: none"> • ±2 kV (IEC 61000-4-4, burst) • ±1 kV (IEC 61000-4-5, symm. surge.) • ±2 kV (IEC 61000-4-5, Surge unsymm.)
• on signal cables	<ul style="list-style-type: none"> • ±1 kV (IEC 61000-4-4, burst length < 3 m) • ±2 kV (IEC 61000-4-4, burst length > 3 m) • ±2 kV (IEC 61000-4-5, surge, length > 30 m)

SIMATIC Box PC 627B	
Electromagnetic compatibility (EMC)	
• to static discharge	<ul style="list-style-type: none"> • ±6 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)
• to radiofrequency radiation	<ul style="list-style-type: none"> • 10 V/m 80 ... 1000 MHz, 80 % AM (acc. to IEC 61000-4-3) • 10 V/m 1,4 ... 2,0 GHz, 50 % ED (acc. to IEC 61000-4-3) • 10 V 80 % AM, 9 KHz ... 8 MHz (acc. to IEC 61000-4-6)
• to magnetic fields	100 A/m, 50 MHz (IEC 61000-4-6)
System-tested SIMATIC Industrial Software	
	<ul style="list-style-type: none"> • STEP 7 • WinAC • ProTool/Pro • WinCC • SOFTNET Note: Compliance with system configuration rules is essential
Approvals	
Safety regulations	IEC 60950-1
Approvals	cULus508, cULus1950, FCC Class A
CE mark	
• Use in industrial environments	<ul style="list-style-type: none"> • Emitted interference : EN 61000-6-4:2001 • Noise immunity: EN 61000-6:2001
• Applications in residential areas, business and trade environments, as well as in small companies	<ul style="list-style-type: none"> • Emitted interference : EN 61000-6-1, 2001 • Noise immunity: EN 61000-6-1:2000
• Other standards	<ul style="list-style-type: none"> • EN 61000-3-2:2000 (harmonic currents) • EN 61000-3-3:1995 (voltage variations and flicker)
Dimensions	
Equipment dimensions (in mm)	<ul style="list-style-type: none"> • 298 x 301 (incl. mounting rail) x 100 without DVD drive: • 298 x 301 (incl. mounting rail) x 80
Weight	
ca.	7 kg

PC-based Automation

Box PC

SIMATIC Box PC 627B

Ordering data

Order No.

Order No.

Configuration ²⁾

SIMATIC Box PC 627B

G 6ES7 647 - 6 B ■ ■ ■ - ■ ■ ■ ■

Graphics onboard, 128 MByte 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 onboard;
CompactFlash drive No. 1 at front: (without CF); watch-dog, temp- / fan monitoring;

Processor

- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB) **A**
- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB); PROFIBUS / MPI; 2 MByte battery-backed SRAM **B**
- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB); PROFINET (3 x RJ45, CP 1616-compatible); 2 MByte battery-backed SRAM; **C**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, EM64-T, 667 MHz FSB); **D**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, EM64-T); PROFIBUS / MPI; 2 MByte battery-backed SRAM **E**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, EM64-T); PROFINET (3 x RJ45, CP 1616-compatible); 2 MByte battery-backed SRAM; **F**
- Core2 Duo T7400 (2,16 GHz, 4 MByte L2, EM64-T, 667 MHz FSB); **G**
- Core2 Duo T7400 (2,16 GHz, 4 MByte SLC, EM64-T, 667 MHz FSB); PROFIBUS/MPI; 2 MByte battery-backed SRAM; **H**
- Core2 Duo T7400 (2,16 GHz, 4 MByte SLC, EM64-T, 667 MHz FSB); PROFINET (3 x RJ45, CP1616-compatible); 2 MByte battery-backed SRAM; **J**

Memory configuration

- 256 MByte DDR2 667 SODIMM **0**
- 512 MByte DDR2 667 SODIMM **1**
- 1 GByte DDR2 667 SODIMM **2**
- 2 GByte DDR2 667 SODIMM **3**
- 3 GByte DDR2 667 SODIMM **4**
- 4 GByte DDR2 667 SODIMM **5**

Country-specific version / power supply

- AC 110 / 230 V industrial power supply with Namur; European cable **0**
- AC 110 / 230 V industrial power supply with Namur; UK cable **1**
- AC 110 / 230 V industrial power supply with Namur; CH cable **2**

¹⁾ Windows XP embedded: at least 512 MByte; RAID1-Option

²⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: www.siemens.com/ipc-configurator

G: Subject to export regulations: AL: N and ECCN: 5D992

Configuration ²⁾

SIMATIC Box PC 627B

G 6ES7 647 - 6 B ■ ■ ■ - ■ ■ ■ ■

Country-specific version / power supply (continued)

- AC 110 / 230 V industrial power supply with Namur; USA cable **3**
- AC 110 / 230 V industrial power supply with Namur; Italian cable **4**
- AC 110 / 230 V industrial power supply with Namur; Chin. cable; **5**
- DC-24-V industrial power supply **6**

PC slots

- 2 x PCI free **0**
- 1 x PCI, 1 x PCIe (x4) free **1**
- PCI interface card with COM2+LPT (1 PCI free) **4**
- PCI interface card with COM2+LPT (1 PCIe x4 free) **5**

Drives

- 160 GByte HDD SATA **A**
- 160 GByte HDD SATA +DVD+/-RW **B**
- 250 GByte HDD SATA **C**
- 250 GByte HDD SATA +DVD+/-RW **D**
- 2 x 80 GByte SATA (2,5") **E**
- 2 x 80 GByte SATA (2,5") + DVD+/-RW **F**
- RAID1 2 x 80 GByte SATA (2,5") **G**
- RAID1 2 x 80 GByte SATA (2,5") + DVD+/-RW **H**
- CompactFlash drive No. 2 installed (instead of HDD, ODD, without CF) **W**
- without drives **X**

Operating system (preinstalled and activated) ¹⁾

- Windows 2000 Prof. Multi-Language SP4 (Eng, Ger, Fr, It, Sp) **A**
- Windows XP Prof. Multi-Language SP2 (Eng, Ger, Fr, It, Sp) **B**
- Windows Vista Ultimate Multi-Language (Eng, Ger, Fr, It, Sp) + at least 512 MByte memory **C**
- Windows XP Embedded (SP2) English on 2 GByte CompactFlash (at least 512 MByte memory; no RAID1); **F**
- without operating system **X**

Expansion

- without expansion (SW) **0**
- SIMATIC IPC DiagMonitor software included **1**
- SIMATIC IPC Image Creator software included **2**
- SIMATIC IPC DiagMonitor and Image Creator software incl. **3**
- SIMATIC IPC Image & Partition Creator V3.1 included **4**
- SIMATIC IPC DiagMonitor and Image & Partition Creator V3.1 included **5**

Ordering data		Order No.	Order No.	
Accessories			Expansion components	
Memory expansions			SIMATIC PC keyboard	
• 256 MByte, DDR2 667, SODIMM	B	6ES7 648-2AG20-0HA0	German / international, USB port	6ES7 648-0CB00-0YA0
• 512 MByte, DDR2 667, SODIMM	B	6ES7 648-2AG30-0HA0	SIMATIC PC mouse	
• 1 GByte, DDR2 667, SODIMM	B	6ES7 648-2AG40-0HA0	(optical, 3-button); for programming device and PC with adapter	6ES7 790-0AA01-0XA0
• 2 GByte, DDR2 667, SODIMM	B	6ES7 648-2AG50-0HA0	CompactFlash Card	
PCI expansion card	B	6ES7 648-2CA01-0AA0	• 2 GByte	6ES7 648-2BF02-0XF0
with COM1 and LPT			• 4 GByte	6ES7 648-2BF01-0XG0
Graphics adapter cable			SIMATIC USB Flash Drive	6ES7 648-0DC40-0AA0
• DVI-I to VGA, 250 mm long		6ES7 648-3AB00-0XA0	2 GByte, USB 2.0, metal enclosure, bootable	
• DVI-I to VGA and DVI-D, 250 mm long (Y cable)		6ES7 648-3AE00-0XA0	Communication products	see page 5/246
Portrait assembly kit			Power supply units and UPS	see page 5/233
• Interfaces upward / downward		6ES7 648-1AA10-0YA0	RMOS3 real-time operating system	see page 5/205
• Interfaces to the front	B	6ES7 648-1AA10-0YB0		
SIMATIC PC power cable AC 230 V				
angled, 3 m for Box PC and Panel PC for				
• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden		6ES7 900-1AA00-0XA0		
• United Kingdom		6ES7 900-1BA00-0XA0		
• Switzerland		6ES7 900-1CA00-0XA0		
• USA		6ES7 900-1DA00-0XA0		
• Italy		6ES7 900-1EA00-0XA0		
• China		6ES7 900-1FA00-0XA0		

¹⁾ Windows XP embedded: at least 512 MByte of memory; RAID1 option

²⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: : www.siemens.com/lpc-configurator

B: Subject to export regulations: AL: N and ECCN: EAR99H

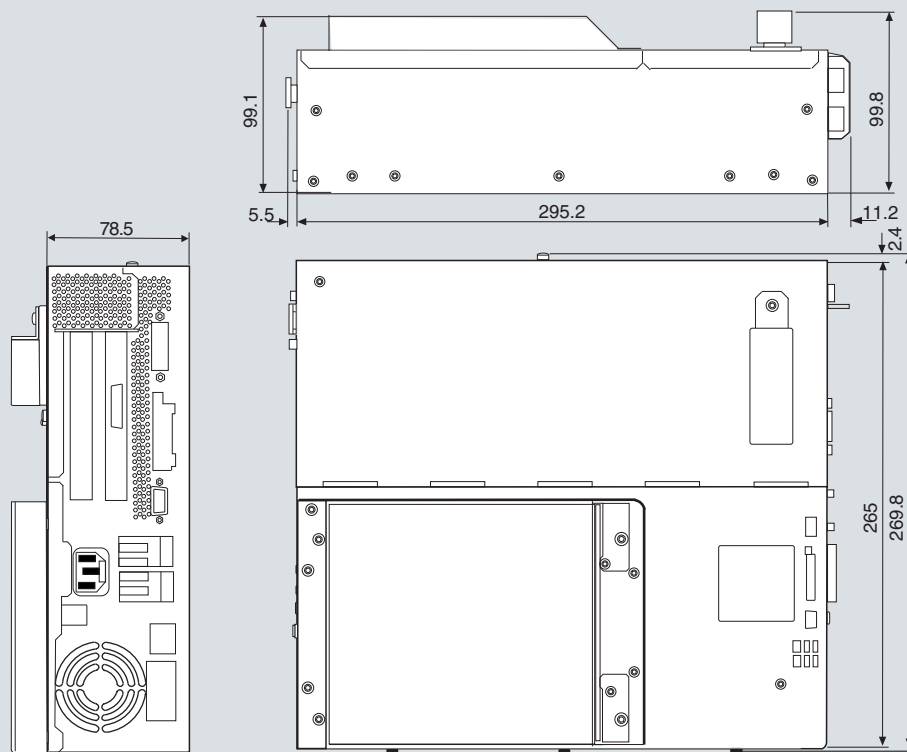
PC-based Automation

Box PC

SIMATIC Box PC 627B

Dimensions

All dimensions in mm. Panel cutout see technical specification.



Dimensions in mm

G_KT01_EN_00329

SIMATIC Box PC 627B

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

Overview



The SIMATIC Box PC 827B is a control cabinet PC for high-performance PC applications at machine level.

It offers:

- Maximum performance with a high degree of flexibility
- Intel Core2 Duo technology

Benefits

Maximum system performance for complex measuring, control and visualization tasks

- Intel processors: Core2 Duo or Celeron M
- Intel chipset: 945GM Express + ICH7R
- Intel GMA 950 graphics media accelerator
- PCI Express technology
- DDR2 667 memory technology up to 4 GByte
- SATA hard disks up to 250 GByte

High flexibility and expandability

- Flexible installation in many different positions with mounting brackets or portrait installation kit
- Onboard: PROFINET or PROFIBUS interface and RAID1 controller (optional)
- 4 x PCI and 1 x PCIe-Express (x4) or 2 x PCI and 3 x PCIe (x4)
- 2 LAN 10 / 100 / 1000 Mbit/s connections (Gbit LAN with teaming capability)
- 4 high-speed USB-2.0 ports

Rugged design for direct installation in the machine

- Maximum processor performance up to ambient temperature of 55 °C
- High shock / vibration resistance in all possible mounting positions
- High EMC for safe operation
- 2 CompactFlash drives, both accessible from the outside (one of which is optional)

High system availability, fast startup, maintenance and servicing

- High degree of data security thanks to mirror disk system (RAID1, optional)
- Battery-backed SRAM as memory for WinAC data (with 24 V DC industrial power supply)
- All interfaces and control / display elements on one side to allow optimum installation in control cabinet
- 2 x 7-segment display and 2 signal LEDs (freely programmable) for diagnostics purposes
- CMOS battery compartment accessible from outside
- Operating system preinstalled, ready to run, and already activated (eliminates need for usual product activation via the Internet or by telephone)
- Fast restoration of delivery state of hard disk contents with recovery and restore CDs
- Worldwide service and support

Cost reductions through high investment security

- Long-term platform with embedded Intel components
- Availability of 3 to 5 years, guaranteed availability of spare parts for 5 years
- Part of the scalable Box-PC range with identical performance features and footprint
- System-tested with SIMATIC hardware and software
- Certification for worldwide marketing (cULus)

PC-based Automation

Box PC

SIMATIC Box PC 827B

Application

The SIMATIC Box PC 827B provides mechanical engineers, plant engineers, and control cabinet makers with a high-performance, compact PC platform for application at the machine or in the industrial environment for:

- Measuring, testing, open-loop and closed-loop control of process and machine data (e.g. filling plants, packaging machines, machines for the semiconductor industry, CD / DVD production machines)
- Operating and visualization tasks with separate display / monitor solutions (e.g. information terminals, large-scale displays in automotive production)
- Data acquisition and processing (e.g. wind-driven power stations, energy management, test systems)

The SIMATIC Box PC 827B has CE certification for use in the industrial sector as well as in residential and commercial areas, and small businesses. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public.

The SIMATIC Box PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a reduced price.

Design

Basic design

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Card retainer for reliable operation of PC modules in the event of vibrations and shocks
- Graphics onboard 1600 x 1200, 85 Hz, 32-bit colors
- Interfaces (accessible from one side):
 - 2 x LAN 10 / 100 / 1000 Mbit/s Ethernet interface (RJ45, teaming-capable)
 - DVI-I graphics interface
 - 4 x USB 2.0
 - 1 x serial (COM1)
- CompactFlash drive (can be plugged in from the outside)
- Two 7-segment displays and two LEDs for status indication (freely programmable)

Design versions

- Processor:
 - Intel Celeron M 440 1.86 GHz, 533 MHz FSB, 1 MByte L2 cache
 - Intel Core2 Duo T5500 1.66 GHz, 677 MHz FSB, 2 MByte L2 Cache
 - Intel Core2 Duo T7400 2.16 GHz, 677 MHz FSB, 4 MByte L2 Cache
- Main memory configuration from 256 MByte to 4 GByte, DDR2 677
- Fieldbus:
 - PROFINET on-board, 3 x RJ45, CP 1616-compatible, PROFINET versions feature 2 MByte battery-backed SRAM on-board
 - PROFIBUS / MPI on-board, CP 5611-compatible, PROFIBUS versions feature 2 MByte SRAM with battery back-up on-board
- Drives:
 - Hard disks serial ATA
 - 160 GByte, 3.5"
 - 250 GByte, 3.5"
 - RAID1, 2 x 80 GByte, 2.5"
 - Optical drives DVD+/-RW/-RAM/-DL
 - CompactFlash drive (internal) instead of HDD, ODD, without CF
- Spare slots for expansion:
 - 1 x PCI-Express x4 (175 mm) and 4 x PCI (265 mm)
 - 1 x PCI-Express x4 (175 mm), 2 x PCI-Express x4 and 2 x PCI (265 mm)
- Power supply:
 - 110 / 230 V AC (autorange), 50 / 60 Hz
 - 24 V DC industrial power supply
- Preinstalled operating systems
 - Windows 2000 Professional, Multi-Language
 - Windows XP Professional, Multi-Language
 - Windows XP Embedded English (on 2 GByte CompactFlash)
 - Windows Vista Ultimate, Multi Language
- SIMATIC IPC DiagMonitor¹⁾
- SIMATIC PC / PG Image Creator¹⁾

¹⁾ Further information can be found under "Expansion components".

Function

- Integrated and configurable monitoring functions (program execution (watchdog)), internal enclosure temperature, external enclosure temperature, fan speed monitoring)
- Extended diagnostics / alarms via Ethernet, e-mail, SMS and for direct infeed into the SIMATIC software via OPC and logging (optionally via SIMATIC IPC DiagMonitor):
 - Runtime meter
 - Hard disk status
 - Automatic logging of all alarms by means of a log file
 - Long-term recording and graphic display of measured values (temperature, fan)
 - Capability for central monitoring of networked SIMATIC PCs
- RAID1 for automatic data mirroring on two serial ATA hard disks
- 2 x CompactFlash drive, can be accessed externally, for extremely rugged data storage and for configuring systems without hard disks
- Externally accessible CMOS battery supports easy battery replacement
- Flash BIOS with capability for saving customer-specific CMOS settings in a non-volatile memory area
- The PROFINET and PROFIBUS versions offer 2 MByte of battery-backed SRAM for application data
- When using the DC power supply, important process data can still be written into the battery-backed SRAM following an unforeseen power interruption
- Two 7-segment displays (Port 80) for the power-up display and for customer outputs (user-programmable)
- Two 2-color LEDs (green / red) for the indication of status messages (user-programmable)
- All interfaces and control elements on one side permit simple installation of the PC in a control cabinet

Integration

- Ethernet
Two integrated, teaming-capable Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages).
- PROFINET
The optional, isolated PROFINET interface can be used for connecting distributed field devices or for controlling drives.
- PROFIBUS
The optional floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or to interface to the SIMATIC S7 (with the "SOFTNET for PROFIBUS" software packages).
- Other interfaces
For connecting additional I/O devices, 2 free slots are available for PC modules as well as 4 USB (Universal Serial Bus) interfaces and one serial interface.

Technical specifications

SIMATIC Box PC 827B	
General features	
Design	Rack-mountable, wall or portrait mounting
Processor	<ul style="list-style-type: none"> • Intel Core2 Duo 7400, 2,16 GHz, 677 MHz FSB, 4 MByte L2 Cache • Intel Core2 Duo 5500, 1,66 GHz, 677 MHz FSB, 2 MByte L2 Cache • Intel Celeron M 440 1,86 GHz, 533 MHz FSB, 1 MByte L2 Cache
Chipset	Intel 945 GM Express
Main memory	256 MByte; DDR2 677, SODIMM; expandable up to 4 GByte, (2 memory bases)
Spare slots for expansions	<ul style="list-style-type: none"> • 1 x PCI-Express x4 (175 mm) and 4 x PCI (265 mm) • 1 x PCI-Express x4 (175 mm), 2 x PCI-Express x4 and 2 x PCI (265 mm)
Graphics	<ul style="list-style-type: none"> • Onboard, Intel GMA 950 graphics controller • 8 ... 128 MByte SDRAM (Dynamic Shared Memory) • VGA: 1600 x 1200 / 32 bit colors / 85 Hz • DVI-I: 1600 x 1200 / 32 bit colors / 60 Hz • LCD: 1280 x 1024 / 18 bit

PC-based Automation

Box PC

SIMATIC Box PC 827B

Technical specifications (continued)

	SIMATIC Box PC 827B
Operating system	
Preinstalled and activated / supplied on restore DVD:	<ul style="list-style-type: none"> • without • Windows 2000 Professional MUI²⁾; SP4 • Windows XP Professional MUI²⁾; SP2 • Windows Vista Ultimate MUI²⁾ • Windows XP Embedded³⁾⁴⁾ (SP2) English on 2 GByte CompactFlash
Order separately	• RMOS3 V3.40 (available soon)
Project-specific on request	<ul style="list-style-type: none"> • Linux¹⁾ • Other
Power supply	<ul style="list-style-type: none"> • AC 100 / 240 V, 190 W; autorange; with short-term bridging of power failures in accordance with NAMUR: max. 20 ms at 93 V or 264 V 50 ... 60 Hz (47 ... 63 Hz) • DC 24 V, 210 W isolated (optional)
Drives	
Hard disk	<ul style="list-style-type: none"> • without • 160 GByte 3,5" • 250 GByte 3,5" • 2 x 80 GByte 2,5" • RAID1, 2 x 80 GByte 2,5"
Flash drive	<ul style="list-style-type: none"> • CompactFlash Drive No. 1 at front • CompactFlash Drive No. 2 at front, instead of HDD, ODD
DVD+/-RW	Optional (depth is increased by 20 mm)
Interfaces	
PROFINET	<ul style="list-style-type: none"> • 3 x RJ45 (CP 1616-compatible, optional) <p>Note The PROFINET options are supplied with 2 MByte battery-backed SRAM.</p>
PROFIBUS / MPI	<ul style="list-style-type: none"> • 12 Mbit/s (isolated, CP 5611-compatible, optional) <p>Note: The PROFIBUS / MPI options are supplied with 2 MByte SRAM with battery back-up.</p>
Ethernet	2 x 10 / 100 / 1000 Mbit/s (RJ45, teaming capability)
USB	4 x USB 2.0 (high current), high speed
Serial	1 x COM1
Parallel	PCI interface module (optional)
DVI-I	1 x (analog, digital)
VGA	Via DVI-I to VGA adapter (available as accessory)

	SIMATIC Box PC 827B
Monitoring functions	
Temperature	<ul style="list-style-type: none"> • Overshoot / undershoot of permissible operating temperature • Outside temperature • Messages can be evaluated by the application program
Watchdog	<ul style="list-style-type: none"> • 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
Fan	Speed monitoring
Local displays	<ul style="list-style-type: none"> • Port 80 display: • Two 7-segment displays for monitoring the PC power-up (user-programmable) • Two 2-color LEDs for status outputs (user-programmable)
Monitoring functions via the network	SIMATIC PC DiagMonitor (optional) Remote monitoring capability for: <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Hard disk monitoring (SMART) • Runtime meter Communication: <ul style="list-style-type: none"> • Internet (Web Server) • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Layout of log files • Long-term recording of measured values (temperature, fan) and graphic display
Ambient conditions	
Degree of protection (front / rear)	IP20 acc. to EN 60529
Ambient temperature during operation	
• With maximum configuration	5 ... 45 °C
• Up to 20 Watt load on PCI bus	5 ... 50 °C
• Up to 10 Watt load on PCI bus	5 ... 55 °C

¹⁾ Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.de/simatic-pc/geeignet-fuer-linux> (LINUX is a trademark of Linus Torvald).

²⁾ MUI: Multi-user interface; 5 languages (English, French, German, Italian, Spanish)

³⁾ XPe and Vista require at least 512 MByte of memory

⁴⁾ XPe does not support RAID1 function

Technical specifications (continued)

SIMATIC Box PC 827B	
Ambient conditions (continued)	
Vibration	
• During operation	<ul style="list-style-type: none"> • 10 ... 58 Hz: 0,75 mm; 58 ... 500 Hz: 9,8 m/s² (ca. 1 g) With DVD operation: <ul style="list-style-type: none"> • 10 ... 58 Hz: 0,018 mm; 58 ... 500 Hz: 2,5 m/s² (ca. 0,25 g) <u>Note:</u> No vibration permitted when burning DVDs
• Storage / transport	<ul style="list-style-type: none"> • 5 ... 9 Hz: 3,5 mm, 9 ... 500 Hz: 9,8 m/s²
Shock	
• During operation	<ul style="list-style-type: none"> • 50 m/s² With DVD operation <ul style="list-style-type: none"> • 50 m/s², 11 ms (ca. 5 g) <u>Note:</u> No shock permitted when burning DVDs
• Storage / transport	250 m/s ² , 6 ms
Relative humidity	
• During operation	<ul style="list-style-type: none"> • 5 ... 80 % at 25 °C (no condensation)
• Storage / transport	<ul style="list-style-type: none"> • 5 ... 95 % at 25 °C (no condensation)
Protection class	Protection class I acc. to VDE 0106 Part 1 (IEC 536)
Electromagnetic compatibility (EMC)	
• Emitted interference	EN 55022 Class B
Noise immunity	
• to conducted interference on the supply cables	<ul style="list-style-type: none"> • ±2 kV (IEC 61000-4-4, burst) • ±1 kV (IEC 61000-4-5, symm. surge.) • ±2 kV (IEC 61000-4-5, Surge unsymm.)
• on signal cables	<ul style="list-style-type: none"> • ±1 kV (IEC 61000-4-4, burst length < 3 m) • ±2 kV (IEC 61000-4-4, burst length > 3 m) • ±2 kV (IEC 61000-4-5, surge, length > 30 m)

SIMATIC Box PC 827B	
Noise immunity (continued)	
• to static discharge	<ul style="list-style-type: none"> • ±6 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge+ (IEC 61000-4-2)
• to radiofrequency radiation	<ul style="list-style-type: none"> • 10 V/m 80 ... 1000 MHz, 80 % AM (acc. to IEC 61000-4-3) • 10 V/m 1,4 ... 2,0 GHz, 50 % ED (acc. to IEC 61000-4-3) • 10 V 80 % AM, 9 KHz ... 8 MHz (acc. to IEC 61000-4-6)
• to magnetic fields	100 A/m, 50 MHz (IEC 61000-4-6)
System tested SIMATIC Industrial Software	<ul style="list-style-type: none"> • STEP 7 • WinAC • ProTool/Pro • WinCC • SOFTNET <u>Note:</u> Compliance with system configuration rules is essential
Approvals	
Safety regulations	IEC 60950-1
Approvals	cULus508, cULus1950, FCC Class A
CE mark	
Use in industrial environments	<ul style="list-style-type: none"> • Emitted interference : EN 61000-6-4:2001 • Noise immunity: EN 61000-6:2001
Applications in residential areas, business and trade environments, as well as in small companies	<ul style="list-style-type: none"> • Emitted interference : EN 61000-6-1, 2001 • Noise immunity: EN 61000-6-1:2000
Other standards	<ul style="list-style-type: none"> • EN 61000-3-2-2000 (harmonic currents) • EN 61000-3-3:1995 (voltage variations and flicker)
Dimensions	
• Equipment dimensions (in mm)	298 x 301 (incl. mounting rail) x 100
• without DVD drive	298 x 301 (incl. mounting rail) x 80
Weight	
Weight, approx.	9 kg

PC-based Automation

Box PC

SIMATIC Box PC 827B

Ordering data

Order No.

Order No.

Configuration²⁾

SIMATIC Box PC 827B

G

6ES7 647 - 6 N ■ ■ ■ ■ - ■ ■ ■ ■ ■

Graphics onboard, 128 MByte shared memory;
2 x 10 / 100 / 1000 Mbit/s, Ethernet RJ45; 4 x USB V2.0 (high current); 1 x serial (COM1), RAID controller onboard; CompactFlash drive No. 1 front (without CF); watchdog, temp. / fan monitoring;

Processor

- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB) **A**
- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB); PROFIBUS / MPI; 2 MByte battery-backed SRAM **B**
- Celeron M 440 (1,86 GHz, 1 MByte L2, 533 MHz FSB); PROFINET (3 x RJ45, CP 1616-compatible); 2 MByte battery-backed SRAM **C**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, 667 MHz FSB); **D**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, 667 MHz FSB); PROFIBUS / MPI; 2 MByte battery-backed SRAM **E**
- Core2 Duo T5500 (1,66 GHz, 2 MByte L2, EM64-T); PROFINET (3 x RJ45, CP 1616-compatible); 2 MByte battery-backed SRAM **F**
- Core2 Duo T7400 (2,16 GHz, 4 MByte L2, 667 MHz FSB) **G**
- Core2 Duo T7400 (2,16 GHz, 4 MByte SLC, 667 MHz FSB); PROFIBUS / MPI; 2 MByte battery-backed SRAM **H**
- Core2 Duo T7400 (2,16 GHz, 4 MByte SLC, EM64-T, 667 MHz FSB); PROFINET (3 x RJ45, CP 1616-compatible); 2 MByte battery-backed SRAM **J**

Memory configuration

- 256 MByte DDR2 667 SODIMM **0**
- 512 MByte DDR2 667 SODIMM **1**
- 1 GByte DDR2 667 SODIMM **2**
- 2 GByte DDR2 667 SODIMM **3**
- 3 GByte DDR2 667 SODIMM **4**
- 4 GByte DDR2 667 SODIMM **5**

Country-specific version / power supply

- AC 100 / 240 V industrial power supply with Namur; Eur. cable **0**
- AC 100 / 240 V industrial power supply with Namur; UK cable **1**
- AC 100 / 240 V industrial power supply with Namur; CH cable **2**

¹⁾ Windows XP embedded: at least 512 MByte of memory Do not choose RAID1 option

²⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: : www.siemens.com/ipc-configurator

G: Subject to export regulations: AL: N and ECCN: 5D992

Configuration²⁾

SIMATIC Box PC 827B

G

6ES7 647 - 6 N ■ ■ ■ ■ - ■ ■ ■ ■ ■

Country-specific version / power supply (continued)

- AC 110 / 230 V industrial power supply with Namur; USA cable **3**
- AC 110 / 230 V industrial power supply with Namur; Italian cable **4**
- AC 110 / 230 V industrial power supply with Namur; Chin. cable; **5**
- DC-24-V industrial power supply **6**

Expansions (HW)

- 4 x PCI, 1 x PCIe (x4) free; **0**
- 2 x PCI, 3 x PCIe (x4) free; **1**
- PCI interface card with COM2, LPT1; 1 x PCI, 3 x PCIe free; **3**
- PCI interface card with COM2, LPT1; 3 x PCI, 1 x PCIe free; **4**

Drives

- 160 GByte HDD SATA **A**
- 160 GByte HDD SATA +DVD+/-RW **B**
- 250 GByte HDD SATA **C**
- 250 GByte HDD SATA +DVD+/-RW **D**
- 2 x 80 GByte SATA (2,5") **E**
- 2 x 80 GByte SATA (2,5") + DVD+/-RW **F**
- RAID1 2 x 80 GByte SATA (2,5") **G**
- RAID1 2 x 80 GByte SATA (2,5") + DVD+/-RW **H**
- CompactFlash drive No. 2 at front. (instead of HDD, ODD, without CF) **W**
- without drives **X**

Operating system (preinstalled and activated)¹⁾

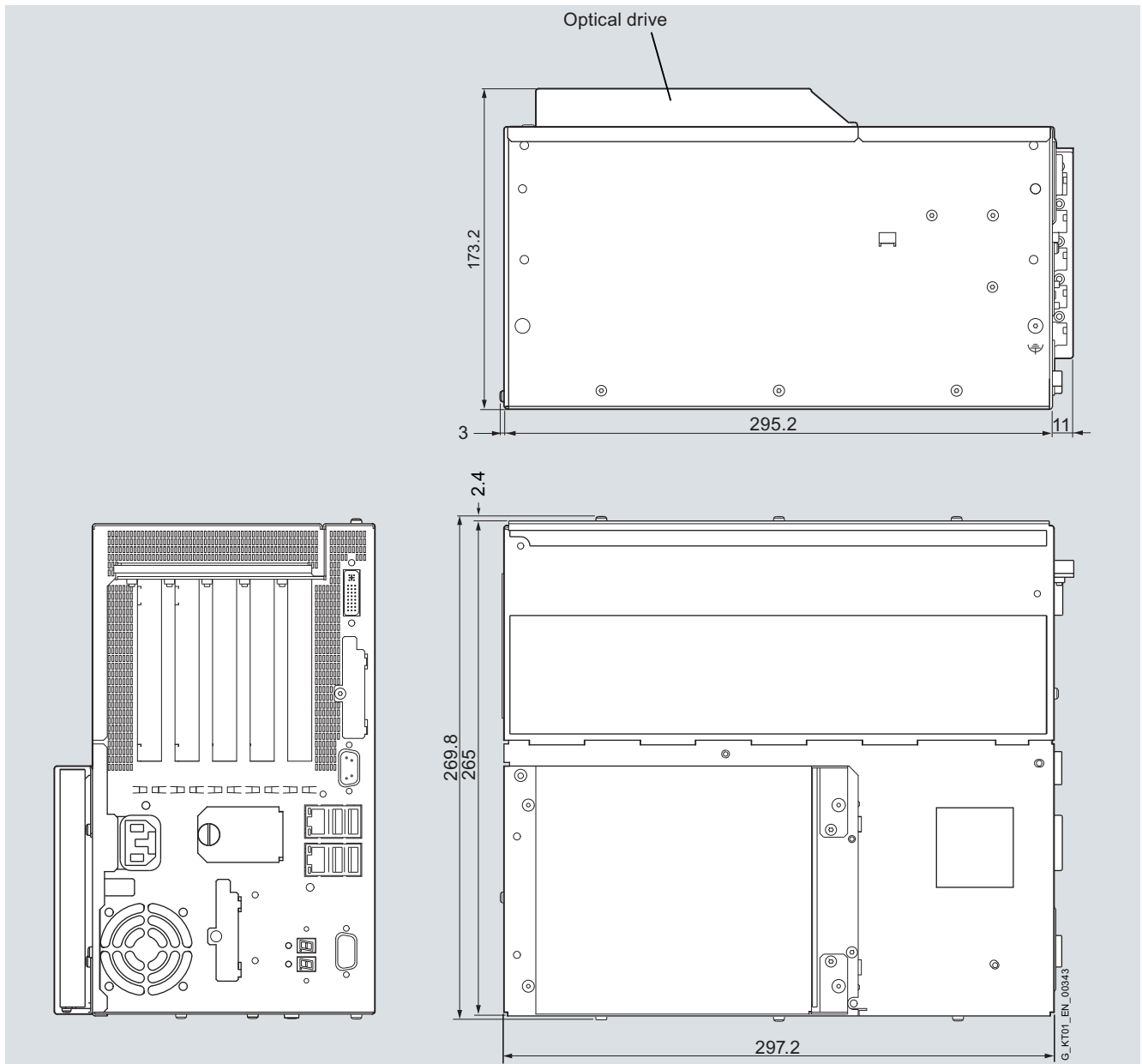
- Windows 2000 Prof. Multi Language SP4 (Eng, Ger, Fr, It, Sp) **A**
- Windows XP Prof. Multi-Language SP2 (Eng, Ger, Fr, It, Sp) **B**
- Windows Vista Ultimate Multi-Language (Eng, Ger, Fr, It, Sp) + at least 512 MByte memory **C**
- Windows XP Embedded (SP2) English on 2 GByte CompactFlash (at least 512 MByte memory; no RAID1); **F**
- without operating system **X**

Expansion

- without expansion (SW) **0**
- SIMATIC IPC DiagMonitor software included **1**
- SIMATIC IPC Image Creator software included **2**
- SIMATIC IPC DiagMonitor and Image Creator software incl. **3**
- SIMATIC IPC Image & Partition Creator V3.1 included **4**
- SIMATIC IPC DiagMonitor and Image & Partition Creator V3.1 included **5**

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SIMATIC Box PC 827B

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-pc>

PC-based Automation

SIMATIC HMI IPC / Panel PC

HMI IPC / Panel PC systems and monitors

Overview

Panel PC systems

SIMATIC Panel PCs are suitable for use in standard control cabinets, consoles, operator panels or directly at the machine. Typical applications are in building services automation, production automation and process automation.

For different requirements, the

- SIMATIC HMI IPC477C embedded, HMI IPC577C, HMI IPC677C and
- SIMATIC Panel PC 477B embedded, 577B and 677B

are available.

Monitors

The monitors comprise SIMATIC Flat Panels and SCD monitors.

They are rugged industrial LCD monitors which can be used wherever CRT monitors can be used.

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-panel-pc> and

<http://www.siemens.com/industrial-lcd>

Overview



SIMATIC Panel PCs are suitable thanks to their high industrial compatibility both 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 production 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 up to 19"
- 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 / NEMA 4 degrees of protection)

SIMATIC HMI IPC477C embedded – Ultra-compact and maintenance-free Panel PC in embedded technology

- Compact design (only 61 to 69 mm mounting depth for 12" to 19" display)
- No rotating parts (without fan and hard disk)
- High security due to the Microsoft Windows XP Embedded Standard 2009 operating system
- 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 IPC577C – Industrial functionality and openness at an attractive price

- Full PC openness and performance boost with Intel Core 2 Duo processors
- Rugged design for industrial use
- Can be expanded using a PCI slot and additional interfaces
- More rugged due to SSD (Solid-State Drive) or compact flash
- The configurator (best-fit for the customer) makes ordering more flexible
- Compact design

SIMATIC HMI IPC677C - Highest performance, flexibility and availability

- Rugged, expandable industrial PC with choice of front panels
- Rugged design for industrial use
- Full PC openness
- Optional PROFIBUS or PROFINET onboard
- All CPUs with dual core

SIMATIC Panel PC 677B – Flexibility and compactness with maximum performance

- High performance thanks to latest process technology from Intel
- Dual Core technology: up to Intel Core 2 Duo 2.16 GHz
- Compact structure with simultaneous expandability through PCI / PCIe slots
- Strong communication through two Ethernet and integrated PROFIBUS DP / MPI interfaces
- Control and computer units can be separated by up to 30 m
- RAID1 controller on board
- Retentive memory on board (NV-RAM, usable with WinAC RTX)

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC

Overview (continued)

	SIMATIC HMI IPC477C	SIMATIC HMI IPC577C	SIMATIC HMI IPC677C
Design			
Centralized configuration	•	•	•
Distributed configuration (via remote kit)	–	–	–
Display			
Size	12" / 15" / 19" TFT	12" / 15" / 19" TFT	12" / 15" / 19" TFT
Resolution	800 x 600 / 1024 x 768 / 1280 x 1024	800 x 600 / 1024 x 768 / 1280 x 1024	800 x 600 / 1024 x 768 / 1280 x 1024
Operator controls			
Membrane keyboard	• ¹⁾	• ¹⁾	• ¹⁾
Touch screen	•	•	•
General features			
Power supply 24 V DC / 110 / 240 V AC / 120 / 230 V AC	• / – / –	• / • / –	• / – / •
Processor	<ul style="list-style-type: none"> Intel Celeron M 1,2 GHz; Intel Core2 Solo 1,2 GHz or Intel Core2 Duo 1,2 GHz 	<ul style="list-style-type: none"> Intel Celeron M 1,2 GHz; Intel Core2 Solo 1,2 GHz or Intel Core2 Duo 1,86 GHz 	<ul style="list-style-type: none"> Intel Celeron P4505, 1,86 GHz, 2 Cores, 2 MByte cache Intel Core i3-330E, 2,13 GHz, 2 Cores, 4 Threads, 3MB cache, HT, VT-x Intel Core i7-620E, 2,53 GHz, 2 Cores, 4 Threads, 4 MByte, Cache, TB, HT, VT-x, VT-d
Main memory	1 GByte, 2 GByte or 4 GByte	1 GByte, 2 GByte or 4 GByte	1 GByte expandable up to 4 GByte or 2 GByte / 4 GByte with ECC
Expansion slots	1 x CF slot for CompactFlash Card (externally accessible)	1 x PCI ²⁾ ; 1 x CF slot for CompactFlash Card (externally accessible)	2 x PCI ²⁾ or 1 x PCI and 1 x PCIe x16 CompactFlash Card (externally accessible)
Operating system	Windows Embedded Standard 2009 or XP Professional MUI	without operating system, Windows Embedded Standard 2009 or XP Professional MUI	without operating system, Windows XP Professional MUI, Windows 7 Ultimate MUI, Windows Embedded Standard 2009 on CF
Interfaces			
PROFIBUS / MPI	•	•	•
PROFINET (RT / IRT)	•	•	•
Ethernet	10 / 100 / 1000 Mbit	10 / 100 / 1000 Mbit	10 / 100 / 1000 Mbit
PS/2 (mouse / keyboard)	–	–	–
USB	•	•	•
Serial interface	•	•	•
Parallel Interface	–	–	–
Audio in / out	–	–	–
Graphics interface	•	•	•
Ambient conditions			
Vibration during operation	1 g	1 g ³⁾	1 g
Shock load during operation	5 g	5 g ³⁾	5 g
Permissible temperature during operation with maximum configuration	+0 °C ... +50 °C ⁶⁾	+0 °C ... +50 °C ⁶⁾	+5 °C ... +50 °C ⁶⁾
Power loss in maximum configuration			
12" display	40 W ⁴⁾	55 W ⁵⁾	140 W ⁵⁾
15" display	45 W ⁴⁾	57 W ⁵⁾	140 W ⁵⁾
19" display	60 W ⁴⁾	84 W ⁵⁾	163 W ⁵⁾

• Available

– Not available

¹⁾ 12" / 15"-displays²⁾ All slots with card retainer³⁾ Valid with CF or SSD; with HDD: 5 g / 0.5 g;⁴⁾ 3 W taken into account for each PCI / PCIe slot⁵⁾ 15 W taken into account for each PCI / PCIe slot⁶⁾ 12" / 15": +0°C to +50°C; 19": +0°C to +45°C

Overview (continued)

SIMATIC Panel PC 677B	
Design	
Centralized configuration	•
Distributed configuration (via remote kit)	•
Display	
Size	12" / 15" / 15" INOX / 19" TFT
Resolution	800 x 600 / 1024 x 768 / 1280 x 1024
Operator controls	
Membrane keyboard	• 1)
Touch screen	•
General features	
Power supply 24 V DC / 110 / 230 V AC	• / •
Processor	Intel Celeron M 1,86 GHz; Intel Core2 Duo 1,66 GHz; Intel Core2 Duo 2,16 GHz
Main memory	1 GByte; 2 GByte; 3 GByte; 4 GByte
Expansion slots	2 x PCI or 1 x PCI and 1 x PCIe x4 ³⁾ ; 1 x CF slot (externally accessible)
Operating system	without; Windows 2000 Professional MUI; Windows XP Professional MUI; Windows Vista Ultimate MUI; Windows 2003 Standard Server; Windows XP embedded auf CF

SIMATIC Panel PC 677B	
Interfaces	
PROFIBUS / MPI	•
PROFINET	•
Ethernet	10 / 100 / 1000 Mbit
PS/2 (mouse / keyboard)	–
USB	•
Serial interface	•
Parallel Interface	–
Audio in / out	–
Graphics interface	•
Ambient conditions	
Vibration during operation	1 g
Shock load during operation	5 g
Permissible temperature during operation with maximum configuration	+5 °C ... +50 °C; max. 50 °C in installation space, max. 40 °C at the front ⁵⁾
Power loss in maximum configuration	
12" / 15" display	140 W ⁷⁾
19" display	163 W ⁷⁾

• Available

– Not available

1) 12" / 15"-Displays

2) With optional expansion rack

3) All slots with card retainer

4) Expandable via plug-in card

5) 3 W taken into account for each PCI / PCIe slot

6) 15 W taken into account for each PCI / PCIe slot

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC

Benefits

High degree of industrial capability

The entire construction is designed for purely industrial use. Thus, for example, a special vibration-absorbing suspension of the hard disk ensures operational reliability, even at high mechanical loads. SIMATIC Panel PCs are thus designed for a vibration load of 1 g (Panel PC 577B: 0.25 g) and a shock load of 5 g (Panel PC 577B: 1 g) during operation.

Performance

Thanks to the use of the latest Intel processors from ULV (Ultra Low Voltage) to Core 2 Duo technology, SIMATIC Panel PCs are flexibly scalable for your application.

- Scalable computing power
- Highest computing power
- Latest Intel processor technology
- Dual Core, ULV

Investment security

High component continuity and guaranteed availability of spare parts for up to 5 years after product phase-out are ensured e.g. through the development and production of our own motherboards. This enables long-lasting machine concepts without renewed engineering effort.

Service-friendly device design

Upgrades and exchange of components are easy thanks to the device design.

Integrated interfaces

The different already-integrated interfaces allow for various communication and expansion options. Many models are already equipped with Gigabit Ethernet and PROFIBUS DP / MPI interface.

Extendibility

Depending on the model, ISA, PCI, PCI Express, PC/104 Plus and PC/104 slots are available for individual expandability. This enables the further use of existing and new expansion cards.

Compact dimensions

Considering the desired expandability, SIMATIC Panel PCs have an extremely low mounting depth and can thus be used in very narrow installation locations.

Options

Various options enable an individual solution for your industrial application. Thus, the operator control unit can be operated separately from the computer unit by up to 30 m. The direct control key module increases the operating safety in that it can be used to run the process independently of the operating system and without delay directly on PROFIBUS DP / MPI.

Individually expandable system availability

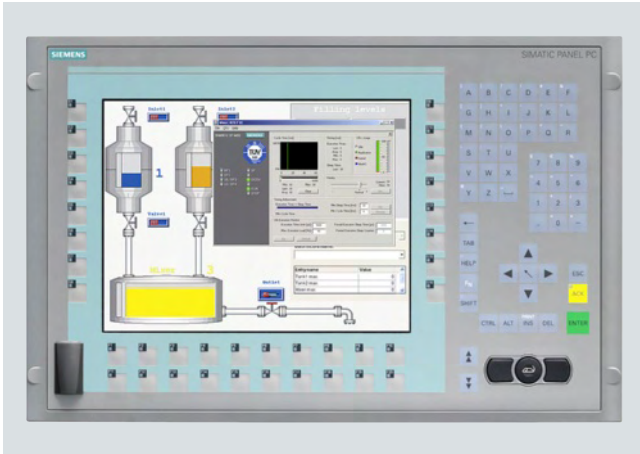
- RAID1 configuration – high system stability through redundant data management
- SIMATIC PC DiagMonitor – Monitoring of the operating states and early detection of problems locally and in the network
- SIMATIC PC / PG Image & Partition Creator – downtime minimization through preventative data backup
- SITOP and Masterguard power supply (UPS) – Bridging of voltage dips

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-panel-pc>

Overview



- 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 the harshest mechanical stress and is extremely reliable in operation
- Compact design (only 61-69 mm mounting depth for 12"-19")
- High degree of investment protection
- Fast integration capability

The following front versions are available:

- Installation types
 - 12" and 15" TFT Touch
 - 12" and 15" TFT Keys
 - 19" Touch
- Support arm versions
 - PRO 15" and PRO 19" Touch
 - Fully enclosed device with degree of protection IP65 for mounting on a support arm / stand.

Benefits

- Maximum industrial compatibility due to rugged construction, even when subjected to extreme vibration and shocks
- High degree of investment protection thanks to assured availability of spare parts (for a period of 5 years following the end of active marketing)
- High continuity of components for long-term machine concepts without renewed engineering outlay
- Savings in time and costs thanks to service-friendly device design:
 - USB 2.0 interfaces on the front and rear for quick and easy connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI and PROFINET interfaces
- Maintenance-free due to lack of rotating components (fan and hard disk)
- Minimized downtimes thanks to high system availability
 - Efficient self-diagnostics (DiagBase and SIMATIC IPC DiagMonitor)
 - High reliability and security of an embedded platform
- Integral component of Totally Integrated Automation (TIA):
 - Enhanced productivity, reduction of engineering overhead, reduction of lifecycle costs
- Complete turnkey solutions are supplied (the software is preinstalled and preconfigured) for visualization and automation, in combination with WinCC flexible and / or WinAC RTX and WinCC.

Application

SIMATIC HMI IPC477C is designed for use direct at the machine, where the focus is on a combination of ruggedness and maximum reliability (the reliability of an embedded platform), and the openness of a PC is also required (e.g. module expansion and the connection of I/O devices such as printers, keyboards, etc.).

Due to the minimal mounting depth, it can also be used in confined spaces.

The PC can be used in production automation as well as in process automation and can be mounted in control cabinets, control desks, 19" cabinets / racks and as PRO version direct on swivel arms (booms).

The SIMATIC HMI IPC477C is the ideal platform for PC based Automation:

- PC based visualization on-site at the machine with SIMATIC WinCC flexible
- PC based Control with SIMATIC WinAC RTX
- SIMATIC WinCC Client (standard or multi client) for distributed operation and monitoring
- SIMATIC WinCC as single-user station solution for centralized operation and monitoring (also in combination with WinCC WebNavigator server)

Siemens offers a complete modular system of automation components that complement one another perfectly.

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

Design

The HMI IPC477C is a compact unit comprising an operator control unit with an integrated computing unit.

Standard components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processors:
 - Intel Celeron M 1.2 GHz, Intel Core 2 Solo 1.2 GHz or Intel Core 2 Duo 1.2 GHz
- Main memory basic configuration:
 - 1, 2 or 4 GByte (DDR3)
 - Battery-backed retentive memory 2 MByte
- Compact Flash Drive (internal) with preinstalled Windows XP embedded operating system (Image) and optional software or Solid-State Disk (SSD) with Windows XP embedded or Windows XP Professional (MUI)
- Graphics onboard (1280 x 1024)
- Interfaces:
 - 2 x PROFINET (IE) onboard (10 / 100 / 1000 Mbit/s)
 - Optional 2 x PROFINET (IE) onboard (10 / 100 / 1000Mbit/s) and 1 x PROFIBUS DP / MPI onboard, CP5611 compatible
 - Optional 1 x PROFINET (IE) onboard (10 / 100 / 1000Mbit/s) and 1 x PROFINET (RT / IRT) with 3 ports, CP 1616-compatible
 - 5 x USB 2.0 port, 500 mA (1 x on front)
 - 1 x COM1 (RS232)
 - 1 x DVI-I (for connecting a second display unit)
- Free slots for expansions:
 - 1 x CompactFlash slot (accessible from outside)
- Power supply: 24 V DC

Components of the operator control unit:

The operator control units are available in the following versions:

12" Key

- 12" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with international PC character set and 36 additional function keys and an integrated mouse
- USB interface (on the front)

12" Touch

- 12" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen
- USB interface (on the front)

15" Key

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys and an integrated mouse
- USB interface (on the front)

15" Touch

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen
- USB interface (on the front)

19" Touch

- 19" TFT color display, 1280 x 1024 (SXGA)
- Resistive analog touch screen
- USB interface (on the front)

Expansion components

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, watchdog
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (English / German)
- Network-wide monitoring via SNMP and OPC interface possible

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up
- Software tool for adaptation of mass storage partitioning

Design

SINUMERIK 3.5" USB 1.1 disk drive

The USB disk drive is provided for fast exchange of user data, e.g. recipes, or of files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

Operation of the USB disk drive with SIMATIC Panel PCs:

- Windows XP: possible without separate driver
- The driver is included in the scope of supply of the operating system

SIMATIC IPC USB FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Ready-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

SIMATIC IPC Service USB FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Ready-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

Industrial USB Hub 4

- Industry-standard USB 2.0 hub, front IP65
- Installation in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

Further information can be found under "Expansion components".

Function

- DiagBase: Integrated, parameterizable monitoring functions (program execution / watchdog, internal enclosure temperature, DIAG bit for CF cards similar to S.M.A.R.T for hard disks)
- Expanded diagnostics / messages via Ethernet, e-mail, SMS and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor)

Integration

Integrated interfaces:

- Ethernet
The integrated PROFINET interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages). Available options: PROFINET (RT / IRT) with 3 ports instead of one PROFINET (IE).
- PROFIBUS onboard (option)
The isolated PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with software packages "SOFTNET for PROFIBUS").
- Other interfaces
For connecting additional I/O devices, 5 USB (Universal Serial Bus) interfaces and one serial interface are available.

SIMATIC HMI IPC477C bundles: HMI, RTX, RTX F and HMI / RTX

HMI, RTX, RTX F and HMI / RTX complete turnkey solutions (the software is already preinstalled and configured) for visualization and automation, in combination with WinCC flexible and WinAC RTX

- Quick start in automation solutions with Embedded Automation
- HMI: SIMATIC WinCC flexible RT preinstalled and ready-to-use
- RTX: SIMATIC WinAC RTX preinstalled and ready-to-use
- RTX F: SIMATIC WinAC RTX F preinstalled and ready-to-use
- HMI / RTX: SIMATIC WinCC flexible and SIMATIC WinAC RTX preinstalled and ready-to-use
- PROFIBUS and PROFINET (RT / IRT) pre-configured for use in a SIMATIC environment
- Configuration and programming with SIMATIC WinCC flexible ES and SIMATIC STEP 7 via Industrial Ethernet or PROFIBUS
- Flexibility of a PC-based automation environment
- Open for additional PC applications
- Connection option for USB devices, flat panel monitor or screen
- Use of WinAC ODK with SIMATIC WinAC RTX
- Data retention for WinAC RTX without uninterruptible power supply (UPS)

SIMATIC HMI IPC477C as WinCC client or single-user station

Selected hardware configuration with preinstalled software WinCC V7.0 RT as

- ready-to-run client (standard and multiclient) in a WinCC multi-user station, or
- ready-to-run single-user station with process connection

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

Technical specifications

SIMATIC HMI IPC477C	6AV7 884..
General features	
Processors	Intel Celeron M 1,2 GHz, Intel Core2 Solo 1,2 GHz or Core2 Duo 1,2 GHz
Memory type	DDR3-RAM
Main memory	1 GByte, 2 GByte or 4 GByte
Free slots	1 x CF card slot (externally accessible)
Operating system	Windows Embedded Standard 2009 or Windows XP Professional Multi Language
Additional OS information	Language: English, German
SIMATIC software	Optionally with preinstalled bundle software SIMATIC WinCC flexible 2008 SP1 and / or WinAC RTX 2009 SIMATIC WinAC RTX F SIMATIC WinCC as web client or standard client
Drives	
Floppy drive	Optional via external USB floppy drive
Optical drives	Possible as external drive via USB
Hard disk / Mass Storage	CompactFlash Drive with 2, 4 or 8 GByte and / or SSD (Solid-State Drive) with 32 GByte
Interfaces	
Graphics interface	DVI-I can be used for an additional display unit (only VGA via adapter); color depth 32 bits, graphics memory up to 128 MByte; resolution as integral display in each case
Connection for keyboard / mouse	USB / USB
Serial interface	COM1: 1 x V.24 (RS232)
PROFIBUS / MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card required, CP5611-compatible, not upgradable

SIMATIC HMI IPC477C	6AV7 884..
Interfaces (continued)	
PROFINET (RT / IRT)	Optional: 3 x RJ45, CP1616-compatible; not upgradable
USB	1 x on front, 4 x on rear, USB 2.0 (500 mA)
PROFINET (IE), Ethernet	onboard, 2 x 10 / 100 / 1000 Mbit (RJ45 with / without PROFIBUS), 1 x 10 / 100 / 1000 Mbit (RJ45 with PROFINET (RT / IRT)), no plug-in card required
Supply voltage	
Supply voltage	24 V DC
Monitoring functions	
Temperature / Watchdog	Yes / Yes
DiagBit (similar to S.M.A.R.T.)	Yes (for CF cards and SSD)
Status LEDs	Yes (on rear)
Front side according to EN 60529	IP65 (on the front) acc. to EN 60529+NEMA4
Ambient conditions	
Vibration during operation	Tested according to DIN IEC 60068-2-6: 10 to 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s ² (1 g)
Shock load during operation	Tested according to DIN IEC 60068-2-7: 50 m/s ² (5 g), 30 ms, 100 Shocks
Relative humidity	Tested according to DIN IEC 60068- 78, DIN IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Maximum permissible installation angle + / -	45° over vertical
Ambient temperature during operation	0°C ... +50°C in maximum configuration; without fan
Certifications & standards	
Approvals	CE, cULus(508), marine engineering
EMC	CE, FFC A, 55022A, EN 61000-6-4, EN 61000-6-2

Technical specifications (continued)

SIMATIC HMI IPC477C	6AV7 884-0 12" TFT Touch	6AV7 884-1 12" TFT Key	6AV7 884-2 15" TFT Touch	6AV7 884-3 15" TFT Key	6AV7 884-5 19" TFT Touch
General features					
Accessories	Touch cover foils, touch pen	Insertable strips for keyboard	Touch cover foils, touch pen	Insertable strips for keyboard	Touch cover foils, touch pen
Max. power loss in maximum configuration	40 W	40 W	45 W	45 W	60 W
Display					
Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024
MTBF of backlighting (at 25 °C)	50000 h at 24 h continuous operation, temperature-dependent				
Type of operation					
Function keys	No	36	No	36	No
Alphanumeric keyboard	No	Yes	No	Yes	No
Touch screen (analog / resistive)	Yes	No	Yes	No	Yes
Mouse on the front	No	Yes	No	Yes	No
Design					
Centralized configuration	Yes	Yes	Yes	Yes	Yes
Distributed configuration	No	No	No	No	No
Dimensions					
Mounting dimensions in centralized configuration (W x H x D, without optical drive) in mm	368 x 290 x 61	450 x 290 x 61	450 x 290 x 65	450 x 321 x 60	450 x 380 x 71
Operator control unit (W x H) in mm	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 355 (19", 8 HU)	483 x 400 (19", 9 HU)
Weight	6,1 kg	6,6 kg	7,0 kg	7,2 kg	9,5 kg

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

Ordering data

Order No.

Order No.

Preferred versions with spare parts in exchange

("Built to order" with delivery time of max. 15 working days and replacement devices in exchange)

Configuration

SIMATIC HMI IPC477C

H 6AV7 884 - ■ A ■ ■ ■ - ■ ■ ■ 0

Without fan, 5 x USB 2.0 (500 mA), one of which on the front 1 x COM (RS232), 24 V DC power supply with On / Off switch

Front panels

- 12" TFT Touch
- 12" TFT Key
- 15" TFT Touch
- 15" TFT Key
- 19" TFT Touch

0
1
2
3
5

Processors and fieldbus

- Celeron M 1,2 GHz, 2 x PROFINET (IE)
- Celeron M1 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12
- Core2 Solo 1,2 GHz, 2 x PROFINET (IE)
- Core2 Solo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12
- Core2 Solo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (RT / IRT)(3 Ports)
- Core2 Duo 1,2 GHz, 2 x PROFINET (IE)
- Core2 Duo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12
- Core2 Duo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (RT / IRT)(3 Ports)

A
B
D
E
F
G
H
J

Main memory (DDR3 RAM), 1 database

- 1 GByte
- 2 GByte
- 4 GByte

1
2
3

Second mass storage (installed and formatted)

- without
- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid-State Drive) min. 32 GByte

0
2
3
4
6

Preferred versions with spare parts in exchange

("Built to order" with delivery time of max. 15 working days and replacement devices in exchange)

Configuration (continued)

SIMATIC HMI IPC477C

H 6AV7 884 - ■ A ■ ■ ■ - ■ ■ ■ 0

First mass storage (vorinstalliert mit SIMATIC Software)

- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid-State Drive) min. 32 GByte

2
3
4
6

Operating system (preinstalled and activated)

- Windows Embedded Standard 2009
- Windows XP Professional Multi-Language, only with SSD; without SIMATIC software

B
D

Software packages, only with CF 4 GByte or higher

- without SIMATIC software
- with operating system and RTX WinAC RTX 2009 pre-installed and configured
- with operating system and HMI WinCC flexible 2008 SP1 RT (incl. archives / recipes) pre-installed and configured
 - Number of tags 128 PT
 - Number of tags 512 PT
 - Number of tags 2048 PT
 - Number of tags 4096 PT
- with operating system and HMI WinCC flexible 2008 SP1 RT (incl. archives / recipes) pre-installed and configured
 - Number of tags 128 PT
 - Number of tags 512 PT
 - Number of tags 2048 PT
 - Number of tags 4096 PT

A
B
C
D
E
F
K
L
M
N

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

Ordering data	Order No.	Order No.
<p>Further bundles with SIMATIC HMI IPC477C and WinCC V7.0 SP1</p> <p>Configuration</p> <p>SIMATIC HMI IPC477C</p> <p>Without fan 4 x USB 2.0 on rear, 1 x USB 2.0 on front, 2 x 10 / 100 / 1000 Mbit/s Ethernet (RJ45); software pre-installed on CF / SSD: Windows Embedded Standard, SIMATIC WinCC V7.0 SP1</p> <p>Client</p> <p>Client Processor Celeron M 1.2 GHz, 1 GByte DDR3 RAM, CF Card 8 GByte, RT license 128 PT on USB stick</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch 	<p>H 6AV7 884 - ■ A A 1 0 - 4 B X 0</p>	<p>Configuration</p> <p>SIMATIC HMI IPC477C</p> <p>embedded and without fan, fully enclosed according to IP65; 5 x (500 mA), one of which on the front 24 V DC power supply with On / Off switch</p> <p>Front panels</p> <ul style="list-style-type: none"> • 12" TFT Touch (embedded and without fan) • 12" TFT Key (embedded and without fan) • 15" TFT Touch (embedded and without fan) • 15" TFT Key (embedded and without fan) • 19" TFT Touch (embedded and without fan) <p>Processors and fieldbus</p> <ul style="list-style-type: none"> • Celeron M 1,2 GHz, 2 x PROFINET (IE) • Celeron M 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP 12 • Core2 Solo 1,2 GHz, 2 x PROFINET (IE) • Core2 Solo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS • Core2 Solo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (RT / IRT) (3 Ports) • Core2 Duo 1,2 GHz, 2 x PROFINET (IE) • Core2 Duo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS • Core2 Duo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (RT / IRT) (3 Ports) <p>Main memory (DDR3 RAM), 1 database</p> <ul style="list-style-type: none"> • 1 GByte • 2 GByte • 4 GByte <p>Second mass storage (installed and formatted)</p> <ul style="list-style-type: none"> • without • CompactFlash 2 GByte • CompactFlash 4 GByte • CompactFlash 8 GByte • SSD (Solid-State Drive), min. 32 GByte
<p>Client and Single Station</p> <p>Client and Single Station Processor Core2Solo 1.2 GHz, PROFIBUS DP, 2 GByte DDR3 RAM, CF Card 8 GByte, RT license 128 PT</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch 	<p>H 6AV7 884 - ■ A E 2 0 - 4 B X 0</p>	<p>A</p> <p>B</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>J</p>
<p>Single Station</p> <p>Processor Core2 Duo 1,2 GHz, PROFIBUS DP, 4 GByte DDR3 RAM</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch • 8 GByte CF Card • 32 GByte SSD • Runtime license 128 PT on USB flash drive • Runtime license 2048 PT on USB flash drive 	<p>H 6AV7 884 - ■ A H 3 0 - ■ B ■ 0</p>	<p>4</p> <p>6</p> <p>X</p> <p>W</p>
<p>Configuration</p> <p>SIMATIC HMI IPC477C with WinAC RTX F</p> <p>Processor Core2 Duo 1.2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP, 2 GByte DDR3 RAM CompactFlashCard plugged in (internal); 8 GByte. Software pre-installed on CF Card RTX F: WinAC RTX F 2009</p> <ul style="list-style-type: none"> • 12" TFT Touch • 12" TFT Key • 15" TFT Touch 	<p>H 6AV7 884 - ■ A H 2 0 - 4 B P 0</p>	<p>1</p> <p>2</p> <p>3</p> <p>0</p> <p>2</p> <p>3</p> <p>4</p> <p>6</p>

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

Ordering data

Order No.

Order No.

Configuration (continued)

SIMATIC HMI IPC477C

H 6AV7 884 - ■ A ■ ■ ■ - ■ ■ ■ 0

embedded and without fan
5 x (500 mA), one of which on the
front., 24 V DC power supply with
On / Off switch

Mass storage (installed, Windows
Embedded Standard 2009
(English, German) preinstalled,
optionally with SIMATIC software)

- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid-State Drive),
min. 32 GByte

2

3

4

6

Operating system
(preinstalled and activated)

- Windows Embedded
Standard 2009
- Windows XP Professional
Multi Language, only with SSD;
without SIMATIC Software

B A

D A

Software packages with
CF 4 GByte or higher capacity

- with operating system and
RTX1) Windows XP embedded
pre-installed, WinAC RTX 2009
pre-installed and configured for
PROFIBUS
- with operating system and HMI
Windows XP embedded pre-
installed, WinCC flexible 2008
SP1 RT (incl. archives / recipes)
pre-installed and configured
- Number of tags 128 PT
- Number of tags 512 PT
- Number of tags 2048 PT
- Number of tags 4096 PT
- with operating system and
HMI / RTX1) Windows XP
embedded pre-installed,
WinCC flexible 2008 SP1 RT
(incl. archives / recipes) and
WinAC RTX 2009
pre-installed and configured
- Number of tags 128 PT
- Number of tags 512 PT
- Number of tags 2048 PT
- Number of tags 4096 PT

B

C

D

E

F

K

L

M

N

Accessories

Protective membrane for Panel PCs 477 / 577 / 677

For protecting the touch screen
against dirt / scratches

- for 12" Touch
- for 15" Touch (not for PRO)
- for 19" Touch

6AV7 671-2BA00-0AA0

6AV7 671-4BA00-0AA0

6AV7 672-1CE00-0AA0

Labeling membranes for Panel PCs 477 / 577 / 677

For labeling soft keys and
function keys, blank, supplied in
sets of 10

6AV7 672-0DA00-0AA0

Touch pen

B

6AV7 672-1JB00-0AA0

Undetachable pen for operation
of the touch devices, mounting of
the support on the control cabinet
or directly on the PRO unit

Expansion components

SIMATIC IPC DiagMonitor V4.2

A

6ES7 648-6CA04-2YX0

Software tool for monitoring
SIMATIC IPCs,
incl. manual, on CD-ROM
(German / English)

SIMATIC IPC Image & Partition Creator V3.1

G

6ES7 648-6AA03-1YA0

Software tool for preventive data
backup and hard disk partitioning
for SIMATIC IPCs, incl. manual on
CD-ROM (German, English)

SIMATIC IPC USB FlashDrive

B

6ES7 648-0DC40-0AA0

2 GByte, USB 2.0,
metal enclosure, bootable

SIMATIC IPC Service USB FlashDrive

C

6AV7 672-8JD00-0AA0

2 GByte, USB 2.0, metal
enclosure, bootable Image &
Partition Creator V3.0
pre-installed, incl. CD

SINUMERIK Floppy drive 3.5", USB 1.1

B

6FC5 235-0AA05-1AA2

With 1 m connecting cable

Industrial USB Hub 4

B

6AV6 671-3AH00-0AX0

4 x USB 2.0, IP65 for control
cabinet door or DIN rail

CompactFlash Card

- 2 GByte
- 4 GByte
- 8 GByte

B

6ES7 648-2BF02-0XF0

B

6ES7 648-2BF02-0XG0

B

6ES7 648-2BF02-0XH0

1) Not with Celeron M 1.2 GHz processor

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

G: Subject to export regulations: AL: N und ECCN: 5D992

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

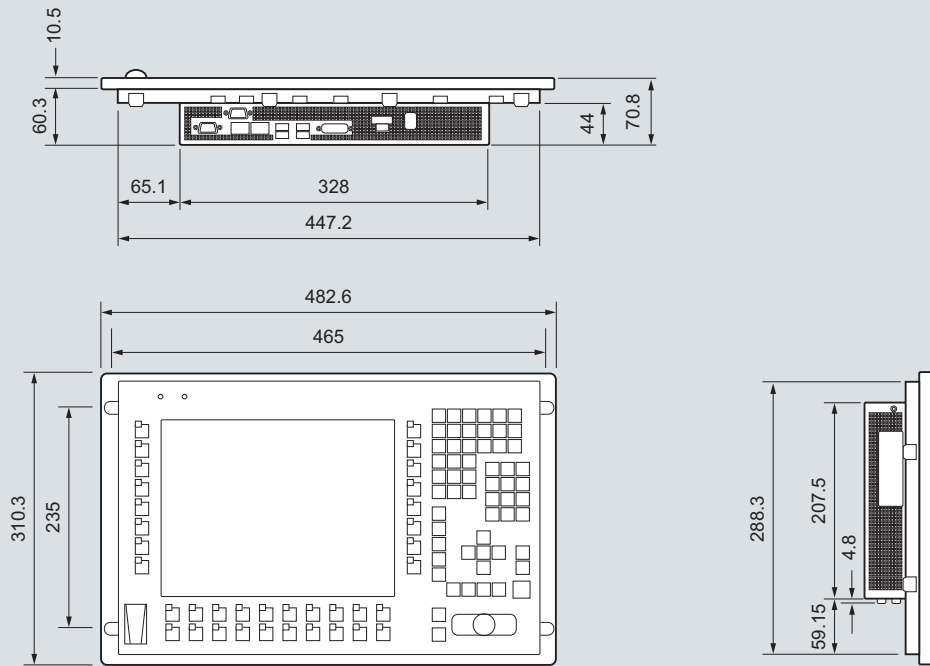
Note:

The HMI IPC477C is delivered as standard with an inserted
CF card. The licenses are on the supplied USB stick.

Further embedded versions based on IPC427C and Embedded
Controller (mEC) are listed under SIMATIC PC based Control.

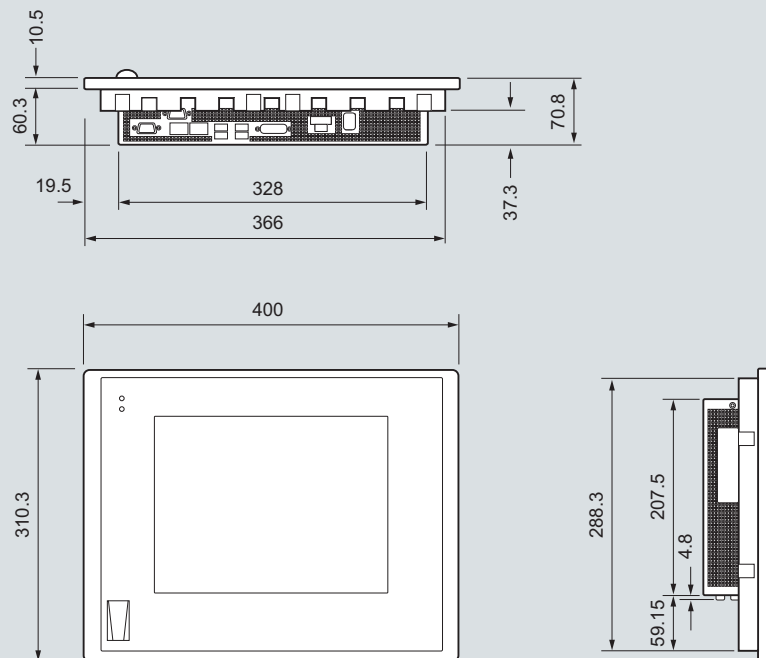
Dimensions

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00395

SIMATIC HMI IPC477C 12" Key version



G_ST80_XX_00396

SIMATIC HMI IPC477C 12" Touch version

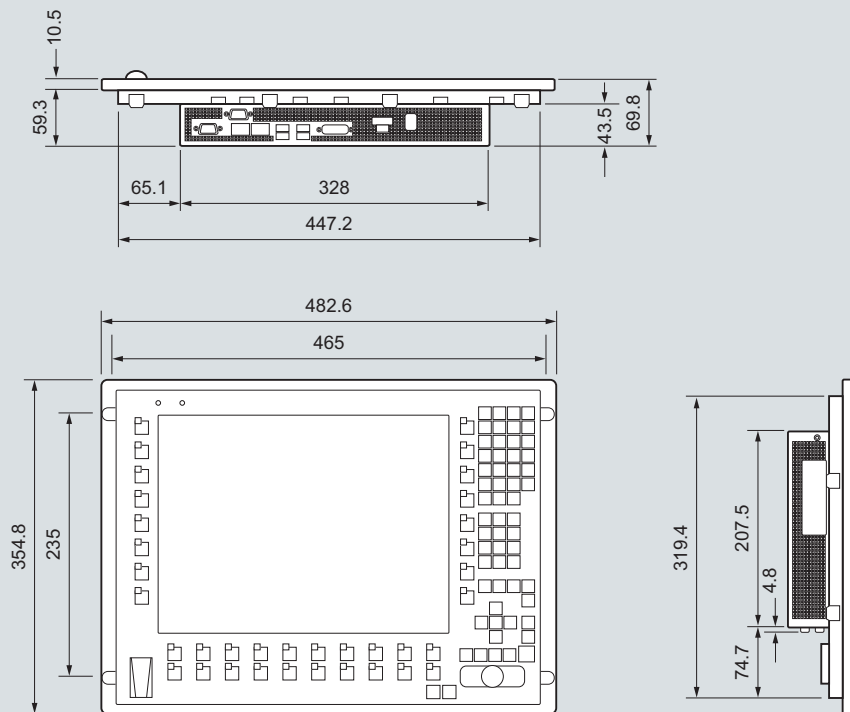
PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC477C

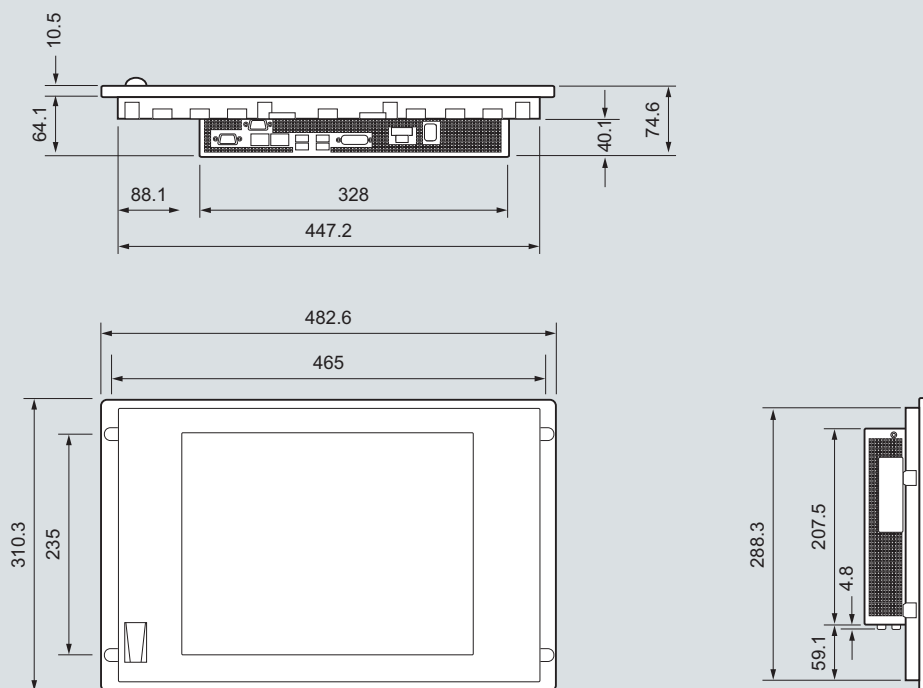
Dimensions (continued)

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00397

SIMATIC HMI IPC477C 15" Key version

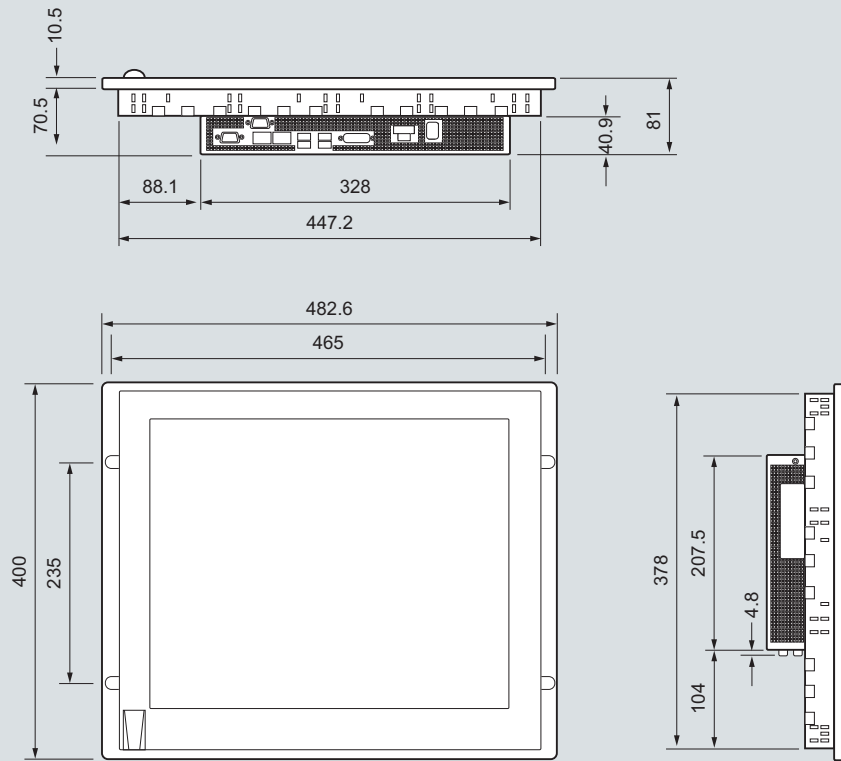


G_ST80_XX_00398

SIMATIC HMI IPC477C 15" Touch version

Dimensions (continued)

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00399

SIMATIC HMI IPC477C 19" Touch version

More information

Additional information is available in the Internet under:

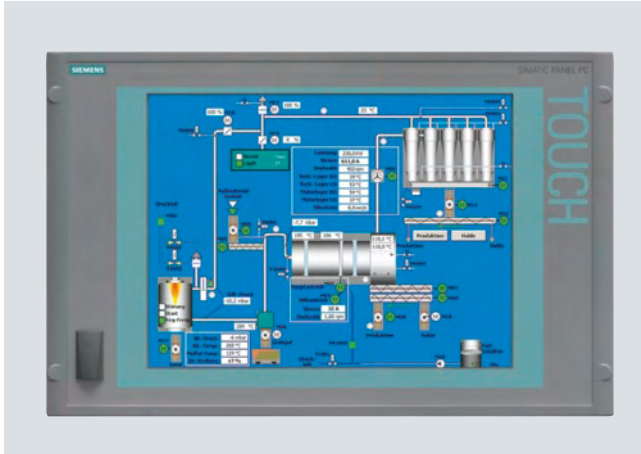
<http://www.siemens.com/simatic-panel-pc>

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC577C

Overview



Rugged, expandable industry PC for demanding tasks in the area of PC-based automation with various control units (front panels):

- Rugged and compact design for industrial use
- Full PC openness
 - Windows Embedded Standard or Windows XP Professional, or without operating system
 - CF card, HDD, SSD
 - DVD drive
- Expandable using a PCI slot
- Optionally with PROFIBUS or PROFINET (RT / IRT) onboard
- Installation-compatible with Panel PC 577B
 - Touch screen control units with 12", 15" and 19" TFT display
 - 12" and 15" TFT Key
- High degree of investment protection

Benefits

- High performance due to powerful processor
- Low-cost entry-level industry PC with full PC openness.
- Ideal for applications in industrial environments due to
 - Excellent operational reliability – even when subjected to extreme vibration and shock
 - High degree of chemical resistance to oils and grease
 - Smooth front, therefore no dirt can accumulate
 - Brilliant displays for good clearness of display, even when lighting conditions and viewing angles change.
- High degree of investment protection due to
 - A long marketing period (4 - 5 years) and high continuity of components for long-term machine concepts
 - Assured availability of spare parts (for a period of 5 years following the end of active marketing)
 - Simple migration from the predecessor product with minimum engineering overhead
 - Same installation dimensions as predecessor
 - Early detection of faults and minimized downtimes due to self-diagnostics (DiagBase)
- High level of flexibility due to
 - Expandable by the customer thanks to diverse interfaces (PCI, CompactFlash, Gbit Ethernet, and others)
 - USB interfaces on the front and rear for quick and easy connection of additional hardware components
 - User-friendly and easy integration in the fieldbus level, thanks to integrated PROFIBUS DP / MPI and 2 Gigabit Ethernet interfaces (onboard)

Application

The SIMATIC HMI IPC577C is used in manufacturing automation and process automation. The device is designed for installation in control cabinets and consoles, 19" cabinets / racks, and swivel arms (booms). Due to the minimal mounting depth, it can also be used in confined spaces, e.g. 83 mm for 15" Touch.

Thanks to its full PC openness and the powerful Core2Duo processor, it can be used for a host of different applications.

A SIMATIC HMI IPC577C is the ideal platform for PC-based automation:

- PC-based visualization on site at the machine with SIMATIC WinCC flexible
- Complex solutions with SIMATIC WinCC process visualization
- PC-based control with SIMATIC WinAC software PLC

SIMATIC HMI IPCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a lower price.

Design

The SIMATIC HMI IPC is equipped as follows:

Computing unit

- Processor:
 - Intel Core2 Duo processor 1.86 GHz or
 - Intel Core2 Solo 1.2 GHz or
 - Intel Celeron M 1.2 GHz
- Main memory configuration:
 - 1 GByte, 2 GByte or 4 GByte (SO-DIMM DDR3)
- Retentive memory
- Mass storage
 - Solid-State Disc (SSD) \geq 32 GByte for maximum shock tolerance since there are no rotating parts, or
 - Hard disk HDD \geq 80 GByte (3.5" SATA) with vibration-absorbent hard disk holder, which ensures reliable operation even under conditions of high mechanical stress, and / or
 - CF card (2 GByte, 4 GByte, or 8 GByte)
- Onboard graphics
- Interfaces:
 - 2 x 10 / 100 / 1000 PROFINET (IE)
 - 4 x USB 2.0 interfaces on rear + 1 x USB 2.0 interface on front; all high current (500 mA)
 - 1 x serial V.24 (9-pin)
- Free slots for expansions:
 - 1 x PCI (slots with card retainer)
 - 1 x slot for Compact Flash Card (externally accessible)
- Power supply:
 - 24 V DC or 100 / 240 V AC (autorange), 50 / 60 Hz
- Drive (optional)
 - DVD \pm RW \pm R combo drive
- Fieldbus onboard (optional)
 - 1 x PROFIBUS DP12 / MPI interface (CP5611-compatible) and 2 x LAN 1 Gbit/s
 - 1 x PROFIBUS RT / IRT (3 Port), CP 1616-compatible

Operating unit

Operating units are available in the following sizes / resolutions:

12" Key

- 12.1" TFT color display, 800 x 600 pixels
- Membrane keyboard with tactile feedback and integral mouse

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)

15" Key

- 15.1" TFT color display, 1024 x 768 pixels
- Membrane keyboard with tactile feedback and integral mouse

15" Touch

- 15.1" TFT color display, 1024 x 768 pixels (XGA)

19" Touch

- 19.1" TFT color display, 1280 x 1024 pixels (SXGA)

The operating units have the following functionality:

- Analog resistive touch screen or tactile membrane keyboard with system keys and 36 user-configurable function keys
- Degree of protection IP65 and NEMA 4
- USB 2.0 interface on the front for connecting external peripherals such as mouse or keyboard

Expansion components

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up
- Software tool for adaptation of mass storage partitioning.

SIMATIC PC USB FlashDrive

- Mobile memory medium for SIMATIC PC / PG

SIMATIC IPC Service USB FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Pre-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

Industrial USB Hub 4

- Industry-standard USB 2.0 hub, front IP65

Additional accessories

- Touch pen (cannot be lost) for operating the touch devices
- Protective membranes to protect the touch screen against dirt / scratches
- Labeling membranes for labeling the user-configurable function keys of the key devices

Function

- Integrated, parameterizable monitoring functions: Program execution (watchdog), internal temperature of enclosure, fan speed
- Expanded diagnostics / messages via Ethernet, e-mail, SMS and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor)

Integration

Integrated interfaces

- PCI
 - One free PCI slot is available for expansion with plug-in cards.
- Ethernet
 - The integrated PROFINET (IE) interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages).
- Further interfaces
 - One CompactFlash Card slot, 5 x USB 2.0 interfaces (Universal Serial Bus), as well as one serial interface are available for further I/O devices.

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC577C

Technical specifications

SIMATIC HMI IPC577C	6AV7 885..
General features	
Processors	Intel Celeron M 1,2 GHz or Intel Core2 Solo 1,2 GHz or Intel Core2 Duo 1,86 GHz
Memory type	DDR3-RAM
Main memory	1 GByte, 2 GByte or 4 GByte
Spare slots for expansions	1 x CF card slot (externally accessible) 1 x PCI slot
Operating system	Windows Embedded Standard 2009 (English, German) or Windows XP Professional Multi-Language ¹⁾
Additional OS information	Language: English, German
MTBF backlighting	50000 h at 24 h continuous operation, temperature-dependent
Drives	
Floppy drive	Optional via external USB floppy drive
Optical drives	Optional DVD±RW±R combination drive or external drive via USB
Hard disk / mass storage	Compact Flash drive with 2, 4, or 8 GByte and / or SSD (Solid-State Drive) with 32 GByte
Interfaces	
External Graphics interface	DVI-I for additional display unit: Color depth 32 bits
Connection for keyboard / mouse	USB / USB
Serial interface	COM1: 1 x V.24 (RS232)
PROFIBUS DP / MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card required, CP 5611-compatible, not upgradable
PROFINET (RT / IRT)	Optional onboard, 3 x RJ 45, CP 1616-compatible, not upgradeable
PROFINET (IE), Ethernet	Onboard, 2 x 10 / 100 / 1000 Mbit (RJ45 without / with PROFIBUS), 1 x 10 / 100 / 1000 Mbit (RJ45 with PROFINET), no plug-in card necessary
USB	1 x front, 4 x rear, USB 2.0 (500 mA)

SIMATIC HMI IPC577C	6AV7 885..
Supply voltage	
Supply voltage	24 V DC or 100 / 240 V AC
Monitoring functions	
Temperature	Yes
Watchdog	Yes
DiagBit (similar to S.M.A.R.T.)	Yes (for CF cards HDD and SSD)
Front side acc. to EN 60529	IP65 (on the front), tested acc. to EN 60529 and NEMA4
Ambient conditions	
Vibration during operation	Tested according to DIN IEC 60068-2-6: 10 - 58 Hz: 0.075 mm, 58 to 200 Hz: 10 m/s ² (1 g) ³⁾
Shock load during operation	Tested according to DIN IEC 60068-2-27: 50 m/s ² (5 g), 30 ms, 100 shocks
Relative humidity	Tested according to DIN IEC 60068-78, DIN IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Maximum permissible installation angle + / -	45° over vertical
Ambient temperature during operation	0°C ... +50°C in maximum configuration ⁴⁾
Certifications & standards	
Approvals	CE, cULus(508)
EMC	CE, FCC A, 55022A, EN 61000-6-4 ²⁾ , EN 61000-6-2

- ¹⁾ Multi-Language means: GER / E / F / I / SP / CHIN traditional / CHIN simplified / Korean / Japanese
- ²⁾ 61000-6-2 replaces 50082-2; 61000-6-4 replaces 50081-2
- ³⁾ Valid with CF or SSD; with HDD: 5 g / 0.5 g
- ⁴⁾ Valid with CF or SSD; with HDD: +5 °C to 45 °C

Technical specifications (continued)

SIMATIC HMI IPC577C	6AV7 885-1 12" TFT Key	6AV7 885-0 12" TFT Touch	6AV7 885-3 15" TFT Key	6AV7 885-2 15" TFT Touch	6AV7 885-5 19" TFT Touch
General features					
Accessories	Insertable strips for keyboard	Touch protective membranes	Insertable strips for keyboard	Touch protective membranes	Touch protective membranes
Power loss in maximum configuration	24 V DC: max. 55 W	24 V DC: max. 55 W	24 V DC: max. 55 W	24 V DC: max. 55 W	24 V DC: max. 55 W
Display					
Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024
MTBF backlighting (at 25 °C)	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent
Type of operation					
Function keys	Yes	No	Yes	No	No
Alphanumeric keyboard	Yes	No	Yes	No	No
Touch screen (analog / resistive)	No	Yes	No	Yes	Yes
Mouse on the front	Yes	No	Yes	No	No
Design					
Centralized configuration	Yes	Yes	Yes	Yes	Yes
Distributed configuration	No	No	No	No	No
Dimensions					
Mounting dimensions in centralized configuration (W x H x D, without optical drive) in mm	450 x 290 x 84	368 x 290 x 84	450 x 321 x 87	450 x 290 x 87	450 x 380 x 94
Operator control unit (W x H) in mm	400 x 310 (7 HU)	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 400 (19", 9 HU)
Weight	8,0 kg	8,0 kg	9,0 kg	9,0 kg	11,5 kg

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC577C

Ordering data

Order No.

Order No.

Configuration

SIMATIC HMI IPC577C

G 6AV7 885 - A - - - - -

Front panels

- 12" TFT Touch
- 12" TFT Key
- 15" TFT Touch
- 15" TFT Key
- 19" TFT Touch

0
1
2
3
5

Mainboards (processor with fieldbus interfaces)

- Celeron M 1,2 GHz, 1 MByte cache, 800 MHz FSB
 - with PROFINET (Industrial Ethernet); 2 x LAN 1 Gbit/s
- Core2 Solo 1,2 GHz, 3 MByte cache, 800 MHz FSB
 - with PROFINET (Industrial Ethernet); 2 x LAN 1 Gbit/s
 - with PROFIBUS DP12 / MPI (CP5611-compatible), 2 x LAN 1 Gbit/s
 - with PROFINET (RT / IRT) 3 Ports, 1 x LAN 1 Gbit/s
- Core2 Duo 1,86 GHz, 6 MByte cache, 1066 MHz FSB
 - with PROFINET (Industrial Ethernet); 2 x LAN 1 Gbit/s
 - with PROFIBUS DP12 / MPI (CP5611-compatible), 2 x LAN 1 Gbit/s
 - with PROFINET (RT / IRT) 3 Ports, 1 x LAN 1 Gbit/s

A
D
E
F
K
L
M

Working memory

- 1 GByte RAM, DDR3
- 2 GByte RAM, DDR3
- 4 GByte RAM, DDR3

1
2
3

Second mass storage and / or drive (formatted without operating system)

- No second mass storage / drive
- DVD-RW drive
- HDD + DVD-RW drive
- SSD + DVD-RW drive
- SSD min. 32 GByte (Solid-State Disk)
- HDD min. 80 GByte

0
1
2
3
6
8

Configuration (continued)

SIMATIC HMI IPC577C

G 6AV7 885 - A - - - - -

First mass storage (formatted, optionally with operating system):

- without
- HDD min. 80 GByte (not if 2nd mass storage is HDD or SSD)
- 2 GByte CompactFlash
- 4 GByte CompactFlash
- 8 GByte CompactFlash
- Solid-State Drive (not if 2nd mass storage is HDD or SSD)

0
1
2
3
4
6

Operating system (preinstalled on first mass storage)

- Without operating system
- Windows Embedded Standard 2009
- Windows XP Professional Multi-Language¹⁾

A
B
D

Expansion (Software)

- without
- IPC DiagMonitor V4.2 included
- IPC Image & Partition Creator
- IPC DiagMonitor V4.2 and Image & Partition Creator V3.1 included

A
B
C
D

Power supply

- 100 / 240 V AC industrial power supply with Namur
- 100 / 240 V AC industrial power supply with Namur; European power cable
- 100 / 240 V AC industrial power supply with Namur; USA power power cable
- 100 / 240 V AC industrial power supply with Namur; CN power cable
- 100 / 240 V AC industrial power supply with Namur; IT power cable
- 100 / 240 V AC industrial power supply with Namur; CH power cable
- 100 / 240 V AC industrial power supply with Namur; UK power cable
- 24 V DC industrial power supply

1
2
3
4
5
6
7
8

¹⁾ Multi-Language means: GER / E / F / I / SP / CHIN traditional / CHIN simplified / Korean / Japanese

G: Subject to export regulations: AL: N and ECCN: 5D992

Ordering data		Order No.	Order No.	
Accessories			Expansion components	
Protective membranes for SIMATIC HMI IPC577C, in sets of 10 For protecting the touch screen against dirt / scratches <ul style="list-style-type: none"> • for 12" Touch • for 15" Touch • for 19" Touch 		6AV7 671-2BA00-0AA0	SIMATIC IPC DiagMonitor V4.2 A 6ES7 648-6CA04-2YX0 Software tool for monitoring SIMATIC IPCs, incl. manual, on CD-ROM (German / English)	
		6AV7 671-4BA00-0AA0		
		6AV7 672-1CE00-0AA0		
Labeling membranes for Key devices For labeling soft keys and function keys, blank, supplied sets of 10		6AV7 672-0DA00-0AA0	SIMATIC IPC Image & Partition Creator V3.1 G 6ES7 648-6AA03-1YA0 Software tool for preventive data backup and hard disk partitioning for SIMATIC IPCs, incl. manual on CD-ROM (German, English)	
Touch pen B 6AV7 672-1JB00-0AA0 Undetachable pen for operation of touch devices, mounting of the support on the control cabinet			SIMATIC IPC USB FlashDrive B 6ES7 648-0DC40-0AA0 2 GByte, USB 2.0; metal enclosure, bootable	
Communication components PCI expansion card B 6ES7 648-2CA01-0AA0 with COM1-, COM2- and LPT interfaces			SIMATIC IPC Service USB FlashDrive C 6AV7 672-8JD00-0AA0 with: Image & Partition Creator (en) ready-installed, incl. installation CD (ger / en)	
			SINUMERIK Floppy drive 3,5", USB 1.1 With 1 m connecting cable	6FC5 235-0AA05-1AA2
			Industrial USB Hub 4 B 6AV6 671-3AH00-0AX0 4 x USB 2.0 interfaces, IP65 for mounting on control cabinet door or DIN rail	

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

G: Subject to export regulations: AL: N und ECCN: 5D992

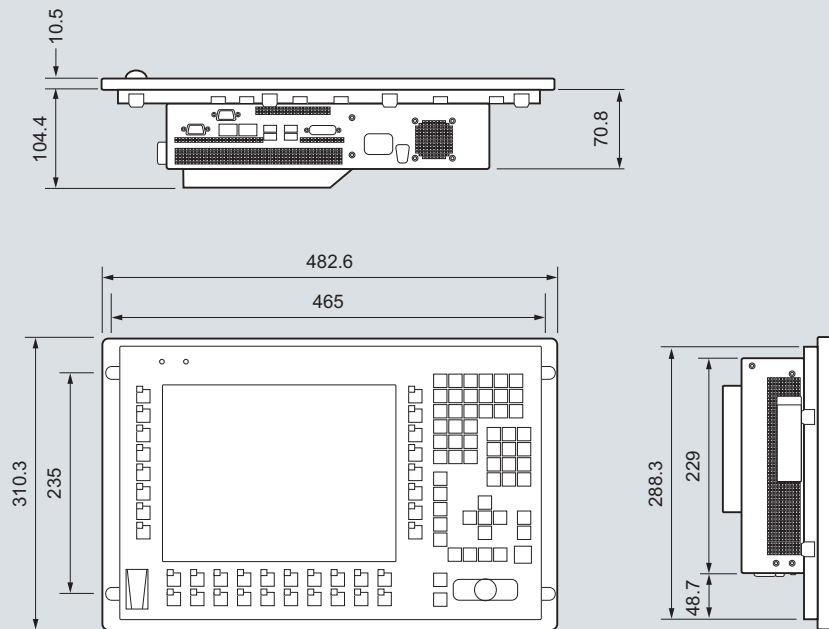
PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC577C

Dimensions

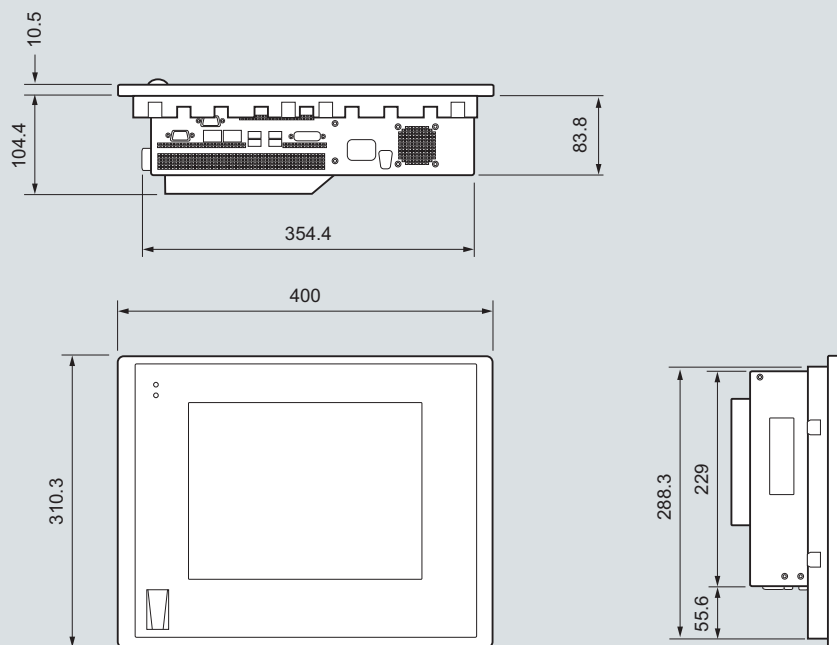
All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00402

SIMATIC HMI IPC577C 12" Key version

5

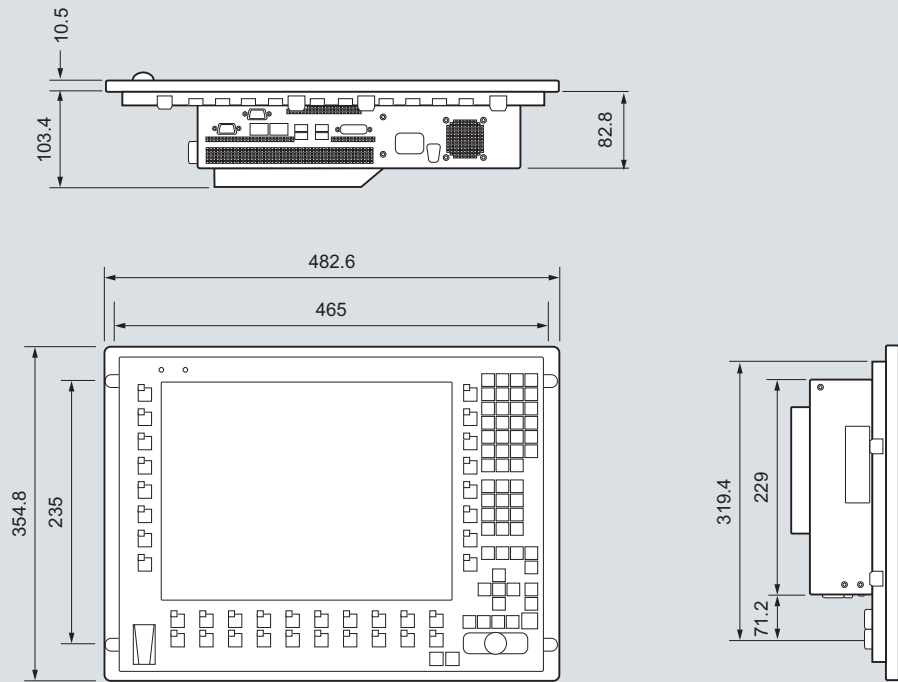


G_ST80_XX_00403

SIMATIC HMI IPC577C 12" Touch version

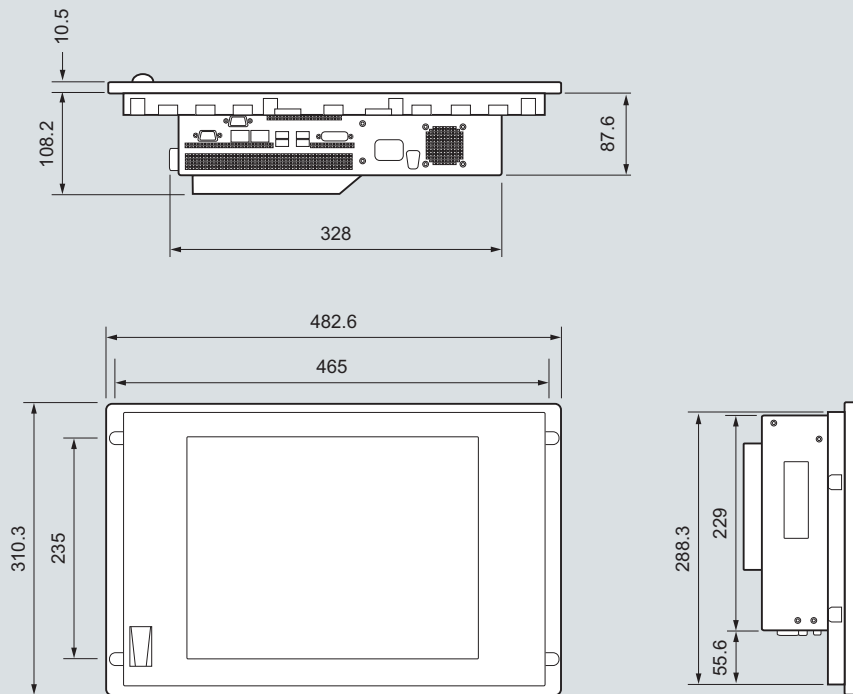
Dimensions (continued)

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00404

SIMATIC HMI IPC577C 15" Key version



G_ST80_XX_00405

SIMATIC HMI IPC577C 15" Touch version

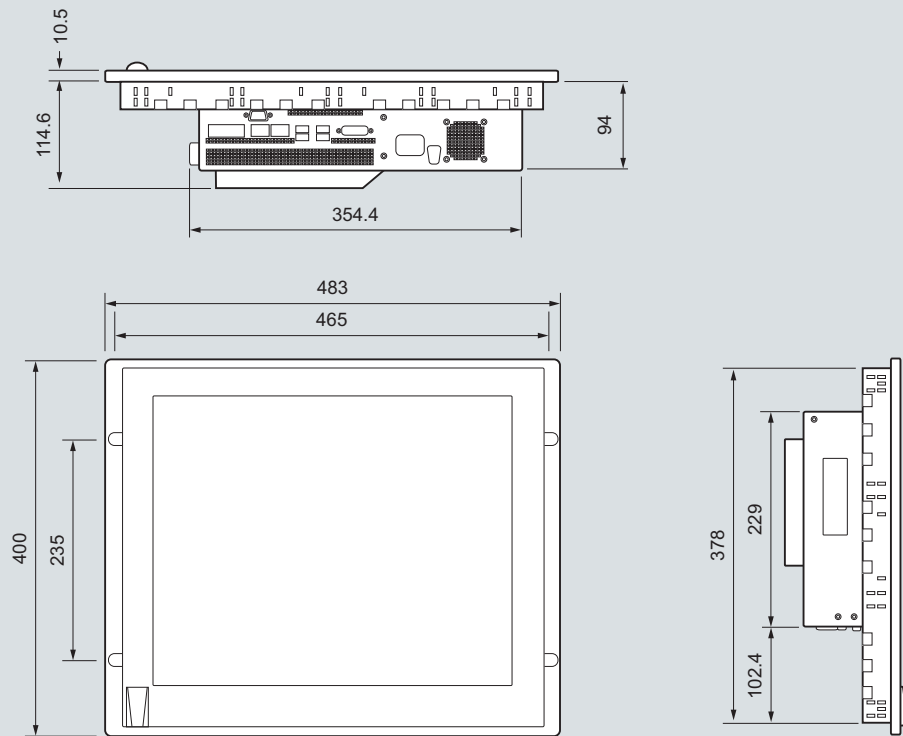
PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC577C

Dimensions (continued)

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00406

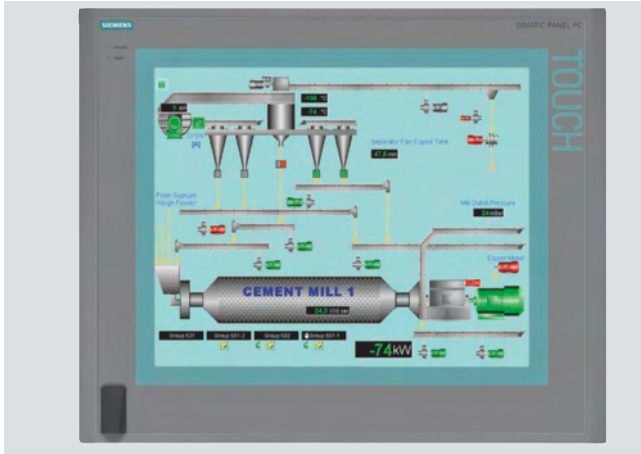
SIMATIC HMI IPC577C 19" Touch version

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-panel-pc>

Overview



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
- Front panel versions:
 - 12", 15" and 19" TFT Touch
 - 12" and 15" TFT Keys
 - 15" TFT Touch INOX with stainless steel front for special requirements, e.g. in the food, beverages and tobacco industries

Benefits

- Excellent industrial compatibility due to rugged construction, even when subjected to extreme vibration and shock
- High degree of investment protection thanks to assured availability of spare parts (for a period of 5 years following the end of active marketing)
- Excellent continuity of components for machine concepts with a long service life without any new engineering costs
- Savings in time and costs due to service-friendly equipment construction:
 - Operator control unit and computer unit can be opened easily for fast replacement of components or subsequent expansions
 - Front and rear USB 2.0 interfaces for quick and easy connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI or PROFINET (CP1616-compatible) and 2 Gigabit Ethernet interfaces
- 2 x ≥ 250 GByte SATA hard disk system (configured as single-disk system or RAID1)
- 32 GByte SSD as rugged and high-speed hard disk substitute
- Reduction in standstill times thanks to high system availability
- Minimized energy consumption thanks to support for Wake-On-LAN, shutdown or dimming of the display during operation, and use of Notebook components
- Efficient self-diagnostics (SIMATIC IPC DiagMonitor or DiagBase):
 - Solutions for preventive data backup
- Integral component of Totally Integrated Automation (TIA):
 - increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

The SIMATIC HMI IPC677C is designed for use direct on-site at the machine. The shallow installation depth of just 105 / 130 mm means it can also be operated in restricted installation conditions.

The PC is used both in manufacturing automation and process automation, installed in control cabinets and consoles, 19" cabinets / racks and swing arms (booms).

Thanks to the Dual Core CPUs with Intel Core technology, high-performance control and visualization are possible simultaneously.

With PCIe (x16), the new PCI Express cards (x1, x4 and x8) are also supported.

The integral NVRAM (battery-backed) is supported by WinAC RTX with DC or AC power supply, devices with PROFIBUS or PROFINET (IRT capability) are equipped with this.

A SIMATIC HMI IPC is the ideal platform for PC-based Automation:

- PC-based visualization at the machine level on-site with SIMATIC WinCC flexible
- Complex solutions with SIMATIC WinCC process visualization
- PC-based Control with SIMATIC WinAC RTX Software PLC

Siemens offers the complete modular system of harmonically matched automation components.

The SIMATIC HMI IPCs can be ordered in conjunction with WinCC flexible or WinCC as SIMATIC HMI packages at a price advantage (see SIMATIC HMI complete systems).

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC677C

Design

The SIMATIC HMI IPC677C comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
 - Intel Celeron 1.86 GHz, 2 cores
 - Intel Core i3 2.13 GHz, 2 cores, hyper-threading
 - Intel Core i7 2.53 GHz, 2 cores, hyper-threading, turbo boost
- Main memory basic configuration: 1 GByte
- 3.5" SATA hard disk: ≥ 250 GByte; the special vibration-absorbing hard disk support ensures reliable operation even under extreme mechanical stress
- Graphics integrated on CPU (Intel Graphics Media Accelerator)
- Interfaces:
 - 2 x 10 / 100 / 1000 Ethernet
 - PROFIBUS DP / MPI on board, floating
 - PROFINET (IRT-capable), 3-port, switching-enabled, CP1616-compatible
 - 4 x USB 2.0 connection
 - 1 x serial V.24 (9-pin)
- Retentive memory:
 - 2 MByte NVRAM, can be used with WinAC RTX 128 KB (AC and DC versions)
- Free slots for expansions:
 - 2 x PCI (slots with card retainer)
 - 1 x slot for Compact Flash Card
- Power supply: 110 / 230 V AC (autorange), 50 / 60 Hz or 24 V DC
- DVI-I interface for connecting a further monitor (DVI or VGA) or Flat Panel monitor

Optional additional components:

- Main memory expansion to 2, 3, or 4 GByte, or 2 or 4 GByte with ECC
- SATA hard disk ≥ 500 GByte
- Dual hard disk module 2 x ≥ 250 GByte SATA as single disk configuration or RAID1 preconfigured
- 32 GByte SSD (Solid-State Drive)
- Internal CF card slot (unpopulated, instead of hard disks)
- DVD±RW±R combo drive
- 1 x PCIe x16 / 1 x PCI instead of 2 x PCI slots (with card retainers)
- Different Microsoft Windows operating systems incl. Windows 7 Ultimate

Components of the operator control unit:

The operator control units are available in the following versions:

12" Key

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen

15" Key

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

15" Touch

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen

15" Touch stainless steel / INOX

- 15.1" TFT color display, 1024 x 768 (XGA)
- Resistive analog touch screen
- Stainless steel front, designed for use in the food and beverages industry
- Developed on the basis of DIN EN 1672-2
- Polished surface (stainless steel 1.4301, line pattern, grain-size 240)
- IP66k on front
- Without USB front interface
- Display shattering protection
- Optimized frame profile, so that liquids can run off
- Minimal number of grooves and joints
- Decorative membrane tested against chemicals in accordance with DIN 42115, Part 2
- Mounting with clamping frame only; sealing material food-safe (EDPM, in accordance with FDA 21 CFR 177.2006)
- Prepared for EHEDG certification for the entire machine

19" Touch

- 19.1" TFT color display, 1280 x 1024 pixels (SXGA)
- Resistive analog touch screen

The operator control units feature a USB 2.0 port on the front for connecting external peripheral devices, such as a mouse or keyboard. They fulfill the requirements of degree of protection IP65 and NEMA 4. All operator control units are also available without a USB port on the front.

The computer unit is connected via a connecting cable attached at the rear of the operator control unit.

Distributed configuration

A distributed configuration can be set up with the SIMATIC Box IPC627C and the SIMATIC Flat Panel monitors. The monitor can be placed up to 30m away while retaining the front functionality (incl. rear USB interfaces). The Flat Panel monitors are available in different versions as a device without operating functionality, with touch or key operation.

Design (continued)

Expansion components

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog, BIOS battery
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (German / English)
- Network-wide monitoring via SNMP and OPC interface possible
- Integrated Web server for monitoring over the network using a Web browser

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up

SIMATIC IPC Service USB FlashDrive

- Software tool for adaptation of mass storage partitioning
- Mobile memory medium for backing up / restoring mass memories
- Pre-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

SIMATIC IPC USB FlashDrive

- Mobile memory medium for SIMATIC PC / PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

SINUMERIK Floppy drive 3.5", USB 1.1

The USB disk drive is provided for the high-speed exchange of user data, such as recipes, or files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

Industrial USB Hub 4

USB I/O can be connected and operated without opening the control cabinet door using the Industrial Hub 4.

- Industry-standard USB 2.0 Hub, Front IP65
- Mounting in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

For further information, see "Expansion components".

Function

- Integrated, parameterizable monitoring functions (program execution (watchdog), temperature inside housing, fan speed)
- Expanded diagnostics / alarms over Ethernet, by e-mail, as text message, and for direct infeed in SIMATIC software over OPC (optionally through SIMATIC IPC DiagMonitor)
- RAID1 for automatic data mirroring on two SATA hard disks

Integration

Ethernet

The integrated Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages).

PROFIBUS

The floating PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with software package "SOFTNET for PROFIBUS").

PROFINET

The three (IRT-capable) PROFINET ports can be used to connect distributed I/O, SIMATIC S7 and drives. The switching-capable ports of the CP1616-compatible PROFINET option support linear and tree topologies (WinAC RTX Version 2008 and higher). Alternatively, the interface can be used as a standard Windows interface.

Further interfaces

For connecting additional I/O devices, 2 spare slots are available for PCI modules or alternatively 1 x PCI and 1 x PCIe x4 modules, as well as a Compact Flash Card interface, 5 USB 2.0 interfaces (Universal Serial Bus) and one serial interface.

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC677C

Technical specifications

SIMATIC HMI IPC677C	6AV7 89.-...
General features	
Processor	<ul style="list-style-type: none"> Intel Core i7-610E (2C / 4T, 2.53 GHz, 4 MByte L2, Turbo Boost, VT-d) Intel Core i3-330E (2C / 4T, 2.13 GHz, 3 MByte L2) Intel Celeron P4505 (2C / 2T, 1.86 GHz, 2 MByte L2)
Main memory	<ul style="list-style-type: none"> 1 GByte, optional 2 GByte or 4 GByte or 2 GByte or 4 GByte with ECC
Spare slots for expansions (all long)	<ul style="list-style-type: none"> 2 x PCI (slot with card retainer) or 1 x PCI and 1 x PCIe x16 1 x slot for CompactFlash Card (accessible from outside)
Operating system	Different Windows operating systems incl. Windows 7 Ultimate
Power supply	24 V DC or 110 / 240 V AC (autorange), 50 / 60 Hz
MTBF backlighting	Typ. 50000 h (at 24 h continuous operation, temperature-dependent)
Drives	
Floppy drive	Optional via external USB floppy drive
Optical drives	Optional DVD±RW±R combo drive, at the rear, operable from the side
Hard disk / mass storage	3.5" SATA hard disk ≥ 250 GByte; optional 3.5" SATA hard disk ≥ 500 GByte, dual hard disk module 2 x ≥ 250 GByte SATA as single disk configuration or RAID1 preconfigured, 32 GByte SSD (Solid-State Drive)
Interfaces	
Graphics interface	DVI-I for additional display unit: Color depth 32 bits
Connection for keyboard / mouse	USB / USB
Serial interface	COM1: 1 x V.24 (RS232)
PROFIBUS DP / MPI	Onboard, isolated, max. 12 Mbit/s, compatible with CP 5611, not upgradeable
PROFINET (IRT)	Onboard, 3 x RJ 45, CP 1616-compatible, not upgradeable
PROFINET (IE), Ethernet	onboard, 2 x 10 / 100 / 1000 Mbit
USB	1 x on front, 4 x on rear, USB 2.0 (500 mA)

SIMATIC HMI IPC677C	6AV7 89.-...
Monitoring functions	
Temperature	Yes
Watchdog	Yes
Ambient conditions	
Degree of protection	IP65 (on the front) acc. to EN 60529 and NEMA 4
Vibration load during operation	Tested according to DIN IEC 60068-2-6: 10 - 58 Hz: 0.075 mm, 58 to 500 Hz: 10 m/s ² (1 g)
Shock load during operation ²⁾	Tested according to DIN IEC 60068-2-27: 50 m/s ² (5 g), 30 ms, 100 shocks
EMC	CE, FCC A, 55022A, EN 61000-6-4 ¹⁾ , EN 61000-6-2
Ambient temperature during operation	12" / 15": 5 °C ... +50 °C in maximum configuration 19": 5 °C ... +45 °C in maximum configuration
Relative humidity	Tested according to DIN IEC 60068-78, DIN IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Installation angle	20° over vertical
Certifications & standards	
Approvals	CE, cULus(508)
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET communication modules, SIMATIC PC DiagMonitor, SIMATIC IPC Image & Partition Creator, USB disk drive 3.5", SIMATIC IPC USB FlashDrive

¹⁾ 61000-6-2 replaces 50082-2; 61000-6-4 replaces 50081-2

²⁾ Valid with CF or SSD; with HDD: 5 g / 0.5 g

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC677C

Ordering data		Order No.	
Configuration (job-oriented production and delivery) SIMATIC HMI IPC677C G 6AV7 89 - - - - - 0			
Front panels <ul style="list-style-type: none">• 12" TFT Touch• 12" TFT Key• 15" TFT Touch• 15" TFT Key• 19" TFT Touch	0 1 2 3 4		
Front options <ul style="list-style-type: none">• With front USB interface• Without front USB interface• INOX front, without front USB, with 15" TFT Touch only	0 1 2		
Power supply <ul style="list-style-type: none">• DV 24 V• 110 / 230 V AC, European cable• 110 / 230 V AC without cable• 110 / 230 V AC, UK cable• 110 / 230 V AC, CH cable• 110 / 230 V AC, USA cable• 110 / 230 V AC, Italy cable• 110 / 230 V AC, Chinese cable	A B C D E F G H		
Processor <ul style="list-style-type: none">• Intel Celeron 1.86 GHz (2 MByte shared cache), 2 cores• Intel Celeron 1.86 GHz (2 MByte shared cache), 2 cores, PROFIBUS MPI, 2 MByte buffered SRAM• Intel Celeron 1.86 GHz (2 MByte shared cache), 2 cores, PROFINET MPI (3 x RJ45, CP1616-compatible), 2 MByte buffered SRAM• Intel Core i3, 2.13 GHz (3 MByte shared cache), 2 cores, hyper-threading• Intel Core i3, 2.13 GHz (3 MByte shared cache), 2 cores, hyper-threading, PROFIBUS MPI, 2 MByte buffered SRAM• Intel Core i3, 2.13 GHz (3 MByte shared cache), 2 cores, hyper-threading, PROFINET (3 x RJ45, CP1616-compatible), 2 MByte buffered SRAM• Intel Core i7, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost• Intel Core i7, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost, PROFIBUS MPI, 2 MByte buffered SRAM• Intel Core i7, 2.53 GHz (4 MByte shared cache), 2 cores, hyper-threading, turbo boost, PROFINET (3 x RJ45, CP 1616-compatible), 2 MByte buffered SRAM	A B C D E F G H J		

Ordering data		Order No.	
Configuration Configurator (job-oriented production and delivery) SIMATIC HMI IPC677C G 6AV7 89 - - - - - 0			
Main memory <ul style="list-style-type: none">• 1 GByte DDR3• 2 GByte DDR3• 3 GByte DDR3• 4 GByte DDR3• 2 GByte DDR3 with ECC• 4 GByte DDR3 with ECC	0 1 2 3 5 6		
Mass storage <ul style="list-style-type: none">• 250 GByte SATA hard disk• 500 GByte SATA hard disk• RAID1 dual hard disk module 2 x 250 GByte SATA, reconfigured• Dual hard disk module 2 x 250 GByte SATA• 32 GByte SSD• Second CF card slot, internal, empty (not with Windows XP or Windows 7) instead of hard disk or SSD• Without mass storage	0 1 2 3 4 5 8		
Optical drives <ul style="list-style-type: none">• Without• DVD±RW±R combo drive	0 1		
Communication interfaces <ul style="list-style-type: none">• 2 x PCI free• 1 x PCI, 1 x PCIe (x16) free		A B	
Operating system (preinstalled and activated) <ul style="list-style-type: none">• without operating system²⁾• Windows XP Professional Multi-Language¹⁾• Windows 7 Ultimate Multi-Language¹⁾• Windows Embedded Standard on 8 GByte CF card ³⁾		A B C D	

1) Multi-Language means: GER / E / F / I / SP / CHIN

2) Not with internal second CF card slot

3) Only without RAID 1 option

G: Subject to export regulations: AL: N and ECCN: 5D992

¹⁾ Multi-Language means: GER / E / F / I / SP / CHIN

²⁾ Not with internal second CF card slot

³⁾ Only without RAID 1 option

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC677C

Order No.

Order No.

Order No.

Delivery versions (ex stock)

IPC677C stock versions

12" TFT Touch

with Windows XP Prof. MUI,
110 / 230 V AC power supply,
Core i3 2,13 GHz, 2 x PCI
1 GByte RAM, 250 GByte HDD
DVD±R/RW burner
PROFIBUS / MPI, NVRAM

6AV7 890-0BE00-1AB0

12" TFT Key

with Windows XP Prof. MUI,
110 / 230 V AC power supply,
Core i3 2,13 GHz, 2 x PCI
1 GByte RAM, 250 GByte HDD
DVD±R/RW burner
PROFIBUS / MPI, NVRAM

6AV7 891-0BE00-1AB0

15" TFT Touch

with Windows XP Prof. MUI,
110 / 230 V AC power supply,
Core i3 2,13 GHz, 2 x PCI
1 GByte RAM, 250 GByte HDD
DVD±R/RW burner
PROFIBUS / MPI, NVRAM

6AV7 892-0BE00-1AB0

15" TFT Key

with Windows XP Prof. MUI,
110 / 230 V AC power supply,
Core i3 2,13 GHz, 2 x PCI
1 GByte RAM, 250 GByte HDD
DVD±R/RW burner
PROFIBUS / MPI, NVRAM

6AV7 893-0BE00-1AB0

19" TFT Key

with Windows XP Prof. MUI,
110 / 230 V AC power supply,
Core i3 2,13 GHz, 2 x PCI
1 GByte RAM, 250 GByte HDD
DVD±R/RW burner
PROFIBUS / MPI, NVRAM

6AV7 894-0BE00-1AB0

Accessories

Protective foil 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

6AV7 671-2BA00-0AA0

6AV7 671-4BA00-0AA0

6AV7 672-1CE00-0AA0

Labeling strips for Panel PC 477 / 577 / 677 key devices

For labeling soft keys and
function keys, blank, supplied
in sets of 10

6AV7 672-0DA00-0AA0

Memory Expansion

- 1 GByte DDR3 DIMM
- 2 GByte DDR3 DIMM
- 1 GByte DDR3 DIMM with ECC
- 2 GByte DDR3 DIMM with ECC

6ES7 648-2AJ40-0KA0

6ES7 648-2AJ50-0KA0

6ES7 648-2AJ40-1KA0

6ES7 648-2AJ50-1KA0

Touch pen

Undetachable pen for operation
of touch devices, mounting of the
support on the control cabinet

B

6AV7 672-1JB00-0AA0

Accessories (continued)

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

6ES7 900-1AA00-0XA0

6ES7 900-1BA00-0XA0

6ES7 900-1CA00-0XA0

6ES7 900-1DA00-0XA0

6ES7 900-1EA00-0XA0

6ES7 900-1FA00-0XA0

Expansion components

SIMATIC IPC DiagMonitor V4.2

Software tool for monitoring
SIMATIC IPCs,
incl. manual, on CD-ROM
(German / English)

A 6ES7 648-6CA04-2YX0

SIMATIC IPC Image & Partition Creator V3.1

Software tool for preventive data
backup and hard disk partitioning
for SIMATIC IPCs, incl. manual on
CD-ROM (German, English)

G 6ES7 648-6AA03-1YA0

SIMATIC IPC USB FlashDrive

2 GByte, USB 2.0,
metal enclosure, bootable

B 6ES7 648-0DC40-0AA0

SIMATIC IPC Service USB FlashDrive

with: Image & Partition Creator
(en) ready-installed, incl.
installation CD (ger / en)

C 6AV7 672-8JD00-0AA0

SINUMERIK Floppy drive 3,5", USB 1.1

with 1 m connecting cable

6FC5 235-0AA05-1AA2

Industrial USB Hub 4

4 x USB 2.0 interfaces, IP65
for mounting on control cabinet
door or DIN rail

B 6AV6 671-3AH00-0AX0

Uninterruptible power supplies

SITOP Power, 15 A DC UPS module with USB interface

with charger unit for 24 V lead
battery, input 24 V DC / 16 A,
output 24 V DC / 15 A

6EP1 931-2EC42

SITOP Power, battery module 24 V / 3.2 Ah

for DC UPS module 15 A

6EP1 935-6MD11

Communication components

PCI interface card

With COM1, COM2 and LPT
interfaces

B 6ES7 648-2CA01-0AA0

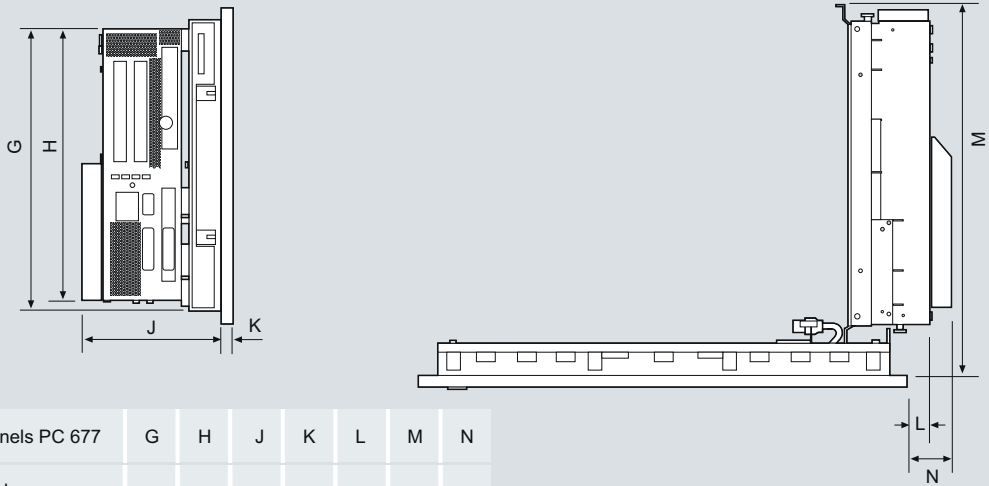
A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

G: Subject to export regulations: AL: N und ECCN: 5D992

Dimensions



Operator panels PC 677	G	H	J	K	L	M	N
Touch panels							
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 panels							
12"	289	271	122	11	42	351	59
15"	324	271	141	11	31	370	48

All dimensions without screw protrusions

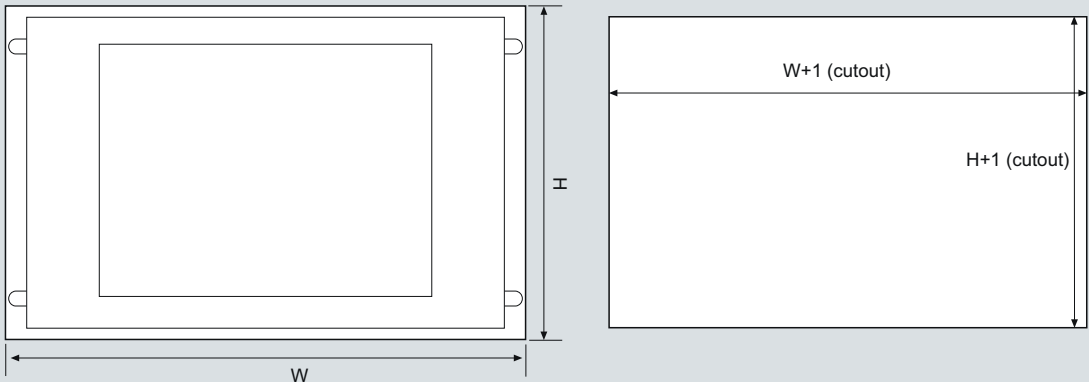
G_ST80_XX_00288

Operator control unit and overall device

PC-based Automation
SIMATIC HMI IPC / Panel PC

SIMATIC HMI IPC677C

Dimensions (continued)



Front dimensions	W	H
Touch panels		
12"	400	310
15"	483	310
19"	483	400

Installation cutout	W+1	H+1
Touch panels		
12"	368	290
15"	450	290
19"	450	380

Key panels	W	H
12"	483	310
15"	483	355

Key panels	W+1	H+1
12"	450	290
15"	450	321*

* in addition: two 25 x 5 mm recesses on the top side of the keyboard, for slide-in label channels

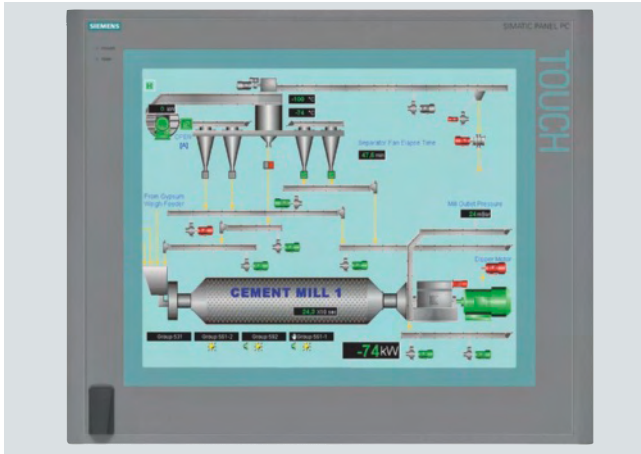
G_ST80_XX_00289

Installation cutout. All dimensions in mm.

More information

Additional information is available in the Internet under:
<http://www.siemens.com/simatic-panel-pc>

Overview



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
- Front panel versions:
 - 12", 15" and 19" TFT Touch
 - 12" and 15" TFT Keys
 - 15" TFT Touch INOX with stainless steel front for special requirements, e.g. in the food, beverages and tobacco industries
- The operator control unit and computing unit can be placed 30 m apart (optional).

Benefits

- Excellent industrial compatibility due to rugged construction, even when subjected to extreme vibration and shock
- High level of investment security thanks to assured spare parts availability of the components (for 5 years following the end of active marketing)
- Excellent continuity of components for machine concepts with a long service life without any new engineering costs
- Savings in time and costs due to service-friendly equipment construction:
 - Operator control unit and computer unit can be simply hinged open for fast replacement of components or for future expansion
 - USB 2.0 interfaces on the front and rear for quick and easy connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI or PROFINET interfaces (CP1616-compatible) and 2 GByte Ethernet interfaces
- Operational reliability
 - Using the optional direct control key module, the process can be operated without delay over PROFIBUS DP independently of the operating system
- 2 x ≥ 80 GByte SATA hard disk system (configured as a single disk system or RAID1)
- Reduction in standstill times thanks to high system availability
- Efficient self-diagnostics (SIMATIC IPC DiagMonitor):
 - Solutions for preventative data security
- Integral component of Totally Integrated Automation (TIA):
 - Enhanced productivity, reduction of engineering costs, reduction of lifecycle costs
 - Spatially separated configuration of computer and operator control unit possible with the Remote Kit (up to 30 m, optionally available as accessories)

Application

SIMATIC Panel PC 677B is designed for use directly at the machine. Due to the minimal mounting depth of only 105 / 130 mm, it can also be used in confined spaces.

The PC can be used in production automation as well as in process automation and can be mounted in control cabinets, control desks, 19" cabinets / racks and in gantries.

The Dual Core CPUs with Intel Core 2 Duo technology support simultaneously high performance control and visualization.

With PCIe (x4), the new PCI express (PCIe) cards (x1 and x4) are also supported.

The integrated NV-RAM (battery-backed) is supported from WinAC RTX 2005 SP2 and with DC power supply.

A SIMATIC Panel PC is the ideal platform for PC-based Automation:

- PC-based visualization on site at the machine with SIMATIC WinCC flexible
- Complex solutions with SIMATIC WinCC process visualization
- PC-based Control with SIMATIC WinAC Software PLC or with SIMATIC WinAC Slot PLC

Siemens offers the complete set of building blocks of automation components that are designed to interact perfectly.

The SIMATIC Panel PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a lower price (see SIMATIC HMI complete systems).

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC 677B

Design

The Panel PC 677B comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
 - Mobile Intel 945G chip set
 - Intel Celeron M 440 / 1.86 GHz or
 - Intel Core2Duo T5500 / Dual Core, 1.66 GHz or
 - Intel Core2Duo T7400 / Dual Core, 2.16 GHz
- Main memory basic configuration: 1 GByte
- 3.5" SATA hard disk: ≥ 160 GByte; the special vibration-absorbing hard disk support ensures reliable operation even under extreme mechanical stress
- Onboard graphics
- Interfaces:
 - 2 x 10 / 100 / 1000 MBit Ethernet
 - PROFIBUS DP / MPI on board, floating
 - PROFINET (IRT-capable), 3-port, switching-enabled, CP1616-compatible
 - 4 x USB 2.0 connection
 - 1 x serial V.24 (9-pin)
- Retentive memory:
 - 2 MByte NVRAM, can be used with WinAC RTX 128 KB (DC versions)
- Free slots for expansions:
 - 2 x PCI (slots with card retainer)
 - 1 x slot for Compact Flash Card
- Power supply: 110 / 230 V AC (autorange), 50 / 60 Hz or 24 V DC
- DVI-I interface for connecting a further monitor (DVI or VGA) or Flat Panel monitor

Optional additional components:

- Main memory expansion to 2, 3 or 4 GByte
- SATA hard disk ≥ 250 GByte
- Dual hard disk module 2 x ≥ 80 GByte SATA preconfigured as single disk configuration or RAID1
- Internal CF card slot (empty, instead of hard disk and optical drive; only with Windows XP embedded operating system)
- DVD±RW±R combo drive
- 1 x PCIe x 4 / 1 x PCI instead of 2 x PCI slots (with card retainers)
- Direct key module (for devices with key front)

Components of the operator control unit:

The operator control units are available in the following versions:

12" Key

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen

15" Key

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

15" Touch

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen

19" Touch

- 19.1" TFT color display, 1280 x 1024 pixels (SXGA)
- Resistive analog touch screen

The operator control units feature a USB 2.0 port on the front for connecting external peripheral devices, such as a mouse or keyboard. They fulfill the requirements of degree of protection IP65 and NEMA 4. All operator control units are also available without a USB port on the front.

The computer unit is connected via a connecting cable attached at the rear of the operator control unit.

Design (continued)

Expansion components

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog, BIOS battery
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (English / German)
- Network-wide monitoring via SNMP and OPC interface possible
- Integrated Web server for monitoring over the network using a Web browser

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up
- Software tool for adaptation of mass storage partitioning

SIMATIC IPC USB FlashDrive

- Mobile memory medium for SIMATIC PC / PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

SIMATIC IPC Service USB FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Ready-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

SINUMERIK Floppy drive 3.5", USB 1.1

The USB disk drive is provided for the high-speed exchange of user data, such as recipes, or files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

SIMATIC Panel PC Remote Kit

- Spatially separated configuration of computer and operator control unit
- At a maximum distance of up to 30 m
- Pure hardware solution, no need to install additional software
- Maintaining the Panel PC front functionality
- Additional USB interface on the rear
- Centralized and distributed configuration with only one basic unit
- Can be retrofitted

Industrial USB Hub 4

USB I/O can be connected and operated without opening the control cabinet door using the Industrial Hub 4.

- Industry-standard USB 2.0 Hub, Front IP65
- Mounting in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

Further information can be found under "Expansion components".

Function

- Integrated, parameterizable monitoring functions (program execution (watchdog), temperature inside housing, fan speed)
- Expanded diagnostics / alarms over Ethernet, by e-mail, as text message, and for direct infeed in SIMATIC software over OPC (optionally through SIMATIC IPC DiagMonitor)
- RAID1 for automatic data mirroring on two SATA hard disks

Integration

Integrated interfaces

- **Ethernet**
The integrated Ethernet interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages).
- **PROFIBUS**
The floating PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with software package "SOFTNET for PROFIBUS").
- **PROFINET**
The three (IRT-capable) PROFINET ports can be used to connect distributed I/O, SIMATIC S7 and drives. The switching-capable ports of the CP1616-compatible PROFINET option support linear and tree topologies (WinAC RTX Version 2008 and higher). Alternatively, the interface can be used as a standard Windows interface.
- **Further interfaces**
For connecting additional I/O devices, 2 spare slots are available for PCI modules or alternatively 1 x PCI and 1 x PCIe x4 modules, as well as a Compact Flash Card interface, 5 USB 2.0 interfaces (Universal Serial Bus) and one serial interface.

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC 677B

Technical specifications

SIMATIC Panel PC 677B	6AV7 87-.....-...0
Supply voltage	
Supply voltage	100 VAC / 240 VAC (autorange) 50 / 60 Hz; optional 24 VDC
Memory	
Main memory	1 GByte to 4 GByte
Data areas and their remanence	
Retentive data area in total (incl. times, counters, flags), max.	2 MByte battery-backed only DC power supply WinAC RTX 2005 SP1 or higher
Monitoring functions	
Status LEDs	Yes
Configuration	
SIMATIC software	Optionally in package with SIMATIC WinCC or WinCC flexible
Ambient conditions	
Vibration load in operation	Tested to DIN IEC 68-2-6: 10 to 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s ² (1 g)
Shock loading in operation	Tested to DIN IEC 68-2-29: 50 m/s ² (5g), 30 ms, 100 shocks
Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5% to 80% at 25 °C (no condensation)
Maximum permissible installation angle +/-	20°
Temperature	
• Ambient temperature in operation	12°, 15°: +5 °C to +50 °C in maximum configuration 15°, 19°: +5 °C to +45 °C in maximum configuration
Degree of protection	
Front to EN 60529	IP65 (at the front) acc. to EN60529 and tested acc. to NEMA4
Certifications & standards	
Approvals	CE, cULus (508)
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2

SIMATIC Panel PC 677B	6AV7 87-.....-...0
Interfaces	
Interfaces	
Spare slots for expansions	2 x PCI or 1 xPCI & 1 x PCIe x4 (slots with card retainer), 1 x slot for Compact Flash Card
• Graphics interface	DVI-I usable for additional display unit (VGA via adapter); color depth 32 bits, 8 to 128 MByte Shared Memory
• Connection for keyboard / mouse	USB / USB
• Serial interface	COM1: 1 x V.24 (RS232)
PROFIBUS / MPI	1
USB Interface	1 x at front, 4 x at rear, USB 2.0 (500 mA)
Industrial-Ethernet interface	onboard, 2 x 10 / 100 / 1000 Mbit/s, RJ45, no plug-in card necessary
Operating systems	
Operating system	Windows 2000 Prof. (Multi-Language), Windows XP Prof. (Multi-Language), Windows Vista Ultimate 32 bit, Windows Server 2003 Standard 32 bit (incl. 5 clients), Windows XP embedded (English) on CF card, opt. without operating system
Processor	
Processor	Intel Core 2 Duo technology; Intel Celeron M 440, 1.86 GHz, 533 MHz FSB, 1 MByte SLC; Core 2 Duo T5500, 1.66 GHz, 667 MHz FSB, 2 MByte SLC; Core 2 Duo T7400, 2.16 GHz, 667 MHz FSB, 4 MByte SLC
Drives	
Floppy drive	optional: via external USB floppy disk drive
Optical drives	Optional: DVD±R±RW combi drive; on rear, can be operated from side
Hard disk	3.5" SATA hard disk ≥ 80 GByte, optional ≥ 160 GByte, optional: 2 x 2.5" SATA hard disk module (≥ 80 GByte), RAID 1 controller onboard; all drives are vibration- damped

Technical specifications (continued)

SIMATIC Panel PC 677B	6AV7 870 12" Touch	6AV7 871 12" keyboard	6AV7 872 15" Touch	6AV7 873 15" keyboard	6AV7 875 19" Touch
Operator control and monitoring					
Accessory components	Touch protective foil, remote kit	Slide-in keyboard labels, direct key module, remote kit	Touch protective foil (not for Inox front), remote kit	Slide-in keyboard labels, direct key module, remote kit	Touch cover foils, remote kit, fixing elements for screw mounting at the front
General features					
Front panel	12" TFT Touch	12" TFT Key	15" TFT Touch	15" TFT Key	19" TFT touch display
Display					
Expansion components	Uninterruptible power supply (USP), SIMATIC NET communication modules	Uninterruptible power supply (USP), SIMATIC NET communication modules	Uninterruptible power supply (USP), SIMATIC NET communication modules	Uninterruptible power supply (USP), SIMATIC NET communication modules	Uninterruptible power supply (UPS), SIMATIC NET communication modules, DiagMonitor, ImagePartition Creator
Power loss in maximum configuration	140 W max. (15 W included per slot)	140 W max. (15 W included per slot)	140 W max. (15 W included per slot)	140 W max. (15 W included per slot)	163 W max. (15 W included per slot)
Screen diagonal	12"	12"	15"	15"	19"
Resolution (WxH in pixel)	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024
• MTBF backlighting (at 25 °C)	50000 h in 24 h permanent operation, temperature-dependent	50000 h in 24 h permanent operation, temperature-dependent	50000 h in 24 h permanent operation, temperature-dependent	50000 h in 24 h permanent operation, temperature-dependent	50000 h in 24 h permanent operation, temperature-dependent
Type of operation					
Function keys	No	36 with LEDs	No	36 with LEDs	No
Mouse, at front	No	Yes	No	Yes	No
• Alphanumeric keyboard	No	Yes	No	Yes	No
• Touch screen (analog / resistive)	Yes	No	Yes	No	Yes
Design					
Centralized configuration	Yes	Yes	Yes	Yes	Yes
Distributed configuration	Yes; by means of remote kit	Yes; by means of remote kit	Yes; by means of remote kit	Yes; by means of remote kit	Yes; by means of remote kit
Dimensions					
Mounting cutout / device depth (W x H)	368 x 290 / 144 (incl. optical drive)	450 x 290 / 126 (incl. optical drive)	450 x 290 / 142 (incl. optical drive)	450 x 321 / 145 (incl. optical drive)	450 x 380 / 151 (incl. optical drive)
Install. dimensions, centralized design (W x H x D without optical drive) in mm	368 x 290 x 123	450 x 290 x 105	450 x 290 x 121	450 x 321 x 124	450 x 380 x 130
additional mounting depth (optical drive)	21 mm	21 mm	21 mm	21 mm	21 mm
Operator control unit (W x H) in mm	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 355 (19", 8 HU)	483 x 400 (19", 9 HU)
Install. dimensions, operator panel with distributed design (W x H x D) in mm	368 x 290 x 87	450 x 290 x 69	450 x 290 x 85	450 x 321 x 89	450 x 380 x 94
Install. dimensions, computer unit with distributed design (W x H x D) in mm	298 x 301 x 100; (298 x 301 x 80 without CD)	298 x 301 x 100; (298 x 301 x 80 without CD)	298 x 301 x 100; (298 x 301 x 80 without CD)	298 x 301 x 100; (298 x 301 x 80 without CD)	298 x 301 x 100; (298 x 301 x 80 without CD)
Weight					
Weight					
• Panel PC in central design, approx.	13 kg	12 kg	14 kg	16 kg	17 kg

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC 677B

Ordering data

Order No.

Configuration

job-oriented
production and delivery

SIMATIC Panel PC 677B G **6AV7 87** ■ - ■ ■ ■ ■ ■ - ■ ■ ■ ■ **0**

Front panels

- 12" TFT Touch
- 12" TFT Key
- 15" TFT Touch
- 15" TFT Key
- 19" TFT Touch

0
1
2
3
5

Front options

- With front USB interface
- Without front USB interface
- INOX front, without front USB, with 15" TFT Touch only

0
1
2

Power supply

- 24 V DC
- 110 / 230 V AC, power cable for Europe
- 110 / 230 V AC (without power cable)
- 110 / 230 V AC, power cable for UK
- 110 / 230 V AC, power cable for CH
- 110 / 230 V AC, power cable for the USA
- 110 / 230 V AC, power cable for Italy
- 110 / 230 V AC, power cable for China

A
B
C
D
E
F
G
H

Processor

- Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MByte SLC, slots (spare): 2 x PCI
- Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI
- Intel Core2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MByte SLC, slots (spare): 2 x PCI
- Intel Core2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI
- Intel Core2 Duo T7400 / Dual Core, 2.16 GHz, 677 MHz FSB, 4 MByte SLC, slots (spare): 2 x PCI
- Intel Core2 Duo T7400 / Dual Core, 2.16 GHz, 677 MHz FSB, 4 MByte SLC, slots (spare): 1 x PCIe x4 and 1 x PCI

A
B
C
D
E
F

- ¹⁾ Multi-Language means: GER / E / F / I / SP / CHIN traditional / CHIN simplified / Korean / Japanese
- ²⁾ Not with internal second CF card slot
- ³⁾ Windows 2000 does not support dual core CPUs; under Windows 2000, only one core is activated.
- ⁴⁾ Only without RAID 1 option

Order No.

Configuration (continued)

SIMATIC Panel PC 677B G **6AV7 87** ■ - ■ ■ ■ ■ ■ - ■ ■ ■ ■ **0**

Main memory

- 1 GByte DDR2
- 2 GByte DDR2
- 3 GByte DDR2
- 4 GByte DDR2

2
3
4
5

Mass storage

- 160 GByte SATA hard disk
- 250 GByte SATA hard disk
- RAID1 dual hard disk module 2 x 80 GByte SATA, preconfigured
- Dual hard disk module 2 x 80 GByte SATA
- Second CF card slot (only in combination with Windows XP embedded), internal, not fitted, only with version without opt. drive and without HDD

0
1
2
3
4

Optical drives

- Without
- DVD±RW±R combo drive

0
1

Communication interfaces

- PROFIBUS / MPI; 2 x Gbit Ethernet, 2 MByte NVRAM
- PROFINET (3 x RJ45, CP1616-compatible); 2 x Gbit Ethernet, 513 KB NVRAM⁶⁾

A
B

Operating system

(preinstalled and activated)

- Without operating system²⁾
- Windows 2000 Professional Multi-Language¹⁾²⁾³⁾
- Windows XP Professional Multi-Language SP2 (SP3 included)¹⁾²⁾
- Windows Vista Ultimate Multi-Lang. (SP1 included.)²⁾
- Windows Server 2003 Standard Edition incl. 5 Clients⁷⁾ MUI⁵⁾, SP1 (SP2 included)
- Windows XP embedded (English)⁴⁾ on 2 GByte CF card

A
B
C
D
E
F

- ⁵⁾ Multi-language means: GER / E / F / I / SP; other languages only by downloading from Microsoft

- ⁶⁾ Not with Windows 2000 Professional or Windows 2003 Server

- ⁷⁾ Only with Core2 Duo CPUs, not with PROFINET option

G: Subject to export regulations: AL: N and ECCN: 5D992

Ordering data		Order No.	Order No.	
<i>Stock versions</i>			<i>Stock versions (continued)</i>	
SIMATIC Panel PC 677B, 12" TFT Touch	G	6AV7 870-0BC20-1AC0	SIMATIC Panel PC 677B, 15" TFT Key	G 6AV7 873-0BC20-1AC0
with Windows XP Prof. MUI (SP2) GER / E / F / I / SP / CHIN traditional / CHIN simplified Korean / Japanese			with Windows XP Prof. MUI (SP2) GER / E / F / I / SP / CHIN traditional / CHIN simplified Korean / Japanese	
<ul style="list-style-type: none"> • 110 / 230 V AC power supply • Core2 Duo T5500, 1,66 GHz, 2 x PCI • 1 GByte RAM, 160 GByte HDD • DVD±R±RW burner • PROFIBUS / MPI 			<ul style="list-style-type: none"> • 110 / 230 V AC power supply • Core2 Duo T5500, 1,66 GHz, 2 x PCI • 1 GByte RAM, 160 GByte HDD • DVD±R±RW burner • PROFIBUS / MPI 	
SIMATIC Panel PC 677B, 12" TFT Key	G	6AV7 871-0BC20-1AC0	SIMATIC Panel PC 677B, 19" TFT Touch	G 6AV7 875-0BC20-1AC0
with Windows XP Prof. MUI (SP2) GER / E / F / I / SP / CHIN traditional / CHIN simplified Korean / Japanese			with Windows XP Prof. MUI (SP2) GER / E / F / I / SP / CHIN traditional / CHIN simplified Korean / Japanese	
<ul style="list-style-type: none"> • 110 / 230 V AC power supply • Core2 Duo T5500, 1,66 GHz, 2 x PCI • 1 GByte RAM, 160 GByte HDD • DVD±R±RW burner • PROFIBUS / MPI 			<ul style="list-style-type: none"> • 110 / 230 V AC power supply • Core2 Duo T5500, 1,66 GHz, 2 x PCI • 1 GByte RAM, 160 GByte HDD • DVD±R±RW burner • PROFIBUS / MPI 	
SIMATIC Panel PC 677B, 15" TFT Touch	G	6AV7 872-0BC20-1AC0		
with Windows XP Prof. MUI (SP2) GER / E / F / I / SP / CHIN traditional / CHIN simplified Korean / Japanese				
<ul style="list-style-type: none"> • 110 / 230 V AC power supply • Core2 Duo T5500, 1,66 GHz, 2 x PCI • 1 GByte RAM, 160 GByte HDD • DVD±R±RW burner • PROFIBUS / MPI 				

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

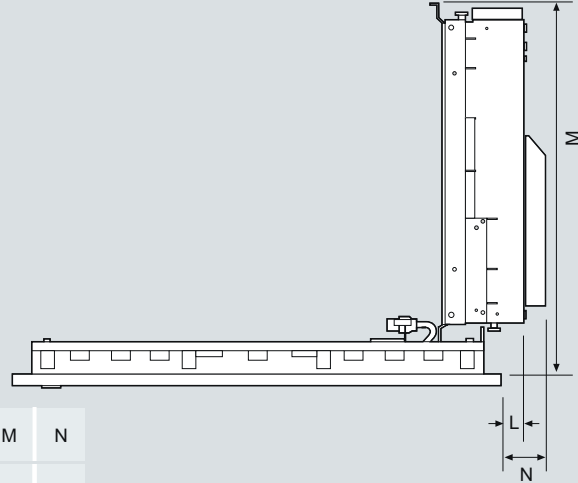
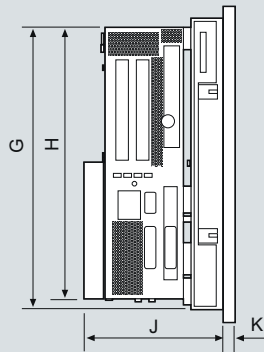
SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC 677B

Ordering data		Order No.	Order No.
Accessories			
Cover membrane for Panel PC 477 / 577 / 677 / Flat Panel			
Set of 10, for protecting the touch screen against dirt / scratches			
• for 15" Touch		6AV7 671-4BA00-0AA0	
Memory Expansion			
• 1 GByte DDR2	B	6ES7 648-2AG40-0HA0	
• 2 GByte DDR2	B	6ES7 648-2AG50-0HA0	
Direct control key module for Panel PC 677(B)	B	6AV7 671-7DA00-0AA0	
Option pack for direct control key module			
Transfer module for interface connection to 16 I/Os		6ES7 648-0AA00-0XA0	
Non-heating apparatus cable for SIMATIC Box and Panel PC			
SIMATIC PC power cable, 230 V AC, angled, 3 m, for:			
• Germany		6ES7 900-1AA00-0XA0	
• United Kingdom		6ES7 900-1BA00-0XA0	
• Switzerland		6ES7 900-1CA00-0XA0	
• USA		6ES7 900-1DA00-0XA0	
• Italy		6ES7 900-1EA00-0XA0	
• China		6ES7 900-1FA00-0XA0	
Touch pen	B	6AV7 672-1JB00-0AA0	
Captive pen for operation of the touch devices, mounting of the support on the control cabinet			
Expansion components			
SIMATIC IPC DiagMonitor V4.2	A	6ES7 648-6CA04-2YX0	
Software tool for monitoring SIMATIC IPCs, incl. manual, on CD-ROM (German / English)			
SIMATIC IPC Image & Partition Creator V3.1	G	6ES7 648-6AA03-1YA0	
Software tool for preventive data backup and hard disk partitioning for SIMATIC IPCs, incl. manual on CD-ROM (German, English)			
Expansion components (continued)			
SIMATIC IPC USB FlashDrive	B	6ES7 648-0DC40-0AA0	
2 GByte, USB 2.0; metal enclosure, bootable			
SIMATIC IPC Service USB FlashDrive	C	6AV7 672-8JD00-0AA0	
2 GByte, USB 2.0; metal enclosure, bootable			
SINUMERIK Floppy drive 3,5", USB 1.1		6FC5 235-0AA05-1AA2	
With 1 m connecting cable			
SIMATIC Panel PC Remote Kit			
for the separate configuration of control unit and PC			
• 24 V DC, 5 m	B	6AV7 671-1EA00-5AA1	
• 24 V DC, 10 m	B	6AV7 671-1EA01-0AA1	
• 24 V DC, 15 m	B	6AV7 671-1EA01-5AA1	
• 24 V DC, 20 m	B	6AV7 671-1EA02-0AA1	
• 24 V DC, 30 m	B	6AV7 671-1EA03-0AA1	
• 110 / 230 V AC, 5 m	B	6AV7 671-1EA10-5AA1	
• 110 / 230 V AC, 10 m	B	6AV7 671-1EA11-0AA1	
• 110 / 230 V AC, 15 m	B	6AV7 671-1EA11-5AA1	
• 110 / 230 V AC, 20 m	B	6AV7 671-1EA12-0AA1	
• 110 / 230 V AC, 30 m	B	6AV7 671-1EA13-0AA1	
Industrial USB Hub 4	B	6AV6 671-3AH00-0AX0	
4 x USB 2.0 interfaces, IP65 for mounting on control cabinet door or DIN rail			
Uninterruptible power supplies			
SITOP Power, 15 A DC UPS module with USB interface		6EP1 931-2EC42	
with charger unit for 24 V lead battery, input 24 V DC / 16 A, output 24 V DC / 15 A			
SITOP Power, battery module 24 V / 3.2 Ah		6EP1 935-6MD11	
for DC UPS module 15 A			
Communication components			
PCI interface card	B	6ES7 648-2CA01-0AA0	
With COM1, COM2 and LPT interfaces			

A: Subject to export regulations: AL: N und ECCN: EAR99S
 B: Subject to export regulations: AL: N und ECCN: EAR99H
 C: Subject to export regulations: AL: N und ECCN: EAR99T
 G: Subject to export regulations: AL: N und ECCN: 5D992

Dimensions

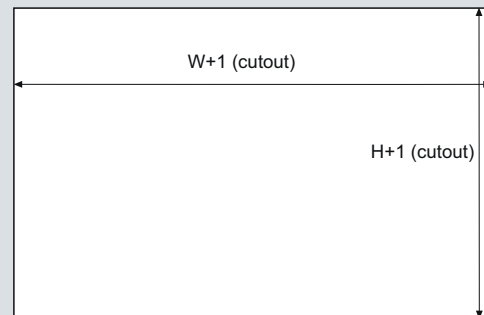


Operator panels PC 677	G	H	J	K	L	M	N
Touch panels							
12"	289	271	141	11	53	369	71
15"	289	271	138	11	24	367	42
19"	378	271	147	11	18	376	36
Key panels							
12"	289	271	122	11	42	351	59
15"	324	271	141	11	31	370	48

All dimensions without screw protrusions

G_ST80_XX_00288

Operating unit and complete unit. All dimensions in mm.



Front dimensions	W	H
Touch panels		
12"	400	310
15"	483	310
19"	483	400

Installation cutout	W+1	H+1
Touch panels		
12"	368	290
15"	450	290
19"	450	380

Key panels	W	H
12"	483	310
15"	483	355

Key panels	W+1	H+1
12"	450	290
15"	450	321*

* in addition: two 25 x 5 mm recesses on the top side of the keyboard, for slide-in label channels

G_ST80_XX_00289

Installation cutout. All dimensions in mm.

PC-based Automation

SIMATIC HMI IPC / Panel PC

SIMATIC Panel PC 677B

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-panel-pc>

Overview



Siemens has developed a wide range of matched hardware and software components for PC-based automation.

Focal point: *SIMATIC PC-based Control* with SIMATIC WinAC, the open, flexible and reliable control 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 control 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.

Application

SIMATIC WinAC is optimized for the following tasks:

- Compact design:
Data processing, communication, visualization, technology and control must be integrated on one PC for space and performance reasons.
- Openness:
High-performance integration into the data processing is required.
- Technology:
Specific technological tasks must be executed in close corporation with the control functions.
- Flexibility:
The task requires the integration of special hardware or software modules.

SIMATIC WinAC is provided for this purpose with open and powerful interfaces. SIMATIC WinAC is therefore the ideal platform for tailored automation solutions.

Additional information is available in the Internet under:

<http://www.siemens.com/pc-based-automation>

PC-based Automation

PC-based Controller

SIMATIC PC-based Controller

Function

Interfacing to the process

SIMATIC WinAC software PLCs support access to the process I/O via PROFIBUS DP and PROFINET IO. The PROFIBUS or PROFINET interface modules from the SIMATIC NET product range and the integrated interfaces of the SIMATIC PC are used for this purpose.

Technological tasks

There are various ways of solving technological tasks with WinAC:

SIMATIC Runtime Software – this includes for example *Standard PID Control* or *Easy Motion Control* – provides a series of libraries for technological functions, which are directly processed by SIMATIC WinAC.

- SIMATIC function modules such as FM 350 or FM 351 can be used simultaneously in an ET200M station on PROFIBUS or PROFINET.
- An open integration of specific technological tasks can be achieved by means of the WinAC ODK for the SIMATIC WinAC software and slot PLCs.
- The isochronous mode via PROFIBUS DP of WinAC RTX and WinAC Slot allows for exactly reproducible response times and is the basis for precise and fast control applications.

Communication

SIMATIC WinAC supports SIMATIC communication both locally on the same PC and over the SIMATIC networks PROFIBUS and Industrial Ethernet / PROFINET. The following communication connections are possible:

- Programming and commissioning by means of STEP 7 both locally and remotely from a PG / PC
- Visualization with WinCC or WinCC flexible either locally or over a network
- Communication with other WinAC or S7 systems
- Open communication (TCP/UDP) via the PROFINET interface
- PROFINET CBA

Interfacing to visualization

The SIMATIC HMI products WinCC flexible and WinCC have full access to all data and functions of SIMATIC WinAC in accordance with the demands placed on Totally Integrated Automation. They can be operated both locally on the same PC as SIMATIC WinAC and remotely over the supported networks.

Even the SIMATIC Touch and Operator Panels cooperate with SIMATIC WinAC without any restrictions. In this case the access via the PROFIBUS DP or PROFINET IO interface of the SIMATIC WinAC is particularly useful, as this enables the devices to be operated "on site" with minimum wiring outlay.

The SIMATIC NET OPC-Server, which is included in the delivery of WinAC, alternatively allows access to process data through commercially available visualization systems.

Access to process data

The SIMATIC NET OPC server offers an open access to process data through any OPC client application.

In addition, access to process data from standard Windows applications such as Excel or Access can be carried out simply via the OPC Data Access Automation Interface.

Programming

SIMATIC Software

The PC-based controller is programmed and configured with STEP 7 and the SIMATIC engineering tools for production engineering. For this purpose, all SIMATIC programming languages are also available for WinAC.

The SIMATIC programming languages fulfill the DIN EN 6.1131-3 standard. This minimizes the familiarization and training time.

In addition, the program modules which were programmed for SIMATIC S7 controllers can be reused in WinAC.

STEP 7 for all aspects of the control task:

- Configuring of control and communication:
All characteristics of the PC-based control and the interplay with additional SIMATIC components are handled by STEP 7. All configuring data are centrally and consistently stored at a single location.
- A complete spectrum of programming languages:
STEP 7 and the STEP 7 engineering tools offer a wide spectrum of programming languages for all aspects of control tasks.
- Local and remote programming:
The complete network connection of SIMATIC STEP 7 allows for both the local programming of WinAC on the same PC and the remote programming over LAN or WAN.
- Efficient debugging:
STEP 7 offers efficient support for the testing and commissioning of the control programs. This includes for example online modification of programs, the display and control of variables or single-step processing.

SIMATIC iMap

The actual control functionality of the PC-based controller is programmed using STEP 7.
The interconnection of system components and machine which was generated with WinAC RTX and PROFINET CBA, is implemented with the open tool SIMATIC iMap.

More information

Brochures

Information material can be downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

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

- Windows 7
- Isochronous mode with PROFINET IO
- Web Server
- PROFINET Shared Device
- PROFINET IP Config
- PROFINET Media redundancy

Benefits

- Hard real time and maximum performance
- Implementation of fast, S7-compatible control solutions with low processor loading.
Alongside the control task, sufficient processor capability is available for processing complex, demanding PC applications in parallel.

Application

SIMATIC WinAC RTX is particularly suited to tasks that demand a high degree of flexibility and efficient integration in the overall task. This comprises close interlinking with data processing and logistics systems as well as interfacing with technology tasks such as motion control or vision systems.

SIMATIC WinAC RTX is equally suited to implementation on cost-effective PC platforms with single-core processors and on high-end PCs, e.g. with QuadCore processors. WinAC RTX is optimized for operation on embedded PC platforms such as the S7-modular Embedded Controller, the SIMATIC IPC427C, or the SIMATIC HMI IPC477C.

These platforms feature, with their diskless and fanless design, significantly enhanced ruggedness for an automation task. Non-volatile memory is also available which permits storage of up to 512 KB retentive data (S7-mEX, EC31) on a voltage dip, independently of the file system. The I/O is connected via the leading fieldbus standards of PROFINET or PROFIBUS. With the S7-mEC, EC31, operation is also possible in conjunction with centralized signal modules (SM) of S7-300. The support of the integral PROFINET or PROFIBUS interfaces of the SIMATIC PCs as well as the excellent performance result in an excellent price / performance ratio for PC-based automation.

The *WinAC ODK* is used for expansion of the PLC functionality with application specific C/C++ applications.

It supports:

- Integration of complex high-level language algorithms in the control program
- Access to the Windows API or Windows system resources
- Access to external HW and software components

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX

Design

SIMATIC WinAC RTX comprises the following components:

- Windows Logic Controller (WinLC RTX V4.5)
- WinAC TimeSynchronization
- SIMATIC NET SOFTNET-S7 Lean 2008 incl. SIMATIC NET OPC
- Real-time driver for PROFINET and PROFIBUS interfaces
- IntervalZero RTX real-time core for ensuring real-time and a deterministic response

Optional:

- Interfaces for connection to PROFIBUS DP:
 - CP 5611 or the integral PROFIBUS interface of the SIMATIC PC
 - CP 5621
 - CP 5613 A2
 - CP 5603
- Interfaces for connection to PROFINET
 - CP 1616 (HW version 8 and above) or integral CP 1616 onboard interface of the SIMATIC PC
 - CP 1604 (HW version 7 and above)
 - Integrated standard Ethernet interfaces of selected SIMATIC PCs (e.g. SIMATIC IPC427C and HMI IPC477C)
- Storage of retentive data independently of the file system:
 - SIMATIC WinAC NV128 for SIMATIC PC without integral, non-volatile memory
- WinAC Open Development Kit (ODK):
 - For integrating C/C++ code in WinAC RTX
 - Integration of external software (technology programs) or PC components (e.g. barcode scanner, PC cards for measured value acquisition)

Function

Windows Logic Controller (WinLC RTX)

The Windows Logic Controller handles the actual control task and execution of the control program. It coordinates the associated input and output of process values via the lower-level PROFINET or PROFIBUS fieldbus system and makes the process values available for visualization and data processing tasks.

Several processing levels are available for optimum process control:

- Cyclic program processing
- Interrupt processing
- Time and date-controlled processing
- Isochronous processing level of PROFIBUS and PROFINET

Retentivity

WinAC RTX saves all data that has been declared as retentive on the hard disk upon exiting. An uninterruptible power supply (e.g. SITOP DC UPS) can be used to ensure a defined termination of the WinAC Software PLC even in the case of an unexpected drop in the PC power supply.

Alternatively, storage of retentive data on the integral, battery-backed SRAM memory of the SIMATIC PC (for example, SIMATIC IPC427C or SIMATIC Panel PC 677B with DC power supply) can also be selected so that up to 128 KB of data can be stored retentively on voltage failure. For operation on SIMATIC S7-mEC, EC31, as much as 512 KB of retentive data can be stored on the integral, non-volatile memory. A UPS is not necessary in this case. It is, however, recommended that a UPS is used when supplementary applications such as visualization or data processing demand saving of the current data in the event of voltage failure. For SIMATIC PCs without integral, non-volatile memory, the WinAC NV28 plug-in card is available for storing retentive data. Depending on the version of the PC, it may be necessary to use a UPS.

OPC server

The SIMATIC NET OPC server supplied with WinAC provides open access to all process values. Visualization systems or data processing systems can be linked to WinAC via this interface.

Interface to visualization

SIMATIC WinAC RTX is easy to use with the SIMATIC HMI systems SIMATIC WinCC flexible or SIMATIC WinCC.

Visualization systems from third-party suppliers can be connected via the included SIMATIC NET OPC server.

Communication

The programming of the Windows Logic Controller with STEP 7 and also the visualization with SIMATIC HMI can be implemented both locally in the same PC and remotely using the standard SIMATIC networks Ethernet or PROFIBUS.

WinAC RTX can exchange data with WinAC stations or with S7 controllers over these networks. The new feature of WinAC RTX 2008 is the Open User Communication over the PROFINET interface, which supports communication with any peers over the open TCP and UDP protocols.

A SOFTNET S7 Lean license is included for communication over Industrial Ethernet by means of the integral Ethernet interfaces of the SIMATIC PC.

Technical specifications

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
Product version	
Hardware product version	-
Firmware version	4.6
associated programming package	STEP7 V5.5 SP4 or higher + HW update / iMap V3.0 SP1
Memory	
Working memory	
• integrated (for program)	4 MByte; Adjustable; depends on Non Paged Memory Pool
• integrated (for data)	4 MByte; Adjustable; depends on Non Paged Memory Pool
Load memory	
• integrated RAM, max.	Adjustable; depends on Non Paged Memory Pool
CPU / blocks	
DB	
• Number, max.	65 535; Limited only by RAM set for data
• Size, max.	64 KByte
FB	
• Number, max.	65 536; Limited only by RAM set for code
• Size, max.	64 KByte
FC	
• Number, max.	65 536; Limited only by RAM set for code
• Size, max.	64 KByte
OB	
• Number, max.	Limited only by RAM set for code
• Size, max.	64 KByte
• Number of free cycle OBs	1; OB 1
• Number of time alarm OBs	1; OB 10
• Number of delay alarm OBs	1; OB 20
• Number of time alarm OBs	9; OB 30 -38
• Number of process alarm OBs	1; OB 40
• Number of ODK OBs	3; OB 52-54
• Number of DPV1 alarm OBs	3; OB 55-57
• Number isochronous mode OBs	2; OB 61-62
• Number of startup OBs	2; OB 100, 102
• Number of asynchronous error OBs	7; OB 80, 82-85, 86, 88
• Number of synchronous error OBs	2; OB 121, 122

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
CPU / blocks (continued)	
Nesting depth	
• per priority class	24
• additional within an error OB	24
CPU processing times	
for bit operations, min.	0,004 µs; typ.
for fixed point arithmetic, min.	0,003 µs; typ.
for floating point arithmetic, min.	0,004 µs; typ.
Reference platform	Pentium IV, 2,4 GHz
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
• Retentivity	
- can be set	Yes
- lower limit	0
- upper limit	2 047
- preset	8
• Counting range	
- can be set	Yes
- lower limit	0
- upper limit	999
IEC counter	
• Available	Yes
• Type	SFB
S7 times	
• Number	2 048
• Retentivity	
- can be set	Yes
- lower limit	0
- upper limit	2 047
- preset	0
• Time range	
- lower limit	10 ms
- upper limit	9 990 s
IEC timer	
• Available	Yes
• Type	SFB

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX

Technical specifications (continued)

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
Data areas and their remanence	
Retentivity without UPS and PS Extension Board	128 KB with SIMATIC IPC427C and HMI IPC477C; further SIMATIC PCs on request
Retentivity with UPS	all data
Flag	
• Number, max.	16 KByte
• of which retentive	MByte 0 to MByte 16383
• Retentivity preset	MByte 0 to MByte 15
• Number of clock memories	8
Local data	
• can be set, max.	32 KByte
• preset	16 KByte
• per priority class, max.	32 KByte
Address area	
I/O address area	
• overall	16 KByte
• Outputs	16 KByte
• of which, distributed	
- DP interface, inputs	16 KByte
- DP interface, outputs	16 KByte
- PN interface, inputs	16 KByte
- PN interface, outputs	16 KByte
Process image	
• Inputs, adjustable	8 KByte
• Outputs, adjustable	8 KByte
• Inputs, default	512 byte
• Outputs, default	512 byte
Subprocess images	
• Number of subprocess images, max.	15
Digital channels	
• Inputs	128 000
• Outputs	128 000
Analog channels	
• Inputs	8 000
• Outputs	8 000

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
Hardware configuration	
Submodules	
• Number of submodules, max	4
• of which PROFIBUS, max.	4; Supported interfaces: see 1st and 2nd interface
• of which Industrial Ethernet max.	1; Supported interfaces: see 3rd and 4th interface
Number of operable FMs and CPs (recommended)	
• FM	FM distributed: FM 350-1 / 350-2, FM 351, FM 352, FM 353, FM 355 / 355-2
• CP, point-to-point	2; CP 340, CP 341 distributed
• CP, LAN	Over PC CP
Time of day	
Clock	
• Hardware clock (real-time clock)	Yes
• battery-backed and synchronizable	Yes
Runtime meter	
• Number	8
Clock synchronization	
• supported	Yes
• to PC-CP, slave	Yes
• on Ethernet via NTP	Yes
S7 message functions	
Number of login stations for message functions, max.	62
SCAN procedure	No
Process diagnostic messages	Yes; ALARM_S, ALARM_SQ, ALARM_D, ALARM_DQ
simultaneously active Alarm-S blocks, max.	20; of a total of 20 for all SFCs
Alarm 8-blocks	Yes
• Number of instances for alarm 8 and S7 communication blocks, max.	4 000
Process control messages	No

Technical specifications (continued)

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
Test commissioning functions	
Status / control	
• Status / control variable	Yes
Forcing	
• Forcing	No
Status block	Yes
Single step	Yes
Diagnostic buffer	
• Available	Yes
• Number of entries, max.	3 200
- preset	120
Communication functions	
PG / OP communication	Yes
Data record routing	No
Global data communication	
• supported	No
S7 basic communication	
• supported	No
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	64 KByte; Depends on which block is used: BSEND / USEND or PUT / GET
Web server	
• supported	No
Open IE communication	
• TCP/IP	Yes
- Number of connections, max.	Dependent on interface
- Data length, max.	65 534 byte
• ISO-on-TCP (RFC1006)	No
• UDP	Yes
- Number of connections, max.	Dependent on interface
- Data length, max.	1 472 byte
Number of connections	
• overall	96
• usable for PG communication	
- reserved for PG communication	1
• usable for OP communication	
- reserved for OP communication	1

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
Communication functions (continued)	
PROFINET CBA (at set setpoint communication load)	
• Setpoint for the CPU communication load	20 %
• Number of remote interconnection partners	64
• Number of functions, master / slave	30
• Total of all Master / Slave connections	1 000
• Data length of all incoming connections master / slave, max.	6 800 byte
• Data length of all outgoing connections master / slave, max.	6 800 byte
• Number of device-internal and PROFIBUS interconnections	500
• Data length of device-internal and PROFIBUS interconnections, max.	4 000 byte
• Data length per connection, max.	1 400 byte
• Remote interconnections with acyclic transmission	
- Sampling frequency: Sampling time, min.	500 ms
- Number of incoming interconnections	100
- Number of outgoing interconnections	100
- Data length of all incoming interconnections, max.	2 000 byte
- Data length of all outgoing interconnections, max.	2 000 byte
- Data length per connection, max.	1 400 byte
• Remote interconnections with cyclic transmission	
- Transmission frequency: Transmission interval, min.	10 ms
- Number of incoming interconnections	200
- Number of outgoing interconnections	200
- Data length of all incoming interconnections, max.	4 800 byte
- Data length of all outgoing interconnections, max.	4 800 byte
- Data length per connection, max.	250 byte

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX

Technical specifications (continued)

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
<ul style="list-style-type: none"> HMI variables via PROFINET (acyclic) <ul style="list-style-type: none"> Number of stations that can log on for HMI variables (PN OPC / iMap) HMI variable updating Number of HMI variables Data length of all HMI variables, max. PROFIBUS proxy functionality <ul style="list-style-type: none"> supported Number of linked PROFIBUS devices Data length per connection, max. 	3 500 ms 200 2 000 byte Yes 16 240 byte; Slave-dependent
1st interface	
Type of interface	CP 5611-A2, CP 5621, integrated PB interface of the SIMATIC PC
Max. no. of simultaneously operable CPs	1
Physics	RS 485 / PROFIBUS
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	Not available
Functionality	
<ul style="list-style-type: none"> MPI DP master DP slave 	No Yes No
DP master	
<ul style="list-style-type: none"> Number of connections, max. Services <ul style="list-style-type: none"> PG / OP communication Routing Global data communication S7 basic communication S7 communication Equidistance mode support Services (continued) <ul style="list-style-type: none"> Isochronous mode SYNC / FREEZE Activation / deactivation of DP slaves Direct data exchange (slave-to-slave communication) DPV0 DPV1 Transmission rate, max. Number of DP slaves, max. 	8 Yes Yes No No Yes Yes; Only in conjunction with isochronous mode Yes Yes Yes Yes Yes Yes 12 Mbit/s 64

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
1st interface (continued)	
<ul style="list-style-type: none"> Address area <ul style="list-style-type: none"> Inputs, max. Outputs, max. User data per DP slave <ul style="list-style-type: none"> Inputs, max. Outputs, max. 	16 KByte 16 KByte 244 byte 244 byte
2nd interface	
Type of interface	CP 5613, CP 5613-A2, CP 5603, CP 5623
Max. no. of simultaneously operable CPs	4
Physics	RS 485 / PROFIBUS
Isolated	Yes
Functionality	
<ul style="list-style-type: none"> MPI DP master DP slave 	No Yes No
DP master	
<ul style="list-style-type: none"> Number of connections, max. Services <ul style="list-style-type: none"> PG / OP communication Routing Global data communication S7 basic communication S7 communication Equidistance mode support Isochronous mode SYNC / FREEZE Activation / deactivation of DP slaves Direct data exchange (slave-to-slave communication) DPV0 DPV1 Transmission rate, max. Number of DP slaves, max. Address area <ul style="list-style-type: none"> Inputs, max. Outputs, max. User data per DP slave <ul style="list-style-type: none"> Inputs, max. Outputs, max. 	50 Yes Yes No No Yes Yes; Only in conjunction with isochronous mode Yes Yes Yes Yes Yes Yes 12 Mbit/s 125 16 KByte 16 KByte 244 byte 244 byte

Technical specifications (continued)

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
3rd interface	
Type of interface	PROFINET
Max. no. of simultaneously operable CPs	1; Intel Pro / 1000 (Intel 82571EB, 82573L, 82574L, 82541PI; non shared IRQ required); integrated IE interface SIMATIC PC 4 x7B, 6 x7B, 8 x7B and IPC4 x7C
Physics	Ethernet
Isolated	Yes
automatic detection of transmission speed	Yes; 10 / 100 Mbit/s
Functionality	
• PROFINET IO-Controller	Yes
• PROFINET IO-Device	No
• PROFINET CBA	Yes
• Open IE communication	Yes
• Web server	No
PROFINET IO-Controller	
• Services	
- PG / OP communication	Yes
- Routing	Yes; S7 routing
- S7 communication	Yes
- Open IE communication	Yes
• Transmission rate, min.	100 Mbit/s
• Transmission rate, max.	100 Mbit/s
• Total number of connectable IO Devices, max.	128
• IRT, supported	No
• Prioritized startup supported	Yes
- Number of IO Devices, max.	32
• Activation / deactivation of IO Devices	Yes
- Number of IO Devices that can be simultaneously activated / deactivated, max.	8
• IO Devices changing during operation (partner ports), supported	Yes
• Device replacement without swap medium	Yes
• Send clock times	1 ms
• Updating time	1 - 512 ms (minimum value depends on communication share set for PROFINET I/O, on the number of I/O devices, and on the volume of configured user data)
• Address area	
- Inputs, max.	16 KByte
- Outputs, max.	16 KByte
• User data per address area, max.	2 KByte
- User data consistency, max.	256 byte

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
3rd interface(continued)	
SIMATIC communication	
• PG / OP communication	Yes
• S7 routing	Yes
• S7 communication	Yes
• Number of connections, max.	16
Open IE communication	
• Open IE communication, supported	Yes
• Number of connections, max.	32
• Local port numbers used at the system end	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
4th interface	
Type of interface	PROFINET
Max. no. of simultaneously operable CPs	1; CP 1616 (HW release 8 or above), CP 1604 (HW release 7 or higher), integrated PN interface of SIMATIC PC and S7-mEC
Physics	Ethernet
Isolated	Yes
automatic detection of transmission speed	Yes; 10 / 100 Mbit/s
Functionality	
• PROFINET IO-Controller	Yes
• PROFINET CBA	Yes
• Open IE communication	Yes
• Web server	No
PROFINET IO-Controller	
• Services	
- PG / OP communication	Yes
- Routing	Yes; S7 routing
- S7 communication	Yes
- Open IE communication	Yes
• Transmission rate, min.	100 Mbit/s
• Transmission rate, max.	100 Mbit/s
• Number of connectable IO devices, max.	256
• Number of IO Devices with IRT and the option "high flexibility", max.	64
- of which in line, max..	32
• IRT, supported	Yes
• Prioritized startup supported	Yes
- Number of IO Devices, max.	32
• Activation / deactivation of IO Devices	Yes
- Number of IO Devices that can be simultaneously activated / deactivated, max.	8

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX

Technical specifications (continued)

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
PROFINET IO-Controller (continued)	
• IO Devices changing during operation (partner ports), supported	Yes
• Device replacement without swap medium	Yes
• Send clock times	250 µs, 500 µs, 1 ms
• Updating time	0.25...512 depending on the send cycle
• Address area	
- Inputs, max.	16 KByte
- Outputs, max.	16 KByte
• User data per address area, max.	2 KByte
- User data consistency, max.	256 byte
SIMATIC communication	
• PG / OP communication	Yes
• S7 routing	Yes
• S7 communication	Yes
• Number of connections, max.	32
Open IE communication	
• Open IE communication, supported	Yes
• Number of connections, max.	32
• Local port numbers used at the system end	0, 20, 21, 25, 80, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Isochronous mode	
Isochronous mode	Yes
Number of DP masters with isochronous mode	2
User data per isochronous slave, max.	128 byte
equidistance	Yes
shortest clock pulse	2.2 ms; 2.2 ms without partial process image; 2.2 ms with partial process image
CPU / programming	
Programming language	
• STEP 7	Yes; V5.5 or higher, Engineering Tools (optional)
• KOP	Yes
• FUP	Yes
• AWL	Yes
• SCL	Yes
• CFC	Yes
• GRAPH	Yes
• HiGraph®	Yes
Nesting levels	8

SIMATIC WinAC RTX 2009	6ES7 671-0RC07-0YA0
CPU / Programming (continued)	
Know-how protection	Yes
Software libraries	
• Easy Motion Control	Yes
Open Development interfaces	
• CCX (Custom Code Extension)	Yes; WinAC ODK V4.2 or higher
• SMX (Shared Memory Extension)	Yes; WinAC ODK V4.2 or higher
- Inputs	4 KByte
- Outputs	4 KByte
• CMI (Controller Management Interface)	Yes; WinAC ODK V4.2 or higher
Number of simultaneously active SFCs	
• DPSYC_FR	20; of a total of 20 for all SFCs
• D_ACT_DP	20; of a total of 20 for all SFCs
• RD_REC	20; of a total of 20 for all SFCs
• WR_REC	20; of a total of 20 for all SFCs
• WR_PARM	20; of a total of 20 for all SFCs
• PARM_MOD	20; of a total of 20 for all SFCs
• WR_DPARM	20; of a total of 20 for all SFCs
• DPNRM_DG	20; of a total of 20 for all SFCs
• RDSYSST	20; of a total of 20 for all SFCs
Number of simultaneously active SFBs	
• RD_REC	20; of a total of 20 for all SFBs
• WR_REC	20; of a total of 20 for all SFBs
Hardware required	PC with color monitor, keyboard, mouse or pointing device for Windows
Required memory on hard disk, min.	100 MByte
Main memory, min.	1 GByte
Processor	Intel Celeron M, 900 MHz or compatible
• Multi-processor system	Yes; Dual Pentium, CoreDuo, Core2Duo or compatible
• Hyper-threading	Yes
Operating system	
Operating system	
• Windows NT 4.0	No
• Windows 2000	No
• Windows XP	Yes; Professional, SP2 and SP3
• Windows XP embedded	Yes; With the delivery image of the SIMATIC PC
• Windows Vista	No
• Windows 7	Yes
Weight	
• Weight, approx.	100 g; with packaging

Ordering data		Order No.		Order No.
SIMATIC WinAC RTX 2010	A	6ES7 671-0RC08-0YA0		
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				
SIMATIC WinAC RTX 2009 Upgrade	A	6ES7 671-0RC08-0YE0		
For upgrading from Basis / RTX V3.x, V4.0, V4.1 2005 and 2008; single license, executable under Windows XP SP2				
CP 5611 A2 communications processor		6GK1 561-1AA01		
PC plug-in card with non-volatile memory for the storage of up to 128 KB of retentive data in the event of voltage failure				
CP 5621 communications processor				
• PCI Express x1 card (32 bit) f or connection of a programming device or PC to PROFIBUS	H	6GK1 562-1AA00		
• PCI Express x1 card (32 bit) CP 5621 and MPI cable, 5 m	H	6GK1 562-1AM00		
CP 5603 Microbox Package	B	6GK1 560-3AU00		
Comprising CP 5603 module and Microbox expansion rack				
			CP 5613 A2 communications processor	6GK1 561-3AA01
			PCI card (32 bit; 3.3 V / 5 V) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32 bit Windows 2000 Professional / Server, Windows XP Professional, German / English	
			CP 1616 communications processor	6GK1 562-3AA00
			PCI card (32 bit; 3.3 V / 5 V) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master or DP Slave, incl. PG and FDL protocol; 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	6GK1 161-6AA01
			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	
			CP 1604 Microbox Package	6GK1 160-4AU00
			Package for implementing the CP 1604 in the SIMATIC Microbox PC; comprising the CP 1604, connection board, power supply and expansion rack for Microbox PC; for use with Development Kit DK-16 xx PN IO; NCM PC	

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX

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

Brochures

Information material can be downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

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

PC-based Automation

PC-based Controller

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 PROFI-safe.

Benefits

- Hard real-time and maximum performance up to SIL 3 according to IEC 61508/62061 or according to EN ISO 13849-1 up to PL e
- Implementation of fast, S7-compatible control solutions with low processor loading.
Alongside the control task, sufficient processor capability is available for processing complex, demanding PC applications in parallel.

Application

WinAC RTX F

is a fail-safe software controller approved by the German Technical Inspectorate for standard and safety-related applications. The STEP 7 option package "S7 Distributed Safety" is used for programming the safety-related (F) program part. SIMATIC WinAC RTX F is particularly suited to tasks requiring a high level of flexibility and effective integration in the overall solution. This also includes close interlinking with data processing systems or logistics systems and integration in the safety control.

WinAC RTX F

is equally suited to implementation on cost-effective PC platforms with single-core processors and on high-end PCs, e.g. with QuadCore processors. WinAC RTX F is optimized for operation on embedded PC platforms such as the S7-modular Embedded Controller, the SIMATIC IPC427C or the SIMATIC HMI IPC477C. These platforms offer, with their diskless and fanless design, significantly enhanced ruggedness for an automation task. Non-volatile memory is also available which permits storage of up to 512 KB retentive data (S7-mEX, EC31) on a voltage dip, independently of the file system. The I/O is connected via the leading fieldbus standards of PROFINET or PROFIBUS. With the S7-mEC, EC31, operation is also possible with the central signal modules (SM) of S7-300. The support of the integral PROFINET or PROFIBUS interfaces of the SIMATIC IPCs, as well as the excellent performance result in an excellent price / performance ratio for the PC-based automation.

WinAC ODK

is used for expansion of the PLC functionality with application specific C/C++ applications. In the standard program part, it supports:

- Integration of complex high-level language algorithms in the control program
- Access to the Windows API or Windows system resources
- Access to external HW and software components

Read-only access is permitted in the safety program part.

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX F

Design

SIMATIC WinAC RTX F comprises the following components:

- Windows Failsafe Logic Controller (WinLC RTX F V4.5)
- WinAC TimeSynchronization
- SIMATIC NET SOFTNET-S7 Lean 2008
- Real-time driver for PROFINET and PROFIBUS interfaces
- IntervalZero RTX V8.1 real-time core for ensuring real-time and a deterministic response

Optional:

- Interfaces for connection to PROFIBUS DP:
 - CP 5611 or the integral PROFIBUS interface of the SIMATIC IPC
 - CP 5621
 - CP 5613 A2
 - CP 5603
- Interfaces for connection to PROFINET:
 - CP 1616 (HW version 8 and above) or integral CP 161 onboard interface of the SIMATIC IPC
 - CP 1604 (HW version 7 and above)
 - Integral CP 1616 onboard interfaces of the SIMATIC IPC
 - Integrated standard Ethernet interfaces of selected SIMATIC IPCs (e.g. SIMATIC IPC427C and HMI IPC477C)
- WinAC Open Development Kit (ODK):
 - For integrating C/C++ code in WinAC RTX
 - Integration of external software (technology programs) or PC components (e.g. barcode scanner, PC cards for measured value acquisition)

Function

Windows Failsafe Logic Controller (WinLC RTX F)

The Windows Failsafe Logic Controller is responsible for the actual control job and execution of the control program. It coordinates the associated input and output of process values via the lower-level PROFINET or PROFIBUS fieldbus system and makes the process values available for visualization and data processing tasks.

Fail-safe programs are created with the STEP 7 option package S7 Distributed Safety.

A safety control can be built up using fail-safe signal modules. This opens up

- Classical safety applications in the field of machine safety and press automation as well as
- Applications in process engineering and chemicals.

The I/O can be connected over PROFINET IO or PROFIBUS DP. The PROFIsafe profile supports fail-safe communication over the fieldbuses for this purpose.

The functional safety is implemented by means of targeted safety functions in the software. Safety functions are implemented with S7 Distributed Safety, to place the plant in a safe state or to hold it in a safe state. The safety functions are mainly contained within the following components:

- in the safety-related user program (safety program) in WinLC RTX F
- In the fail-safe inputs and outputs (F I/O).

The F I/O ensures safety-related processing of the field information (emergency stop pushbutton, light barriers, motor pre-control). It features all the hardware and software components required for reliable processing, according to the required safety class.

- The user only programs the user safety functions. The safety functions for the process can be implemented with a user safety function or a system-internal fault reaction function. If the F system is unable to execute the actual user safety function, it will execute the fault response function: e.g. deactivation of the associated outputs and, if appropriate, F-CPU in STOP.

Interface to visualization

SIMATIC WinAC RTX F is easy to use with the SIMATIC HMI systems SIMATIC WinCC flexible or SIMATIC WinCC.

Visualization systems from third-party suppliers can be connected via the included SIMATIC NET OPC server.

Communication

The programming of the Windows Logic Controller with STEP 7 and also the visualization with SIMATIC HMI can be implemented both locally in the same PC and remotely using the standard SIMATIC networks Ethernet or PROFIBUS.

WinAC RTX F can exchange data via these networks:

- With additional WinAC stations
- With S7 controllers as well as
- With safety-oriented S7 controllers (safe PLC-to-PLC communication)

A SOFTNET S7 Lean license is included for Industrial Ethernet communication over the integral Ethernet interfaces of the SIMATIC PC.

Technical specifications

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
Product version	
Hardware product version	-
Firmware version	4,5
associated programming package	STEP7 V5.4 SP5 or higher + HSP135 as basic requirement for the HSP178 for WinAC RTX F 2009 on Embedded Controller + HSP179 for WinAC RTX F 2009 on PC station / iMap V3.0 SP1 / option package S7 Distributed Safety V5.4 SP5 or higher
Memory	
Working memory	
• integrated (for program)	4 MByte; Adjustable; depends on Non Paged Memory Pool
• integrated (for data)	4 MByte; Adjustable; depends on Non Paged Memory Pool
Load memory	
• integrated RAM, max.	8 MByte; Adjustable; depends on Non Paged Memory Pool
CPU / blocks	
DB	
• Number, max.	65 535; Limited only by RAM set for data
FB	
• Number, max.	65 535; Limited only by RAM set for code
FC	
• Number, max.	65 535; Limited only by RAM set for code
OB	
• Number, max.	Limited only by RAM for code
• Number of free cycle OBs	1; OB 1
• Number of time alarm OBs	1; OB 10
• Number of delay alarm OBs	1; OB 20
• Number of time alarm OBs	9; OB 30 -38
• Number of process alarm OBs	1; OB 40
• Number of ODK OBs	3; OB 52-54
• Number of DPV1 alarm OBs	3; OB 55-57
• Number isochronous mode OBs	2; OB 61-62
• Number of startup OBs	2; OB 100, 102
• Number of asynchronous error OBs	7; OB 80, 82-85, 86, 88
• Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
• per priority class	24
• additional within an error OB	24
CPU processing times	
for bit operations, min.	0,004 µs; typ.
for fixed point arithmetic, min.	0,003 µs; typ.
for floating point arithmetic, min.	0,004 µs; typ.
Reference platform	Pentium IV, 2,4 GHz

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
• Retentivity	
- can be set	Yes
- lower limit	0
- upper limit	2047
- preset	8
• Counting range	
- can be set	Yes
- lower limit	0
- upper limit	999
IEC counter	
• Available	Yes
• Type	SFB
S7 times	
• Number	2 048
• Retentivity	
- can be set	Yes
- lower limit	0
- upper limit	2 047
- preset	0
• Time range	
- lower limit	10 ms
- upper limit	9 990 s
IEC-Timer	
• Available	Yes
• Type	SFB
Data areas and their remanence	
Retentivity without UPS and PS Extension Board	128 KB with SIMATIC IPC427C and HMI IPC477C; further SIMATIC PCs on request
Retentivity with UPS	all data
Flag	
• Number, max.	16 KByte
• of which retentive	MByte 0 to MByte 16383
• Retentivity preset	MByte 0 to MByte 15
• Number of clock memories	8
Local data	
• can be set, max.	32 KByte
• preset	16 KByte

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX F

Technical specifications (continued)

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
Address area	
I/O address area	
• overall	16 KByte
• Outputs	16 KByte
• of which, distributed	
- DP interface, inputs	16 KByte
- DP interface, outputs	16 KByte
- PN interface, inputs	16 KByte
- PN interface, outputs	16 KByte
Process image	
• Inputs, adjustable	8 KByte
• Outputs, adjustable	8 KByte
• Inputs, default	512 byte
• Outputs, default	512 byte
Subprocess images	
• Number of subprocess images, max.	15
Digital channels	
• Inputs	128 000
• Outputs	128 000
Analog channels	
• Inputs	8 000
• Outputs	8 000
Hardware configuration	
Submodules	
• Number of submodules, max	4
• of which PROFIBUS, max.	4; Supported interfaces: see 1st and 2nd interface
• of which Industrial Ethernet max.	1; Supported interfaces: see 3rd and 4th interface
Number of operable FMs and CPs (recommended)	
• FM	4; FM distributed: FM 350-1 / 350-2, FM 351, FM 352, FM 353, FM 355 / 355-2
• CP, point-to-point	2; CP 340, CP 341 distributed
• CP, LAN	Over PC CP
Time of day	
Clock	
• Hardware clock (real-time clock)	Yes
• battery-backed and synchronizable	Yes
Runtime meter	
• Number	8
Clock synchronization	
• supported	Yes
• to PC-CP, slave	Yes
• on Ethernet via NTP	Yes
S7 message functions	
Number of login stations for message functions, max.	62
SCAN procedure	No

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
S7 message functions (continued)	
Process diagnostic messages	Yes; ALARM_S, ALARM_SQ, ALARM_D, ALARM_DQ
simultaneously active Alarm-S blocks, max.	20; of a total of 20 for all SFCs
Alarm 8-blocks	Yes
• Number of instances for alarm 8 and S7 communication blocks, max.	600
Process control messages	No
Test commissioning functions	
• Status / control variable	Yes
Forcing	No
Status block	Yes
Single step	Yes
Diagnostics buffer	
• Available	Yes
• Number of entries, max.	3 200
- preset	120
Communication functions	
PG / OP communication	Yes
Data record routing	No
Global data communication	
• supported	No
S7 basic communication	
• supported	No
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	64 KByte; Depends on which block is used: BSEND / USEND or PUT / GET
Web server	
• supported	No
Open IE communication	
• TCP/IP	Yes
- Number of connections, max.	Dependent on interface
- Data length, max.	64 KByte - 2 Byte = 65534 Byte
• ISO-on-TCP (RFC1006)	No
• UDP	Yes
- Number of connections, max.	Dependent on interface
- Data length, max.	1 472 byte
Number of connections	
• overall	64
• for PG communication	
- reserved for PG communication	1
• for OP communication	
- reserved for OP communication	1

Technical specifications (continued)

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
Communication functions (continued)	
PROFINET CBA (at set setpoint communication load)	
• Setpoint for the CPU communication load	20 %
• Number of remote interconnection partners	64
• Number of functions, master / slave	30
• Total of all Master / Slave connections	1 000
• Data length of all incoming connections master / slave, max.	6 800 byte
• Data length of all outgoing connections master / slave, max.	6 800 byte
• Number of device-internal and PROFIBUS interconnections	500
• Data length of device-internal and PROFIBUS interconnections, max.	4 000 byte
• Data length per connection, max.	1 400 byte
• Remote interconnections with acyclic transmission	
- Sampling frequency: Sampling time, min.	500 ms
- Number of incoming interconnections	100
- Number of outgoing interconnections	100
- Data length of all incoming interconnections, max.	2 000 byte
- Data length of all outgoing interconnections, max.	2 000 byte
- Data length per connection, max.	1 400 byte
• Remote interconnections with cyclic transmission	
- Transmission frequency: Transmission interval, min.	10 ms
- Number of incoming interconnections	200
- Number of outgoing interconnections	200
- Data length of all incoming interconnections, max.	4 800 byte
- Data length of all outgoing interconnections, max.	4 800 byte
- Data length per connection, max.	250 byte
• HMI variables via PROFINET (acyclic)	
- Number of stations that can log on for HMI variables (PN OPC / iMap)	3
- HMI variable updating	500 ms
- Number of HMI variables	200
- Data length of all HMI variables, max.	2 000 byte

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
Communication functions (continued)	
• PROFIBUS proxy functionality	Yes
- supported	
- Number of linked PROFIBUS devices	16
- Data length per connection, max.	240 byte; Slave-dependent
1st interface	
Type of interface	CP 5611-A2, CP 5621, integrated PB interface of the SIMATIC PC
Max. no. of simultaneously operable CPs	1
Physics	RS 485 / PROFIBUS
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	Not available
Functionality	
• MPI	No
• DP master	Yes
• DP slave	No
DP master	
• Number of connections, max.	8
• Services	
- PG / OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	Yes
- Equidistance mode support	Yes; Only in conjunction with isochronous mode
- Isochronous mode	Yes
- SYNC / FREEZE	Yes
- Activation / deactivation of DP slaves	Yes
- Direct data exchange (slave-to-slave communication)	Yes
- DPV0	Yes
- DPV1	Yes
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	64
• Address area	
- Inputs, max.	16 KByte
- Outputs, max.	16 KByte
• User data per DP slave	
- Inputs, max.	244 byte
- Outputs, max.	244 byte

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX F

Technical specifications (continued)

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
2nd interface	
Type of interface	CP 5613, CP 5613-A2, CP 5603
Max. no. of simultaneously operable CPs	4
Physics	RS 485 / PROFIBUS
Isolated	Yes
Functionality	
• MPI	No
• DP master	Yes
• DP slave	No
DP master	
• Number of connections, max.	50
• Services	
- PG / OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	Yes
- Equidistance mode support	Yes; Only in conjunction with isochronous mode
- Isochronous mode	Yes
- SYNC / FREEZE	Yes
- Activation / deactivation of DP slaves	Yes
- Direct data exchange (slave-to-slave communication)	Yes
- DPV0	Yes
- DPV1	Yes
• Transmission rate, max.	12 Mbit/s
• Number of DP slaves, max.	125
• Address area	
- Inputs, max.	16 KByte
- Outputs, max.	16 KByte
• User data per DP slave	
- Inputs / Outputs, max.	244 byte / 244 byte
3rd interface	
Type of interface	PROFINET
Max. no. of simultaneously operable CPs	1; Intel Pro / 1000 (Intel 82571EB, 82573L, 82574L, 82541PI; non shared IRQ required); integrated IE interface SIMATIC PC 4 x7B, 6 x7B, 8 x7B and IPC4 x7C
Physics	Ethernet
Isolated	Yes
automatic detection of transmission speed	Yes; 10 / 100 Mbit/s
Functionality	
• PROFINET IO-Controller	Yes
• PROFINET IO-Device	No
• PROFINET CBA	Yes
• Open IE communication	Yes
• Web server	No

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
3rd interface(continued)	
PROFINET IO-Controller	
• Services	
- PG / OP communication	Yes
- Routing	Yes; S7 routing
- S7 communication	Yes
- Open IE communication	Yes
• Transmission rate, min.	100 Mbit/s
• Transmission rate, max.	100 Mbit/s
• Number of connectable IO devices, max.	128
• IRT, supported	No
• Prioritized startup supported	Yes
- Number of IO Devices, max.	32
• Activation / deactivation of IO Devices	Yes
- Number of IO Devices that can be simultaneously activated / deactivated, max.	8
• IO Devices changing during operation (partner ports), supported	Yes
• Device replacement without swap medium	Yes
• Send clock times	1 ms
• Updating time	1 - 512 ms (minimum value depends on communication share set for PROFINET I/O, on the number of I/O devices, and on the volume of configured user data)
• Address area	
- Inputs, max.	16 KByte
- Outputs, max.	16 KByte
• User data per address area, max.	2 KByte
- User data consistency, max.	256 byte
SIMATIC communication	
• PG / OP communication	Yes
• S7 routing	Yes
• S7 communication	Yes
• Number of connections, max.	16
Open IE communication	
• Open IE communication, supported	Yes
• Number of connections, max.	32
• Local port numbers used at the system end	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535

Technical specifications (continued)

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
4th interface	
Type of interface	PROFINET
Max. no. of simultaneously operable CPs	1; CP 1616 (HW release 8 or above), CP 1604 (HW release 7 or higher), integrated PN interface of SIMATIC PC and S7-mEC
Physics	Ethernet
Isolated	Yes
automatic detection of transmission speed	Yes; 10 / 100 Mbit/s
Functionality	
• PROFINET IO-Controller	Yes
• PROFINET CBA	Yes
• Open IE communication	Yes
• Web server	No
PROFINET IO-Controller	
• Services	
- PG / OP communication	Yes
- Routing	Yes; S7 routing
- S7 communication	Yes
- Open IE communication	Yes
• Transmission rate, min.	100 Mbit/s
• Transmission rate, max.	100 Mbit/s
• Number of connectable IO devices, max.	256
• Number of IO Devices with IRT and the option "high flexibility", max.	64
- of which in line, max..	32
• IRT, supported	Yes
• Prioritized startup supported	Yes
- Number of IO Devices, max.	32
• Activation / deactivation of IO Devices	Yes
- Number of IO Devices that can be simultaneously activated / deactivated, max.	8
• IO Devices changing during operation (partner ports), supported	Yes
• Device replacement without swap medium	Yes
• Send clock times	250 µs, 500 µs, 1 ms
• Updating time	0.25...512 depending on the send cycle
• Address area	
- Inputs, max.	16 byte; KB
- Outputs, max.	16 byte; KB
• User data per address area, max.	2 byte
- User data consistency, max.	256 byte; Byte

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
4th interface(continued)	
SIMATIC communication	
• PG / OP communication	Yes
• S7 routing	Yes
• S7 communication	Yes
• Number of connections, max.	32
Open IE communication	
• Open IE communication, supported	Yes
• Number of connections, max.	32
• Local port numbers used at the system end	0, 20, 21, 25, 80, 102, 135, 161, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Isochronous mode	
Isochronous mode	Yes; only PROFIBUS
Number of DP masters with isochronous mode	2
User data per isochronous slave, max.	128 byte
equidistance	Yes
shortest clock pulse	2.2 ms; 2.2 ms without partial process image; 2.2 ms with partial process image
CPU / programming	
Programming language	
• STEP 7	Yes; V5.4 SP5 + HSP135 as basic requirement for the HSP178 for WinAC RTX F 2009 on Embedded Controller + HSP179 for WinAC RTX F 2009 on PC station, engineering tools (optional)
• KOP	Yes
• FUP	Yes
• AWL	Yes
• SCL	Yes
• CFC	Yes
• GRAPH	Yes
• HiGraph®	Yes
Nesting levels	8
Know-how protection	Yes
Software libraries	
• Easy Motion Control	Yes
Open Development Interfaces	
• CCX (Custom Code Extension)	Yes; WinAC ODK V4.2 or higher
• SMX (Shared Memory Extension)	Yes; WinAC ODK V4.2 or higher
- Inputs	4 KByte
- Outputs	4 KByte
• CMI (Controller Management Interface)	Yes; WinAC ODK V4.2 or higher

PC-based Automation

PC-based Controller

SIMATIC WinAC RTX F

Technical specifications (continued)

SIMATIC WinAC RTX F 2009	6ES7 671-1RC07-0YA0
CPU / programming (continued)	
Number of simultaneously active SFCs	
• DPSYC_FR	20; of a total of 20 for all SFCs
• D_ACT_DP	20; of a total of 20 for all SFCs
• RD_REC	20; of a total of 20 for all SFCs
• WR_REC	20; of a total of 20 for all SFCs
• WR_PARM	20; of a total of 20 for all SFCs
• PARM_MOD	20; of a total of 20 for all SFCs
• WR_DPARM	20; of a total of 20 for all SFCs
• DPNRM_DG	20; of a total of 20 for all SFCs
• RDSYSST	20; of a total of 20 for all SFCs
Number of simultaneously active SFBs	
• RD_REC	20; of a total of 20 for all SFBs
• WR_REC	20; of a total of 20 for all SFBs
Hardware requirements	
Hardware required	PC with color monitor, keyboard, mouse or pointing device for Windows
Required memory on hard disk, min.	100 MByte
Main memory, min.	1 GByte
Processor	Intel Celeron M, 900 MHz or compatible (Former PC Systems with Programmable Interrupt Controller (PIC) are not suitable for WinAC RTX F 2009)
• Multi-processor system	No
• Hyper-threading	Yes
Operating system	
Operating system	
• Windows NT 4.0	No
• Windows 2000	No
• Windows XP	Yes; Professional, SP2 and SP3
• Windows XP embedded	Yes; With the delivery image of the SIMATIC PC
• Windows Vista	No
Weight	
Weight	100 g; with packaging

Ordering data

Order No.

SIMATIC WinAC RTX F 2009	A	6ES7 671-1RC07-0YA0
CP 5611 A2 communications processor		6GK1 561-1AA01
PCI card (32 bit) for connection of a programming device or PC to PROFIBUS		
CP 5621 communications processor		
PCI Express x1 card (32 bit) for connection of a programming device or PC to PROFIBUS		
• PCI Express x1 card (32 bit) CP 5621 and MPI cable, 5 m	H	6GK1 562-1AA00
		6GK1 562-1AM00
CP 5603 Microbox Package	B	6GK1 560-3AU00
Comprising CP 5603 module and Microbox expansion rack		
CP 5613 A2 communications processor		6GK1 561-3AA01
PCI card (32 bit; 3.3 V / 5 V) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32 bit Windows 2000 Professional / Server, Windows XP Professional, German / English		
CP 1616 communications processor		6GK1 161-6AA01
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		
CP 1604 Microbox Package		6GK1 160-4AU00
Package for implementing the CP 1604 in the SIMATIC Microbox PC; comprising the CP 1604, connection board, power supply and expansion rack for Microbox PC; for use with Development Kit DK-16 xx PN IO; NCM PC		

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

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. In this way, you can 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

Brochures

Information material can be downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

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

PC-based Automation

PC-based Controller

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)

Application

WinAC ODK can be used to meet the following requirements:

- Integration of specific technology into the control task, e.g. measured data acquisition or analysis, vision systems or PC-based motion solutions
- Access to typical PC resources such as file system, interfaces etc.

Typical examples of uses for WinAC ODK include:

- Connection of specific fieldbus systems to the controller
- Direct, powerful connection of the control program to a production database
- Integration of robotics systems
- Implementation of specific communication protocols

Function

SIMATIC WinAC ODK

WinAC ODK V4.2 supports the development of custom-designed applications for WinAC RTX with a high-level language development tool such as Microsoft Visual Studio. WinAC RTX provides 3 different interfaces for this:

- The *Custom Code Extension (CCX)* interface allows the direct start-up of high-level language applications or functions which are available in the form of DLLs for Windows or real-time DLLs for IntervalZero RTX, the real-time kernel used by WinAC RTX. Implementation as a DLL gives the developer complete access to the operating system APIs, software interfaces of other programs, or even resources of the PC (drivers, HW). These DLLs are developed with the aid of the ODK.
- The *Shared Memory Extension (SMX)* interface allows the fast exchange of data between the PLC program of the WinAC RTX and a user application. The Shared Memory can be addressed from the PLC in the I/O area and can be used, for example, in the same manner as a DP-DP coupler with a 4 KB I/O area.
- The *Controller Management Interface (CMI)* provides all of the functions of the WinAC panel for the customer application. This allows the WinAC RTX to be operated completely via a customer application such as a visualization program.

Creation of WinAC ODK applications

WinAC ODK applications are created using Microsoft Visual Studio. Depending on the interface runtime environment, it is possible to use different programming languages:

- CCX and SMX applications under IntervalZero RTX: Visual C++
- CCX, SMX and CMI applications under Windows: Visual C++, C#, Visual Basic

If a CCX or SMX application is supposed to work with WinAC RTX in real-time, an IntervalZero SDK (from IntervalZero Inc.) that matches the version of the real-time kernel used by WinAC RTX is required.

For ease of understanding and a quick start in an ODK application, the creation of CCX and SMX applications is supported by a wizard. Some programming examples are also included in the delivery kit.

Function (continued)

Custom Code Extension Interface (CCX)

Applications that use the CCX interface can run both in Windows and in the IntervalZero RTX context, which means that, in principle, there are no restrictions with regard to the language elements used when programming this application.

CCX applications are executed as DLLs under Windows or real-time DLLs under Ardence RTX.

The application programmer is supported by a wizard when creating the following application types and functions:

- Synchronous start of the ODK application:
The code is executed as part of the PLC code.
- Asynchronous start:
The code is started in parallel to the PLC and is executed in the background.
- Continuous process:
The ODK application runs parallel to the PLC and alerts the PLC program by calling up an alarm OB

Special system function blocks are available at the PLC end for starting the CCX application and starting its functions.

Shared Memory Extension Interface (SMX)

WinAC RTX provides a Shared Memory area which can be accessed as required by both the PLC application program and the SMX application. This type of coupling allows for very efficient exchange of data and a far-reaching uncoupling of the PLC variant from the SMX application which is also accessing data.

From the viewpoint of WinAC RTX, the Shared Memory is located in the I/O address area with 4 KB each the input and output. Access is possible using load / transfer commands. Access functions are available at the SMX application end.

Just as for the CCX interface, a wizard supports the creation of SMX applications.

Some typical applications for the SMX interface are:

- Data archiving
- Fast data coupling to software for optimizing production
- Simple, fast data interface to operating software with Visual Basic or C#

Controller Management Interface (CMI)

The CMI allows the WinAC CPU panel functionality to be integrated into a PC application. The following panel functions can be carried out by the PC application (examples):

- Starting and shutting down the controller.
- Operating the (RUN / STOP) key-operated switch.
- Status LED display.
- Loading user programs

This allows for flexible integration of WinAC into the overall application:

- Starting and stopping the controller in relation to other applications, e.g. defining the start sequence when starting up the PC.
- Automatic reload of updated PLC user programs ("machine update" by OEM).

Distribution of the WinAC ODK application

WinAC ODK is only needed for the development of applications (development license). No additional licenses are required by WinAC for applications created using ODK (runtime licenses).

At the WinAC Software PLC or Slot PLC end, such an application is integrated with the usual SIMATIC PLC programming languages.

- The PLC programmer can also use these applications without having higher-level programming languages expertise. For the PLC programmer, the ODK application looks like a function of the PLC.
- To make it easier for the PLC programmer to use the application, a STEP 7 library can be created, which provides simple FC / FB calls for handling the ODK application.

PC-based Automation

PC-based Controller

SIMATIC WinAC ODK

Technical specifications

SIMATIC WinAC ODK V4.2	6ES7 806-1CC03-0BA0
CPU / programming	
Open Development Interfaces	
• CCX (Custom Code Extension)	Yes; WinAC RTX 2008 (V4.4) or higher; programming languages: Microsoft Visual C++ V6.0 SP5 or higher, .net 2003, 2005, 2008; Microsoft Visual Basic 2005, 2008; Microsoft Visual C# 2005, 2008
• SMX (Shared Memory Extension)	Yes; WinAC RTX 2008 (V4.4) or higher; programming languages: Microsoft Visual C++ V6.0 SP5 or higher, .net 2003, 2005, 2008; Microsoft Visual Basic 2005, 2008; Microsoft Visual C# 2005, 2008
• CMI (Controller Management Interface)	Yes; WinAC RTX 2005 SP2 (V4.3) or higher; programming languages: Microsoft Visual C++ V6.0 SP5 or higher, .net 2003, 2005, 2008; Microsoft Visual Basic V6.0 SP5 or higher, .net 2003, 2005, 2008; Microsoft Visual C# .net 2003, 2005, 2008
Hardware requirements	
Hardware required	PC with color monitor, keyboard, mouse or pointing device for Windows
Required memory on hard disk, min.	30 MByte
Main memory, min.	512 MByte
Processor	Intel Pentium 800 MHz
Software requirement	
Software required	Microsoft Visual Developer Studio, for details see interfaces; CCX and SMX realtime applications in addition: IntervalZero SDK V8.1 (SDK version must match the WinAC RTX version)
Operating systems	
Operating system	
• Windows XP	Yes; Professional, SP2 and SP3
• Windows 7	Yes
Weight	
Weight	200 g

Ordering data

Order No.

SIMATIC WinAC ODK V4.2 A **6ES7 806-1CC03-0BA0**

for integration of C/C++ code in WinAC PLCs, executable under Windows XP SP2 or SP3; CD-ROM with electronic documentation

Single License

A: Subject to export regulations: AL: N und ECCN: EAR99S

More information

Brochures

Information material can be downloaded from the Internet:

<http://www.siemens.com/simatic/printmaterial>

PC-based Automation Embedded Controller

SIMATIC S7-modular Embedded Controller

Overview



- Quick 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
 - Operation without a hard disk, based on flash disk and Windows Standard embedded
 - Operation without a fan
- 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)

Application

The EC31-RTX combines the advantages of PC-based control solutions with those of the conventional PLC world: It offers the flexibility for integrating various tasks of an automation solution on a single hardware platform. The fanless and diskless design of the EC31 allows the use of the solution directly at the machine in harsh environments. Using the integrated Ethernet and PROFINET interfaces, the system can be integrated into existing automation environments with little effort.

The S7-mEC is the preferred platform if the following criteria for automation solutions must be fulfilled:

- Modular use, expandable
- "Headless operation" – without integrated display:
 - Operation with remote screen using the SIMATIC Thin Client
- Integration of different tasks such as control, visualization, technology functions, or data processing in one hardware unit
- Use of application-specific hardware and software
- Use at machine level

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Design

The S7-mEC automation system can comprise the following components:

- EC31 controller in the order versions:
 - EC31 with Software Development Kit (SDK)
 - EC31-RTX
 - EC31-RTX F
 - EC31-HMI / RTX
- S7-300 signal modules
- Extension modules for the central rack with additional PC interfaces:
 - EM PC:
The extension module for additional DVI-I, USB, Gigabit Ethernet interfaces, serial interfaces, memory card slots.
 - EM PCI-104:
The extension module for holding up to 3 PC cards in the PCI-104 Standard.

The hardware of the EC31 features:

- 1.2 GHz Intel CoreDuo processor
- 1 GByte RAM, 2 GByte flash disk¹⁾
- Integral PROFINET interface (2 ports)
- Integral Ethernet interface (1 port)
- 2 x USB
- 1 x multimedia card slot
- Memory for retentive data, 512 KB without UPS (256 KB are supported for EC31 with SDK)
- Windows XP embedded

EC31-RTX features the following additional software:

- SIMATIC WinAC RTX 2010¹⁾
- SIMATIC SOFTNET-S7 Lean incl. SIMATIC NET OPC Server

EC31-RTX F also has the following software:

- SIMATIC WinAC RTX F 2010
- SIMATIC NET Edition 2008

EC31-HMI / RTX also features:

- WinCC flexible 2009 RT visualization system

Optional

- SIMATIC WinAC Open Development Kit (ODK):
 - For integrating C/C++ code in SIMATIC WinAC RTX
 - For integration of external software (technology programs) or PC components (e.g. scanners, PC cards)

Function

- Control:
For the optimum control of processes with WinAC RTX, several processing levels are available:
 - Cyclic program processing
 - Interrupt processing
 - Time and date-controlled processing
- Functional safety with WinAC RTX F for EC31-RTX F:
The functional safety is implemented by means of targeted safety functions in the software. Safety functions are implemented with S7 Distributed Safety, to place the plant in a safe state or to hold it in a safe state. The safety functions are mainly included in the following components:
 - In the safety-related user program (safety program) in WinLC RTX F
 - In the fail-safe inputs and outputs (F I/O).
The F I/O ensures reliable processing of the field information (emergency stop pushbutton, light barriers, motor pre-control). It features all the hardware and software components required for reliable processing, according to the required safety class. The user only programs the user safety functions. The safety functions for the process can be implemented with a user safety function or a system-internal fault reaction function. If the F system is unable to execute the actual user safety function, it will execute the fault response function: e.g. deactivation of the associated outputs and, if appropriate, F-CPU in STOP.
- Retentivity:
The controller can back up 512 KB of retentive data on an integrated, non-volatile memory, without the need for a UPS. Total retentivity of all process values of SIMATIC WinAC RTX can be achieved with a generally available UPS.
- Access to process values:
The SIMATIC NET OPC server supplied with EC31-RTX permits open access to all process values. Visualization systems or data processing systems can be linked to SIMATIC WinAC RTX via this interface.
- Communication:
The Windows Automation Center (WinAC) is programmed with SIMATIC STEP 7 via the integral Industrial Ethernet interface. The SIMATIC NET SOFTNET Lean communication package is pre-installed for this purpose.
- Use of other software:
The customer can install supporting software products. Windows XP Embedded is designed so that typical add-on packages can be installed.

Mode of operation

The SIMATIC WinAC RTX handles the actual control task and execution of the user program. It coordinates the necessary input and output of process values through the lower-level PROFINET fieldbus system and provides the process values for visualization and data processing tasks.

The distributed I/O connection is made via PROFINET, for which the integrated interface (2 ports, switched) of the EC31 is used. By using the IO modules of the S7-300 (SM modules), the IO can also be connected centrally and, if necessary, extended as in the case of the S7-300. If required, additional PC interfaces are available via the extension modules.

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Technical specifications

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
Product version						
Firmware version	V2.0 ¹⁾	V2.0 ¹⁾	V2.0 ¹⁾	V2.0 ¹⁾	V2.0 ¹⁾	V2.0 ¹⁾
PC configuration						
Computer platform	SIMATIC S7 modular embedded controller	SIMATIC S7 modular embedded controller	SIMATIC S7 modular embedded controller	SIMATIC S7 modular embedded controller	SIMATIC S7 modular embedded controller	SIMATIC S7 modular embedded controller
Processor selection	Intel Core Duo 1,2 GHz	Intel Core Duo 1,2 GHz	Intel Core Duo 1,2 GHz	Intel Core Duo 1,2 GHz	Intel Core Duo 1,2 GHz	Intel Core Duo 1,2 GHz
Main memory	1 GByte RAM	1 GByte RAM	1 GByte RAM	1 GByte RAM	1 GByte RAM	1 GByte RAM
Operating systems	Windows embedded Standard 2009	Windows embedded Standard 2009	Windows embedded Standard 2009	Windows embedded Standard 2009 ¹⁾	Windows embedded Standard 2009	Windows embedded Standard 2009
Power supply						
Input voltage						
• Rated value, 24 V DC	Yes	Yes	Yes	Yes	Yes	Yes
• permissible range, lower limit (DC)	20,4 V	20,4 V	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	28,8 V	28,8 V
Input current						
• Rated value at 24 V DC	800 mA; without backplane bus and USB power supply	800 mA; without backplane bus and USB power supply	800 mA; without backplane bus and USB power supply	800 mA; without backplane bus and USB power supply	800 mA; without backplane bus and USB power supply	800 mA; without backplane bus and USB power supply
Supply voltages						
Mains buffering						
• Mains / voltage failure stored energy time	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms
Power loss						
Power loss, typ.	34 W	34 W	34 W	34 W	34 W	34 W
Memory						
Memory type	256 KByte non-volatile memory for retentive data	512 KByte non-volatile memory for retentive data	512 KByte non-volatile memory for retentive data	512 KByte non-volatile memory for retentive data	512 KByte non-volatile memory for retentive data	512 KByte non-volatile memory for retentive data
CPU / blocks						
DB						
• Number, max.		Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each
• Size, max.		64 KByte	64 KByte	64 KByte	64 KByte	64 KByte
FB						
• Number, max.		Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each
• Size, max.		64 KByte	64 KByte	64 KByte	64 KByte	64 KByte
FC						
• Number, max.		Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
CPU / blocks (continued)						
OB						
• Number, max.		Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each
• Size, max.		64 KByte	64 KByte	64 KByte	64 KByte	64 KByte
• Number of free cycle OBs		1; OB 1	1; OB 1	1; OB 1	1; OB 1	1; OB 1
• Number of time alarm OBs		1; OB 10	1; OB 10	1; OB 10	1; OB 10	1; OB 10
• Number of delay alarm OBs		1; OB 20	1; OB 20	1; OB 20	1; OB 20	1; OB 20
• Number of time alarm OBs		9; OB 30 -38	9; OB 30 -38	9; OB 30 -38	9; OB 30 -38	9; OB 30 -38
• Number of process alarm OBs		1; OB 40	1; OB 40	1; OB 40	1; OB 40	1; OB 40
• Number of startup OBs		2; OB 100, 102	2; OB 100, 102	2; OB 100, 102	2; OB 100, 102	2; OB 100, 102
• Number of asynchronous error OBs		7; OB 80, 82-85, 86, 88	7; OB 80, 82-85, 86, 88	7; OB 80, 82-85, 86, 88	7; OB 80, 82-85, 86, 88	7; OB 80, 82-85, 86, 88
• Number of synchronous error OBs		2; OB 121, 122	2; OB 121, 122	2; OB 121, 122	2; OB 121, 122	2; OB 121, 122
Nesting depth						
• per priority class		24	24	24	24	24
• additional within an error OB		24	24	24	24	24
CPU processing times						
for bit operations, min.		0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.
for fixed point arithmetic, min.		0,003 µs; typ.	0,003 µs; typ.	0,003 µs; typ.	0,003 µs; typ.	0,003 µs; typ.
for floating point arithmetic, min.		0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.	0,004 µs; typ.
Counters, timers and their retentivity						
S7 counter						
• Number		2 048	2 048	2 048	2 048	2 048
• Retentivity						
- can be set		Yes	Yes	Yes	Yes	Yes
- lower limit		0	0	0	0	0
- upper limit		2 047	2 047	2 047	2 047	2 047
- preset		8	8	8	8	8
• Counting range						
- can be set		Yes	Yes	Yes	Yes	Yes
- lower limit		0	0	0	0	0
- upper limit		999	999	999	999	999
IEC counter						
• Available		Yes	Yes	Yes	Yes	Yes
• Type		SFB	SFB	SFB	SFB	SFB
S7 times						
• Number		2 048	2 048	2 048	2 048	2 048
• Retentivity						
- can be set		Yes	Yes	Yes	Yes	Yes
- lower limit		0	0	0	0	0
- upper limit		2 047	2 047	2 047	2 047	2 047
• Time range						
- lower limit		10 ms	10 ms	10 ms	10 ms	10 ms

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
Counters, timers and their retentivity (continued)						
IEC timer						
• present		Yes	Yes	Yes	Yes	Yes
• Type		SFB	SFB	SFB	SFB	SFB
Data areas and their retentivity						
retentive data area, total		512 KByte	512 KByte	512 KByte	512 KByte	512 KByte
Flag						
• Number, max.		16 KByte	16 KByte	16 KByte	16 KByte	16 KByte
• of which retentive without battery		MByte 0 to MByte 16383	MByte 0 to MByte 16383	MByte 0 to MByte 16383	MByte 0 to MByte 16383	MByte 0 to MByte 16383
• Retentivity preset		MByte 0 to MByte 15	MByte 0 to MByte 15	MByte 0 to MByte 15	MByte 0 to MByte 15	MByte 0 to MByte 15
• Number of clock memories		8	8	8	8	8
Data blocks						
• Number, max.		Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each	Max. code size and max. data size: 4 MByte each
• Size, max.		64 KByte	64 KByte	64 KByte	64 KByte	64 KByte
Address area						
I/O address area						
• overall		16 KByte	16 KByte	16 KByte	16 KByte	16 KByte
• Outputs		16 KByte	16 KByte	16 KByte	16 KByte	16 KByte
• of which, distributed						
- Inputs		8 KByte	8 KByte	8 KByte	8 KByte	8 KByte
- Outputs		8 KByte	8 KByte	8 KByte	8 KByte	8 KByte
Process image						
• Inputs, adjustable		16 KByte	16 KByte	8 KByte	8 KByte	8 KByte
• Outputs, adjustable		16 KByte	16 KByte	8 KByte	8 KByte	8 KByte
• Inputs, default		512 byte	512 byte	512 byte	512 byte	512 byte
• Outputs, default		512 byte	512 byte	512 byte	512 byte	512 byte
Subprocess images						
• Number of subprocess images, max.		15	15	15	15	15
Digital channels						
• Inputs		128 000	128 000	128 000	128 000	128 000
• Outputs		128 000	128 000	128 000	128 000	128 000
Analog channels						
• Inputs		8 000	8 000	8 000	8 000	8 000
• Outputs		8 000	8 000	8 000	8 000	8 000
Time of day						
Clock						
• Hardware clock (real-time clock)		Yes; Resolution: 1 s	Yes; Resolution: 1 s	Yes; Resolution: 1 s	Yes; Resolution: 1 s	Yes; Resolution: 1 s
Clock synchronization						
• supported		Yes	Yes	Yes	Yes	Yes
• on Ethernet via NTP		Yes	Yes	Yes	Yes	Yes

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
S7 message functions						
Number of login stations for message functions, max.		62; The alarm functions cannot currently be used for central bus modules	62; The alarm functions cannot currently be used for central bus modules	62; The alarm functions cannot currently be used for central bus modules	62; The alarm functions cannot currently be used for central bus modules	62; The alarm functions cannot currently be used for central bus modules
Process diagnostic messages		Yes; Alarm_S	Yes; Alarm_S	Yes; Alarm_S	Yes; Alarm_S	Yes; Alarm_S
Test commissioning functions						
Status / control						
• Status / control variable		Yes	Yes	Yes	Yes	Yes
Forcing						
• Forcing		No	No	No	No	No
Diagnostic buffer						
• Available		Yes	Yes	Yes	Yes	Yes
Monitoring functions						
Status LEDs		Yes	Yes	Yes	Yes	Yes
Communication functions						
PG / OP communication		Yes	Yes	Yes	Yes	Yes
Global data communication						
• supported		No	No	No	No	No
S7 basic communication						
• supported		No	No	No	No	No
S7 communication						
• supported		Yes	Yes	Yes	Yes	Yes
• as server		Yes	Yes	Yes	Yes	Yes
• as client		Yes	Yes	Yes	Yes	Yes
Open IE communication						
• TCP/IP		Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs
- Number of connections, max.		32	32	32	32	32
- Data length, max.		8 192 byte		8 192 byte	8 192 byte	8 192 byte
• ISO-on-TCP (RFC1006)		No	No	No	No	No
• UDP		Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs	Yes; Via integrated PROFINET interface (X1) and loadable FBs
- Number of connections, max.		32	32	32	32	32
- Data length, max.		1 472 byte		1 472 byte	1 472 byte	1 472 byte
Number of connections						
• overall		64	64	64	64	64
• usable for PG communication						
- reserved for PG communication		1	1	1	1	1
• usable for OP communication						
- reserved for OP communication		1	1	1	1	1

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
1st interface						
Type of interface		PROFINET	PROFINET	PROFINET	PROFINET	PROFINET
Physics		2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
automatic detection of transmission speed		Yes	Yes	Yes	Yes	Yes
Autonegotiation		Yes	Yes	Yes	Yes	Yes
Autocrossing		Yes	Yes	Yes	Yes	Yes
Number of connection resources		32	32	32	32	32
Functionality						
• MPI		No	No	No	No	No
• DP master		No	No	No	No	No
• DP slave		No	No	No	No	No
• PROFINET IO-Device		No	No	No	No	No
• PROFINET IO-Controller		Yes	Yes	Yes	Yes	Yes
• PROFINET CBA		Yes	Yes	Yes	Yes	Yes
• Open IE communication		Yes	Yes	Yes	Yes	Yes
• Point-to-point connection		No	No	No	No	No
PROFINET IO-Controller						
• Services						
- PG / OP communication		Yes	Yes	Yes	Yes	Yes
- S7 routing		Yes	Yes	Yes	Yes	Yes
- S7 communication		Yes	Yes	Yes	Yes	Yes
- Isochronous mode		No	No	No	No	No
• Number of connectable IO devices, max.		256	256	256	256	256
• Number of IO devices with IRT and the option "high flexibility"		64	64	64	64	64
• IRT, supported		Yes	Yes	Yes	Yes	Yes
• Prioritized startup supported		Yes	Yes	Yes	Yes	Yes
- Number of IO Devices, max.		32	32	32	32	32
• Activation / deactivation of IO Devices		Yes	Yes	Yes	Yes	Yes
- Number of IO Devices that can be simultaneously activated / deactivated, max.		8	8	8	8	8
• IO Devices changing during operation (partner ports), supported		Yes	Yes	Yes	Yes	Yes
- Max. number of IO devices per tool		8	8	8	8	8
• Address area						
- Inputs, max.		16 KByte	16 KByte	16 KByte	16 KByte	16 KByte
- Outputs, max.		16 KByte	16 KByte	16 KByte	16 KByte	16 KByte
• User data per address area, max.		2 KByte	2 KByte	2 KByte	2 KByte	2 KByte
- User data consistency, max.		256 byte	256 byte	256 byte	256 byte	256 byte

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
1st interface (continued)						
PROFINET CBA						
• acyclic transmission		Yes	Yes	Yes	Yes	Yes
• cyclic transmission		Yes	Yes	Yes	Yes	Yes
Open IE communication						
• Open IE communication, supported		Yes	Yes	Yes	Yes	Yes
• Number of connections, max.		32	32	32	32	32
• Local port numbers used at the system end		0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
2nd interface						
Type of interface		Integrated Ethernet interface	Integrated Ethernet interface	Integrated Ethernet interface	Integrated Ethernet interface	Integrated Ethernet interface
Physics		Ethernet RJ45	Ethernet RJ45	Ethernet RJ45	Ethernet RJ45	Ethernet RJ45
automatic detection of transmission speed		Yes	Yes	Yes	Yes	Yes
Autonegotiation		Yes	Yes	Yes	Yes	Yes
Autocrossing		No	No	No	No	No
Number of connection resources		32	32	32	32	32
Functionality						
• PROFINET IO-Controller		No	No	No	No	No
• PROFINET IO-Device		No	No	No	No	No
• PROFINET CBA		No	No	No	No	No
• PROFINET CBA-SRT		No	No	No	No	No
CPU / programming						
Configuration software						
• STEP 7		Yes; V5.5 + HW update / iMap V3.0 SP1	Yes; STEP7 V5.4 SP5 or higher + HSP135 as basic requirement for the HSP178 for WinAC RTX F 2009 on Embedded Controller / iMap V3.0 SP1	Yes; V5.5 + HW update / iMap V3.0 SP1	Yes; V5.5 + HW update / iMap V3.0 SP1	Yes; V5.5 + HW update / iMap V3.0 SP1
Programming language						
• STEP 7		Yes	Yes; V5.4 SP5	Yes	Yes	Yes
• KOP		Yes	Yes	Yes	Yes	Yes
• FUP		Yes	Yes	Yes	Yes	Yes
• AWL		Yes	Yes	Yes	Yes	Yes
• SCL		Yes	Yes	Yes	Yes	Yes
• CFC		Yes	Yes	Yes	Yes	Yes
• GRAPH		Yes	Yes	Yes	Yes	Yes
• HiGraph®		Yes	Yes	Yes	Yes	Yes

Technical specifications (continued)

SIMATIC S7-mEC	6ES7 677-1DD00-0BA0 EC31	6ES7 677-1DD00-0BB0 EC31-RTX	6ES7 677-1FD00-0FB0 EC31-RTX F	6ES7 677-1DD00-0BF0 EC31-HMI / RTX 128PT	6ES7 677-1DD00-0BG0 EC31-HMI / RTX 512PT	6ES7 677-1DD00-0BH0 EC31-HMI / RTX 2048PT
Installed software						
Visualization				WinCC flexible RT 2008	WinCC flexible RT 2008	WinCC flexible RT 2008
Control		SIMATIC WinAC RTX 2010 ¹⁾	SIMATIC WinAC RTX F 2010 ¹⁾	SIMATIC WinAC RTX 2010 ¹⁾	SIMATIC WinAC RTX 2010 ¹⁾	SIMATIC WinAC RTX 2010 ¹⁾
Communication		Yes	Yes	Yes	Yes	Yes
Environmental requirements						
Operating temperature						
• 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
Storage / transport temperature						
• min.	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C
• max.	70 °C	70 °C	70 °C	70 °C	70 °C	70 °C
Vibrations						
• Operation, checked according to IEC 60068-2-6	Yes	Yes	Yes	Yes	Yes	Yes
• Transport tested checked to IEC 60068-2-6	Yes	Yes	Yes	Yes	Yes	Yes
Shock test						
• checked according to IEC 60068-2-27	Yes	Yes	Yes	Yes	Yes	Yes
• checked according to IEC 60068-2-29	Yes	Yes	Yes	Yes	Yes	Yes
Shock testing						
• checked according to IEC 60068-2-29	Yes	Yes	Yes	Yes	Yes	Yes
• Operation, checked according to IEC 60068-2-29	Operation, checked acc. to IEC 60068-2-27	Operation, checked acc. to IEC 60068-2-27	Operation, checked acc. to IEC 60068-2-27	Operation, checked acc. to IEC 60068-2-27	Operation, checked acc. to IEC 60068-2-27	Operation, checked acc. to IEC 60068-2-27
• Storage / transport, checked to IEC 60068-2-29	Yes	Yes	Yes	Yes	Yes	Yes
Degree of protection						
IP 20	Yes	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
CSA approvals	Yes; included in cULus	Yes; included in cULus	Yes; included in cULus	Yes; included in cULus	Yes; included in cULus	Yes; included in cULus
C-TICK	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approvals	Yes	Yes	Yes	Yes	Yes	Yes
Dimensions						
Width	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
Height	125 mm	125 mm	125 mm	125 mm	125 mm	125 mm
Depth	115 mm	115 mm	115 mm	115 mm	115 mm	115 mm
Weight						
Weight, approx.	1,5 kg	1,5 kg	1,5 kg	1,5 kg	1,5 kg	1,5 kg

PC-based Automation

Embedded Controller

SIMATIC S7-modular Embedded Controller

Technical specifications (continued)

Product type designation		6ES7 677-1DD40-1AA0 EM PCI-104	6ES7 677-1DD50-2AA0 EM PC
Product version			
Hardware product version	01		01
Power supply			
Input voltage			
• Rated value, 24 V DC		Yes; option: external infeed	
• permissible range, lower limit (DC)		20,4 V	
• permissible range, upper limit (DC)		28,8 V	
Power loss			
Power loss, max.			14 W
Power loss, typ.		2,4 W; without PCI-104 cards	9 W
Alarms / Diagnostics / Statusinformation			
Diagnostics			
• Diagnostic functions		Yes; POWER-LED, Status LED	Yes; POWER-LED, CARD LED for indicating access to SD / MMC
Environmental requirements			
Operating temperature			
• min.		0 °C	0 °C
• max.		50 °C	50 °C
Storage / transport temperature			
• min.		-40 °C	-40 °C
• max.		70 °C	70 °C
Vibrations			
• Operation, checked according to IEC 60068-2-6		Yes	Yes
• Transport tested checked to IEC 60068-2-6		Yes	Yes
Shock test			
• checked according to IEC 60068-2-27		Yes	Yes
• checked according to IEC 60068-2-29		Yes	Yes
Shock testing			
• checked according to IEC 60068-2-29		Yes	Yes
• Operation, checked according to IEC 60068-2-29		Yes	Yes
• Storage / transport, checked to IEC 60068-2-29		Yes	Yes

Technical specifications (continued)

	6ES7 677-1DD40-1AA0	6ES7 677-1DD50-2AA0
Product type designation	EM PCI-104	EM PC
Degree of protection		
IP 20	Yes	Yes
Standards, approvals, certificates		
CE mark	Yes	Yes
CSA approvals	Yes	Yes
C-TICK	Yes	Yes
cULus	Yes	Yes
FM approvals	Yes	Yes
Dimensions		
Width	120 mm; without bus connector Extension-Bus	80 mm; without bus connector Extension-Bus
Height	125 mm; without external voltage connecting terminal	125 mm
Depth	115 mm	115 mm
Weight		
Weight	0,5 kg	0,4 kg

Ordering data

	Order No.		Order No.
SIMATIC S7-modular Embedded Controller		EC31-HMI / RTX¹⁾	
EC31¹⁾	H 6ES7 677-1DD10-0BA0	Intel CoreDuo 1.2 GHz processor Memory configuration: 1 GByte RAM, 2 GByte Flash Disk; interfaces: 1 Industrial Ethernet port, 2 PROFINET ports, 2 USB ports, 1 slot for multimedia card; Software: Windows XP embedded preinstalled, Software Development Kit (SDK) for creating C/C++ applications with accesses to central I/O modules	
EC31-RTX¹⁾	H 6ES7 677-1DD10-0BB0	• With WinCC flexible 2008 RT 128 PT	H 6ES7 677-1DD10-0BF0
		• With WinCC flexible 2008 RT 512 PT	H 6ES7 677-1DD10-0BG0
		• With WinCC flexible 2008 RT 2048 PT	H 6ES7 677-1DD10-0BH0
EC31-RTX F¹⁾	H 6ES7 677-1FD10-0FB0	EM PCI-104 expansion module	B 6ES7 677-1DD40-1AA0
		For fitting up to 3 additional PCI-104 cards	
		EM PC expansion module	B 6ES7 677-1DD50-2AA0
		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	

B: Subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC IPC427C Bundles

Overview



Quick start in automation solutions with embedded PC platforms.

- SIMATIC WinAC RTX or SIMATIC WinAC RTX F preinstalled on SIMATIC IPC427C ready for switch-on
- PROFINET, PROFIBUS and Industrial Ethernet prepared for use in a SIMATIC environment
- Optional WinCC flexible for visualization tasks in parallel with SIMATIC WinAC RTX.
- Configuration and programming with SIMATIC STEP 7 via Industrial Ethernet, PROFINET, or PROFIBUS
- Safety requirements up to SIL 3 according to IEC 61508/62061 or according to EN ISO 13849-1 up to PL e can be implemented with WinAC RTX F.
- Rugged operation
 - Operation without a hard disk, based on Compact Flash Card (CF Card) or Solid-State Drive and Windows Embedded Standard
 - Operation without a fan
 - 128 KByte retentive data for WinAC RTX, also without uninterruptible power supply (UPS)
- Flexibility of a PC-based automation environment
 - Free memory space on CF Card can be used for other PC applications
 - Use of WinAC ODK with SIMATIC WinAC RTX or SIMATIC WinAC RTX F (read-only for fail-safe program part)
 - Connection option for USB devices, flat panel monitor or screen
 - PCI 104 cards can be plugged in
- High-performance service concept
 - Replacement parts for preferred types available in exchange, ex stock

New

- New hardware basis SIMATIC IPC427C
- Cost-effective variants with PROFINET, based on the standard Ethernet interface
- Current product versions of the pre-installed software:
 - SIMATIC WinAC RTX 2009 or SIMATIC WinAC RTX F
 - SIMATIC WinCC flexible 2008 SP1 (WinAC RTX 2009 only)
 - SIMATIC NET Edition 2008

Application

The SIMATIC IPC427C bundles combine the advantages of the PC-based controller solutions with those of the classical PLC world: They offer the flexibility for integrating the different tasks of an automation solution on one hardware platform. The diskless and fanless design of the IPC427C enable the solution to be used directly at the machine in a harsh environment. Using the PROFINET and PROFIBUS interfaces, the system can be integrated with minimal outlay in existing automation landscapes (SIMATIC world, Siemens drive systems).

The SIMATIC IPC427C bundles are the preferred platform when the following criteria must be fulfilled for the automation solution:

- Ultra-compact and operation without an operator ("headless operation")
- For use with remote screen
- Integration of different tasks such as control, visualization, technology functions, or data processing in one hardware unit
- Use of application-specific hardware and software
- Use at machine level
- Safety functions up to SIL 3 according to IEC 61508/62061 or according to EN ISO 13849-1 up to PL e with WinAC RTX F

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC IPC427C Bundles

Function

Controlling:

- For the optimum control of processes with WinAC RTX, several processing levels are available:
 - Cyclic program processing
 - Interrupt processing
 - Time and date-controlled processing
- The controller can save up to 128 KByte of retentive data on an integrated, non-volatile memory, without the need for a UPS.
The complete retentivity of all process values of SIMATIC WinAC RTX can be achieved with a generally available UPS.

Functional safety with WinAC RTX F:

- The functional safety is implemented by means of targeted safety functions in the software. Safety functions are implemented with the S7 Distributed Safety system, to place the plant in a safe state or to hold it in a safe state. The safety functions are mainly contained within the following components:
 - In the safety-related user program (safety program) in WinLC RTX F
 - In the fail-safe inputs and outputs (F I/O).
- The F I/O ensures safety-related processing of the field information (emergency stop pushbutton, light barriers, motor pre-control) It features all the hardware and software components required for reliable processing, according to the required safety class. The user only programs the user safety functions. The safety functions for the process can be implemented with a user safety function or a system-internal fault reaction function. If the F system is unable to perform the actual user safety function in the event of a fault, it performs instead the fault response function, e.g. the associated outputs are switched off and the F CPU enters the STOP state.

Visualization:

- SIMATIC WinCC flexible can also be ordered as an option preinstalled and ready to switch on. WinCC flexible offers powerful functions for visualizing the processes at the machine.

Open access to process values:

- SIMATIC NET OPC server supplied with the SIMATIC IPC427C bundles (variants with WinAC RTX) provides open access to all process values. Any visualization systems or data processing systems can be linked to SIMATIC WinAC RTX via this interface.

Communication:

- Programming of WinAC RTX with SIMATIC STEP 7 and transfer of the WinCC flexible project is performed via the integral Industrial Ethernet interface. The communication package SIMATIC NET SOFTNET S7 Lean is installed for this purpose. The S7 program can alternatively be downloaded to WinAC RTX via the PROFIBUS DP interface.

Use of other software:

- The customer can install supporting software products. Windows XP Embedded is designed so that typical add-on packages can be installed.

Ordering data

Order No.

SIMATIC IPC427C Bundles

*Preferred version with
SIMATIC WinAC RTX F 2009*

(Replacement hardware unit
available in exchange)

SIMATIC IPC427C bundle with WinAC RTX F 2009 H **6ES7 675-1DK30-0EP0**

Processor Core2Duo,
1.2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS,
2 GByte RAM,
8 GByte CompactFlash

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC IPC427C Bundles

Ordering data

Order No.

Order No.

*Preferred versions with
SIMATIC WinAC RTX 2009 and
WinCC flexible 2008*

(Replacement hardware unit
available in exchange)

SIMATIC IPC427C bundles H **6ES7 675 - 1 D ■ ■ 0 - ■ ■ ■ 0**

Processor

- Celeron M, 1,2 GHz,
2 x PROFINET (IE) **A**
- Celeron M, 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS **B**
- Core2 Solo, 1,2 GHz,
2 x PROFINET (IE) **E**
- Core2 Solo, 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS **F**
- Core2 Duo, 1,2 GHz,
2 x PROFINET (IE) **J**
- Core2 Duo, 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS **K**

Working memory

- 2 GByte RAM **3**

Mass storage internal

- without **0**

Mass Storage, externally accessible

- 4 GByte CompactFlash,
Windows Embedded 2009 and
preinstalled software **D**
- 8 GByte CompactFlash,
Windows Embedded 2009 and
preinstalled software **E**

Software configurations

- WinAC RTX **B**
- WinCC flexible RT 128 PT **C**
- WinCC flexible RT 512 PT **D**
- WinCC flexible RT 2048 PT **E**
- WinCC flexible RT 4096 PT **F**
- WinAC RTX, WinCC flexible
RT 128 PT **K**
- WinAC RTX, WinCC flexible
RT 512 PT **L**
- WinAC RTX, WinCC flexible
RT 2048 PT **M**
- WinAC RTX, WinCC flexible
RT 4096 PT **N**

*All versions with
SIMATIC WinAC RTX 2009 and
WinCC flexible 2008*

(Hardware: repair only is
possible)

SIMATIC IPC427C bundles H **6ES7 675 - 1 D ■ ■ 0 - ■ ■ ■ 0**

Processor

- Celeron M, 1,2 GHz, 2 x
PROFINET (IE) **A**
- Celeron M, 1,2 GHz,
2 x PROFINET (IE), 1 x PROFIBUS **B**
- Core2 Solo, 1,2 GHz, 2 x
PROFINET (IE) **E**
- Core2 Solo, 1,2 GHz,
2 x PROFINET (IE), 1 x PROFIBUS **F**
- Core2 Duo, 1,2 GHz,
2 x PROFINET (IE) **J**
- Core2 Duo, 1,2 GHz,
2 x PROFINET (IE), 1 x PROFIBUS **K**

Working memory

- 1 GByte RAM **2**
- 2 GByte RAM **3**
- 4 GByte RAM **4**

Mass Storage, internal¹⁾

- None (can only be ordered with
externally accessible
mass storage) **0**
- 80 GByte HDD SATA, also with
externally accessible CF **1**
- 32 GByte Solid-State Disk SATA,
Windows Embedded 2009 and
preinstalled software **2**
- 4 GByte internal CompactFlash,
Windows Embedded 2009 and
preinstalled software **6**
- 8 GByte internal CompactFlash,
Windows Embedded 2009 and
preinstalled software **7**

Externally accessible mass storage¹⁾

- None (can only be ordered with
internal mass storage) **A**
- 4 GByte CompactFlash,
Windows Embedded 2009 and
preinstalled software **D**
- 8 GByte CompactFlash,
Windows Embedded 2009 and
preinstalled software **E**

Software configurations

- WinAC RTX **B**
- WinCC flexible RT 128 PT **C**
- WinCC flexible RT 512 PT **D**
- WinCC flexible RT 2048 PT **E**
- WinCC flexible RT 4096 PT **F**
- WinAC RTX,
WinCC flexible RT 128 PT **K**
- WinAC RTX,
WinCC flexible RT 512 PT **L**
- WinAC RTX,
WinCC flexible RT 2048 PT **M**
- WinAC RTX, WinCC flexible
RT 4096 PT **N**

¹⁾ For operation with 2 x CF the CF is always required as internal
mass data storage. Second CF can be ordered separately.

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC IPC427C Bundles

Ordering data		Order No.	Order No.	
Delivery versions (ex stock)			Accessories	
Replacement hardware unit available in exchange				
SIMATIC IPC427C bundle with WinAC RTX 2009				
• Processor Core2 Solo, 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS, 2 GByte RAM, 4 GByte CompactFlash	H	6ES7 675-1DF30-0DB0	CP 5603 Microbox Package	B 6GK1 560-3AU00
			Package for using the PROFIBUS-CP 5603 in Microbox PCs; comprising a CP 5603 module and a Microbox expansion rack	
• Processor Core2 Duo, 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS, 2 GByte RAM, 4 GByte CompactFlash	H	6ES7 675-1DK30-0DB0	CP 1604 Microbox Package	6GK1 160-4AU00
			Package for using the PROFINET CP 1604 in Microbox PCs; comprising CP 1604, connection board, power supply and expansion rack for Microbox PC; implemented with Development Kit DK-16 xx PN IO; NCM PC	
• Processor Core2 Duo, 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS, 2 GByte RAM, 8 GByte CompactFlash	H	6ES7 675-1DK30-0EP0	Expansion kit PC/104	B 6AG4 070-0BA00-0XA0
			Expansion rack incl. mounting hardware; 6 items	
SIMATIC IPC427C bundle with WinAC RTX 2009 and WinCC flexible 2008 512 PT		6ES7 675-1DK30-0DL0	CompactFlash Cards	
Processor Core2 Duo, 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS, 2 GByte RAM, 4 GByte CompactFlash			• 4 GByte	B 6ES7 648-2BF02-0XG0
			• 8 GByte	B 6ES7 648-2BF02-0XH0
			SIMATIC PC keyboard	
			• German / international, USB connection	6ES7 648-0CB00-0YA0
			• German / International, USB connection, with 4-way USB HUB	B 6ES7 648-0CD00-0YA0
			SIMATIC PC USB mouse	B 6ES7 790-0AA01-0XA0
			Optical, 3 buttons, with PS/2 adapter	
			SIMATIC PC USB flash drive	B 6ES7 648-0DC40-0AA0
			2 GByte, USB 2.0, incl. SIMATIC PC BIOS manager, bootable, metal enclosure	
			SIMATIC IPC Service USB FlashDrive	C 6AV7 672-8JD00-0AA0
			2 GByte, USB 2.0; metal enclosure, bootable	
			Book mounting kit	B 6ES7 648-1AA20-0YB0
			Interfaces at the front	

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC IPC427C Bundles

More information

Delivery

Production and delivery of the devices will typically be completed within 13 working days after receipt of order. The hardware and mass memory with the complete, pre-installed software ready-to-use are supplied fully assembled.

Commissioning

Before the control or visualization application is complete, simply perform the following steps:

- Optional: Install and setup additional hardware on the device (e.g. an additional SIMATIC CP 5603 PROFIBUS interface)
- Optional: Install and setup other software on the device
- Transfer the engineering projects from STEP 7 or WinCC flexible
- Transfer the supplied license keys for SIMATIC software
- Back up the installed software and protect the flash based mass memory by switching on the enhanced write filter

Spare parts

For a selection of preferred variants, replacement parts are available in exchange immediately, ex stock Preferred variants offer the following options:

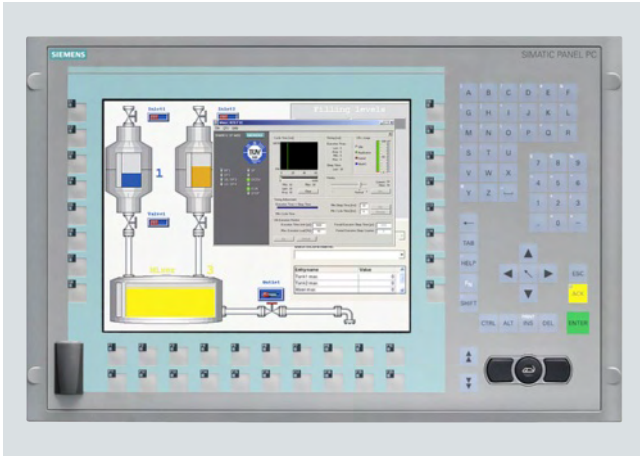
- All processor variants with PROFINET or PROFIBUS option
- 2 GByte RAM
- Replaceable CompactFlash memory only
- All software configurations

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Overview



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 the harshest mechanical stress and is extremely reliable in operation
- Compact design (only 61-69 mm mounting depth for 12"-19")
- High degree of investment protection
- Fast integration capability

Available in the following versions

- built-in versions
 - 12" and 15" TFT Touch
 - 12" and 15" TFT Keys
 - 19" Touch
 - versions for mounting on a support arm
 - PRO 15" und 19" Touch
- Fully enclosed version with IP65 degree of protection for mounting on a support arm / stand

Benefits

- Maximum industrial compatibility due to rugged construction, even when subjected to extreme vibration and shocks
- High degree of investment protection thanks to assured availability of spare parts (for a period of 5 years following the end of active marketing)
- High continuity of components for long-term machine concepts without renewed engineering outlay
- Savings in time and costs thanks to service-friendly device design:
 - USB 2.0 interfaces on the front and rear for quick and easy connection of additional hardware components
- High degree of industrial functionality thanks to integrated PROFIBUS DP / MPI and PROFINET (IE, RT / IRT) interfaces
- Maintenance-free due to lack of rotating components (fan and hard disk)
- Minimized downtimes thanks to high system availability
 - Efficient self-diagnostics (DiagBase and SIMATIC PC DiagMonitor)
 - High reliability and security of an embedded platform
- Integral component of Totally Integrated Automation (TIA):
 - Enhanced productivity, reduction of engineering overhead, reduction of lifecycle costs
- Complete turnkey solutions are supplied (the software is already installed and preconfigured) for visualization and automation in combination with WinCC flexible and WinAC RTX.

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Application

SIMATIC HMI IPC477C is designed for use direct at the machine, where the focus is on a combination of ruggedness and maximum reliability (the reliability of an embedded platform), and the openness of a PC is also required (e.g. module expansion and the connection of I/O devices such as printers, keyboards, etc.).

Due to the minimal mounting depth, it can also be used in confined spaces.

The PC can be used in production automation as well as in process automation and can be mounted in control cabinets, control desks, 19" cabinets / racks and as PRO version direct on swivel arms (gantries).

A SIMATIC Panel PC is the ideal platform for PC-based automation:

- PC-based visualization, on-site at the machine with SIMATIC WinCC flexible
- PC-based control with SIMATIC WinAC RTX
- SIMATIC WinCC Web Client for web-based solutions with WinCC/Web Navigator
- SIMATIC WinCC Standard Client as single-user station

Siemens offers a complete modular system of automation components that complement one another perfectly.

Design

The HMI IPC477C is a compact unit comprising an operator control unit with an integrated computing unit.

Standard components of the computer unit:

- Rugged metal enclosure, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processors:
 - Intel Celeron M 1.2 GHz, Intel Core2Solo 1.2 GHz or Intel Core2Duo 1.2 GHz
- Main memory basic configuration:
 - 1.2 or 4 GByte (DDR3)
 - Battery-backed retentive memory 2 MByte
- Compact Flash Drive (internal) with preinstalled Windows XP embedded operating system (Image) and optional software or Solid-State Drive (SSD) with Windows XP embedded or Windows XP Professional (MUI)
- Graphics onboard (VGA analog, 1280 x 1024)
- Interfaces:
 - 2 x PROFINET (IE) onboard (10 / 100 / 1000 Mbit/s)
 - Optionally PROFIBUS DP / MPI onboard, CP5611-compatible, isolated
 - Optionally PROFINET (IRT) onboard, CP 1616-compatible, 3 ports
 - 5 x USB 2.0 port, 500 mA (1 x on front)
 - 1 x COM1 (RS232)
 - 1 x DVI-I (for connecting a second display unit)
- Free slots for expansions:
 - 1 x CompactFlash slot (accessible from outside)
- Power supply: 24 V DC

Components of the operator control unit:

The operator control units are available in the following versions:

12" Key

- 12" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with international PC character set and 36 additional function keys, as well as integrated mouse
- USB interface

12" Touch

- 12" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen
- USB interface

15" Key

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys, as well as integrated mouse
- USB interface

15" Touch

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen
- USB interface

19" Touch

- 19" TFT color display, 1280 x 1024 (SXGA)
- Resistive analog touch screen
- USB interface

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Design (continued)

Expansion components (accessories)

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for the early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, watchdog
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (English / German)
- Network-wide monitoring via SNMP and OPC interface possible

SIMATIC IPC Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- High-speed restoring of system and data partitions with bit accuracy; user software and special installations are also backed up
- Software tool for adaptation of mass storage partitioning.

SINUMERIK Floppy drive 3.5", USB 1.1

The USB disk drive is provided for fast exchange of user data, e.g. recipes, or of files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. A USB cable of 1 m length is included in the scope of supply. The disk drive complies with the USB 1.1 standard. 3.5" high density disks can be used (1.44 MByte).

Operation of the USB disk drive with SIMATIC Panel PCs:

- Windows XP: possible without separate driver
- The driver is included in the scope of supply of the operating system

SIMATIC IPC USB FlashDrive

- Mobile memory medium for SIMATIC PC / PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

SIMATIC IPC Service USB FlashDrive

- Mobile memory medium for backing up / restoring mass memories
- Ready-installed Image & Partition Creator V3.0
- Ultra-compact and rugged

Industrial USB Hub 4

- Industry-standard USB 2.0 hub, front IP65
- Installation in control cabinet door or on DIN rail
- Inspection window and LEDs for each of the four interfaces

Note:

Further information can be found under "Expansion components".

Function

- DiagBase: Integrated, parameterizable monitoring functions (program execution / watchdog, internal enclosure temperature, DIAG bit for CF cards similar to S.M.A.R.T for hard disks)
- Expanded diagnostics / messages via Ethernet, e-mail, SMS and for direct transfer to SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor)

Integration

Integrated interfaces:

- Ethernet
The integrated PROFINET interfaces (10 / 100 / 1000 Mbit/s) can be used for IT communication and for exchanging data with programmable controllers such as SIMATIC S7 (with the "SOFTNET S7" software packages). Available options: PROFINET (iRT) with 3 ports instead of an PROFINET (IE).
- PROFIBUS onboard (option)
The floating PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for coupling to SIMATIC S7 (with software packages "SOFTNET for PROFIBUS").
- Other interfaces:
For connecting additional I/O devices, 5 USB (Universal Serial Bus) interfaces and one serial interface are available.

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Technical specifications

SIMATIC HMI IPC477C Bundles	6AV7 884..
General features	
Processors	Intel Celeron M 1,2 GHz, Intel Core2Solo 1,2 GHz or Core2 Duo 1,2 GHz
Memory type	DDR3-RAM
Main memory	1 GByte, 2 GByte or 4 GByte
Spare slots for expansions	1 x CF card slot (externally accessible)
Operating system	Windows Embedded Standard 2009 (English, German) or Windows XP Professional Multi-Language
Additional OS information	Language: English, German
SIMATIC software	Optionally with preinstalled bundle software SIMATIC WinCC flexible 2008 SP1 and / or WinAC RTX 2009 SIMATIC WinAC RTX F SIMATIC WinCC as web client or single-user station
Drives	
Floppy drive	Optional via external USB floppy drive
Optical drives	Possible as external drive via USB
Hard disk / Mass Storage	Compact Flash drive with 2, 4, or 8 GByte and / or SSD (Solid- State Disk) with 32 GByte
Interfaces	
Graphics interface	DVI-I for additional display unit: Color depth 32 bits
Connection for keyboard / mouse	USB / USB
Serial interface	COM1: 1 x V.24 (RS232)
PROFIBUS / MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card required, CP5611-compatible, not upgradable
PROFINET (RT / IRT)	Optional: 3 x RJ45, CP1616-kompatibel; not upgradable
USB	1 x on front, 4 x on rear, USB 2.0 (500 mA)
PROFINET (IE), Ethernet	onboard, 2 x 10/100/1000Mbit (RJ45 with / without PROFIBUS), 1 x 10/100/1000 Mbit (RJ45 with PROFINET), no plug-in card required
Multimedia	No

SIMATIC HMI IPC477C Bundles	6AV7 884..
Supply voltage	
Supply voltage	24 V DC
Monitoring functions	
Temperature	Yes
Watchdog	Yes
DiagBit (similar to S.M.A.R.T.)	Yes (for CF cards and SSD)
Status LEDs	Yes (rear)
Front side according to EN 60529	IP65 (on the front) according to EN 60529 and NEMA4
Ambient conditions	
Vibration load during operation	Tested according to DIN IEC 60068-2-6: 10 ... 58 Hz: 0.075 mm, 58 ... 200 Hz: 9.8 m/s ² (1 g)
Shock load during operation	Tested according to DIN IEC 60068-2-7: 50 m/s ² (5 g), 30 ms, 100 shocks
Relative humidity	Tested according to DIN IEC 60068-78, DIN IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)
Maximum permissible installation angle + / -	30° over vertical
Ambient temperature during operation	0 °C ... +50 °C in maximum configuration; no fan
Certifications & standards	
Approvals	CE, cULus(508), marine engineering
EMC	CE, 55022A, EN 61000-6-4, EN 61000-6-2

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Technical specifications (continued)

	6AV7 884-0	6AV7 884-1	6AV7 884-2	6AV7 884-3	6AV7 884-5
SIMATIC HMI IPC477C Bundles	12" TFT Touch	12" TFT Key	15" TFT Touch	15" TFT Key	19" TFT Touch
General features					
Accessory components	Touch protective foil,	Slide-in keyboard labels	Slide-in keyboard labels	Slide-in keyboard labels	Touch protective foil,
Power loss in maximum configuration	24 V DC: max. 45 W	24 V DC: max. 45 W	24 V DC: max. 55W	24 V DC: max. 55 W	24 V DC: max. 60 W
Display					
Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024
MTBF backlighting (at 25 °C)	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent	50000 h at 24 h continuous operation, temperature-dependent
Type of operation					
Function keys	No	36	No	36	No
Alphanumeric keyboard	No	Yes	No	Yes	No
Touch screen (analog / resistive)	Yes	No	Yes	No	Yes
Mouse on the front	No	Yes	No	Yes	No
Design					
Centralized configuration	Yes	Yes	Yes	Yes	Yes
Distributed configuration	No	No	No	No	No
Dimensions					
Mounting dimensions in centralized configuration (W x H x D, without optical drive) in mm	368 x 290 x 61	450 x 290 x 61	450 x 290 x 64	450 x 321 x 59	450 x 380 x 71
Operator control unit (W x H) in mm	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 355 (19", 8 HU)	483 x 400 (19", 9 HU)
Weight	6,1 kg	6,6 kg	7,0 kg	6,6 kg	7,2 kg

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Ordering data

Order No.

Order No.

Preferred versions with spare parts in exchange

("Built to order" with delivery time of max. 15 working days and replacement devices in exchange)

Configuration

SIMATIC HMI IPC477C

H 6AV7 884 - ■ A ■ ■ ■ - ■ ■ ■ 0

Without fan
5 x USB 2.0 (500 mA),
one of which on the front
1 x COM (RS232)
24 V DC power supply with
On / Off switch

Front panels

- 12" TFT Touch
- 15" TFT Touch
- 19" TFT Touch

0
2
5

Processors and fieldbus

- Celeron M 1,2 GHz,
2 x PROFINET (IE)
- Celeron M1 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS DP 12
- Core2 Solo 1,2 GHz,
2 x PROFINET (IE)
- Core2 Solo 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS DP 12
- Core2 Duo 1,2 GHz,
2 x PROFINET (IE)
- Core2 Duo 1,2 GHz,
2 x PROFINET (IE),
1 x PROFIBUS DP 12

A
B
D
E
G
H

Main memory (DDR3 RAM), 1 database

- 2 GByte

2

Second mass storage (installed and formatted)

- without
- CompactFlash 2 GByte
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid-State Drive)
min. 32 GByte

0
2
3
4
6

Preferred versions with spare parts in exchange

("Built to order" with delivery time of max. 15 working days and replacement devices in exchange)

Configuration (continued)

SIMATIC HMI IPC477C

H 6AV7 884 - ■ A ■ ■ ■ - ■ ■ ■ 0

First mass storage (with pre-installed SIMATIC software)

- CompactFlash 2 GByte¹⁾
- CompactFlash 4 GByte
- CompactFlash 8 GByte
- SSD (Solid-State Drive)
min. 32 GByte

2
3
4
6

Operating system (preinstalled and activated)

- Windows Embedded
Standard 2009
- Windows XP Professional Multi-
Language, only with SSD;
without SIMATIC software

B
D A

Software packages, only with CF 4 GByte or higher

- without SIMATIC Software
- with operating system and RTX
WinAC RTX 2009 pre-installed
and configured
- with operating system and HMI
WinCC flexible 2008 SP1 RT
(incl. archives / recipes)
pre-installed and configured
- Number of tags 128 PT
- Number of tags 512 PT
- Number of tags 2048 PT
- Number of tags 4096 PT
- with operating system and HMI
WinCC flexible 2008 SP1 RT
(incl. archives / recipes)
pre-installed and configured
- Number of tags 128 PT
- Number of tags 512 PT
- Number of tags 2048 PT
- Number of tags 4096 PT

B A
B B
B C
B D
B E
B F
B K
B L
B M
B N

¹⁾ Only without SIMATIC software

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Ordering data	Order No.	Order No.
<p>Further bundles with SIMATIC HMI IPC477C and WinCC V7.0 SP1</p> <p>Configuration</p> <p>SIMATIC HMI IPC477C</p> <p>without fan 4 x USB 2.0 on rear, 1 x USB 2.0 on front, 1 x COM (RS232), 2 x 10 / 100 / 1000 Mbit/s Ethernet (RJ45); software pre- installed on CF / SSD: Windows Embedded Standard, SIMATIC WinCC V7.0 SP1</p> <p>Client</p> <p>Processor Celeron M 1.2 GHz, 1 GByte DDR3 RAM, CF Card 8 GByte, RT license 128 PT on USB stick</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch 	<p>H 6AV7 884 - ■ A A 1 0 - 4 B X 0</p> <p>2</p> <p>5</p>	<p>Configuration</p> <p>SIMATIC HMI IPC477C with WinAC RTX F</p> <p>Processor Core2 Duo 1.2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS DP, 1 x COM (RS232), 5 x USB 2.0, of which 1 x on the front, 2 GByte DDR3 RAM CompactFlash Card plugged in (internal); 8 GByte. Software pre-installed on CF Card RTX F: WinAC RTX F 2009</p> <ul style="list-style-type: none"> • 12" TFT Touch • 12" TFT Key • 15" TFT Touch • 15" TFT Key • 19" TFT Touch <p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>5</p> <p>SIMATIC HMI IPC477C PRO</p> <p>H 6AV7 883 - ■ A ■ ■ ■ - ■ ■ ■ 0</p> <p>embedded and without fan, fully enclosed according to IP65 5 x (500 mA), one of which on the front 24 V DC power supply with On / Off switch</p> <p>Front panels</p> <ul style="list-style-type: none"> • 15" TFT Touch (IP65 enclosure; PRO) • 15" TFT Key (IP65 enclosure; PRO) <p>6</p> <p>7</p>
<p>Client and Single Station</p> <p>Processor Core 2 Solo 1.2 GHz, PROFIBUS DP, 2 GByte DDR3 RAM, CF Card 8 GByte, RT license 128 PT</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch 	<p>H 6AV7 884 - ■ A E 2 0 - 4 B X 0</p> <p>2</p> <p>5</p>	
<p>SIMATIC HMI IPC477C</p> <p>Single Station</p> <p>Processor Core 2 Duo 1.2 GHz, PROFIBUS DP, 4 GByte DDR3 RAM</p> <ul style="list-style-type: none"> • 15" TFT Touch • 19" TFT Touch • 8 GByte CF Card • 32 GByte SSD • Runtime license 128 PT on USB stick • Runtime license 2048 PT on USB stick 	<p>H 6AV7 884 - ■ A H 3 0 - ■ B ■ 0</p> <p>2</p> <p>5</p> <p>4</p> <p>6</p> <p>X</p> <p>W</p>	

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Ordering data

Order No.

Order No.

Configuration

SIMATIC HMI IPC477C PRO

H

6AV7 883 - ■ A ■ ■ ■ - ■ ■ ■ 0

embedded and without fan, fully enclosed according to IP65 5 x (500 mA), one of which on the front 24 V DC power supply with On / Off switch

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 Solo 1,2 GHz, 2 x PROFINET (IE) **D**
- Core2 Solo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS **E**
- Core2 Solo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (3 Ports) **F**
- Core2 Duo 1,2 GHz, 2 x PROFINET (IE) **G**
- Core2 Duo 1,2 GHz, 2 x PROFINET (IE), 1 x PROFIBUS **H**
- Core2 Duo 1,2 GHz, 1 x PROFINET (IE), 1 x PROFINET (3 Ports) **J**

Main memory (DDR3 RAM), 1 database

- 1 GByte **1**
- 2 GByte **2**
- 4 GByte **3**

Second mass storage (installed and formatted)

- without **0**
- CompactFlash 2 GByte **2**
- CompactFlash 4 GByte **3**
- CompactFlash 8 GByte **4**
- SSD (Solid State Drive), min. 32 GByte **6**

Configuration (continued)

SIMATIC HMI IPC477C PRO

H

6AV7 883 - ■ A ■ ■ ■ - ■ ■ ■ 0

Mass storage (installed, Windows XP embedded (English, German) preinstalled, optionally with SIMATIC software)

- CompactFlash 2 GByte²⁾ **2**
- CompactFlash 4 GByte **3**
- CompactFlash 8 GByte **4**
- SSD (Solid State Drive), min. 32 GByte **6**

Operating system

Windows Embedded Standard 2009 pre-installed **B A**

Windows XP Professional Multi-Language, only with SSD; without SIMATIC software **D A**

Software packages with CF 4 GByte or higher

with operating system and RTX Windows XP embedded pre-installed, WinAC RTX 2009 pre-installed and configured for PROFIBUS

- with operating system and HMI Windows XP embedded pre-installed, WinCC flexible 2008 SP1 RT (incl. archives / recipes) pre-installed and configured
 - Number of tags 128 PT **B C**
 - Number of tags 512 PT **B D**
 - Number of tags 2048 PT **B E**
 - Number of tags 4096 PT **B F**
- with operating system and HMI / RTX1) Windows XP embedded pre-installed, WinCC flexible 2008 SP1 RT (incl. archives / recipes) and WinAC RTX 2009 pre-installed and configured
 - Number of tags 128 PT **B K**
 - Number of tags 512 PT **B L**
 - Number of tags 2048 PT **B M**
 - Number of tags 4096 PT **B N**

¹⁾ Not with Celeron M 1.2 GHz processor

²⁾ Only without SIMATIC software

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Ordering data		Order No.	Order No.	
Accessories			Expansion components	
Protective foil for Panel PC 477 / 577 / 677 For protecting the touch screen against dirt / scratches <ul style="list-style-type: none"> • for 12" Touch • for 15" Touch (not for PRO) • for 19" Touch 		6AV7 671-2BA00-0AA0	SIMATIC IPC DiagMonitor V4.2	A 6ES7 648-6CA04-2YX0
		6AV7 671-4BA00-0AA0	SIMATIC IPC Image & Partition Creator V3.1 Software tool for preventive data backup and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (German, English)	G 6ES7 648-6AA03-1YA0
		6AV7 672-1CE00-0AA0		
Labeling strips for Panel PC 477 / 577 / 677 For labeling soft keys and function keys, blank, supplied in sets of 10		6AV7 672-0DA00-0AA0	SIMATIC IPC USB FlashDrive	B 6ES7 648-0DC40-0AA0
Touch pen B Undetachable pen for operation of the touch devices, mounting of the support on the control cabinet or directly on the PRO unit		6AV7 672-1JB00-0AA0	SIMATIC IPC Service USB FlashDrive	C 6AV7 672-8JD00-0AA0
			<ul style="list-style-type: none"> • 2 GByte, USB 2.0, metal enclosure, bootable • With: BIOS Manager, Image & Partition Creator pre-installed, incl. CD 	
			SINUMERIK Floppy drive 3,5", USB 1.1	B 6FC5 235-0AA05-1AA2
			With 1 m connecting cable	
			Industrial USB Hub 4	B 6AV6 671-3AH00-0AX0
			4 x USB 2.0, IP65 for control cabinet door or DIN rail	
			CompactFlash Card	
			• 2 GByte	B 6ES7 648-2BF02-0XF0
			• 4 GByte	B 6ES7 648-2BF02-0XG0
			• 8 GByte	B 6ES7 648-2BF02-0XH0

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N und ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

G: Subject to export regulations: AL: N und ECCN: 5D992

Please note:

The HMI IPC477C is delivered as standard with an inserted CF card. The licenses are on the supplied USB stick.

Note:

Further embedded versions based on IPC427C and Embedded Controller (mEC) are listed under SIMATIC PC based Control.

PC-based Automation

Embedded Bundles / Packages for Industrial PC

SIMATIC HMI IPC477C Bundles

Ordering data		Order No.	Order No.	
Accessories			Expansion components	
Protective foil for Panel PC 477 / 577 / 677 / 877			SIMATIC IPC DiagMonitor V4.2 A	6ES7 648-6CA04-2YX0
For protecting the touch screen against dirt / scratches			Software tool for monitoring SIMATIC IPCs, incl. manual, on CD-ROM (German / English)	
• for 12" Touch		6AV7 671-2BA00-0AA0	SIMATIC IPC Image & Partition Creator V3.1 G	6ES7 648-6AA03-1YA0
• for 15" Touch		6AV7 671-4BA00-0AA0	Software tool for preventive data backup and hard disk partitioning for SIMATIC IPCs, incl. manual on CD-ROM (German, English)	
• for 19" Touch		6AV7 672-1CE00-0AA0	SIMATIC IPC USB FlashDrive B	6ES7 648-0DC40-0AA0
Labeling strips for Panel PC 477 / 577 / 677 / 877		6AV7 672-0DA00-0AA0	2 GByte, USB 2.0, metal enclosure, bootable	
For labeling soft keys and function keys, blank, supplied in sets of 10			SIMATIC IPC Service USB FlashDrive C	6AV7 672-8JD00-0AA0
Touch pen B		6AV7 672-1JB00-0AA0	2 GByte, USB 2.0, metal enclosure, bootable	
Undetachable pen for operation of touch devices, mounting of the support on the control cabinet			with: Image & Partition Creator (en) ready-installed, incl. installation CD (ger / en)	
			SINUMERIK Floppy drive 3,5", USB 1.1 B	6FC5 235-0AA05-1AA2
			With 1 m connecting cable	
			Industrial USB Hub 4 B	6AV6 671-3AH00-0AX0
			4 x USB 2.0 interfaces, IP65 for mounting on control cabinet door or DIN rail	
			CompactFlash Card	
			• 2 GByte B	6ES7 648-2BF01-0XF0
			• 4 GByte B	6ES7 648-2BF01-0XG0
			Extension kit PC/104 B	6AG4 070-0BA00-0XA0
			For integration of PC/104 modules packing unit contains 6 expansion frames	

A: Subject to export regulations: AL: N und ECCN: EAR99S

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N und ECCN: EAR99T

G: Subject to export regulations: AL: N and ECCN: 5D992

Note:

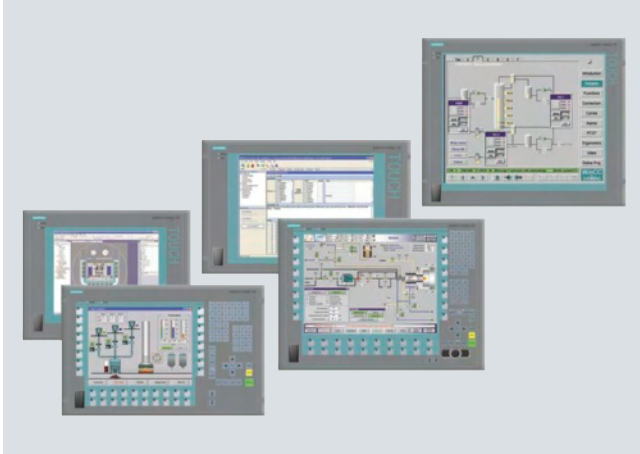
For further embedded versions (with preinstalled and preconfigured Software) based on Basic Microbox PC please refer to SIMATIC PC-based Control.

PC-based Automation

Embedded Bundles / Packages for Industrial PC

Software packages for
SIMATIC IPC and S7-mEC

Overview



SIMATIC IPC and S7-mEC with SIMATIC WinCC flexible

- SIMATIC IPC packages with WinCC flexible are an innovative solution for simple visualization tasks directly at the machine in the field of HMI.
- This package can only be supplied if a SIMATIC IPC or S7-mEC is ordered together with the WinCC flexible Runtime software. It cannot be ordered subsequently.
- In combination with the embedded SIMATIC IPC (HMI IPC477C (PRO) and IPC427C) and the embedded controller S7-mEC, there are turn-key solutions (bundles), i.e. the runtime software is already preinstalled.

SIMATIC IPC with SIMATIC WinCC

- The SIMATIC IPC packages with WinCC make it easy to order all the components required for an HMI solution on the basis of a Panel PC.
- This package can only be supplied if a SIMATIC IPC or S7-mEC is ordered together with the WinCC flexible Runtime software. It cannot be ordered subsequently.
- In combination with the embedded SIMATIC IPC (HMI IPC477C (PRO) and IPC427C) and the embedded controller S7-mEC, there are turn-key solutions (bundles), i.e. the runtime software is already preinstalled.

SIMATIC IPC with SIMATIC WinAC RTX (F)

- The SIMATIC IPC packages with WinAC RTX make it easy to order all the components required for a control solution on the basis of an industrial PC.
- This package can only be supplied if a SIMATIC Industrial PC is ordered together with the WinAC RTX Runtime software. It cannot be ordered subsequently.
- In combination with the embedded SIMATIC IPC (HMI IPC477C (PRO) and IPC427C) and the embedded controller S7-mEC, there are turn-key solutions (bundles), i.e. the runtime software is already preinstalled.

Benefits

- Easy to order
- Cost savings in contrast to ordering components individually
- Optimally tuned hardware for the SIMATIC HMI software
- System-tested solution

Design

SIMATIC IPC and S7-mEC with SIMATIC WinCC flexible

The order configurator gives you a free choice of how the SIMATIC Industrial PC hardware is configured – depending on individual requirements for display and system performance.

Customers must install the desired WinCC flexible Runtime software and the communication hardware and software themselves. The WinCC flexible Runtime software is supplied with the devices. The package also contains the runtime options for WinCC flexible /Archives and WinCC flexible /Recipes.

Runtime licenses are required for WinCC flexible Runtime. One of the offered licenses can be selected depending on the number of Power Tags required.

The term PowerTags is used exclusively to describe process variables that have a process link to the controller.

Variables without process link, constant limit values of variables, and messages are also available for additional system performance.

SIMATIC IPC with SIMATIC WinCC

The order configurator gives you a free choice of how the SIMATIC Industrial PC hardware is configured – depending on individual requirements for display and system performance. It is only necessary in this case to comply with the minimum requirements that WinCC places on the basic hardware.

Minimum configuration:

- Processor: Pentium III 933 MHz or Celeron 650 MHz or higher
- 12" or 15" display (at least 600 x 800 pixels resolution)
- Main memory min. 512 MByte
- Min. 10 GByte with CD-ROM
- Windows 2000 Multilanguage or Windows XP Professional Multilanguage

For process communication, you can choose between the on-board, CP 5611-compatible PROFIBUS interface or the powerful modules CP 1613 for Industrial Ethernet and CP 5613 for PROFIBUS.

From the configurator for the WinCC package, another order item can be selected that then contains the relevant WinCC software package and the communication module.

Both order items are delivered together. Customers must install the communication hardware and the WinCC software themselves.

Runtime licenses are required for WinCC Runtime. One of the offered licenses can be selected depending on the number of Power Tags required.

The term Power Tags is used exclusively to describe process variables that have a process link to the controller. Variables without process link, constant limit values of variables, and messages are also available for additional system performance.

PC-based Automation

Embedded Bundles / Packages for Industrial PC

Software packages for SIMATIC IPC and S7-mEC

Ordering data

Order No.

Order No.

Configuration

SIMATIC WinCC flexible Package¹⁾³⁾ (incl. Archives and Recipes)

WinCC flexible 2008 Runtime

- 128 Power Tags
- 512 Power Tags
- 2048 Power Tags
- 4096 Power Tags

6AV6 623 - 2 A 0 0 - 0 A A 0

B
D
F
G

SIMATIC WinCC Package²⁾

WinCC V6.2 Runtime²⁾

- 128 Power Tags
- 256 Power Tags
- 1024 Power Tags
- 8192 Power Tags
- 65536 Power Tags

6AV6 382 - 2 A 0 6 - 2 A X 0

C
D
E
H
F

SIMATIC WinCC Package²⁾

WinCC V7.0 SP1 Runtime²⁾

- 128 Power Tags
- 512 Power Tags
- 2048 Power Tags
- 8192 Power Tags
- 65536 Power Tags

6AV6 382 - 2 A 0 7 - 0 A X 0

C
D
E
H
F

SIMATIC WinAC RTX (F) Package

• SIMATIC WinAC RTX²⁾³⁾

A 6ES7 671-0RC07-6YA0

• SIMATIC WinAC RTX F²⁾³⁾

A 6ES7 671-1RC07-6YA0

¹⁾ Only if ordered together with a SIMATIC IPC or S7-mEC

²⁾ Only if ordered together with a SIMATIC IPC

³⁾ The current version will always be supplied

A: Subject to export regulations: AL: N und ECCN: EAR99S

Note:

For ordering data for Panel PCs and accessories, see configurators in "SIMATIC Panel PCs".

Ready-to-use HMI IPC477C with WinCC

("Build to order" with delivery time of max. 14 working days for hardware, only repairs are possible)

Configuration

HMI IPC477C mit WinCC

No fan, 5 x USB2.0 (500 mA), 1 x of which on front, 1 x COM (RS232), power supply 24 V DC with On / Off switch, 2 x PROFINET (IE), 2 GByte main memory (DDR3-SDRAM), CompactFlash card 8 GByte, Windows Embedded 2009 preinstalled, SIMATIC WinCC V7.0 SP1 Runtime preinstalled

Client configurations

Processor Celeron M 1.2 GHz, 1 GByte SDRAM-DDR3, 8 GByte CF card, runtime licence 128 PT

- 15" Touch
- 19" Touch

Client and single-user station configurations

Processor Core2Solo 1.2 GHz, 2 GByte SDRAM-DDR3, 8 GByte CF card, runtime license 128 PT

- 15" Touch
- 19" Touch

Single-user station configurations

Processor Core2 Duo 1,2 GHz, 4 GByte SDRAM-DDR3

- 15" Touch
- 19" Touch
- 8 GByte CF-Karte
- 32 GByte SSDe
- Runtime license 128 PT
- Runtime license 2048 PT

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

Note:

Other ready-to-use SIMATIC HMI IPC477C can be found in the Chapter "Panel PC under HMI IPC477C".

More information

Additional information is available in the Internet under:

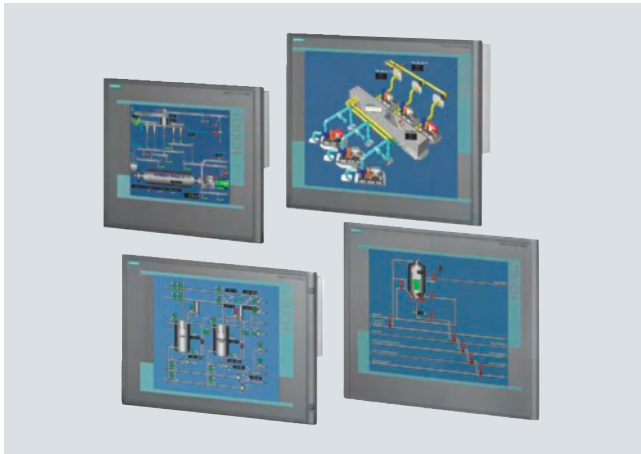
<http://www.siemens.com/simatic-hmi>

Overview

Industrial LCD monitors encompass:

- SIMATIC Flat Panels / monitors
- SCD monitors

Flat Panel



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)

Benefits

- Rugged industrial design:
 - High shock and vibration resistance as well as extremely high electromagnetic compatibility make for a fail-safe and long-lasting design
 - Enclosure front in degree of protection IP65 / NEMA4, resistant against dust and humidity
 - Enclosure version complete in degree of protection IP65 for mounting on supporting arm
 - Scratch-resistant, anti-glare mineral glass screen, providing high mechanical protection against pressure and scratching
 - Meets CE standard "Industry"
- Variety of versions
- No X-rays
- Lower energy requirement
- Fatigue-proof operation:
 - Wide reading angle of up to 170° horizontal and vertical
 - Sharp and high-contrast graphic display
 - No flickering, uniform brightness
 - Automatic display adjustment (Auto Adjust)
- Configuration using on-screen display (OSD)
- Small space requirement and low weight
- Long service life

Application

The Flat Panels are used wherever the PC computing unit and the operator / display unit must be installed remotely from one another for technical or application-related reasons. SIMATIC Flat Panels are suitable for direct connection to any PC, in particular, however, for use with the SIMATIC Box PC or SIMATIC Rack PC

Design

- Rugged aluminum front
- TFT display in following sizes:
 - 12" / 800 x 600 pixels
 - 15" / 1024 x 768 pixels
 - 17" / 1280 x 1024 pixels
 - 19" / 1280 x 1024 pixels
- 256K up to 16 million colors
- Anti-glare and hardened mineral glass screen
- Basic display or touch screen option
- 24 V DC power supply, additional option with 100-240 V AC (50 / 60Hz)
- Can be located up to 5 m from the computing unit

The following are included in the scope of supply of the built-in units:

- 24 V connection plug
- Power supply cable (Europe) for version with AC power pack (power supply cables for other countries can be ordered as an accessory)
- VGA connection cable 1.8 m (other cable lengths and DVI cable available separately as accessories)
- USB Touch connection cables for Touch devices (other cable lengths available separately as accessories)
- Latch fastener
- Operating instructions, 2 languages (German and English)
- CD-ROM with hardware drivers and documentation

The following are included in the scope of supply of the PRO devices:

- 24 V connection plug
- Power supply cable (Europe) (power supply cables for other countries can be ordered as an accessory)
- Operating instructions, 2 languages (German and English)
- CD-ROM with hardware drivers and documentation

Special functions of extended versions

- Can be located up to 30 m from the computing unit
- Two rear USB interfaces
- Dimmable backlit display
- Combined AC and DC power supply
- EX22 approval for 17" and 19" devices
- Marine approvals

Flat Panel PRO 15" / 19" Touch devices

- For mounting on a support arm or stand
- IP65 all-round, enclosure type 4 x
- 15" / 19" Touch display
- Rugged aluminum enclosure
- 24 V DC power supply and 100-240 V AC (50 / 60 Hz) combined
- Two internal USB interfaces, one of which can be equipped with the accessory "USB service interface"
- Can be located up to 30 m from the computing unit
- Device can be adapted from above or below
- Direct connection to support arm systems from well-known manufacturers (e.g. Rittal, Bernstein, Rose, Rolec)
- Supports the internationally established standard VESA 75 / VESA 100 for adjustable mounting

PC-based Automation

Monitors and Thin Clients

Industrial LCD monitors – Flat Panel

Technical specifications

Flat Panel	12"	15"	17"	19"
Supply voltage	24 V DC, additional option 100-240 V AC			
Permissible frequency range	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz
Power consumption, max.	25 VA	35 VA	55 VA	55 VA
General features				
Anti-glare and hardened mineral glass screen	Yes	Yes	Yes	Yes
Line side switch	No	No	No	No
Can be separate from the computer	Optional up to 30 m	Optional up to 30 m	Optional up to 30 m	Optional up to 30 m
Display				
On-screen display (OSD) configuration	Yes	Yes	Yes	Yes
Display version	12" TFT	15" TFT	17" TFT	19" TFT
Visible area (H x V) in mm	246 x 184,5	304 x 228	304 x 228	376 x 301
Viewing angle	140° x 120°	140° x 120° (min)	170° x 170°	170° x 170°
Pixel pitch	0,3075 mm x 0,3075 mm	0,297 mm x 0,297 mm	0,297 mm x 0,297 mm	0,294 mm x 0,294 mm
Resolution (W x H in pixel)	800 x 600	1024 x 768	1280 x 1024	1280 x 1024
Refresh rate	60 - 75 Hz	60 - 75 Hz	60 - 75 Hz	60 - 75 Hz
Line frequency	25 - 48 kHz	46,7 - 62,5 kHz	30 - 80 KHz	30 - 80 KHz
Brightness / Contrast	> 350 cd/m ² / 450:1	> 260cd/m ² / 350:1	> 300cd/m ² / 300:1	> 300cd/m ² / 300:1
Number of colors	262k	16,7 Mio.	16,7 Mio.	16,7 Mio
MTBF backlighting (at 25 °C, 24h continuous duty)	50000 h	50000 h	50000 h	50000 h
Type of operation				
Touch screen	analog-resistive, optional	analog-resistive, optional	analog-resistive, optional	analog-resistive, optional
Connection for mouse / keyboard / barcode reader	Yes, at rear, optionally via USB	Yes, at rear, optionally via USB	Yes, at rear, optionally via USB	Yes, at rear, optionally via USB
Degree of protection				
Front side acc. to EN 60529	IP65 / IP20	IP65 / IP20	IP65 / IP20	IP65 / IP20
Certifications & standards				
Certification	cULus (UL 508), NEMA4 tested			
EMC	CE EN 55011 class A	CE EN 55011 class A	CE EN 55011 class A	CE EN 55011 class A
CE mark / UL approvals	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
CCC marking	Yes	Yes	Yes	Yes
Ambient conditions				
Vibration during operation	1 g (10 m/s ²)	1 g (10 m/s ²)	1 g (10 m/s ²)	1 g (10 m/s ²)
Shock load during operation	5 g (50 m/s ²)	5 g (50 m/s ²)	5 g (50 m/s ²)	5 g (50 m/s ²)
Temperature				
Ambient temperature during operation	5 to +50°C	5 to +50°C	5 to +45°C	5 to +45°C
Mounting				
Rack mounting	No	No	No	No
Front mounting	Yes (IP65)	Yes (IP65)	Yes (IP65)	Yes (IP65)
Angle of inclination for desk mounting	-20° / +70°	-20° / +70°	-20° / +70°	-20° / +70°
Interfaces				
Graphics interface	Standard VGA interface 15-pin Sub D / digital DVI-D interface			
Interface for Touch	USB (V1.1)	USB (V1.1)	USB (V1.1)	USB (V1.1)
USB interface for touch screen	Optional	Optional	Optional	Optional
Dimensions				
External dimensions (WxHxD) in mm	400 x 310 x 61,5	483 x 310 x 54	483 x 400 x 56	483 x 400 x 56
Installation cutout / device depth (W x H x D) in mm	368 x 290 x 51	450 x 290 x 54	449 x 380 x 56	449 x 380 x 56
Weight	5 kg	6,4 kg	10,2 kg	10,2 kg

Ordering data		Order No.	Order No.	
Standard configuration			Accessories	
Flat Panel Monitor	B	6AV7 861 - ■ ■ ■ ■ 0 - ■ A A 0	Cover foils	
Display size			For protecting the touch screen against dirt and scratches Pack with 10 units	
• 12"		1	• for 12" Touch	6AV7 671-2BA00-0AA0
• 15"		2	• for 15" Touch	6AV7 671-4BA00-0AA0
• 17"		4	• for 17" Touch	6AV7 672-1CF00-0AA0
• 19"		3	• for 19" Touch	6AV7 672-1CE00-0AA0
Operator functionality			Mounting elements for Panel PC 57x / 67x / Flat Panel	
• Display devices without operator functionality		A	For screw mounting of the 17" front panel, e.g. in 19" rack cabinet	6AV7 672-8KE00-0AA0
• Touch screen (analog / resistive)		T		
Power supply			Touch pen	
• 24 VDC (not for Extended versions since these always have AC and DC)		A 0	Undetachable pen for operation of the touch devices, mounting of the support on the control cabinet or directly on the PRO unit	6AV7 672-1JB00-0AA0
• 100 to 230 V AC (incl. Euro power supply cable) and 24 V DC		B		
Flat Panel Monitor			Connection cables for Standard, Extended and PRO versions	
• 12" Key	B	6AV7 861-1KB10-1AA0	• Video (VGA)	
• 15" Key	B	6AV7 861-2KB10-1AA0	- 3,0 m	6AV7 860-0AH30-0AA0
• PRO 15" Touch	B	6AV7 861-5TB10-1AA0	- 5,0 m	6AV7 860-0AH50-0AA0
• PRO 19" Touch	B	6AV7 861-6TB10-1AA0	• Video (DVI-D)	
			- 3,0 m	6AV7 860-0BH30-0AA0
			- 5,0 m	6AV7 860-0BH50-0AA0
			• USB for optional touch screen	
			- 3,0 m	6AV7 860-0CH30-0AA0
			- 5,0 m	6AV7 860-0CH50-0AA0
			Connection cables for Extended and PRO versions	
			• Cable set 10 m (DVI-D, CAT5 cable(USB), USB transmitter module)	B 6AV7 860-1EX21-0AA1
			• Cable set 15m (DVI-D, CAT5 cable(USB), USB transmitter module)	B 6AV7 860-1EX21-5AA1
			• Cable set 20 m (DVI-D, CAT5 cable(USB), USB transmitter module)	B 6AV7 860-1EX22-0AA1
			• Cable set 30 m (DVI-D, CAT5 cable(USB), USB transmitter module)	B 6AV7 860-1EX23-0AA1

B: Subject to export regulations: AL: N and ECCN: EAR99H

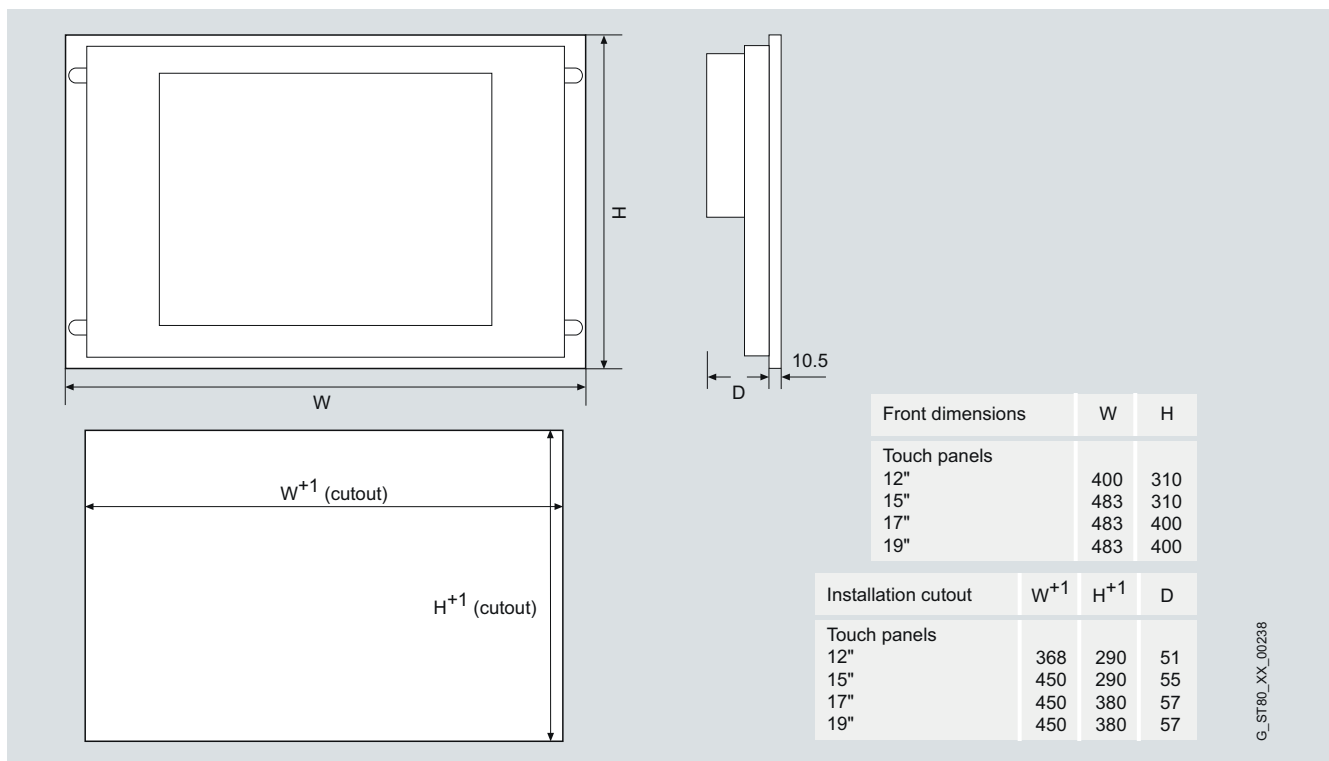
PC-based Automation

Monitors and Thin Clients

Industrial LCD monitors – Flat Panel

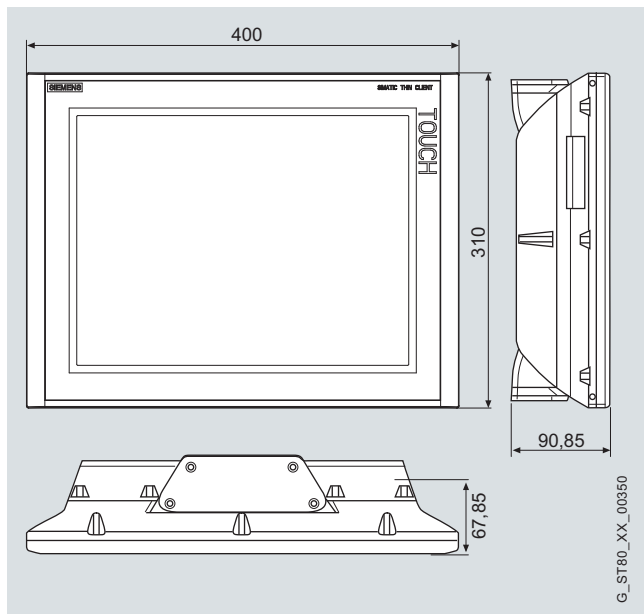
Dimensions

All dimensions in mm. Panel cutout see technical specification.

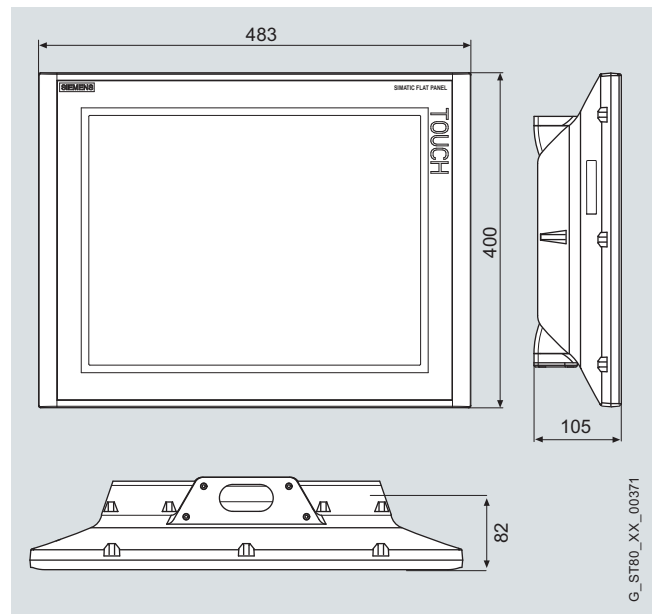


Installation cutout for Flat Panel

5



Flat Panel PRO 15" Touch



Flat Panel PRO 19" Touch

More information

Additional information is available in the Internet under:
<http://www.siemens.com/industrial-lcd>

Overview



SCD monitors are LCD monitors in rugged industry design.

Built-in versions:

- Built-in units (for control cabinets, control desks, and gantries)
- Desktop models only (19" display)

Type of operator control:

- Strictly display units (desktop models only)
- Panels with touch control

SCD 19101 D / DT monitors

The SCD 19101 D / DT monitors are LCD desktop monitors for use in industry.

Type of operator control:

- Simple display devices
- Panels with touch control

Benefits

- Rugged industrial design:
 - High shock and vibration resistance as well as extremely high electromagnetic compatibility ensure failure safety and a long service life
 - Mineral glass screen, i.e. high mechanical protection against pressures and scratching
 - Meets CE standard "Industry"
- No X-rays
- Lower energy requirement
- Fatigue-proof operation:
 - Large reading angle
 - Sharp and high-contrast graphic display
 - No flickering, uniform brightness
 - Automatic display adjustment (Auto Adjust)
- Configuration using on-screen display (OSD)
- Minimal space requirement and low weight
- Long service life

Design

- Plastic enclosure
- 19" TFT display
- Anti-glare and hardened mineral glass screen
- Simple display, touch screen
- Line frequency 30-80 kHz
- Refresh frequency 50-72 Hz
- 100 -240 V AC power supply

Scope of delivery:

- Network connecting cable for AC power supply unit
- Connecting cables 1.8 m
- Operating instructions, 2 languages (German and English)
- CD-ROM with touch drivers

PC-based Automation

Monitors and Thin Clients

Industrial LCD monitors – SCD monitors

Technical specifications

SCD 19101-D / -DT	monitors 19"
Supply voltage	
Supply voltage	110 / 230 V AC
Frequency / power consumption	47 - 63 Hz / 30 VA
Line side switch	No
Representation	Full screen
Display	
Display version	19" TFT
Screen diagonal	19"
Visible area (H x V) in mm	359 x 287
Viewing angle	170° x 170°
Pixel pitch	0,28 x 0,28
Optimum resolution (in pixels)	1280 x 1024
Refresh rate	30 - 100 Hz
Line frequency	50 - 97 KHz
Brightness / Contrast (typ.)	270 cd/m ² / 400:1
Number of colors	16 Mio
MTBF backlighting (up to 50 %, at 25 °C)	50000 h
Type of operation	
Function keys	No
Membrane keyboard & piezo mouse	No
Touch screen	Optional
Degree of protection	
Degree of protection acc. to EN 60529	IP20
Ambient conditions	
- Ambient temperature during operation	0 to +40°C
Interfaces	
Interface design, analog video signal (VGA)	Yes
PS/2 interfaces for keyboard and mouse	No
Serial interface for touch screen	Optional / serial
Dimensions	
External dimensions (W x H x D) in mm	465 x 444 x 91 (stand depth 240)
Installation cutout / depth (W x H x D) in mm	465 x 444 x 91 (stand depth 240)
Weight	
Weight	7 kg

Ordering data

Order No.

19" LCD monitors B **6GF6 220-1DA01**

SCD 19101-D, desktop model

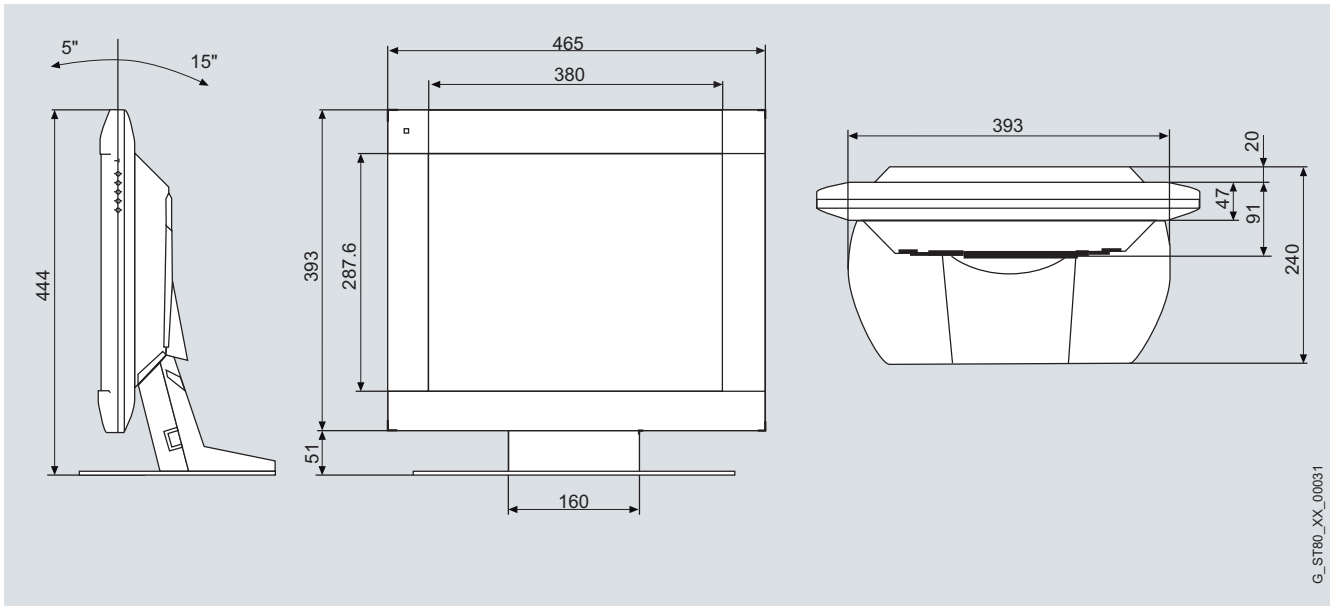
19" Touch LCD monitors B **6GF6 220-1DB01**

SCD 19101-DT, desktop model

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

Dimensions

All dimensions in mm. Panel cutout see technical specification.



SCD 19101-D / DT

More information

Additional information is available in the Internet under:

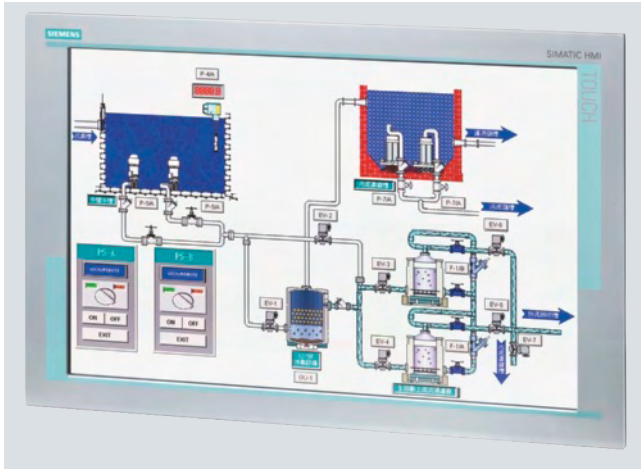
<http://www.siemens.com/industrial-lcd>

PC-based Automation

Monitors and Thin Clients

SCD monitors 1900

Overview



The SIMATIC HMI SCD 1900 is a rugged, industry-standard PC monitor.

It is used as operator control unit in all types of industrial and standard PC. Standard interfaces permit a wide range of possible applications.

Built-in versions:

- Built-in unit (for control cabinets, control desks, and gantries)
- 19" built-in units (for 19" racks)

Type of operator control:

- Panels with touch control

Benefits

- Rugged industrial design:
 - high shock and vibration resistance as well as extremely high electromagnetic compatibility ensure failure safety and a long service life
 - enclosure with degree of protection IP65 at the front, resistant against dust and humidity
 - meets CE standard "Industry"
- No X-rays
- Lower energy requirement
- Fatigue-proof operation:
 - large reading angle
 - sharp and high-contrast graphic display
 - no flickering, uniform brightness
 - automatic display adjustment (Auto Adjust)
- Configuration using on-screen display (OSD)
- Minimal space requirement and low weight
- Long service life

Design

- Rugged aluminum enclosure
- 19" TFT display in widescreen design
- Rugged analog-resistive touch screen
- 24 V DC, optionally with external 100 - 240 V AC power supply
- Can be located up to 5 m from the computing unit

Scope of delivery:

- Network connecting cable for AC power supply unit
- Connecting cables 1.8 m, 5 m, 10 m or 20 m
- Operating instructions, 2 languages (German and English)
- CD-ROM with touch drivers and SW tools

PC-based Automation

Monitors and Thin Clients

SCD monitors 1900

Technical specifications

SCD 1900	monitors 19" Widescreen
Supply voltage	
Supply voltage	24 V DC, optional 100 / 240 V AC
Display	
Display version	19" TFT
Screen diagonal	19" Wide
Visible area (H x V) in mm	359 x 287
Viewing angle	85° x 80°
Pixel pitch	0,28 x 0,28
Optimum resolution (in pixels)	1440 x 900
Refresh rate	30 - 100 Hz
Line frequency	50 - 97 KHz
Brightness / Contrast (typ.)	300 cd/m ² / 400:1
Number of colors	16 Mio
MTBF backlighting (up to 50 %, at 25 °C)	50000 h
Type of operation	Touch screen
Degree of protection acc. to EN 60529	
front / rear	IP65 / IP20
Ambient conditions	
Ambient temperature during operation	during operation: 0 to +45°C
Interfaces	
Video signal	
• analog / digital / Touch screen	VGA / DVI-D / USB
Dimensions	
External dimensions (W x H x D) in mm	483 x 310 x 67 (81 with AC power supply)
Installation cutout / depth (W x H x D) in mm	483 x 310 x 67 (81 with AC power supply)
Weight in kg	10

Ordering data

Order No.

SCD monitors 1900	B	6AV7 862-2TA00-1AA0
Accessories		
Cable for connecting to the graphics interface of the PC		
• VGA cable, 3,0 m		6AV7 860-0AH30-0AA0
• VGA cable, 5,0 m		6AV7 860-0AH50-0AA0
• DVI-D cable, 3,0 m		6AV7 860-0BH30-0AA0
• DVI-D cable, 5,0 m		6AV7 860-0BH50-0AA0
USB cable for connecting the touch screen		
• 3,0 m		6AV7 860-0CH30-0AA0
• 5,0 m		6AV7 860-0CH50-0AA0
USB cable for connecting the touch screen	B	6AV7 860-2AD06-0AA0
100-230 V AC, 50-60 Hz; incl. mounting accessories for optional installation at the device.		

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Monitors and Thin Clients

SCD monitors 1900

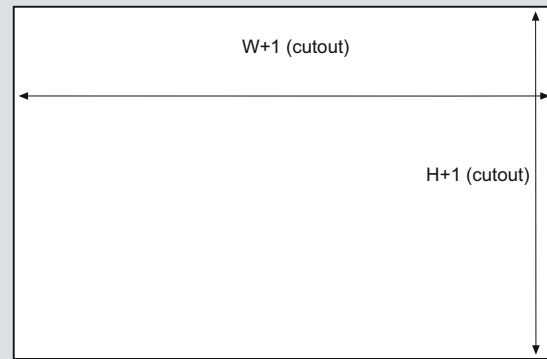
Dimensions

All dimensions in mm. Panel cutout see technical specification.



Front dimensions

SCD monitors	W	H
19"	483	310



Installation cutouts

SCD monitors	W	H
19"	450	290

G_ST80_XX_00239

SCD 1900

More information

Additional information is available in the Internet under:

<http://www.siemens.com/industrial-lcd>

Overview



SIMATIC Thin Clients are operator panels of extremely good value which can be used flexibly in various distributed applications. They can be used as (additional) operator stations on a SIMATIC industrial PC or also on a SIMATIC Panel.

The following versions are available:

- The rack-mounting versions SIMATIC Thin Client 10" Touch and SIMATIC Thin Client 15" Touch
- The support arm version SIMATIC Thin Client PRO 15" Touch with a rugged and very compact aluminum enclosure which is completely IP65 protected and therefore suitable for harsh ambient conditions.

The SIMATIC HMI Thin Client Ex is available for hazardous areas. This device differs technically from the devices mentioned above.

Benefits

SIMATIC Thin Clients offer a wide range of possible applications, used as either a second operator station for plant visualization on a Multi Panel or as a classical "Client" which communicates with a server (e.g. Microbox 427C) via VNC.

Low-cost client / server architectures can be implemented with SIMATIC Thin Clients.

A further advantage of SIMATIC Thin Clients: They communicate exclusively via Ethernet, thus permitting extremely simple coverage of even large distances to the server.

The possibility of using SCADA and Office functionalities (e.g. WinCC, SAP, MS-Excel) directly on-site on the machine supports the vertical integration of the data flow from host systems down to the machine level (e.g. warehouse utilization).

The SIMATIC Thin Client itself requires no installations, licenses or additional software.

The following protocols are supported:

- Sm@rtAccess for plant visualization with WinCC flexible
- RDP (Remote Desktop Protocol) for SCADA and office functions
- VNC (Virtual Network Computing) for remote operation of a PC
- As a Thin Client Unit on a SINUMERIK PCU / NCU
- Citrix ICA Client complex client / server architectures

PC-based Automation

Monitors and Thin Clients

SIMATIC Thin Client

Design

SIMATIC Thin Client is installation-compatible with the Multi Panels MP 277 (10") and MP 377 (12" and 15").

The device has degree of protection IP54 (splash-proof), enclosure type 12 (indoor use only) and can be expanded with an options package to degree of protection IP65 (protected against water jets), enclosure type 4 x / type 12 (indoor use only).

In addition, the SIMATIC Thin Client has the following features:

- Ethernet interface for operating on PROFINET- and Ethernet networks (with Auto-Cross-Over function for one-to-one connections between server and client via Ethernet cable)
- TFT screen with 64K colors
- Resolution:
 - 640 x 480 pixels (10")
 - 1024 x 768 pixels (15")
- A mouse and a keyboard can be operated on the USB interface as external input media. The USB interface supports the industrial USB Hub 4.
- Printer and storage media are controlled via the host device

Thin Clients support automatic parameterization via DHCP. As an alternative, you can also assign IP addresses manually.

Mode of operation

One or more SIMATIC Thin Clients are connected using Ethernet to a server (Multi Panel or PC). No local applications are executed on the devices themselves (apart from the integrated browser).

All Thin Clients are provided with the faceplate by the server over the network, and display this faceplate without applications being installed on the Thin Client.

Inputs on the Thin Client are transferred to the server and processed. Operation is carried out on the Thin Client as if one were working on the server itself. Operation is possible via Touch or with a keyboard or mouse connected to a USB port.

Function

Via the various protocols:

- Sm@rtAccess
- RDP (Remote Desktop Protocol)
- VNC (Virtual Network Computing)
- Citrix ICA
- SINUMERIK connection

the Thin Clients communicate with a server.

A Thin Client can access the SIMATIC WinCC flexible visualization software via Sm@rtAccess. The software is executed on a server: this can be an Operator Panel or an IPC. Two or more Thin Clients can be operated depending on the server's performance. The advantage: if the HMI project is changed, the modification need only be carried out once centrally on the server.

Low-cost and flexible structures can also be produced for SCADA applications using Thin Clients. For example, the Thin Client can communicate as an HMI client with the WinCC SCADA software via RDP. A completely new feature is that a SINUMERIK PCU / NCU can now also be operated from a SIMATIC Thin Client.

SIMATIC Thin Clients communicate with the classical "PC World" using standard network protocols such as RDP, VNC or Citrix. RDP is currently included in every Microsoft operating system and only needs to be activated. A Thin Client can access the desktop of the server via RDP and carry out remote operation. The use of VNC is also very popular. The main difference to RDP is that VNC displays a "cloned" desktop if two or more operator panels are connected.

Via RDP – and with a non-server operating system – only one operator panel can be active at a time and operate the server. In this case, all other stations display the log-in window. Citrix is frequently used with highly complex client / server architectures. The principle: The applications which can be accessed by the clients are defined on the server. The clients themselves can then connect to the applications enabled on the server.

Integration

Commissioning is very simple. Configuration can be carried out locally - directly on the device - or also through remote access from a PC over the Web. The SIMATIC Thin Client only needs an IP address and a host device that it can communicate with. It does not require any local software installations or configurations. There is thus no need to backup / restore or update the projects, and total cost of ownership are significantly reduced.

SIMATIC Thin Client can be operated in all systems in a PROFINET network or in Ethernet networks. As an alternative, a one-to-one connection with the host is also possible with an Ethernet cable. In this way, distances of 100 meters (with a switch, even greater distances are possible) can be bridged, which means a clear cost reduction compared with the standard remote operator fronts via USB / DVI cable.

Technical specifications

SIMATIC Thin Client	6AV6 646-0AA21-2AX0 10" Touch	6AV6 646-0AB21-2AX0 15" Touch
Supply voltage		
Supply voltage	DC 24 V	DC 24 V
permissible range	DC +19,2 V to +28,8 V	DC +19,2 V to +28,8 V
Memory		
Typ	Flash / RAM	Flash / RAM
Protocols		
Protocols (terminal link)		
• Sm@rtAccess / RDP	Yes / Yes	Yes / Yes
WEB characteristics		
• HTTP / HTML / XML / CSS	Yes / Yes / Yes / Yes	Yes / Yes / Yes / Yes
• Java Script	Yes	Yes
Display		
Display type	TFT, 65536 colors	TFT, 65536 colors
Size	10,4"l	15,1"
Resolution (WxH in pixel)	640 x 480	1024 x 768
• MTBF backlighting (at 25 °C)	ca. 50000 h	ca. 50000 h
Type of operation		
Operator controls	Touch screen	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB
• Touch screen	analog, resistive	analog, resistive
EMC		
Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
Ambient conditions		
maximum permissible angle of inclination without external ventilation	+ / - 35 °	+ / - 35 °
max. relative humidity (in %)	85 %; (Storage)	85 %; (Storage)
Temperature		
• Operation (vertical installation)	0 °C to +50 °C	0 °C to +50 °C
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C
Degree of protection		
Front	IP54, NEMA 12, (when installed)	IP54, NEMA 12, (when installed)
Rear	IP20	IP20
Certifications & standards		
Certification	CE, cULus, C-TICK, NEMA 12 (when installed: IP54, enclosure type 12; optional IP65, enclosure type 4 x / type 12 (6AV6671-6AP00-0AX0))	CE, cULus, C-TICK, NEMA 12 (when installed: IP54, enclosure type 12; optional IP65, enclosure type 4 x / type 12 (6AV6671-6AP00-0AX0))
Interfaces		
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
USB port	1 x USB	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Processor		
Processor	ARM, 266 MHz	ARM, 266 MHz
Dimensions		
Front of enclosure (W x H)	325 x 263	400 x 310
Mounting cutout / device depth (W x H)	310 x 248 / 65	368 x 290 / 65
Weight		
Weight	2,2 kg	3,6 kg

PC-based Automation

Monitors and Thin Clients

SIMATIC Thin Client

Ordering data

SIMATIC Thin Client

- 10" Touch device
- 15" Touch device

Order No.

G 6AV6 646-0AA21-2AX0

G 6AV6 646-0AB21-2AX0

Starter packages

SIMATIC Thin Client with Sm@rtAccess

(License to operate SmartAccess on the server)

- Touch device 10" with Sm@rtAccess license (panels)
- Touch device 15" with Sm@rtAccess license (panels)
- Touch device 10" with Sm@rtAccess license for WinCC flexible 2008 Runtime
- Touch device 15" with Sm@rtAccess license for WinCC flexible 2008 Runtime

G 6AV6 653-6AA01-2AA0

G 6AV6 653-6BA01-2AA0

G 6AV6 653-6DA01-2AA0

G 6AV6 653-6EA01-2AA0

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

Option packages

IP65 set (upgrade from IP54 to IP65)

6AV6 671-6AP00-0AX0

Touch pen SIMATIC HMI Touch devices

B 6AV7 672-1JB00-0AA0

Cover membrane 10"

6AV6 671-3DC00-0AX0

10 units per packing unit

Cover foils 15"

6AV6 674-1AD00-4EX0

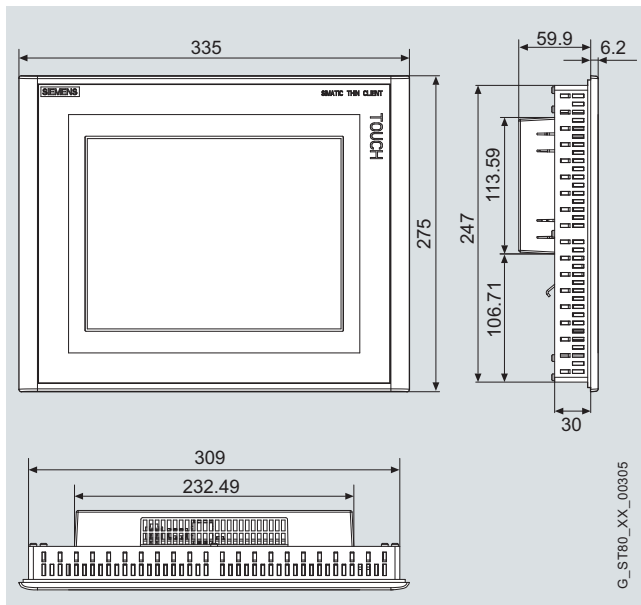
Accessories

Accessories for follow-up ordering

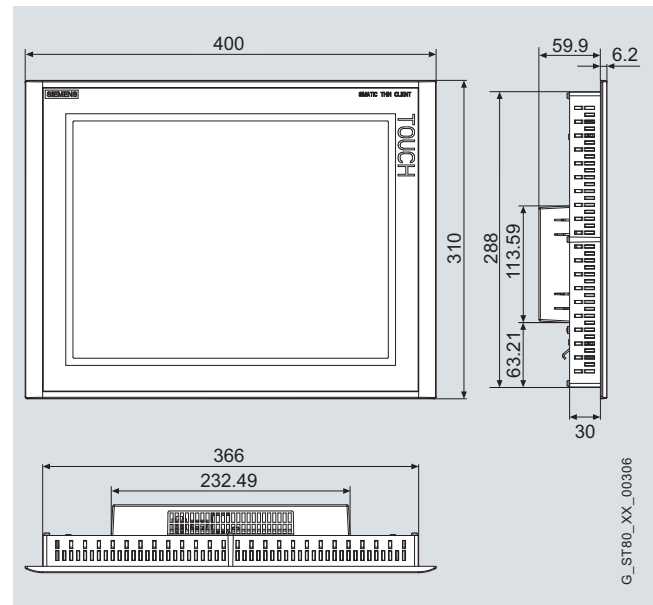
See HMI accessories page 2/160

Dimensions

All dimensions in mm. Panel cutout see technical specification. Tolerance ± 1 mm.



SIMATIC Thin Client 10" Touch



SIMATIC Thin Client 15" Touch

More information

Additional information is available in the Internet under:

<http://www.siemens.com/simatic-thin-client>

PC-based Automation

RMOS3 real-time operating system

RMOS3 real-time operating system

Overview



SICOMP RMOS3

RMOS3 is a real-time and multitasking-capable operating system. In addition to real-time capability, which ensures fast response times, deterministic behavior is also an important feature. This guarantees response times within a short time interval.

Rugged operating systems guarantee reliable behavior even under exceptional circumstances. RMOS3 has been optimized for use in embedded applications. In harsh environments, the rugged memory cards or CompactFlash memories can be used instead of hard disks. In addition, RMOS3 is suitable for operation with or without an operator.

With the new RMOS3 V3.50 version, Core2 Duo processors are now also supported. The "Symmetric Multicore Processing" (SMP) mode makes it possible to implement complex applications that are simultaneously processed on multiple processor cores. RMOS3 V3.50 ensures that the cores are symmetrically utilized so that a performance increase of up to 100% can be achieved on the SIMATIC IPC with Core2 Duo processors.

The new RMOS3 real-time operating system is characterized by increased security thanks to memory protection, minimum interrupt response times and fast hard disk access.

For SIMATIC IPCs, automation solutions based on C/C++ with demands for hard real time, deterministic response and high performance can now be created more easily, conveniently and with greater stability.

RMOS3-GRAPHX V1.0

With the RMOS3-GRAPHX product, window-based, graphical user interfaces can be implemented with the RMOS3 real-time operating system Version V3.30 or higher.

Extensive graphical libraries increase the user-friendliness of the system and support cost savings due to centralization of the control and operation on a CPU.

With a Graphical User Interface (GUI), familiar from Windows, window displays can be implemented with the familiar command elements in the form of buttons, toolbars, scrollbars, selection lists and symbols as well as dialog boxes for prompts or inputs.

RMOS3-GNU V3.0

The RMOS3-GNU software package uses common Linux tools with which users can easily create real-time applications for RMOS3 on SIMATIC PC.

The GNU-based software tools for Windows XP / Vista / Windows 7 computers comprise the assemblers, C/C++ compilers, linkers and debuggers familiar in the Linux environment as well as the Eclipse development interface.

The integrated cross debugger is useful for commissioning the customer application since the development and target system can be connected via TCP/IP. C/C++ header files and libraries are available for applications which use RMOS3 Version 3.40 or higher.

RMOS3-TCP/IP V3.0

The software package RMOS3-TCP/IP V3.0 offers the application developer a wide range of different possibilities for implementing TCP/UDP-based communication tasks using the real-time operating system RMOS3 V3.40 and higher.

Apart from the UDP and TCP protocols commonly used in application development, the new version of RMOS3-TCP/IP features ARP (Address Resolution Protocol), Multicast and ICMP services (Ping) as well as client services for DHCP (Dynamic Host Configuration Protocol), DNS (Domain Name System), NTP (Network Time Protocol) and SMTP (Simple Mail Transfer Protocol).

In combination with the FTP programming interface and the WEB server with process data interfacing, the programmer has numerous programming interfaces for even greater flexibility in communication.

BSP-SIMATIC IPC V3.0 für RMOS3

The board support package BSP-SIMATIC IPC V3.0 for RMOS3 is a software package for supporting all interfaces and other onboard functions for the SIMATIC Microbox PC 427B, SIMATIC IPC427C, SIMATIC Box PC 627B, SIMATIC Box PC 827B, SIMATIC Rack PC 647B and SIMATIC Rack PC 847B industrial PCs.

More information

Additional information is available in the Internet under:

<http://www.siemens.com/rmos3>

PC-based Automation

RMOS3 real-time operating system

RMOS3 V3.50 real-time operating system

Overview

RMOS3 is the real-time and multitasking-capable operating system from Siemens for implementing your automation solution with the programming languages C and C++. In mechanical engineering or in the manufacture of machine tools RMOS3 is used in test beds, packaging or printing machines where high response times in conjunction with open and closed-loop control tasks are required.

The new RMOS3 real-time operating system is characterized by increased security thanks to memory protection, minimum interrupt response times and fast hard disk access.

With the new RMOS3 V3.50 version, Core2 Duo processors are now also supported. The "Symmetric Multicore Processing" (SMP) mode makes it possible to implement complex applications that are simultaneously processed on multiple processor cores. RMOS3 V3.50 ensures that the cores are symmetrically utilized so that a performance increase of up to 100% can be achieved on the SIMATIC IPC with Core2 Duo processors.

For SIMATIC IPC, automation solutions based on C/C++ with demands for hard real time, deterministic response and high performance can now be created more easily, conveniently and with greater stability.

RMOS3 has been optimized for use on PC platforms in embedded systems and fulfills industrial requirements with respect to:

- Real-time and multitasking capability
- Deterministic features
- Ruggedness
- Scalability / memory requirements
- Operation with or without an operator
- Modern development tools
- Quality assurance
- Warranty conditions
- Service & Support

Design

RMOS3 impresses customers with its industrial compatibility as an embedded operating system for maximum response times in closed-loop and open-loop control tasks and is the basis for high-performance customer solutions with SIMATIC IPC.

Due to the new features in version V3.50, such as support of "Symmetric Multicore Processing" on Core 2 Duo processors and long-term accurate time with the help of the HPET, its ruggedness, industrial compatibility and performance have been further enhanced. Memory protection for applications in the FLAT (GNU) memory module, APIC support for high-performance interrupt mode as well as UDMA support for faster access to mass memories are additional core elements of RMOS3.

In combination with the widely used GNU development tools and the Eclipse development environment, the development of C/C++ based automation solutions is even more efficient.

The *configurable nucleus* that has been available since RMOS3 V3.50 is already preconfigured and can be installed immediately and completely adapted to the hardware and software requirements of your target system via an initialization file. The configurable nucleus supports the PCs from the SIMATIC IPC range and is optimally coordinated with the available additional functions and the hardware features.

With optional products and Board Support Packages (BSP) you can integrate additional functions and drivers into your application. The Board Support Package BSP-SIMATIC PC V2.1 is the complete package for operating the following SIMATIC PCs with RMOS3 V3.40:

- Microbox PC 420 and Microbox PC 427B
- Box PC 627 and Box PC 627B
- Box PC 840 V2 and Box PC 827B
- Rack PC 840 V2 and Rack PC 847B

The additional RMOS3-GNU software package is available for development and for testing applications for RMOS3. The new development platform is based on the GNU tool chain well-known and widely used in UNIX / Linux environments and contains all expansions necessary for developing RMOS3 applications. With the Eclipse development interface and the integrated graphical cross debugger creating applications for RMOS3 is now even easier than before.

Ordering data

Order No.

RMOS3 V3.50 EL Single license for RMOS3 development environment incl. a RMOS3 runtime license	A	6AR1 405-0EA00-1AA4
RMOS3 V3.50 EL Update Update from V3.40 to V3.50. Single license for RMOS3 development environment incl. a RMOS3 runtime license	A	6AR1 405-0EA50-1AA4
RMOS3 V3.50 RT Simple RMOS3 V3.40 runtime license	A	6AR1 403-0DA3

A: Subject to export regulations: AL: N und ECCN: EAR99S

PC-based Automation

RMOS3 real-time operating system

RMOS3-GRAPHX V1.0

Overview

Mit *RMOS3-GRAPHX V1.0* provides you with a comprehensive graphics package which enables you to enlarge your C/C++ based automation solution under SICOMP RMOS3 with a user-friendly graphics interface for operator control and monitoring. Use of the Qt-based graphics library of the Norwegian company Trolltech ASA (www.trolltech.com) allows window-based interfaces with a "look and feel" and input facilities comparable to Windows.

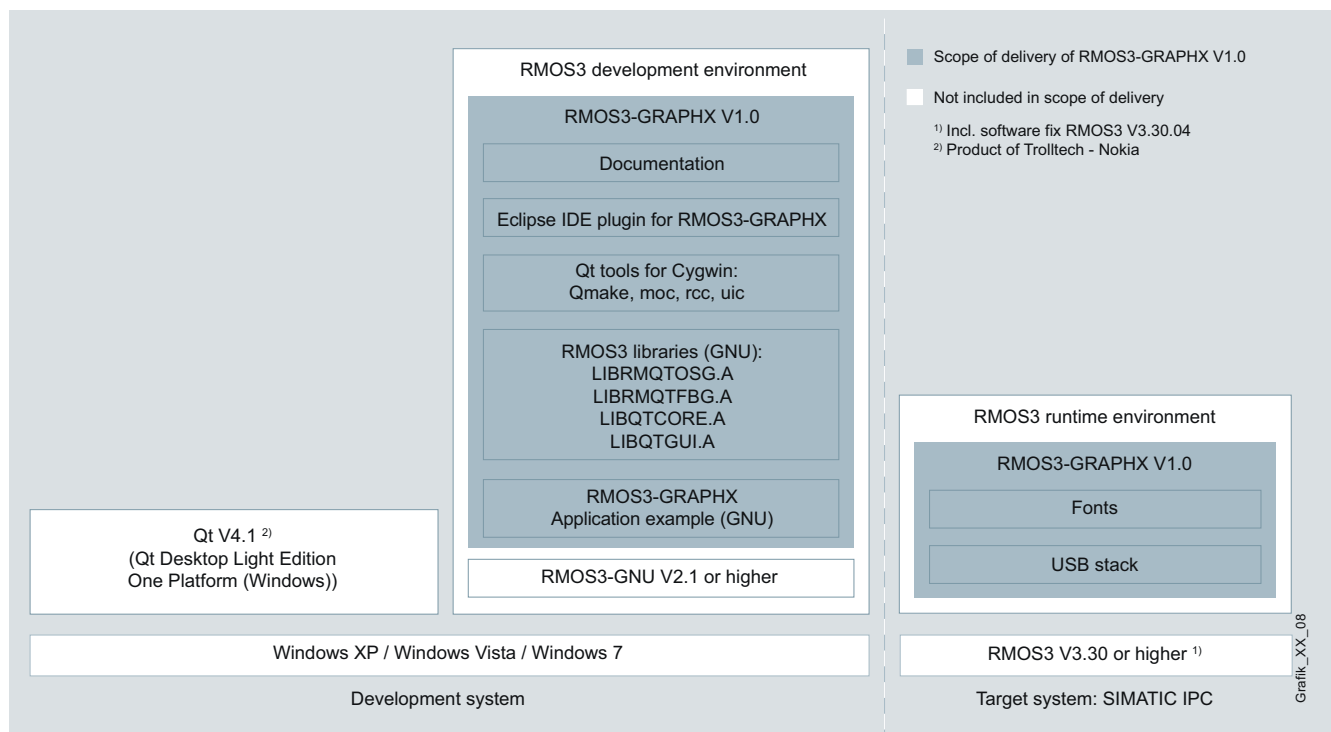
Real-time characteristics are maintained within the multi-tasking RMOS3 operating system environment.

For the creation of your real-time applications on released SIMATIC PC and SICOMP IMC hardware, convenient development tools in connection with the well-known development tools GNU, Eclipse and the Qt Designer of Trolltech ASA are at your disposal.

Design

RMOS3-GRAPHX contains all the necessary libraries and development programs (Qt tool for Cygwin) to implement customer-specific, window-oriented graphical user interfaces with the development environment RMOS3-GNU and the Qt Designer of Trolltech ASA.

Since numerous prefabricated control and display elements are available, as generally known under Windows, the development time can be reduced to a minimum.



For RMOS3-GNU V3.0 and higher, an update for RMOS3-GraphX V1.1 will be offered by Customer Support: www.siemens.com/automation/support-request

For the creation of the graphics interface the "Qt Designer" from Trolltech is required. This is an integral part of the "Qt Desktop Light Edition" product for Windows and can directly be obtained from Trolltech ASA (www.trolltech.com).

PC-based Automation

RMOS3 real-time operating system

RMOS3-GRAPHX V1.0

Ordering data

Order No.

RMOS3-GRAPHX V1.0 EL

R

6AR1 403-0BG00-1AA0

Master license for graphics library
for creation of window-oriented
interfaces of RMOS3 Version
3.30 and higher

**Qt Desktop Light Edition,
Single Platform Windows
development pack**

Qt Desktop Light Edition V4.1.4
for Windows, incl. Qt Designer

obtainable from
Trolltech ASA, ,
www.trolltech.com

R: Subject to export regulations: AL: N und ECCN: 5D992

PC-based Automation

RMOS3 real-time operating system

RMOS3-GNU V3.0

Overview

RMOS3-GNU V3.0 is a software package that supports development and testing of applications for the real-time operating system RMOS3 (Version 3.40 and higher).

RMOS3-GNU V3.0 replaces the existing RMOS3-GNU V2.x product. An update from RMOS3-GNU V2.x to Version V3.0 is available.

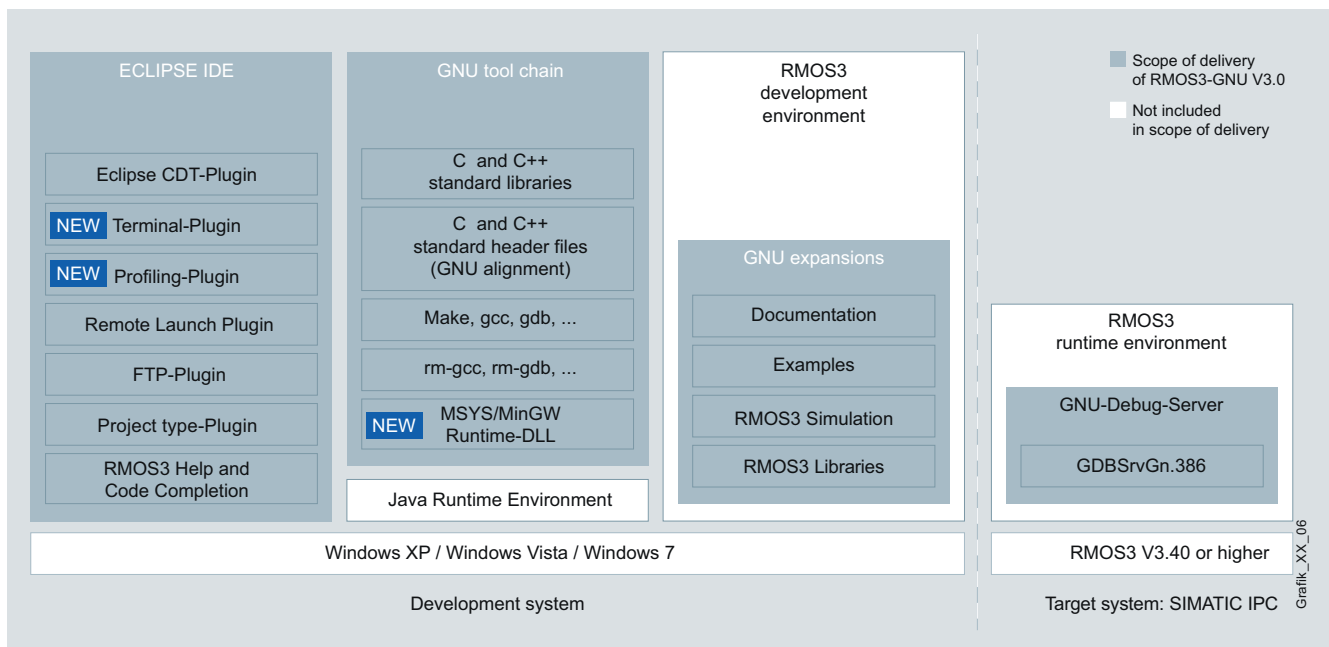
RMOS3-GNU V3.0 contains the following new functions:

- Up-to-date versions of the GNU tool chain, e.g. C/C++ compiler V3.4.1
- Updated versions of Eclipse V3.4 and CDT plug-in V5.0.
- New Eclipse "terminal" plug-in for remote operation of the target system
- New Eclipse "profiling" plug-in for determining the system load and the task activity on the target system
- Extended Eclipse "remote launcher" plug-in for testing the applications on Privilege Level 0 or alternatively on Privilege Level 1

Design

The RMOS3-GNU development package comprises the following components:

- GNU tool chain (comprising a compiler for C/C++, make-tool, assembler, linker and debugger)
- Integrated development environment Eclipse (including CDT plug-in for creating C/C++ programs) with the following RMOS3-specific expansions:
 - Simulation environment for RMOS3 applications
 - Project type plug-ins for RMOS3 applications and RMOS3 libraries
 - Integrated RMOS3 online help and code completion
 - FTP plug-in for file transfer to the target system
 - Remote launcher plug-in for easy debugging on the target system
 - Terminal plug-in for remote operation of the target system
 - Profiling plug-in for determining the system load and the task activity on the target system
- GNU debug server for RMOS3
- Adaptation layer MSYS / MinGW for implementing the GNU tool chain, originally developed for UNIX, with Windows systems
- Programming and operating manual in PDF form, in German



Updated versions of the GNU tools released for use with RMOS3:

GNU-Tools	RMOS3-GNU V1.0	RMOS3-GNU V2.0	RMOS3-GNU V2.1	RMOS3-GNU V3.0
C/C++ compiler	V3.3.1	V3.4.3	V3.4.3	V4.3.0
GNU debugger	V5.3	V6.3	V6.3	V6.8
GNU debug server	V1.0.3	V1.2.5	V1.3.9	V1.4.1
Binutil ¹⁾	V2.14	V2.14	V2.14	V2.18
Eclipse IDE	V2.1.1	V3.0.1	V3.2.1	V3.4.1
Eclipse CDT plug in	V1.2.0	V2.1.1	V3.1.1	V5.0.1
Cygin	V1.5.5-1	V1.5.12-1	V1.5.12-1	-
MinGW / MSYS	-	-	-	V5.1.4 / V1.0.10

¹⁾ Assembler rm-as, linker rm-ld, object dump rm-objdump, archiver rm-ar.exe, striptool rm-strip, index creator for archiver rm-ranlib, display symbol rm-nm

PC-based Automation

RMOS3 real-time operating system

RMOS3-GNU V3.0

Ordering data		Order No.
SICOMP RMOS3-GNU V3.0 EL	A	6AR1 405-0BA00-1CA0
Development package, single license, CD-ROM, including description in German in PDF format		
SICOMP RMOS3-GNU V3.0 EL update	A	6AR1 405-0BA50-1CA0
Update V2.x auf V3.0, development package, single license, CD-ROM, including description in German in PDF format		

A: Subject to export regulations: AL: N und ECCN: EAR99S

PC-based Automation

RMOS3 real-time operating system

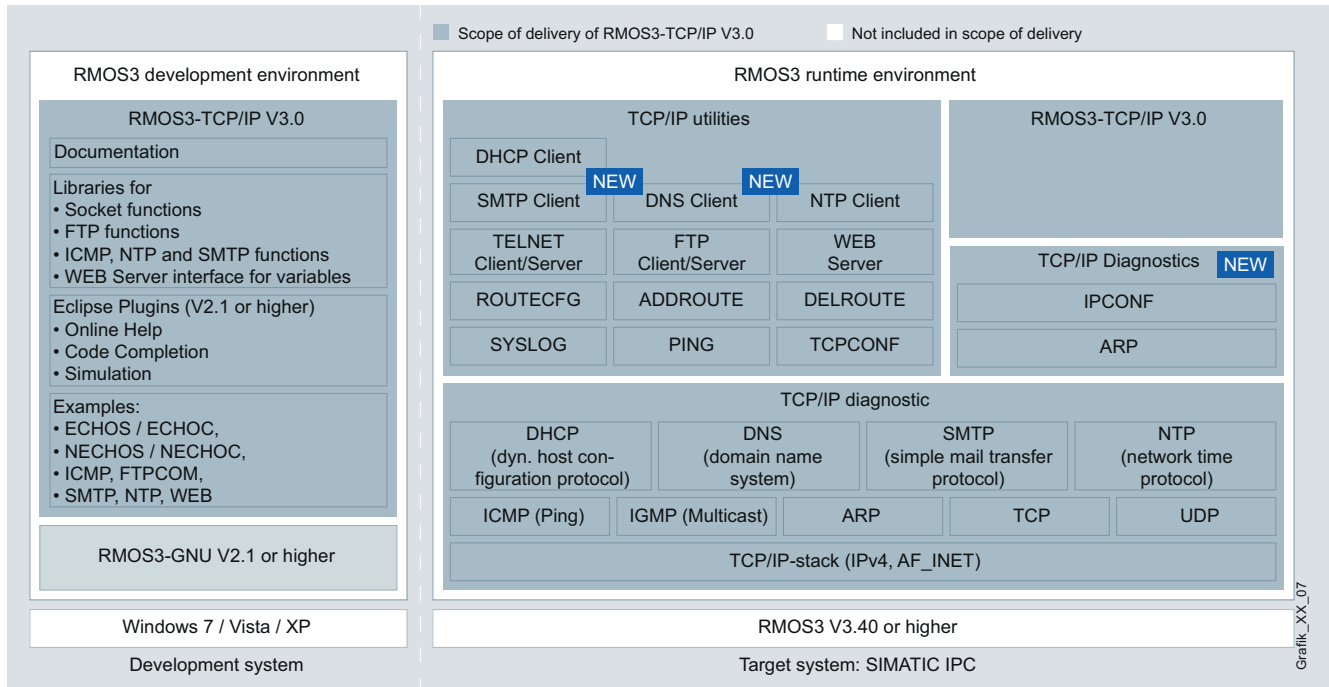
RMOS3-TCP/IP V3.0

Overview

The software package RMOS3-TCP/IP V3.0 offers the application developer a wide range of different possibilities for implementing TCP/UDP-based communication tasks using the real-time operating system RMOS3 V3.40 and higher. Apart from the UDP and TCP protocols commonly used in application development, the new version of RMOS3-TCP/IP features ARP (Address Resolution Protocol), Multicast and ICMP services (Ping) as well as client services for DHCP (Dynamic Host Configuration Protocol), DNS (Domain Name System), NTP (Network Time Protocol) and SMTP (Simple Mail Transfer Protocol).

In combination with the FTP programming interface and the WEB server with process data interfacing, the programmer has numerous programming interfaces for even greater flexibility in communication.

An overview of the supplied components of RMOS3-TCP/IP V3.0 is shown in the product structure diagram below:



RMOS3-TCP/IP V3.0 supersedes Version V2.3. An update to version V3.0 is available.

Design

Contents of the RMOS3-TCP/IP V3.0 software package

The software package RMOS3-TCP/IP V3.0 contains a completely remodeled TCP/IP protocol stack (TCPIP.DRV V3.0) with a transmission time that is 30 % lower than RMOS3-TCP/IP V2.3 for data transfer.

With RMOS3-TCP/IP V3.0, new communication services have been prepared for communication with higher-level server applications:

Features of the DHCP client

The Dynamic Host Configuration Protocol (DHCP) supports the automatic configuration of IP addresses and subnet masks in a network. With the help of a DHCP server, a computer (client) can be integrated into an existing network without the need for manual configuration. The complexity of address configuration management is reduced by central administration of IP addresses via a network server. On the client it is only necessary to set the automatic reference to the IP address. When the computer is started on the network, the client can request the IP address, network mask, gateway, DNS server, etc. from the DHCP server.

Advantage: Dynamic assignment of IP addresses means that a specific PC can be addressed using DHCP via a meaningful, machine-based working name which makes tasks such as remote maintenance over the WEB server easier.

PC-based Automation

RMOS3 real-time operating system

RMOS3-TCP/IP V3.0

Design (continued)

Features of the DNS client

The Domain Name System (DNS) is a distributed database used for central management of the name space on the Internet. It converts IP addresses to names (domains) and names to IP addresses so that computers and services can be addressed via user-friendly names.

Advantage: Dynamic assignment of IP addresses means that a specific PC can be addressed using DHCP via a meaningful, machine-based working name which makes tasks such as remote maintenance over the WEB server easier.

Features of the NTP client

NTP (Network Time Protocol) is used for time synchronization between different computers in the network. The network time is scanned by an NTP server which is synchronized ideally with atomic clocks. A uniform time that is constantly valid all around the globe (UTC Coordinated Universal Time) is transferred.

Advantages of automatic setting of time via NTP: Automatic setting of the computer clock - also when there are several PCs in a network. With the omission of CMOS batteries, completely maintenance-free SIMATIC IPC solutions can be implemented using, for example, the IPC427C.

Features of the SMTP client

SMTP is used for sending e-mails to an SMTP server. The protocol is used primarily for the infed and forwarding of e-mails.

Advantage: A function call can be used by the machine to notify the service personnel immediately by e-mail, without delay and to make them aware of actual events.

Features of the WEB server

The previous version of the WEB server for RMOS3 has been updated for use with RMOS3-TCP/IP V3.0. The WEB server (V1.1) is used to display HTML pages, upload / download files and to access the process data of user applications under RMOS3.

Suitable library functions for exchanging data over the WEB server with RMOS3 applications are available to support this access.

Advantages: With the WEB server, the user has

- Centralized access to distributed / remote automation solutions based on the SIMATIC IPC with RMOS3
- Visualization of process data in a browser
- Operation of "headless" systems (e.g. for commissioning and maintenance purposes)

The customer has a web server with HTML pages that can be adapted to the application for the purpose of remote maintenance of the SIMATIC IPC, in which access to process variables can also be integrated.

Features of application programming

For programming the application, plug-ins are available again for the Eclipse development environment (RMOS3-GNU V2.1 and higher):

- Online help:
Integration of the socket function calls in the online help of the Eclipse IDE for rapid access to the function description.
- Code-Completion:
The extended code completion is also available for the socket functions and supports the developer in creating the source code by completing the entered socket calls.

- Simulation:
This simulates RMOS socket calls with Windows socket calls to enable the RMOS3 application to be pretested at an early stage on the development system.

Prepared application examples for RMOS3-GNU V2.1 and higher support the programmer with implementation of the communications interface through the TCP protocol in blocking or non-blocking mode. To check the accessibility of the stations over Ethernet, a PING example is offered which can be directly integrated into the application. An application example is used to explain the interface to the FTP function library for implementing an FTP client under RMOS3. Further examples describe the sending of e-mails via SMTP and time synchronization by means of NTP.

Features of TCP diagnostics

The following new add-on programs are offered for diagnosis of the TCP/IP stacks:

- IPCONF for outputting the configuration of the Ethernet controller integrated into the TCP/IP stack (IP address, subnet mask and standard gateway). This provides a quick overview of the current Ethernet configuration in the system.
- ARP for configuring the ARP (Address Resolution Protocol) table for the TCP/IP stack: Display of all communication partners that have already communicated with the local system. Dual assignment of IP addresses can therefore be detected.

Further TCP utilities

TCP utilities such as FTP, FTPD, TELNET and TELNETD support the exchange of files and remote operation of the RMOS3 system over the LAN interface. Additional programs ensure accessibility through gateways and routers (e.g. the program ROUTECFG) and can be used to test the connection quickly (PING).

5

Ordering data	Order No.
SICOMP RMOS3-TCP/IP V3.0 EL A Development package, single license, TCP/IP software for RMOS3 from V3.40, CD-ROM, incl. description in German in PDF format	6AR1 403-0AN00-1BA0
SICOMP RMOS3-TCP/IP V2.3 EL, A update from V2.3 to V3.0 Development package, single license, TCP/IP software for RMOS3 from V3.40, CD-ROM, incl. description in German in PDF format	6AR1 403-0AN50-1AA3
SICOMP RMOS3-TCP/IP V3.x A Runtime license Runtime license for TCP/IP Software V3.0 and higher for use with RMOS3 V3.40 and higher	6AR1 403-0BN3

A: Subject to export regulations: AL: N und ECCN: EAR99S

PC-based Automation

RMOS3 real-time operating system

BSP-SIMATIC IPC V3.0 for RMOS3

Overview

The *BSP SIMATIC IPC V3.0 Board Support Package* for the field-proven real-time and multitasking operating system RMOS3 supports the first SIMATIC IPC of generation C (SIMATIC IPC427C).

The BSP SIMATIC IPC V3.0 now also provides PROFINET onboard functionalities in addition to USB1.1, Ethernet, PROFIBUS, CAN, and hardware-level functions under the real-time operating system RMOS3 from V3.40 on the SIMATIC IPC. For creating applications with the PROFINET, PROFIBUS, CAN and hardware-level functions, an online help and code completion is offered for the Eclipse development environment (ab RMOS3-GNU V2.1or higher).

The BSP SIMATIC IPC V3.0, which also supplements the SIMATIC Rack PC 647B in addition to the SIMATIC IPC427C, now supports the following rugged and long-term-available SIMATIC PCs and SIMATIC IPCs:

- Microbox PC 427B and IPC427C
- Box PC 627B and Box PC 827B
- Rack PC 647B and Rack PC 847B

The BSP SIMATIC IPC V3.0 replaces the existing BSP SIMATIC IPC V2.1 Board Support Package. An upgrade to BSP SIMATIC IPC V3.0 is available.

Benefits

Industry-standard

- PROFINET on-board for the high-performance, cyclic and isochronous transmission of user data via Industrial Ethernet
- Detailed monitoring functions (battery, temperature, fan, watchdog, and S.M.A.R.T.) to avoid system downtimes
- Configurable transmission rates and modes on the Gigabit-Ethernet interface for optimum integration into the communications network

Flexible

- RMOS3 nucleus can be flexibly adapted to the requirements of the automation solution
- Optimally matched to SIMATIC PC and SIMATIC IPC

User-friendly

- Effective programming through integration of the PROFINET, PROFIBUS, CAN and monitoring functions into the code completion and online help of the GNU development environment Eclipse.
- Drastic reduction in commissioning times through configurable nucleus
- Complete package incl. PROFINET, PROFIBUS, USB, Ethernet and CAN drivers
- 100% downward compatible operating system versions
- Free support
- No additional software downloads necessary

Application

The Board Support Package BSP-SIMATIC IPC V3.0 for RMOS3 supports application programmers during the implementation of real-time applications, e.g. for control of printing machines, chip handlers and test setups.

Through the provision of all drivers for the onboard interfaces of the SIMATIC IPCs (Ethernet, USB, PROFINET, PROFIBUS, CAN) and the programming interfaces required for PROFINET, PROFIBUS, BasisCAN and hardware functions, the SIMATIC IPCs can be optimally integrated into the control infrastructure.

Design

The configurable nucleus has been expanded to support the PROFINET on-board interfaces of the SIMATIC IPCs.

In conjunction with the also supported additional cards SIMATIC NET, IE, CP 1616 PCI-CARD or SIMATIC NET, IE, CP 1604 PC/104 PLUS CARD (referred to below as SIMATIC NET CP16 xx), it now offers diverse options for integrating the real-time solution with SIMATIC IPCs into PROFINET networks. PROFINET RT (Real-Time) and PROFINET IRT (Isochronous Real-Time) are supported in the operating modes IRT with high flexibility or IRT with high performance with cycle times up to 250 µs and jitter accuracy < 1 µs.

If required, the configurable nucleus loads the drivers for the on-board interfaces USB, Gigabit Ethernet, PROFINET IO, PROFIBUS DP and CAN Bus, and enables the use of the following functions:

If required, the configurable nucleus loads the drivers for the on-board interfaces USB, Gigabit Ethernet, PROFINET IO, PROFIBUS DP and CAN Bus, and enables the use of the following functions:

- Up to two CompactFlash cards, SIMATIC CF cards also with S.M.A.R.T. monitoring
- A battery-backed SRAM of up to 2 MByte for retentive data
- Control of freely programmable user LEDs
- Expanded diagnostics functions for battery monitoring, temperature monitoring, and fan monitoring
- Functions for using the watchdog
- Runtime meter
- HD monitoring with S.M.A.R.T.

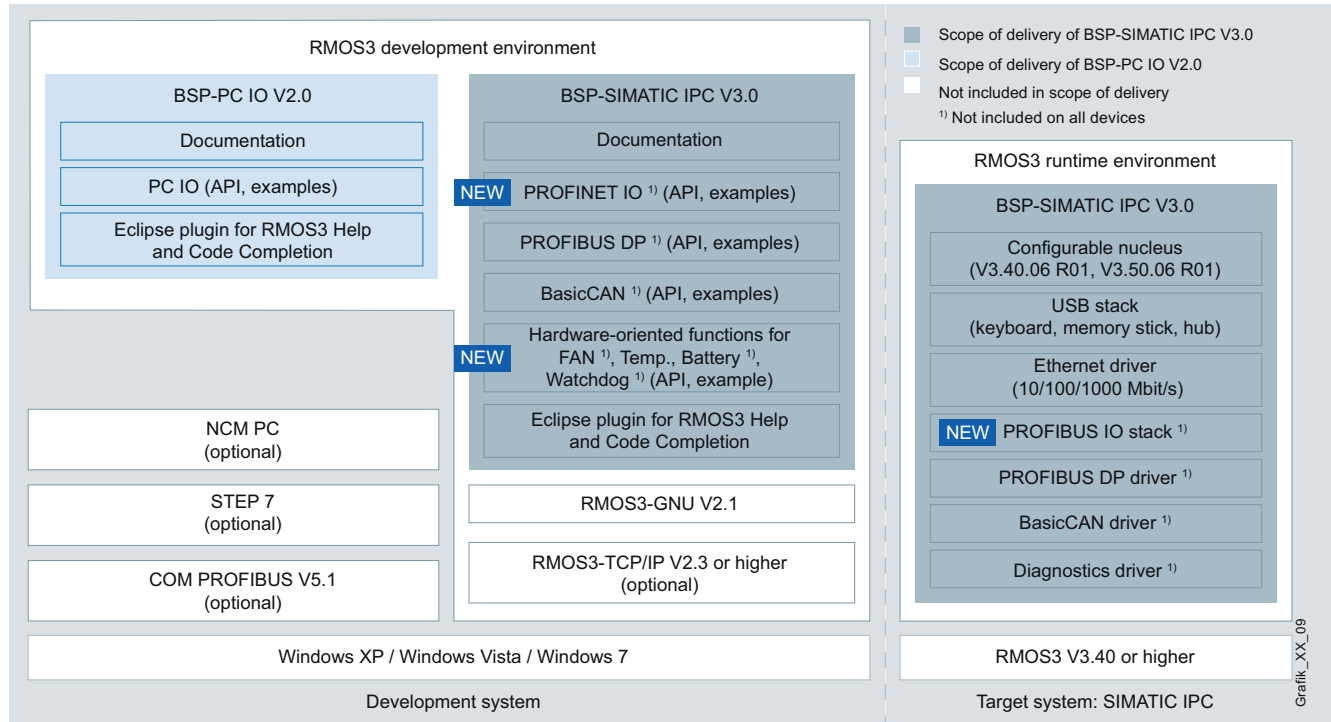
For using the development environment Eclipse from the development package RMOS3-GNU (V2.1 and higher), the C/C++ programmer is provided with all functions of the programming interfaces for PROFINET, PROFIBUS, CAN Bus and hardware diagnostics in the form of an online help and code completion. The PROFINET function interface is identical here to the calls described in the programming manual of the SIMATIC NET CP16 xx "SIMATIC NET IO-Base User Programming Interface".

PC-based Automation

RMOS3 real-time operating system

BSP-SIMATIC IPC V3.0 for RMOS3

Design (continued)



Ordering data

Order No.

Order No.

BSP-SIMATIC IPC V3.0 EL

G 6AR1 403-0BC00-1CA0

Board Support Package for:
SIMATIC Microbox PC 427B,
IPC427C
SIMATIC Box PC 627B,
SIMATIC Box PC 827B
SIMATIC Rack PC 647B,
SIMATIC Rack PC 847B
for use under the operating
system SICOMP RMOS3, V3.40.
and higher, runtime license
RMOS3, V3.40 and higher not
included.

Includes:

- Development package
- Single license
- One runtime license
- CD-ROM, including description in German, PDF format

G: Subject to export regulations: AL: N and ECCN: 5D992

BSP-SIMATIC IPC V3.0 EL Update

G 6AR1403-0BC50-1CA0

BSP-SIMATIC IPC V3.x RT

6AR1403-0CC03

Runtime license for Board
Support Package for
SIMATIC Microbox PC 427B,
IPC427C
SIMATIC Box PC 627B,
SIMATIC Box PC 827B
SIMATIC Rack PC 647B,
SIMATIC Rack PC 847B
for use under the operating
system SICOMP RMOS3, V3.40
and higher. Runtime license
RMOS3, V3.40 and higher not
included.

Grafik_XX_09

PC-based Automation

Expansion components and accessories

Expansion components

Overview

SIMATIC IPC DiagMonitor

- PC diagnostics / alarm software for early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integrated log functions, comprehensive text messages, online help (German / English)

SIMATIC IPC BIOS-Manager

The SIMATIC IPC BIOS Manager is a software tool that is used to process BIOS data from SIMATIC IPCs under Windows PE. The tool is obtained by downloading it from the Internet using the Automation Value Card from Customer Support.

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 adaptation of hard disk partitioning

ADDM-Data Management

With ADDM, you have full control of your SIMATIC and SINUMERIK controllers – round the clock and across all program versions. This tool, indispensable in modern production systems, allows user-friendly backup, comparison and management of control data.

SIMATIC IPC CompactFlash

The use of PCs in industrial areas demands 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.

Centralized I/O expansion PC IO

The PC IO expansion comprises the following:

- 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 managed by the basic module.
- Mechanical components for installation.

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

SIMATIC IPC Service USB- lashDrive

The SIMATIC IPC Service USB FlashDrive is the ideal tool for backup and restoring. This is ready for immediate use with the already pre-installed SIMATIC IPC Image & Partition Creator V3.1.

3.5" SINUMERIK disk drive, USB 1.1

The USB disk drive is provided for the high-speed exchange of user data, such as recipes, or files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

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

Industrial USB Hub 4

- The Industrial USB Hub 4 is essentially used as a USB hub for the connection of I/O devices to Multi Panels and Panel PCs with an integral USB interface
- USB I/O devices can be connected to the panel and operated via the USB Hub 4 without opening the cabinet door
- The Industrial Hub 4 differs from commercially available USB hubs mainly in its suitability for use in industrial environments (IP65).

DC-UPS uninterruptible power supplies

The uninterruptible DC power supply with battery modules consists of DC-UPS modules.

The maintenance-free SITOP UPS500s with capacitors as energy stores are especially suitable for use at high ambient temperatures. A further advantage of these high-capacity double-layer capacitors are their shorter charging times.

For flexible use, there is the SITOP UPS500S – 15-A basic unit in 2.5-kW and 5-kW versions. Up to 3 SITOP UPS501S expansion modules of 5 kW each can be switched in parallel to extend the backup times. The SITOP UPS500P IP65 version has capacitors for 5 or 10 kW and supplies up to 7 A output current.

Input and output devices

The SIMATIC IPC accessories encompass a variety of input devices.

The Siemens products are designed in such a way that they also function reliably under extreme industrial conditions.

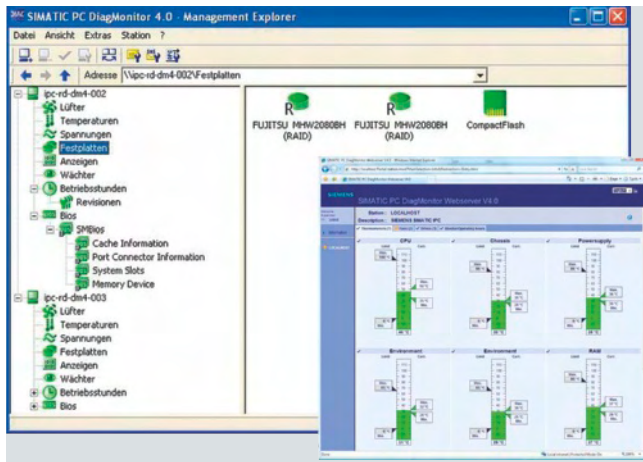
The original SIMATIC IPC accessories secure the reliability of your automation solution. It is system-tested with the SIMATIC IPCs.

PC-based Automation

Expansion components and accessories

SIMATIC IPC DiagMonitor

Overview



SIMATIC IPC DiagMonitor: Intelligent and comprehensive diagnostics for 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.

DiagMonitor V4.2 can run on the following SIMATIC IPCs:

- Microbox PC 427B
- IPC427C / IPC627C
- Box PC 627B / 827B
- Rack PC IL 43 / 547B / 847B
- Rack IPC547C / IPC647C / IPC847C
- Panel PC 477B / 577B / 677B
- Panel HMI IPC477C / HMI IPC477C PRO / HMI IPC577C / HMI IPC677C

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, Mail).

(DiagMonitor V3.1 is used with SIMATIC Microbox PC 420 / 427B, Box PC 627 / 627B, Rack PC IL 43 / 840 / 847B, Panel PC 477 / 477B / 677 / 677B / 877 and can be ordered directly via the PC configurator or as an individual product.)

Benefits

Investment security thanks to increased system availability

- Diagnostics and signaling functions for PC temperature, fan, hard disks (RAID, SMART, CompactFlash Card, SSD), operating system status (watchdog)
- Runtime meter for preventive maintenance
- Integral log function, comprehensive text messages, online help, German / English
- Worldwide diagnostics via Internet thanks to integrated web server function

Reduced costs thanks to reduced downtimes

- Fast fault signaling thanks to communication by means of e-mails and test messages
- Fast response thanks to communication in the application through OPC (client) and SNMP

Function

SIMATIC IPC DiagMonitor monitors, signals, and communicates with a central server, acts in the event of an alarm, and logs the system states of the SIMATIC IPCs.

It monitors

- Processor and internal device temperatures
- Fans
- Operating system status by means of "watchdog"
- Function of the hard drive or RAID system using the S.M.A.R.T. diagnostic bytes
- New generation of the SIMATIC IPC CompactFlash Card with diagnostics capability

It signals

- Accumulated operating hours for controlling service intervals
- Each alarm and logs it
- Overshoot / undershoot of permissible operating temperature
- Program interruption following a watchdog timeout
- Hard drive problems

It communicates

- Locally with an OPC client
- Locally via DLL or SNMP with a central server
- Remotely over LAN, e-mail, text messages
- Via diagnostic LEDs and 7-segment displays on the device
- Worldwide over the Internet through a web server

It acts in the event of an alarm

- By starting customer applications
- Through predefined applications (e.g. restart)

It logs

- All alarms and operations automatically in a log file
- Measured data (temperature, fan) over the operating period

It visualizes

- Recorded measuring data (with trend analysis)

It synchronizes

- System time over LAN (e.g. maintenance-free operation without CMOS battery)

Furthermore, customers have the option of creating their own applications via a programming interface. As a useful enhancement when purchasing SIMATIC IPC DiagMonitor, the user also receives the *SIMATIC PC web business card* for free. The web business card is a component of the diagnostic software and provides information about the SIMATIC IPC via the web server. The following is displayed:

- Device data, e.g. product designation, BIOS version, mainboard number
- System status

System requirements:

Executable with: Microsoft Windows 2000 Professional, Microsoft Windows XP Professional, Microsoft Windows XP Embedded (SIMATIC PC configuration), Microsoft Windows Vista Ultimate (32 bit), Microsoft Windows 2003 Server Edition (32 bit), Microsoft Windows 2008 Server Edition (32 bit), Microsoft Windows Embedded Standard 2009 (SIMATIC PC configuration), Microsoft Windows 7 Ultimate (32 bit)

Ordering data

Order No.

SIMATIC IPC DiagMonitor V4.2

can be ordered using the SIMATIC IPC configurator

SIMATIC IPC DiagMonitor V4.2

6ES7 648-6CA04-2YX0

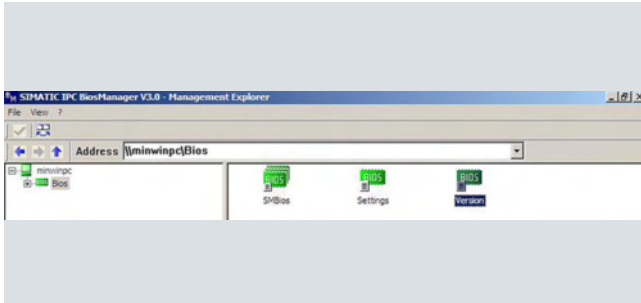
Software tool for monitoring the SIMATIC IPC, incl. manual on CD ROM (English, German), single license

PC-based Automation

Expansion components and accessories

SIMATIC IPC BIOS Manager

Overview



The SIMATIC IPC BIOS Manager V3.1 (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://www.siemens.com/simatic/bios-manager>

Benefits

Productivity increase due to efficient and user-friendly BIOS data management

- CMOS data duplicated by means of reading out, saving in a file, writing to the CMOS
- CMOS data saved for documentation and restore purposes
- Reading out and saving an inventory number in the SMBIOS
- Saving the BIOS image and installing on PCs that are identical in construction
- Execution of a BIOS update

Application

Wherever SIMATIC IPCs are used in industry, they are extended with modules and software and the BIOS settings (CMOS data) are correspondingly modified. In this environment, the SIMATIC IPC BIOS Manager can be used as:

Production tool

For the fast configuration of identical CMOS data

- Reading of CMOS data from the BIOS
- Saving the CMOS data to a file with the addition of user-specific text
- Writing the saved CMOS data to the BIOS

Service / quality tool

- Fast, easy storage of PC system data for QM requirements
- Forwarding the CMOS data to an end user
- Uncomplicated on-site restoration of CMOS

Function

The SIMATIC IPC BIOS Manager V3.1 offers the following functions:

- Management of the BIOS settings (CMOS data) of SIMATIC IPCs:
 - Read-out from the BIOS
 - Save to a file
 - Import from a file
 - Save to the BIOS
- Display the SMBIOS data of SIMATIC IPCs
- Execute BIOS update and backup of BIOS image

System requirements:

The requirements for the use of the SIMATIC IPC BIOS Manager V3.1 are:

- SIMATIC IPC / PG as hardware platform

Windows PE boot medium, e.g. restore or recovery CD / DVD ("C" device generation or higher)

Alternative: SIMATIC IPC Image & Partition Creator V3.1 (start from CD) or USB FlashDrive created by it with Image & Partition Creator (boot from USB FlashDrive)

Ordering data

Order No.

SIMATIC IPC BIOS-Manager

Software tool for the management and processing of SIMATIC IPC BIOS data

as download using
Customer Support
<http://www.siemens.com/simatic/bios-manager>

Note:

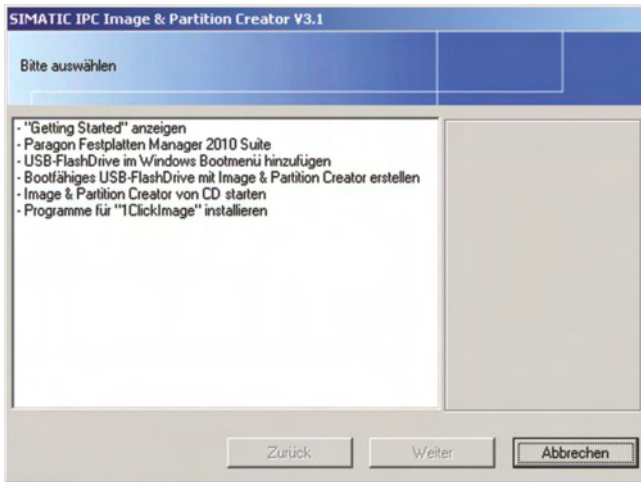
SIMATIC IPC BIOS Manager is also available together with the SIMATIC IPC USB FlashDrive and IPC Service USB FlashDrive.

PC-based Automation

Expansion components and accessories

SIMATIC IPC Image & Partition Creator

Overview



SIMATIC IPC Image & Partition Creator V3.1 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 in this case)
- Complete backup by means of a mouse double-click with "1ClickImage" (must be installed in this case)
- Menu-driven creation of a bootable USB flash drive as an alternative start medium from which Image & Partition Creator can then be started.
- Independent of the operating system thanks to ability to start from the bootable Image & Partition Creator CD or bootable USB flash drive with Image & Partition Creator

Benefits

Data security and hard disk management with very little overhead

- Hard disk partitions can be modified without loss of data and without the need for reinstallation
- Hard disk contents can be saved quickly, accurate to a bit, and securely
- No changes to the target system to be processed (when starting directly from the CD or USB FlashDrive with Image & Partition Creator)
- Reliable deletion of confidential data
- Can be used with any SIMATIC IPC hardware, independent of the respective IPC configuration (even devices with CompactFlash cards and solid-state drive)

Cost reduction due to considerably reduced downtimes in the event of an error

- Following replacement of a hard disk, SIMATIC IPCs are ready for operation again in just a few minutes
- Software failures due to application errors, operator errors or computer viruses can be rectified in a matter of minutes

Application

SIMATIC IPC Image & Partition Creator should be used on all SIMATIC IPCs / HMI IPCs for subsequent adjustment of existing hard disk partitioning and for all data backups if there is no central backup solution via LAN.

Function

SIMATIC IPC Image & Partition Creator V3 continues to offer the functionality its users valued in the past:

- High-speed and accurate backup and restoring of hard disk contents. This restoration requires considerably less time compared to a reinstallation.
- Easy duplication of existing software installations to other devices with the same equipment and same use (cloning). This enables a quick complete replacement of equipment in the event of servicing
- Automatic driver support for the latest SIMATIC IPCs
- Complete backup by means of a mouse double-click with "1ClickImage" after one-time configuration of backup path
- Menu-driven creation of a bootable USB FlashDrive with Image & Partition Creator as an alternative start medium (instead of CD)
- Menu-driven creation of an entry for the USB FlashDrive in the Windows boot menu for easy booting from the USB FlashDrive
- Time-controlled backup: The start of a previously configured complete backup via the imaging software or Windows Task Planner enables regular, unsupervised backups at any time.

PC-based Automation

Expansion components and accessories

SIMATIC IPC Image & Partition Creator

Function (continued)

Functions for changing hard disk partitions:

- Enlarge and reduce existing system and data partitions without any loss of data
- Create new partitions or delete existing ones
- Convert the file system (e.g. FAT32 to NTFS)
- Easy setup of multiple-boot systems. Installation of a boot manager

SIMATIC IPC Image & Partition Creator V3 offers the following new functions:

- Direct start (without installation) from the Windows autostart menu
- System backups even during operation
- Backup of files and folders
- Menu-driven creation of a protected "backup container"
- Irrevocable deletion of data
- Support of virtual drives

With the above-named functions, the existing installation should continue to function without restrictions (except in the case of deletions).

System requirements:

Hardware:

- SIMATIC PCs of generation B
- SIMATIC IPCs of generation C
- SIMATIC Field PG M2 / M3
- SINUMERIK PCU50-3 / 50-5
- SIMOTION P350-3 / 350-5

Software:

- Operating system for installation:
Windows XP, Windows Vista, Windows 2003 / 2008 Server, Windows 7

Compatibility

- SIMATIC IPC Image & Partition Creator V3 is not image-compatible with previous versions.

Ordering data

Order No.

SIMATIC IPC Image & Partition Creator V3.1

can be ordered using the SIMATIC IPC configurator

SIMATIC IPC Image & Partition Creator V3.1

6ES7 648-6AA03-1YA0

Software tool for very easy preventive data backup and efficient partition management on SIMATIC IPCs

G: Subject to export regulations: AL: N and ECCN: 5D992

Note:

SIMATIC Image & Partition Creator is also available together with the SIMATIC IPC BIOS Manager preinstalled with the SIMATIC IPC Service USB FlashDrive.

PC-based Automation

Expansion components and accessories

ADDM – Data Management

Overview



With ADDM, you are completely in control of the SIMATIC and SINUMERIK controls – around the clock and with any program version. This tool is indispensable in a modern production area and ensures user-friendly backup, comparison and management of control data.

Ordering data

Order No.

ADDM

Software package:
Languages: English, German

ADDM Single User

For PC / PG with Windows XP

- Single license with CD-ROM of current software version
- Trial license with CD-ROM of current software version
- Single user upgrade

6BQ3 030-1AA30-3AD0**6BQ3 030-1AA70-3AD0****6BQ3 030-1AB13-3AD0**

ADDM Client

For PC / PG with Windows XP

- Single license without data carrier
- Single license with CD-ROM of current software version
- Client upgrade from V5.x to V6.2 with CD-ROM

G

6BQ3 030-1AA20-1AC0**6BQ3 030-1AA10-0AD0****6BQ3 030-1AB11-3AD0**

ADDM Server

For server PC with Windows XP and Windows 2003 Server

- Single license with CD-ROM of current software version
- Server upgrade from V5.x to V6. with CD-ROM

6BQ3 030-1AA00-3AD0**6BQ3 030-1AB10-3AD0**

ADDM Agent

For SINUMERIK PCU with HMI-Advanced

- Single license without data carrier
- Single license with CD-ROM of current software version
- Agent upgrade from V1.x to V1.3 with CD-ROM

G

6BQ3 030-1AA00-1AB0**6BQ3 030-4AA00-0AD0****6BQ3 030-1AB12-3AD0**

G: Subject to export regulations: AL: N and ECCN: 5D992

More information

Additional information is available in the Internet under:

<http://www.siemens.com/addm>

PC-based Automation

Expansion components and accessories

SIMATIC IPC CompactFlash

Overview

Rugged systems are required when using PCs in industrial environments to ensure minimal production standstill times.

SIMATIC IPCs are specially designed 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 of 256 MByte and 2 to 8 GByte.

Benefits

Reduced costs through high industrial functionality

- High system availability because no mechanical parts subject to wear are used
- High degree of industrial compatibility because highly resistant to vibration / shock and high temperatures
- Minimization of time and effort for customer through qualification and system test by SIMATIC IPC
- Integrating the CompactFlash diagnostics has enabled a further increase in system availability

Ordering data

Order No.

SIMATIC IPC CompactFlash

• 256 MByte	B	6ES7 648-2BF02-0XC0
• 2 GByte	B	6ES7 648-2BF02-0XF0
• 4 GByte	B	6ES7 648-2BF02-0XG0
• 8 GByte	B	6ES7 648-2BF02-0XH0

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Expansion components and accessories

PC IO peripherals

Overview



The PC IO I/O expansion extends rugged use of the SIMATIC Microbox PC 420 / 427B at machine level.

Further information can be found under
SIMATIC industrial PCs - SIMATIC Box PC.

The I/O expansion supports and extends use of the SIMATIC Microbox PC 420 / 427B maintaining:

- Extremely compact dimensions (262 mm wide, 134 mm high, depth from 47 mm)
- High system availability (rugged and maintenance-free, since without rotating parts, for example)
- Maximum flexibility

The PC IO I/O expansion comprises:

- Base module with encoder / counter functionality, PCI-104 interface to the HOST system and communication interfaces to the I/O modules
- Digital and analog I/O modules that are managed by the base module
- Mechanical installation components

A selection guide with a list of materials for your requirements can be found under:

<http://www.siemens.com/simatic-pc/pc-io-selection>

Benefits

Reduction in standstill times thanks to high system availability

- Monitoring and diagnostic functions (watchdog, heart beat, short-circuit monitoring, temperature monitoring, broken cable)
- Maintenance-free operation because a fan is not necessary
- Service-friendly hardware configuration (easy expansion, direct plug-in system for easy installation)
- High interference immunity (isolated digital I/Os)

Cost reductions through high investment security

- High product continuity through long-term secure functionality in hardware and software
- Modules developed and manufactured by Siemens
- Guaranteed spare-parts availability of the components (5 years)

Reduced costs through high industrial functionality

- High degree of industrial compatibility thanks to rugged construction (solid metal expansion rack, Base 400 permanently screwed to I/O modules) even under extreme vibration and shock loading, at high temperatures and with high electromagnetic interference
- High degree of flexibility in the selection and expansion of components (inputs and outputs are scalable in terms of type and number)
- Compact, resource-saving construction (four I/O modules or up to 160 24 V IOs can be operated on one PCI load)
- Support is available for different operating systems, such as RMOS3, Windows XP Professional, Windows XP embedded
- High performance for fast signal processing in real-time applications

Cost minimization through time savings

- Fully assembled, turn-key systems
- Program examples for support with creating applications
- Quick assembly due to integrated terminals with direct plug-in connection system

Module	Description
PC IO Base 400 (base module)	<ul style="list-style-type: none"> • PCI-104 interface to host • 4 encoder inputs, can also be used as counters if required • 4 digital inputs • Management of encoder inputs and associated counters and up to four I/O modules over separate communication interfaces • Power supply distribution for 4 encoders
PC IO MOD Digital 010 (digital I/O module 0)	<ul style="list-style-type: none"> • 24 binary 24 V inputs • 16 binary 24 V outputs
PC IO MOD Analog 020 (analog I/O module 0)	<ul style="list-style-type: none"> • 8 analog inputs, 12 bits, 0 to 5 V, 0 to 10 V ± 5 V, ± 10 V • 8 analog outputs, 16 bits, ± 10 V • 4 Pt100 connections, 2-wire
PC IO KIT 040 (encoder expansion rack)	<p>For expanding a SIMATIC Microbox PC 420 / 427B.</p> <p>Connection unit for:</p> <ul style="list-style-type: none"> • 4 encoder inputs • 4 digital inputs • Encoder voltage supply
PC IO KIT 030 (I/O expansion rack)	<p>For expanding a SIMATIC Microbox PC 420 / 427B.</p> <p>expansion rack to hold</p> <ul style="list-style-type: none"> • max. 2 I/O modules in the Microbox PC 42 x System

PC-based Automation

Expansion components and accessories

PC IO peripherals

Application

The SIMATIC Microbox PC 420 / 427B with central I/O expansion provides mechanical engineers, plant engineers, and switch cabinet manufacturers with a high performance, compact PC platform for application at the machine or in the process, and applications in the industrial environment for:

- Measuring and open-loop and closed-loop control of process and machine data (e.g. automated washing systems, robot controls).

The application spectrum of Microbox PC 420 / 427B with a central I/O expansion ranges from C/C++-based automation solutions with the well-proven SICOMP RMOS3 operating system with real-time and multi-function capability through to applications based on Windows XP.

The PC IO central I/O expansion has CE certification for use in the industrial sector as well as in residential and commercial areas, and small businesses when implemented in the Microbox PC 420 / 427B. In addition to industrial applications, it can also be used in building services automation or in facilities open to the public.

Design

- The Base 400 is directly plugged into the PC104 slot of the Microbox PC 420 / 427B; any required encoders or counters are routed externally through the Kit 040 (encoder expansion rack).
- Up to 2 I/O modules are screwed into the Kit 030 and both are attached to the Microbox PC 420 / 427B enclosure; flat ribbon cable provides the electrical connection to Base 400. The I/O can be connected through direct connectors.
- Flexible central expansion under the following boundary conditions supports the use of up to 320 24 V digital I/Os in one Microbox PC 420 / 427B:
 - Up to three PCI-104 modules can be implemented in the Microbox PC 420 / 427B
 - Expandable with up to 4 expansion frames
 - Up to 4 I/O modules can be operated on one Base 400
 - Up to 2 PC IO Mod Analog 020 can be operated on one Base 400.

Technical specifications

Electrical data

Supply voltages and current consumption

Parameters	Value
Power supply to base module	Via PCI-104 interface: 3.3 V DC and 5 V DC
Encoder supply voltage infeed	24 V DC
Current consumption of encoder inputs and counters	0.3 A per encoder
Power supply to digital I/O module 0	24 V DC
Current consumption of digital I/O module 0, max. approx.	4 A
Power supply to analog I/O module 0	5 V DC from Base 400

Counters and encoder inputs

Parameters	Value
Number of counters or encoder inputs on the base module	4
Input signal from encoder	RS 422
Counting depth	32 Bit
Encoder input counting frequency	≤ 2 MHz
Sampling time for timer or pulse-width measurement	1 MHz or 4 MHz
Gate time for frequency measurement	Adjustable in the following stages: 8 µs, 32 µs, 128 µs, 512 µs, 2048 µs, 8192 µs, 16384 µs, 32768 µs, 131072 µs, 262144 µs, 524288 µs, 1048576 µs, 2097152 µs, 4194304 µs, 8388608 µs, 16777216 µs
Isolation	No
Protected against polarity reversal	No

PC-based Automation

Expansion components and accessories

PC IO peripherals

Technical specifications (continued)

Digital inputs on base module

Base module: Digital inputs

Parameters	Value
Number of digital inputs	4
Cable length (without lightning protection element)	max. 30 m
Input voltage	24 V DC
Input current	Approx. 2 mA
Time constant of input filter	0.01 ms
Isolation	No

Digital I/O module 0: Digital inputs

Parameters	Value
Number of digital inputs	24
Cable length (without lightning protection element)	max. 30 m
Input voltage	DC 24 V
Input current	ca. 2 mA
Time constant of input filter:	
• Inputs 0 ... 7	0,1 ms
• Inputs 8 ... 23	1 ms
• Inputs 8 and 9 also designed as high-speed inputs (parallel to 1 ms path)	0,01 ms
Isolation	
For communication between the base module and the inputs of digital I/O module 0	Yes
Isolation test voltage	500 V DC
Between the individual inputs/outputs of digital I/O module 0	No, one electrical circuit

Digital I/O module 0: Digital outputs

Parameters	Value
Number of outputs	16, Organized in 4 output groups
Cable length (without lightning protection element)	max. 30 m
Output voltage	24 V DC
Output current:	
• Per output group	1 A max.
• Total per digital I/O module 0	4 A max.
Switching rate	≤ 2 kHz
Switching type	Current sourcing
Output delay:	
Internal transmission delay	16 µs
Register output to driver output (load-dependent):	
• 0 → 1 signal	max. 30 µs
• 1 → 0 signal (with a digital input connected)	max. 130 µs
Isolation:	
For communication between the base module and the outputs of digital I/O module 0	Yes
Isolation test voltage	500 V DC
Between the individual inputs / outputs of digital I/O module 0	No, one electrical circuit
Short-circuit protection of the output drivers	Threshold on Typ. 9 A max. 11 A electronically pulsing In order to comply with UL requirements, the user must limit the input current to 4 A. Use NEC Class 2 current source
Excess temperature shutdown	Above 150 °C
Overvoltage protection	Typ. 47 V max. 52 V
Status after POWER ON and after RESET	High resistance

Technical specifications (continued)

Analog I/O module

Analog I/O module 0: Analog inputs

Parameters	Value
Number of analog inputs	8
Shielded cable length	max. 30 m
Voltage ranges	0 ... 5 V 0 ... 10 V ±5 V ±10 V
Permissible input voltage against analog ground	max. 15 V, continuous
Impedance	> 10 kOhm
Input type	Single-ended
Resolution	12 bits (including sign)
Repeatability	10 bits (including sign)
Input filters	No
Conversion time	max. 200 µs per channel
Configuration cycle time for analog-to-digital conversion:	Without Pt100 With Pt100
• With one analog input	50 ... 100 µs 50 ... 200 µs
• With 4 analog inputs	200 ... 400 µs 200 ... 500 µs
• With 8 analog inputs	400 ... 800 µs 400 ... 1000 µs
Isolation	No

Analog I/O module: Pt100 inputs

Parameters	Value
Number of external Pt100 inputs	4
Type	Two-wire measurement
Dynamic response	The mean value is constantly available and is updated approximately every 6 ms.
Isolation	No

Analog I/O module 0: Analog outputs

Parameters	Value
Number of analog outputs	8
Type	Single-ended
Shielded cable length	max. 30 m
Voltage range	±10 V
Load current	2 mA max.
Resolution	16 bits (including sign)
Accuracy	0.5 %
Conversion time	max. 200 µs per channel
Output value after POWER ON and after RESET	0 V
Configuration cycle time for digital-to-analog conversion ¹⁾ :	
• With one analog input	100 ... 200 µs
• With 4 analog inputs	400 ... 800 µs
• With 8 analog inputs	800 ... 1600 µs
Short-circuit protection	No
Isolation	No

¹⁾ The times also depend on the software response time (interrupt response time or polling times).

PC-based Automation

Expansion components and accessories

PC IO peripherals

Technical specifications (continued)

Environmental requirements for installation in Microbox PC 42x

Electromagnetic compatibility (EMC)

• Emitted interference

EN 55022 Class B
In order to comply with Class B, a 230 V AC power supply unit must be used which meets the requirements of EN 55022 Class B (e.g. "SITOP modular 5 A", type No.: 6EP1333-3BA00).

• Immunity to conducted interference on the supply lines

- ±2 kV (IEC 61000-4-4, Burst)
- ±1 kV (IEC 61000-4-5, symm. surge, length > 30 m) with lightning protection element (e.g. from Dehn, type "Blitzductor BVT AD24", type No.: 918402)
- ±2 kV (IEC 61000-4-5, unsymm. surge, length > 30 m) with lightning protection element (e.g. from Dehn, type "Blitzductor BVT AD24", type No.: 918402)

• Immunity to conducted interference on the unshielded supply lines

- ±2 kV (IEC 61000-4-4, burst)
- ±1 kV (IEC 61000-4-5, symm. surge, length > 30 m) with lightning protection element (e.g. from Dehn, type "Blitzductor BVT AD24", type No.: 918402)
- ±2 kV (IEC 61000-4-5, unsymm. surge) Length > 30 m) with lightning protection element (e.g. from Dehn, type "Blitzductor BVT AD24", type No.: 918402)

• Immunity to conducted interference on the shielded supply lines

- ±2 kV (IEC 61000-4-4, burst)
- ±1 kV (IEC 61000-4-5, surge symm., length > 30 m)
- ±2 kV (IEC 61000-4-5, surge unsymm., length > 30 m)

Environmental requirements for installation in Microbox PC 42x

• Immunity to static discharge

- ±6 kV, contact discharge (IEC 61000-4-2)

• Immunity to high radio frequency interference

- ±8 kV, air discharge (IEC 61000-4-2)
- 10 V/m 80 % AM; 80 MHz to 1 GHz (IEC 61000-4-3);
- 10 V/m 80 % AM; 1.4 GHz to 2 GHz (IEC 61000-4-3)

• Immunity to high-frequency current feed

- 10 V 80 % AM, 9 kHz to 80 MHz (IEC 61000-4-6)

Ambient temperature during operation

- 0 to 50 °C with Flash drive (horizontal; preferred mounting position)
- 0 to 45 °C with Flash drive (vertical)
- 5 to 40 °C with hard disk (horizontal and vertical)

Ambient temperature during storage and transport

-20 °C ... +60 °C

Moist heat

30 °C / 85 % (IEC 60068-2-78, Test Cab)

Approvals

Safety regulations

IEC/EN 60950-1

CE marking

- EC Directive 89/336/EEC (EMC Directive)
- Use in industry:
 - Emitted interference: EN 61000-6-4
 - Noise immunity: EN 61000-6-2
- Applications in residential areas, business and trade environments as well as in workshops:
 - Emitted interference: EN 61000-6-3
 - Noise immunity: EN 61000-6-1

Dimensions

Equipment dimensions (in mm)

- Width x height: 262 x 134
- Depth of basic unit: 47
- Depth of basic unit above rail: 52
- Additional depth per encoder expansion rack (Kit 040): 17
- Additional depth per I/O expansion rack (Kit 030): 22

PC-based Automation

Expansion components and accessories

PC IO peripherals

Technical specifications (continued)

Environmental requirements for installation in Microbox PC 42x

Degree of protection acc. to EN 60529, (front / rear)	IP20				
Protection class	Protection class I acc. to VDE 0106 Part 1 (IEC 536)				
Vibration during operation	Devices without hard disk:				
	Frequency	Acceleration	Displacement	Cycles per axis	Octaves/min
	10 – 58 Hz	-	0.075 mm	10	1
	58 – 200 Hz	9.8 m/s ²	-	10	1
	acc. to IEC 60068-2-6, test Fc				
	Devices with hard disk: Wall mounting				
	Frequency	Acceleration	Displacement	Cycles per axis	Octaves/min
	10 – 58 Hz	0.035 mm		10	1
	58 – 200 Hz	4.9 m/s ²		10	1
	Standard rail: No mechanical excitation permitted				
Shock load during operation	Devices without hard disk:				
	Acceleration		Shock duration		
	150 m/s ²		11 ms		
	acc. to IEC 60068-2-27, test Ea				
	3 in both pos. and neg. direction per axis, half-sine				
	Devices with hard disk: Wall mounting:				
	Acceleration		Shock duration		
	50 m/s ²		30 ms		
	Standard rail: No mechanical excitation permitted				

Ordering data

Module	Order No.	Module	Order No.
PC IO Base 400 PCI-104 module for connecting up to 4 PC IO MOD xxx 010 / 020, with 4 encoder interfaces and 4 DI incl. fixing accessories (base module with fixing accessories)	B 6ES7 648-2CE20-0AA0	PC IO KIT 030 I/O module expansion rack for Microbox PC 420 / 427B for installing up to 2 I/O modules, including fixing accessories and a cover plate	6ES7 648-1AA20-0XF0
PC IO MOD Digital 010 Digital I/O module with 24DI and 16DO, incl. connecting cable to PC IO Base 400 and mating connector	B 6ES7 648-2CE40-0BA0	PC IO KIT 040 Encoder expansion rack for Microbox PC 420 / 427B for contacting the encoder interfaces and DIs of the PC IO Base 400, incl. fixing accessories	6ES7 648-1AA20-0XE0
PC IO MOD Analog 020 Analog I/O module with 8AI, 8AO and 4 PT100, incl. connecting cable to PC IO Base 400, mating connector and shield clamp	B 6ES7 648-2CE40-0CA0		

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Expansion components and accessories

SIMATIC IPC (Service) USB FlashDrive

Overview



The SIMATIC PC USB FlashDrive is the ideal mobile storage medium for SIMATIC PCs / PGs. Thanks to the rugged and ultra-compact construction in a metal enclosure, fast data transfer (USB 2.0) and the high memory capacity of 2 GByte, 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 applications). 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 PC Image and / or SIMATIC PC Partition Creator.

The SIMATIC IPC SERVICE USB FlashDrive is the perfect tool for backup and restoring. With the pre-installed SIMATIC Image&PartitionCreator V3.1, it is ready to use.

Benefits

Ultra-compact, rugged and industry-standard

- SLC-Flash technology for maximum data security and performance
- High level of electromagnetic compatibility according to CE Industry when operated with SIMATIC PC
- Especially suitable for use in industrial environments thanks to the metal enclosure
- Two USB FlashDrives can be inserted one above the other / side by side

High degree of investment protection

- System tested with SIMATIC PC / PG (hardware and software)
- Can be used to transfer Automation License Keys (requirement: Automation License Manager, V2.x and higher)

Added value

USB FlashDrive

- SIMATIC PC BIOS-Manager (DOS and Windows version) included in scope of supply

Service USB FlashDrive

- SIMATIC Image&Partition Creator is preinstalled

Application

The SIMATIC IPC USB FlashDrive is a fast and simple method of saving your data (e.g. recipes, configuration data, etc.) and transporting them easily from one place to another; it can also be used as starting medium for SIMATIC IPC BIOS-Manager, SIMATIC IPC Image Creator or SIMATIC IPC Partition Creator. In addition, it is ideal as a storage medium for portable applications.

Function

Functional highlights / outstanding technical features

- Rugged metal enclosure, ultra-compact design (dimensions: 64 x 18.5 x 7.8 mm) and high electromagnetic compatibility in accordance with CE Industry make the stick particularly suitable for industrial use.
- High memory capacity of 2 GByte
- SLC-Flash technology for maximum data security and performance
- High data transmission rate (USB 2.0 interface)
- Bootable with operating system (FreeDOS) and the auxiliary tool SIMATIC IPC BIOS Manager (DOS and Windows version) after short set-up procedure.
- Perfect as boot medium for SIMATIC IPC Image & Partition Creator. "Tool stick" can be generated with BIOS-Manager, Image Creator and Partition Creator
- Immediately ready to use – "plug & play", no driver necessary (Windows 2000 or higher)
- Status LED for indicating the operating state and data transmission
- System-tested with SIMATIC IPC / PG
- For functions of the SIMATIC Image&Partition Creator, refer to the specific Section

Recommended operating systems:

Windows 2000 / XP / Vista

Technical specifications

SIMATIC IPC USB-FlashDrive / SIMATIC IPC Service USB FlashDrive	
Supported operating systems	Windows 2000 / XP / Vista
Capacity	2 GByte
Approvals	CE Industry
Temperature	
• During operation	+5 ... +55 °C
• Storage	-20 ... +70 °C
Device dimensions (L x W x H) in mm	64 x 18,5 x 7,8
Weight, approx.	12 g

Ordering data

Order No.

SIMATIC IPC USB Flash-Drive

2 GByte, USB 2.0, metal enclosure, boot capability, for SIMATIC PC: Rack PC, Box PC and Panel PC (477 Embedded / 577 / 677 / 877) and for SIMATIC PG

- 1 ... 9 units
- 10 units and above
- 100 units and above

6ES7 648-0DC40-0AA0

6ES7 648-0DC40-0AA0

6ES7 648-0DC40-0AA0

SIMATIC IPC Service USB FlashDrive

2 GByte, USB 2.0, metal enclosure, boot capability, Image&Partition Creator V3.1 preinstalled, incl. CD

6AV7 672-8JD00-0AA0

Notice:

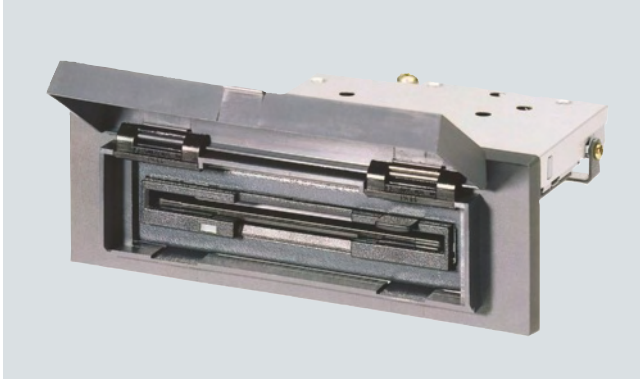
For orders of more than 100, delivery time may be extended.

PC-based Automation

Expansion components and accessories

SINUMERIK 3.5" floppy disk drive, USB 1.1

Overview



The SINUMERIK 3.5" floppy disk drive, USB 1.1 is suitable for archiving user data and can be installed in front panels. The connection is made via the USB interface.

Function

The SINUMERIK 3.5" floppy disk drive, USB 1.1 is designed for the transfer of user data.

Installation in front panels makes it possible to transfer data without opening the control cabinet door. High density (1.2 / 1.44 MByte) 3.5" floppy disks can be used for storing user data.

Integration

The SINUMERIK floppy disk drive, USB 1.1 is suitable for connecting to:

- SINUMERIK PCU 50.3
- SINUMERIK TCU
- SIMATIC Panel PC 67x / 87x / 477 / 577 with Windows 2000 / XP
- SIMOTION P350 with Windows XP Professional

Technical specifications

SINUMERIK Floppy drive 3.5", USB 1.1

Input voltage	5.25 V DC
Power consumption, max.	2.5 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • Rear IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	<ul style="list-style-type: none"> • Storage 5 ... 90 % • Transport 5 ... 95 % • Operation 20 ... 80 %
Ambient temperature	<ul style="list-style-type: none"> • Storage -20 ... +60 °C (-4 ... +140 °F) • Transport -20 ... +60 °C (-4 ... +140 °F) • Operation 4 ... 50 °C (39.2 ... 122 °F)
Distance to PCU / TCU	5 m (16.4 ft)
Dimensions	<ul style="list-style-type: none"> • Width 145 mm (5.71 in) • Height 50 mm (1.97 in) • Depth 161 mm (6.34 in)
Weight, approx.	0.32 kg (0.71 lb)
Approvals, according to	CE, cULus

Ordering data

Order No.

SINUMERIK 3.5" floppy disk drive, USB 1.1 B **6FC5 235-0AA05-1AA2**

Incl. connecting cable
Length: 1 m (3.28 ft)

Accessories

Cover
For SINUMERIK floppy disk drive and card reader with masking frame, cover and bearing bracket

6FC5 247-0AA20-0AA0

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Note for SIMATIC Panel PCs

The USB 1.1 floppy disk drive is approved for the Windows 2000 / XP operating systems. The appropriate drivers for the floppy disk drive are supplied with the operating system software.

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.

Benefits

- Maintaining the Panel PC front functionality
 - Status LEDs (temperature / power)
 - LEDs on the keys, Piezo mouse
 - USB 2.0 on front (up to 5 m), USB 1.1 (up to 30 m)
 - Dimmable backlit display
 - Programmable keyboard controller
 - Direct control key module option available and mountable
- Makes an ultra-compact operator control unit possible
- Suitable for subsequent modification / upgrade by the customer
- Can be used for all SIMATIC Panel PCs 677B
- Pure hardware solution and, therefore, independent of the operating system
- Remote front with the option of AC or DC power supply
- Operator control unit can be located up to 30 m away from the computer unit
- Two additional USB ports on rear, USB 2.0: up to 5 m high-speed, up to 30 m full-speed

Application

The Panel PC Remote Kit is designed for use exclusively with a Panel PC 677B. The Remote Kit can only be operated using the cables included in the scope of delivery.

Design

The Remote Kit consists of the following components:

- Remote module (mounted on the rear of the operator control unit)
- Video connecting cable (industrial grade DVI-D cable)
- USB connecting cable (up to 5 m with a standard USB cable; at 5 m and longer, the USB signal is transmitted via a CAT6 cable with external amplification)
- Mechanical components (for mounting the computer unit inside a control cabinet, console or machine)

Technical specifications

SIMATIC Panels 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: <ul style="list-style-type: none"> • 12" Touch / Key • 15" Touch / Key • 17" Touch • 19" Touch
Cable sets	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Remote module • Cable set • Mounting accessories for the PC677B computer unit • European power supply cable (with the AC option)

PC-based Automation

Expansion components and accessories

SIMATIC Panel PC Remote Kit

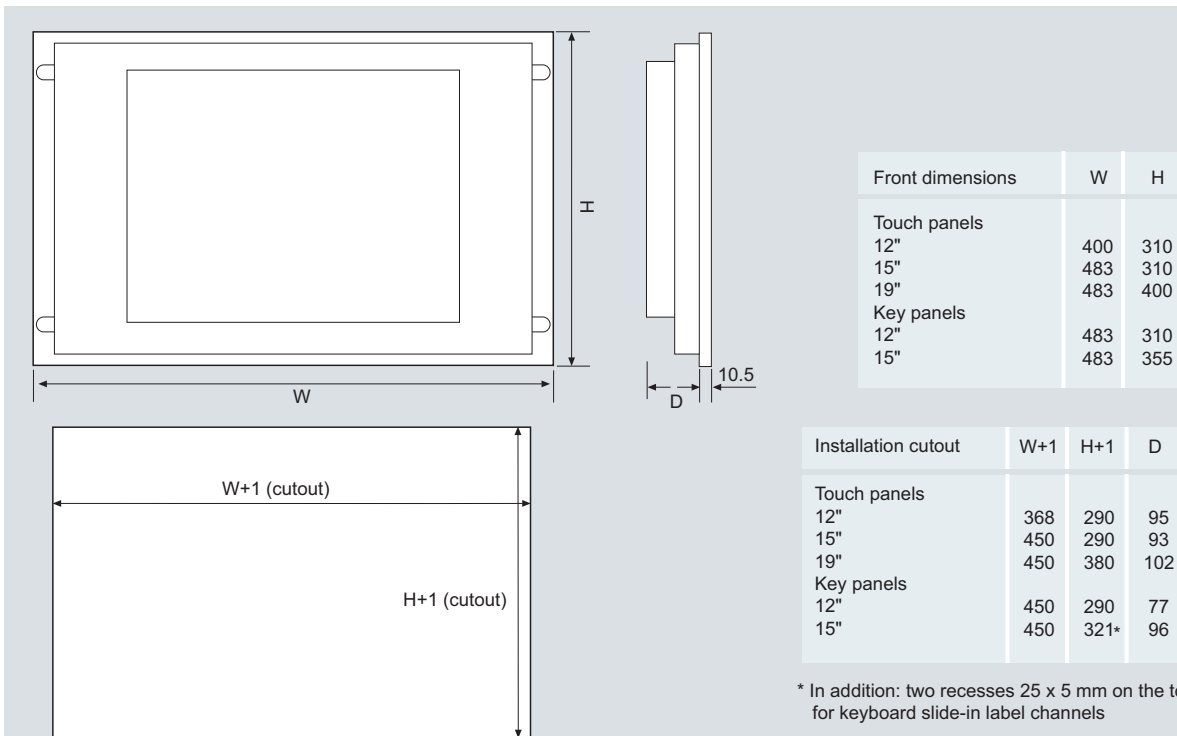
Ordering data	Order No.		Order No.	
SIMATIC Panel PC Remote Kit			Accessories (continued)	
<ul style="list-style-type: none">• 24 V DC, 5 m• 24 V DC, 10 m• 24 V DC, 15 m• 24 V DC, 20 m• 24 V DC, 30 m• 100 / 240 V AC, 5 m• 100 / 240 V AC, 10 m• 100 / 240 V AC, 15 m• 100 / 240 V AC, 20 m• 100 / 240 V AC, 30 m	B	6AV7 671-1EA00-5AA1	Sub-components of the Remote Kit (only available individually as spare parts)	
	B	6AV7 671-1EA01-0AA1		
	B	6AV7 671-1EA01-5AA1		
	B	6AV7 671-1EA02-0AA1		
	B	6AV7 671-1EA03-0AA1		
	B	6AV7 671-1EA10-5AA1		
	B	6AV7 671-1EA11-0AA1		
	B	6AV7 671-1EA11-5AA1		
	B	6AV7 671-1EA12-0AA1		
	B	6AV7 671-1EA13-0AA1		
Accessories				
Power supply cable				
<ul style="list-style-type: none">• Europe: GER / F / NL / E / B / A / S / FIN ¹⁾• United Kingdom• Switzerland• USA• Italy• China		6ES7 900-1AA00-0XA0		
		6ES7 900-1BA00-0XA0		
		6ES7 900-1CA00-0XA0		
		6ES7 900-1DA00-0XA0		
		6ES7 900-1EA00-0XA0		
		6ES7 900-1FA00-0XA0		

¹⁾ A European power supply cable is included in the scope of delivery of the AC (100-240 V) version of the Remote Kit.

B: Subject to export regulations: AL: N and ECCN: EAR99H

Dimensions

All dimensions in mm. Panel cutout see technical specification.



G_ST80_XX_00267

SIMATIC Panel PC Remote Kit

PC-based Automation

Expansion components and accessories

Industrial USB Hub 4

Overview



Industrial USB Hub 4, open

- The Industrial USB Hub 4 is used as a USB hub for the connection of peripheral devices to Multi Panels, Panel PCs and standard PCs.
- The industrial USB Hub 4 with IP65 degree of protection on the front (Service Kit required) can be mounted in a control cabinet. This simplifies the use of USB peripherals in harsh industrial environments.
- USB peripherals can be connected to the panel and operated via the Industrial USB Hub 4 without opening the cabinet door. The ports are also accessible from the rear even in the control cabinet.

Design

Use of the Industrial USB Hub 4

- permits the simultaneous connection of as many as four peripheral devices such as USB stick, mouse, keyboard, printer or barcode reader to the panel.
- increases the availability of the system to be operated. The cabinet door no longer has to be opened in order to connect to the peripherals. The unit can be operated from the Panel PC and the Multi Panel without interruption.

In addition, the Industrial USB Hub4 has the following features:

- Inspection window for each interface
- Vibration-proof restraint of connected USB cables and USB sticks
- One LED per interface for checking the data traffic
- Sufficient interior space for easy insertion and removal of connections
- Facility for attachment to a DIN rail
- Voltage connection for 24 V DC

Integration

The Industrial USB Hub 4 is suitable for connection to:

- Multi Panels
- SIMATIC Panel PC
- Standard PC

Recommended operating systems:

Windows CE / 2000 / XP / XP embedded

Technical specifications

	6AV6 671-3AH00-0AX0
Product type designation	Industrial USB Hub 4
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V to +28.8 V DC
Ambient conditions	
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C to +50 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
IP65 at front	Yes
IP20 rear	Yes
Certifications & standards	
Certifications	CE
Interfaces	
Number of USB interfaces	4; 500 mA each, e.g. mouse, keyboard, printer, USB stick
General information	
belongs to product / product range	MP 277, Panel PC
Dimensions	
External dimensions (W x H x D) in mm	212 x 156 x 50
Weight	
Weight	
• Weight	0.5 kg

Ordering data

Order No.

Industrial USB Hub 4	B	6AV6 671-3AH00-0AX0
Service pack for Industrial USB Hub 4		See HMI Accessories Service packages (incl. IP65 expansion)) from page 2/175

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Note for SIMATIC Panel PCs

The Industrial USB Hub 4 is approved for the Windows CE / 2000 / XP operating systems. The appropriate drivers are supplied with the operating system software.

PC-based Automation

Expansion components and accessories

DC UPS uninterruptible power supplies

Overview

Backup module

Expansion module with electrolyte capacitors for bridging temporary power failures. Can be combined with SITOP modular

Selection criteria:

- Low-cost protection against power failures for max. 3 seconds
- Supports the power supply unit when there is a temporarily increased power demand
- High load current up to 40 A



SITOP DC UPS module

DC UPS module with maintenance-free lead-gel batteries for energy storage. Bridging of power failures even for hours.

Selection criteria:

- The 24 V power supply is maintained for a long time, e.g. in order to continue processes.
- High load current up to 40 A



SITOP UPS500

DC UPS with high-capacity double-layer capacitors. Bridging of power failures for several minutes.

Selection criteria:

- Backup of data and closing of applications within minutes.
- Absolutely maintenance-free
- High ambient temperatures up to 60 °C
- No ventilation is required since no gas is emitted
- For distributed applications without control cabinet

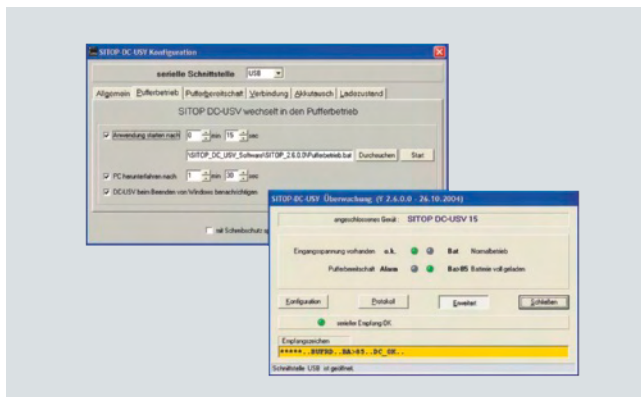


G_ST70_XX_00682

The uninterruptible power supply DC with battery modules consists of DC UPS modules with 6 A, 15 A, or 40 A output current and the battery modules 1.2 Ah, 3.2 Ah, 7 Ah and 12 Ah (contains lead-acid batteries with corrosion-resistant lead-calcium high-performance grid plates and fiber-glass mat) and 2.5 Ah (contains high-purity lead-acid "high-temperature batteries").

The maintenance-free SITOP UPS500 with capacitors as energy storage units is especially well suited for use at high ambient temperatures. Another advantage of these high-capacity double-layer capacitors is the shorter charge times. For flexible use, there is the SITOP UPS500S - 15 A basic unit in 2.5 kW and 5 kW versions. A maximum of 3 SITOP UPS501S expansion modules with 5 kW can be connected in parallel to increase the buffer times. The IP65 version SITOP UPS500P disposes of capacitors for 5 or 10 kW and provides up to 7 A of output current.

DC UPS software



SITOP DC UPS software monitoring and configuration window

The uninterruptible power supplies DC are optionally available with USB interface or serial interface. All relevant messages about the status of the uninterruptible power supply DC can be transferred to a PC (e.g. SIMATIC IPC) via this interface.

SITOP DC UPS software provides the user with a software tool that is extremely easy to operate and can be used to further process the signals sent from the uninterruptible power supply DC on the PC. In monitoring mode, the statuses of the uninterruptible power supply DC are visualized on the PC.

Secure shutdown on power failure and automatic restart of the PC are supported. It is also possible to freely define responses to the different operating states of the uninterruptible power supply DC, permitting extremely flexible integration into a wide variety of applications.

The software runs under the operating systems, Windows 2000, Windows XP and Windows Vista. It is available as freeware on the SITOP homepage and can be downloaded free of charge.

<http://www.siemens.com/sitop>

PC-based Automation

Expansion components and accessories

DC UPS with battery modules

Overview

By combining a DC UPS module with at least one 24 V battery module and a SITOP power supply unit, longer power failures can be bridged without any interruption.

This combination is used, for example, in machine tool manufacture, the textile industry, all types of production lines and filling systems, and in conjunction with 24 V industrial PCs. This prevents the negative effects which often result from power failures.

DC UPS modules:

- 6 A, 15 A, 40 A

Battery modules:

- 1.2 Ah (contains lead-acid batteries with corrosion-resistant lead-calcium, high-capacity grid plates and fiberglass mat)
- 3.2 Ah (contains lead-acid batteries with corrosion-resistant lead-calcium, high-capacity grid plates and fiberglass mat)
- 7 Ah (contains lead-acid batteries with corrosion-resistant lead-calcium, high-capacity grid plates and fiberglass mat)
- 12 Ah (contains lead-acid batteries with corrosion-resistant lead-calcium, high-capacity grid plates and fiberglass mat)
- 2.5 Ah (contains "high-temperature battery" lead-acid type)

Selection table for battery modules and mains buffering times

Load current	Battery module 1.2 Ah (6EP1935-6MC01)	Battery module 3.2 Ah (6EP1935-6MD11)	Battery module 7 Ah (6EP1935-6ME21)	Battery module 12 Ah (6EP1935-6MF01)	Battery module 2.5 Ah (6EP1935-6MD31)
1 A	30 min	2.5 h	6 h	11 h	2 h
2 A	11 min	45 min	2.5 h	5 h	45 min
3 A	4 min	25 min	1.5 h	3 h	30 min
4 A	2 min	20 min	45 min	2 h	20 min
6 A	1 min	10 min	30 min	1 h	13 min
8 A	-	4 min	20 min	40 min	9 min
10 A	-	1.5 min	15 min	30 min	7 min
12 A	-	1 min	10 min	25 min	5.5 min
14 A	-	50 s	8 min	20 min	4.5 min
16 A	-	40 s	6 min	15 min	4 min
20 A	-	-	2 min	11 min	-

Important information for selecting the battery capacity:

The mains buffering times are based on the discharge period of new or non-aged, fully charged battery modules at a battery temperature of not less than +25 °C down to a battery voltage of 21 V (with voltage drops in the DC UPS, approximately 20.4 V DC still remain for the load).

Battery aging reduces the still available battery capacity up to the end of the service life to typically around 50 % of the original capacity value when new (1.2 Ah or 3.2 Ah or 7 Ah, etc.) and the internal resistance increases. When the message "Battery charge > 85 %" appears, only around 50 % x 85 % = approx. 43 % of the originally available capacity can be assumed at the end of the battery service life.

At battery temperatures below +25 °C, the available capacity drops by another 30 % at + 5 °C battery temperature from approx. 43 % to approx. 70 %. There is then only around 30 % of the original capacity available.

A significantly larger battery capacity must therefore be selected when configuring the plant: A drop to approx. 50 % is compensated for by selecting 1 / approx. 0.5 = approx. double the battery capacity (required as per the table for the relevant load current and the relevant buffering time). Available capacity of approx. 43 % is compensated for by selecting 1 / approx. 0.43 = approx. 2.33 times battery capacity. Available capacity of approx. 30 % is compensated for by selecting 1 / approx. 0.3 = approx. 3.33 times battery capacity.

PC-based Automation

Expansion components and accessories

DC UPS module 6 A
DC UPS module 15 A

Overview SITOP Power DC UPS Module 6 A



- Compact design, only 50 mm wide
- Simple DIN rail mounting
- Completely uninterruptible mains buffering through immediate electronic connection of the battery as soon as the DC UPS input voltage falls below the value set by means of DIP switches.
- High level of safety and availability through monitoring of operational readiness, battery supply line, battery aging (message "Battery replacement necessary") and battery charge (message "Battery charged >85 %")
- Support for automatic warm restart of industrial PCs through selectable shutdown characteristics.
- Optionally with serial or USB interface.
SW tool available for download from <http://www.siemens.com/sitop>
Executes under Windows NT4.0, Windows 2000 and Windows XP.

Overview SITOP Power DC UPS Module 15 A



- Compact design, only 50 mm wide
- Completely uninterruptible mains buffering through immediate electronic connection of the battery as soon as the DC UPS input voltage falls below the value set by means of DIP switches.
- High level of safety and availability through monitoring of operational readiness, battery supply line, battery aging (message "Battery replacement necessary") and battery charge (message "Battery charged >85 %")
- Support for automatic warm restart of industrial PCs through selectable shutdown characteristics.
- Optionally with serial or USB interface.
SW tool available for download from <http://www.siemens.com/sitop>
Executes under Windows NT4.0, Windows 2000 and Windows XP.

Ordering data

Order No.

SITOP power DC UPS module 6 A

6EP1 931-2DC21

- With serial interface
- With USB interface

6EP1 931-2DC31

6EP1 931-2DC42

Ordering data

Order No.

SITOP power DC UPS module 15 A

6EP1 931-2EC21

- With serial interface
- With USB interface

6EP1 931-2EC31

6EP1 931-2EC42

PC-based Automation

Expansion components and accessories

DC UPS module 40 A
Battery module 1.2 Ah

Overview SITOP Power DC UPS Module 40 A



- Compact design, only 102 mm wide
- Completely uninterruptible mains buffering through immediate electronic connection of the battery as soon as the DC UPS input voltage falls below the value set by means of DIP switches.
- High level of safety and availability through monitoring of operational readiness, battery supply line, battery aging (message "Battery replacement necessary") and battery charge (message "Battery charged >85 %")
- Support for automatic warm restart of industrial PCs through selectable shutdown characteristics.
- Optionally with USB interface.
SW tool available for download from <http://www.siemens.com/sitop>
Executes under Windows NT4.0, Windows 2000 and Windows XP.

Ordering data

Order No.

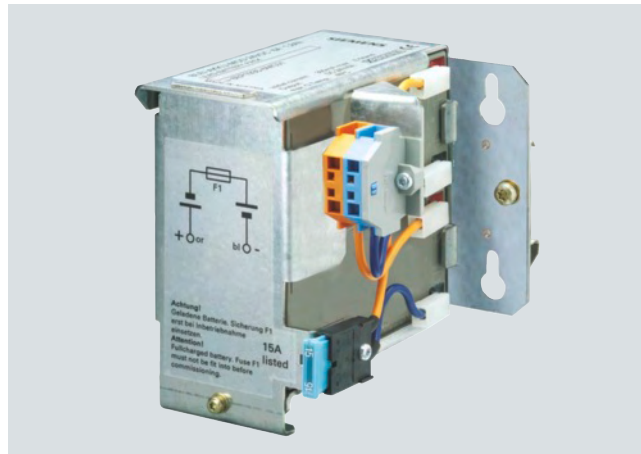
SITOP power DC UPS module 40 A

6EP1 931-2FC21

With USB interface

6EP1 931-2FC42

Overview SITOP Power Battery Module 24 V 1.2 Ah



- Battery module for DC UPS module 6 A
- It has two maintenance-free, closed lead-acid batteries (from the same lot) which are installed in a holder and connected in series with corrosion-resistant lead-calcium high-performance grid plates and glass fiber.
- Completely prewired with battery retainer and terminals
- Low self-discharge rate of approximately 3 % per month (at +20 °C)

Ordering data

Order No.

SITOP power, battery module 24 V / 1.2 Ah

B **6EP1 935-6MC01**

For DC UPS module 6 A

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Expansion components and accessories

Battery module 2.5 Ah

Battery module 3.2 Ah

Overview SITOP Power Battery Module 24 V 2.5 Ah



- High-temperature battery module for DC UPS module 6 A and 15 A
- It has two maintenance-free, closed pure lead-acid batteries (from the same lot), which are installed in a holder and connected in series.
- Completely prewired with battery retainer and terminals
- Low self-discharge rate of approximately 3 % per month (at +20 °C)

Ordering data	Order No.
SITOP power, battery module 24 V / 2.5 Ah For DC UPS module 15 A	6EP1 935-6MD31

Overview SITOP Power Battery Module 24 V 3.2 Ah



- Battery module for DC UPS module 6 A and 15 A
- It has two maintenance-free, closed lead-acid batteries (from the same lot) which are installed in a holder and connected in series with corrosion-resistant lead-calcium high-performance grid plates and glass fiber.
- Complete with battery retainer and terminals
- Low self-discharge rate of approximately 3 % per month (at +20 °C)

Ordering data	Order No.
SITOP power, battery module 24 V / 3.2 Ah for DC UPS module 15 A	6EP1 935-6MD11

PC-based Automation

Expansion components and accessories

Battery module 7 Ah Battery module 12 Ah

Overview SITOP Power Battery Module 24 V 7 Ah



- Battery module for DC UPS module 6 A, 15 A, and DC UPS module 40 A (for > 20 to 40 A, 2 modules are required in parallel).
- It has two maintenance-free, closed lead-acid batteries (from the same lot) which are installed in a holder and connected in series with corrosion-resistant lead-calcium high-performance grid plates and glass fiber.
- Completely pre-wired with terminals and battery retainer
- Low self-discharge rate of approximately 3 % per month (at +20 °C)

Ordering data

Order No.

**SITOP power,
battery module 24 V / 7 Ah**

6EP1 935-6ME21

for DC UPS module 6 A, 15 A and
40 A

Overview SITOP Power Battery Module 24 V 12 Ah



- Battery module for DC UPS module 6 A and 15 A and DC UPS module 40 A (for > 20 to 40 A, 2 modules are required in parallel)
- It has two maintenance-free, closed lead-acid batteries (from the same lot) which are installed in a holder and connected in series with corrosion-resistant lead-calcium high-performance grid plates and glass fiber.
- Completely pre-wired with terminals and battery retainer
- Low self-discharge rate of approximately 3 % per month (at +20 °C)

Ordering data

Order No.

**SITOP power,
battery module 24 V / 12 Ah**

6EP1 935-6MF01

for DC UPS module 6 A, 15 A and
40 A

PC-based Automation

Expansion components and accessories

DC UPS with capacitors

Overview

Uninterruptible power supplies normally store the electrical energy in lead-acid batteries.

Temperatures such as those prevalent in control cabinets considerably shorten the service life of the battery, however, and the batteries must be replaced on a regular basis – annually at an ambient temperature of 40 °C, for example. The innovative SITOP UPS500, however, is based on absolutely maintenance-free capacitors with a long service life. Even at temperatures of 50 °C they still have more than 80 % of their capacity after 8 years, so there is no need to replace the energy stores. Because the capacitors do not emit any gas, the control cabinet does not have to be ventilated.

Another advantage is the significantly shorter charging times of the double-layer capacitors, which ensure that the buffer is ready very quickly after loss of power.

The IP65 version SITOP UPS500P has capacitors for 5 or 10 kW and provides up to 7 A of output current. The oblong metal enclosure is also suitable for installing on support arm systems.

Selection table SITOP UPS500 (optional with expansion module) and mains buffering times

Buffering and charging times										
Configurations	SITOP UPS500S / 501S								UPS500P	
Basic unit	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	5 kW	10 kW
Expansion modules	-	-	1 × 5 kW	1 × 5 kW	2 × 5 kW	2 × 5 kW	3 × 5 kW	3 × 5 kW	-	-
Total energy	2.5 kW	5 kW	7.5 kW	10 kW	12.5 kW	15 kW	17.5 kW	20 kW	5 kW	10 kW
Load current	Buffer times									
0,5 A	134 s	236 s	390 s	478 s	632 s	748 s	851 s	1007 s	284 s	647 s
0,8 A	90 s	167 s	266 s	346 s	440 s	527 s	580 s	706 s	190 s	435 s
1 A	75 s	138 s	219 s	296 s	365 s	414 s	490 s	572 s	153 s	351 s
2 A	38 s	76 s	122 s	156 s	203 s	230 s	265 s	306 s	80 s	152 s
3 A	26 s	52 s	82 s	106 s	136 s	159 s	186 s	213 s	53 s	108 s
4 A	19 s	39 s	61 s	81 s	101 s	120 s	139 s	160 s	40 s	84 s
5 A	15 s	31 s	49 s	65 s	81 s	95 s	111 s	130 s	30 s	68 s
6 A	12 s	26 s	40 s	55 s	67 s	80 s	94 s	106 s	25 s	57 s
7 A	10 s	21 s	34 s	47 s	58 s	69 s	81 s	82 s	21 s	49 s
8 A	8 s	18 s	29 s	40 s	50 s	59 s	69 s	79 s	-	-
10 A	6 s	15 s	23 s	32 s	39 s	47 s	54 s	62 s	-	-
12 A	4 s	12 s	19 s	26 s	32 s	38 s	44 s	52 s	-	-
15 A	3 s	9 s	14 s	20 s	25 s	30 s	35 s	40 s	-	-
Load current	Buffer times									
2 A	54 s	120 s	158 s	223 s	263 s	318 s	355 s	417 s	130 s	360 s
1 A	110 s	205 s	311 s	425 s	503 s	625 s	695 s	816 s	-	-

Important information for selecting the energy storage units:

When the mains buffering times were determined, the discharge period of new or non-aged, completely charged capacitors was used as a basis. At a continuous ambient temperature of +50 °C, a loss of capacity of approx. 20 % must be considered after a service life of 8 years.

PC-based Automation

Expansion components and accessories

SITOP UPS500

Overview

Basic device 15 A, SITOP UPS500S

- Compact design, only 120 mm wide
- Two versions with integrated energy storage units: 2.5 kW or 5 kW
- Can be expanded easily using a user-friendly plug-in system with the expansion module 5 kW
- Absolutely uninterruptible bridging of power failures, as soon as the DC UPS input voltage falls below the value set by the DIP switches
- High level of safety and availability through monitoring of operational readiness, and monitoring of the capacitor charge (message "> 85 % charged")
- Support for automatic warm restart of industrial PCs through selectable shutdown characteristics
- With USB interface

SITOP UPS501S expansion module

- Additional energy storage (5 kW)
- Up to 3 expansion modules can be connected to a SITOP UPS500S to extend the buffer times
- Compact design, only 70 mm wide
- Can be easily connected to SITOP UPS500S via a user-friendly plug-in system
- Complete with balancing and safety circuits
- Can be snapped onto standard mounting rail EN 60715 35 x 7.5 / 15
- Dimensions (W x H x D) in mm: Approx. 70 x 125 x 125
- Weight: Approx. 0.7 kg

Basic device 7 A, IP65, SITOP UPS500P

- Compact design, degree of protection IP65
- For distributed use, e.g. on support arms
- Integrated energy storage: 5 kW or 10 kW
- Ambient temperature range for operation: 0 to +55 °C
- High degree of efficiency 96.9 % or low power loss, approx. 6 W with 7 A load current
- USB interface
- Indication of the operating states normal operation, buffer mode, alarm message "Buffer not ready" and indication of the capacitor charge > 85 %



The IP65 version of the maintenance-free power supply for distributed use.



Maintenance-free power supply in the form of a combination of a basic module and an expansion module

Ordering data

Order No.

SITOP UPS500S

- DC UPS basic device 15 A with 2.5 kW
- DC UPS basic device 15 A with 5 kW
- SITOP UPS501S expansion module 5 kW for connecting to the basic device

6EP1 933-2EC41

6EP1 933-2EC51

6EP1 935-5PG01

SITOP UPS500P

- DC UPS basic device 7 A with 5 kW
- DC UPS basic device 7 A with 10 kW
- Connector set consisting of connector for input and output and an assembled USB cable (2 m in length)

6EP1 933-2NC01

6EP1 933-2NC11

6EP1 975-2ES00

PC-based Automation

Expansion components and accessories

Input and output devices SIMATIC PC keyboard, IP65 membrane keyboard

Overview SIMATIC PC accessories

The SIMATIC PC accessories range includes various input devices, Flat Panels, USB FlashDrives, and printers.

Overview SIMATIC PC keyboard

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. It is optionally available with an integrated USB hub for 4 other USB devices

Benefits

High degree of investment protection

- Space-saving, compact design
- Durable and recyclable
- Consistent switching characteristics
- Soft-touch buttons for convenient operation
- Abrasion-resistant inscriptions on buttons
- Optional integrated USB hub with four downstream ports for simple and convenient connection of USB devices (plug and play) directly to the keyboard

Technical specifications

SIMATIC PC keyboard		
Description	SIMATIC PC keyboard, USB	SIMATIC PC keyboard, 4 USB hubs, ger / int
Layout	MF2, 105 keys, German / international	MF2, 105 keys, German / international
Dimensions (L x W x H) in mm	470 x 195 x 44	458 x 195 x 42
Weight, approx.	1400 g	1140 g
Connecting cable	Length 1.75 m, USB plug	Length 1.75 m, USB plug
Temperature		
• During operation	0 ... +50 °C	0 ... +50 °C
• Storage	-20 ... +60 °C	-20 ... +60 °C
Current consumption	-	max. 500 mA
Current delivery	-	max. 100 mA per downstream port
Transmission rate	-	Up to 12 Mbit/s
Description	FCC, cURus, GS, CE, c-tick, GOST-R	FCC, cURus, GS, CE, c-tick, GOST-R, VCCI

Ordering data

Order No.

SIMATIC PC keyboard¹⁾ **6ES7 648-0CB00-0YA0**

German / international, USB connection

SIMATIC PC keyboard, 4 x USB B **6ES7 648-0CD00-0YA0**

German / international, USB connection

¹⁾ It can be used as a standard keyboard using the USB PS2 adapter supplied (available soon).

B: Subject to export regulations: AL: N and ECCN: EAR99H

Overview IP65 membrane keyboard, desk version

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.

Benefits

- Jet-proof
- Rugged front due to reinforced front membrane (150 µm) made of resistant polyester
- Integrated touchpad
- UL/CSA listed

Application

The desktop version of the IP65 membrane keyboard is designed for areas of industry with stringent demands on the degree of protection.

Design

- MF2 / Windows 95 compatible key layout
- 105 short-stroke keys, type Omron
- Membrane keyboard with reinforced front membrane made of resistant polyester (150 µm thick)
- Touchpad

Technical specifications

- Color "light-basic"
- MF2 / Windows 95 compatible key layout with 105 short-stroke keys, type Omron
- German or international key layout
- Desktop unit made of polyester
- Mounting plate and base made of metal
- Front membrane made of resistant polyester (150 µm thick)
- 1 million strokes per key
- Y cable with 2 PS/2 connectors with 1.8 m connecting cable
- Weight approx. 1190 g
- Dimensions in mm (W x D x H): 478.6 x 180 x 26
- Licences: UL 1950, CSA C22.2 No. 950
- CE conformity according to EC 89/336
- Degree of protection IP65

Ordering data

Order No.

Standard configuration

IP65 membrane keyboard, desktop version with touchpad¹⁾

With PS/2 connector

- German keyboard layout **6GF6 710-2AC**
- International keyboard layout B **6GF6 710-2BC**

¹⁾ Available soon with USB plug

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Expansion components and accessories

IP65 membrane keyboard, Built-in version Slide-in keyboard

Overview IP65 membrane keyboard, built-in version

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.

Benefits

- Jet-proof
- Extra-reinforced front membrane (180 µm) made of resistant polyester
- Touchpad or trackball (IP65 version)
- UL/CSA listed

Application

The built-in version of the IP65 membrane keyboard is designed for 19" cabinets and is suitable for areas of industry with stringent demands on the degree of protection (IP65).

Design

- MF2 / Windows 95 compatible key layout
- 105 short-stroke keys, type Omron
- Membrane keyboard with reinforced front membrane made of resistant polyester (180 µm thick)
- 19" / 4HE mounting plate made of metal
- Y cable with 2 PS/2 connectors
- Touchpad or trackball

Technical specifications

- Color "light-basic"
- MF2 / Windows 95 compatible key layout with 105 short-stroke keys, type Omron
- German or international key layout
- Desktop unit made of polyester
- 19" / 4HE mounting plate made of metal (1.6 mm thick)
- Front membrane made of resistant polyester (180 µm thick)
- Touchpad or trackball (IP65 version)
- Y cable with 2 PS/2 connectors with 1.8 m connecting cable
- Weight approx. 1480 g
- Dimensions in mm (W x D x H): 482.6 x 177.8 x 42.5
- Licences: UL 1950, CSA C22.2 No. 950
- CE conformity according to EC 89/336
- IP65 protection at the front, IP54 at the rear

Ordering data

Order No.

Standard configuration

IP65 membrane keyboard, 19" built-in version

For installation in 19" cabinets

- With touchpad ¹⁾
 - German keyboard layout
 - International keyboard layout
- With trackball
 - German keyboard layout
 - International keyboard layout

6GF6 710-3AE**6GF6 710-3BE****6GF6 710-3BF****6GF6 710-3BG**

Overview slide-in keyboard

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.

Benefits

- Jet-proof
- Small space requirement
- High reliability
- Integrated trackball
- Flat design

Application

The slide-out keyboard is designed for installation in 19" cabinets.

Design

- 84 full-stroke keys, "Gold Crosspoint" contact technology
- Some keys with dual assignment (switchover with the Fn key)
- Trackball
- Y cable with 2 PS/2 connectors
- Combination of draw-out keyboard and drawer

Ordering data

Order No.

Standard configuration

19" draw-out keyboard with trackball

- | | | |
|----------------------------|---|---------------------|
| • German key layout | B | 6GF6 710-3BJ |
| • International key layout | B | 6GF6 710-3BK |

B: Subject to export regulations: AL: N and ECCN: EAR99H

Overview SIMATIC PC mouse

Even with the mouse we offer you more than the standard: Optical wheel mouse for use with USB or PS/2 interface.

- Interfaces: USB and PS/2 (via adapter)
- Operating systems: Microsoft Windows XP, 2000, ME, 98, Windows NT4
- Connection cable: Length 1.83 m, USB plug
- Approvals:
 - FCC Declaration of Conformity (USA)
 - UL and cUL Notice of Approval (USA and Canada)
 - ICES-003 report on file (Canada)
 - TÜV-GS Certificate (Germany)
 - CE Declaration of Conformity
 - Safety and EMC (EU)
 - GOST Certificate (Russia)
 - VCCI Certificate (Japan)
 - ACA/MED Declaration of Conformity (Australia and New Zealand)
 - BSMI Certificate (Taiwan)
 - MIC Certificate (Korea)
 - NOM Certificates (Mexico)
 - CB Scheme Certificate (International)
 - WHQL (International) ID: 866988

Benefits

- Minimized overhead through safe and reliable operation with SIMATIC PC / PG

Ordering data

Order No.

SIMATIC PC mouse

Optical wheel mouse,
USB interface,
incl. PS/2 adapter

6ES7 790-0AA01-0XA0**Overview operating channel extensions**

If the distance between computer and operator panel is greater than 2 m, you will require an operating channel extension (BKV).

The BKV is an active operating channel extension for use in harsh industrial environments. It is available in the following lengths:

- BKV 2520: 20 m
- BKV 2550: 50 m

Note:

Every operating channel extension has PS/2 ports for mouse and keyboard. An additional video cable of corresponding length is required for the monitor.

Application

The operator communication channel extensions are for mouse and keyboards and can be used in the industrial sector.

Design

- PS/2 ports for mouse and keyboard
- Length: 20 m or 50 m

Ordering data

Order No.

*Standard configuration***BKV active, operating channel extension active**

PS/2 ports

- 20 m long
- 50 m long

6GF6 980-0KC**6GF6 980-0KE**

PC-based Automation

Expansion components and accessories

Printers

T 2240/9, T 2240/24, T 2340/24

Overview



T 2240/9

The T 2240/9 is a rugged 9-needle printer for the medium performance range and is suitable for continuous use in rough industrial environments.

The strength of the T 2240/9 is its versatility. The T 2240/9 is a cost-effective printer for professional use.

T 2240/24

The T 2240/24 is a rugged 24-needle printer for the medium performance range (14,000 pages/month) and is suitable for continuous use in rough industrial environments.

The strength of the T 2240/24 is its versatility. The T 2240/24 is a cost-effective printer for professional use.

T 2340/24

The T 2340/24 is a rugged 24-needle printer for paper size DIN A3 horizontal. It is designed for the medium performance range (14,000 pages/month) and is suitable for continuous use in rough industrial environments.

The strength of the T 2340/24 is its versatility. The T 2340/24 is a cost-effective printer for professional use.

Ordering data

Order No.

Standard configuration

T 2240/9

9 pins, DIN A4 (power supply is not switchable: For operation with 230 V only)

6GF6 520-1LL

T 2240/24

24 pins, DIN A4 (power supply is not switchable: For operation with 230 V only)

6GF6 520-1LM

T 2340/24

24 pins, DIN A3 transverse (power supply is not switchable: For operation with 230 V only)

6GF6 520-1LN

Accessories

Interfaces

- RS 232C
- RS 232 / TTY

6GF6 520-2HA

6GF6 520-2LA

PC-based Automation

Expansion components and accessories

Printers
2150, 2250

Overview 2150

The 2150 is a multifunctional 24-pin printer for paper sizes up to DIN A4. It is designed for high performance (up to 26,000 pages per month), and is suitable for continuous use under harsh industrial conditions.

Ordering data

Order No.

Standard configuration

2150

B

6GF6 520-1LD

24 pins, DIN A4 (switchable power supply: 110 V / 230 V)

Accessories

Interfaces

- RS 232 / TTY
- Ethernet (10 / 100 Mbit)

B

6GF6 520-2LB

6GF6 520-2LC

B: Subject to export regulations: AL: N and ECCN: EAR99H

Overview 2250

The 2250 is a multifunctional 24-pin printer for paper sizes up to DIN A3 in landscape format. It is designed for high performance (up to 26,000 pages per month), and is suitable for continuous use under harsh industrial conditions.

Ordering data

Order No.

Standard configuration

2250

24 pins, DIN A3 in landscape format (switchable power supply: 110 V / 230 V)

Accessories

Interfaces

- RS 232 / TTY
- Ethernet (10 / 100 Mbit)

B

6GF6 520-1LE

6GF6 520-2LB

6GF6 520-2LC

PC-based Automation Communication

Communication processors for Industrial Ethernet

Overview



CPs with an internal microprocessor

- Protocol software executes on the CP
- Free PC resources for applications
- Suitable for comprehensive applications
- Recommended for applications with HMI systems which have high performance requirements, e.g. WinCC
- Recommended for large systems (eight stations or more, e.g. SIMATIC)
- Constant communication throughput
- Can be used for redundant communication
- Use for PROFINET IO real-time applications (RT, IRT with CP 1616 / CP 1604)
- Time synchronization











CPs without an internal microprocessor

- Protocol software executes on the PG / PC
- PC resources are divided between communications and applications
- Suitable for less comprehensive applications
- Recommended for smaller applications (up to eight stations, e.g. SIMATIC)
- Communications performance depends on PC resources and PC loading

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.

													Embedded Systems								
Communi- cation hardware	Communication software	Operating system environ- ment of the communication software					SIMATIC Industrial PC/ Field PG						Op. sys.	SIMATIC Industrial PCs ²⁾							
		Windows XP Pro + SP2/3	Windows Server 2003 R2 / SP2	Windows Server 2008	Vista Business / Ultimate + SP1	other operating systems	Field PG M	Rack PC 847B	Rack PC 547B / 547C, Panel PC 577B / 577C	Box PC 627B	Box PC 827B	Microbox 427B / 427C	Windows XPembedded + SP1/SP2/FP 2007	Microbox 427B / 427C	Panel PC 477B / 477C	Panel PC 677B / 677C	Box PC 627B				
CPs and software for Industrial Ethernet																					
CP 1613 A2 (PCI 32 Bit)	S7-1613 	●	●	●	●	-	-	●	●	●	●	-	-	-	-	○ ⁶⁾	●				
	S7-REDCONNECT ³⁾ 	●	●	●	●	-	-	○ ³⁾	○ ³⁾	○ ^{5/6)}	-	-	-	-	-	○ ^{4/6)}	○ ^{5/6)}				
CP 1623 (PCIe x1)	S7-1613 	●	●	●	●	-	-	○ ⁶⁾	●	○ ⁶⁾	○ ⁶⁾	-	-	-	-	○ ⁶⁾	○ ⁶⁾				
	S7-REDCONNECT ³⁾ 	●	●	●	●	-	-	○ ^{3/6)}	○ ³⁾	○ ^{5/6)}	○ ⁶⁾	-	-	-	-	○ ^{5/6)}	○ ^{5/6)}				
CP 1612 A2 (PCI 32 Bit)	SOFTNET-S7	●	●	●	●	-	-	●	●	●	●	-	●	-	-	○ ⁶⁾	●				
	SOFTNET-S7 Lean	●	●	●	●	-	-	●	●	●	●	-	●	-	-	○ ⁶⁾	●				
	SOFTNET-S7	●	●	●	●	-	-	●	●	●	●	-	●	-	-	○ ⁶⁾	●				
SIMATIC PG/PC with integral Ethernet interface	SOFTNET-S7 	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●				
	SOFTNET-S7 Lean 	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●				
	SOFTNET-PG 	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●				
CPs and software for PROFINET																					
CP 1616 ¹⁾ (PCI 32 Bit)	DK-16xx PN IO ¹⁾ V2.1	●	○	○	○	○	-	○	○	○	○	-	○	-	-	○	○				
CP 1604 ¹⁾ (PCI-104)	DK-16xx PN IO ¹⁾ V2.1	●	○	○	○	○	-	-	-	-	-	○ ²⁾	○	○ ²⁾	○ ²⁾	-	-				
SIMATIC PG/PC with integral Ethernet interface	SOFTNET PN IO 	●	●	●	●	○ ⁷⁾	●	●	●	○	○	○ ²⁾	●	● ²⁾	● ²⁾	●	●				
	PN CBA OPC-Server 	●	●	●	●	-	●	●	●	○	○	○ ²⁾	-	-	-	-	-				
<div>1) Use of these CPs requires porting of the Development Kit DK-16xx PN IO to the relevant operating system environment. You can order the DK-16xx PN IO at www.siemens.com/simatic-net/dk16xx on the Internet. It contains sample software for Linux Suse 10 and Windows XP Professional. For IRT operation an exclusive interrupt is necessary; this is not available in all slots. The additional use of CP 1616/CP 1604 is not approved for SIMATIC Industrial PC versions and integrated PROFINET interface.</div> <div>2) possible with restrictions, if necessary, depending on memory expansion and processor capacity.</div> <div>3) requires at least 2 PCI or 2 PCIe slots (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</div> <div>4) not possible for 677B/677C in version with 1x PCI or 1x PCIe slot</div> <div>5) without 4-way redundancy as there are only 2 slots</div> <div>6) depending on the slots of the selected PC version</div> <div>7) with SOFTNET PN IO Linux</div>													<div>Notes</div> <div>- Please always note the supplementary conditions for the specified SIMATIC NET products that you can view on the Internet pages shown below.</div> <div>- for further details on XP embedded, see http://support.automation.siemens.com/WW/view/de/21661049</div> <div>- 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 CD, 2008 SP2 Edition or at http://support.automation.siemens.com/WW/view/de/26610954</div> <div>- 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</div>					<div>● suitable</div> <div>- not suitable</div> <div>○ suitable under certain conditions</div> <div> on SIMATIC NET CD 2008 SP2 Edition</div>			
G_IK10_XX_10225																					

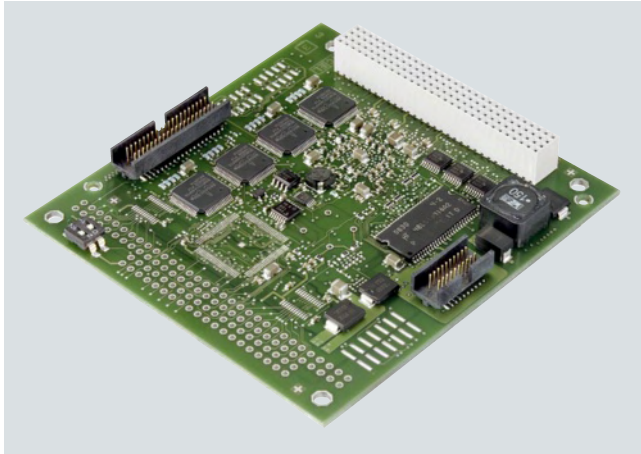
Connection options of Industrial Ethernet CPs to PG / PC

PC-based Automation

Communication processors for Industrial Ethernet

CP 1604

Overview



- 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
- 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

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
	●	●	●				

Ordering data

Order No.

Order No.

CP 1604 communications processor

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; other operating systems by means of DK-16 xx PN IO Development Kit German / English

6GK1 160-4AA00

IE FC RJ45 Plug 180

RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs / CPUs with Industrial Ethernet interface

- 1 pack = 1 item
- 1 pack = 10 items
- 1 pack = 50 items

6GK1 901-1BB10-2AA0
6GK1 901-1BB10-2AB0
6GK1 901-1BB10-2AE0

CP 1604 Microbox Package

Package for implementing the CP 1604 in the SIMATIC Microbox PC; comprising the CP 1604, connection board, power supply and expansion racks for Microbox PC; for use with Development Kit DK-16xx PN IO; NCM PC

6GK1 160-4AU00

SCALANCE X204-2

with four 10 / 100 Mbit/s RJ45 ports and two fiber-optic ports

6GK5 204-2BB10-2AA3

SCALANCE X204IRT

4 x 10 / 100 Mbit/s RJ45 Ports

6GK5 204-0BA00-2BA3

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 1000 m, minimum order 20 m

6XV1 840-4AH10

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

6XV1 870-2B

Accessories

Connection board for CP 1604

Connection board for CP 1604 with four RJ45 sockets incl. connecting cable

6GK1 160-4AC00

Power supply for CP 1604

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

6GK1 160-4AP00

DK-16xx PN IO development kit

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 9.3 and Windows XP Professional

see
<http://www.siemens.com/simatic-net/dk16xx>

B: Subject to export regulations: AL: N and ECCN: EAR99H

PC-based Automation

Communication processors for Industrial Ethernet

CP 1616

Overview



- 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

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
	●	●	●				

Ordering data

Order No.

Order No.

CP 1616 communications processor

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; other operating systems via Development Kit DK-16xx PN IO German / English

6GK1 161-6AA01

IE FC RJ45 Plug 180

RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs / CPUs with Industrial Ethernet interface

- 1 pack = 1 item
- 1 pack = 10 items
- 1 pack = 50 items

6GK1 901-1BB10-2AA0
6GK1 901-1BB10-2AB0
6GK1 901-1BB10-2AE0

Accessories

DK-16xx PN IO development kit

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 and Windows XP Professional

see
<http://www.siemens.com/simatic-net/dk16xx>

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 1000 m, minimum order 20 m

6XV1 840-4AH10

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

6XV1 870-2B

PC-based Automation

Communication processors for 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

Order No.

CP 1612 A2 communications processor A **6GK1 161-2AA01**

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, 2003 R2 Server SP2, Vista Business / Ultimate SP1, Windows 2008 Server; German / English

SOFTNET Security Client Edition 2008 H **6GK1 704-1VW02-0AA0**

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, Windows Vista Ultimate / Business + SP1

SOFTNET PN IO Edition 2008

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 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English

• Single license for one installation G **6GK1 704-1HW71-3AA0**

• Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-1HW00-3AL0**

• Upgrade SOFTNET PN IO Edition 2006 or higher to SOFTNET PN IO V8.0 G **6GK1 704-1HW00-3AE0**

• Upgrade SOFTNET PN IO from V6.0, V6.1, V6.2 or V6.3 to SOFTNET PN IO V8.0 G **6GK1 704-1HW00-3AE1**

SOFTNET Edition 2008 for Industrial Ethernet

Software for S7 and open communication, incl. OPC server, PG / OP communication, and NCM PC, runtime software, software and electronic manual on CD-ROM, license key 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; German / English

A: Subject to export regulations: AL: N and ECCN: EAR99S

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Communication processors for Industrial Ethernet

CP 1612 A2

Ordering data	Order No.	Order No.
SOFTNET-S7 Edition 2008 for Industrial Ethernet up to 64 connections <ul style="list-style-type: none"> • Single license for 1 installation G 6GK1 704-1CW71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade from Edition 2006 and higher to 2008 G 6GK1 704-1CW00-3AE0 • Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2008 G 6GK1 704-1CW00-3AE1 		
SOFTNET-S7 Lean Edition 2008 for Industrial Ethernet up to 8 connections <ul style="list-style-type: none"> • Single license for 1 installation G 6GK1 704-1LW71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade from Edition 2006 and higher to Edition 2008 G 6GK1 704-1LW00-3AE0 • Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2007 G 6GK1 704-1LW00-3AE1 		
SOFTNET-PG Edition 2008 for Industrial Ethernet Software for PG / OP communication, runtime software, software and electronic manual on CD-ROM, license key 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; German / English <ul style="list-style-type: none"> • Single license for 1 installation G 6GK1 704-1PW71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade from Edition 2006 and higher to Edition 2008 G 6GK1 704-1PW00-3AE0 • Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2008 G 6GK1 704-1PW00-3AE1 		
IE TP Cord RJ45 / RJ45 TP cable 4 x 2 with 2 RJ45 connectors <ul style="list-style-type: none"> • 0.5 m 6XV1 870-3QE50 • 1 m 6XV1 870-3QH10 • 2 m 6XV1 870-3QH20 • 6 m 6XV1 870-3QH60 • 10 m 6XV1 870-3QN10 		
PN CBA OPC-Server Edition 2008 PROFINET OPC server for CBA; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for 32-bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English <ul style="list-style-type: none"> • Single license for 1 installation G 6GK1 706-0HB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade from Edition 2006 and higher to Edition 2008, Single License G 6GK1 706-0HB00-3AE0 • Upgrade from V6.0 to Edition 2008, single license G 6GK1 706-0HB00-3AE1 		
SNMP OPC Server Edition 2008 Including MIB compiler; single license for 1 installation of runtime software; software and electronic manual on CD-ROM; license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English <ul style="list-style-type: none"> • Basic 2008 G 6GK1 706-1NW71-3AA0 Administration of up to 20 IP addresses; Single license for 1 installation - Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 706-1NW00-3AL0 - Upgrade from Edition 2006 and higher to Edition 2008, Single License G 6GK1 706-1NW00-3AE0 - Upgrade from V6.0 to Edition 2008, Single License G 6GK1 706-1NW00-3AE1 • Extended V8.0 G 6GK1 706-1NX71-3AA0 Administration of up to 200 IP addresses - Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 706-1NX00-3AL0 - Upgrade from Edition 2006 and higher to Edition 2008, Single License G 6GK1 706-1NX00-3AE0 - Upgrade from V6.0 to Edition 2008, Single License G 6GK1 706-1NX00-3AE1 • Power Pack 2008: For upgrade from SNM OPC Server Basic to SNM OPC Server Extended Edition 2008 6GK1 706-1NW71-3AC0 		

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

CP 1613 A2

Overview



- 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

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	●

Ordering data

Order No.

Order No.

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 S7-1613 and S7-REDCONNECT, incl. drivers for 32-bit Windows XP Professional SP2 / 3, 2003 R2 Server SP2, Vista Business / Ultimate SP1

6GK1 161-3AA01

S7-1613 Edition 2008

Software for S7 and open, 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 flash drive, Class A, for 32 Bit Windows XP Professional SP 2, 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2/ CP 1623; German / English

- Single license for 1 installation

G

6GK1 716-1CB71-3AA0

- Software Update Service for 1 year, with automatic extension; requirement: current software version

G

6GK1 716-1CB00-3AL0

- Upgrade S7-1613, Edition 2006 or higher, to S7-1613 Edition 2008

G

6GK1 716-1CB00-3AE0

- Upgrade S7-1613 from V6.0, V6.1, V6.2 or V6.3 to S7-1613 Edition 2008

G

6GK1 716-1CB00-3AE1

S7-REDCONNECT Edition 2008

Software for fail-safe S7 communication via redundant networks, incl. S7 OPC server, S7-1613 2008, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2/ CP 1623; German / English

- Single license for 1 installation

G

6GK1 716-0HB71-3AA0

- Software Update Service for 1 year, with automatic extension; requirement: current software version

G

6GK1 716-0HB00-3AL0

- Upgrade S7-REDCONNECT from V6.0, V6.1, V6.2 or V6.3 to S7-REDCONNECT Edition 2008

G

6GK1 716-0HB00-3AE0

- Upgrade S7-REDCONNECT from V6.0, V6.1, V6.2 or V6.3 to S7-REDCONNECT Edition 2008

G

6GK1 716-0HB00-3AE1

Power Pack S7-REDCONNECT Edition 2008

G

6GK1 716-0HB71-3AC0

For expansion from S7-1613 2008 to S7-REDCONNECT, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2 / CP 1623; German / English

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

CP 1623

Overview



- 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
- SNMP-supported diagnostics
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software.

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	●

PC-based Automation

Communication processors for Industrial Ethernet

CP 1623

Ordering data	Order No.	Order No.	
CP 1623 communications processor PCI Express x1 card for connection to Industrial Ethernet (10 / 100 / 1000 Mbit/s) with 2 port switch (RJ45) connection via S7-1613 and S7-REDCONNECT, incl. drivers for 32-bit Windows XP Professional SP2 / 3, 2003 R2 Server SP2, Windows Vista Business / Ultimate SP1	6GK1 162-3AA00	Power Pack S7-REDCONNECT Edition 2008 For expansion from S7-1613 2008 to S7-REDCONNECT, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2 / CP 1623; German / English	6GK1 716-0HB71-3AC0
S7-1613 Edition 2008 Software for S7 and open, 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 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 1613 / CP 1613 A2 / CP 1623; German/English		IE FC RJ45 Plug 4 x 2 RJ45 plug connector for Industrial Ethernet (10 / 100 / 1000 Mbit/s) with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; 180° cable outlet; for network components and CPs / CPUs with Industrial Ethernet interface	
<ul style="list-style-type: none">• Single license for 1 installation• Software Update Service for 1 year, with automatic extension; requirement: current software version• Upgrade S7-1613, Edition 2006 or higher, to S7-1613 Edition 2008• Upgrade S7-1613 from V6.0, V6.1, V6.2 or V6.3 to S7-1613 Edition 2008	<ul style="list-style-type: none">G 6GK1 716-1CB71-3AA06GK1 716-1CB00-3AL0G 6GK1 716-1CB00-3AE0G 6GK1 716-1CB00-3AE1	<ul style="list-style-type: none">• 1 pack = 1 unit• 1 pack = 10 units• 1 pack = 50 units	<ul style="list-style-type: none">6GK1 901-1BB11-2AA06GK1 901-1BB11-2AB06GK1 901-1BB11-2AE0
S7-REDCONNECT Edition 2008 Software for fail-safe S7 communication via redundant networks, incl. S7 OPC server, S7-1613 2008, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2 / CP 1623; German / English		Switches SCALANCE X-400 Modular Industrial Ethernet switches with integrated RJ45 ports for setting up electrical and / or optical Industrial Ethernet networks; integrated redundancy manager, IT functions (RSTP, VLAN, etc.), PROFINET IO Device, network management via SNMP and web server; incl. operating instructions, Industrial Ethernet network manual and configuration software on CD-ROM; C-PLUG included in the scope of supply	
<ul style="list-style-type: none">• Single license for 1 installation• Software Update Service for 1 year, with automatic extension; requirement: current software version• Upgrade S7-REDCONNECT, from Edition 2006 or higher to S7-REDCONNECT Edition 2008• Upgrade S7-REDCONNECT from V6.0, V6.1, V6.2 or V6.3 to S7-REDCONNECT Edition 2008	<ul style="list-style-type: none">G 6GK1 716-0HB71-3AA06GK1 716-0HB00-3AL0G 6GK1 716-0HB00-3AE0G 6GK1 716-0HB00-3AE1	<ul style="list-style-type: none">• SCALANCE X408-2; 4 x 10 / 100 / 1000 Mbit/s and 4 x 10 / 100 Mbit/s RJ45 ports; 2 x Gigabit / Fast Ethernet media module slots• SCALANCE X414-3E; 2 x 10 / 100 / 1000 Mbit/s and 12 x 10 / 100 Mbit/s RJ45 ports; 1 x Gigabit Ethernet and 2 x Fast Ethernet media module slots; 1 x Extender interface	<ul style="list-style-type: none">6GK5 408-2FD00-2AA26GK5 414-3FC00-2AA2

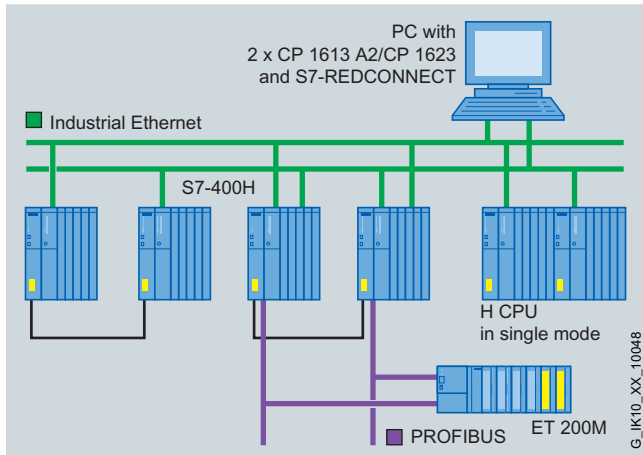
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

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 redundantly configured 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

Order No.

S7-REDCONNECT Edition 2008

Software for fail-safe S7 communication via redundant networks, incl. S7 OPC server, S7-1613 2008, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A; or 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2 / CP 1623; German / English

- Single license for 1 installation G **6GK1 716-0HB71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 716-0HB00-3AL0**
- Upgrade S7-REDCONNECT, from Edition 2006 or higher to S7-REDCONNECT Edition 2008 G **6GK1 716-0HB00-3AE0**
- Upgrade S7-REDCONNECT from V6.0, V6.1, V6.2 or V6.3 to S7-REDCONNECT Edition 2008 G **6GK1 716-0HB00-3AE1**

Power Pack S7-REDCONNECT Edition 2008

For expansion from S7-1613 2008 to S7-REDCONNECT, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2 / CP 1623; German / English

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 S7-1613 and S7-REDCONNECT, incl. drivers for 32 Bit Windows 7 Professional / Ultimate, Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1

Communications processor CP 1623

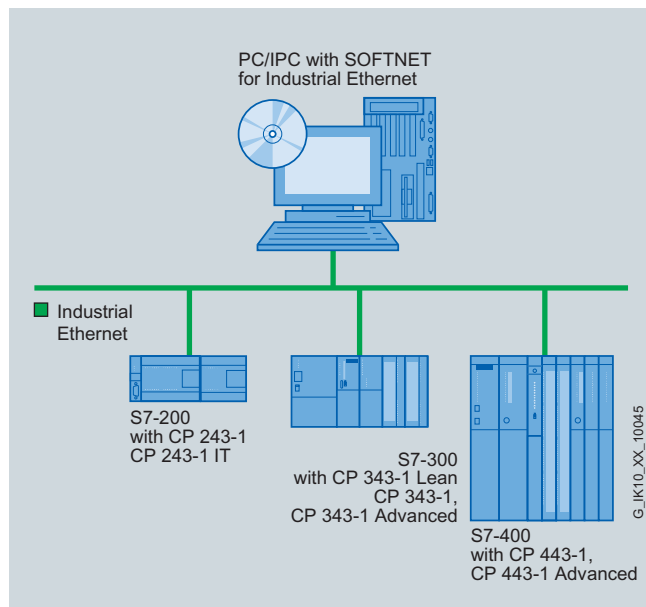
PCI Express x1 card (3.3 V / 12) for connection to Industrial Ethernet (10 / 100 / 1000 Mbit/s) with 2-port switch (RJ45) connection via S7-1613 and S7-REDCONNECT, incl. driver for 32 Bit Windows 7 Professional / Ultimate, Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1

PC-based Automation

Communication processors for Industrial Ethernet

SOFTNET for Industrial Ethernet

Overview



System configuration SOFTNET for Industrial Ethernet

ISO	TCP/UDP	PN	MRP	OPC	PG/OP	S7/S5	IT
●	●			●	●	●	

- For coupling programming devices / PCs / workstations to programmable controllers
- Communication services:
 - PG / OP communication
 - S7 communication
 - Open communication (SEND / RECEIVE)
- Can be used with
 - Layer 2 Ethernet card (PCI / PCIe)
 - Integrated Industrial Ethernet interface, e.g. CP 1612 A2
 - Modem (Remote Access Service RAS)
- Complete protocol stack as a software package
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

Ordering data

Order No.

SOFTNET S7 for Industrial Ethernet

Software for S7 and open communication, incl. OPC server, PG / OP communication, and NCM PC, runtime software, software and electronic manual on CD-ROM, license key 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; German / English

SOFTNET-S7 Edition 2008 for Industrial Ethernet

up to 64 connections

- Single license for 1 installation G **6GK1 704-1CW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-1CW00-3AL0**
- Upgrade from Edition 2006 and higher to Edition 2008 G **6GK1 704-1CW00-3AE0**
- Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2008 G **6GK1 704-1CW00-3AE1**

SOFTNET-S7 Lean Edition 2008 for Industrial Ethernet

up to 8 connections

- Single license for 1 installation G **6GK1 704-1LW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-1LW00-3AL0**
- Upgrade from Edition 2006 and higher to Edition 2008 G **6GK1 704-1LW00-3AE0**
- Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2008 G **6GK1 704-1LW00-3AE1**

SOFTNET-PG Edition 2008 for Industrial Ethernet

Software for PG / OP communication, runtime software, software and electronic manual on CD-ROM, license key 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; German / English

- Single license for 1 installation G **6GK1 704-1PW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-1PW00-3AL0**
- Upgrade from Edition 2006 and higher to Edition 2008 G **6GK1 704-1PW00-3AE0**
- Upgrade from V6.0, V6.1, V6.2 or V6.3 to Edition 2008 G **6GK1 704-1PW00-3AE1**

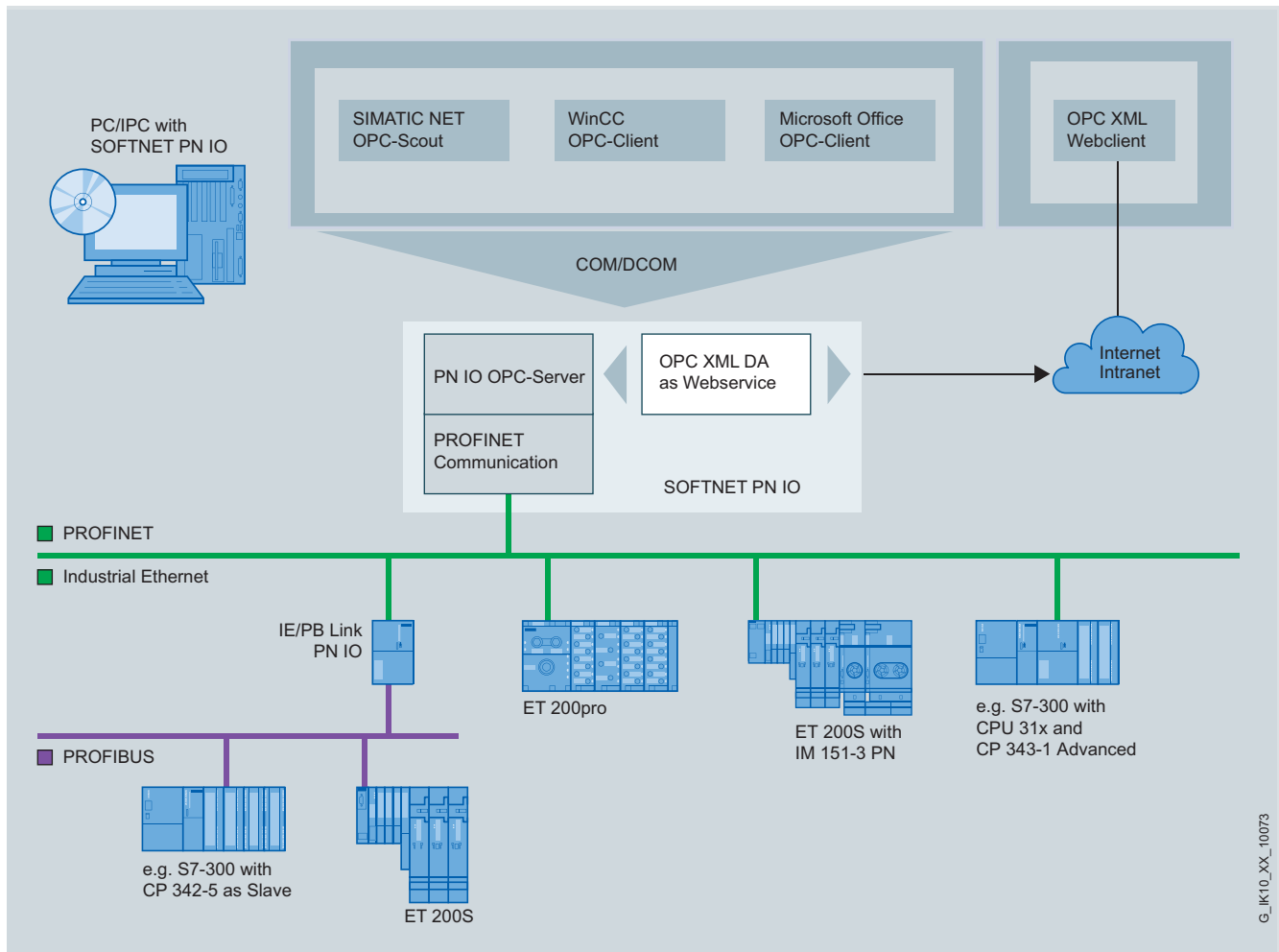
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for 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
 - Integrated interfaces of SIMATIC PG / PC
 - You can find more information about the environment of use www.siemens.com/simatic-net/ik-info
- Cost-effective solution for the low-end performance range
- OPC server for I/O interfacing over PROFINET included in scope of supply

Ordering data

Order No.

SOFTNET PN IO Edition 2008

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 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English

- | | | |
|---|---|----------------------------|
| • Single license for one installation | G | 6GK1 704-1HW71-3AA0 |
| • Software Update Service for 1 year, with automatic extension; requirement: current software version | | 6GK1 704-1HW00-3AL0 |
| • Upgrade SOFTNET PN IO Edition 2006 or higher to SOFTNET PN IO Edition 2008 | G | 6GK1 704-1HW00-3AE0 |
| • Upgrade SOFTNET PN IO from V6.0, V6.1, V6.2 or V6.3 to SOFTNET PN IO Edition 2008 | G | 6GK1 704-1HW00-3AE1 |

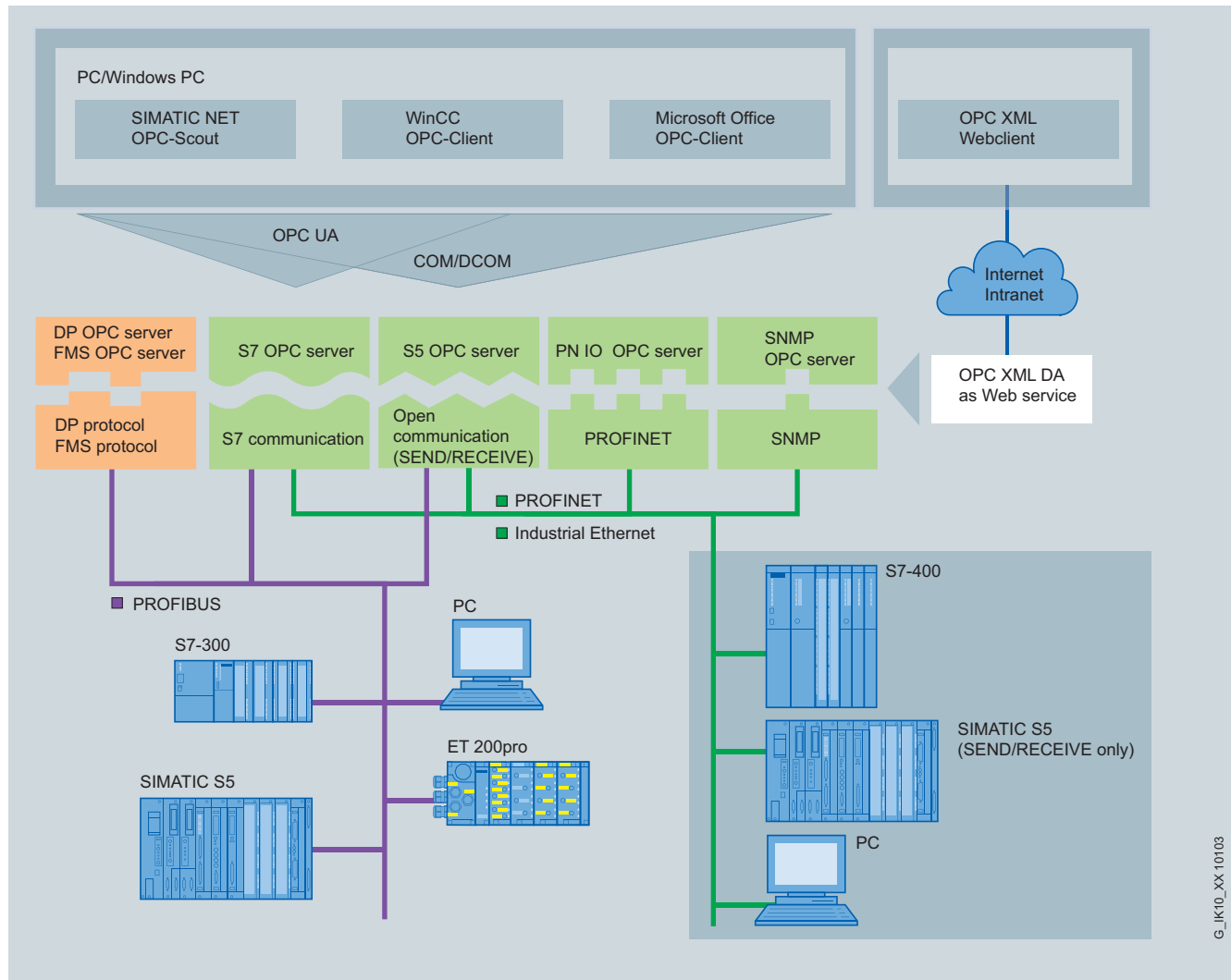
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

OPC server for Industrial Ethernet

Overview



System integration with OPC server

- The appropriate 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.
- OPC Scout with browser functionality as an OPC client and OCX Data Control/.NET Data Control for simple OPC client creation

G_IK10_XX 10103

PC-based Automation

Communication processors for Industrial Ethernet

OPC server for Industrial Ethernet

Ordering data	Order No.		Order No.	
PN CBA OPC Server Edition 2008 PROFINET OPC server for CBA; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for 32-bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English			SNMP OPC Server Edition 2008 including MIB compiler; single license for 1 installation of runtime software; software and electronic manual on CD-ROM; license key on USB flash drive, Class A; for 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1612 / CP 1613 / CP 1623 German / English	
<ul style="list-style-type: none">• Single license for 1 installation	G	6GK1 706-0HB71-3AA0	<ul style="list-style-type: none">• Basic 2008 Administration of up to 20 IP addresses; Single license for 1 installation	G 6GK1 706-1NW71-3AA0
<ul style="list-style-type: none">• Software Update Service for 1 year, with automatic extension; requirement: current software version		6GK1 706-0HB00-3AL0	<ul style="list-style-type: none">- Software Update Service for 1 year, with automatic extension; requirement: current software version	6GK1 706-1NX00-3AL0
<ul style="list-style-type: none">• Upgrade from Edition 2006 and higher to Edition 2008, single license	G	6GK1 706-0HB00-3AE0	<ul style="list-style-type: none">- Upgrade from Edition 2006 and higher to Edition 2008, single license	G 6GK1 706-1NW00-3AE0
<ul style="list-style-type: none">• Upgrade from V6.0 to Edition 2008, single license	G	6GK1 706-0HB00-3AE1	<ul style="list-style-type: none">- Upgrade from Edition 2006 and higher to Edition 2008, single license	G 6GK1 706-1NW00-3AE1
			<ul style="list-style-type: none">• Extended 2008 Administration of up to 200 IP addresses	G 6GK1 706-1NX71-3AA0
			<ul style="list-style-type: none">- Upgrade from Edition 2006 and higher to Edition 2008, single license	G 6GK1 706-1NX00-3AE0
			<ul style="list-style-type: none">- Upgrade from Edition 2006 and higher to Edition 2008, single license	G 6GK1 706-1NX00-3AE1
			<ul style="list-style-type: none">• Power Pack 2008: For upgrade from SNMP OPC Server Basic to SNMP OPC Server Extended Edition 2008	G 6GK1 706-1NX71-3AC0

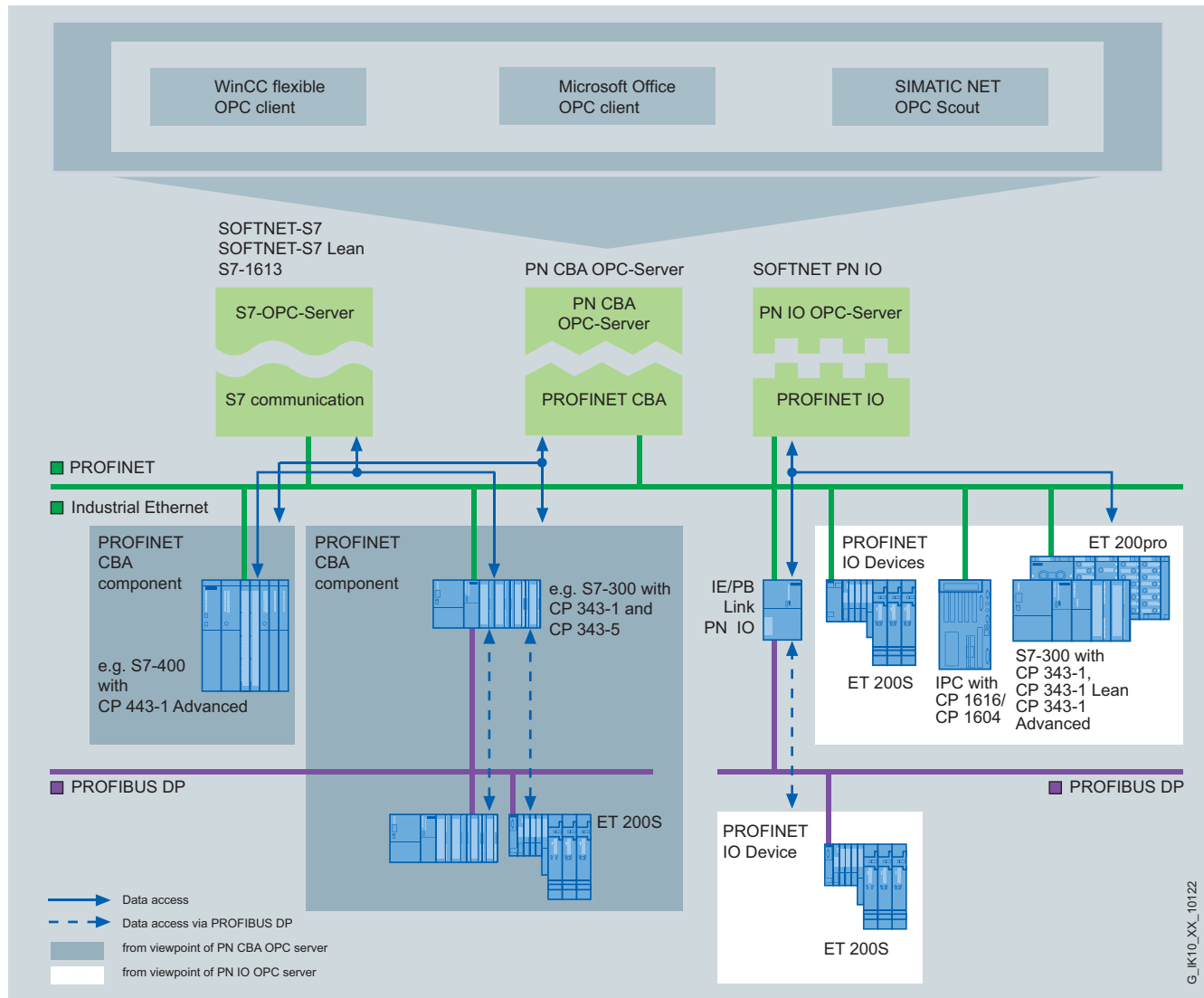
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

PN CBA OPC server

Overview



System integration with the PN CBA OPC server

- Access to variables in PROFINET CBA components over the OPC interface
- Use of the objects and symbols defined using the PROFINET engineering tool SIMATIC IMap and STEP 7
- Adding PROFINET functionality to existing installations. This enables it to be used in parallel with other communication protocols such as S7 communication with SOFTNET-S7 for Industrial Ethernet.
- OPC Scout as an OPC client with browser functions for the variables of the PROFINET CBA components

G_IK10_XX_10122

PC-based Automation

Communication processors for Industrial Ethernet

PN CBA OPC server

Ordering data	Order No.	Order No.	
PN CBA OPC-Server Edition 2008 PROFINET OPC server for CBA; runtime software, software and electronic manual on CD-ROM, license key on USB flash drive, Class A, for 32-bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2 Windows Vista Business / Ultimate; German / English			
<ul style="list-style-type: none">• Single license for 1 installation	G 6GK1 706-0HB71-3AA0		
<ul style="list-style-type: none">• Software Update Service for 1 year, with automatic extension; requirement: current software version	6GK1 706-0HB00-3AL0		
<ul style="list-style-type: none">• Upgrade of PN CBA OPC Server, Edition 2006 or higher, to PN CBA OPC Server, Edition 2008	G 6GK1 706-0HB00-3AE0		
<ul style="list-style-type: none">• Upgrade of PN CBA OPC Server from V6.0, V6.1, V6.2 or V6.3 to PN CBA OPC Server Edition 2008	G 6GK1 706-0HB00-3AE1		
		Software iMap V3.0 for configuring PROFINET CBA Requirement: Windows 2000 Prof. with Service Pack 4 or later or Windows XP Prof. with Service Pack 1 or later or Windows 2003 Server with Service Pack 1 or later; on PG or PC with Pentium processor, min. 1 GHz; STEP 7, V5.3 or later with Service Pack 3, PN OPC Server V6.3 or later Type of supply: German, English with electronic documentation	
		<ul style="list-style-type: none">• Single license	G 6ES7 820-0CC04-0YA5
		<ul style="list-style-type: none">• Software Update Service	G 6ES7 820-0CC01-0YX2
		<ul style="list-style-type: none">• Upgrade to V3.0, single license	G 6ES7 820-0CC04-0YE5

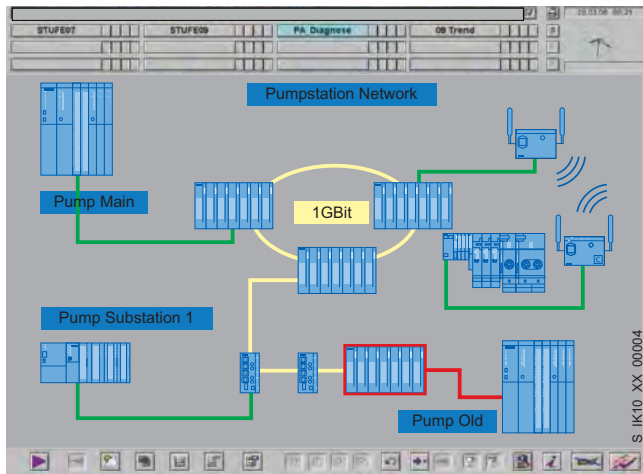
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for Industrial Ethernet

SNMP OPC server

Overview



- Status monitoring and network management of SNMP-capable devices in any OPC client systems; e.g. SIMATIC HMI / SCADA, office application
- Easy access to SNMP-capable devices over the OPC interface
- Devices without SNMP agents can be monitored using the ping mechanism
- Complete integration in the SIMATIC NET OPC server environment
- SNMP can be implemented in parallel with other communications protocols such as PROFINET or S7 communication
- Configuring with STEP 7 or NCM PC
- Autodiscovery function for integrating accessible Ethernet devices (STEP 7 V5.3+SP3 or higher)

Ordering data

Order No.

SNMP OPC-Server Edition 2008

Including MIB compiler; single license for 1 installation of runtime software; software and electronic manual on CD-ROM; license key on USB flash drive, Class A; or 32 Bit Windows XP Professional SP 2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 1613 / CP 1613 A2, CP 1623; German / English

• Basic V8.0

Administration of up to 20 IP addresses; Single license for 1 installation

- Software Update Service for 1 year, with automatic extension; requirement: current software version

- pgrade of SNMP OPC Server Basic, Edition 2006 or higher, to SNMP OPC Server Basic Edition 2008

- Upgrade of SNMP OPC Server Basic from V6.0, V6.1, V6.2 or V6.3 to SNMP OPC Server Basic Edition 2008

• Extended 2008

Administration of up to 200 IP addresses

- Software Update Service for 1 year, with automatic extension; requirement: current software version

- Upgrade of SNMP OPC Server Extended, Edition 2006 or higher, to SNMP OPC Server Extended Edition 2008

- Upgrade of SNMP OPC Server Extended from V6.0, V6.1, V6.2 or V6.3 to SNMP OPC Server Extended Edition 2008

• Power Pack 2008;

For upgrade from SNM OPC Server Basic to SNM OPC Server Extended Edition 2008

G **6GK1 706-1NW71-3AA0****6GK1 706-1NW00-3AL0**G **6GK1 706-1NW00-3AE0**G **6GK1 706-1NW00-3AE1**G **6GK1 706-1NX71-3AA0****6GK1 706-1NX00-3AL0**G **6GK1 706-1NX00-3AE0**G **6GK1 706-1NX00-3AE1**G **6GK1 706-1NX71-3AC0**

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

Introduction

Overview



PC card with an internal microprocessor

Recommended solution for:

- PC-based control systems (Soft Control, PLC, Numeric Control, Robot Control)
- Process control systems
- Operator control and monitoring systems (HMI)
- PROFIBUS DP slave interface (CP 5614 A2)
- PROFIBUS plants with large quantity framework (more than 8 stations)
- Multi-protocol operation
- Use of several CPs in one system
- Designs with fiber-optic interface (FO)

PC card without an internal microprocessor

Recommended solution for:

- Configuring tools (e.g. STEP 7)
- PROFIBUS DP diagnostics station (e.g. with COM PROFIBUS or as DP master Class 2)
- PROFIBUS DP slave connection
- PROFIBUS systems with up to 8 stations
- Mono protocol mode

PC-based Automation



















Communication processors for PROFIBUS

Connection options to SIMATIC IPC

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.

SIMATIC Industrial PC/Field PG														Embedded Systems					
Communication hardware	Communication hardware	Operating system environment of the communication software					SIMATIC Industrial PC/Field PG							Op. sys.	SIMATIC Industrial PCs ⁴⁾				
		Windows XP Pro + SP2/3	Windows Server 2003 R2 / SP2	Windows Server 2008	Vista Business / Ultimate + SP1	other operating systems	Field PG M	Rack PC 847B	Rack PC 647B	Rack PC 547B / 547C, Panel PC 577B / 577C	Box PC 627B	Box PC 827B	Microbox 427B / 427C (with CP 5603)	Windows XP Embedded + SP1/SP2/FP 2007 (with CP 5603)	Microbox 427B / 427C (with CP 5603)	Panel PC 477B / 477C (with CP 5603)	Panel PC 677B / 677C ⁴⁾	Box PC 627B	SIMATIC S7 modular Embedded Controller
CPs and software for Industrial Ethernet																			
CP 5603 (PCI-104)	CP with DP-Base 	●	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-
	DK-5613 ¹⁾ (DP-base)	○	-	-	-	○	-	-	-	-	-	-	○	○	○	○	-	-	○
	DP-5613 	●	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-
	S7-5613 	●	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-
CP 5613 A2 CP 5613 FO CP 5614 A2 (PCI 32 Bit)	CP with DP-Base 	●	●	●	●	-	-	●	●	●	●	●	-	-	-	-	●	●	-
	DK-5613 ¹⁾ (DP-base)	○	○	○	○	○	-	○	○	○	○	○	-	○	-	-	○	○	-
	DP-5613 	●	●	●	●	-	-	●	○	●	●	●	-	-	-	-	●	●	-
	S7-5613 	●	●	●	●	-	-	●	○	●	●	●	-	-	-	-	●	●	-
	FMS-5613 	●	●	●	●	-	-	●	○	●	●	●	-	-	-	-	●	●	-
CP 5623 CP 5624 (PCIe x1)	CP with DP-Base 	●	●	●	●	-	-	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	○ ⁵⁾	○ ⁵⁾	-	-
	DK-5613 ¹⁾ (DP-base)	○	○	○	○	○	-	○ ⁵⁾	○	○	○ ⁵⁾	○ ⁵⁾	-	○	-	-	○ ⁵⁾	○ ⁵⁾	-
	DP-5613 	●	●	●	●	-	-	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	-	○ ⁵⁾	○ ⁵⁾	-
	S7-5613 	●	●	●	●	-	-	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	-	○ ⁵⁾	○ ⁵⁾	-
CP 5611 A2 (PCI 32 Bit)	SOFTNET-DP 	●	●	●	●	-	-	●	●	●	●	●	-	-	-	-	●	●	-
	SOFTNET-DP Slave 	●	●	●	●	-	-	●	●	●	●	●	-	-	-	-	●	●	-
	SOFTNET-S7 	●	●	●	●	-	-	●	●	●	●	●	-	-	-	-	●	●	-
CP 5621 (PCIe x1)	SOFTNET-DP 	●	●	●	●	-	●	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	-	○ ⁵⁾	○ ⁵⁾	-
	SOFTNET-DP Slave 	●	●	●	●	-	●	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	-	○ ⁵⁾	○ ⁵⁾	-
	SOFTNET-S7 	●	●	●	●	-	●	○ ⁵⁾	●	●	○ ⁵⁾	○ ⁵⁾	-	-	-	-	○ ⁵⁾	○ ⁵⁾	-
CP 5512 (Cardbus 32 Bit)	SOFTNET-DP 	●	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-
	SOFTNET-DP Slave 	●	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-
	SOFTNET-S7	●	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-
CP 5711 (USB V2.0)	SOFTNET-DP	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●	●	-
	SOFTNET-DP Slave	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●	●	-
	SOFTNET-S7	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●	●	-
SIMATIC PG/PC with integral PROFIBUS interface	SOFTNET-DP	●	●	-	●	-	●	-	-	-	●	●	○ ⁴⁾	●	○ ⁴⁾	●	●	●	-
	SOFTNET-DP Slave	●	●	-	●	-	●	-	-	-	●	●	○ ⁴⁾	●	○ ⁴⁾	●	●	●	-
	SOFTNET-S7	●	●	-	●	-	●	-	-	-	●	●	○ ⁴⁾	●	○ ⁵⁾	●	●	●	-

- 1) Use of these CPs in other operating system environments requires porting of the DK-5613 Development Kit to the relevant operating system environment. You can order the DK-5613 in the Internet under www.siemens.com/simatic-net/dk5613.
- 2) Integrated PROFIBUS interface is optional
- 3) Possible with restrictions, if necessary, depending on memory expansion and processor capacity.
- 4) Not possible for 677B/677C in version with 1x PCI or 1x PCIe slot
- 5) Depending on the slots of the selected PC version
- 6) EM-PCI 104 expansion module required

- Notes
- Please always note the supplementary conditions for the specified SIMATIC NET products that you can view in the Internet pages shown below.
 - for further details on XP Embedded, see <http://support.automation.siemens.com/WW/view/de/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 CD, 2008 SP2 Edition or under <http://support.automation.siemens.com/WW/view/de/26610954>
 - Updates and supplements to the catalog entries, as well as the above tables can be viewed under <http://www.siemens.com/simatic-net/ik-info>

- suitable
- not suitable
- suitable under certain conditions
- on SIMATIC NET CD 2008 SP2 Edition

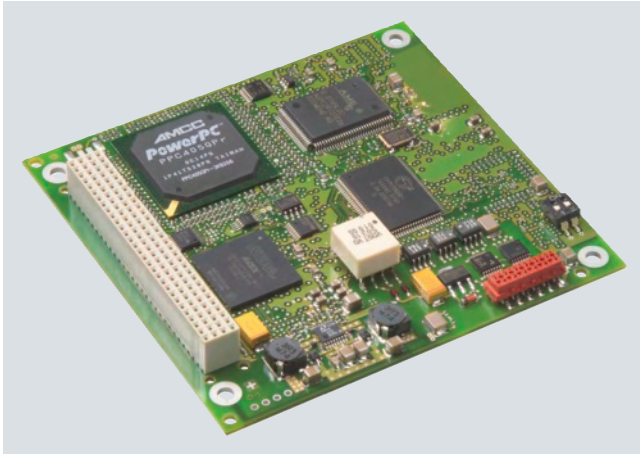
G.LK10.XX.50025

PC-based Automation

Communication processors for PROFIBUS

CP 5603

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 S7-5613 software package
 - Open communication (SEND / RECEIVE) based on the FDL interface
 - PROFIBUS FMS according to IEC 61158/61784
- 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
- Linux-based 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

PC-based Automation

Communication processors for PROFIBUS

CP 5603

Ordering data		Order No.	Order No.
CP 5603 communications processor	B	6GK1 560-3AA00	S7-5613 Edition 2008 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 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 5613 FO, CP 5614, CP 5614 A2 German / English
CP 5603 Microbox Package	B	6GK1 560-3AU00	<ul style="list-style-type: none"> Single license for 1 installation
For use of CP 5603 in Microbox 420 / 427B; consisting of CP 5603 module and Microbox expansion frame			6GK1 713-5CB71-3AA0
CP 5603 expansion rack		6GK1 560-3AA00-0AU0	<ul style="list-style-type: none"> Software Update Service for 1 year, with automatic extension; requirement: current software version
for use in Microbox 420 / 427B with mounting material			6GK1 713-5CB00-3AL0
CP 5603 mEC Package	B	6GK1 560-3AE00	<ul style="list-style-type: none"> Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008
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			6GK1 713-5CB00-3AE0
CP 5603 insert plate		6GK1 560-3AA00-0AE0	<ul style="list-style-type: none"> Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008
Metal plate with RS485 cutout for inserting for the S7 modular embedded controller			6GK1 713-5CB00-3AE1
Development Kit DK-5613		see http://www.siemens.com/simatic-net/dk5613	FMS-5613 Edition 2008 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
Software development kit 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			<ul style="list-style-type: none"> Single license for 1 installation
DP-5613 Edition 2008			6GK1 713-5FB71-3AA0
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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; CP 5603, CP 5613, CP 5613 A2, CP 5623, CP 5613 FO, CP 5614, CP 5614 A2, CP 5624; German / English			6GK1 713-5FB00-3AL0
<ul style="list-style-type: none"> Single license for 1 installation 	G	6GK1 713-5DB71-3AA0	<ul style="list-style-type: none"> Software Update Service for 1 year, with automatic extension; requirement: current software version
<ul style="list-style-type: none"> Software Update Service for 1 year, with automatic extension; requirement: current software version 		6GK1 713-5DB00-3AL0	<ul style="list-style-type: none"> Upgrade FMS-5613 Edition 2006 or 2007 to FMS-5613 Edition 2008
<ul style="list-style-type: none"> Upgrade from DP-5613 Edition 2006 or 2007 to DP-5613 Edition 2008 	G	6GK1 713-5DB00-3AE0	<ul style="list-style-type: none"> Upgrade FMS-5613 V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008
<ul style="list-style-type: none"> Upgrade from DP-5613 V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 	G	6GK1 713-5DB00-3AE1	PROFIBUS FastConnect bus connector RS 485 Plug 180
			With 180° cable outlet
			PROFIBUS bus terminal 12M
			Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable

B: Subject to export regulations: AL: N and ECCN: EAR99H

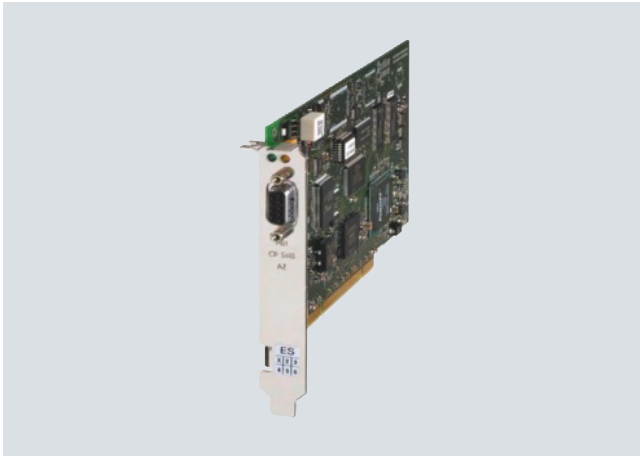
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

CP 5613 A2

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 5 and STEP 7
 - S7 communication with S7-5613 software package
 - Open communication (SEND / RECEIVE) based on the FDL interface
 - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- 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.

PC-based Automation

Communication processors for PROFIBUS

CP 5613 A2

Ordering data	Order No.	Order No.
CP 5613 A2 communications processor PCI card (32-bit; 3.3 V / 5 V) for connection to PROFIBUS including DP-Base software with NCM PC; DP-RAM interface for DP master, including PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32 bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English	6GK1 561-3AA01	S7-5613 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English <ul style="list-style-type: none"> Single license for 1 installation Software Update Service for 1 year, with automatic extension; requirement: current software version Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008 Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008
Software Upgrade for CP 5613 A2 and CP 5613 FO from V6.0 to Edition 2008	6GK1 561-3AA01-3AE0	<ul style="list-style-type: none"> Single license for 1 installation Software Update Service for 1 year, with automatic extension; requirement: current software version Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008 Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008
Development Kit DK-5613 Software development kit for CP 5613 / CP 5614 / CP 5613 A2 / CP 5614 A2 / CP 5613 FO for integration in other operating system environments on systems with a PCI slot	see http://www.siemens.com/simatic-net/dk5613	
DP-5613 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English <ul style="list-style-type: none"> Single license for 1 installation Software Update Service for 1 year, with automatic extension; requirement: current software version Upgrade from DP-5613 Edition 2006 or 2007 to DP-5613 Edition 2008 Upgrade from DP-5613 V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 	6GK1 713-5DB71-3AA0 6GK1 713-5DB00-3AL0 6GK1 713-5DB00-3AE0 6GK1 713-5DB00-3AE1	FMS-5613 Edition 2008 Software for FMS protocol, including 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 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English <ul style="list-style-type: none"> Single license for 1 installation Software Update Service for 1 year, with automatic extension; requirement: current software version Upgrade FMS-5613, Edition 2006 or higher, to FMS-5613 Edition 2008 Upgrade FMS-5613 from V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008
		PROFIBUS FastConnect bus connector RS 485 Plug 180 With 180° cable outlet
		PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

CP 5613 FO

Overview



DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●		●	●	●	●

- PCI card with own microprocessor for connection of PCs and SIMATIC PG / PC to the optical PROFIBUS at up to 12 Mbit/s
- Integrated fiber-optic interface for FO direct connection
- Communication services:
 - PROFIBUS DP master according to IEC 61158/61784 on a PCI card
 - PG / OP communication with STEP 5 and STEP 7
 - S7 communication with S7-5613 software package
 - Open communication (SEND / RECEIVE) based on the FDL interface
 - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- 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
- Multi-protocol mode 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.

PC-based Automation

Communication processors for PROFIBUS

CP 5613 FO

Ordering data		Order No.	Order No.
CP 5613 FO communications processor PCI card (32-bit; 5 V) for connection to optical PROFIBUS including DP-base software with NCM PC; DP-RAM interface for DP master, including PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit, Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English	G	6GK1 561-3FA00	S7-5613 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English
		6GK1 561-3AA01-3AE0	• Single license for 1 installation G 6GK1 713-5CB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5CB00-3AL0
		see http://www.siemens.com/simatic-net/dk5613	• Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE0 • Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE1
		DP-5613 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English	FMS-5613 Edition 2008 Software for FMS protocol, including 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 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English
• Single license for 1 installation G 6GK1 713-5DB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5DB00-3AL0 • Upgrade from DP-5613 Edition 2006 or 2007 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE0 • Upgrade from DP-5613 V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE1			• Single license for 1 installation G 6GK1 713-5FB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5FB00-3AL0 • Upgrade FMS-5613, Edition 2006 or higher, to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE0 • Upgrade FMS-5613 from V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE1
			PROFIBUS FastConnect bus connector RS 485 Plug 180 With 180° cable outlet 6GK1 500-0FC10
			PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable 6GK1 500-0AA10

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

CP 5614 A2

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 S7-5613 software package
 - Open communication (SEND / RECEIVE) based on the FDL interface
 - PROFIBUS FMS according to IEC 61158/61784 with FMS-5613 software package
- 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.

PC-based Automation

Communication processors for PROFIBUS

CP 5614 A2

Ordering data	Order No.	Order No.
CP 5614 A2 communications processor PCI card (32-bit; 3.3 V / 5 V) master and slave interface to PROFIBUS including DP-Base software with NCM PC; DP-RAM interface for DP master, including PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32 Bit Windows XP Professional SP 2, 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; German / English	6GK1 561-4AA01	S7-5613 Edition 2008 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 32 Bit Windows XP Professional SP2, 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English
Software Upgrade for CP 5613 A2 and CP 5613 FO from V6.0 to Edition 2008	6GK1 561-3AA01-3AE0	• Single license for 1 installation G 6GK1 713-5CB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5CB00-3AL0
Development Kit DK-5613 Software development kit for CP 5613 / CP 5614 / CP 5613 A2 / CP 5614 A2 / CP 5613 FO for integration in other operating system environments on systems with a PCI slot	see http://www.siemens.com/simatic-net/dk5613	• Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE0 • Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE1
DP-5613 Edition 2008 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 32 Bit Windows XP Professional SP 2, 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2; German / English		FMS-5613 Edition 2008 Software for FMS protocol, including 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 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, German / English
• Single license for 1 installation G 6GK1 713-5DB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5DB00-3AL0 • Upgrade from DP-5613 Edition 2006 or 2007 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE0 • Upgrade from DP-5613 V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE1		• Single license for 1 installation G 6GK1 713-5FB71-3AA0 • Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5FB00-3AL0 • Upgrade FMS-5613, Edition 2006 or higher, to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE0 • Upgrade FMS-5613 from V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE1
		PROFIBUS FastConnect bus connector RS 485 Plug 180 With 180° cable outlet 6GK1 500-0FC10
		PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable 6GK1 500-0AA10

G: Subject to export regulations; AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

CP 5623

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 S7-5613 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

PC-based Automation

Communication processors for PROFIBUS

CP 5624

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 S7-5613 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

PC-based Automation

Communication processors for PROFIBUS

CP 5624

Ordering data		Order No.	Order No.
CP 5624 A2 communications processor 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 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for operating system support see SIMATIC NET software; German / English	H	6GK1 562-4AA00	S7-5613 Edition 2008 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 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
		see http://www.siemens.com/simatic-net/dk5613	
Development Kit DK-5613 Software development kit 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			<ul style="list-style-type: none"> Single license for 1 installation G 6GK1 713-5CB71-3AA0 Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5CB00-3AL0 Upgrade from S7-5613 Edition 2006 or 2007 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE0 Upgrade from S7-5613 V6.0, V6.1, V6.2 or V6.3 to S7-5613 Edition 2008 G 6GK1 713-5CB00-3AE1
DP-5613 Edition 2008 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 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			FMS-5613 Edition 2008 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
<ul style="list-style-type: none"> Single license for 1 installation G 6GK1 713-5DB71-3AA0 Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5DB00-3AL0 Upgrade from DP-5613 Edition 2006 or 2007 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE0 Upgrade from DP-5613 V6.0, V6.1, V6.2 or V6.3 to DP-5613 Edition 2008 G 6GK1 713-5DB00-3AE1 			<ul style="list-style-type: none"> Single license for 1 installation G 6GK1 713-5FB71-3AA0 Software Update Service for 1 year, with automatic extension; requirement: current software version 6GK1 713-5FB00-3AL0 Upgrade from FMS-5613 Edition 2006 or 2007 to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE0 Upgrade FMS-5613 V6.0, V6.1, V6.2 or V6.3 to FMS-5613 Edition 2008 G 6GK1 713-5FB00-3AE1
			PROFIBUS FastConnect bus connector RS 485 Plug 180 With 180° cable outlet 6GK1 500-0FC10
			PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS nodes at up to 12 Mbit/s with connecting cable 6GK1 500-0AA10

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

PC-based Automation

Communication processors for PROFIBUS

CP 5512

Overview



DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- PC Card Type II (CardBus 32 bit) to connect PG / PC and notebooks with PC card slot (CardBus 32 bit) to PROFIBUS and to the MPI of the SIMATIC S7
- Communication services:
 - PROFIBUS DP Master Class 1 incl. acyclic DP expansions with SOFTNET-DP software package
 - PROFIBUS DP Master Class 2 incl. acyclic DP expansions with SOFTNET-DP software package
 - PROFIBUS DP slave with SOFTNET-DP Slave software package
 - PG / OP communication with STEP 5 or STEP 7
 - S7 communication with SOFTNET-S7 software package
 - Open communication (SEND / RECEIVE on basis of the FDL interface) with SOFTNET-DP or SOFTNET-S7 software package
- Can be used with:
 - STEP 7 and NCM PC; (ProTool, Micro/Win, ProTool/Pro, SIMATIC PDM for PG / OP communication)
 - SOFTNET-S7 (for S7-communication)
 - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC servers are included in the scope of supply of the respective communication software

PC-based Automation

Communication processors for PROFIBUS

CP 5512

Ordering data

Order No.

Order No.

CP 5512 communications processor

PC-Card (CardBus, 32-bit) 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

6GK1 551-2AA00**SOFTNET-S7 Edition 2008**

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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5512, CP 5611, CP 5611 A2, CP 5621; German / English

- Single license for 1 installation
- Software Update Service for 1 year, with automatic extension; requirement: current software version

G

6GK1 704-5CW71-3AA0**6GK1 704-5CW00-3AL0**

- Upgrade SOFTNET-S7, Edition 2006 or higher, to SOFTNET-S7 Edition 2008

G

6GK1 704-5CW00-3AE0

- Upgrade SOFTNET-S7 from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008

G

6GK1 704-5CW00-3AE1**SOFTNET-DP Edition 2008**

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, 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English

- Single license for 1 installation
- Software Update Service for 1 year, with automatic extension; requirement: current software version

G

6GK1 704-5DW71-3AA0**6GK1 704-5DW00-3AL0**

- Upgrade SOFTNET-DP, Edition 2006 or higher, to SOFTNET-DP Edition 2008

G

6GK1 704-5DW00-3AE0

- Upgrade SOFTNET-DP from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008

G

6GK1 704-5DW00-3AE1**SOFTNET-DP Slave Edition 2008**

Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English

- Single license for 1 installation
- Software Update Service for 1 year, with automatic extension; requirement: current software version

G

6GK1 704-5SW71-3AA0**6GK1 704-5SW00-3AL0**

- Upgrade SOFTNET-DP Slave, Edition 2006 or higher, to SOFTNET-DP Slave Edition 2008

G

6GK1704-5SW00-3AE0

- Upgrade SOFTNET-DP Slave from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008

G

6GK1704-5SW00-3AE1**PROFIBUS FastConnect bus connector RS 485 Plug 180****6GK1 500-0FC10**

With 180° cable outlet

PROFIBUS adapter for CP 5512**C79459-A1890-A10**

PC-based Automation

Communication processors for PROFIBUS

CP 5611 A2

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-DP software package
 - PROFIBUS DP Master Class 2 incl. acyclic DP expansions with SOFTNET-DP software package
 - PROFIBUS DP slave with SOFTNET-DP Slave software package
 - PG / OP communication with STEP 5 or STEP 7
 - S7 communication with SOFTNET-S7 software package
 - Open communication (SEND / RECEIVE on basis of the FDL interface) with SOFTNET-DP or SOFTNET-S7 software package
- Can be used with:
 - STEP 7, STEP 7-Micro/Win, ProTool, ProTool/Pro, SIMATIC PDM (for PG / OP communication)
 - COM PROFIBUS
 - SOFTNET-S7 (for S7-communication)
 - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communications software.

PC-based Automation

Communication processors for PROFIBUS

CP 5611 A2

Ordering data	Order No.	Order No.
CP 5611 A2 communications processor <ul style="list-style-type: none"> • PCI card (32-bit) for connection of a programming device or PC to PROFIBUS • PCI card (32-bit) CP 5611 A2 and MPI cable, 5 m 	6GK1 561-1AA01 6GK1 561-1AM01	
SOFTNET-S7 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server for CP 5512, CP 5611, CP 5611 A2, CP 5621; German / English		
<ul style="list-style-type: none"> • Single license for 1 installation 	G 6GK1 704-5CW71-3AA0	
<ul style="list-style-type: none"> • Software Update Service for 1 year, with automatic extension; requirement: current software version 	6GK1 704-5CW00-3AL0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-S7, Edition 2006 or higher, to SOFTNET-S7 Edition 2008 	G 6GK1 704-5CW00-3AE0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-S7 from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 	G 6GK1 704-5CW00-3AE1	
SOFTNET-DP Edition 2008 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, 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English		
<ul style="list-style-type: none"> • Single license for 1 installation 	G 6GK1 704-5DW71-3AA0	
<ul style="list-style-type: none"> • Software Update Service for 1 year, with automatic extension; requirement: current software version 	6GK1 704-5DW00-3AL0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-DP, Edition 2006 or higher, to SOFTNET-DP Edition 2008 	G 6GK1 704-5DW00-3AE0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-DP from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 	G 6GK1 704-5DW00-3AE1	
SOFTNET-DP Slave Edition 2008 Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English		
<ul style="list-style-type: none"> • Single license for 1 installation 	G 6GK1 704-5SW71-3AA0	
<ul style="list-style-type: none"> • Software Update Service for 1 year, with automatic extension; requirement: current software version 	6GK1 704-5SW00-3AL0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-DP Slave, Edition 2006 or higher, to SOFTNET-DP Slave Edition 2008 	G 6GK1 704-5SW00-3AE0	
<ul style="list-style-type: none"> • Upgrade SOFTNET-DP Slave from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 	G 6GK1 704-5SW00-3AE1	
PROFIBUS FastConnect bus connector RS 485 Plug 180 With 180° cable outlet	6GK1 500-0FC10	
PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable	6GK1 500-0AA10	

B: Subject to export regulations: AL: N and ECCN: EAR99H

G: Subject to export regulations: AL: N and ECCN: 5D992

Overview



DP-M	DP-S	FMS	OPC	PG/OP	S7/S5
●	●		●	●	●

- 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-DP software package
 - PROFIBUS DP Master Class 2 incl. acyclic DP expansions with SOFTNET-DP software package
 - PROFIBUS DP slave with SOFTNET-DP Slave software package
 - PG / OP communication with STEP 5 or STEP 7
 - S7 communication with SOFTNET-S7 software package
 - Open communication (SEND / RECEIVE on basis of the FDL interface) with SOFTNET-DP or SOFTNET-S7 software package
- Can be used with:
 - STEP 7, STEP 7-Micro/Win, ProTool, ProTool/Pro, SIMATIC PDM (for PG/OP communication)
 - COM PROFIBUS
 - SOFTNET-S7 (for S7-communication)
 - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software.

PC-based Automation

Communication processors for PROFIBUS

CP 5621

Ordering data		Order No.	Order No.
Communications processor CP 5621			
• PCI Express x1 card (32-bit) for connection of a PG or PC to PROFIBUS	H	6GK1 562-1AA00	
• PCI Express x1 card (32-bit) CP 5621 and MPI cable, 5 m	H	6GK1 562-1AM00	
SOFTNET-S7 Edition 2008			
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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5512, CP 5611, CP 5611 A2, CP 5621; German / English			
• Single license for 1 installation	G	6GK1 704-5CW71-3AA0	
• Software Update Service for 1 year, with automatic extension; requirement: current software version		6GK1 704-5CW00-3AL0	
• Upgrade SOFTNET-S7, Edition 2006 or higher, to SOFTNET-S7 Edition 2008	G	6GK1 704-5CW00-3AE0	
• Upgrade SOFTNET-S7 from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008	G	6GK1 704-5CW00-3AE1	
SOFTNET-DP Edition 2008			
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, 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English			
• Single license for 1 installation	G	6GK1 704-5DW71-3AA0	
• Software Update Service for 1 year, with automatic extension; requirement: current software version		6GK1 704-5DW00-3AL0	
• Upgrade SOFTNET-DP, Edition 2006 or higher, to SOFTNET-DP Edition 2008	G	6GK1 704-5DW00-3AE0	
• Upgrade SOFTNET-DP from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008	G	6GK1 704-5DW00-3AE1	
SOFTNET-DP Slave Edition 2008			
Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English			
• Single license for 1 installation	G	6GK1 704-5SW71-3AA0	
• Software Update Service for 1 year, with automatic extension; requirement: current software version		6GK1 704-5SW00-3AL0	
• Upgrade SOFTNET-DP Slave, Edition 2006 or higher, to SOFTNET-DP Slave Edition 2008	G	6GK1 704-5SW00-3AE0	
• Upgrade SOFTNET-DP Slave from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008	G	6GK1 704-5SW00-3AE1	
PROFIBUS FastConnect bus connector RS 485 Plug 180			6GK1 500-0FC10
With 180° cable outlet			
PROFIBUS bus terminal 12M			6GK1 500-0AA10
Bus terminal for connection of PROFIBUS stations for up to 12 Mbit/s with plug-in cable			

G: Subject to export regulations: AL: N and ECCN: 5D992

H: Subject to export regulations: AL: N und ECCN: 5D002ENC3

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
- Rugged 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-DP software package
 - PROFIBUS DP slave with SOFTNET-DP Slave software package
 - PG / OP communication with STEP 5 or STEP 7 software package
 - S7 communication with SOFTNET-S7 software package
 - Open communication (SEND / RECEIVE on basis of the FDL interface) with SOFTNET-DP or SOFTNET-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-S7 (for S7 communication)
 - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC servers and configuration tools are included in the scope of supply of the respective communication software

PC-based Automation

Communication processors for PROFIBUS

CP 5711

Ordering data	Order No.	Order 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 <ul style="list-style-type: none"> • USB V2.0 adapter • USB V2.0 adapter CP 5711 and MPI cable, 5 m 	6GK1 571-1AA00 6GK1 571-1AM00	SOFTNET-DP Edition 2008 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, 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 5512, CP 5611, CP 5611 A2, CP 5621, CP 5711; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade SOFTNET-DP, Edition 2006 or higher, to SOFTNET-DP Edition 2008 • Upgrade SOFTNET-DP from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008
Mounting rail support for CP 5711 Compartment for CP 5711 enclosure; fastened mechanically to 35 mm DIN rail	6GK1 571-1AA00-0AH0	6GK1 704-5DW71-3AA0 6GK1 704-5DW00-3AL0
SOFTNET-S7 Edition 2008 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 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5512, CP 5611, CP 5611 A2, CP 5621, CP 5711; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade SOFTNET-S7, Edition 2006 or higher, to SOFTNET-S7 Edition 2008 • Upgrade SOFTNET-S7 from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 	6GK1 704-5CW71-3AA0 6GK1 704-5CW00-3AL0 6GK1 704-5CW00-3AE0 6GK1 704-5CW00-3AE1	SOFTNET-DP Slave Edition 2008 Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key 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 5512, CP 5611, CP 5611 A2, CP 5621, CP 5711; German / English <ul style="list-style-type: none"> • Single license for 1 installation • Software Update Service for 1 year, with automatic extension; requirement: current software version • Upgrade SOFTNET-DP Slave, Edition 2006 or higher, to SOFTNET-DP Slave Edition 2008 • Upgrade SOFTNET-DP Slave from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008
		PROFIBUS FastConnect bus connector RS485 Plug 180 With 180° cable outlet

B: Subject to export regulations: AL: N and ECCN: EAR99H

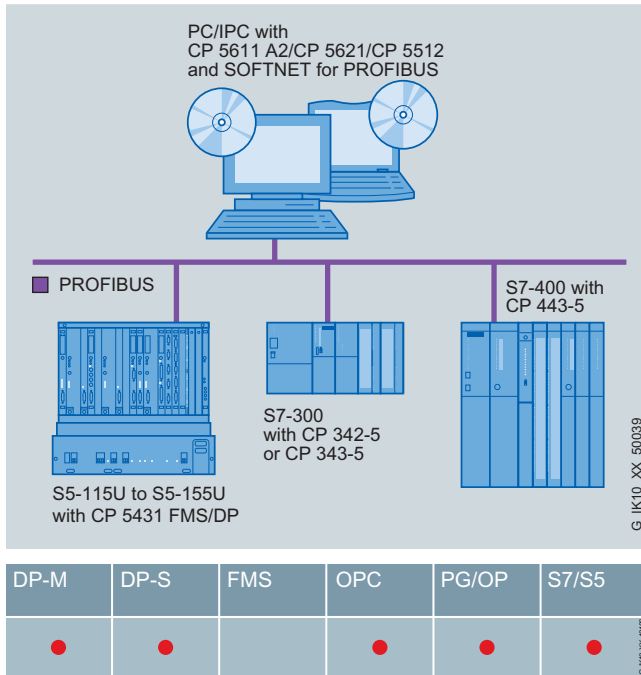
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

SOFTNET for PROFIBUS

Overview



- Software for coupling 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 are included in the scope of supply of the respective communication software

Ordering data

Order No.

Order No.

SOFTNET-S7 Edition 2008

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, or 32 Bit Windows XP Professional SP2 / 3; Windows 2003 Server R2, SP2; Windows Vista Business / Ultimate SP1; Windows 2008 Server; for CP 5512, CP 5611, CP 5611 A2, CP 5621; German / English

- Single license for 1 installation G **6GK1 704-5CW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-5CW00-3AL0**
- Upgrade SOFTNET-S7, Edition 2006 or higher, to SOFTNET-S7 Edition 2008 G **6GK1 704-5CW00-3AE0**
- Upgrade SOFTNET-S7 from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-S7 Edition 2008 G **6GK1 704-5CW00-3AE1**

SOFTNET-DP Edition 2008

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, 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English

SOFTNET-DP Edition 2008 (continued)

- Single license for 1 installation G **6GK1 704-5DW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-5DW00-3AL0**
- Upgrade SOFTNET-DP, Edition 2006 or higher, to SOFTNET-DP Edition 2008 G **6GK1 704-5DW00-3AE0**
- Upgrade SOFTNET-DP from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Edition 2008 G **6GK1 704-5DW00-3AE1**

SOFTNET-DP Slave Edition 2008

Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key 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 5512, CP 5611, CP 5611 A2, CP 5621; German / English

- Single license for 1 installation G **6GK1 704-5SW71-3AA0**
- Software Update Service for 1 year, with automatic extension; requirement: current software version **6GK1 704-5SW00-3AL0**
- Upgrade SOFTNET-DP Slave, Edition 2006 or higher, to SOFTNET-DP Edition 2008 G **6GK1 704-5SW00-3AE0**
- Upgrade SOFTNET-DP Slave from V6.0, V6.1, V6.2 or V6.3 to SOFTNET-DP Slave Edition 2008 G **6GK1 704-5SW00-3AE1**

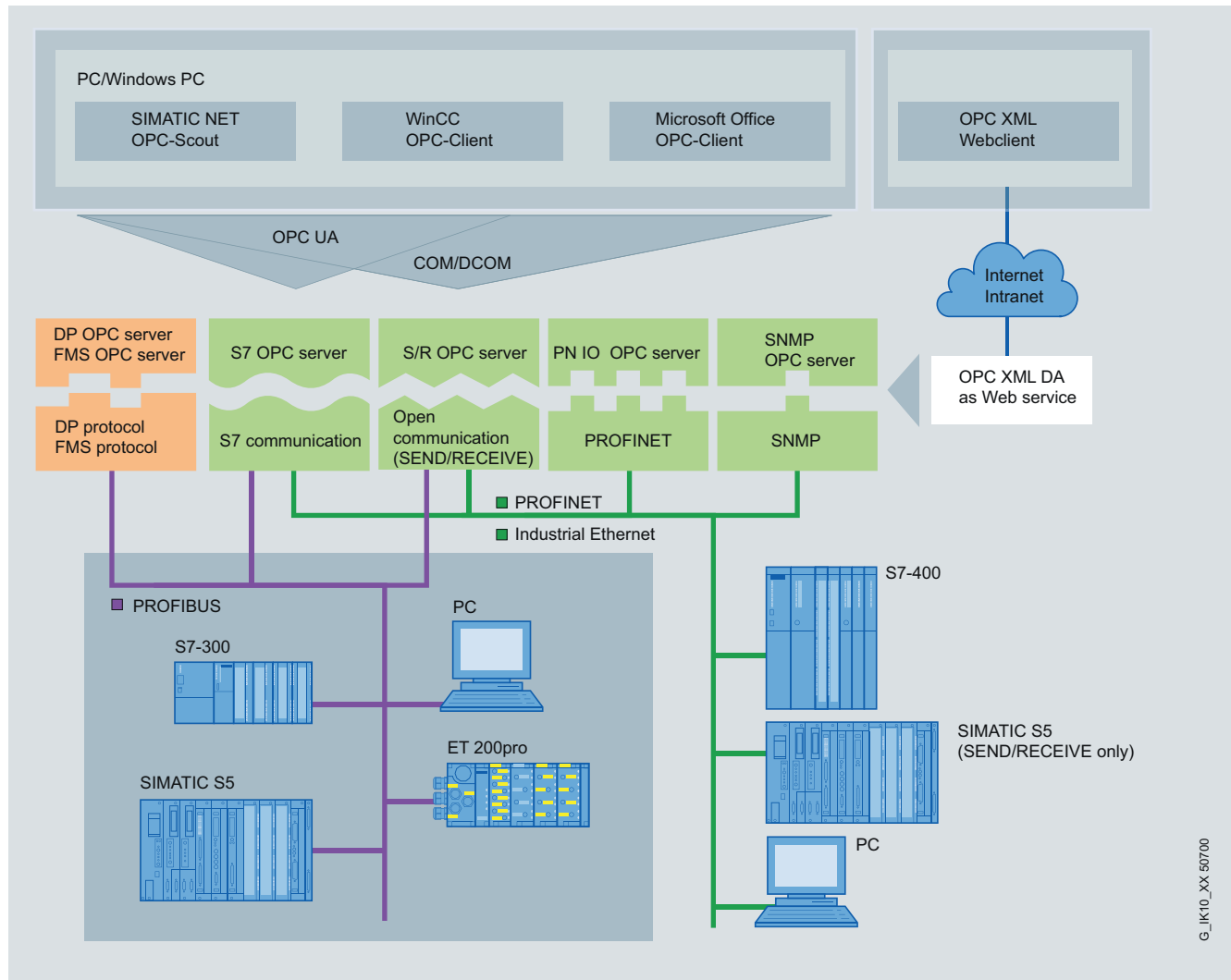
G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Communication processors for PROFIBUS

OPC server for PROFIBUS

Overview

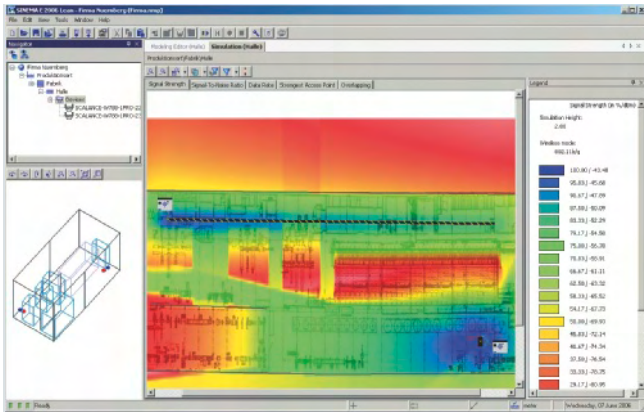


System integration with OPC server

- 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

G_JK10_Xx 50700

Overview



- Engineering tool for support with planning, configuration, simulation and measurement of an IWLAN radio field on site (Site Survey) according to the IEEE 802.11 a/b/g/h standard
- Automatic determination of the WLAN infrastructure for new and existing networks
- Optimization functions for minimization of channel interference
- Visualization and analysis of WLAN networks according to signal strength, data rate, signal-to-noise ratio, overlapping and applications (PROFINET, TCP/IP, Voice over WLAN)
- Configuration of single and multiple devices as well as uploading / downloading of IWLAN device parameters
- Site survey functions (measurements) for the acquisition, conditioning, evaluation and visualization of measured WLAN signals
- Integrated and expandable catalog entries for WLAN devices, antennas and radio hindrances as well as standard graphics formats for importing layout plans
- Report function for documenting the configured and measured WLAN infrastructure

Ordering data

Order No.

SINEMA E

Engineering software for planning, configuring, simulating and measuring (Site Survey) industrial WLAN applications in office and industrial environments on PG / PC in accordance with the 802.11 a/b/g/h standard; software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional +SP2; German / English

- | | | |
|---|---|----------------------------|
| • SINEMA E 2006 Lean
Planning, configuring and simulating WLAN applications | G | 6GK1 781-0AA00-6AA0 |
| • SINEMA E 2006 standard
Extended planning, configuring, simulating and measuring (site survey) of WLAN applications (automatic placement, application profile, contour presentation, storage / comparison of simulations, extended filter options) | G | 6GK1 782-0AA00-6AA0 |
| • SINEMA E 2006 Powerpack
Software upgrade from SINEMA E Lean to SINEMA E Standard | G | 6GK1 782-4AA00-6AC0 |

G: Subject to export regulations: AL: N and ECCN: 5D992

PC-based Automation

Engineering Tools



Customized Automation



6/2	Introduction
6/4	Customized adaptations
6/6	Product modifications
6/6	Introduction
6/7	Product modifications
6/8	<u>Design products</u>
6/14	<u>OEM products</u>
6/15	Flexible front design concept for HMI products
6/17	SIMATIC PC function cards
6/18	MP 270 data display
6/19	MP 277 8" Touch control console
6/20	MP 277 6" Touch portrait
6/21	Panel PC 677B with 46"
6/23	<u>Turnkey products</u>
6/23	HMI operator stations
6/25	Backplane cover
6/27	Software products
6/27	Open Platform Program (for WinCC flexible)
6/30	Remote Operate Software
6/31	SIMATIC KNX/EIB2S7
6/33	Examples of sector products
6/33	Introduction
6/34	<u>Renewable energy</u>
6/34	Solar systems
6/35	Wind farms
6/36	<u>Automotive industry</u>
6/36	HMI operator stations
6/38	PP17 with PROFIBUS and PROFINET
6/42	Front panel with function keys at the side
6/43	Mobile Panel 277 10" Remote Operate
6/45	<u>General machine construction</u>
6/45	HMI RFID module
6/47	MP 177 6" Touch portrait
6/48	Front panel 15" Touch and Keys for Panel PCs, resistant to honing oil
6/50	Flat Panels 6.4" and 10.4" for Panel PC
6/51	<u>Food and beverages industry, pharmaceuticals</u>
6/53	Panels and Panel PCs with stainless steel front
6/55	HMI Panels as rear-mounted devices
6/57	Flat Panels with stainless steel front
6/59	HMI stainless steel operator stations
6/60	<u>Oil & gas/chemicals/marine</u>
6/61	MP 377 15" Touch daylight readable
6/63	TEK – Temperature Extension Kit

Customized Automation

Introduction

Overview



Customized Automation – Hardware

Customized Automation

Customized Hardware

- Turnkey Products
- OEM Products
- Design Products

Customized Software

Customized Service & Support

Customized Logistics

SIMATIC Standard products

- SIMATIC Controller
- SIMATIC HMI
- SIMATIC IPC

Customized Automation – Software

With Customized Automation, field-proven SIMATIC, SIMATIC PC and SIMATIC HMI standards are converted into individual products and systems – tailored precisely to the customer's requirements.

The portfolio covers the hardware and software range, but also 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 maximum quality, long-term availability and continuity with SIMATIC, SIMATIC PC and SIMATIC HMI
- you save unnecessary costs thanks to tailor-made solutions, and you benefit from the global service & support concepts with SIMATIC, SIMATIC PC 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:

- Design products
- OEM products
- Turnkey products

Customized software:

- Customized software suite
- Open Platform Program
- Remote Operate
- KNX/EIB2S7

Customized products from various sectors

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 and shipbuilding

Customized products for various industries are developed and produced in conjunction with a customized product agreement.

More information

Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

Customized Automation

Introduction

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

Our competence = Your benefit

Customized Hardware	Customized Software	Customized Service & Support	Customized Logistics
<p>Customized products on the basis of the tried-and-tested SIMATIC PC standards</p> <ul style="list-style-type: none"> ■ SIMATIC Box PC ■ SIMATIC Rack PC 			

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, work memory, 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 system¹⁾

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://www.siemens.com/simatic-pc/suitable-for-linux>

Application (continued)

Customized Service & 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.

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

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:

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

Customized Automation

Product modifications

Introduction

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.

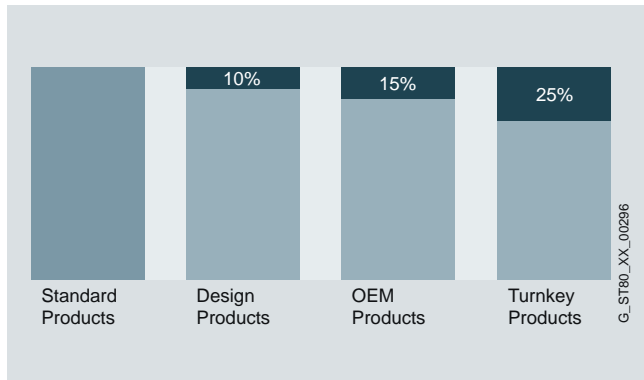
With these possible modifications, products are planned for special customer requirements in the various industries.

- Customized products from various sectors

Further information can be found 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 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 processes 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.

Overview (continued)

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.

Customized software

Customized software suite

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

Open Platform Program

SIMATIC HMI Panels with Windows CE operating system and Panel PCs are open for the software function expansions of WinCC flexible or also for customer applications.

The Open Platform Program provides you with software tools (SDKs – Software Development Kits) including training and support for creating software expansions for WinCC flexible or also your own customer applications. The Open Platform Program makes it possible to adapt customized hardware and software solutions optimally to requirements and to implement them quickly:

- Customer's own applications
- Expanding the SIMATIC WinCC flexible HMI software using ActiveX controls
- Proprietary, specific project functions or tasks that interact with WinCC flexible

This is based on the SIMATIC HMI WinCE platforms, that is, Windows CE-based SIMATIC HMI Panels from TP 177B as standard products or as OEM products and also Panel PC products. Optionally, SIMATIC HMI Panels can also be used as platforms for other CE software.

Remote Operate

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 Panel PCs. These operator stations (slaves, up to 6 in number) based on Thin Clients with MP 370 and PC477-OEM with identical image to the server, can be assigned to several servers simultaneously.

KNX/EIB2S7

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.

Customized Automation

Product modifications

Design products

Overview



For machines and systems, SIMATIC HMI products in individual corporate design are important for customers when making purchasing decisions. Seamless integration of the operator panels where operation and ergonomics are concerned as well as in the overall machine and system design is very important. The HMI devices with customer-specific design fully meet these requirements.

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

The design products are exactly the same as the HMI standard products regarding technology and functionality, they only differ in the color and outward appearance. The same product basis enables the use of standard devices in case of a failure if the machine or plant supplier does not have a customized design product available in their own spare parts store at the time.

The flexible production of the SIMATIC HMI Panels and Panel PCs enables economical manufacture of design products even with smaller ordering quantities. In this case, devices of customized design are manufactured in the series production factory, and are subject to the same quality requirements as standard devices.

The creation of customized designs is handled by a professional industrial designer:

- Customer consulting and production of proposals and drafts
- Experience in the ergonomics of human-machine interfaces
- Knowledge in handling graphic and design tools, color tables and fonts
- Competence in the selection of appropriate fonts and standardized symbols for machine operation
- Short response times

HMI Designer Services:

- Design and specification of the requested, customer-specific design versions A, B or C in direct consultation with the customer
- Obtaining required customer approval
- Design draft and release of sample template
- Archiving

HMI Designer response time:

- Customer call after receipt of order < 1 workday
- First draft sent to the customer 3 days after review
- Reaction time after customer change request < 2 workdays

The predefined services of the Design Center are included in the project non-recurring costs (see "Additional information").

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 HMI design products in order to achieve a uniform corporate identity. The associated costs will be calculated according to actual requirements.

Benefits

- Seamless adaptation to system design and special operating philosophy of the customer
- No cutbacks on ergonomics compared to standard products
- The flexible production of the SIMATIC HMI Panels makes the manufacture of even small quantities of devices with customer-specific design based on standard products manufactured in the series plants economically viable.
- They can be replaced by standard devices and are completely compatible with the standard devices regarding:
 - Functions and interfaces
 - SIMATIC HMI configuration software
 - Housing and installation dimensions
 - Logistics and service, identified repairs
 - UL and CE certification, more upon request

Ordering data

Micro Panels

Device type	Order No.	Minimum quantity/year
Operator Panel OP73micro	6AV6 640-0BA11-0AX0	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Touch Panel TP 177micro	6AV6 640-0CA11-0AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200

Mobile Panels

Device type	Order No.	Minimum quantity/year
Mobile Panel 177 DP	6AV6 645-0AA01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 177 DP with STOP button	6AV6 645-0AB01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 177 DP with STOP button	6AV6 645-0AC01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 177 PN	6AV6 645-0BA01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 177 PN with STOP button	6AV6 645-0BB01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 177 PN with STOP button	6AV6 645-0BC01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 277 with acknowledgement button	6AV6 645-0CA01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 277 with acknowledgement button and STOP button	6AV6 645-0CB01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Mobile Panel 277 with acknowledgement button, STOP push-button, handwheel, key-operated switch and illuminated pushbutton	6AV6 645-0CC01-0AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50

Thin Client

Device type	Order No.	Minimum quantity/year
Thin Client 10" Touch	6AV6 646-0AA21-2AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
Thin Client 15" Touch	6AV6 646-0AB21-2AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100

Operator Panels

Device type	Order No.	Minimum quantity/year
Operator Panel OP 73	6AV6 641-0AA11-0AX0	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Operator Panel OP 77A	6AV6 641-0BA11-0AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Operator Panel OP 77B	6AV6 641-0CA01-0AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Operator Panel OP 177B DP bluemode	6AV6 642-0DC01-1AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Operator Panel OP 177B DP / PN	6AV6 642-0DA01-1AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
Operator Panel OP 277 6"	6AV6 643-0BA01-1AX0	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200

Customized Automation

Product modifications

Design products

Ordering data (continued)

Touch Panels

Device type	Order No.	Minimum quantity/year
TP 177 4" widescreen Touch Panel	6AV6 642-0BD01-3AX0	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
TP 177A Touch Panel	6AV6 642-0AA11-0AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
TP 177B color Touch Panel	6AV6 642-0BA01-1AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
TP 177B DP blue mode Touch Panel	6AV6 642-0BC01-1AX1	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200
TP 177B PN / DP color INOX Touch Panel	6AV6 642-8BA10-0AA0	-
with design version A	customer-specific	100
with design version B	customer-specific	200
TP 277 6" Touch Panel	6AV6 643-0AA01-1AX0	-
with design version A	customer-specific	100
with design version B	customer-specific	100
with design version C	customer-specific	200

Flat Panels

Device type	Order No.	Minimum quantity/year
Flat Panel 77 12"	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Flat Panel 77 15"	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Flat Panel 77 19"	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100

Basic Panels

Device type	Order No.	Minimum quantity/year
KTP400 Basic mono PN	6AV6 647-0AA11-3AX0	-
with design version A	customer-specific	150
with design version B	customer-specific	150
with design version C	customer-specific	500
KTP600 Basic mono PN	6AV6 647-0AB11-3AX0	-
with design version A	customer-specific	150
with design version B	customer-specific	150
with design version C	customer-specific	500
KTP600 Basic color DP	6AV6 647-0AC11-3AX0	-
with design version A	customer-specific	150
with design version B	customer-specific	150
with design version C	customer-specific	500
KTP600 Basic color PN	6AV6 647-0AD11-3AX0	-
with design version A	customer-specific	150
with design version B	customer-specific	150
with design version C	customer-specific	500
KTP1000 Basic color DP	6AV6 647-0AE11-3AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	200
KTP1000 Basic color PN	6AV6 647-0AF11-3AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	200
TP1500 Basic color PN	6AV6 647-0AG11-3AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	200

Ordering data (continued)

Multi Panels

Device type	Order No.	Minimum quantity/year
MP 177 6" Touch Multi Panel	6AV6 642-0EA01-3AX0	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
MP 277 8" Touch Multi Panel	6AV6 643-0CB01-1AX1	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
MP 277 8" Key Multi Panel	6AV6 643-0DB01-1AX1	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
MP 277 10" Touch Multi Panel	6AV6 643-0CD01-1AX1	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
MP 277 10" Key Multi Panel	6AV6 643-0DD01-1AX1	-
with design version A	customer-specific	50
with design version B	customer-specific	50
with design version C	customer-specific	100
MP 277 10" Touch INOX Multi Panel	6AV6 643-8AD10-0AA1	-
with design version A	customer-specific	50
with design version B	customer-specific	100
with design version B	customer-specific	30

Device type	Order No.	Minimum quantity/year
MP 377 12" Touch Multi Panel	6AV6 644-0AA01-2AX0	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
MP 377 12" Key Multi Panel	6AV6 644-0BA01-2AX1	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
MP 377 15" Touch Multi Panel	6AV6 644-0AB01-2AX0	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
MP 377 15" Touch INOX Multi Panel	6AV6 644-0CB01-2AX0	-
with design version A	customer-specific	30
with design version B	customer-specific	30
MP 377 19" Touch Multi Panel	6AV6 644-0AC01-2AX0	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100

Customized Automation

Product modifications

Design products

Ordering data (continued)

Panel PC

Device type	Order No.	Minimum quantity/year
Panel PC 477C 12" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 477C 12" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 477C 15" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 477C 15" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 477C 19" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 577C 12" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 577C 12" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100

Device type	Order No.	Minimum quantity/year
Panel PC 577C 15" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 577C 15" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 577C 19" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 677B 12" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 677B 12" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 677B 15" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 677B 15" Keys	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100
Panel PC 677B 19" Touch	depends on configuration	-
with design version A	customer-specific	30
with design version B	customer-specific	30
with design version C	customer-specific	100

Customized Automation

Product modifications

Design products

Ordering data (continued)

Rack PC

Device type	Order No.	Minimum quantity/year
IPC547C	depends on configuration	-
with design version A	customer-specific	50
with design version B	customer-specific	50
Rack PC 847B	depends on configuration	-
with design version A	customer-specific	50
with design version B	customer-specific	50

Box PC

Device type	Order No.	Minimum quantity/year
IPC427C	depends on configuration	-
with design version A	customer-specific	50
with design version B	customer-specific	50

More information

Ordering information

Explanation of the tables with selection and ordering data:

"Device type" and "Order No. of the associated standard device"

- "Type specification" and "Order No." of the HMI product to be modified.
- Start of delivery of a design variant cannot commence less than 2 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.
- A clear presentation of all possible design devices with the associated minimum quantities can be found 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.

In addition to the adapted unit price, one-off costs are incurred for the design process and the factory introduction of the design variant. The level of these costs depends on the device and the design variant.

Processing

A special order processing is required for the customized design. Two approval steps by the customer should guarantee that the end product fully meets their expectations. The order is processed via the Delivery Center Nuremberg (LZN), for each order of one unit or more!

Repairs / spare parts storage

Only identified repairs are carried out.

The customer-specific spare parts required for this purpose (device front panels) are to be stored and made available by the customer on expiry of the warranty period (on termination of supply).

Contacts

Please contact your local / national Siemens HMI representative (visit our Internet site for more information).

Further information can be found in the Internet at:

<http://www.siemens.com/hmi-oem>

Customized Automation

OEM products

Introduction

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

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.

Overview



MP 377 15" Touch OEM according to flexible front-mounting concept for injection molding machines

Customer requirements with regard to HMI devices are extremely diverse. The flexible front-mounting concept makes it possible to meet these diverse customer-specific requirements.

The flexible front-mounting concept enables customized front design as well as customized layout of the operator elements. The SIMATIC products form the technical basis of a device developed according to the flexible front-mounting concept.

The diversity of the standard products enables integration from the small 6" Flat Panel right up to high-performance PC technology. The customer's own, typical operator philosophy can also be optimally implemented since the flexible front-mounting concept offers the wide range of operator elements - from the classic 3SB operator elements, through short-stroke keys, right up to membrane keyboards.

The flexible communication options with PROFIBUS or PROFINET facilitate integration into new or existing machine concepts. Fail-safe operation can be implemented by using PROFIsafe components. To meet individual customer requirements, a device built in accordance with the flexible front-mounting concept can be designed as a built-in device or as a stand-alone unit. If designed as a stand-alone unit, care is taken to make the enclosure slimline and modern in appearance.

Benefits

The flexible front-mounting concept allows customized HMI solutions based on the field-proven SIMATIC components. A project using the flexible front-mounting concept is the obvious choice especially for the following customer requirements:

- Customized integration of operator elements and display systems
- High integration density of SIMATIC products
- Demand for customized design and layout
- Demand for optimal integration into plants and machinery
- Compact design as stand-alone product in enclosure
- Compact design as built-in unit at the machine level
- Use of field-proven components and thus also optimized time-to-market

These requirements can be implemented for the customer by means of a flexible front-mounting concept.

The general conditions for a project using the flexible front-mounting concept are:

- Minimum unit quantity 100 p.a.
- Project agreement
 - With unit quantity start-up forecasting and annual unit quantities for the project
 - for funding development costs
 - Key project dates and standard start-of-delivery dates
 - Logistics with delivery times

Application

The industrial environment imposes diverse requirements on technology and design.

Thanks to its variable and modular approach, the flexible front-mounting concept opens up diverse options for re-combining SIMATIC standard components in a compact device configuration with individualized design and layout. The possible uses are thus diverse and universal.

Customized Automation

OEM products

Flexible front design concept for HMI products

Design

The flexible design and the use of standard SIMATIC products make it possible to meet just about every technical requirement with regard to customized HMI. Components that can be combined to form an individualized HMI are listed below:

Basic devices

- Flat Panels with different screen diagonals
- Thin Client
- Multi Panels
- Panel PCs

Operator control

- Touch functionality
- Keys functionality with
 - 3SB elements
 - Short-stroke keys
 - Membrane keys (also illuminated)
- Keyswitches etc.

Additional elements

- High-speed keys via PROFINET
- Emergency stop (also PROFIsafe)
- RFID module
- Front USB etc.

Design

- Stand-alone (IP65 at front, <= IP54 at rear)
- Built-in unit (IP65 at front; IP20 at rear)
- Slimline enclosure design

Device connection

- With support arm via VESA 100 on rear of enclosure
- Connected at the edges using hinges
- Installation in machinery

Design

- Customized design
- Customized key layout
- Customized symbols and logos

More information

Quotation preparation

Product specification in accordance with customer requirements. Quotation drafted by SIMATIC HMI specialists.

Determining:

- One-time project costs
- Costs for sample devices / prototypes
- Standard unit prices
- General conditions (product agreement)

There must be a minimum limit to the annual unit quantity/ purchase quantity (minimum quantity per version: from 100) and this must be agreed with the project customer. Customized products can only be ordered in conjunction with a product agreement. A customer-specific order number is allocated during the product agreement process.

Contacts

Please contact the HMI representatives of your Siemens sales office / national company.

Additional information in the Internet is available at:

<http://www.siemens.com/hmi-oem>

Flexible front-mounting concept project development and service

Customized projects using the flexible front-mounting concept are developed and produced in different steps 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 in standard product factories, 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.

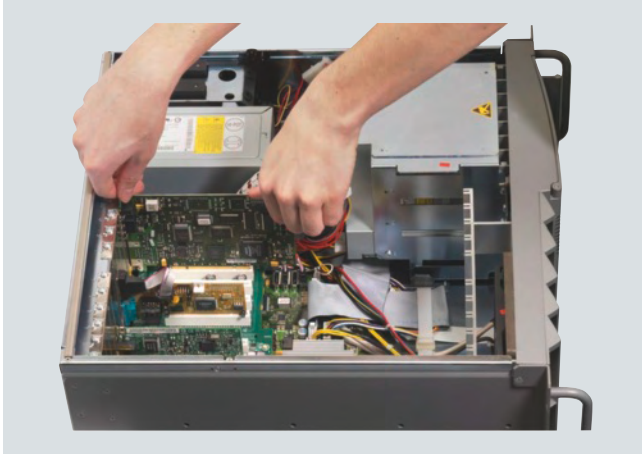
Customized products can only be ordered in conjunction with a product agreement.

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

The repair concept is also agreed with the customer. The necessary customized spare parts (device fronts) are defined here and offered to customers for their products after completion of delivery.

Overview



Function cards are PC modules that perform customer-specific extended functions. They are installed at the manufacturer's plant as part of the PC production.

This enables fully-tested, customized SIMATIC IPCs with function cards to be delivered quickly and easily.

Benefits

Expansion of the PC functionality tested within the system and ready to order:

- Time and cost savings due to a fast ordering process and commissioning
- Simplified, standardized ordering process for the complete IPC with function cards already inserted
- One contact for SIMATIC IPC and function cards, also for repair, service and support

Application

For all applications in automation engineering in which the standard integrated interfaces of the existing industrial PC are not sufficient, e.g.:

- Measuring and control tasks
- Operation and visualization tasks

Examples from the sectors are:

- Data collector and central interface in wind turbines as well as the central monitoring of wind farms
- Diagnostic systems for end-of-line quality assurance in the automotive industry
- Fast open and closed-loop control of chip handlers as well as control and visualization of CVD (chemical vapor deposition) machines in the semiconductor industry
- Group control computers for machining centers and the connection of real mechatronic devices in the timber industry
- Automatic picking systems for automated storage in pharmacies

Function

Expansion cards are available for the following functions:

- PROFIBUS / PROFINET
- Serial interfaces
- I/O bus systems
- Additional LAN interfaces
- Digital and analog I/Os
- Graphics expansions

SIMATIC PC function cards	
PCIe	<ul style="list-style-type: none"> • 4 RS 232 (x1) • 1 x LAN 10 / 100 / 1000 (x1) • Dual Head graphic (x1)¹⁾
PCI104	<ul style="list-style-type: none"> • 2 x CAN • 2 x RS 485 • 4 x RS 232 • Centralized PC IO peripherals: • PC IO interface module for expanding with encoder / counter as well as PC IO digital modules and PC IO analog modules. <p>In the maximum configuration this allows the integration of up to 120 analog IO interfaces, 320 digital IO interfaces, and 12 encoder / counter interfaces</p>

¹⁾ For the SIMATIC Rack PC 847B, an optional graphics card is available via the standard configurator

More information

Contacts

Please contact the HMI representative at your local Siemens office / company.

Further information can be found in the Internet under:

<http://support.automation.siemens.com/WW/view/de/32596843>

Customized Automation

OEM products

MP 270 data display

Overview



Benefits

- Extremely good readability
- Die-cast aluminum housing
- Rotatable and tiltable suspension unit
- Communication with control PC via Ethernet PCMCIA card
- Can be mounted on wall, desktop or support arm
- Customized Windows CE image
- Glass front for easy cleaning

Application

The OEM MP 270 data display handles only visualization functions. It is used for the visualization of coronary angiography systems in the medical field.

Technical specifications

- Die-cast aluminum housing
- Customized application and customized WinCE image
- Display: 15"
- Resolution: 640 x 480 pixels (VGA)
- Degree of protection on front: IP65

Ordering data

Order No.

OEM MP 270/data display

Can only be ordered exclusively

Order only in conjunction with a product agreement

Status:	Released for delivery
Project runtime:	None
Non-recurring costs:	None
Minimum quantity:	200

More information

Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

Overview



OEM MP 277 8.4" Touch

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

Order No.

OEM MP 277 8.4" Touch

On request

Order only in conjunction with a product agreement

Status:	Released for delivery
Project runtime:	None
Non-recurring costs:	None
Minimum quantity:	200

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

More information

Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

Application



The OEM MP 277 8.4" Touch is suitable for use as a control console for coronary angiography systems in the medical field.

Customized Automation

OEM products

MP 277 6" Touch portrait

Overview



MP 277 6" Touch monochromatic portrait

Use of the panels in portrait format is required wherever mounting space is limited.

The MP 277 6" Touch monochromatic in portrait format extends the range of standard panels in customized projects.

Benefits

- Vertical mount in case of limited space on machine
- Portrait format of screen contents
- Adapted Engineering System: "What you see is what you get".
- Proven functionality of the SIMATIC HMI standard products
- Together with WinAC MP 2007, it offers a compact combination of HMI and controller

Application

The MP 277 6" Touch monochromatic portrait format is designed both for vertical mount with display in portrait format as well as for WinAC MP 2007 applications.

The device is suitable for installation in machines where only limited space is available, e.g. packaging machines, automatic baking machines etc.

Design

- Special features:
 - 6" monochromatic vertical mount,
 - Second RS485 interface (1 USB omitted) for customer-specific communication protocol
- The remaining features of the device design are comparable to those of the standard product on which it is based
- External dimensions and mounting cutout as for corresponding standard product
- Angled adapter required for communication: RS422 / RS485 angled adapter

Technical specifications

- 5.7" monochromatic (blue mode) display
- 240 x 320 pixel resolution

The modified design of the display and the resolution should be taken into account when configuration the user interface.

The remaining technical specifications correspond to those of the associated standard device MP 277 8" Touch.

Ordering data

Order No.

MP 277 6" Touch portrait

Can only be ordered exclusively

Order only in conjunction with a product agreement

Minimum quantity:

50

More information

Customer-specific modifications

- Customized design

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.

Overview



Front view with speakers



Interface module and integrated Box PC

Benefits

The rugged design with large display is intended for industrial use and maintenance-free use. The Panel PC 677B with 46" display is therefore outstandingly suitable for use wherever sophisticated information display is required in the areas of manufacturing industry, control desks, information displays in public areas, or trade fairs.

The intelligent large display can be positioned for ease of viewing using a support arm system and operated easily by means of the Remote Control software included in the scope of supply.

Application

- Automotive and manufacturing industry
- Pharmaceuticals industry
- Logistics sector
- Control desks
- Information displays

Design

- Box PC 677B computing unit
- TFT LCD 46" with 4 mm laminated glass screen
- Industrial display for 24/7 continuous operation, MTBF 50,000 hrs
- Anti-glare coating
- Degree of protection IP65 on front / IP54 at rear
- Welding splatter-proof front
- Powder-coated sheet-steel enclosure
- Suitable for fixing to support system
- Audio amplifier module for up to 3 speaker pairs (optional)
- Remote Control software for operation
- WinCC flexible support
- Easily accessible interfaces on the enclosure
- Quiet operation in environments up to 40°C without air-conditioning
- Quiet operation in environments up to 50°C with air-conditioning (optional)
- PC without hard disk and without CD for maintenance-free use
- Auto-refresh function for protecting the display against the effects of burn-in

Customized Automation

OEM products

Panel PC 677B with 46"

Technical specifications

	Panel PC 677B with 46" TFT LCD
PC Configuration	Celeron M440 processor, 1.8 GHz. 512 MByte RAM CF drive 2 GByte Windows XP embedded (SP2) operating system, English
Display	LCD TFT 46", 1366x768 Reading angle +/-178° CCFT, MTBF 50,000 hours 24/7 continuous operation
Brightness	Factory setting 300 cd Setting range 150 cd to 400 cd
Speaker (optional)	1 pair mounted left and right; high-pressure speakers -7 W additionally on the interface module 4 additional connections for 2 pairs of speakers, 7 W each
Power supply	230 V AC
Degree of protection	IP65 on front IP54 at rear
Protection class	Protection class I in accordance with IEC 61140
Permissible ambient temperature (without condensation)	Tested according to IEC 60068-2-2 +5 °C to + 40 °C* (passive cooling) +5 °C to + 50°C (active cooling)
Vibration, vibration in operation	0.25 g (30 - 300 Hz)
Shock resistance in operation	2.5 g
Approvals	CE
Interfaces	3 x USB V2.0 (high current) M12 for 10 / 100 / 1000 Mbit/s Audio output 4 x 7 W into 8 Ohms (maximum cable length 30 meters)
External dimensions (WxHxD)	
• Basic cabinet	Approx. 720 x 1180 x 233 mm
• with loudspeakers	Approx. 720 x 1465 x 233 mm
Weight	Approx. 92 kg
Special features	<ul style="list-style-type: none"> • PC without hard disk and without CD for maintenance-free use • RemoteControl software (also web-based) for volume control, brightness control, switching off backlight, transfer of status messages • Auto-refresh function for display • WinCC flexible 2008 support • Support for up to four PC677B 46" units with different screen contents and sounds via SIMATIC IPC Server with WinCC V7.0

Ordering data

Order No.

Panel PC 677B with 46" Display

Box PC 677B
installed in an enclosure
together with a
46" TFT LCD (1366 x 768),
Celeron M440, 1.86 GHz,
512 MByte RAM,
CF drive 2 GByte,
Windows XP embedded,

• without audio amplifier,
without speakers,
without air conditioner

H **6AV7 466-0AC00-0AA0**

• with audio amplifier,
with speakers,
without air conditioner

H **6AV7 466-0AC20-0AA0**

• without audio amplifier,
without speakers,
with air conditioner

H **6AV7 466-0AC01-0AA0**

• with audio amplifier,
with speakers,
with air conditioner

H **6AV7 466-0AC21-0AA0**

Delivery time

4 weeks ex works

Minimum quantity

1

CA product agreement for
delivery logistics

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

More information

Customer-specific modifications:

- Choice of enclosure color
- Configurable computing units

Contacts

Please contact the HMI representatives of your Siemens sales office / national company.

Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

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 PC 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.

HMI operator stations

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.



Application example: Multi Panel in aluminum enclosure with operator controls, two-tier and with external keyboard

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.

Customized Automation

Turnkey products

HMI operator stations

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.

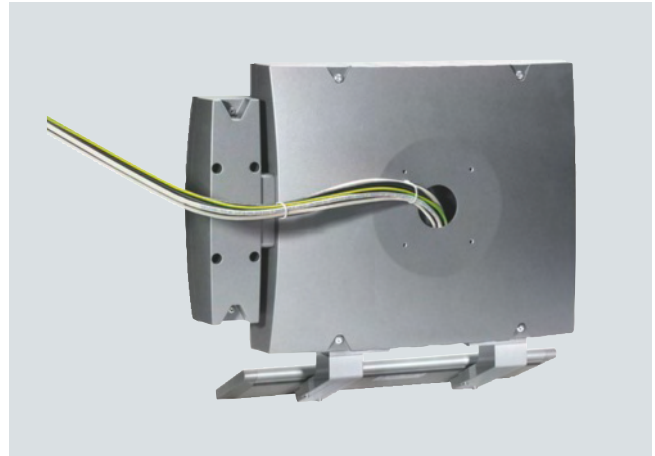
Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

Overview



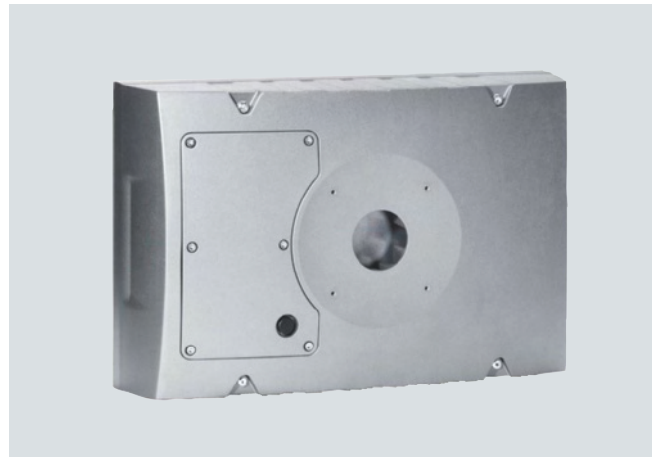
Flat Panel with backplane cover and additional enclosure, front view



Flat Panel with backplane cover and additional enclosure, rear view



PC 477B 15" with backplane cover, front view



PC 477B 15" with backplane cover, rear view

Current HMI products (Panels, Panel PCs and Flat Panels) have been designed in such a way that they can be installed in a control cabinet or a machine. For this purpose, the control cabinet or the machine is provided with an installation cutout into which the HMI product can be inserted from the front.

However, developers are increasingly moving towards installing HMI products as operator units at the machine instead of in the machine. For this reason, Siemens has implemented the concept of the universal backplane cover for flat HMI products for the purpose of equipping HMI products like Flat Panels or Panel PC 477Cs later with a stable backplane of die-cast aluminum or magnesium and a VESA-100 connection for securing on a support arm or stand.

All cables can be run direct through the cover and the support arm / stand. This underlines the mature impression of the overall system.

Customized Automation

Turnkey products

Backplane cover

Benefits

The concept of the universal backplane cover is intended for flat HMI products such as PC 477 12" Keys, PC 477 15" Touch or MP377 19" / Flat Panel 19" Touch / display

- With VESA 100 on the rear for mounting on support system
- Additive enclosure to the right and / or left
- With operator controls, built into the additive enclosure
- Additive enclosure suitable for all backplane covers
- With stainless steel keyboard mounted on backplane cover
- With removable panel for easier access to cables
- The external dimensions (H x W) of the HMI products remain unchanged

Application

- General machine construction

Design

- VESA-100 connection on the rear.
- Mounting
 - On the support arm
 - On the supporting foot (desktop or floor)
 - Direct at the machine (for series mechanical equipment manufacturers)
- Cables can also be run direct through the VESA connection and the support arm / stand
- Flat visual aspect of the backplane cover; industrial character underlined

Within the scope of customized projects:

- Mounting of enclosures for holding additional operator elements such as:
 - Pushbuttons
 - Switches
 - Lamps
 - Emergency-stop facilities
 - RFID modules

Technical specifications

Backplane covers in die-cast aluminum enclosure			
	Height modules	Dimensions (W x H x D in mm)	Weight of backplane cover (in kg)
Backplane cover PC 477B 15" Touch / 12" Key	7 HM	483 x 310 x 122	Approx. 5.5
Backplane cover MP377 19" / Flat Panel 19" Touch / Monitor	9 HM	483 x 400 x appr. 120	Approx. 2.5
Additive enclosure suitable for all cover models		90 x 309 x 89	Approx. 1.0

Ordering data

Order No.

Backplane cover 15"	B	6AV7 672-4GD00-0AA0
Backplane cover for 15" devices		
Backplane cover 19"	B	6AV7 672-6GD00-0AA0
Backplane cover for 19" devices		
Backplane cover 19" with add-on enclosure	B	6AV7 672-6GD01-0AA0
Backplane cover for 19" devices		
Backplane cover 19" with 2 add-on enclosures	B	6AV7 672-6GD11-0AA0
Backplane cover for 19" devices		

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Customized modification options

- With VESA 100 on the rear for mounting on support systems
- Add-on enclosure left and / or right, suitable for all backplane covers
- Additional operator controls, built into the add-on enclosure
- Stainless steel keyboard secured on the backplane cover

For larger projects starting from at least 50 units p. a., Siemens offers customized versions of the backplane covers with add-on enclosures, integral operator elements and an IP65 stainless steel keyboard. These backplane systems integrated into projects can also be ordered individually.

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.

You can find further information and examples at:

<http://www.siemens.com/hmi-oem>

Overview

Open Platform Program

SIMATIC HMI Panels with Windows CE operating system and Panel PCs are open for the software function expansions of WinCC flexible or also for customer applications.

The Open Platform Program provides you with software tools (SDKs – Software Development Kits) including training and support for creating software expansions for WinCC flexible or also your own customer applications.

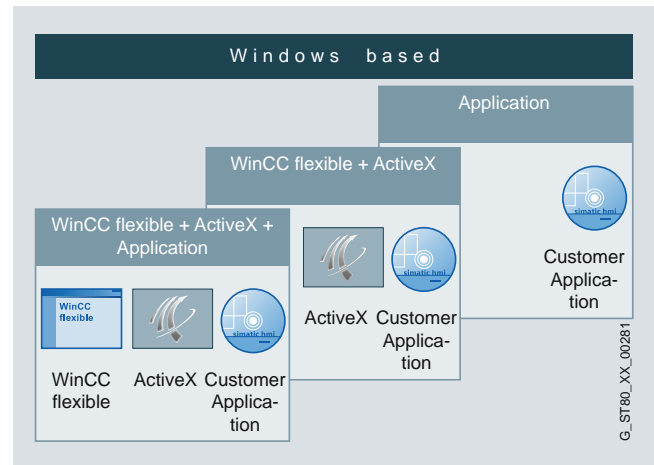
Remote Operate

The HMI Remote Operate Software is an industrial remote control system based on Ethernet.

KNX/EIB2S7

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.

Open Platform Program



The Open Platform Program enables user-specific software solutions based on a proven building block principle. Using the Open Platform Program, you have software tools (SDKs – Software Development Kits) including training and support for creating software expansions for WinCC flexible or your own customer applications.

- The open platform program offers versatile possibilities for developing effective, low-cost software solutions.
- On the basis of Windows CE products as of TP/OP 177B, customized software solutions can be developed, software products from other manufacturers can be used, or WinCC flexible expanded by functions and objects. The flexibility and openness of the PC world can therefore also be used for Panels and Multi Panels.
- With WinCC flexible, the SIMATIC HMI standard software, the open Windows CE operating system, and a finely graded range of hardware platforms (Panels and Panel PC), a great potential is opened up for implementing customized software solutions

Customer-specific software solutions

We offer you the possibility to analyze your requirements with us or an independent partner and to make the technical preparations for an optimal solution. Depending on your requirements, there are several possibilities.

Your software solution can be a combination of:

- Your own software modules,
- 3rd party software,
- WinCC flexible.

If you want to use the freely configurable interface of WinCC flexible, but require a special function that the standard WinCC flexible does not offer, you can retrofit your system (or have it retrofitted) with this specific functionality. Depending on requirements and complexity, this is possible using

- a separate project function,
- an ActiveX object or
- your own program that runs in parallel with WinCC flexible.

Platforms

Scalable hardware is available for your solutions so that you can use the economical and powerful platform whenever required. You can use Touch, Blue-mode key units or color displays with different display sizes for your solution. All customer-specific modifications – design, layout, OEM – are possible here.

Customized Automation

Software products

Open Platform Program (for WinCC flexible)

Benefits

The Open Platform Program enables user-specific software solutions based on a proven building block principle:

- Lower development cost by using standards
- Very short "Time-to-Market" resulting in a competitive advantage
- Utilization of tried components and proven industrial functionality

We are offering our SIMATIC Panels and Mobile Panels TP/OP177B, TP/OP/MP277 and MP377 as the basis for your solutions. You can offer your customers economical and powerful solutions tailored to their requirements.

Developing software for our devices does not require expensive, special hardware. A normal desktop PC with Ethernet card and our standard devices (partly expanded with an Ethernet card) are the optimal platform for developing your solution.

Our Software Development Kits (SDKs) contain the necessary software tools.

The openness and the typical Windows functionality of Windows CE also provide various possibilities for integrating special functions into the platforms. In many cases, commercial products for Windows CE Software offer an inexpensive implementation of your special application.

Integration with WinCC flexible or integration via a standardized data link can already be your solution.

If you want to integrated your application directly in Windows CE, we can offer you the necessary tools and support services through an experienced partner. You can easily port existing solutions to our platforms or develop new solutions.

Customer-specific products, the optimal basis for your solution

By combining customer-specific hardware and software modifications, we are offering you a wide range of modification capabilities for our proven standard products. This gives you a chance to implement products that are perfectly adapted to your requirements without having to "reinvent the wheel".

You can develop your solution with time and cost optimization based on the proven standard product and can also avoid the expenses caused by shortened pilot phases.

Application

Using the Windows CE open operating system opens up multiple possibilities for integrating functionalities, e.g.:

- Simple data exchange with other Windows-based systems
- Connection to central databases
- Multimedial additions
- Access to central documents via Internet / Intranet
- Communication with special peripheral devices (e.g. barcode scanners)

Application examples:

- Customer-specific communication channels
Connection of your panel or panel PC to controllers not included in catalog.
- Barcode readers
Connection of barcode readers through serial communication or with a special functionality for processing the transferred character strings
- Saving of recipes in csv files
Simple archiving directly from the PLC in files.
- Cyrillic SIP
Special softkey board with cryllic characters.
- Function for brightness control
Control of the display brightness of a panel directly from WinCC flexible.

All Windows CE-based SIMATIC panels offer an inexpensive platform for customer-specific OEM software solutions on a reliable industrial hardware basis.

Function

In order to meet specific requirements, WinCC flexible, non-Siemens products or user-specific applications can be used.

SIMATIC WinCC flexible, the standard HMI software for the SIMATIC HMI Panel family, supports a number of options for implementing additional functionality. The following enhancements can be made, in accordance with complexity and requirement:

- New project functions
(e.g. complex calculations, data exchange with other systems, data archiving, etc.)
- User-specific ActiveX objects
(e.g. special plots, user-specific recipe management, complex display objects, etc.)
- Additional applications running in parallel with WinCC flexible
- Porting of proprietary software or third-party software to the panel hardware

The Open Platform Program features a software development kit for SIMATIC WinCC flexible for the development of customized software solutions for PC target platforms.

Open Platform Program (for WinCC flexible)

Technical specifications

A spectrum of hardware platforms, categorized according to cost and performance is provided for your individual solutions:

SIMATIC HMI standard device	TP/OP 177B	TP/OP/MP 277	MP 377
Display	5.7" STN	5.7" / 7.5" / 10" TFT	12" / 15" / 19" TFT
Mode	Monochrome (4), color (256)	color (256 / 64k)	color (64k)
Resolution (pixels)	320 x 240	320 x 240/ 640 x 480/ 640 x 480	800 x 600/ 1024 x 768/ 1290 x 1024
Touch / Keys	Yes / Yes	Yes / Yes	Yes / Yes
Processor	StrongArm 200 MHz	StrongArm 200 MHz/Xscale 520 MHz	Xscale 800 MHz
RAM	64 MByte	64 MByte / 128 MByte	256 MByte
Flash	16 MByte	16 MByte / 64 MByte	64 MByte
Interfaces	MPI / Ethernet / USB	MPI / Ethernet / USB	MPI / Ethernet / USB
Slot	MMC-Slot	SD / MMC-Slot	1 x CF Card
CE-Version	CE 3.0	CE 3.0 / CE 5.0 / CE 5.0	CE 5.0

The ordering data for Panels and Panel PCs can be found in the respective section of this Catalog.

Ordering data

Order No.

MP-SDK

G

6AV6 574-3AA00-0AA0

Software Development Kit for the creation of applications for TP/OP/MP 277 or MP 377 and for the creation of WinCC flexible additions under CE and Windows32 on PC.

Consisting of:

- Application SDK
- WinCC flexible SDK
- Documentation
- 1 day workshop in Erlangen
- 5 hours technical support via e-mail or telephone
- Software update service for 1 year

Order only in conjunction with a product agreement

WinCC flexible SDK for PC

G

6AV6 574-3AB00-0AA0

Software Development Kit for the creation of ProTool supplements under Windows32 on PC.

Consisting of:

- WinCC flexible SDK
- Documentation
- 1 day workshop in Erlangen
- 5 hours technical support via e-mail or telephone
- Software update service for 1 year

Developing software for our SIMATIC Panels and Panel PCs does not require expensive, special hardware. A normal desktop PC with Ethernet card and our standard devices (in some cases, expanded with an Ethernet card) are the optimal platform for developing your solution. Our Software Development Kits (SDKs) contain the necessary software tools.

MP-SDK for Mobile Panel 177 / 277, TP/OP177B, TP/OP/MP277 or MP377

The MP-SDK provides you with everything you require for developing your own applications or for supplementing WinCC flexible for Panels.

It consists of the following tools:

- Application SDK for the optimal development of applications for our devices
- WinCC flexible-SDK WinCC flexible-Runtime SDK, ActiveX-SDK, Function SDK
- Documentation concerning the setup of applications on our devices, for the creation of supplements from ProTool with ActiveX objects and for using the integrated MPI interface for communication with a SIMATIC S7
- Support service
 - 1 day workshop
 - 5 hours technical support
- Software update service for one year.

The following is also required for the development:

- Standard PC (266 MHz, 128 MByte RAM, 500 MByte free HD space, Windows 32 operating system (Windows 2000 recommended) with COM 1 and Ethernet card (optional, but recommended)
- Serial null modem cable (crossed) or
- Ethernet cable for connecting two devices
- CE device as development device
- Ethernet card (installed, PCMCIA or CF)

WinCC flexible SDK for PC

The SDK is the optimum software development kit, if you want to develop software for the PC basis of WinCC flexible "only". It contains:

- WinCC flexible - SDK WinCC flexible - Runtime SDK, ActiveX-SDK, Function SDK
- Documentation for creating supplements of ProTool/WinCC flexible with ActiveX objects.
- Support service
 - 1 day workshop
 - 5 hours technical support
- Software update service for one year.

You also require:

- Standard PC for developing under Windows with the Visual Studio and the current version of MS Visual Studio
- WinCC flexible.

More information

Additional information is available in the Internet under:

<http://www.siemens.com/hmi-oem>

G: Subject to export regulations AL: N and ECCN: 5D992

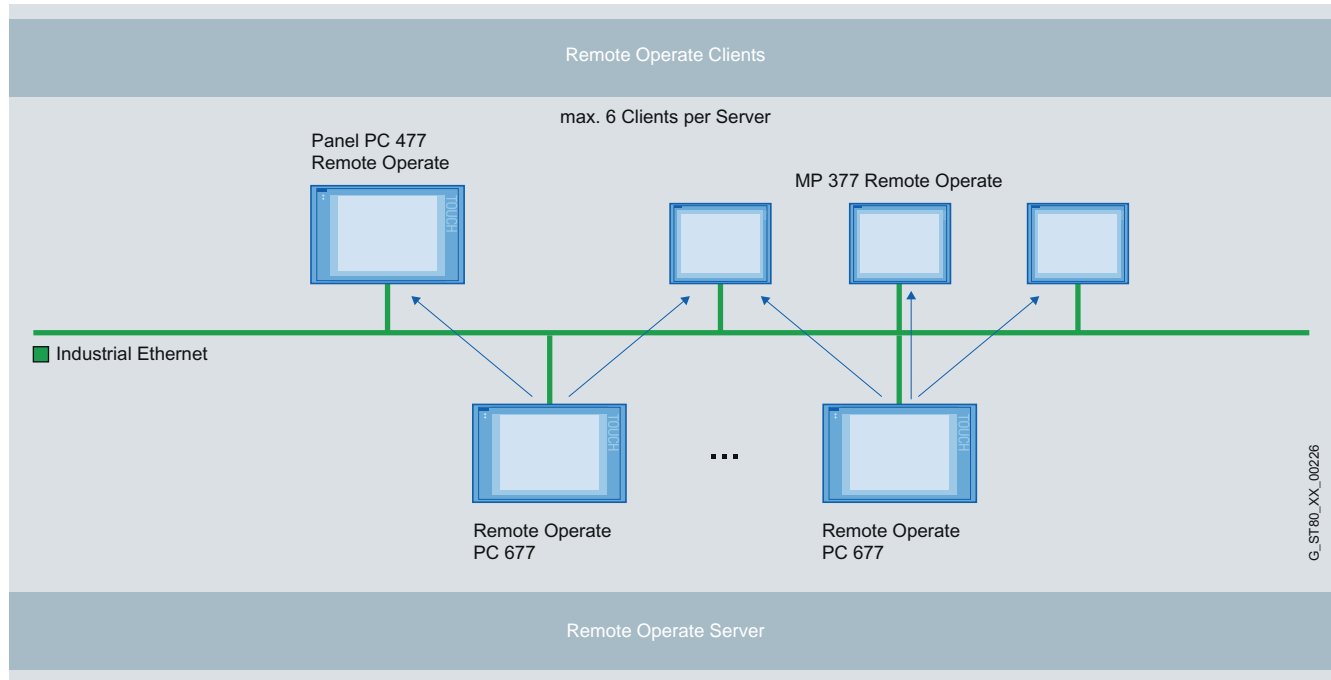
Customized Automation

Software products

Remote Operate Software

Application

Remote Operate Software



Panel PC with connected thin clients

Multi-user system with panel PCs, up to 6 operator stations using thin clients with MP377 and PC477

- 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 1280 x 1024 with true color
- Remote Operate Server with Windows XP Professional or Windows XP embedded
- 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

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 standard

Application

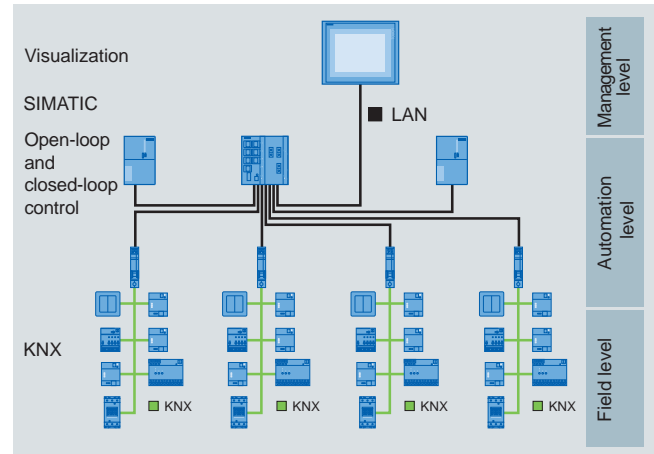
With rising energy awareness and increased requirements regarding user-friendliness and security, recent years have seen building automation facing far-reaching demands.

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 IP Router
 - N 148 / 21 IP interface
 - N 350E IP controller
 - N 151 IP viewer

Customized Automation

Software products

SIMATIC KNX/EIB2S7

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.

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.

Ordering data

Order No.

KNX/EIB2S7 program package A **6AV6 643-7AC10-0AA1**

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 stick

A: Subject to export regulations: AL: N and ECCN: EAR99S

Customized Automation

Examples of sector products

Introduction

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
- General machine construction
- Automotive industry - HMI for factory automation
- 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 Box PC: 627 / 427 with QNX
 - SIMATIC Rack PC with flexible expansion
- Application area *mechanical equipment manufacture, general*:
 - HMI RFID module
 - Mobile Panel PC 12" IWLAN
 - Panel PC 477B OEM
 - TP 177 B color PN / DP for vertical mounting
 - Touch and Key front panel 15" for Panel PC, resistant to honing oil
 - Flat Panels 6.4" and 10.4" for Panel PC
- Use in the *automobile industry*:
 - HMI operator stations
 - Push Button Panels PP17-I PROFIsafe, PP17-I PN, PROFIsafe. PP17-II PN
 - Front panel for Panel PC, 15" with arrow keys on the side
 - Mobile Panel 277 10" Remote Operate
- Area of application *food and beverages industry* and *pharmaceuticals*:
 - Panels and Panel PCs with stainless steel front
 - Panels for rear mounting
 - Flat Panel 15" and 19" Touch in stainless steel enclosure
 - HMI stainless steel operator stations
- Area of application *oil & gas, chemicals* and *shipbuilding*:
 - MP 377 15" Touch daylight readable
 - TEK – Temperature Extension Kit

Customized Automation

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.

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, Core2 Solo, Core2 Duo and Core2 Quad. 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.

Benefits



- Extra long spare parts availability
- Adapted computing power
- High system availability
- Individually adaptable

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



PC SIMATIC IPC427C with expansion rack

- 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 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.

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.

Customized Automation

Automotive industry

HMI operator stations

Overview



Operator PC unit operator panel + PLC and operator terminal (OT)



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 Panel PC 677B and Flat Panels are also suitable for use as operator PCs in 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 housing system for the combination of a number of HMI Panels, Panel PCs and SIMATIC S7 PLCs (see "Overview" figure top left)
 - Modular aluminum control housing system for the combination of a number of HMI Panels (see "Overview" figure top right)
 - Modular aluminum control housing system for the installation of an HMI Panel or Panel PC (see "Overview" figure bottom left)
 - 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	Panel PC 677B <ul style="list-style-type: none"> • Core2 Duo 2.16 GHz, 2 GByte RAM • 160 GByte HD, DVD / CD-RW • MPI / PROFIBUS + 2 x Ethernet interface 10 / 100 Mbit • Europe default 230 V 	PC Box based on Panel PC 677B <ul style="list-style-type: none"> • Core2 Duo 2.16 GHz, 4 GByte RAM • 160 GByte HD, DVD / CD-RW • Without MPI / PROFIBUS + 2 x Ethernet interface 10 / 100 Mbit • Europe default 230 V
Front panel	PC 677B 15" Touch, 15" XGA 1024x768 resolution	Customized front with 2x6 control keys, 15" XGA 1024x768 resolution
Additional components		<ul style="list-style-type: none"> • PP17-I PROFIsafe • PP17-II • S7-400 configuration
Additional components		
Operator panel enclosure	CC-4000, mounted on stand	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Icotec • RJ45 Ethernet port 	<ul style="list-style-type: none"> • Icotec • RJ45 Ethernet port
Software:	<ul style="list-style-type: none"> • Win XP, Prof. Multilanguage • WinCC V6.0 SP4 • SIMATIC Step 7 Prof V5.4 	<ul style="list-style-type: none"> • Win 2003 Server • SIMATIC Softnet S7 for IE V 6.x • SIMATIC Step 7 V 5.x • SIMATIC S7-Graph V 5.x • SIMATIC DistributedSafety V 5.x • InTouch Runtime V 9.x

Type	Operator terminals (OTs)
Components	<ul style="list-style-type: none"> • PP17-I PROFIsafe • PP17-II • TP 170B
Additional components	
Operator panel enclosure	VIP 6000
Dimensions	622 x 585,5 x 210 mm
Elements	<ul style="list-style-type: none"> • 16 short-stroke keys, 2 x 4 add-on controls, 1 x EMERGENCY STOP • 32 short-stroke keys • 3 x SIMATIC DP connecting plugs
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

Additional information is available in the Internet under:
<http://www.siemens.com/automation/partners>

Customized Automation

Automotive industry

PP17 with PROFIBUS and PROFINET

Overview



PP17-I PROFINET

PP17 Push Button Panels with PROFINET communication as well as connections for emergency stop via F-DI are sector-specific expansions to the spectrum of Standard Push Button Panels.

Benefits

The control unit offers a wide range of features that can be used without the need for programming.

Basic features:

- Short-stroke keys with durable surface LEDs
- LED colors red, green, yellow
- Additional 24 V digital inputs and digital outputs
- Short-stroke keys and digital inputs can also be individually configured as switches
- Integrated lamp and button test
- Integrated flash rate
- LEDs for POWER and ERROR indication
- Non-interchangeable coded plug-type terminals
- SIMATIC HMI operator panel design, can be mounted laterally





In addition to the basic features, the following is offered with the PP17 PN

- LEDs for monitoring the PROFINET communication
- PROFINET communication, line-capable

In addition to the basic features, the PP17 PN PS offer the following:

- Pre-perforated cut-outs for 22.5 mm standard add-on components such as key switches and emergency stop (PP17-I PN PS)
- DIL switch for setting the PROFIsafe address
- Fail-safe operation of emergency stop buttons by using PROFIsafe communication
- Simultaneous standard mode and fail-safe mode
- Non-interchangeable coded plug-in terminals

Push Button Panel PP17

Product overview	PROFIBUS, MPI	PROFINET with/ without PROFIsafe
Standard Products - PP17-I - PP17-II	 PP17-I  PP17-II	
Sector-specific Products - PP17-I PN PROFIsafe - PP17-II PN - PP17-II PN PROFIsafe		 PP17-I PN PS  PP17-II PN PP17-II PN PS

G_STB0_XX_00352

Application

The Push Button Panel has been designed for use in the automotive industry.

Possible applications for the operator panel

The operator panel is used to display the operating states of machines or plants and to control the process.

The operator panel is designed for mounting in control panels and replaces individually installed and wired keys, switches and lamps or LEDs. The operator panel can be mounted in an installation cut-out and connected to a controller of type SIMATIC S7-300 or S7-400 via the bus system.

The operator panel is pre-configured and is operational almost immediately. In comparison to conventional wiring, substantially less time is needed for commissioning and the device provides increased failure safety during runtime.

Use in fail-safe mode

Thanks to integrated PROFIsafe communication, the operator panel can be utilized in fail-safe mode with SIMATIC S7-300F or S7-400F for simple emergency stop applications.

Maximum two 2-channel emergency stop buttons can be connected. With regard to safety-relevant signals, SIL 3, PL e can be achieved. The fail-safe operator panel features a simple non-configurable diagnostics function.

The diagnostics are always activated and are automatically made available by the HMI device in STEP 7 and passed on to the CPU in the event of a fault.

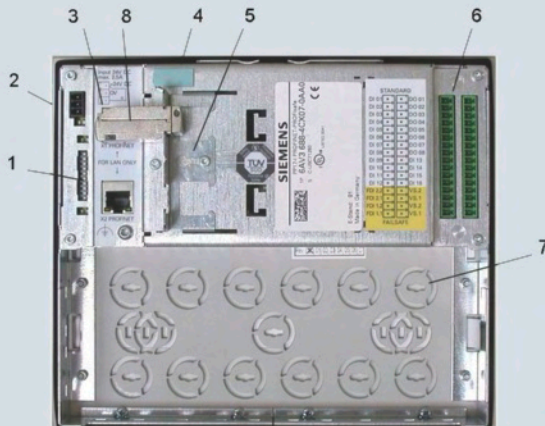
The diagnostic function passes the following diagnostics information to the CPU:

- Communication error
Communication between the operator panel and the CPU has been interrupted (e.g., due to an incorrect bus address or PROFIsafe address).
- Hardware error
External wiring or internal hardware error, data corruption or procedural error.
- Parameterization error
Error in the PROFIsafe configuration

Design

External dimensions and mounting cutout are the same as those for the standard product PP17-I or PP17-II.

PP17-I PROFINET-PROFIsafe



- 1 DIL switch for setting of the PROFIsafe address
- 2 Interface for power supply connection
- 3 PROFINET interfaces and LEDs for monitoring PROFINET communication
- 4 Label for marking operating device, e.g. with the device name
- 5 Screws for securing the plate, for strain-relief of the PROFINET connector
- 6 Digital display and digital outputs
- 7 Push-out pieces for inserting standard elements
- 8 PROFINET connector

G_ST80_XX_00363

Customized Automation

Automotive industry

PP17 with PROFIBUS and PROFINET

Technical specifications

	PP17-I PN PROFIsafe	PP17-II PN	PP17-II PN PROFIsafe
Operator controls			
Short-stroke keys	16	32	32
Number of connectable Emergency Stop buttons	1 to 2	–	1 to 2
Maximum cable length	10 m	–	10 m
Discrepancy time	500 ms	–	500 ms
Response time	40 to 70 ms	–	40 to 70 ms
Functionality			
Enable input	Yes	Yes	Yes
Slots for 22.5 mm standard elements	max. 12	–	–
Non-interchangeable coded plug-type terminals	Yes	–	Yes
Interfaces			
PROFIBUS DP	–	–	–
Ethernet	2 x RJ45 10 / 100 Mbit for line topologies	2 x RJ45 10 / 100 Mbit for line topologies	2 x RJ45 10 / 100 Mbit for line topologies
Connection to controller	S7-300F, S7-400F	S7-300, S7-400	S7-300F, S7-400F
Protocol Standard communication	PROFINET IO	PROFINET IO	PROFINET IO
Fail-safe communication	PROFIsafe V2 mode	---	PROFIsafe V2 mode
Additional digital inputs	16	16	16
Additional digital outputs	8	16	8
Output current	100 mA max.	100 mA max.	100 mA max.
Summation current (per group of 8 outputs each)	600 mA max.	600 mA max.	600 mA max.
Short-circuit protection / electrical isolation	Yes / –	Yes / –	Yes / –
Requirements			
Basic package	STEP 7 V5.4 from SP1	STEP 7 V5.4 from SP1	STEP 7 V5.4 from SP1
Option package	SIMATIC S7 - Distributed Safety V5.4 and higher HSP (Hardware Support Package)	–	SIMATIC S7 - Distributed Safety V5.4 and higher HSP (Hardware Support Package)
Certification			
Certification	cULus, CE, SIL 3, PL e	cULus, CE	cULus, CE, SIL 3, PL e

For further technical specifications, refer to the respective operating instructions.

Ordering data		Order No.	Order No.
SIMATIC PP17-I PN PROFIsafe B Push Button Panel with 16 short-stroke keys and 22.5 cut-outs for operator controls, PROFINET communication, PROFIsafe communication and max. 2 F-DI for emergency stop applications, incl. mounting accessories and 1 sheet of slide-in labels <ul style="list-style-type: none"> • Delivery time • Minimum quantity • Project quantities or ongoing supply • Repairs 	6AV3 688-4CX07-0AA0 Available ex stock None; can be ordered individually Orders as per customer forecast ¹⁾ only identified repairs	Documentation Operating instructions PP17-I PN PROFIsafe, PP17-II PN, PP17-II PN PROFIsafe and software, with Word template for writing the slide-in labels, with GSD file <ul style="list-style-type: none"> • German • English 	Only available by download 6AV3 991-1XB01-0AA0 Download: http://support.automation.siemens.com/WW/view/de/25023739 6AV3 991-1XB01-0AB0 Download: http://support.automation.siemens.com/WW/view/en/25023739
SIMATIC PP17-II PN Push Button Panel with 32 short-stroke keys, PROFINET communication, incl. mounting accessories and 1 sheet of slide-in labels <ul style="list-style-type: none"> • Delivery time • Minimum quantity • Project quantities or ongoing supply • Repairs 	6AV3 688-4EY06-0AA0 Available ex stock None; can be ordered individually Orders as per customer forecast ¹⁾ through spare-parts service	Accessories for supplementary ordering Set of slide-in labels with 4 sets	6AV3 671-8CB00
SIMATIC PP17-II PN PROFIsafe Push Button Panel with 32 short-stroke keys, PROFINET communication with PROFIsafe message frame and 2 F-DI for emergency stop applications, incl. mounting accessories and 1 sheet of slide-in labels <ul style="list-style-type: none"> • Delivery time • Minimum quantity • Project quantities or ongoing supply • Repairs 	6AV3 688-4EY07-0AA0 Available ex stock None; can be ordered individually Orders as per customer forecast ¹⁾ through spare-parts service		

¹⁾ For ongoing supply or the delivery of larger quantities to OEM customers, product planning and production are based on customer forecasts.

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Additional information is available in the Internet under:

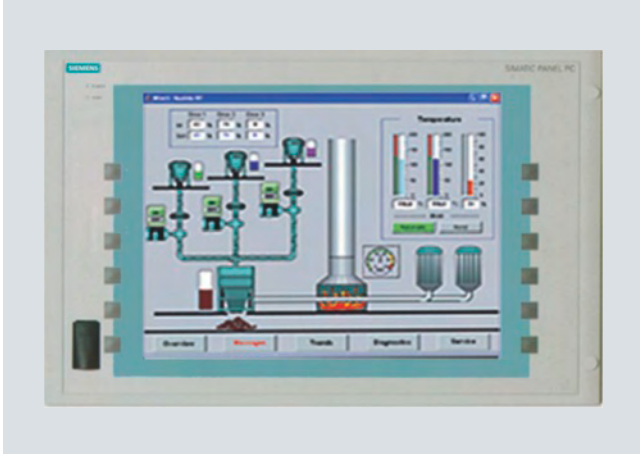
<http://www.siemens.com/automation/partners>

Customized Automation

Automotive industry

Front panel with function keys at the side

Overview



Front panel 15" with function keys at the side for Panel PC in the automotive industry

The front panel 15.1" with arrow keys at the 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 function keys at the side
Display	15.1" TFT
Resolution (pixels)	1024 x 768 pixels
General features	As front panel 15.1" for Panel PC 677
Special features	
Interfaces	USB interface at the front
Connectable to Panel PC	PC 477C, PC 677B 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.

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

Additional information is available in the Internet under

<http://www.siemens.com/automation/partners>

Overview



Front view



Rear view and side 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

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.

Customized Automation

Automotive industry

Mobile Panel 277 10" Remote Operate

Mode of operation

All applications are run on 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 (keyoperated switch), buttons, handwheel
Weight	2.3 kg

Type	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)

Ordering data

Order No.

Mobile Panel 277 10" Remote Operate H **6AV6 645-7AB10-0AS0**

Configuration on request

Connection box PN Plus B **6AV6 671-5AE11-0AX0**

Connecting cable

- 5 m **6XV1 440-4BH50**
- 10 m **6XV1 440-4BH10**
- 25 m **6XV1 440-4BH25**

B: Subject to export regulations: AL: N and ECCN: EAR99H

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

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.

Customized Automation

General machine construction

HMI RFID module

Overview



Front view



Rear view

External RFID USB module

Read / write device in accordance with ISO 15693

- User identification on Multi Panels and Panel PCs with non-contact chip card
- Personnel access control
- Identification of spare parts

Benefits

- Benefits of use
 - RFID module can be easily integrated into HMI operator stations
 - RFID tag direct on the goods or the container
 - Password protection for data on the chip card
- Features
 - Bus Powered USB – no additional 24 V DC supply required
 - 3-color LED status signaling
 - Min. range 3 cm (typ. 6 cm for chip cards)
 - Card recognition < 1 s

Application

- Contactless identification of authorized persons by means of chip card in accordance with ISO 15693, e.g. by means of existing company ID card, service pass, individual permit.
- Access authorization
- Operator documentation

Function

RFID technology for identification solutions in applications on SIMATIC HMI Multi Panels and Panel PCs.

- Drivers for HMI software on Windows operating systems
- XP professional, XP embedded, CE 5.0
- Reading data from and writing data to the RFID tag (depending on type)
- Multitag detection through anti-collision sequence in accordance with
- ISO 15693
- Validity check of the tag in accordance with EUROMAP 65
- No encoding of the clearance, no clone capability
- Firmware update via USB
- Supported tags: Tag-it HF I standard and Plus, I-Code SLISL2

The following functions are among those supported by the software API

RFID solutions for a wide variety of market segments:

- Callback function (new data available)
- Reading / writing of data arrays
- LED signaling
- Read out errors / faults (e.g. device defective, card read error)
- Configuring (e.g. operating mode)
- Read out module data (e.g. serial number)
- Output card UID in the sensing range
- Reading / writing of user-specific data
- Firmware update

Customized Automation

General machine construction

HMI RFID module

Technical specifications

HMI RFID delivery variants	RFID USB chip card reader
Principle	Contactless, external
Interfaces and power supply	1 x UB 2.0, bus-powered, 12 Mbit/s full speed
Current consumption	200 mA
Range	Min. 3 cm (typ. 6 cm with tag antennas in credit card format)
Card memory	2 Kbit, min. 256 bit freely writable
Read / write frequency	13.56 MHz
Response time	Card recognition < 1 s
Panel cut-out W x H	82 x 69 mm
Dimensions W x H x D	89.1 x 75.9 x 45 mm
Permissible ambient temperature	
• Operation	+5 °C to 55 °C (no condensation)
• Storage	-20 °C to +60 °C
Degree of protection	IP65 at front, IP20 at rear
Standards	ISO/15693
Certification	CE, UL/CSA, radio directives

Ordering data

Order No.

SIMATIC RFID chip card reader	B	6AV6 675-8XQ10-0AX0
External RFID USB module		
Starter Kit RFID chip card reader	C	6AV6 675-8XQ00-0AX0
• External RFID USB module		
• Software on CD (USB driver)		
• 3 x chip cards		
• Demo software (tool for reading and writing via WinXP)		

B: Subject to export regulations: AL: N and ECCN: EAR99H

C: Subject to export regulations: AL: N and ECCN: EAR99T

More information

Customized modification options

- Integration into customized operating fronts
- Adaptation of the membrane 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 order number.

Customized Automation

General machine construction

MP 177 6" Touch portrait

Overview



The use of panels in portrait format is required wherever installation space is restricted.

The MP 177 6" Touch with portrait format expands the range of standard panels in customized projects.

Benefits

- Portrait installation for narrow installation spaces at the machine
- Portrait format of the screen contents
- Engineering system adapted by means of add-on software: What you see is what you get.
- Field-proven functionality of the SIMATIC HMI standard products
- A compact combination of HMI and controller in conjunction with WinAC MP

Application

The MP 177 6" Touch portrait format is designed both for vertical installation with display of the screen contents in portrait format, and for WinAC MP applications.

The device is suitable for use in machines with a narrow installation space, such as packaging machinery, baking machines, etc.

Design

- MP 177 6" Touch portrait format, an MP 177 turned through 90° to the left
- The device is otherwise designed like the MP 177
- Angled adapter for communication: RS422 / RS485 angled adapter

Technical specifications

MP 177 6" Touch portrait format	
Display	5.7" TFT color
Resolution	240 x 320 pixels (QXGA)
Note	The modified alignment of the display and resolution must be taken into account when configuring the user interface.
Special features	
Installation dimensions (W x H in mm)	140 x 196
	The remaining technical specifications correspond to the MP 177 Touch 6AV6 642-0EA01-3AX0

Ordering data

Order No.

MP 177 6" Touch portrait format package

H **6AV6 642-7EA01-0AA0**

Comprising

- MP 177 6" Touch with installation accessories, installation seal, power supply connector, and further accessories pack (insert and CD with add-on software for configuring portrait format)

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

More information

Customized modification options

- Customized design

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)

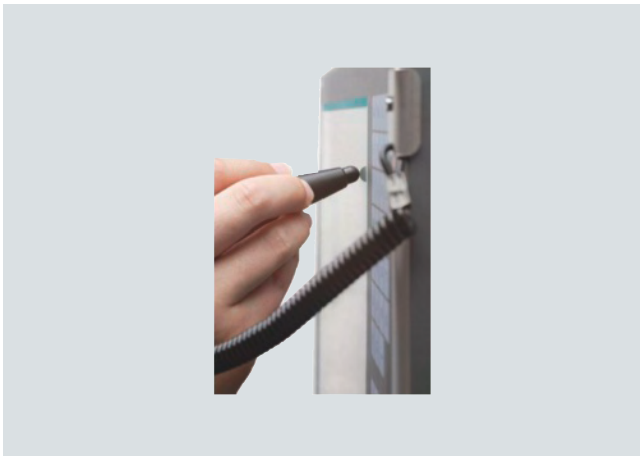
The defined device can then be easily ordered using this product agreement and a customized order number.

Customized Automation

General machine construction

Front panel 15" Touch and Keys 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 + 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

Customized Automation

General machine construction

Front panel 15" Touch and Keys for Panel PCs, resistant to honing oil

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

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	<ul style="list-style-type: none"> • 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.

Additional information is available in the Internet under:

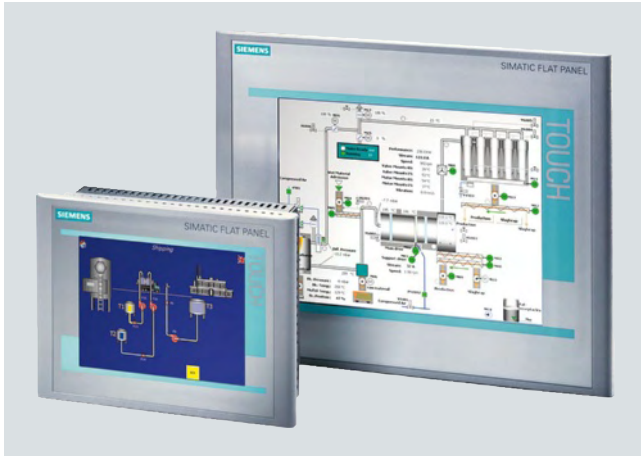
<http://www.siemens.com/automation/partners>

Customized Automation

General machine construction

Flat Panels 6.4" and 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 Panels 6.4" TFT Touch and 10.4" TFT Touch have been designed as display and operator control units for industrial PCs (e.g. SIMATIC Microbox 427B) and Panel PCs (e.g. PC 677B), and they 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 677B.

Technical specifications

Flat Panel	6,4"	10,4"
Resolution (pixels)	640 x 480 pixels	800 x 600 pixels
Input unit	Analog-resistive touch screen	Analog-resistive touch screen
MTBF (at 25 °C)	50 000 h	50 000 h
Power supply	24 V DC, RoHS	24 V DC, RoHS
Front dimensions (L x W x D in mm)	212 x 156 x 60	335 x 275 x 75
Installation dimensions (L x W in mm)	197 x 141	310 x 248
Certified in accordance with	CE, UL, ULCSA	CE, UL, ULCSA
Can be connected to	Panel PC 677B, SIMATIC Rack and Box PC	Panel PC 677B, SIMATIC Rack and Box PC
Approx. weight in kg	0.87	0.80

Ordering data

Order No.

Flat Panel 6" Touch

B

6AV7 461-6TA00-0AA1

SIMATIC Flat Panel 6.4" TFT with analog-resistive Touch Panel, resolution 640 x 480 pixels, 24 V DC power supply, VGA, DVI-D interface, incl. VGA cable 1.8 m

Flat Panel 10" Touch

B

6AV7 461-7TA00-0AA1

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

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Customized modification options

- Customized design
- Modification of front design, e.g. stainless steel front

Customized Automation

Food and beverages industry, pharmaceuticals

Food and beverages industry, pharmaceuticals

Overview



Hygiene areas in food and beverage production, pharmaceuticals or fine chemicals all share one requirement: The devices and equipment must be easy to clean. The relevant directives, standards and legislative requirements must be observed, e.g. EHEDG, FDA, DIN EN 1672-2 (Hygienic Design), GMP, LMHV, LMBG.

However, optimization and variation in the device hardware are also perfectly possible:

- Degree of protection
- Ruggedness
- Temperature resistance
- Design and installation versions
- Suitable for clean rooms
- Certification in accordance with ATEX

The aim is to find the cost-optimized solution for the specific application case.

The overview below shows different features depending on the applications areas, from packaging to the wet area in processing.

Features	Application examples			
	Hygienic packaging	Pharmaceuticals, fine chemicals	Food and beverages, bottle cleaning, bottle filling, laboratories	Abattoirs, meat processing
Stainless steel front	partially	•	•	•
Stainless steel control boxes	•	•	•	•
Stainless steel fully enclosed	•	•	•	•
Simple to clean	•	•	•	•
No grooves and gaps, no projections	partially	partially	membrane-covered protective edge not always accepted	•
Increased tightness	–	–	•	•
Mechanical ruggedness, no membrane front	–	–	partially	•
Suitable for high-pressure cleaning (IP69K)	–	–	–	partially
ATEX Ex Zone 2 / 22	•	•	partially	–

• Yes

– No

The product examples described on the following pages cover a wide range of the most important requirements.

Benefits

- Simpler cleaning thanks to resistant and rugged stainless steel front with smooth surface, and minimal grooves and gaps
- High degree of protection IP66 (TP 177B and MP 277 additionally IP66K) on the front for increased seal 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 2¹⁾
- 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. Degree of protection IP66 (TP 177B additionally IP66K) protects against water even with a jet strength of 100 l/min at 1 bar from a distance of 2.5 m to 3 m. The optimized frame profile and almost flush-mounting of the device on the control cabinet allow liquids to run off.

Installation of the operator panels in a stainless steel control cabinet as ready-to-use units is optionally available as a customized version.

¹⁾ Special resistance requirements must be examined separately.

Customized Automation

Food and beverages industry, pharmaceuticals

Food and beverages industry, pharmaceuticals

Benefits (continued)

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 of 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 m³ 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".

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.

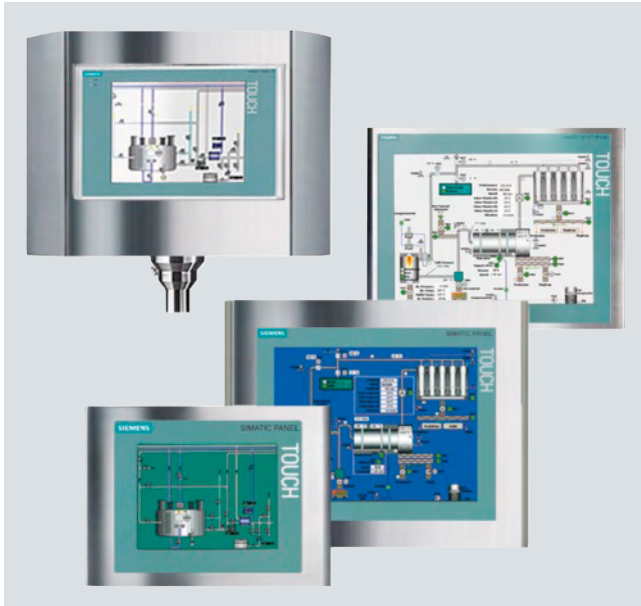
The Panels with stainless steel front have a 240 grit hairline finish, so they are suitably smooth. The membrane covering the display cutout is tested with regard to its resistance to chemicals, has minimal grooves and gaps in which micro-organisms could settle, and also provides shatter protection for the display.

Customized Automation

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"

The SIMATIC Panels with touch screens and stainless steel fronts have been designed for use in the food, beverages and tobacco industry for operator control and monitoring close to food processing machines. They have been developed in compliance with 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
- Degree of protection IP66 at front (partly IP66K)
- 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

Customized Automation

Food and beverages industry, pharmaceuticals

Panels and Panel PCs with stainless steel front

Technical specifications (continued)

	Panel PC Panel PC 677B 15" Touch INOX	Panels 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 mem- brane 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	
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

Order No.

TP 177B color PN / DP INOX	H	6AV6 642-8BA10-0AA0
With stainless steel front, otherwise like 6AV6 642-0BA01-1AX0		
MP 277 10" Touch INOX	H	6AV6 643-0ED01-2AX0
With stainless steel front and LED backlighting, otherwise like 6AV6 643-0CD01-1AX1		
MP 377 15" Touch	H	6AV6 644-0CB01-2AX0
With stainless steel front and LED backlighting, otherwise like 6AV6 644-0AB01-2AX0		
Panel PC 677B 15"		6AV7 872-2....
With stainless steel front, otherwise like Panel PC 677B Configurator 6AV6 643-0CD01-1AX1		

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

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).

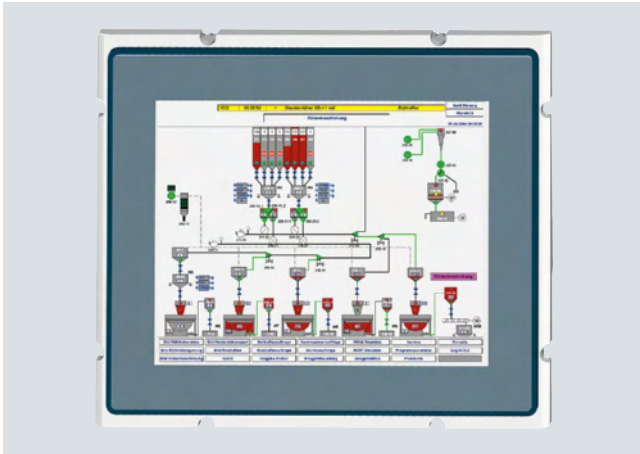
The defined device can then be easily ordered using this product agreement and a customized Order No.

Customized Automation

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.

Customized Automation

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

Order No.

MP 377 12" Touch, rear-mounting

6AV6 644-...

Configuration on request

MP 277 8" Touch vertical, rear-mounting

6AV6 643-...

With emergency-off button and 3 short-stroke keys with LEDs on the front,
Configuration on request

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).

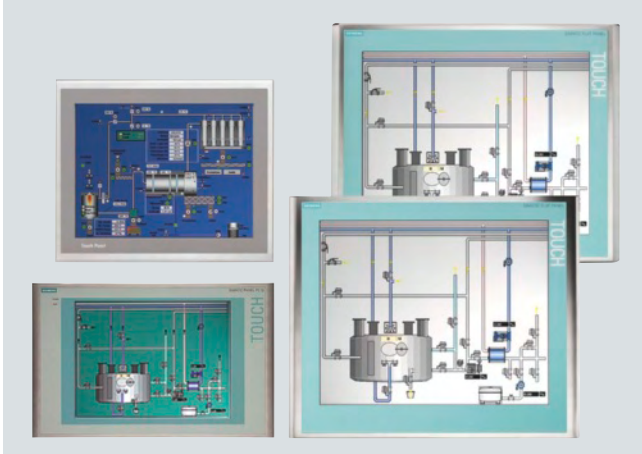
The defined device can then be easily ordered using this product agreement and a customized order number.

Customized Automation

Food and beverages industry, pharmaceuticals

Flat Panels with stainless steel front

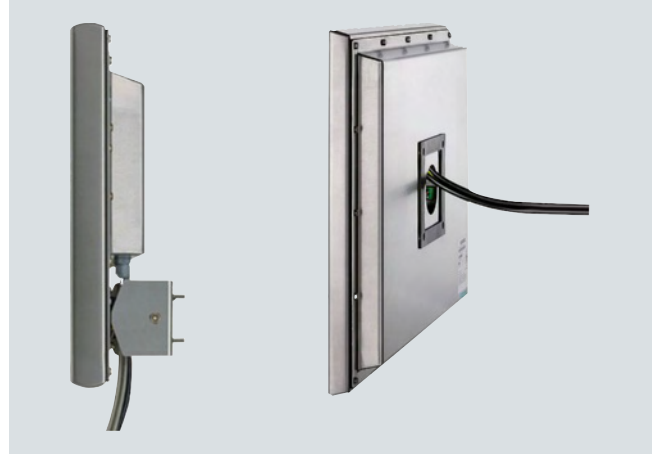
Overview



***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.

Customized Automation

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

6

Ordering data

Order No.

Flat Panel 15" Touch INOX B **6AV7 486-2TA10-1AA0**
Flat Panel 15" Touch INOX fully enclosed **6AV7 476-...**

Configuration on request

Flat Panel 19" Touch INOX B **6AV7 486-4TA01-0AA0**

Cable 1.8 m enclosed

Flat Panel 19" Touch INOX fully enclosed B **6AV7 486-4TA11-0AA0**

Cable 1.8 m pre-assembled

B: Subject to export regulations: AL: N and ECCN: EAR99H

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).

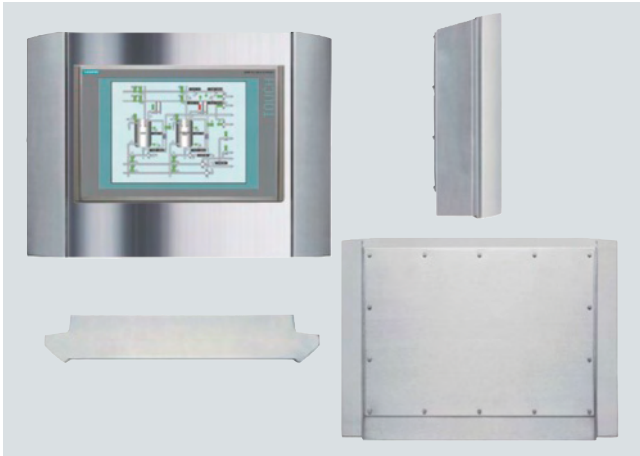
The defined device can then be easily ordered using this product agreement and a customized Order No.

Customized Automation

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

Oil & gas/chemicals/marine

Introduction

Overview

The requirements of the sectors oil and gas, chemicals and shipbuilding 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
- Stainless steel surfaces are demanded for increased resistance to chemicals

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

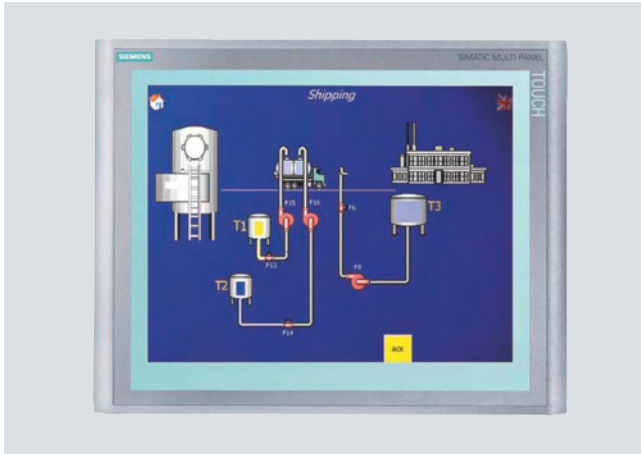
- *MP 377 15" Touch daylight readable*
- *TEK – Temperature Extension Kit*

Customized Automation

Oil & gas/chemicals/marine

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 the extended outdoor temperature range at -20 °C to +55 °C with the TEK option in an air-conditioned control cabinet
- 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.
 - Shipbuilding certificates (available soon)
 - Fan-free

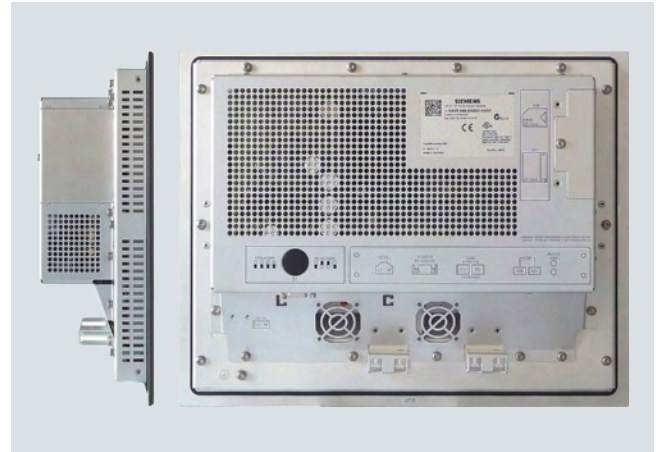
Benefits

- 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, no new training
- Can also be used in the extended temperature ranges with the TEK Temperature Extension Kit option

Application

The Panel has a daylight-readable and dimmable display, making it predestined for use in control desks for, e.g. drill strings (oil & gas industry), ships (shipbuilding) and other exposed areas up to outdoor applications with the TEK Temperature Extension Kit option. The necessary certification for shipbuilding will be available soon.

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 trans-flective 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.

Customized Automation

Oil & gas/chemicals/marine

MP 377 15" Touch daylight readable

Technical specifications

Multi Panels	MP 377 15" Touch daylight readable
General features	
Display	15" TFT, transfective
Brightness	max. 560 cd/m ²
Contrast	typ. 700:1
Reading angle	160°
Resolution	1024 x 768
MTBF of backlit display (at 25°C)	50,000 hrs LED backlighting, dimmable 0 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	0°C to +50°C, restocking 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, shipbuilding certificates available soon
Sector	Oil & gas, ship, outdoor
Can be connected to SIMATIC PC	Multi Panel
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

Ordering data

Order No.

MP 377 15" Touch daylight readable

H **6AV6 644-8AB20-0AA1**

Multi Panel 15" Touch with display suitable for natural-light viewing

H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

More information

Customized modification options

- Integration into customized turnkey operator panels
- Customized design

Drafting a quotation

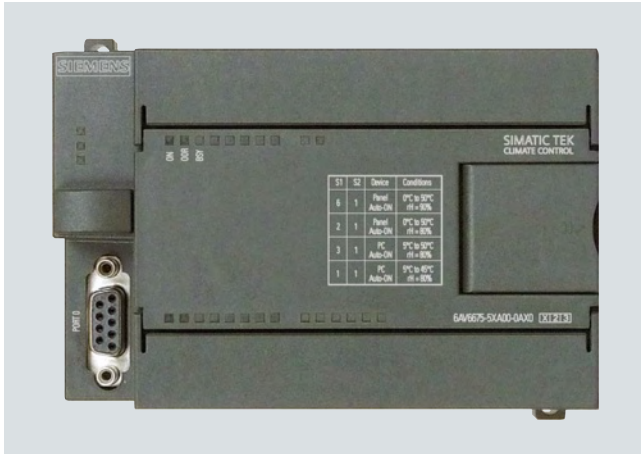
SIMATIC HMI specialists define the product modifications precisely in accordance with customer requirements.

This is followed by drafting a quotation with:

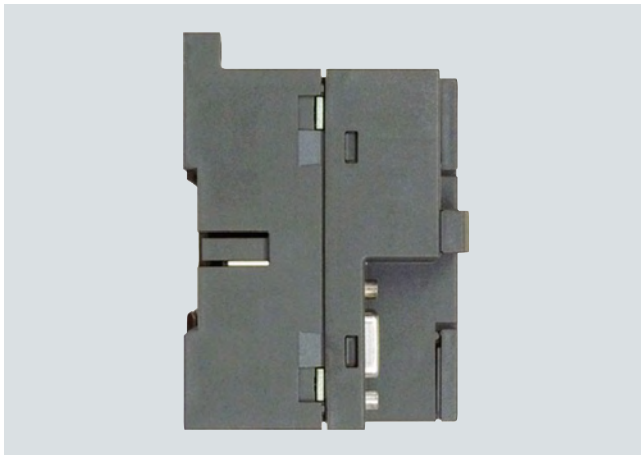
- Non-recurring costs
- Prototype costs
- Standard unit prices
- and the marginal conditions in the form of a product agreement (e.g. minimum quantity).

The defined device can then be easily ordered using this product agreement and a customized Order No.

Overview



TEK, front view



TEK, side view

TEK Temperature Extension Kit for MP 377 15" Touch daylight readable

The TEK (Temperature Extension Kit) is a sector-specific supplement for the MP 377 15" Touch daylight readable operator panel and is used for the extended temperature range from -20 °C to +55 °C and an atmospheric humidity greater than 90%. Permissible ambient temperature in operation is otherwise 0 to 50 °C and 90% relative humidity (without condensation).

The TEK comprises the following components:

- Climate controller with integral humidity sensor
- Set with temperature sensors

Benefits

The TEK enables device applications in environments that were previously not available for the unprotected electronic device (e.g. operator panel Microbox PC) due to impermissible environmental conditions.

Fastest-possible, automatic power-up of the operator panel after connection of the supply voltage and establishment of the operating conditions by the TEK.

The TEK optimizes use of the connected fan, and the heating and cooling systems:

- Energy-efficient thanks to utilization of the specific limits of the electronic device
- Avoidance of corrosion by regulating the atmospheric humidity
- Optimization of the control and adaptation to different disturbance variables by
 - taking account of the temperature gradients
 - taking account of the temperature difference on the electronic device and the surface temperature of the enclosure

Application

The relevant environmental conditions are predominantly in the outdoor area of the oil & gas industry, the chemicals industry and in refrigeration rooms in the food and beverages industry or related areas. The extended temperature range is characteristic of these areas.

Design

The TEK comprises the following components:

- Climate controller with integral humidity sensor
- Set with temperature sensors

Product features of the Temperature Extension Kit

- The TEK is installed in an enclosure together with an operator panel and supplementary, active components for air conditioning. Active components, such as heating / cooling systems and air circulating fans, are necessary for the overall function. You will find information on their dimensioning in the operating instructions of the TEK, or you can consult an experienced control cabinet builder.
- The climate controller has temperature-toughened modules that are also ice-proof and condensation-proof to deal with the relevant environmental influences.
- The climate controller establishes the climatic conditions for operation in the enclosure (control box, control cabinet) even if the permissible environmental conditions for the electronic device are not maintained outside the enclosure.
- The climate controller has two operating modes:
 - In automatic mode ("Auto-ON"), the climate controller switches the operator panel on automatically and as quickly as possible as soon as the climatic conditions inside the electronic control box are within the tolerance range.
 - In manual mode ("Manual-ON"), the user can switch the operator panel on using a pushbutton as soon as the climatic conditions are within the tolerance range. If the user presses the button before the climatic conditions have been established, the climate controller saves this switch-on request and switches the operator panel on as soon as the climatic conditions are within the tolerance range.
- When the operator panel has been switched on, it remains switched on.

Customized Automation

Oil & gas/chemicals/marine

TEK – Temperature Extension Kit

Design (continued)

Use in areas subject to explosion hazard

Additional measures, such as the use of a suitable control cabinet, are required for use of the TEK in areas subject to explosion hazard in Zones 2 or 22 corresponding to the ATEX product guideline or for Class I, Div. 2 applications. The relevant, special installation guidelines in areas subject to explosion hazard must be adhered to.

Function

- The climate Controller determines the climatic conditions in the enclosure using the temperature sensors and the integral humidity sensor.
- The climate controller indicates whether the climatic conditions in the enclosure are within the preselected tolerance range or not and thus warns against potential damage to the operator panel.
- Depending on requirements, the climate controller activates the fan and heater or refrigerator to establish the climatic conditions for operation of the operator panel within the control cabinet.
- The heater and refrigerator are controlled via an optimized two-position controller, taking account of the temperature gradients and the relative atmospheric humidity. The fan is controlled taking account of the temperature difference at the device.
- The climate controller indicates whether the operator panel is switched on or not and whether the control is active or not.

Technical specifications

Technical specifications	TEK climate controller
Storage temperature	-40 °C to +80 °C; control range (outdoor temperature): -20 °C to +50 °C
Interfaces	3 x Pt100 1 integral humidity sensor 2 x DI for keys 3 x DO for signal lamps 5 x floating contacts for active components 2 rotary switches for parameterization
Mounting	on DIN rail
Degree of protection	IP20, protected against brief condensation
Current consumption, typical	400 mA (24 V DC)
Certification	CE, cULus, C-Tick
Ambient temperature	
During operation	0 °C to +50 °C
Relative humidity	10% to 90% without condensation
Transport / storage temperature	-40 °C to +80 °C
Vibration	1 g (IEC 60068, Part 2-6)
Shock	15 g (11 ms, IEC 60068, Part 2-29)
Dimensions	
Mounting dimensions WxHxD (mm)	120.5 x 96 x 61.3
Weight	200 g

Ordering data

Order No.

TEK – Temperature Extension Kit	B	6AV6 675-5XA01-0AX0
Consisting of:		
• TEK climate controller module		
• Accessories pack with 3 x Pt100 sensors and mounting clips		
TEK climate controller	B	6AV6 675-5XA00-0AX0
As separate part		
TEK accessories pack	B	6AV6 675-5XB00-0AX0
Operating Instructions		as download
in German / English		http://support.automation.siemens.com/WW/llsapi.dll?func=cslib.csinfo&objId=39848694&objAction=csOen&nodeId0=10805608&lang=de&siteId=csius&aktprim=0&extranet=standard&viewreg=WW

B: Subject to export regulations: AL: N and ECCN: EAR99H

More information

Customized modification options

- Dimensioning and production of a turnkey operator station for customized environmental conditions

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.

Appendix



7/2	Training
7/3	Course overview
7/4	Operating system licenses
7/4	Standards and approbations
7/5	Partner at Industry Automation and Drive Technologies
7/5	Siemens contacts worldwide
7/6	WinCC Competence Center
7/7	Siemens Solution Partner Automation, Power Distribution and PLM
7/8	Online Services
7/8	Information and Ordering in the internet and on DVD
7/9	Service & Support
7/9	Services covering the entire life cycle
7/10	Knowledge Base on DVD
7/11	Siemens Service Option for SIMATIC PC / PG
7/13	Software Licenses
7/14	Subject index
7/17	Order No. index
7/18	Length key for connecting cables
7/19	Catalog improvement suggestions
7/19	Fax form
7/20	Conditions of sale and delivery
	Export regulations

Training

Faster and more applicable know-how: Hands-on training from the manufacturer

SITRAIN® – the Siemens Training for Automation and Industrial Solutions – provides you with comprehensive support in solving your tasks.

Training by the market leader in automation and plant engineering enables you to make independent decisions with confidence. Especially where the optimum and efficient use of products and plants are concerned. You can eliminate deficiencies in existing plants, and exclude expensive faulty planning right from the beginning.



First-class know-how directly pays for itself: In shorter startup times, high-quality end products, faster troubleshooting and reduced downtimes. In other words, increased profits and lower costs.

Achieve more with SITRAIN

- Shorter times for startup, maintenance and servicing
- Optimized production operations
- Reliable configuration and startup
- Minimization of plant downtimes
- Flexible plant adaptation to market requirements
- Compliance with quality standards in production
- Increased employee satisfaction and motivation
- Shorter familiarization times following changes in technology and staff

Contact

Visit our site on the Internet at:

<http://www.siemens.com/sitrain>

or let us advise you personally.

SITRAIN Customer Support Germany:

Phone: +49 (0) 911 / 895 7575

Fax: +49 (0) 911 / 895 7576

E-Mail: info@sitrain.com

SITRAIN highlights

Top trainers

Our trainers are skilled teachers with direct practical experience. Course developers have close contact with product development, and directly pass on their knowledge to the trainers.

Practical experience

The practical experience of our trainers enables them to teach theory effectively. But since theory can be pretty drab, we attach great importance to practical exercises which can comprise up to half of the course time. You can therefore immediately implement your new knowledge in practice. We train you on state-of-the-art methodically/didactically designed training equipment. This training approach will give you all the confidence you need.

Wide variety

With a total of about 300 local attendance courses, we train the complete range of Siemens Industry products as well as interaction of the products in systems.

Tailor-made training

We are only a short distance away. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. You wish to have individual training instead of one of our 300 courses? Our solution: We will provide a program tailored exactly to your personal requirements. Training can be carried out in our Training Centers or at your company.

The right mixture: Blended learning

"Blended learning" means a combination of various training media and sequences. For example, a local attendance course in a Training Center can be optimally supplemented by a teach-yourself program as preparation or follow-up. Additional effect: Reduced traveling costs and periods of absence.



Training offer for SIMATIC HMI

This page contains an overview of the SIMATIC HMI training courses.





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 under:

www.siemens.com/sitrain

**SITRAIN courses for SIMATIC HMI**

Startup engineers, configuration engineers										
Programmers						Service personnel				
Project managers, project assistants						Operators, users				
Decision makers, sales personnel						Maintenance personnel				
Title	Target Group						Duration/Medium	Short title		
SIMATIC WinCC flexible										
SIMATIC WinCC flexible, system course1				✓	✓	✓	✓	✓	3 days	ST-WCCFSYS1
SIMATIC WinCC flexible, options				✓	✓	✓		✓	1 day	ST-WCCFO
SIMATIC WinCC										
SIMATIC WinCC, system course				✓	✓	✓	✓	✓	5 days	ST-BWINCCS
SIMATIC WinCC, advanced configuration , options for networks and data base access				✓	✓				5 days	ST-BWINOND
ANSI-C in the SIMATIC World Introduction				✓	✓	✓		✓	5 days	ST-SIMACE
Visual Basic Script in the field of SIMATIC				✓	✓	✓		✓	3 days	ST-VBSCR

Standards and approbations

Operating system licenses for SIMATIC PC/PG

The enclosed operating system license is approved only for the installation of the SIMATIC PC/PG supplied.

The Microsoft OEM license allows you to install the software only on this SIMATIC system.

UL (U) and CSA (C) standards

All HMI products comply with the UL (U) and CSA (C) standards or an application for approval has been submitted.

Products, for which there is no approval, are specially marked (see the product ordering data).

CE marking

The electronic products described in this catalog comply with the requirements and protection objectives of the following EU guidelines and with the harmonized European standards (EN) which have been published for programmable controllers in the Official Journal of the European Union:

- 89/336/EEG "Electromagnetic Compatibility" (EMC guideline)
- 73/23/EEG "Electrical Equipment for Use Within Specific Voltage Limits" (low voltage guideline)

The EU conformity declaration is available for examination by the appropriate authorities at:

SIMATIC HMI:

Siemens AG
 I IA AS SM ID
 Postfach 48 48
 90327 Nürnberg
 Federal Republic of Germany

SIMATIC, SIMATIC NET, SIMATIC PC:

Siemens AG
 IA AS EWA
 Postfach 19 63
 92209 Amberg
 Federal Republic of Germany

Partner at Industry Automation and Drive Technologies

Siemens contacts worldwide

Overview



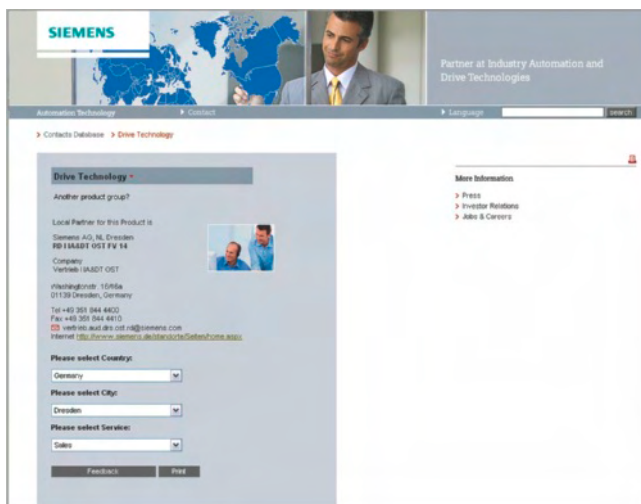
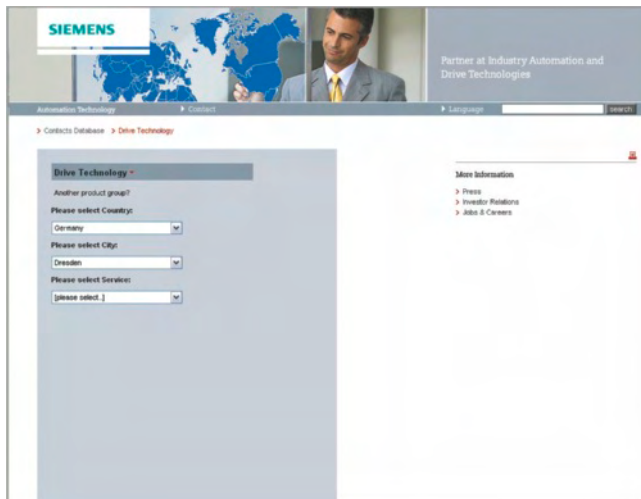
At Siemens Industry Automation and Drive Technologies, more than 85 000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all 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: <http://www.siemens.com/automation/partner>

You start by selecting a

- Product group,
- Country,
- City,
- Service.



WinCC Competence Center

The WinCC competence centers are Siemens internal partners. They offer a wide range of products and services geared to ensuring that customers make the best possible use of the openness and integration capability of WinCC in terms of both cost-efficiency and technology.

In addition to developing standard solutions/add-on products, they are authorized to implement customer-specific and vertical solutions in the areas of application development and system integration on the basis of WinCC. Finally, they also offer consulting and project-associated training and workshops for decisionmakers and users.

Industry-specific as well as automation and WinCC system expertise guarantee professional and efficient solutions. Needless to say, software development is in accordance with recognized standards on the basis of certified ISO 9001 quality management.

Additional information is available in the Internet under:

www.siemens.com/wincc-competence-center

Overview
Siemens Solution Partner
Solution Partner Automation, Power Distribution and PLM

The products and systems from Siemens Industry Automation and Drive Technologies offer the ideal platform for all automation applications.

Under the name Siemens Solution Partner, selected system integrators operate around the world as uniformly qualified solution providers for the portfolio of Siemens automation, power distribution and product lifecycle management products. Day after day, they utilize their qualified product and system know-how as well as their excellent industry expertise to your advantage – for all requirements.

The Solution Partner emblem is a guarantee of quality. The basis for this is to be found in four defined quality features:

- **Solution quality:**
A good result in every case based on proven solution know-how.
- **Expert quality:**
Certified technical competence guarantees maximum efficiency.
- **Project quality:**
Straight to the goal with proven project experience.
- **Product range quality:**
Comprehensive portfolio for state-of-the-art solutions from a single source.

Solution Partner Finder

The Siemens Solution Partner Program helps you to find the optimum partner for your specific requirements. Support is provided by the Solution Partner Finder, a comprehensive online database that showcases the profiles of all our solution partners. You can convince yourself of the competence of the respective Solution Partner by means of the references provided.

The following search criteria are possible:

- Country
- Technology
- Sector
- Company
- Zip code

Once you have located a partner, you are only one small step from contacting them.

You can locate the Solution Partner Finder as follows:

<http://www.siemens.com/automation/partnerfinder>

Additional information on the Siemens Solution Partner Program is available online at:

<http://www.siemens.com/automation/solutionpartner>

Appendix Online Services

Information and Ordering in the Internet and on DVD

Siemens Industry Automation and Drive Technologies in the WWW



A detailed knowledge of the range of products and services available is essential when planning and configuring automation systems. It goes without saying that this information must always be fully up-to-date.

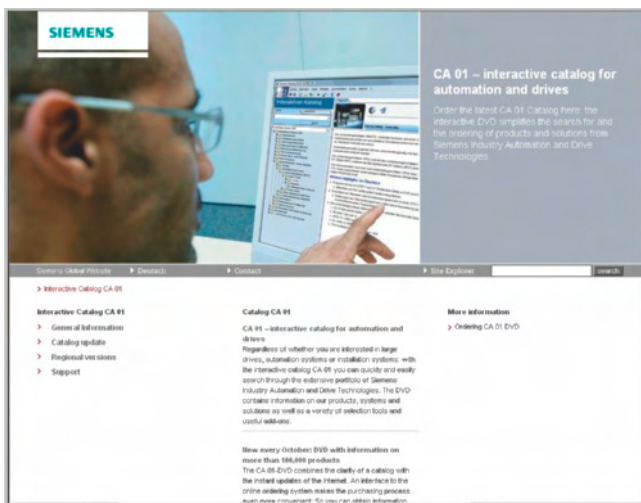
Siemens Industry Automation and Drive Technologies has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

<http://www.siemens.com/industry>

you will find everything you need to know about products, systems and services.

Product Selection Using the Offline Mall of Industry



Detailed information together with convenient interactive functions:

The Offline Mall CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry Automation and Drive Technologies product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives. All information is linked into a user interface which is easy to work with and intuitive.

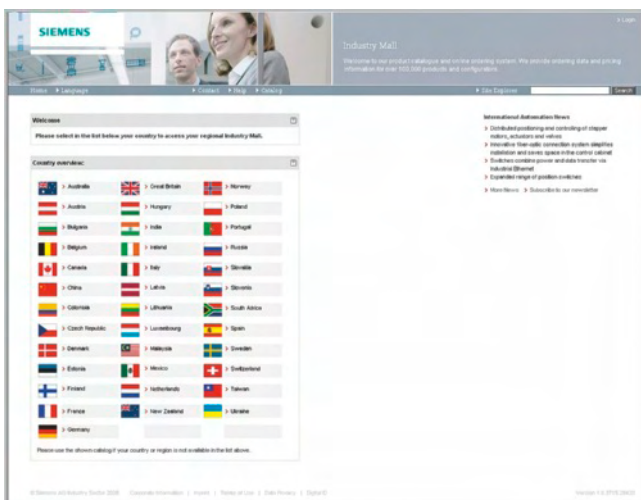
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the Offline Mall CA 01 can be found in the Internet under

<http://www.siemens.com/automation/ca01>

or on DVD.

Easy Shopping with the Industry Mall



The Industry Mall is the virtual department store of Siemens AG in the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

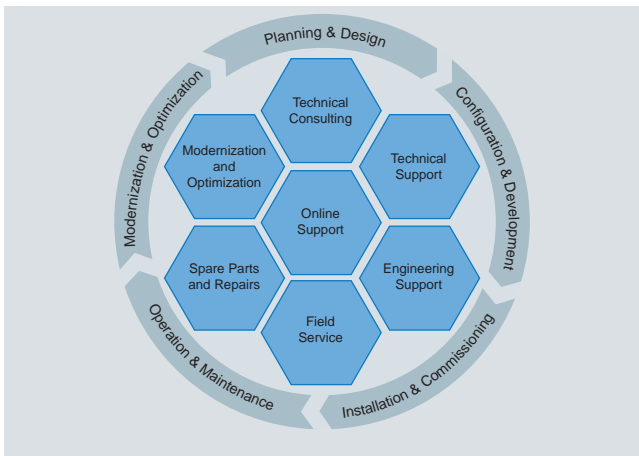
Numerous functions are available to support you.

For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

Please visit the Industry Mall on the Internet under:

<http://www.siemens.com/industrymall>

Services covering the entire life cycle



Our Service & Support are available worldwide to help you with every aspect of Siemens automation and drive technology. We offer on-site support for every phase of the life cycle of your machines and plants in more than 100 countries. Round the clock.

Every step of the way, you have access to an experienced team of specialists and their combined expertise. Thanks to regular training and the close cooperation of key employees around the globe, we are able to offer reliable services for a huge range of options.

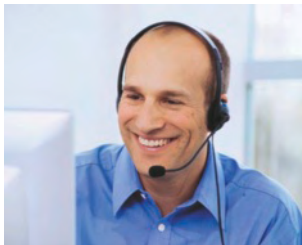
Online Support



The comprehensive information system available round the clock via Internet ranging from Product Support and Service & Support services to Support Tools in the Shop.

<http://www.siemens.com/automation/service&support>

Technical Support



Competent consulting in technical questions covering a wide range of customer-oriented services for all our products and systems.

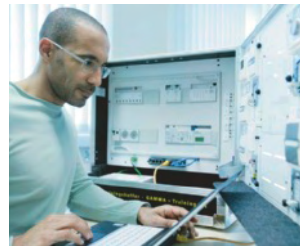
<http://www.siemens.com/automation/support-request>

Technical Consulting



Support in the planning and designing of your project from detailed actual-state analysis, target definition and consulting on product and system questions right to the creation of the automation solution.

Engineering Support



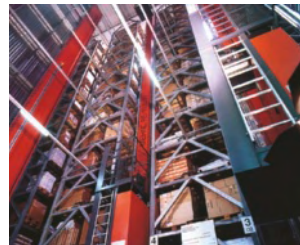
Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project.

Field Service



With Field Service, we offer services for startup and maintenance essential for ensuring system availability.

Spare Parts and Repairs



In the operating phase of a machine or automation system, we provide a comprehensive repair and spare parts service ensuring the highest degree of plant availability.

Optimization and Upgrading



After startup or during the operating phase, additional potential for increasing the productivity or for reducing costs often arises. For this purpose, we offer you high-quality services in optimization and upgrading.

You will find contact details in the Internet under:
<http://www.siemens.com/automation/service&support>

Appendix

Service & Support

Knowledge Base on DVD



For locations without online connections to the Internet there are excerpts of the free part of the information sources available on DVD (Service & Support Knowledge Base). This DVD contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service & Support.

The DVD also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The DVD will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on DVD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** DVD from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

Automation Value Card



By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

Order your Automation and Value Card easily and comfortably like a product with your sales contact.

Automation Value Card order numbers

Credits	Order no.
200	6ES7 997-0BA00-0XA0
500	6ES7 997-0BB00-0XA0
1 000	6ES7 997-0BC00-0XA0
10 000	6ES7 997-0BG00-0XA0

Detailed information on the services offered is available on our Internet site at:

<http://www.siemens.com/automation/service&support>

Service & Support à la Card: Examples

Technical Support

"Priority"	Priority processing for urgent cases
"24 h"	Availability round the clock
"Extended"	Technical consulting for complex questions
"Mature Products"	Consulting service for products that are not available any more

Support Tools in the Support Shop

Tools that can be used directly for configuration, analysis and testing

Small card - great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Automation and Drives will accompany you in each phase of your automation project.

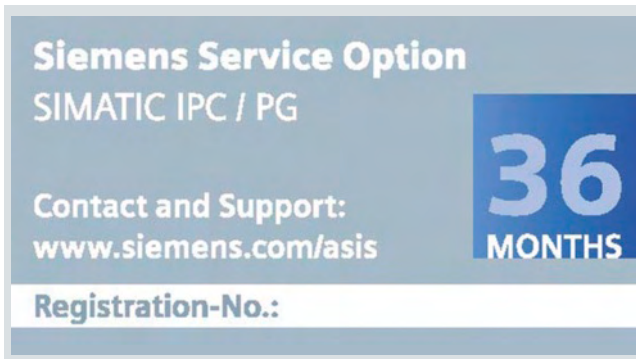
It doesn't matter whether you want just specific services from our Technical Support or want to purchase something on our Online portal, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

Siemens Service Option for SIMATIC PC / PG

Siemens Service Option for SIMATIC PC / PG



The expanded hardware service for SIMATIC PC/PG products

Purchasing and registering this additional agreement for a SIMATIC PC/PG 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):

- Free¹⁾ 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 functions²⁾ of the hardware
- Siemens will also assume the return shipping costs of the repaired device from the repair center to the customer

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 ex works. The uploading of additional application software, drivers and setting up the operating software are not covered by the free repair service.

Product family	Order No. Service option	Order designation
SIMATIC Rack PC <ul style="list-style-type: none"> • Rack PC 847B/IPC847C • Rack PC 547B/IPC547C • Rack PC 647B/IPC647C SIMATIC Box PC <ul style="list-style-type: none"> • Box PC 627B/IPC 627C • Microbox PC 427B/IPC427C • Box PC 827B 	A5E00510072	36 month service option for SIMATIC Rack PC and Box PC
SIMATIC Panel PC <ul style="list-style-type: none"> • Panel PC 677B/IPC677C 	A5E00509961	36 month service option for SIMATIC Panel PC
SIMATIC Field PG <ul style="list-style-type: none"> • SIMATIC Field PG M2 • SIMATIC Field PG M3 	A5E00510007	month service option for SIMATIC Field PG M2/M3

Ordering and registering the additional agreement:

- Select the appropriate order 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!

Siemens Service Option for SIMATIC PC / PG

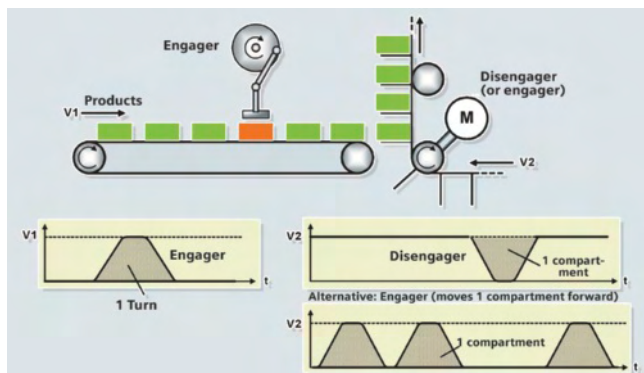
Overview

*Know-how and services for PC-based Automation*

You require support concerning the design and possibilities of a PC-based Automation project, or even engineering support?

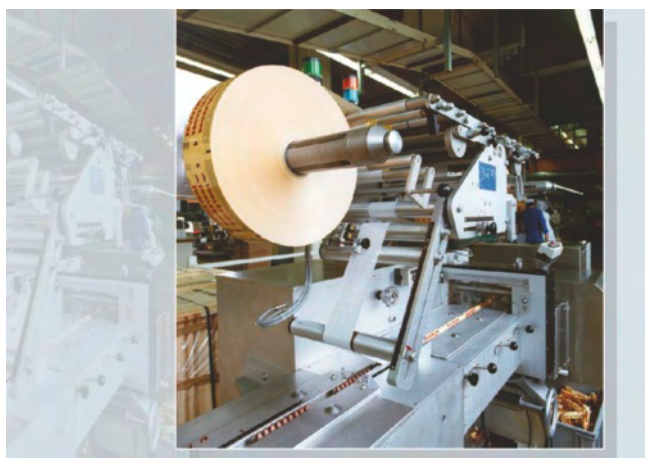
Siemens has installed a team of specialists especially for this purpose in Cologne and Milan. These specialists work closely with the development and product marketing departments, and can provide competent support worldwide to our sales departments on all matters of PC-based Automation.

Our core competences



- Design of PC-based Automation systems from Siemens
- Customer-specific integration of technologies (add-ons) using high-level languages (C++) in Windows or real-time environments
- Knowledge transfer/workshops for the integration of components from other vendors and for applications using the Open Development Kit (ODK)
- Technology and application know-how
- Development of Addons for WinAC and WinCC flexible

Reference applications



- Fast recording of measured values
- Software blocks for drive library
- Customized communication using Ethernet (OPC/ActiveX, TCP-Socket)
- Synchronous operation, cross cutter, table interpolation for electric and hydraulic axes
- Integration of PCI cards into PC-based Automation applications (e.g. WinAC and ASi-Bus)
- Customized development and integration of C++ programs
- Interfaces to databases
- Integration of complex control algorithms

Contacts

Activation of the Competence Center for your application is carried out by your regional partner.

If you do not yet have a contact person in your region, you just have a look at the Internet:

<http://www.siemens.com/automation/partner>

Further information and up-to-date news on available workshops 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
- Trial 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.

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 device, 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 number of hours (the operating hours do not have to be consecutive).

One license is required for each installation of the software.

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.

Factory license

With the Factory License the user has the right to install and use the software at one permanent establishment only. The permanent establishment is defined by one address only. The number of hardware devices on which the software may be installed results from the order data or the Certificate of License (CoL).

Certificate of license

The Certificate of License (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.

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).

Detailed explanations concerning license conditions can be found in the "Terms and Conditions of Siemens AG" or under

<http://www.siemens.com/industrymall>
(Industry Mall Online-Help System)

I IA&DT/Software licenses/En 06.05.10

Subject index

	Page		Page
A		F	
Accessories for fully enclosed HMI devices	3/16	Fax form	7/19
Accessories for SIMATIC Mobile Panel	2/167, 2/168	Fixing elements	2/180
Accessories for SIMATIC Mobile Panel – Charging station	2/169	Flat Panels 6.4" and 10.4" for Panel PC	6/50
Accessories for SIMATIC Mobile Panel – Terminal boxes	2/171	Flat Panels with stainless steel front	6/57
Accessories for SIMATIC Mobile Panel – Transponder	2/172	Flexible front design concept for HMI products	6/15
Adapter sets	3/16	Food and beverages industry, pharmaceuticals	6/51
ADDM – Data Management	5/220	Front panel 15" Touch and Keys for Panel PCs resistant to honing oil	6/48
Application examples	5/3, 5/4, 5/7	Front panel with arrow keys on the side	6/42
Automotive industry	6/36	Fully enclosed HMI devices	3/3
B		G	
Basic Panels	2/67	General machine construction	6/45
Battery module 1,2 Ah	5/236	H	
Battery module 12 Ah	5/238	HMI devices for hazardous areas	3/48
Battery module 12 Ah	5/238	HMI IPC / Panel PC systems and monitors	5/96
Battery module 2,5 Ah	5/237	HMI operator stations	6/23, 6/36
Battery module 3,2 Ah	5/237	HMI Panels as rear-mounted devices	6/55
Battery module 7 Ah	5/238	HMI RFID module	6/45
Box PC	5/61, 5/63	HMI Software	4/2
BSP-SIMATIC IPC V3.0 for RMOS3	5/213	HMI stainless steel operator stations	6/59
C		HMI system SIMATIC WinCC flexible	4/5
Communication	5/246, 5/247	IE FC RJ45 Plug 2 x 2	2/166
Communication processors for Industrial Ethernet	5/246	I	
Communication processors for PROFIBUS	5/263	IE FC RJ45 Plug 2 x 2	2/166
Conditions of sale and delivery, Export regulations	7/20	Industrial LCD monitors – Flat Panel	5/191
Connecting cables	2/161, 2/162, 2/163	Industrial LCD monitors – SCD monitors	5/195
Connection options to SIMATIC IPC	5/247, 5/264	Industrial USB Hub 4	2/160, 5/232
Contact partner at Industry Automation and Drive Technologies	7/5	Information and ordering in the Internet and on DVD-ROM	7/8
Converters/adapters	2/174	Input and output devices	5/241
Course overview	7/3	Input and output devices SIMATIC PC keyboard IP65 membrane keyboard	5/241
CP 1604	5/248, 5/249	IP65 keyboards	3/18
CP 1612 A2	5/250	IP65 membrane keyboard, built-in version	5/242
CP 1613 A2	5/252	IP65 membrane keyboard, desk version	5/241
CP 1616	5/249	K	
CP 1623	5/253	Knowledge Base on DVD	7/10
CP 5512	5/277	L	
CP 5603	5/265	Length key for connecting cables	7/18
CP 5611 A2	5/279	M	
CP 5613 A2	5/267	Memory media	2/173
CP 5613 FO	5/269	Micro Panels	2/15
CP 5614 A2	5/271	Mobile Panel 277 10" Remote Operate	6/43
CP 5621	5/281	Mobile Panels	2/29
CP 5623	5/273	Mobile Panels – 170 series	2/33
CP 5624	5/275	Mobile Panels – 270 series	2/43
CP 5711	5/283	Monitors and Thin Clients	5/191
Customized adaptations	6/4	MP 177 6" Touch portrait	6/47
D		MP 270 data display	6/18
DC UPS module 15 A	5/235	MP 277 6" Touch portrait	6/20
DC UPS module 40 A	5/236	MP 277 8" Touch control console	6/19
DC UPS module 6 A	5/235	MP 377 15" Touch daylight readable	6/61
DC UPS uninterruptible power supplies	5/233	Multi Panel options	2/140
DC UPS with battery modules	5/234	Multi Panels – 170 series	2/117
DC UPS with capacitors	5/239	Multi Panels – 270 series	2/122
Design products	6/8	Multi Panels – 370 series	2/131
Devices with stainless steel front	3/20, 3/21	O	
E		OEM products	6/14
Embedded Bundles / Packages for Industrial PC	5/174	Oli & gas/chemicals/marine	6/60
Embedded Controller	5/163	Online services	7/8
Engineering software WinCC flexible	4/5	Open Platform Program (for WinCC flexible)	6/27
Engineering Tools	5/287	Operating system licenses	7/4
Examples of sector products	6/33	Order No. Index	7/17
Expansion components	5/215	Our services for every phase of your project	7/9
Expansion components and accessories	5/215		
Extension Units	3/17		

	Page
P	
Panel PC 677B with 46"	6/21
Panels – 170 series	2/90
Panels – 270 series	2/107
Panels – 70 series	2/77
Panels and Panel PCs with stainless steel front	6/53
PC IO	5/222
PC-based Automation	1/12
PC-based Controller	5/139
PN CBA OPC server	5/260
PP17 with PROFIBUS and PROFINET	6/38
Printer	2/181
Printers 2150, 2250	5/245
Printers T 2240/9, T 2240/24, T 2340/24	5/244
Product modifications	6/6, 6/7
Protective covers	2/178
Protective membranes	2/179
Push Button Panels	2/8
R	
Rack PC	5/10
Rear panel cover	6/25
Recommended printers for Panels and Multi Panels	2/181
Remote Operate Software	6/30
Renewable energy	6/34
RMOS3 real-time operating system	5/205
RMOS3 V3.50 real-time operating system	5/206
RMOS3-GNU V3.0	5/209
RMOS3-GRAPHX V1.0	5/207
RMOS3-TCP/IP V3.0	5/211
RS485 bus connector	2/165
S	
S7-REDCONNECT	5/255
SCADA system SIMATIC WinCC	4/34
SCD monitors 1900	5/198
Service & Support	7/9
Service packs	2/175
Services throughout the entire lifecycle	7/8
Siemens contacts worldwide	7/5
Siemens service option for SIMATIC PC / PG	7/11
Siemens Solution Partner Automation, Power Distribution and PLM	7/7
SIMATIC 505	2/153
SIMATIC BATCH for WinCC	4/76
SIMATIC Box PC 627B	5/81
SIMATIC Box PC 827B	5/89
SIMATIC Flat Panel PRO	3/10
SIMATIC HMI IPC / Panel PC	5/96
SIMATIC HMI IPC477C	5/101
SIMATIC HMI IPC477C Bundles	5/179
SIMATIC HMI IPC477C PRO	3/12
SIMATIC HMI IPC577C	5/112
SIMATIC HMI IPC677C	5/121
SIMATIC HMI IPC677C INOX	3/42
SIMATIC HMI Panel PC Ex 3	4/9
SIMATIC HMI Thin Client Ex	3/52
SIMATIC Industrial PC	5/9
SIMATIC IPC (service) USB FlashDrive	5/228
SIMATIC IPC BIOS-Manager	5/217
SIMATIC IPC CompactFlash	5/221
SIMATIC IPC DiagMonitor	5/216
SIMATIC IPC Image & Partition Creator	5/218
SIMATIC IPC427C	5/65
SIMATIC IPC427C Bundles	5/174
SIMATIC IPC547C	5/15
SIMATIC IPC627C	5/73
SIMATIC IPC647C	5/23
SIMATIC IPC847C	5/32
SIMATIC KNX/EIB2S7	6/31
SIMATIC Logon	4/80

S (continued)

SIMATIC Logon for WinCC flexible	4/22
SIMATIC Maintenance Station	4/61
SIMATIC Mobile Panel 177	2/33, 2/34
SIMATIC Mobile Panel 277	2/43
SIMATIC Mobile Panel 277(F) IWLAN	2/51, 2/52
SIMATIC MP 177	2/117
SIMATIC MP 277	2/122
SIMATIC MP 277 INOX	3/26
SIMATIC MP 377	2/131
SIMATIC MP 377 INOX	3/31
SIMATIC MP 377 PRO	3/5
SIMATIC OP 177B	2/102
SIMATIC OP 277 6"	2/112
SIMATIC OP 73	2/77
SIMATIC OP 73micro	2/21
SIMATIC OP 77A	2/81
SIMATIC OP 77B	2/85
SIMATIC Panel PC	5/97
SIMATIC Panel PC 677B	5/129
SIMATIC Panel PC 677B INOX	3/36
SIMATIC Panel PC Remote Kit	5/230
SIMATIC PC function cards	6/17
SIMATIC PC mouse	5/243
SIMATIC PC-based Controller	5/139
SIMATIC PP17	2/11
SIMATIC PP7	2/8
SIMATIC ProAgent	4/85
SIMATIC ProAgent process diagnosis software	4/85
SIMATIC Rack PC 647B	5/42
SIMATIC Rack PC 847B	5/51
SIMATIC S5	2/151
SIMATIC S7	2/148
SIMATIC S7-modular Embedded Controller	5/163
SIMATIC Thin Client	5/201
SIMATIC Thin Client PRO	3/8
SIMATIC TP 177A	2/90
SIMATIC TP 177B	2/95
SIMATIC TP 177B INOX	3/21
SIMATIC TP 177micro	2/25
SIMATIC TP 277 6"	2/107
SIMATIC WinAC MP	2/140
SIMATIC WinAC ODK	5/160
SIMATIC WinAC RTX	5/141
SIMATIC WinAC RTX F	5/151
SIMATIC WinCC	4/34
SIMATIC WinCC flexible ES	4/5
SIMATIC WinCC flexible options	4/17, 4/18
SIMATIC WinCC flexible RT	4/10
SIMATIC WinCC options	4/52
SINEMA E	5/287
Single-port USB interface	3/19
SINUMERIK 3.5" floppy disk drive, USB 1.1	5/229
SITOP UPS500	5/240
Slide-in keyboard	5/242
SNMP OPC server	5/262
SOFTNET for Industrial Ethernet	5/256
SOFTNET for PROFIBUS	5/285
SOFTNET PN IO	5/257
Software licenses	7/13
Software packages for SIMATIC IPC and S7-mEC	5/189
Software products	6/27
Solar systems	6/34
Standards and approvals	7/4
Subject index	7/14
Suggestions for improving the catalog	7/19
System interfaces: Panels and runtime software	2/147

Subject index

Page

T

TEK – Temperature Extension Kit	6/63
Text display TD 200	2/15
Text display TD 400C	2/18
Third-party controllers	2/154, 2/155, 2/156, 2/157
Training	7/2
Turnkey products.....	6/23

W

WinCC add-ons and partner management	4/83, 4/84
WinCC Competence Center	7/6
WinCC flexible /Archives	4/19
WinCC flexible /Audit	4/21
WinCC flexible /ChangeControl	4/18
WinCC flexible /OPC-Server	4/31
WinCC flexible /ProAgent	4/33
WinCC flexible /Recipes	4/20
WinCC flexible /Sm@rtAccess	4/24, 4/25, 4/26
WinCC flexible /Sm@rtService	4/28
WinCC/Calendar Scheduler	4/75
WinCC/Central Archive Server (CAS)	4/59
WinCC/ChangeControl & WinCC/Audit	4/78
WinCC/Client Access License (CAL)	4/73
WinCC/Connectivity Pack & WinCC Connectivity Station ...	4/69
WinCC/DataMonitor	4/65
WinCC/DowntimeMonitor	4/67
WinCC/IndustrialDataBridge	4/71
WinCC/IndustrialX	4/81
WinCC/Open Development Kit (ODK)	4/82
WinCC/ProAgent	4/64
WinCC/Redundancy	4/60
WinCC/Server	4/53
WinCC/User Archives	4/74
WinCC/Web Navigator	4/54
Wind farms	6/35

	Page
2XV9	
2XV9 450	4/51
6AG4	
6AG4 070	5/177, 5/188
6AG4 104	5/21
6AG4 114	5/40
6AR1	
6AR1 403	5/206, 5/208, 5/212, 5/214
6AR1 405	5/206, 5/210
6AV3	
6AV3 671	6/41
6AV3 678	2/175
6AV3 688	2/10, 2/13, 6/41
6AV3 991	6/41
6AV6	
6AV6 371	4/45, 4/47, 4/53, 4/57, 4/59, 4/60, 4/64, 4/66, 4/70, 4/72, 4/73, 4/74, 4/79, 4/82, 4/89
6AV6 372	4/68, 4/75
6AV6 381	4/45, 4/46, 4/47, 4/48, 4/49
6AV6 551	2/100, 2/106
6AV6 574	2/167, 2/168, 2/173, 2/175, 2/176, 2/177, 2/178, 2/179, 6/29
6AV6 610	4/8
6AV6 611	4/8
6AV6 612	4/8, 4/9
6AV6 613	4/8, 4/9, 4/14, 4/18
6AV6 618	4/15, 4/19, 4/20, 4/21, 4/27, 4/30, 4/32, 4/33, 4/89
6AV6 621	2/84, 2/88, 2/93, 2/100, 2/106, 3/24
6AV6 622	2/110, 2/115, 2/129, 2/138, 3/30, 3/35
6AV6 640	2/20, 2/23, 2/27
6AV6 641	2/79, 2/84, 2/88
6AV6 642	2/93, 2/100, 2/106, 2/120, 2/121, 3/24, 6/47, 6/54
6AV6 643	2/110, 2/115, 2/128, 3/30, 6/32, 6/54, 6/56
6AV6 644	2/138, 3/7, 6/54, 6/56, 6/62
6AV6 645	2/41, 2/49, 2/64, 2/168, 2/179, 6/44
6AV6 646	5/204, 3/9
6AV6 647	2/75
6AV6 650	2/23, 2/27
6AV6 651	2/41, 2/49, 2/65, 2/75, 2/79, 2/84, 2/88, 2/93
6AV6 652	2/75, 2/120, 2/128, 2/129, 2/138, 2/145, 2/146,
6AV6 653	3/9, 5/204
6AV6 671	2/20, 2/41, 2/49, 2/64, 2/160, 2/168, 2/170, 2/171, 2/172, 2/173, 2/174, 2/175, 2/176, 2/177, 2/178, 2/179, 2/180, 3/40, 3/46, 5/108, 5/117, 5/126, 5/136, 5/187, 5/188, 5/204, 5/232, 6/44
6AV6 675	2/176, 6/46, 6/64
6AV6 691	2/23, 2/27, 2/41, 2/49, 2/65, 2/75, 2/79, 2/84, 2/88, 2/93, 2/100, 2/106, 2/110, 2/115, 2/121, 2/129, 2/138, 3/24, 3/30, 3/35, 4/9, 4/15
6AV7	
6AV7 20	3/50, 3/53
6AV7 461	6/50
6AV7 466	6/22
6AV7 476	6/58
6AV7 486	6/58
6AV7 671	3/40, 3/46, 5/108, 5/117, 5/126, 5/136, 5/187, 5/188, 5/193, 5/231
6AV7 672	2/179, 3/40, 3/46, 5/108, 5/117, 5/126, 5/136, 5/177, 5/187, 5/188, 5/193, 5/204, 6/26
6AV7 674	3/16, 3/17, 3/18, 3/19
6AV7 675	3/50, 3/53
6AV7 860	5/193, 5/199
6AV7 861	3/11, 5/193
6AV7 862	5/199
6AV7 87	5/132
6AV7 870	5/135
6AV7 871	5/135
6AV7 872	5/135, 6/54

6AV7 (continued)

6AV7 873	5/135
6AV7 875	5/135
6AV7 883	5/185
6AV7 884	5/185, 5/190
6AV7 890	5/126
6AV7 891	5/126
6AV7 892	5/126
6AV7 893	5/126
6AV7 894	5/126
6BQ3	
6BQ3 030	5/220
6EP1	
6EP1 931	3/40, 3/46, 5/126, 5/136, 5/235, 5/236
6EP1 935	3/40, 3/46, 5/126, 5/136, 5/236, 5/237, 5/238
6EP1 975	5/240
6ES7	
6ES7 272	2/17, 2/179
6ES7 298	2/20
6ES7 648	2/173, 3/40, 3/46, 5/21, 5/30, 5/40, 5/49, 5/59, 5/70, 5/79, 5/87, 5/108, 5/117, 5/126, 5/136, 5/177, 5/187, 5/188, 5/216, 5/219, 5/221, 5/227, 5/228
6ES7 652	4/51
6ES7 658	4/23, 4/80
6ES7 671	2/145, 5/149, 5/158, 5/190
6ES7 675	5/175, 5/177
6ES7 677	5/173
6ES7 790	5/21, 5/30, 5/40, 5/49, 5/59, 5/70, 5/79, 5/87, 5/177
6ES7 806	5/162
6ES7 840	4/63
6ES7 900	3/40, 3/46, 5/21, 5/30, 5/40, 5/49, 5/59, 5/79, 5/87, 5/126, 5/136, 5/231
6ES7 901	2/17, 2/20, 2/164
6ES7 972	2/165
6ES7 648	5/199, 5/211
6ES7 790	5/226, 5/243
6ES7 901	4/16
6ES7 972	4/16
6FC5	
6FC5 235	3/40, 3/46, 5/108, 5/117, 5/126, 5/136, 5/187, 5/188
6FC5 247	5/229
6GF6	
6GF6 220	5/196
6GF6 520	5/244, 5/245
6GF6 710	5/241, 5/242
6GF6 980	5/243
6GK1	
6GK1 160	5/149, 5/158, 5/177, 5/248
6GK1 161	4/15, 4/48, 4/49, 5/149, 5/158, 5/249, 5/252, 5/255
6GK1 500	2/165, 5/266, 5/268, 5/270, 5/272, 5/280, 5/282
6GK1 551	4/16, 4/39, 4/49, 4/50, 5/278
6GK1 560	5/149, 5/158, 5/177, 5/266
6GK1 561	4/15, 4/16, 4/39, 4/48, 4/50, 5/149, 5/158, 5/280
6GK1 562	4/16, 4/39, 4/48, 4/50, 5/149, 5/158, 5/282
6GK1 704	4/48, 4/49, 5/256, 5/257, 5/278, 5/280, 5/282, 5/285
6GK1 706	5/259, 5/261, 5/262
6GK1 713	4/15, 4/49, 4/50, 5/266, 5/268, 5/270, 5/272
6GK1 716	4/15, 4/48, 4/49, 4/50, 5/252, 5/254, 5/255
6GK1 901	2/166, 5/248, 5/249, 5/254
6GK5	
6GK5 204	5/248
6GK5 408	5/254
6GK5 786	2/64
6GK5 791	2/65
6XV1	
6XV1 440	2/41, 2/49, 2/167, 6/44
6XV1 870	2/166, 5/248, 5/249, 2/164

Length key for connecting cables

Length key

Length key for connecting cables

On connecting cables whose length is freely selectable according to the following lists, the blanks (...) in the Order 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

Length of the connecting cable = Multiplier x length key	Order No. supplement of the connecting cable
Multiplier	6XV ...-.....
• 00.1 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 6XV1 404-0A... connecting cable must be 16 m long. Multiplier 1.0 m (N) x length digit 16 (16) gives a length of 16 m. The Order No. supplement is N16. This is entered in the blank spaces of the Order No.
The complete Order No. for the 16 m long connecting cable is then **6XV1 404-0AN16**.

Length key for 6ES5 connecting cables

6ES5 ... connecting cables

Length of the connecting cable in m	Order No. supplement of the connecting cable
	6ES5 ...-.....
1.0	6ES5 ...-..BB00
1.6	6ES5 ...-..BB60
2.0	6ES5 ...-..BC00
2.5	6ES5 ...-..BC50
3.0	6ES5 ...-..BD00
3.2	6ES5 ...-..BD20
5.0	6ES5 ...-..BF00
8.0	6ES5 ...-..BJ00
10.0	6ES5 ...-..CB00
12.0	6ES5 ...-..CB20
16.0	6ES5 ...-..CB60
20.0	6ES5 ...-..CC00
25.0	6ES5 ...-..CC50
32.0	6ES5 ...-..CD20
40.0	6ES5 ...-..CE00
50.0	6ES5 ...-..CF00
63.0	6ES5 ...-..CG30
80.0	6ES5 ...-..CJ00
100.0	6ES5 ...-..DB00
120.0	6ES5 ...-..DB20
150.0	6ES5 ...-..DB50
160.0	6ES5 ...-..DB60
200.0	6ES5 ...-..DC00
250.0	6ES5 ...-..DC50
320.0	6ES5 ...-..DD20
400.0	6ES5 ...-..DE00
500.0	6ES5 ...-..DF00
600.0	6ES5 ...-..DG00
630.0	6ES5 ...-..DG30
800.0	6ES5 ...-..DJ00
1000.0	6ES5 ...-..EB00

Appendix

Catalog improvement suggestions

Fax form

To

Siemens AG, I IA AS SM ID 2
ST 80 / ST PC · 2010 / Ms. B. Beyer
Gleiwitzer Str. 555
90475 Nürnberg

Fax. +49/911-895-15 31 14

Your address

Name

Job

Company/Department

Street/No.

Postal code/City

Tel. No./Fax

E-mail address

Your opinion is important to us!

Our catalog should be an important and frequently used document. For this reason we are continuously endeavoring to improve it.

A small request on our part to you:
Please take time to fill in the following form and fax it to us.
Thank You!

We invite you to grade our catalog on a point system from 1 (= good) to 6 (= poor):

Do the contents of the catalog live up to your expectations? ☐

Do the technical details meet your expectations? ☐

Is the information easy to find? ☐

How would you assess the graphics and tables? ☐

Can the texts be readily understood? ☐

Did you find any printing errors?

Conditions of sale and delivery Export regulations

Terms and Conditions of Sale and Delivery

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following terms. Please note! The scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following terms apply exclusively for orders placed with Siemens AG.

For customers with a seat or registered office in Germany

The "General Terms of Payment" as well as the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry" shall apply.

For software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany" shall apply.

For customers with a seat or registered office outside of Germany

The "General Terms of Payment" as well as the "General Conditions for Supplies of Siemens Automation and Drives for Customers with a Seat or registered Office outside of Germany" shall apply.

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" shall apply.

General

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches only apply to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages, - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

Surcharges will be added to the prices of products that contain silver, copper, aluminum, lead and/or gold if the respective basic official prices for these metals are exceeded. These surcharges will be determined based on the official price and the metal factor of the respective product.

The surcharge will be calculated on the basis of the official price on the day prior to receipt of the order or prior to the release order.

The metal factor determines the official price as of which the metal surcharges are charged and the calculation method used. The metal factor, provided it is relevant, is included with the price information of the respective products.

An exact explanation of the metal factor and the text of the Comprehensive Terms and Conditions of Sale and Delivery are available free of charge from your local Siemens business office under the following Order Nos.:

- 6ZB5310-0KR30-0BA1
(for customers based in Germany)
- 6ZB5310-0KS53-0BA1
(for customers based outside Germany)

or download them from the Internet
www.siemens.com/industrymall
(Germany: Industry Mall Online-Help System)

Export regulations

Our obligation to fulfill this agreement is subject to the proviso that the fulfillment is not prevented by any impediments arising out of national and international foreign trade and customs requirements or any embargos and/or other sanctions.

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 shall comply with all applicable national and international (re-) export control regulations.

If required to conduct export control checks, you, upon request by us, shall promptly provide us with all information pertaining to particular end customer, destination and intended use of goods, works and services provided by us, as well as any export control restrictions existing.

The products listed in this catalog / price list may be subject to European / German and/or US export regulations.

Therefore, any export requiring a license is subject to approval by the competent authorities.

According to current provisions, the following export regulations must be observed with respect to the products featured in this catalog / price list:

AL	<p>Number of the <u>German Export List</u></p> <p>Products marked other than "N" require an export license.</p> <p>In the case of software products, the export designations of the relevant data medium must also be generally adhered to.</p> <p>Goods labeled with an "<u>AL" not equal to "N"</u>" are subject to a European or German export authorization when being exported out of the EU.</p>
ECCN	<p><u>Export Control Classification Number</u></p> <p>Products marked other than "N" are subject to a reexport license to specific countries.</p> <p>In the case of software products, the export designations of the relevant data medium must also be generally adhered to.</p> <p>Goods labeled with an "<u>ECCN" not equal to "N"</u>" are subject to a US re-export authorization.</p>

Even without a label or with an "AL: N" or "ECCN: N", authorization may be required due to the final destination and purpose for which the goods are to be used.

The deciding factors are the AL or ECCN export authorization indicated on order confirmations, delivery notes and invoices.

Errors excepted and subject to change without prior notice.

I 1A/DT /VuL_ohne MZ/En 07.07.10

Industry Automation, Drive Technologies and Low Voltage Distribution

Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

Interactive Catalog on DVD		<i>Catalog</i>
for Industry Automation, Drive Technologies and Low Voltage Distribution	CA 01	
Drive Systems		
<u>Variable-Speed Drives</u>		
SINAMICS G110, SINAMICS G120	D 11.1	
Standard Inverters		
SINAMICS G110D, SINAMICS G120D		
Distributed Inverters		
SINAMICS G130 Drive Converter Chassis Units	D 11	
SINAMICS G150 Drive Converter Cabinet Units		
SINAMICS GM150, SINAMICS SM150	D 12	
Medium-Voltage Converters		
SINAMICS S120 Chassis Format Units and Cabinet Modules	D 21.3	
SINAMICS S150 Converter Cabinet Units		
SINAMICS DCM Converter Units	D 23.1	
<u>Three-phase Induction Motors</u>	D 84.1	
• H-compact		
• H-compact PLUS		
Asynchronous Motors Standardline	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	
<i>PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	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	
SIMOVERT MASTERDRIVES Vector Control	DA 65.10	
SIMOVERT MASTERDRIVES Motion Control	DA 65.11	
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3	
SIMODRIVE 611 universal and POSMO	DA 65.4	
SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21	
SINAMICS S110	PM 22	
The Basic Positioning Drive		
<u>Low-Voltage Three-Phase-Motors</u>		
IEC Squirrel-Cage Motors	D 81.1	
MOTOX Geared Motors	D 87.1	
<u>Automation Systems for Machine Tools SIMODRIVE</u>	NC 60	
• Motors		
• Converter Systems SIMODRIVE 611/POSMO		
<u>Automation Systems for Machine Tools SINAMICS</u>	NC 61	
• Motors		
• Drive System SINAMICS S120		
<u>Drive and Control Components for Hoisting Equipment</u>	HE 1	
<u>Mechanical Driving Machines</u>		
Flender Standard Couplings	MD 10.1	
Electrical Installation Technology		
<i>PDF: ALPHA Distribution Boards and Terminal Blocks</i>	ETA 1	
<i>PDF: ALPHA 8HP Molded-Plastic Distribution System</i>	ETA 3	
<i>PDF: BETA Low-Voltage Circuit Protection</i>	ET B1	
<i>PDF: DELTA Switches and Socket Outlets</i>	ET D1	
<i>PDF: GAMMA Building Management Systems</i>	ET G1	
<i>PDF: These catalogs are only available as pdf files.</i>		
Motion Control		<i>Catalog</i>
SINUMERIK & SIMODRIVE	NC 60	
Automation Systems for Machine Tools		
SINUMERIK & SINAMICS	NC 61	
Equipment for Machine Tools		
SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21	
SINAMICS S110	PM 22	
The Basic Positioning Drive		
Low-Voltage		
Controls and Distribution – SIRIUS, SENTRON, SIVACON	LV 1	
SICUBE System Cubicles and Cubicle Air-Conditioning	LV 50	
<i>PDF: SIDAC Reactors and Filters</i>	LV 60	
<i>PDF: SIVACON 8PS Busbar Trunking Systems</i>	LV 70	
Low-Voltage Controls and Distribution – SIRIUS, SENTRON, SIVACON	LV 90	
Power Supply and System Cabling		
Power supply SITOP	KT 10.1	
System cabling SIMATIC TOP connect	KT 10.2	
Process Instrumentation and Analytics		
Field Instruments for Process Automation	FI 01	
<i>PDF: Indicators for panel mounting</i>	MP 12	
SIREC Recorders and Accessories	MP 20	
SIPART, Controllers and Software	MP 31	
Products for Weighing Technology	WT 10	
Process Analytical Instruments	PA 01	
<i>PDF: Process Analytics, Components for the System Integration</i>	PA 11	
Safety Integrated		
Safety Technology for Factory Automation	SI 10	
SIMATIC HMI		
Human Machine Interface Systems	ST 80	
SIMATIC Industrial Automation Systems		
Products for Totally Integrated Automation and Micro Automation	ST 70	
SIMATIC PCS 7 Process Control System	ST PCS 7	
Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7.1	
<i>PDF: Migration solutions with the SIMATIC PCS 7 Process Control System</i>	ST PCS 7.2	
pc-based Automation	ST PC	
SIMATIC NET		
Industrial Communication	IK PI	
SIMATIC Sensors		
Sensor Technology for Factory Automation	FS 10	
Industrial Identification Systems	ID 10	
System Solutions		
Applications and Products for Industry are part of the interactive catalog CA 01		

Download-Center

PDF versions of the catalogs are available on the Internet at:
www.siemens.com/automation/infocenter

Siemens AG
Industry Sector
Industrial Automation Systems
Postfach 48 48
90026 NÜRNBERG
GERMANY

Subject to change without prior notice
Order No. E86060-K4680-A101-B7-7600
3P.8201.04.01 / Dispo 07900
KG 0910 13.0 VOD 712 En / [IWI TSTE](#)
Printed in Germany
© Siemens AG 2010

www.siemens.com/automation

The information provided in this catalog contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.
All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.