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Catalog ST 80 · 2008

simatic hmi

Human Machine
Interface Systems

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Siemens Automation and Drives. Welcome

More than 60,000 people aiming for the same goal: increasing your competitiveness. That's Siemens Automation and Drives.

We offer you a comprehensive portfolio for sustained success in your sector, whether you're talking automation engineering, drives or electrical installation systems. Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) form the core of our offering. TIA and TIP are the basis of our integrated range of products and systems for the manufacturing and process industries as well as building automation. This portfolio is rounded off by innovative services over the entire life cycle of your plants.

Learn for yourself the potential our products and systems offer. And discover how you can permanently increase your productivity with us.

Your regional Siemens contact can provide more information. He or she will be glad to help.

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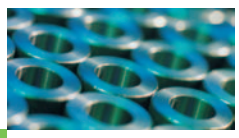

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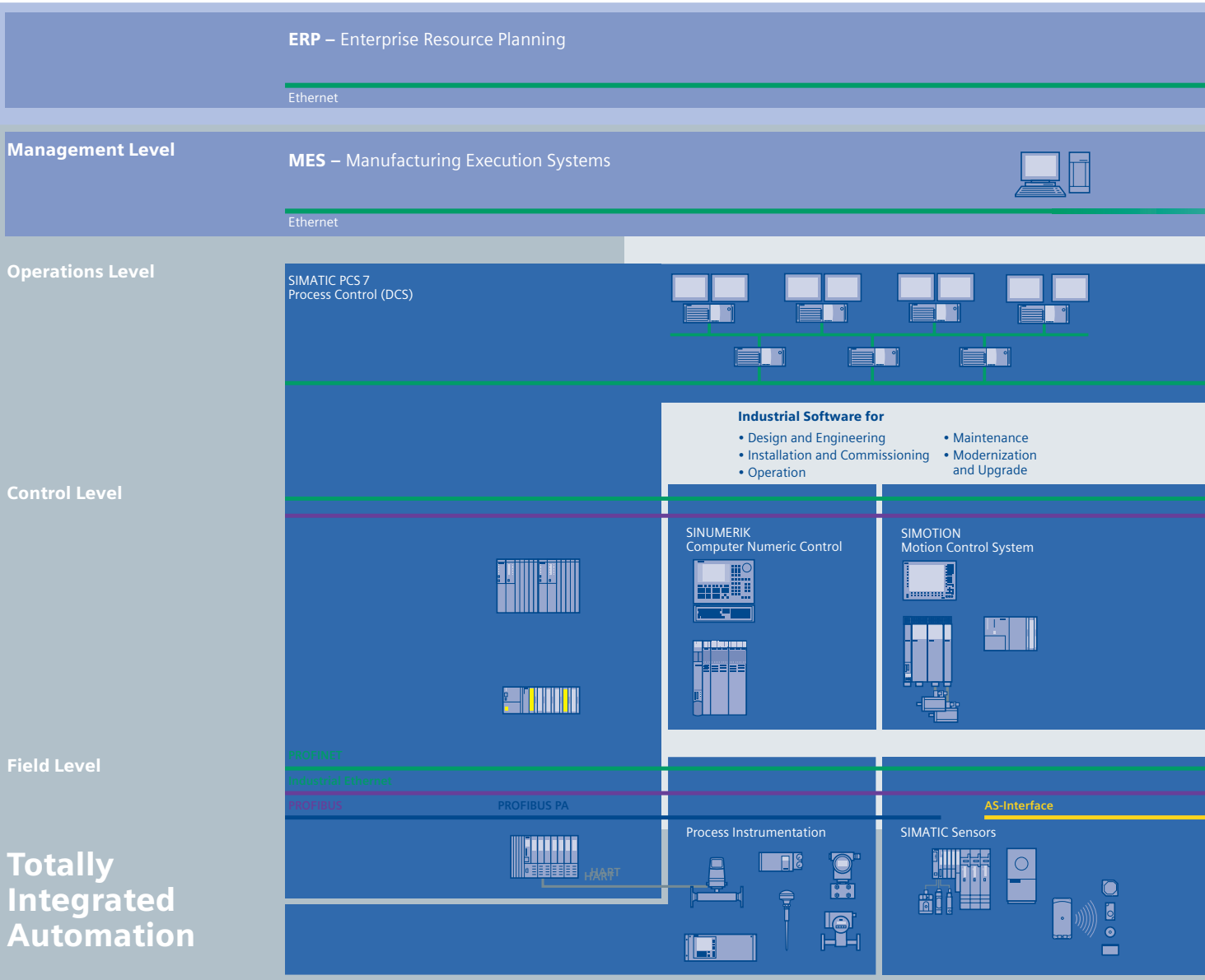
Sharpen your competitive edge. Totally Integrated Automation

With Totally Integrated Automation (TIA), Siemens is the only manufacturer to offer an integrated range of products and systems for automation in all sectors – from incoming goods to outgoing goods, from the field level through the production control level to connection with the corporate management level.

On the basis of TIA, we implement solutions that are perfectly tailored to your specific requirements and are characterized by a unique level of integration. This integration not only ensures significant reductions in interface costs but also guarantees the highest level of transparency across all levels.



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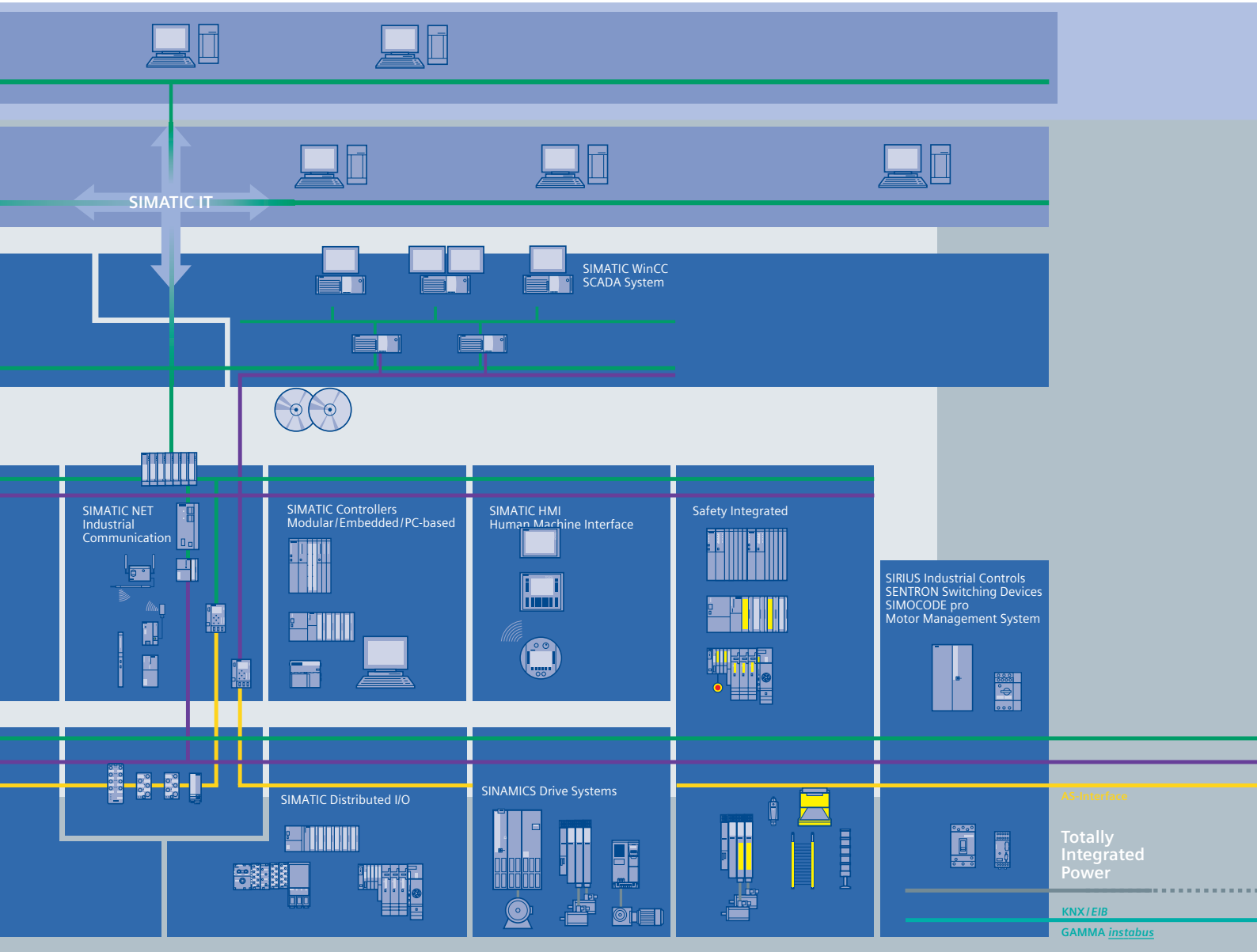
It goes without saying that you profit from Totally Integrated Automation during the entire life cycle of your plants – from the first planning steps, through operation, right up to modernization. Consistent integration in the further development of our products and systems guarantees a high degree of investment security here.

Totally Integrated Automation makes a crucial contribution towards optimizing everything that happens in the plant and thus creates the conditions for a significant increase in productivity.



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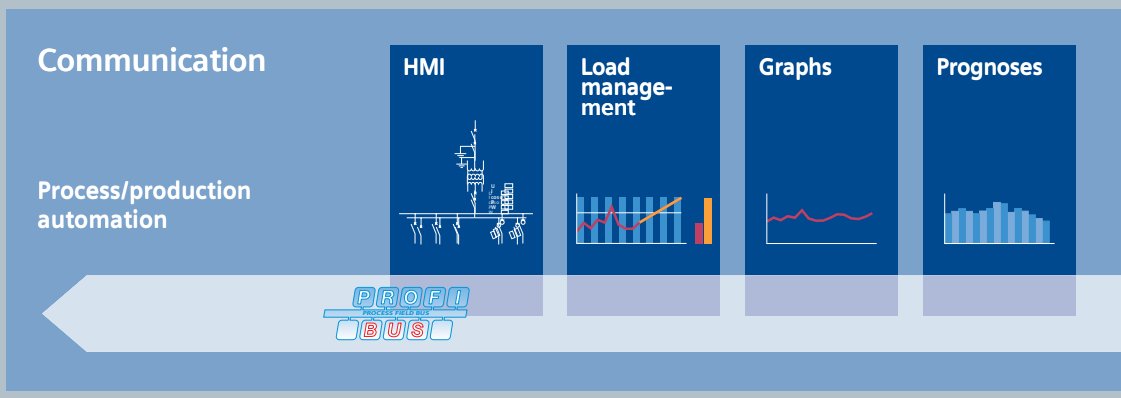
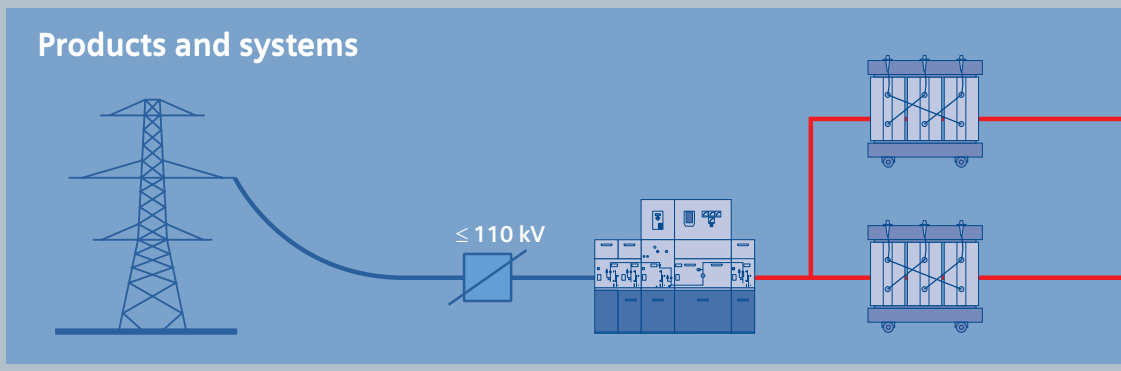
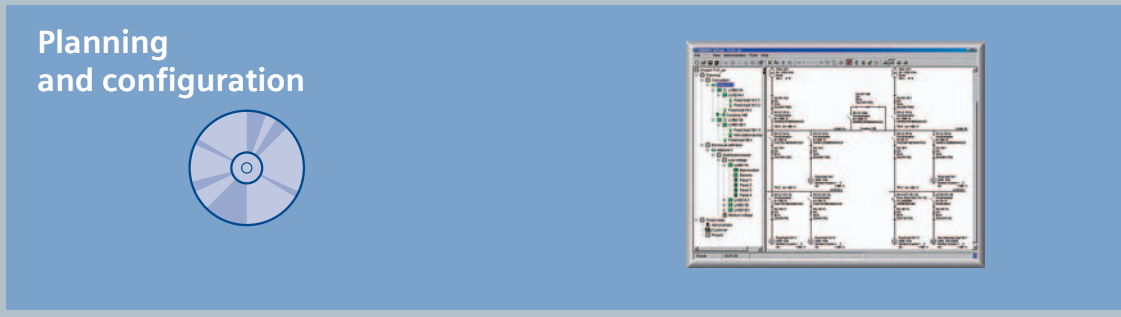
Integrated energy distribution from a single source. Totally Integrated Power

Totally Integrated Power (TIP) brings together all the components of electrical energy distribution into an integrated whole. Thus TIP provides the answer to growing market demands in the planning, construction and use of utility buildings and industrial buildings.

On the basis of TIP, we offer integrated solutions for energy distribution, from medium voltage to the power outlet. Totally Integrated Power is based here on integration in planning and configuring as well as on perfectly matched products and systems.







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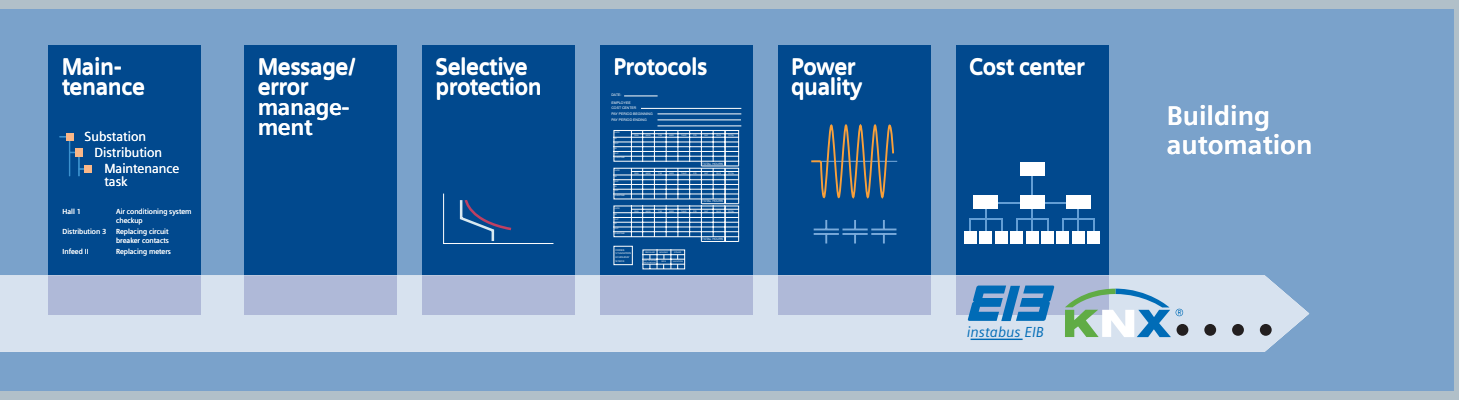
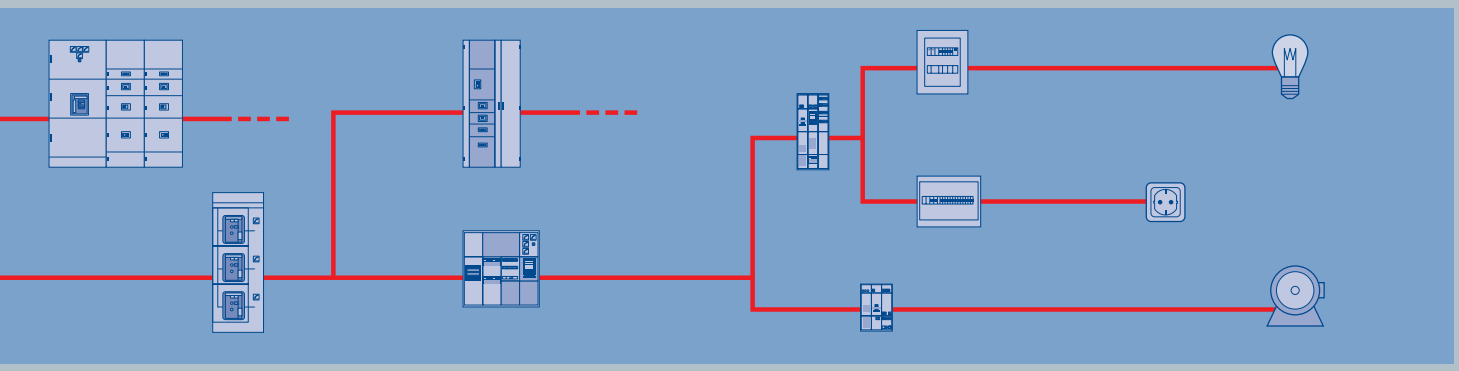
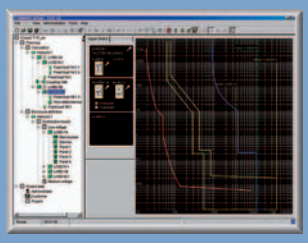
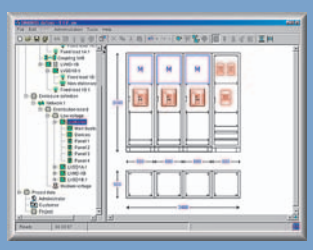
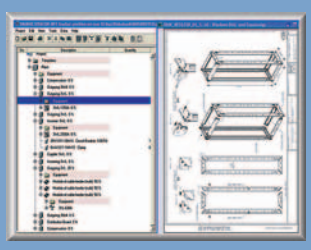
Totally Integrated Power offers communication and software modules for connecting the energy distribution systems to industrial automation and building automation. This enables the implementation of significant savings potential.











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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 A&D offers a complete spectrum of innovative and low-cost products and systems for the multifaceted 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. Products are available which are specifically adapted to the needs of special industrial sectors, such as operator panels with stainless steel fronts especially designed 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. Connectability to almost every controller on the market as well as multiple language capability of the configuring 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 asp specified by the FDA (Food and Drug Administration) 21 CFR Part 11 for the food, beverages and pharmaceutical industries.

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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.

More than just operator control and monitoring

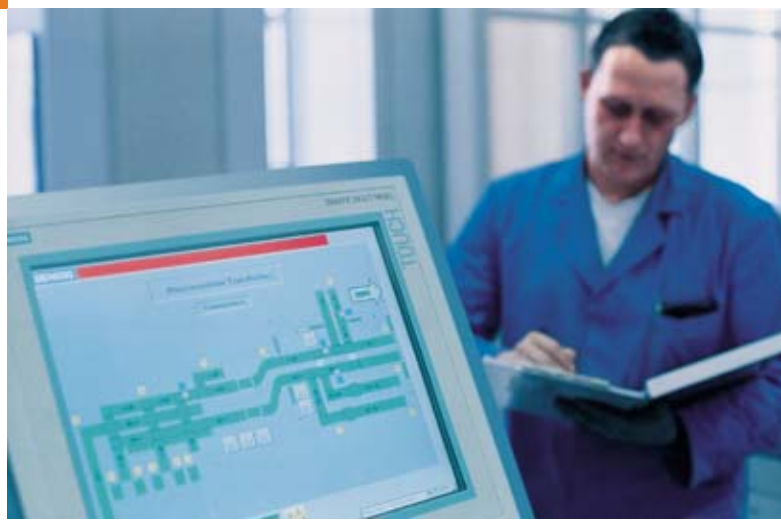
The Multi Panels under Windows CE combine the advantages of two worlds: On the one hand, the ruggedness of an operator panel and on the other hand the flexibility typical of a PC. Apart from classical operator control and monitoring, other automation functions such as control functions can execute simultaneously. 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. And with SIMATIC ProAgent, process error diagnostic messages from the controller can be displayed on the operator panels or visualization systems – without any extra project costs for the HMI system and without additional diagnostic instruments.



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

The Human Machine Interface

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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

SIMATIC Push Button Panels
Input fields connected to the bus for easy, direct machine operation.

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

SIMATIC Mobile Panels
Mobile operator panels for direct operator control of the plant and machine from any location.

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.

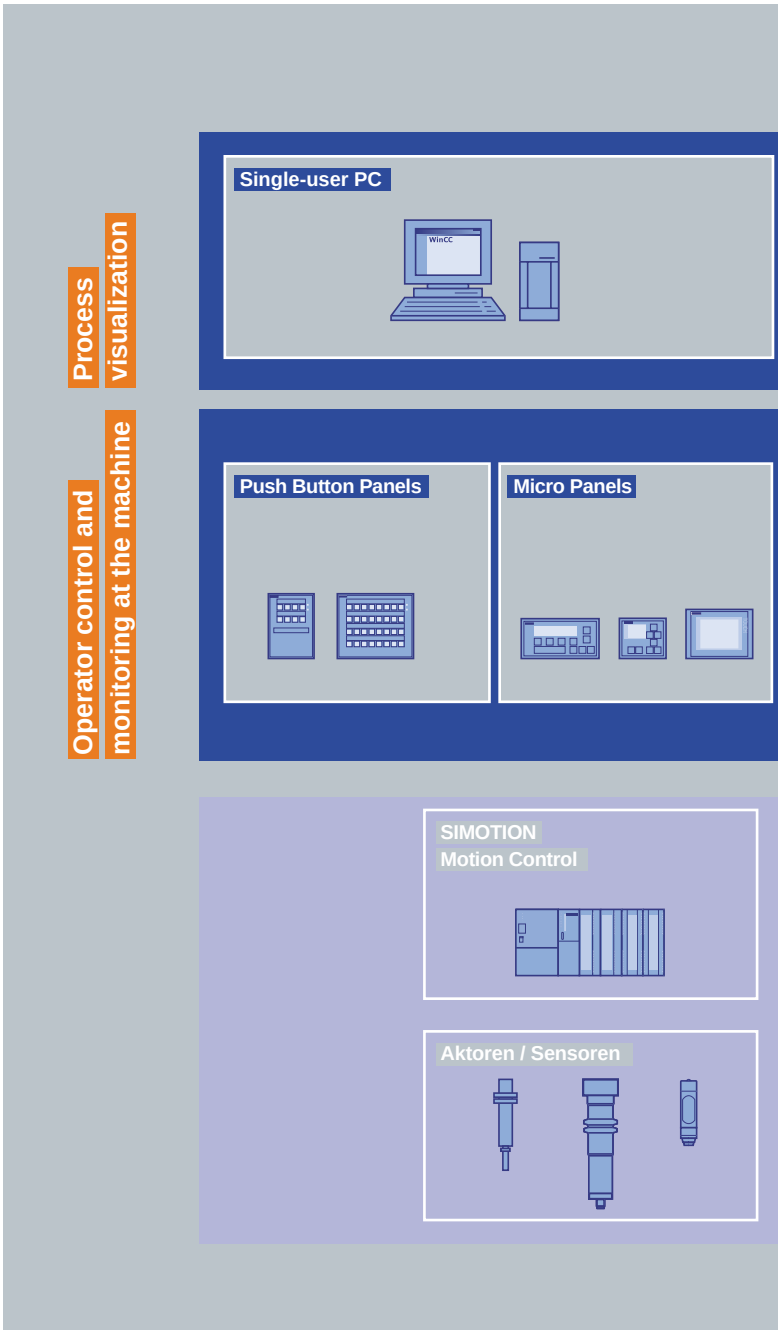
SIMATIC Multi Panels
Multifunctional platforms that, in addition to visualization, also perform other automation tasks such as controlling.

SIMATIC WinAC MP 2007
The software PLC can be used on the Multi Panels of the 270 and 370 series and are suitable for complex processes in which control and visualization tasks are to be solved with one and the same device.

SIMATIC Thin Client
SIMATIC Thin Clients are inexpensive, robust operator stations providing panel functionality directly on-site for systems covering a relatively large area. These are used in Client-Server applications.

SIMATIC 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.

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 configuring efficiency and features additional options for operation, service and diagnostics via the Web.



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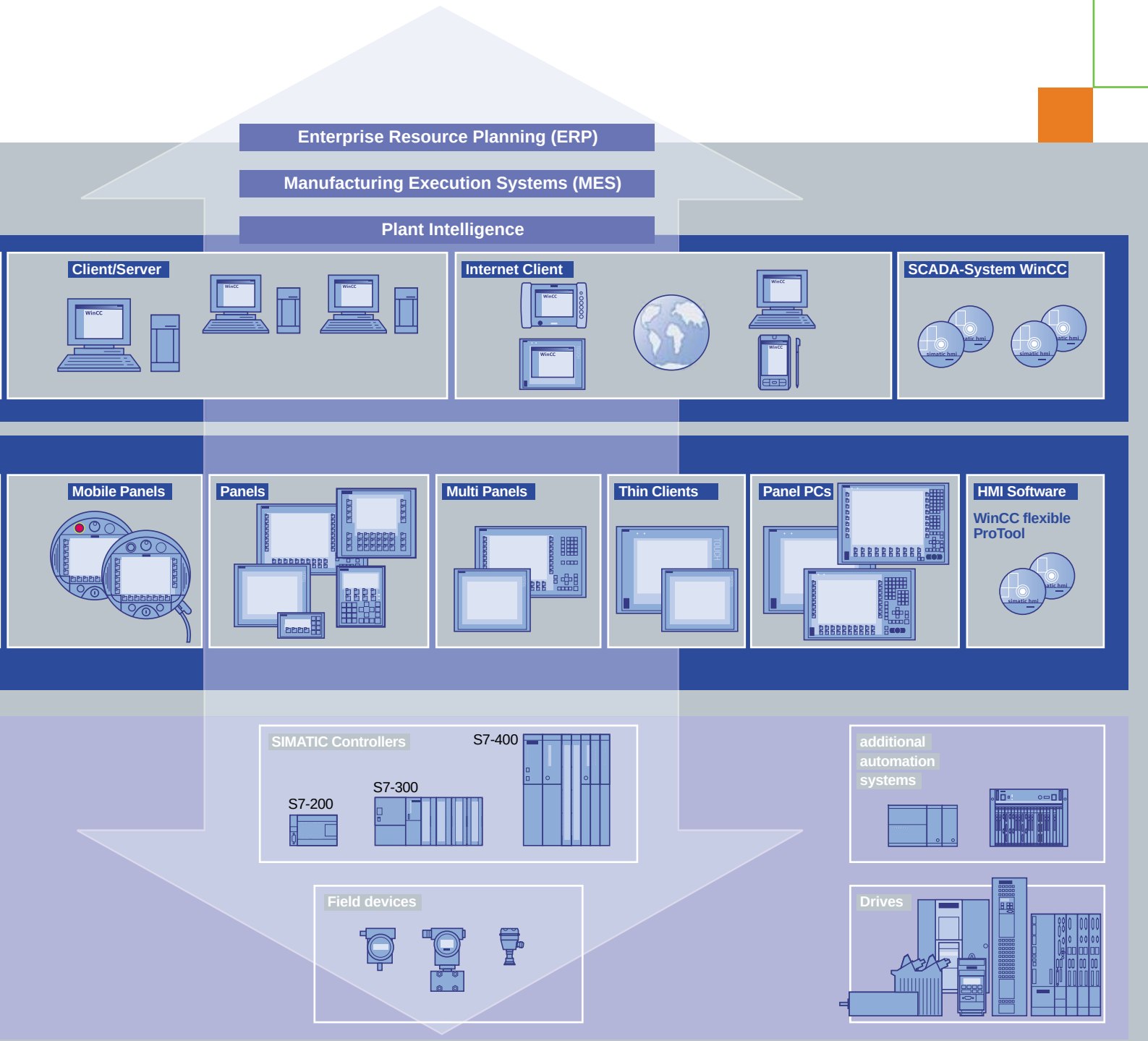

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Protecting the environment and resources. Environmental sustainability

Environmental protection will continue to grow in importance as a result of progressive urbanization and global population growth. These global mega-trends make the careful and sustainable handling of natural resources a central challenge.

We are convinced that every individual – and especially every company – has an ecological responsibility. At Siemens Automation and Drives, we stand by this conviction. Our high environmental protection goals are part of our strict environmental management. We investigate the possible effects of our products and systems on the environment right back at the development stage. We concern ourselves, for example, with the question of how to reduce power consumption in plant operation – and we offer appropriate solutions, such as our energy-saving motors that cut power consumption in industrial manufacturing by up to 40% thanks to their high efficiency levels.

Our products and systems comply with the EC Directive RoHS (Restriction of Hazardous Substances). All the relevant Siemens AG sites are, of course, certified in accordance with DIN EN ISO 14001.

Our commitment goes well beyond compliance with the relevant directives and legislation: we are an active driving force behind environmental protection, through further development of environmental management systems, for example, and we are involved in professional associations such as the German Electrical and Electronic Manufacturers Association (ZVEI).

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Operator Control and Monitoring Devices

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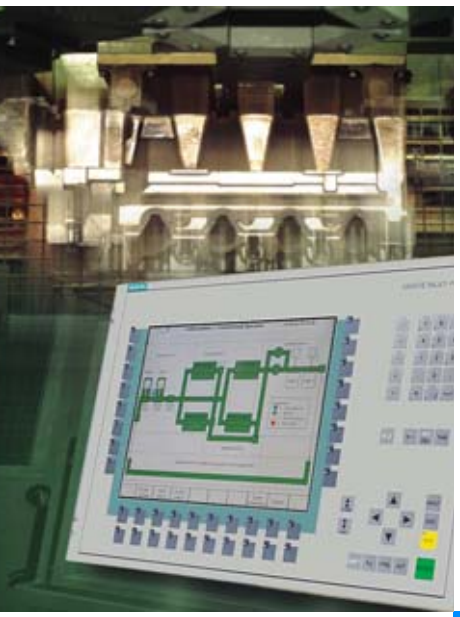

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Introduction

Overview

A finely graded range of HMI devices is available for local operator control and monitoring. These include Push Button Panels, Micro Panels, Panels, Multi Panels, and even Mobile Panels.

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.

Panels

70/170/270 series Graphic Panels
with pixel-graphics display for realistic representation of sequences (in color), either as Touch Panels (TPs) with touch-sensitive display, as Operator Panels (OPs) with membrane keyboard or as combined Touch/Key on the OP 177B.

Multi Panels

270/370 series
These can be used for operator control and monitoring in the same way as the panels, with operation by means of touch screens 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.

WinAC MP 2007
The software PLC can be used on the Multi Panels of the 270 and 370 series (not on the MP 370) and are suitable for complex processes in which control and visualization tasks are to be solved with one and the same device.

Thin Client
SIMATIC Thin Clients are inexpensive, robust 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.

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 configuration software for everything

SIMATIC WinCC flexible is a tool for continued configuration 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 configuration. Programming experience is not required.

Completed configurations can be reused within the family.

Component of Totally Integrated Automation

Siemens provides the complete modular system of matched components for automation solutions from one source and – with Totally Integrated Automation – one of the most successful automation concepts worldwide. SIMATIC WinCC flexible is an integral component of this world. It offers crucial advantages. Thanks to the uniformity in configuration/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/PC/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 includes, for example, Chinese, Taiwanese, Korean, Japanese or Russian. The configuration 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.

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Configuration 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)	● 2)
• Mobile Panel 277(F) IWLAN			● 3)	● 3)
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 6”			● 2)	● 2)
Multi Panels – 270 Series				
• MP 277			●	●
Multi Panels – 370 Series				
• MP 370			●	●
• MP 377			● 3)	● 3)

● Possible

1) WinCC flexible 2005 and higher
2) WinCC flexible 2005 SP1 and higher
3) WinCC flexible 2007 and higher

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Introduction

Technology overview

	Micro Panels	Mobile Panels	Panels		
			70 Series	170 Series	270 Series
	TD 100C [1] / *TD 200/ TD 200C* [1] *OP 73micro TP 177micro*	*Mobile Panel 177/ Mobile Panel 277/ Mobile Panel 277(F) IWLAN*	*OP 73 OP 77A/B*	*TP 177A TP/OP 177B*	*TP/OP 277*
Display	*TD 100C TD 200/ TD 200C:* Text display *OP 73micro:* 3" LCD *TP 177micro:* 5.7" STN	*Mobile Panel 177*: 5.7" STN; *Mobile Panel 277 / 277(F) IWLAN*: 7.5" TFT	*OP 73:* 3" LCD *OP 77A/B*: 4.5" LCD	5.7" STN	5.7" TFT
• Colors	*TD 100C TD 200/ TD 200C/ OP 73micro:* Monochrom *TP 177micro:* 4 shades of blue	*Mobile Panel 177*: 256 colors; *Mobile Panel 277 / 277(F) IWLAN:* 64k colors	Monochrome	*TP 177A:* 4 shades of blue *TP/OP 177B:* 4 shades of blue/ 256 colors	256 colors
Control elements					
• Membrane keyboard	● (TD 200/TD 200C/ OP 73micro)	–	●	●	●
• Touchscreen	● (TP 177micro)	–	–	●	●
• Membrane keyboard and Touch	–	●	–	● (OP 177B only)	–
Interfaces/protocols					
• Serial / MPI / PROFIBUS DP	● / ● / –	● [9] / ● [9] / ● [9]	● / ● / ●	● / ● / ●	● / ● / ●
• USB / Ethernet / WLAN	– / –	● [10] / ● [5] / ● [11]	● [3] / –	● / ● [7]	● / ●
• Multi Media Card / CF / PC Card Slot	– / – / –	● / – / –	● [3] / – / –	● / ● [4] / –	● / – / –
Memory (available for user data)	*TD 100C TD 200/ TD 200C/ OP 73micro:* 128 KByte *TP 177micro:* 256 KByte	*Mobile Panel 177*: 2048 KByte; *Mobile Panel 277 / 277(F) IWLAN*: 6 MByte	*OP 73/OP 77A*: 256 KByte *OP 77B* 1024 KByte	*TP 170A:* 320 KByte *TP 177A:* 512 KByte *TP 170B/ OP 170B:* 768 KByte *TP/OP 177B: approx.* 2 Mbyte	4 MByte
Connection to controller					
• SIMATIC S7 / WinAC	S7-200 only	● / ● [12]	● / ●	● / ●	● / ●
• SIMATIC S5 / 505	– / –	● [12] / ● [12]	● [6] / ● [6]	● [4] / ● [4]	● / ●
• SINUMERIK / SIMOTION	– / –	● [12] / ● [12]	– / –	● / ● [4]	● / ●
• PLCs from other manufacturers	–	● [12]	● [6]	● [4]	●
Applications/Options with WinCC flexible					
• ProAgent	–	–	–	–	●
• Sm@rtService	–	● [5]	–	● [7]	●
• Sm@rtAccess	–	● [5]	–	● [7]	●
• OPC-Server	–	–	–	–	–
• ThinClient/MP	–	–	–	–	–
• MS Pocket Internet Explorer	–	● [10]	–	–	–
• WinAC MP	–	–	–	–	–

● Available – Not available

1) The configuration of the TD 100C/TD 200/TD 200C is done with Micro/WIN
2) Except OP3
3) Only with OP 77B
4) Not with TP 177A, TP/OP 177B (S5 only)
5) Not with Mobile Panel 177 DP
6) With OP 73 and OP 77A, connection only possible to S7-200/300/400
7) Only with TP/OP 177B color
8) Only with TP/OP 177B
9) Only with Mobile Panel 177 DP/Mobile Panel 277
10) Only Mobile Panel 277/277(F) IWLAN
11) Only Mobile Panel 277(F) IWLAN
12) Not with Mobile Panel 277(F) IWLAN

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Technology overview (continued)

	Multi Panels		
	270 Series *MP 277*	**370 Series** *MP 370*	**377 Series** *MP 377*
Display	7.5" / 10.4" TFT	12.1" / 15.1" TFT	12.1" / 15.1" / 19" TFT
• Colors	65535 colors	256 colors	65535 colors
Control elements			
• Membrane keyboard	●	●	●
• Touchscreen	●	●	●
• Membrane keyboard and Touch	–	–	–
Interfaces/protocols			
• Serial / MPI / PROFIBUS DP	● / ● / ●	● / ● / ●	● / ● / ●
• USB / Ethernet	● / ●	● / ●	● / ●
• Multi-media card / CF / PC card slot	– / ● / ●	– / ● / ●	● / ● / ●
Memory (available for user data)	5 MByte	12 MByte	12 MByte
Connection to controller			
• SIMATIC S7 / WinAC	● / ●	● / ●	● / ●
• SIMATIC S5 / 505	● / ●	● / ●	● / ●
• SINUMERIK / SIMOTION	● / ●	● / ●	● / ●
• PLCs from other manufacturers	●	●	●
Applications / Options with WinCC flexible			
• ProAgent	●	●	●
• Sm@rtService	●	●	●
• Sm@rtAccess	●	●	●
• OPC-Server	●	●	●
• MS Pocket Internet Explorer	●	●	●

● Available

– Not available

	Thin Client	
Display	10" Touch	15" Touch
Control elements		
• Touchscreen	●	●
Interfaces		
• USB / Ethernet	●	●
Memory		
• Flash/RAM	●	●

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Introduction

Functionality (when configuring with WinCC flexible)

	Micro Panels	Mobile Panels	Panels			Multi Panels	
			70 Series	170 Series	270 Series	270 Series	370 Series
	OP 73micro / TP 170micro/ TP 177micro	*Mobile Panel 177 / Mobile Panel 277 / 277(F) IWLAN*	*OP 73 / OP 77A / OP 77B*	*TP 177A TP/OP 177B*	*TP/OP 270 TP/OP 277*	*MP 277*	*MP 370 / MP 377*
• Number of messages	*OP 73micro:* 250 *TP 177micro:* 500	*Mobile Panel 177:* 2000 *Mobile Panel 277 / 277(F) IWLAN:* 4000	*OP 73:* 500 *OP 77A/ OP 77B:* 1000	*TP 177A:* 1000 *TP/OP 177B:* 2000	4000	4000	4000
• Message buffer (number of entries)	128 [3] *OP 73micro:* 100	*Mobile Panel 177:* 256 *Mobile Panel 277 / 277(F) IWLAN:* 512	*OP 73*: 150 *OP 77A/B*: 256 [3]	*TP 177A* [3]*/ TP/OP 177B:* 256	512	512	1024
• Recipes	–	*Mobile Panel 177* 100 *Mobile Panel 277 / 277(F) IWLAN:* 300	*OP 77A:* 5 *OP 77B:* 100	*TP/OP 177B:* 100	300	300	500
• Process images	250	500	500	*TP 177A:* 250 *TP/OP 177B:* 500	500	500	500
• Bar graphs/line graphs (pixel graphics)	● / ● [6]	● / ●	● / –	● / ● [1]	● / ●	● / ●	● / ●
• Variables	*OP 73micro:* 500 *TP 177micro:* 250	*Mobile Panel 177:* 1024 *Mobile Panel 277 / 277(F) IWLAN:* 2048	1000	*TP 177A:* 500 *TP/OP 177B:* 1000	2048	2048	2048
• Archiving	–	● [5]	–	–	●	●	●
• Visual Basic scripts	–	● [5]	–	–	●	●	●
• Online languages	5	5	5	*TP 177A:* 5 *TP/OP 177B:* 16	5	16	*MP 370:* 5 *MP 377:* 16
• User administration (security)	●	●	●	●	●	●	●
• Print functions	–	●	● [2]	● [1]	●	●	●
• PG functions (STATUS/CONTROL) with SIMATIC S5/S7	–	● [5]	–	● [4]	●	●	●

● Available

– Not available

1) Except TP 177A
2) Only with OP 77B
3) Non-retentive
4) Only with TP/OP 177B
5) Only Mobile Panel 277/277(F) IWLAN
6) Only for TP 177micro

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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 configuration and startup easier
- No configuration 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-operated switch)
- Rear-side display with miniature keyboard for displaying operating states in text format and changing standard settings
- 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

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

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SIMATIC PP7

Integration

The push button panels can be connected to

- SIMATIC S7-200/S7-300/S7-400, WinAC Software PLC and Slot PLC over MPI and PROFIBUS DP
- SIMATIC S5 (S5-95/Master or IM 308C) only over PROFIBUS DP
- PROFIBUS DP standard masters from any manufacturers (e.g. Allen Bradley)

System interfaces

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	**SIMATIC PP7** 1) **Connected via**
SIMATIC S7 / SIMATIC WinAC (MPI as master) 2)	
Using MPI interface to **S7-200/-300/-400/ WinAC Software PLC / Slot PLC** (9-pin female connector/RS 485),3)4)	**Bus connector, bus cable and MPI network**
SIMATIC S5/S7 (PROFIBUS DP as standard slave)	
Using PROFIBUS to max. 1 x **S7-200** (CPU 215-DP) with MPI protocol **S7-300/-400** with integrated PROFIBUS interface **S7-300** with CP 342-5 **S7-400** with CP 443-5	**PROFIBUS** 5)
Using PROFIBUS DP to **S5-95U** /PROFIBUS DP master (6ES5 095-8ME02) **S5-115U/S5-135U/S5-155U** with IM 308C/IM 308B **S5-115U/S5-135U/S5-155U** with CP 5430/CP 5431	**PROFIBUS** 5)
Non-Siemens PLCs (PROFIBUS DP master)	
Using PROFIBUS DP	**PROFIBUS** 5)

1) PP7 suitable up to 1.5 Mbit/s
2) Standard PG/PC MPI cable cannot be used
3) S7-200 only over MPI (CPU 212 not possible)
4) S7-200 CPU 215-DP also possible on PROFIBUS DP interface over MPI protocol
5) Bus connector: 6GK1 500-0EA02

Note:

The standard PG/PC MPI cable (6ES7 901-0BF00-0AA0) is not suitable for connecting a PP and a CPU.

Technical specifications

	PP7
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +18 to +30 V
Rated current	0.2 A
Power	5 W
Digital inputs	
Number of digital inputs	4
Voltage (DC)	24 V
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	8 Function keys, 8 with LEDs
Number of keys	8 Short stroke keys
Degree of protection	
Front	IP65
Rear	IP20
Certifications & Standards	
Certifications	CE, FM Class I Div. 2, UL, CSA
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°
max. relative humidity (in %)	95%
Temperature	
• Operation (vertical installation)	0 to +55°C
• Operation (max. tilt angle)	0 to +55°C
• Transport, storage	-20 to +70°C
Type of output	
LED colors	Red, Yellow, green
Color modes for LED	3
Number of LEDs	8
Interfaces	1 x RS-485 (Max. 1.5 Mbit/s)
Lifetime, typ.	
Short-stroke keys (in switching cycles)	1500000
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 x 204 mm
Mounting cutout/Device depth (W x H/D) in mm	130 x 190 / 53 mm Device depth
Weights	
Weight	0.8 kg

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Ordering data

		Order No.
SIMATIC PP7	A	**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)		
Manual for PP7/PP17 1)		
• German		**6AV3 991-1CA00-0AA0**
• English		**6AV3 991-1CA00-0AB0**
• French		**6AV3 991-1CA00-0AC0**
• Italian		**6AV3 991-1CA00-0AD0**
• Spanish		**6AV3 991-1CA00-0AE0**
Brief startup guide		
for PP7, PP17-I, PP17-II		
• German		**6AV3 991-1CA00-1BA0**
• English		**6AV3 991-1CA00-1BB0**
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

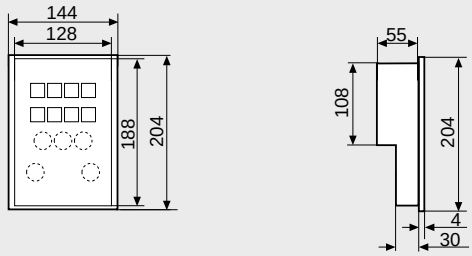
Note:

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

A) Subject to export regulations: AL: N and ECCN: EAR99H

1) Incl. 3.5" diskette with GSD files/type files and Word templates for labeling strips

Dimensions



Panel cutout (W x H x D) in mm: 130 x 190 x 53

G_ST80_XX_00061

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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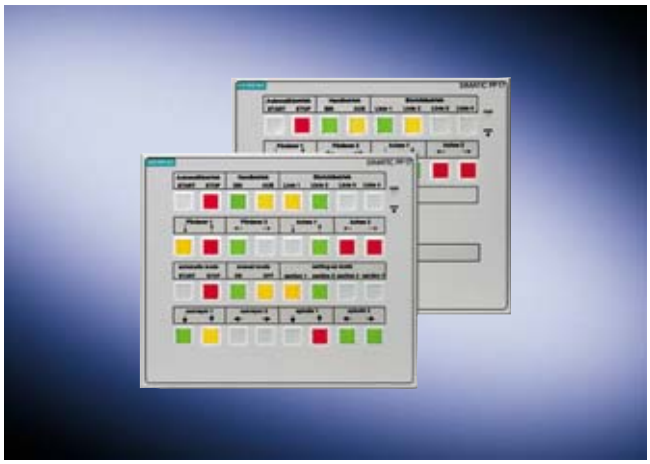
SIMATIC PP17

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 configuration and startup easier
- No configuration 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 in text format and changing standard settings
- 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

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. 1000 ms)
- PROFIBUS DP standard slave

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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 **Target hardware (PROTOCOL)** (connector/physics)	**SIMATIC PP17** [1] **Connection via**
SIMATIC S7/SIMATIC WinAC (MPI as master) [2]	
Using 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**
SIMATIC S5/S7 (PROFIBUS DP as standard slave)	
Using 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]
Using 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]
Non-Siemens controllers (PROFIBUS DP master)	
Using a PROFIBUS DP	**PROFIBUS** [5]

1) PP17 suitable up to 12 Mbit/s
2) Standard PG/PC MPI cable cannot be used
3) S7-200 only with 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

	PP17-I	**PP17-II**
Supply voltage		
Supply voltage	DC 24 V	DC 24 V
permissible range	DC +18 to +30 V	DC +18 to +30 V
Rated current	0.4 A	0.4 A
Power	10 W	10 W
Digital inputs		
Number of digital inputs	16	16
Voltage (DC)	24 V	24 V

Technical specifications (continued)

	PP17-I	**PP17-II**
Digital outputs		
Number of digital outputs	16	16
in groups of	4	4
Short-circuit protection	Yes	Yes
Aggregate current (per group) max.	500 mA	500 mA
Total power	12 W	12 W
Operating mode		
Operating elements	Membrane keyboard	Membrane keyboard
Function keys, programmable	16 Function keys, 16 with LEDs	32 Function keys, 32 with LEDs
Number of keys	16 Short stroke keys	32 Short stroke keys
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
Ambient conditions		
Mounting position	Vertical	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°
max. relative humidity (in %)	95%	95%
Temperature		
• Operation (vertical installation)	0 to +55°C	0 to +55°C
• Operation (max. tilt angle)	0 to +55°C	0 to +55°C
• Transport, storage	-20 to +70°C	-20 to +70°C
Type of output		
LED colors	Red, Yellow, Green	Red, Yellow, Green
Color modes for LED	3	3
Number of LEDs	16	32
Interfaces		
Interfaces	1 x RS-485 (Max. 12 Mbit/s)	1 x RS-485 (Max. 12 Mbit/s)
Lifetime, typ.		
Short-stroke keys (in switching cycles)	1500000	1500000
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) in mm	240 x 204	240 x 204
Mounting cutout/Device depth (W x H/D) in mm	226 x 190 / 53 Device depth	226 x 190 / 53 Device depth
Weights		
Weight	1.2 kg	1.5 kg

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SIMATIC PP17

Ordering data

		Order No.
PP17-I	A	**6AV3 688-3CD13-0AX0**
• 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	A	**6AV3 688-3ED13-0AX0**
• 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)		
Manual for PP7/PP17 1)		
• German		**6AV3 991-1CA00-0AA0**
• English		**6AV3 991-1CA00-0AB0**
• French		**6AV3 991-1CA00-0AC0**
• Italian		**6AV3 991-1CA00-0AD0**
• Spanish		**6AV3 991-1CA00-0AE0**
Brief startup guide		
for PP7, PP17-I, PP17-II		
• German		**6AV3 991-1CA00-1BA0**
• English		**6AV3 991-1CA00-1BB0**
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

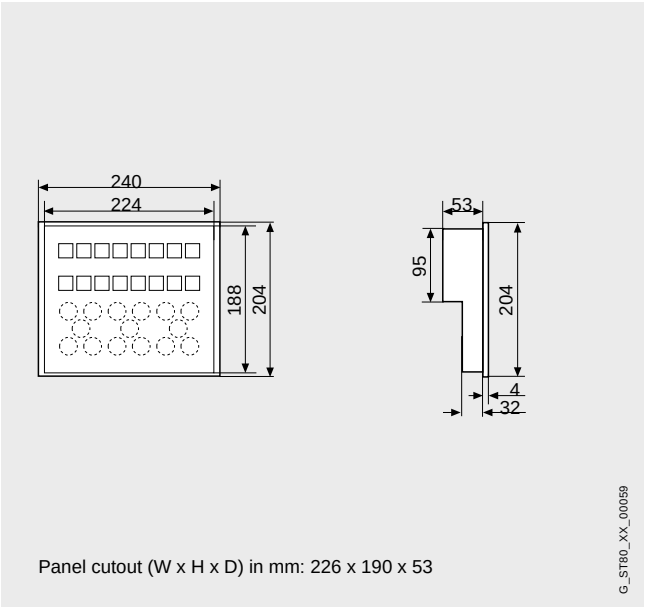
Note:

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

A) Subject to export regulations: AL: N and ECCN: EAR99H

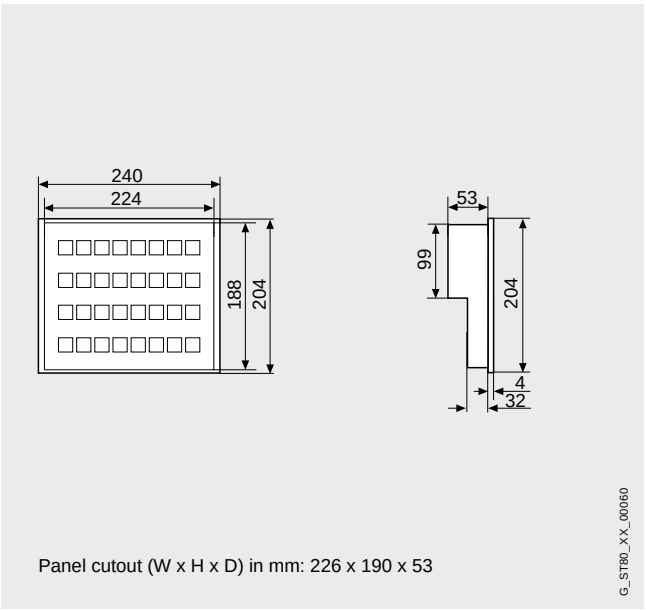
1) Incl. 3.5" diskette with GSD files/type files and Word templates for labeling strips

Dimensions



Panel cutout (W x H x D) in mm: 226 x 190 x 53

PP17-I



Panel cutout (W x H x D) in mm: 226 x 190 x 53

PP17-II

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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Overview

- The low-cost text display for the S7-200 with customized display
- For HMI functions:
  display of message texts, interventions in the control program, setting of inputs and outputs
- Direct connection to CPU interface
- No separate power supply required
- No separate parameterization software required
- Front design can be selected individually
- Addressing and setting of contrast in supplied menu

Application

The TD 100C Text Display is the low-cost solution for the simple HMI tasks of SIMATIC S7-200. The ability to print the surface of the device individually allows it to be optimally adapted to the application environment.

It supports:

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

Design

The TD 100C is simply connected to the PPI interface of the S7-200 using the connecting cable that is available as an accessory. A separate power supply is not required. It is also possible to connect several TDs to one S7-200.

The TD 100C features:

- Rugged plastics housing with IP65 degree of protection (front):
  Increased water tightness thanks to absence of slots for labeling strips
- Mounting depth of 36 mm (up to 44 mm with fixing):
  the TD 100C can be mounted without additional accessories in control cabinets or operator panels, or used as a handheld unit.
- Reflecting 4-line display.
- Integrated interface for connection of cable
- Individually designable user interface:
  The control elements of the front of the device as well as the design can be configured individually on a printable sheet. The Keypad Designer (a component of STEP 7-Micro/WIN) is used for configuration.

Function

The TD 100C permits:

- Display of message texts:
  Up to 40 message texts (alarms) with max. 4 variables display current operating states and can be optionally parameterized to require acknowledgment and can be additionally protected by a password. Also up to 32 static alarms with up to 4 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 bit memory is assigned to each of the 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, various data blocks for operation of several TDs on one CPU, password protection for integral SETUP menu and modified variables
- Activation of TD 100C 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:
    When a function key is pressed, a bit is set; when the key is released, the bit is deleted.
- New character set (Greek, Latin2, Turkish) to support further foreign languages

Programming

The configuration data of the TD 100C are saved in the CPU of the S7-200. The message text strings and configuration parameters are created with the STEP 7 Micro/WIN V4 programming software. Additional parameterization software is not required. The Keypad Designer (a component of STEP 7-Micro/WIN V4) is used to configure the operating front design.

Special data areas are reserved in the CPU of the S7-200 for data exchange with the TD 100C. The TD 100C directly accesses the respectively required functions of the CPU via these data areas. A separate TD wizard in STEP 7 Micro/WIN V4 supports user-friendly parameter assignment.

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Text Display TD 100C

Technical specifications

	TD 100C
Power supply	
Input voltage	
• Rated value (DC)	24 V; Supply from S7-200 communication interface
Input current	
• Rated value at DC 24 V	25 mA
MPI	
Transmission speed (PPI), max.	187.5 kBit/s
1st interface	
Physics	RS 485
Functionality	
• PPI	Yes
PPI	
• Number of nodes, max.	126; S7-200, OP, TP, TBP, PG/PC
Operator control and monitoring	
Display	
• Type	LC display (reflecting)
• Number of lines	4
• Number of characters per line	12; characters/line: 12 or 16 characters/line: Chinese 8
• Font size	3.34 mm
Environmental requirements	
Operating termperature	
• min.	0 °C
• max.	60 °C
Storage/transport temperature	
• min.	-20 °C
• max.	70 °C
Degree and class of protection	
• IP 65	Yes
Dimensions	
Width	90 mm
Height	76 mm
Depth	36 mm; max. 44 mm with fittings
Mounting cutout, width	82 mm
Mounting cutout, height	69.5 mm
Dimensions	
Cabinet/switchboard strength	1.5 mm; 1.5 to 4 mm
Weights	
Weight, approx.	120 g

Ordering data

	Order No.
Text Display TD 100C With individually configurable control elements on the device front; for connecting to SIMATIC S7-200; for use with STEP 7 Micro/WIN V4 and higher, plug-in cable required	**6ES7 272-1BA10-0YA0**
Connecting cables For connecting TD 100C or TD 200C to S7-200	**6ES7 901-3EB10-0XA0**
Blank faceplates For printing customized key-board layouts; 6 perforated foils per sheet; 10 sheets per packing unit	**6ES7 272-1BF00-7AA0**

Accessories

Accessories for supplementary ordering	See HMI accessories, from page 2/148

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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 IP65 degree of protection (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.

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 configuration data of the TD 200 are saved in the CPU of the S7-200. The message text strings and configuration parameters are created with the STEP 7 Micro/WIN configuration 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.

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Text Display TD 200

Technical specifications

	TD 200
Power supply	
Input voltage	
• Rated value (DC)	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
Input current	
• Rated value at DC 24 V	120 mA
MPI	
Transmission speed (PPI), max.	187.5 kBit/s
1st interface	
Physics	RS 485
Functionality	
• PPI	Yes
PPI	
• Number of nodes, max.	126; S7-200, OP, TP, TBP, PG/PC
Operator control and monitoring	
Display	
• Type	LCD backlit
• Number of lines	2
• Number of characters per line	20; Chars/line: ASCII, Cyrillic; 10 chars/line: Chinese
• Font size	5 mm
Environmental requirements	
Operating termperature	
• min.	0 °C
• max.	60 °C
Storage/transport temperature	
• min.	-40 °C
• max.	70 °C
Degree and class of protection	
• IP 65	Yes; at front
Dimensions	
Width	148 mm
Height	76 mm
Depth	27 mm
Mounting cutout, width	138 mm
Mounting cutout, height	68 mm
Dimensions	
Cabinet/switchboard strength	0.3 mm; 0.3 to 4 mm
Weights	
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	**6ES7 272-0AA30-0YA0**
Connecting cables For connecting TD 100C or TD 200C to S7-200	**6ES7 901-3EB10-0XA0**
Accessories	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

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Overview

- The user-friendly text display for the S7-200 with customizable display
- 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
- Frontpanel design can be individually selected
- Addressing and setting of contrast in supplied menu

Application

The TD 200C Text Display is the ideal solution for all HMI tasks of the SIMATIC S7-200. The ability to print the surface of the device individually allows it to be optimally adapted to the application environment.

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 200C 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 200C to one S7-200.

The TD 200C 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 200C 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.
- Integrated interface for connection of cable.
- Connection for optional power supply:
  A power supply unit is required if the distance between the TD 200C and S7-200 is more than 2.5 m. PROFIBUS cables are then available instead of the connection cable.
- Individually designable user interface:
  The control elements of the front of the device as well as the design can be configured individually on a printable sheet. The Keypad Designer (a component of STEP 7-Micro/WIN) is used for configuration.

Function

The TD 200C 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 bit memory is assigned to each of the 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 bargraph display, various data blocks for operation of several TDs 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 S7-200 memory module
- Selection of operating mode of the CPU (RUN/STOP)
- Editing the V memory area

Programming

The configuration data of the TD 200C are saved in the CPU of the S7-200. The message text strings and configuration parameters are created with the STEP 7 Micro/WIN V4 programming software. Additional parameterization software is not required. The Keypad Designer (a component of STEP 7-Micro/WIN V4) is used to configure the operating front design.

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

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Text Display TD 200C

Technical specifications

	TD 200C
Power supply	
Input voltage	
• Rated value (DC)	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
Input current	
• Rated value at DC 24 V	120 mA
MPI	
Transmission speed (PPI), max.	187.5 kBit/s
1st interface	
Physics	RS 485
Functionality	
• PPI	Yes
PPI	
• Number of nodes, max.	126; S7-200, OP, TP, TBP, PG/PC
Operator control and monitoring	
Display	
• Type	LCD backlit
• Number of lines	2
• Number of characters per line	20; Chars/line: ASCII, Cyrillic; 10 chars/line: Chinese
• Font size	5 mm
Environmental requirements	
Operating termperature	
• min.	0 °C
• max.	60 °C
Storage/transport temperature	
• min.	-20 °C
• max.	70 °C
Degree and class of protection	
• IP 65	Yes; at front
Dimensions	
Width	148 mm
Height	76 mm
Depth	28 mm
Mounting cutout, width	138 mm
Mounting cutout, height	68 mm
Dimensions	
Cabinet/switchboard strength	0.3 mm; 0.3 to 4 mm
Weights	
Weight, approx.	200 g

Ordering data

		Order No.
Text Display TD 200C With individually configurable control elements on the device front; for connecting to SIMATIC S7-200; for use with STEP 7 Micro/WIN V4 and higher, incl. plug-in cable		**6ES7 272-1AA10-0YA0**
Connecting cables For connecting TD 100C or TD 200C to S7-200		**6ES7901-3EB10-0XA0**
Blank faceplates For printing customized key-board layouts; 3 perforated faceplates per sheet; 10 sheets per packing unit	A	**6ES7 272-1AF00-7AA0**

Accessories

Accessories for supplementary ordering	See HMI accessories, from page 2/148

A) Subject to export regulations: AL: N and ECCN: EAR99H

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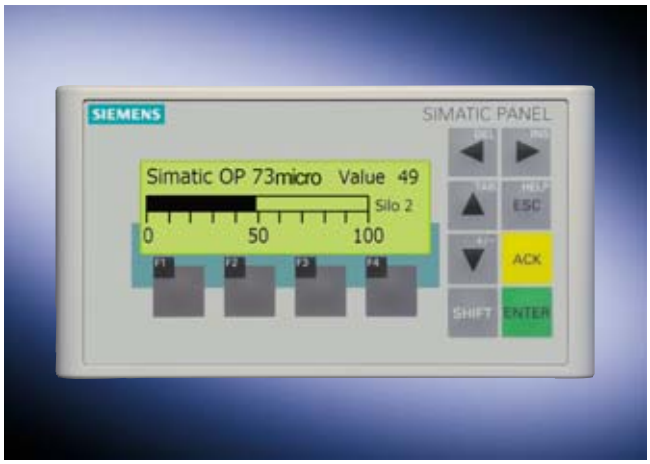
Overview



- 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

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
  for the graphical display of dynamic values.
- Language selection during runtime
  - 5 online languages, 32 configuration 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 configuration thanks to:
  - backup and restoration of configuration, operating system and firmware on a PC using ProSave
  - configuration download serially via RS485
  - individual contrast settings
  - no batteries are necessary

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SIMATIC OP 73micro

Function (continued)

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 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
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.1 A
Memory	
Type of storage	
• Type	Flash
• Memory usable for project data/Options	128 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Micro As of Version 2004 SP 1; HSP (must be ordered separately)
Display	
Display type	STN, Black/white
Size	3 "
Resolution (WxH in pixel)	160 x 48
MTBF backlighting (at 25 °C)	Approx. 100000 h
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	4 Function keys
System keys	8
Touchscreen	No
Numeric/alphabetical input	Yes / Yes
Connection for mouse/ keyboard/barcode reader	- / - / -
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

Technical specifications (continued)

	OP 73micro
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 80°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C
Output port	
Interfaces	1 x RS-485 (Max. 0.1875 Mbit/s)
Operating systems	
Operating system	Linux
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	250
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 100 Entries)
Number of process images	
• Process images	250
• Variables	500
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1000 Text elements
• Graphics object	Bitmaps, 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 medium support	
• Multi Media Card	No
Recording	
• Printer driver	-
Fonts	
• Keyboard fonts	US American (English)

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Technical specifications (continued)

	OP 73micro
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
• Fonts	WinCC flexible-Standard, Ideographic languages
Transfer (Upload/Download)	
• Transfer of configuration	serial
Process coupling	
• Connection to controller	S7-200, See section "System Links"
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/D) in mm	138 mm x 68 mm / 28.5 mm Device depth
Weights	
Weight	0.25 kg

Ordering data

		Order No.
SIMATIC OP 73micro Operator panel for connection to the SIMATIC S7-200, with 3" display, monochrome incl. mounting accessories	C	**6AV6 640-0BA11-0AX0**
OP 73micro starter package Consisting of: • OP 73micro Operator Panel • SIMATIC WinCC flexible Micro engineering software • SIMATIC HMI Manual Collection, 5 languages (English, French, German, Italian, Spanish), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI • MPI cable (5 m) (for test purposes)	F	**6AV6 650-0BA01-0AA0**
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Documentation (to be ordered separately)		
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**
User Manual WinCC flexible Micro		
• German		**6AV6 691-1AA01-0AA0**
• English		**6AV6 691-1AA01-0AB0**
• French		**6AV6 691-1AA01-0AC0**
• Italian		**6AV6 691-1AA01-0AD0**
• Spanish		**6AV6 691-1AA01-0AE0**
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	B	**6AV6 691-1SA01-0AX0**
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
C) Subject to export regulations: AL: N and ECCN: EAR99T
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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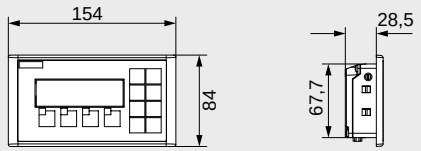
SIMATIC OP 73micro

Dimensions



Panel cutout (W x H) in mm: 138 x 68

G_ST80_XX_00144

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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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) **C**old **C**athode **F**luorescence **L**amps

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 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 (such as PaintShop, Designer or CorelDraw).
- Vector graphics
  Simple geometric basic forms (line, circle and rectangle) can be created directly 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 configuration 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
- Template concept
  Creation of picture templates (picture elements configured in the template appear in every image)
- User-friendly maintenance and configuration thanks to:
  - backup and restoration of configuration, operating system and firmware on a PC using ProSave
  - configuration download serially via RS485
  - individual contrast setting and calibration
  - clean screen
  - no batteries are necessary

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SIMATIC TP 177micro

Function (continued)

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-CPUs 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
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.24 A
Memory	
Type of storage	
• Type	Flash
• Memory usable for project data/Options	256 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Micro As of Version 2004 SP 1; HSP (must be ordered separately)
Display	
Display type	STN, 4 Blue levels
Size	5.7 "
Resolution (WxH in pixel)	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h
Operating mode	
Operating elements	Touchscreen
Function keys, programmable	None
System keys	0
Touchscreen	analog, resistive
Numeric/alphabetical input	Yes / Yes
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 2/22, C-TICK, NEMA 4x

Technical specifications (continued)

	TP 177micro
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C
Output port	
Interfaces	1 x RS-485 (Max. 0.1875 Mbit/s)
Operating systems	
Operating system	Linux
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	500
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 128 Entries)
Number of process images	
• Process images	250
• Variables	250
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	500 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen), Vector graphics
• dynamic objects	Diagrams, Bar graphs
Lists	
• Text lists	150
• Graphics list	100
• Libraries	Yes
Security	
• Number of user groups	1
• Passwords exportable	Yes
• Number of users	1
Data medium support	
• Multi Media Card	No
Recording	
• Printer driver	-
Fonts	
• Keyboard fonts	US American (English)

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Technical specifications (continued)

	TP 177micro
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
• Fonts	WinCC flexible-Standard, Ideographic languages
Transfer (Upload/Download)	
• Transfer of configuration	serial
Process coupling	
• Connection to controller	S7-200, See section "System Links"
Expandability/openness	
• Open Platform Program	No
Dimensions	
Front of enclosure (W x H)	212 x 156 mm
Mounting cutout/Device depth (W x H/D) in mm	198 x 142 / 45 mm Device depth
Weights	
Weight	0.75 kg

Ordering data

		Order No.
SIMATIC TP 177micro	C	**6AV6 640-0CA11-0AX0**
Touch Panel for connection to the SIMATIC S7-200, 5.7" STN display		
TP 177micro starter package	F	**6AV6 650-0DA01-0AA0**
Consisting of:		
• TP 177micro Touch Panel		
• SIMATIC WinCC flexible Micro engineering software		
• SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, Spanish), comprising: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
• MPI cable (5m) (for test purposes)		
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Documentation (to be ordered separately)		
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**
User Manual WinCC flexible Micro		
• German		**6AV6 691-1AA01-0AA0**
• English		**6AV6 691-1AA01-0AB0**
• French		**6AV6 691-1AA01-0AC0**
• Italian		**6AV6 691-1AA01-0AD0**
• Spanish		**6AV6 691-1AA01-0AE0**
SIMATIC HMI Manual Collection	B	**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		
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
C) Subject to export regulations: AL: N and ECCN: EAR99T
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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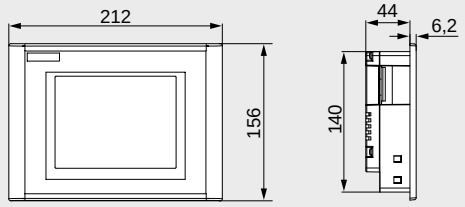
SIMATIC TP 177micro

Dimensions



Panel cutout (W x H) in mm: 198 x 142

G_ST80_XX_00143

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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Overview

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)

SIMATIC Mobile Panel 177 and SIMATIC Mobile Panel 277

- Two three-stage enabling buttons;
  Optional versions include:
  - STOP pushbutton
  - STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
- 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 junction box
- 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 IWLAN and 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-operated switch and illuminated pushbutton
- Fail-safe control elements of the SIMATIC Mobile Panel 277F IWLAN using PROFISAFE:
  - Two three-stage enabling buttons
  - Emergency stop button

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/restoration via a process interface or optionally via a standard multi-media card
  - Transfer of the configuration with automatic transfer recognition via all device interfaces
  - Long service life of the backlighting
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD

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.

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Mobile Panel 177 / 277: Introduction

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)
- The front is resistant to various oils, greases and standard detergents
- Extremely impact-resistant due to twin-wall construction and rounded encosure
- Dust-proof and jet-proof casing with degree of protection IP65 on all sides
- Slot for a standard MultiMediaCard for configuration backup and restoring or for storing recipes
- Two three-stage enabling buttons
- Optional variants with
  - STOP pushbutton or
  - STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
  - 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 and PROFIBUS interface (up to 12 Mbit/s)

or

- Integral Ethernet (PROFINET) interface (up to 100 Mbit/s)
- 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 the Emergency Stop circuit.
- 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 enabling 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 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 enabling buttons are implemented according to safety regulations with two circuits and comply with the requirements of Safety Category 3 according to EN 954-1.

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).

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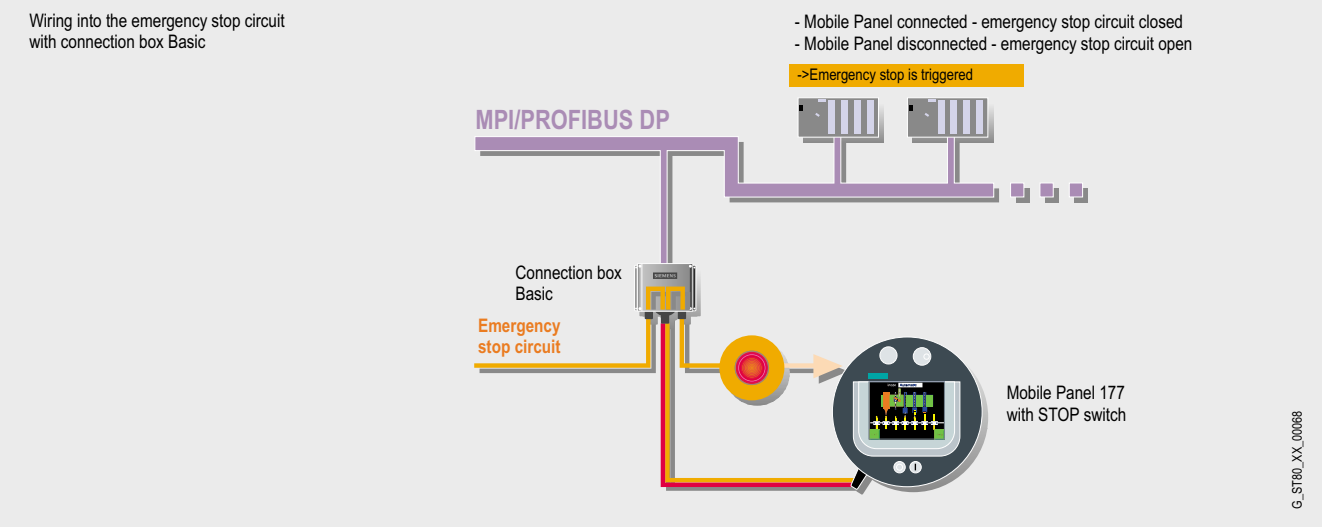
Design (continued)

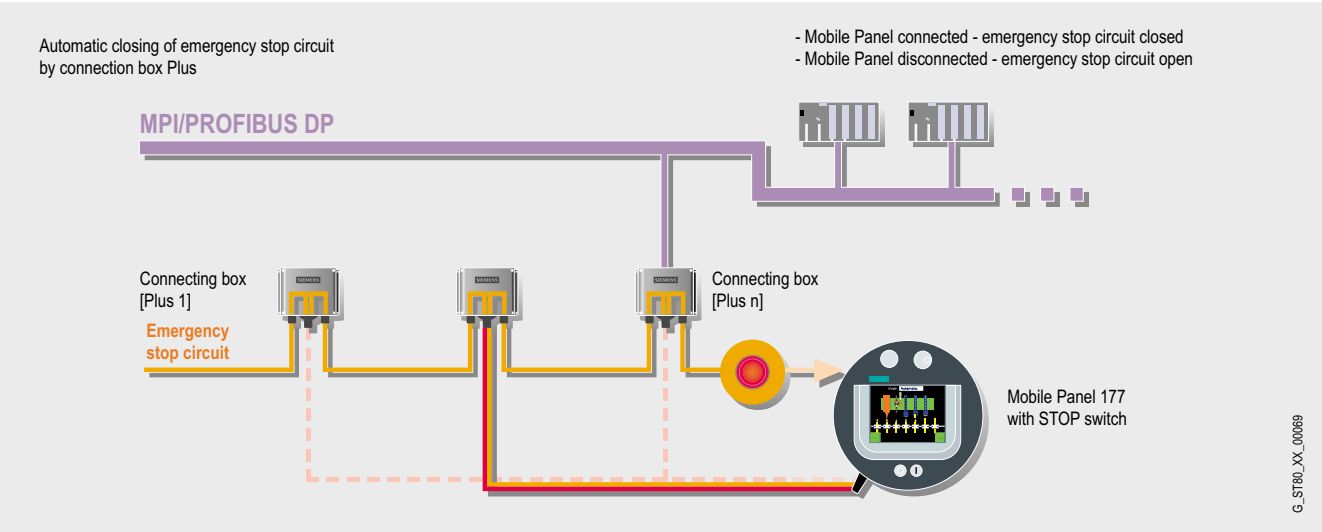
Connection at one point of the machine

When the "Basic" junction box version 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).



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).



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Mobile Panel 277(F) IWLAN: Introduction

Design

- WLAN communication in accordance with IEEE 802.11 a(b/g) and support of IWLAN and 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 enabling 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 by using transponder technology, comparable with connection point recognition with cabled Mobile Panels
- Optional versions with: Handwheel, key-operated switch and illuminated pushbutton
- Fail-safe control elements of the SIMATIC Mobile Panel 277F IWLAN using PROFISAFE:
  - Two three-stage enabling 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 IWLAN Access Points (IWLAN – Industrial Wireless LAN). 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.

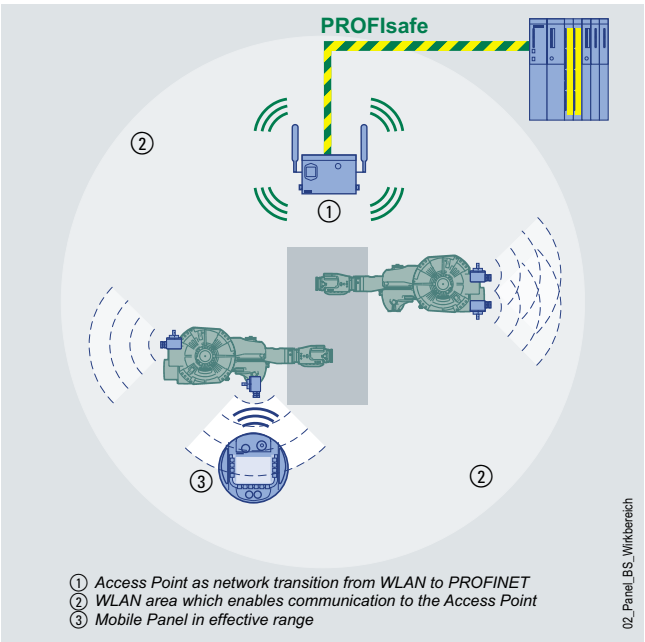
Transponders have been developed especially for the Mobile Panel 277(F) IWLAN and can be used for the local identification of the Mobile Panel in the plant. Comparable with the connection point recognition (Box-ID) for cabled Mobile Panels, these transponders can be used to configure location-dependent 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 enabling button and emergency stop button (Mobile Panel 277F IWLAN), the transponders perform another task: The safety-related release of the enabling 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 "enabling button" and "emergency stop button" comply with SIL 3 in accordance with IEC 61508 or Category 4 in accordance with EN 954-1 and PLe/Cat. 4 in accordance with EN ISO 13849-1 and are certified by BGIA and TÜV. 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 throughout the WLAN 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 enabling 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 configuring 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 enabling button should have and which response to certain events (e.g. leaving the WLAN range) they should have is defined by configuring 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.



① *Access Point as network transition from WLAN to PROFINET*
② *WLAN area which enables communication to the Access Point*
③ *Mobile Panel in effective range*

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Design (continued)

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 enabling 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).

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SIMATIC Mobile Panel 177

Function

- Input/output fields
  for displaying and changing process values
- Function keys
  for direct triggering of 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 applied to a function key.
- Additional command components
  such as handwheel, key-operated switch 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
  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 to "label" function keys or buttons. They can also be used as background displays (wallpaper).
  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 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 ID 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
- 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 and restoration of the project, operating system, recipe data records and firmware on the optional standard multi-media 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 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 new 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.

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Function (continued)

Configuring

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

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 DP interface boxes the Mobile Panel 177 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
  - Telemechanique Uni-Telway
- 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 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".

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Technical specifications

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Supply voltage			
Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery op.	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Memory			
Type of storage			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	2048 kByte Usable memory for user data / Without additional memory for options	2048 kByte Usable memory for user data / Without additional memory for options	2048 kByte Usable memory for user data / Without additional memory for options
Configuration			
Configuration tool	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must 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 (WxH in pixel)	320 x 240	320 x 240	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Expansions to operator process communication			
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
System keys	0	0	0
Touchscreen	analog, resistive	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
STOP pushbutton	No	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)
Enabling button	2-channel, Number of settings: 3	2-channel, Number of settings: 3	2-channel, Number of settings: 3
Key-operated switch	No	No	Yes, 3 Switch settings
Illuminated pushbutton	No	No	Yes
Handwheel	No	No	Yes
Degree of protection			
IP65 housing	Yes	Yes	Yes
Certifications & Standards			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
• 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
Ambient conditions			
max. relative humidity (in %)	80%	80%	80%
Drop height	1.5 m	1.5 m	1.5 m
Temperature			
• Operation	0 to +40°C	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C

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Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Type of output			
LED colors	green	green	green
Acoustics	No	No	No
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (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	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	No	No	No
Ethernet	No	No	No
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	RISC 32Bit, 200 MHz	RISC 32Bit, 200 MHz	RISC 32Bit, 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
Message system			
• Number of messages	2,000	2,000	2,000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating 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
Image elements			
• Text objects	2500 Text elements	2500 Text elements	2500 Text elements
• Graphics object	Bitmaps, Vector graphics	Bitmaps, Vector graphics	Bitmaps, Vector graphics
• dynamic objects	Diagrams / curves, Bar graphs, Sliders, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Hidden buttons
Lists			
• Text lists	300	300	300
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes

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Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data medium 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
• Fonts	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic 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), other non-Siemens drivers, See section "System Links"	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), other non-Siemens drivers, See section "System Links"	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), other non-Siemens drivers, See section "System Links"
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Mechanics			
Type of housing (front)	Plastic	Plastic	Plastic
Dimensions			
Housing diameter/depth (mm)	245/58	245/58	245/58
Weights			
Weight	1.3 kg	1.3 kg	1.3 kg

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Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Supply voltage			
Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery op.	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Memory			
Type of storage			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	2048 kByte Usable memory for user data / Without additional memory for options	2048 kByte Usable memory for user data / Without additional memory for options	2048 kByte Usable memory for user data / Without additional memory for options
Configuration			
Configuration tool	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must 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 (WxH in pixel)	320 x 240	320 x 240	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Expansions to operator process communication			
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
System keys	0	0	0
Touchscreen	analog, resistive	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
STOP pushbutton	No	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)
Enabling button	2-channel, Number of settings: 3	2-channel, Number of settings: 3	2-channel, Number of settings: 3
Key-operated switch	No	No	Yes, 3 Switch settings
Illuminated pushbutton	No	No	Yes
Handwheel	No	No	Yes
Degree of protection			
IP65 housing	Yes	Yes	Yes
Certifications & Standards			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
• 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
Ambient conditions			
max. relative humidity (in %)	80%	80%	80%
Drop height	1.5 m	1.5 m	1.5 m
Temperature			
• Operation	0 to +40°C	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options			
I/O devices	Printer	Printer	Printer

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Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Type of output			
LED colors	green	green	green
Acoustics	No	No	No
Interfaces	1 x RS-485	1 x RS-485	1 x RS-485
PC card slot	No	No	No
CF card slot	No	No	No
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	No	No	No
Ethernet	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 32Bit, 200 MHz	RISC 32Bit, 200 MHz	RISC 32Bit, 200 MHz
Functionality under WinCC flexible			
Applications/options	Sm@rt Service , Sm@rt Access	Sm@rt Service , Sm@rt Access	Sm@rt Service , Sm@rt Access
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
Message system			
• Number of messages	2,000	2,000	2,000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating 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
Image elements			
• Text objects	2500 Text elements	2500 Text elements	2500 Text elements
• Graphics object	Bitmaps, Vector graphics	Bitmaps, Vector graphics	Bitmaps, Vector graphics
• dynamic objects	Diagrams / curves, Bar graphs, Sliders, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Hidden 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 medium support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes

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Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
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
• Fonts	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable
Transfer (Upload/Download)			
• Transfer of configuration	serial, Ethernet, Automatic transfer recognition	serial, Ethernet, Automatic transfer recognition	serial, Ethernet, Automatic transfer recognition
Process coupling			
• Connection to controller	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, See section "System Links"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, See section "System Links"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, See section "System Links"
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Mechanics			
Type of housing (front)	Plastic	Plastic	Plastic
Dimensions			
Housing diameter/depth (mm)	245/58	245/58	245/58
Weights			
Weight	1.3 kg	1.3 kg	1.3 kg

Ordering data

	Order No.
SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	
• With integrated enabling button F	**6AV6 645-0AA01-0AX0**
• With integrated enabling button F and STOP pushbutton	**6AV6 645-0AB01-0AX0**
• With integrated enabling button, F STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton	**6AV6 645-0AC01-0AX0**
SIMATIC Mobile Panel 177 PN (PROFINET)	
• With integrated enabling button F	**6AV6 645-0BA01-0AX0**
• With integrated enabling button F and STOP pushbutton	**6AV6 645-0BB01-0AX0**
• With integrated enabling button, F STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton	**6AV6 645-0BC01-0AX0**

	Order No.
Mobile Panel 177 PN Plus starter kit F	**6AV6 651-5DA01-0AA0**
• Mobile Panel 177 PN with integrated enabling 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 (English, French, German, Italian, Spanish)	
• Software update service for 1 year	
Mobile Panel 177 DP Plus starter kit F	**6AV6 651-5BA01-0AA0**
• Mobile Panel 177 DP with integrated enabling 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 (English, French, German, Italian, Spanish)	
• Software update service for 1 year	

F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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SIMATIC Mobile Panel 177

Ordering data		Order No.
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Documentation (to be ordered separately)		
Operating Instructions for Mobile Panel 177		
• 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**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection	B	**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		

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

		Order No.
System components for Mobile Panels		
DP junction box for Mobile Panels (MPI/PROFIBUS)		
• Basic	A	**6AV6 671-5AE00-0AX0**
• Plus	A	**6AV6 671-5AE10-0AX0**
PN junction box for Mobile Panel (PROFINET)		
• Basic	A	**6AV6 671-5AE01-0AX0**
• Plus	A	**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 [1]		
• 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		
Accessories for Mobile Panels		See HMI accessories, from page 2/148

1) Delivery period approx. 6 weeks

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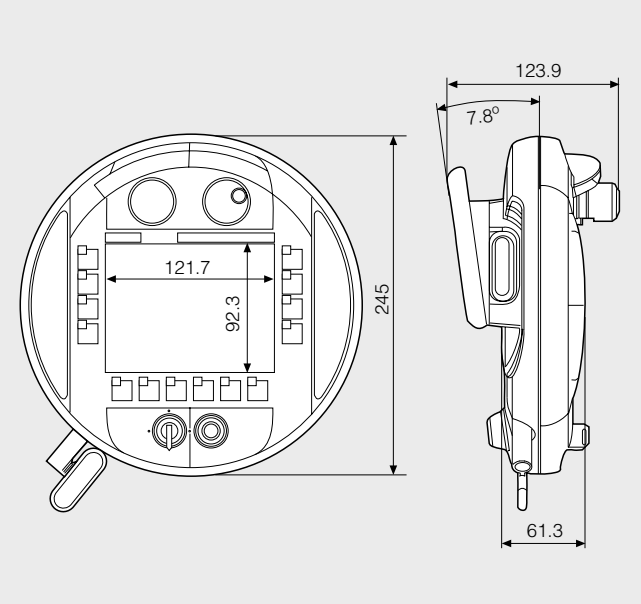
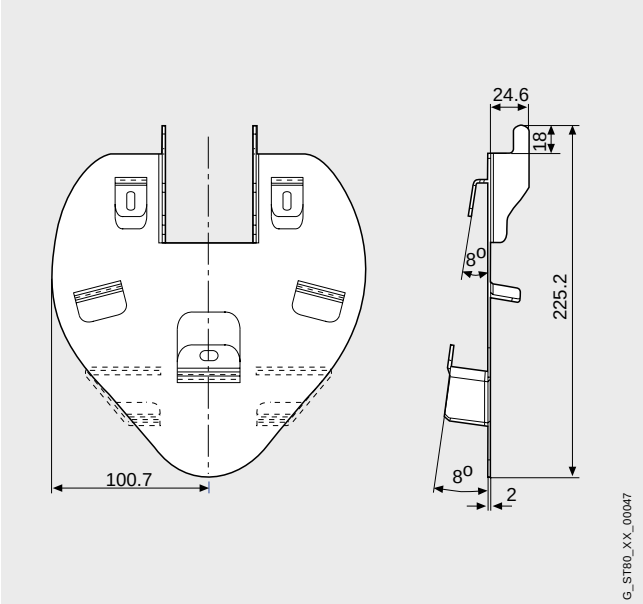
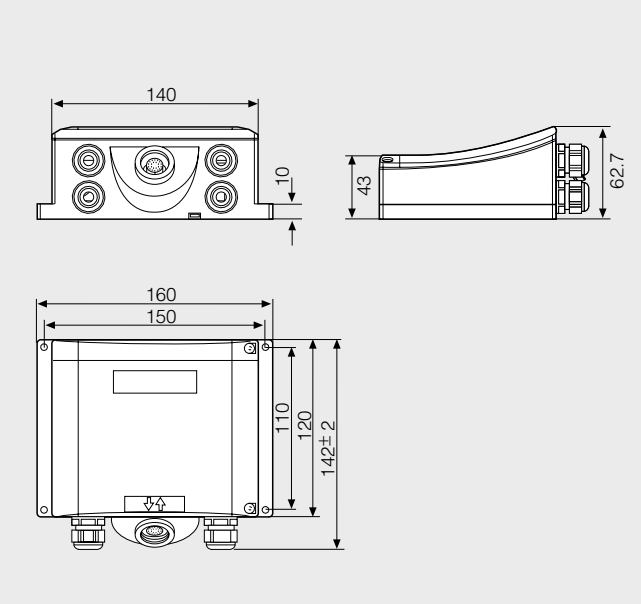
Dimensions



SIMATIC Mobile Panel – front view and side view



Wall holder for SIMATIC Mobile Panel



DP connection box for SIMATIC Mobile Panel

More information

Additional information is available in the Internet under:

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

Note

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

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SIMATIC Mobile Panel 277

Function

- Input/output fields
  for displaying and changing process values
- Function keys
  for direct triggering of 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 applied to a function key.
- Additional command components
  such as handwheel, key-operated switch 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
  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 to "label" function keys or buttons. They can also be used as background displays (wallpaper).
  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 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
- 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 selection
  16 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 ID 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
- 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 and restoration of the project, operating system, recipe data records and firmware on the optional standard multi-media 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 sets, passwords and information specific to the HMI system, 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

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Function (continued)

Configuring

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

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".

Technical specifications

SIMATIC Mobile Panel 277	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Supply voltage			
Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery op.	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Memory			
Type of storage			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	6 MByte Usable memory for user data	6 MByte Usable memory for user data	6 MByte Usable memory for user data
Time			
Clock			
• Type	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable
Configuration			
Configuration tool	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)
Display			
Display type	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors
Size	7.5 "	7.5 "	7.5 "
Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Expansions to operator process communication			
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

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Technical specifications (continued)

SIMATIC Mobile Panel 277	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Operating mode			
Operating options	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
Touchscreen	analog, resistive	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/key-board/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
STOP pushbutton	No	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)	STOP button, 2-channel, forced locking (can be looped into the emergency stop circuit)
Enabling button	2-channel, Number of settings: 3	2-channel, Number of settings: 3	2-channel, Number of settings: 3
Key-operated switch	No	No	Yes, 3 Switch settings
Illuminated pushbutton	No	No	Yes; Two illuminated pushbuttons
Handwheel	No	No	Yes
Degree of protection			
IP65 housing	Yes	Yes	Yes
Certifications & Standards			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
• 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
Ambient conditions			
max. relative humidity (in %)	80%	80%	80%
Drop height	1.2 m	1.2 m	1.2 m
Temperature			
• Operation	0 to +40°C	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options			
I/O devices	Printer, Barcode reader	Printer, Barcode reader	Printer, Barcode reader
Type of output			
LED colors	green	green	green
Interfaces			
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	1 x USB	1 x USB	1 x USB
Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Functionality under WinCC flexible			
Applications/options	Internet Explorer, Sm@rt Service , Sm@rt Access	Internet Explorer, Sm@rt Service , Sm@rt Access	Internet Explorer, Sm@rt Service , Sm@rt Access
Number of Visual Basic scripts	50	50	50
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
Message system			
• Number of messages	4,000	4,000	4,000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free

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Technical specifications (continued)

SIMATIC Mobile Panel 277	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Recipes			
• Recipes	300	300	300
• Data records per recipe	500	500	500
• Entries per data record	1000	1000	1000
• Recipe memory	64 kByte integrated Flash, expandable	64 kByte integrated Flash, expandable	64 kByte integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	2,048	2,048	2,048
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	10000 Text elements	10000 Text elements	10000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons
Lists			
• Text lists	500	500	500
• Graphics list	400	400	400
• Libraries	Yes	Yes	Yes
Archiving			
• Number of archives per project	20	20	20
• Number of measuring points per project	20	20	20
• Number of entries per archive	10,000	10,000	10,000
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data medium support			
• Multi Media Card	Yes	Yes	Yes
Recording			
• Recording/Printing	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	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
• Fonts	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic 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
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), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), OMRON (LINK/Multilink), Modicon (Modbus), other non-Siemens drivers, See section "System Links"

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SIMATIC Mobile Panel 277

Technical specifications (continued)

SIMATIC Mobile Panel 277	with integrated enabling button	with integrated enabling button and STOP pushbutton	with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Mechanics			
Type of housing (front)	Plastic	Plastic	Plastic
Dimensions			
Housing diameter/depth (mm)	290/103	290/103	290/103
Weights			
Weight	1.7 kg	1.7 kg	1.7 kg

Ordering data

		Order No.
SIMATIC Mobile Panel 277		
• With integrated enabling button	F	**6AV6 645-0CA01-0AX0**
• With integrated enabling button and STOP pushbutton	F	**6AV6 645-0CB01-0AX0**
• With integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton	F	**6AV6 645-0CC01-0AX0**
SIMATIC Mobile Panel 277 Starter Package		
for:		
• DP communication	F	**6AV6 651-5EB01-0AA0**
• PN communication	F	**6AV6 651-5FB01-0AA0**
Configuration		
with SIMATIC WinCC flexible		See HMI Software

Documentation (to be ordered separately)

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 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection	B	**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		

		Order No.
System components for Mobile Panels		
DP connection box for Mobile Panels (MPI/PROFIBUS)		
• Basic	A	**6AV6 671-5AE00-0AX0**
• Plus	A	**6AV6 671-5AE10-0AX0**
PN connection box for Mobile Panel (PROFINET)		
• Basic	A	**6AV6 671-5AE01-0AX0**
• Plus	A	**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 [1]		
• 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

Accessories for Mobile Panels	See HMI accessories, from page 2/148

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

1) Delivery period approx. 6 weeks

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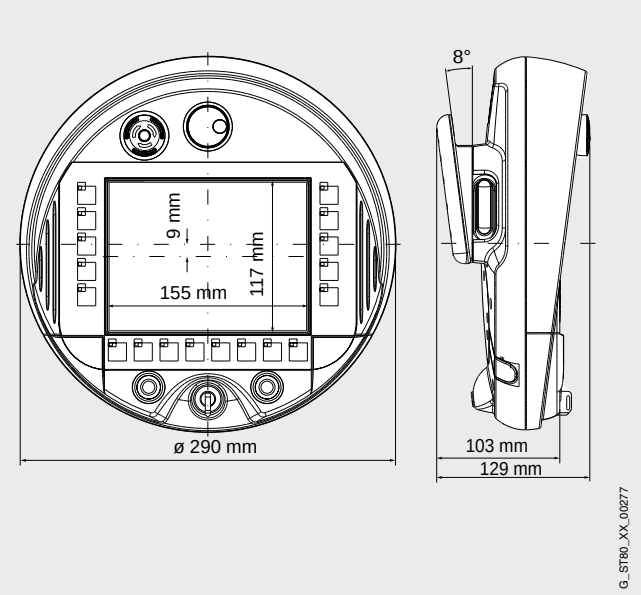
Dimensions



Mobile Panel 277 – front and side views

More information

Additional information is available in the Internet under:

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

Note

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

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SIMATIC Mobile Panel 277(F) IWLAN

Function

- Input/output fields
  for displaying and changing process values.
- Function keys
  are used for directly actuating 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 function that is used more often, such as "Acknowledge message" can be allocated to a function key this way.
- Auxiliary control elements
  such as handwheels, key-operated switches and illuminated pushbuttons can be assigned with a variable or as a direct actuation via PROFINET IO (direct keys).
- Buttons
  are used for directly actuating 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 background displays (wallpaper).
  An extensive library of graphics and diverse objects is available in the configuration software. All editors with an "OLE" interface can be used as graphic editors, e.g. Paint-Shop, Designer, CorelDraw, etc.
- 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 images and process values in any font size.
- Trend displays and bars
  are used for the graphic display of dynamic values.
- Display selection from the controller
  supports 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 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 message events
- Message buffer
  - Non-volatile, maintenance-free and batteryless message buffer. The messages remain stored when the mobile panel has the battery removed as well
- Recipe management
  - With additional data storage (on optional MultiMediaCard)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools 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.
- Message lamps
  for displaying machine and system status.
- Task planner
  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:
  - Save and restore (Backup/Restore) projects, operating system, recipe data records and firmware to the optional standard MultiMediaCard
  - Backup and restoration (Backup/Restore) of the configuration, operating system, recipe data records and firmware on a PC with 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 operation and observation 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

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Function (continued)

Configuration

Configuration is carried out with the SIMATIC WinCC flexible Standard or Advanced configuration software (see HMI software/engineering software SIMATIC WinCC flexible). SIMATIC WinCC flexible is a consistent further development of the proven ProTool family. Projects created with ProTool can be comfortably transferred to WinCC. If WinCC flexible is started directly from the SIMATIC Manager, the data in STEP 7 can be accessed directly while configuring the panel. Double data entry and data storage is prevented this way.

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-operated switch and illuminated pushbuttons

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

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

For 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

System requirements

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

● Recommended
- Not required
! Requirement

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".

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SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications

SIMATIC MobilePanel	277 IWLAN		277(F) IWLAN	
	Communication via WLAN (PROFINET)	Communication via WLAN (PROFINET) with integrated hand-wheel, key-operated switch and two illumi-nated pushbuttons	Communication via WLAN (PROFINET) with enabling button and emergency stop button	Communication via WLAN (PROFINET) with enabling button and emergency stop button with integrated hand-wheel, key-operated switch and two illumi-nated pushbuttons
Supply voltage				
Via charging station	Yes	Yes	Yes	Yes
Via table power supply	Yes	Yes	Yes	Yes
Rated voltage	7.2 V	7.2 V	7.2 V	7.2 V
Capacity	5,100 mAh	5,100 mAh	5,100 mAh	5,100 mAh
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 op.	maximum buffer time 5 min	maximum buffer time 5 min	maximum buffer time 5 min	maximum buffer time 5 min
Memory				
Type of storage				
• Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	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				
Clock				
• Type	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable
Protocols				
PROFINET	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes
PROFIsafe			Yes	Yes
Configuration				
Configuration tool	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must 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 (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
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
Touchscreen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
• 2-channel, positively latched			Yes	Yes
Enabling button			2-channel, Number of settings: 3	2-channel, Number of settings: 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

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Technical specifications (continued)

SIMATIC MobilePanel	277 IWLAN		277(F) IWLAN	
	Communication via WLAN (PROFINET)	Communication via WLAN (PROFINET) with integrated hand-wheel, key-operated switch and two illumi-nated pushbuttons	Communication via WLAN (PROFINET) with enabling button and emergency stop button	Communication via WLAN (PROFINET) with enabling button and emergency stop button with integrated hand-wheel, key-operated switch and two illumi-nated pushbuttons
Degree of protection				
IP65 housing	Yes	Yes	Yes	Yes
Certifications & Standards				
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
• TÜV safety certification			Yes	Yes
• BGIA safety certification			Yes	Yes
• Safety Integrity Level to IEC 61508			3	3
• Performance Level 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
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 to +40°C	0 to +40°C	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C
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				
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	1 x USB	1 x USB	1 x USB	1 x USB
Ethernet	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
• Supports channels (to IEEE 802.11a)	Channel 34, 36, 38, 40, Channel 42, 44, 46, 48, Channel 52, 56, 60, 64, Channel 149, 153, 157, Channel 161	Channel 34, 36, 38, 40, Channel 42, 44, 46, 48, Channel 52, 56, 60, 64, Channel 149, 153, 157, Channel 161	Channel 34, 36, 38, 40, Channel 42, 44, 46, 48, Channel 52, 56, 60, 64, Channel 149, 153, 157, Channel 161	Channel 34, 36, 38, 40, Channel 42, 44, 46, 48, Channel 52, 56, 60, 64, Channel 149, 153, 157, Channel 161
• Supports channels (to IEEE 802.11b and IEEE 802.1g)	Channels 1 to 11, Channel 12, 13, 14	Channels 1 to 11, Channel 12, 13, 14	Channels 1 to 11, Channel 12, 13, 14	Channels 1 to 11, Channel 12, 13, 14
• Country approval (radio)	Australia, Belgium, Den-mark, Germany, Finland, France, Greece, Great Britain, Ireland, Iceland, Italy, Japan, Liechten-stein, Luxemburg, Netherlands, Norway, Austria, Poland, Portugal, Sweden, Switzerland, Spain, South Africa, Czech Republic, Turkey, Hungary, USA	Australia, Belgium, Den-mark, Germany, Finland, France, Greece, Great Britain, Ireland, Iceland, Italy, Japan, Liechten-stein, Luxemburg, Netherlands, Norway, Austria, Poland, Portugal, Sweden, Switzerland, Spain, South Africa, Czech Republic, Turkey, Hungary, USA	Australia, Belgium, Den-mark, Germany, Finland, France, Greece, Great Britain, Ireland, Iceland, Italy, Japan, Liechten-stein, Luxemburg, Netherlands, Norway, Austria, Poland, Portugal, Sweden, Switzerland, Spain, South Africa, Czech Republic, Turkey, Hungary, USA	Australia, Belgium, Den-mark, Germany, Finland, France, Greece, Great Britain, Ireland, Iceland, Italy, Japan, Liechten-stein, Luxemburg, Netherlands, Norway, Austria, Poland, Portugal, Sweden, Switzerland, Spain, South Africa, Czech Republic, Turkey, Hungary, USA
• Encryption	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA

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Technical specifications (continued)

SIMATIC MobilePanel	277 IWLAN		277(F) IWLAN	
	Communication via WLAN (PROFINET)	Communication via WLAN (PROFINET) with integrated hand-wheel, key switch and two illuminated pushbuttons	Communication via WLAN (PROFINET) with enable button and emergency stop button	Communication via WLAN (PROFINET) with enable button and emergency stop button with integrated hand-wheel, key switch and two illuminated pushbuttons
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@rt Service , Sm@rt Access	Internet Explorer, Sm@rt Service , Sm@rt Access	Internet Explorer, Sm@rt Service , Sm@rt Access	Internet Explorer, Sm@rt Service , Sm@rt Access
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
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	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating 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	10000 Text elements	10000 Text elements	10000 Text elements	10000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams / curves, Bar graphs, Sliders, Analog display, Hidden 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 medium support				
• Multi Media Card	Yes	Yes	Yes	Yes

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Technical specifications (continued)

SIMATIC MobilePanel	277 IWLAN		277(F) IWLAN	
	Communication via WLAN (PROFINET)	Communication via WLAN (PROFINET) with integrated hand-wheel, key switch and two illuminated pushbuttons	Communication via WLAN (PROFINET) with enable button and emergency stop button	Communication via WLAN (PROFINET) with enable button and emergency stop button with integrated hand-wheel, key switch and two illuminated pushbuttons
Recording				
• Recording/Printing	Messages, Report (shift log), PROFINET	Messages, Report (shift log), PROFINET	Messages, Report (shift log), PROFINET	Messages, Report (shift log), PROFINET
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
• Fonts	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable
Transfer (Upload/Download)				
• Transfer of configuration	USB, Ethernet, Automatic transfer recognition	USB, Ethernet, Automatic transfer recognition	USB, Ethernet, Automatic transfer recognition	USB, Ethernet, Automatic transfer recognition
• Wireless LAN	Yes	Yes	Yes	Yes
Process coupling				
• Connection to controller	S7-200, S7- 300/400, See section "System Links"	S7-200, S7- 300/400, See section "System Links"	S7-200, S7- 300/400, See section "System Links"	S7-200, S7- 300/400, See section "System Links"
• 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)	290/103	290/103	290/103	290/103
Weights				
Weight	2.2 kg	2.2 kg	2.2 kg	2.2 kg

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SIMATIC Mobile Panel 277(F) IWLAN

Ordering data

		Order No.
SIMATIC Mobile Panel 277 IWLAN		
• Communication via WLAN (PROFINET)	F	**6AV6 645-0DD01-0AX0**
• Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	F	**6AV6 645-0DE01-0AX0**
SIMATIC Mobile Panel 277F IWLAN		
• Communication via WLAN (PROFINET) with enabling button and emergency stop button	F	**6AV6 645-0DB01-0AX0**
• Communication via WLAN (PROFINET) with enabling button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	F	**6AV6 645-0DC01-0AX0**
SIMATIC Mobile Panel 277 (F) IWLAN starter kit		
for		
• Mobile Panel 277 IWLAN	F	**6AV6 651-5GA01-0AA0**
• Mobile Panel 277F IWLAN	F	**6AV6 651-5HA01-0AA0**
Accessories		
Note: Please order the table-top power supply or charger as well! Required for charging the battery.		
• Table-top power supply incl. power cable for EU, US, UK, JP (only suitable for operation under laboratory/office conditions)		**6AV6 671-5CN00-0AX1**
• 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		**6AV6 671-5CE00-0AX0**
• Additional battery with LED indicator for indicating the charge status		**6AV6 671-5CL00-0AX0**
• Transponder incl. batteries (3x AA)		**6AV6 671-5CM00-0AX0**
• Service pack for Mobile Panel 277(F) IWLAN 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)		**6AV6 671-5CA00-0AX1**
Other compatible accessories:		
• Wall bracket for Mobile Panels		See HMI accessories, from page 2/148
• MultiMedia memory card		See HMI accessories, from page 2/148
• Mobile Panel 277 cover foil		See HMI accessories, from page 2/148
• Key labeling strips for Mobile Panel 277		See HMI accessories, from page 2/148
• Spare key for Mobile Panels		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

	Order No.
Configuration	
with SIMATIC WinCC flexible	See HMI Software
Documentation (to be ordered separately)	
Function Manual "Fail-Safe Operation of the Mobile Panel 277F IWLAN" [1]	
• German	**6AV6 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• Japanese	**6AV6 691-1AB01-2AJ0**
Mobile Panel 277F IWLAN Operating Instructions	
• 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**
Mobile Panel 277 IWLAN Operating Instructions	
• 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**
Getting Started Mobile Panel 277(F) IWLAN	
• German	**6AV6 691-1EM01-2AA0**
• English	**6AV6 691-1EM01-2AB0**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
Accessories	
Accessories for Mobile Panels	See HMI accessories, from page 2/148

1) Function manual enclosed with the Mobile Panel 277(F) IWLAN units is printed in German. Please order other languages separately.

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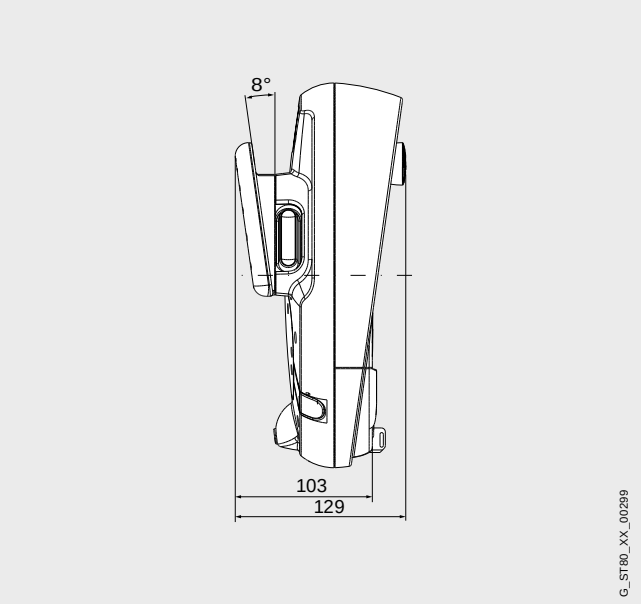
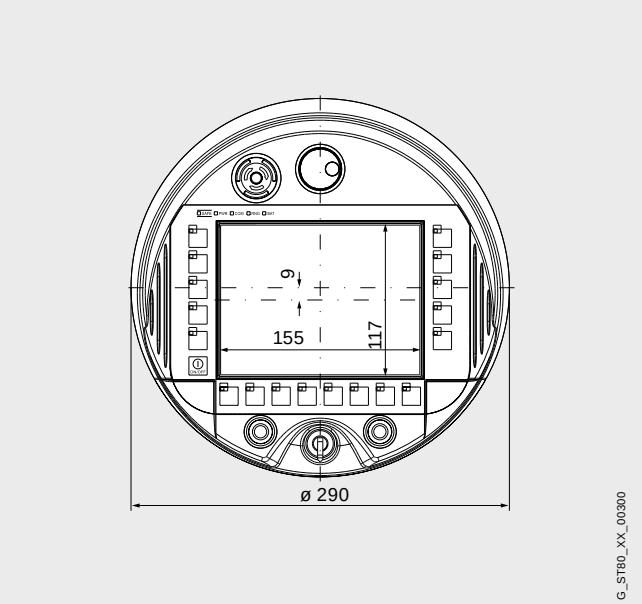
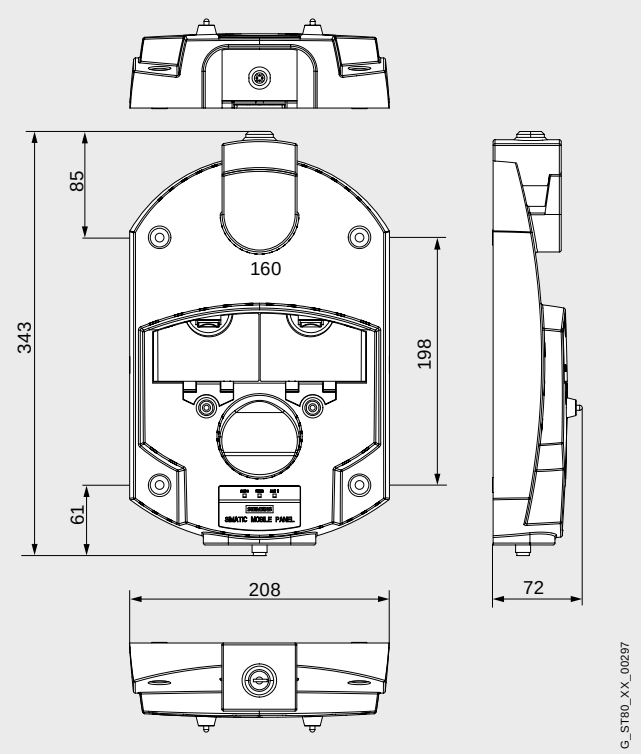
Dimensions



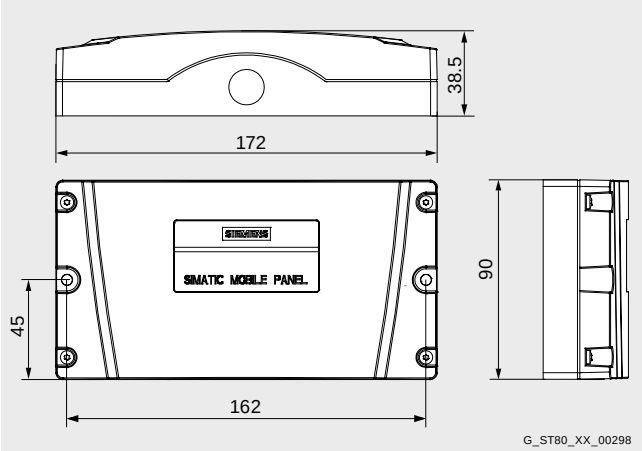
Mobile Panel 277(F) IWLAN –Side view



Mobile Panel 277(F) IWLAN –Front view



Charger



Transponder

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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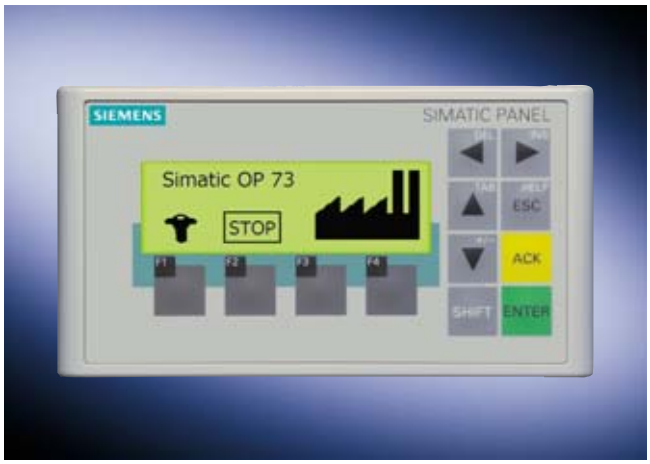
SIMATIC OP 73

Overview



- Operator panel for operator control and monitoring of machines and plants
- A new dimension in graphics: small and clever
- Pixel graphics 3" LCD, monochrome
- 8 system keys, 4 freely programmable function keys
- All interfaces (e.g. MPI, PROFIBUS DP) are onboard
- 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

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 via MPI/PROFIBUS DP or serially via RS485
  - individual contrast settings
  - no batteries are necessary

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Function (continued)

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:

For further information see "System interfaces"

Technical specifications

	OP 73
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.1 A
Memory	
Type of storage	
• Type	Flash
• Memory usable for project data/Options	256 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Compact As of Version 2004 SP 1; HSP OP 73 (must be ordered separately)
Display	
Display type	STN, Black/white
Size	3 "
Resolution (WxH in pixel)	160 x 48
MTBF backlighting (at 25 °C)	Approx. 100000 h
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	4 Function keys
System keys	8
Numeric/alphabetical input	Yes / Yes
Connection for mouse/keyboard/barcode reader	- / - / -
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
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 80°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C

	OP 73
Output port	
Interfaces	1 x RS-485 (Max. 1.5 Mbit/s)
Operating systems	
Operating system	Linux
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	500
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Not retentive
Number of process images	
• Process images	500
• Variables	1,000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1000 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen)
• dynamic objects	Bar graphs
Lists	
• Text lists	150
• Graphics list	0
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Fonts	
• Keyboard fonts	US American (English)

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SIMATIC OP 73

Technical specifications (continued)

	OP 73
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
• Fonts	WinCC flexible-Standard, Ideographic 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 "System Links"
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/D) in mm	138 mm x 68 mm / 28.5 mm Device depth
Weights	
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	D	**6AV6 651-1AA01-0AA0**
Consisting of:		
• OP 73 Operator Panel		
• SIMATIC WinCC flexible Compact engineering software		
• SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish), 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)		
• Voucher for Software Update Service for 1 year		
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Documentation (to be ordered separately)		
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection	B	**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		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
C) Subject to export regulations: AL: N and ECCN: EAR99T
D) Subject to export regulations: AL: N and ECCN: 5D992B1

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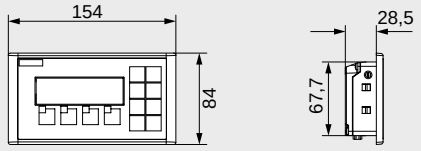
Dimensions



G_ST80_XX_00144

Panel cutout (W x H) in mm: 138 x 68

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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SIMATIC OP 77A

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 the important differences from OP7 or 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.
- 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 via MPI/PROFIBUS DP and serially via RS 485
  - individual contrast settings
  - no batteries are necessary

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Function (continued)

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
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.2 A
Memory	
Type of storage	
• Type	Flash / RAM
• Memory usable for project data/Options	256 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Compact As of Version 2004 SP 1; HSP OP 77 (must be ordered separately)
Display	
Display type	STN, Black/white
Size	4.5 "
Resolution (WxH in pixel)	160 x 64
MTBF backlighting (at 25 °C)	Approx. 100000 h
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	8 Function keys, 4 With LEDs
System keys	23
Numeric/alphabetical input	Yes / Yes
Connection for mouse/ keyboard/barcode reader	- / - / -
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 2/22, C-TICK, NEMA 4x
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 80°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C

	OP 77A
Type of output	
LED colors	green
Interfaces	1 x RS-422, 1 x RS-485 (Max. 1.5 Mbit/s)
PC card slot	No
CF card slot	No
Multi Media Card slot	No
USB	No
Ethernet	No
Operating systems	
Operating system	Linux
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	1,000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Not retentive
Recipes	
• Recipes	5
• Data records per recipe	20
• Entries per data record	20
• Recipe memory	32 kByte integrated Flash
Number of process images	
• Process images	500
• Variables	1,000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1000 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen)
• dynamic objects	Bar graphs
Lists	
• Text lists	300
• Graphics list	0
• Libraries	Yes

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SIMATIC OP 77A

Technical specifications (continued)

	OP 77A
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
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
• Fonts	WinCC flexible-Standard, Ideographic 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 "System Links"
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/D) in mm	135 mm x 171 mm / 38.5 mm Device depth
Weights	
Weight	0.5 kg

Ordering data

		Order No.
SIMATIC OP 77A Operator Panel with 4.5" display, monochrome, including mounting accessories	C	**6AV6 641-0BA11-0AX0**
OP 77A starter package Consisting of: • Operator Panel OP 77A • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish), 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) • Voucher for Software Update Service for 1 year	D	**6AV6 651-1BA01-0AA0**
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Documentation (to be ordered separately)		
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
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	B	**6AV6 691-1SA01-0AX0**
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
C) Subject to export regulations: AL: N and ECCN: EAR99T
D) Subject to export regulations: AL: N and ECCN: 5D992B1

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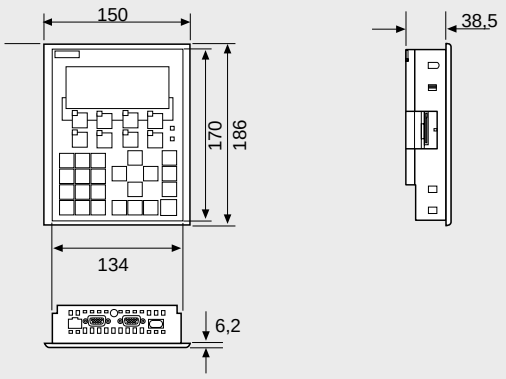
Dimensions



Panel cutout (W x H x D) in mm: 134 x 170 x 38,5

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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2

SIMATIC OP 77B

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): increases productivity, minimizes the engineering outlay, reduces the lifecycle 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 all over the world:
  - 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 Multi Media 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" 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 small 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
- Interfaces:
  - RS 485/422 interface for process connections (MPI and PROFIBUS DP up to 12 Mbit/s)
  - RS 232 interface for process connections
  - USB printer port
- Slot for multi media card (MMC)

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

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Function (continued)

- 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 (MMC)
  - 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".

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SIMATIC OP 77B

Technical specifications

	OP 77B
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.2 A
Memory	
Type of storage	
• Type	Flash / RAM
• Memory usable for project data/Options	1000 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Compact As of Version 2004 (must be ordered separately)
Display	
Display type	STN, Black/white
Size	4.5 "
Resolution (WxH in pixel)	160 x 64
MTBF backlighting (at 25 °C)	Approx. 100000 h
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	8 Function keys, 4 With LEDs
System keys	23
Numeric/alphabetical input	Yes / Yes
Connection for mouse/key-board/barcode reader	- / - / -
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 2/22, C-TICK, NEMA 4x, NEMA 12
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventila-tion	+/- 80°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C
I/O/Options	
I/O devices	Printer

	OP 77B
Type of output	
LED colors	None
Interfaces	1 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
Multi Media Card slot	1 x Multi Media Card slot
USB	1 x USB
Ethernet	No
Operating systems	
Operating system	Windows CE
Processor	
Processor	ARM
Functionality under WinCC flexible	
Help system	Yes
Message system	
• Number of messages	1,000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Not 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	2500 Text elements
• Graphics object	Bitmaps, 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 medium support	
• Multi Media Card	Yes
Recording	
• Recording/Printing	Messages, Report (shift log), Hardcopy
• Printer driver	ESC/P2, PCL3/PCL6
Fonts	
• Keyboard fonts	US American (English)

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Technical specifications (continued)

	OP 77B
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
• Fonts	Tahoma, WinCC flexible-Standard, Ideographic languages, all freely scalable
Transfer (Upload/Download)	
• Transfer of configuration	MPI/PROFIBUS DP, serial, USB, using 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), other non-Siemens drivers, See section "System Links"
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/D) in mm	135 mm x 171 mm / 38.5 mm Device depth
Weights	
Weight	0.5 kg

Ordering data

		Order No.
SIMATIC OP 77B Operator Panel with 4.5" display, monochrome, including mounting accessories	F	**6AV6 641-0CA01-0AX0**
OP 77B starter package Consisting of: • Operator Panel OP 77B • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable (5 m) • Voucher for Software Update Service for 1 year	F	**6AV6 651-1CA01-0AA0**
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Configuration set 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)	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
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	B	**6AV6 691-1SA01-0AX0**
Accessories		
Accessories for supplementary ordering		See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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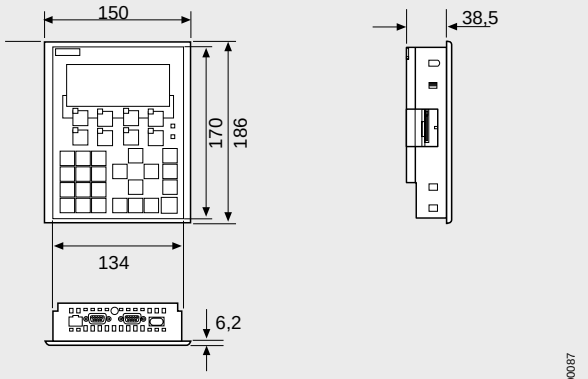
SIMATIC OP 77B

Dimensions



Panel cutout (W x H x D) in mm: 134 x 170 x 38,5

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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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 even be used where installation space is restricted thanks to portrait configuration
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduces the service and start-up costs due to:
  - Remote downloading of configuration with automatic transfer recognition also over WAN (Wide Area Network)
  - Maintenance-free design (no batteries) 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
  - 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, CCFL[1)]-backlit display, Bluemode (4 shades of blue)
- Analog resistive Touch
- Numerical system keyboard for decimal, binary and hexadecimal number formats
- On screen alphanumeric 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) **C**old **C**athode **F**luorescence **L**amps

Function

- Permanent window and template concept for creating 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 full-screen background images.
  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 (such as PaintShop, Designer or CorelDraw).
- Vector graphics
  Simple geometric basic forms (line, circle and rectangle) can be created directly in the configuring tool
- Predefined
  for labeling function keys, process images and process values in different font sizes
- Trend functions and bars
  are used for the graphic display of dynamic values

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SIMATIC TP 177A

Function (continued)

- 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 messages
  - 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
  Creation of picture templates (picture 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"

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Technical specifications

	TP 177A
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Rated current	0.24 A
Memory	
Type of storage	
• Type	Flash / RAM
• Memory usable for project data/Options	512 kByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Not battery backed
Configuration	
Configuration tool	WinCC flexible Compact As of Version 2004 SP 1 (must be ordered separately)
Display	
Display type	STN, 4 Blue levels
Size	5.7 "
Resolution (WxH in pixel)	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h
Operating mode	
Operating elements	Touchscreen
Touchscreen	analog, resistive
Numeric/alphabetical input	Yes / Yes
Connection for mouse/ keyboard/barcode reader	- / - / -
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, C-TICK, NEMA 4x
Ambient conditions	
Mounting position	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°
max. relative humidity (in %)	90%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C
• Transport, storage	-20 to +60°C
Type of output	
LED colors	None
Interfaces	1 x RS-422, 1 x RS-485 (Max. 1.5 Mbit/s)
PC card slot	No
CF card slot	No
Multi Media Card slot	No
USB	No
Ethernet	No
Operating systems	
Operating system	Linux
Processor	
Processor	ARM

	TP 177A
Functionality under WinCC flexible	
Number of Visual Basic scripts	Not possible
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	1,000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Not retentive
Recipes	
• Recipes	5
• Data records per recipe	20
• Entries per data record	20
• Recipe memory	32 kByte integrated Flash
Number of process images	
• Process images	250
• Variables	500
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1000 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen), Vector graphics
• dynamic objects	Diagrams, Bar graphs
Lists	
• Text lists	150
• Graphics list	100
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
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
• Fonts	WinCC flexible-Standard, Ideographic 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 "System Links"
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/D) in mm	198 mm x 142 mm / 45 mm Device depth
Weights	
Weight	0.75 kg

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SIMATIC TP 177A

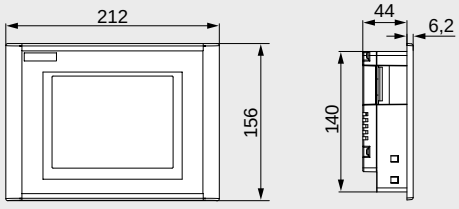
Ordering data

		Order No.
SIMATIC TP 177A Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	C	**6AV6 642-0AA11-0AX0**
TP 177A starter kit Consisting of: • Touch Panel TP 177A • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, Spanish), 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) • Software Update Service for 1 year	D	**6AV6 651-2AA01-0AA0**
Configuration		
• with SIMATIC WinCC flexible		See Chapter 4

B) Subject to export regulations: AL: N and ECCN: EAR99S
C) Subject to export regulations: AL: N and ECCN: EAR99T
D) Subject to export regulations: AL: N and ECCN: 5D992B1

	Order No.
Documentation (to be ordered separately)	
Operating Instructions TP 177A, TP 177B, OP 177B	
• 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 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B 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	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

Dimensions



Panel cutout (W x H) in mm: 198 x 142

G_ST80_XX_00143

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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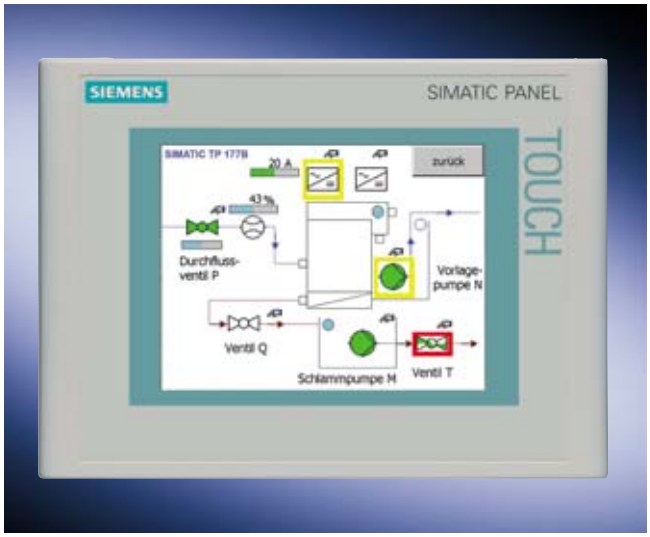
SIMATIC TP 177B (incl. INOX)

Overview



- Touch Panel with comprehensive functions for operator control and monitoring of machines and plants
- Pixel-graphics STN blue-mode/color display with analog touch screen
- The TP 177B PN/DP is also available with a stainless steel front (DIN EN 1672-2). The stainless steel front is appropriate e.g. for the increased demands of the food and beverages industry
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- PROFINET interface is already on-board in the color version
- Drivers are also available for non-Siemens PLCs

Benefits

- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a Multi Media Card
  - 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 all over the world:
  - 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 Multi Media Card, used for recipe data sets 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
- 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, stainless steel fronts (including gasket) provide 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 TP177B panels are now 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.

The *TP 177B PN/DP with stainless steel front* has been designed for all industries requiring such. 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.

Design

- 256 colors with color display or 4 blue-mode monochrome STN display
- CCFL[1)] 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 with color variant already on-board
- Can be configured using SIMATIC WinCC flexible 2005 Compact and higher
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- Multi Media Card slot, can be used for standard MMCs (for backing up recipe data sets, the configuration and system data)
- 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) **C**old **C**athode **F**luorescence **L**amps

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SIMATIC TP 177B (incl. INOX)

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 (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
- 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
  - clean screen function to support reliable cleaning of the touch panel in service
  - configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 (Compact 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.
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@rt Service
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rt Access
  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.

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Technical specifications

	TP 177B DP	TP 177B PN/DP	TP 177B PN/DP INOX (with stainless steel front)
Supply voltage			
Supply voltage	DC 24 V	DC 24 V	DC 24 V
permissible range	DC +18 to +30 V	DC +18 to +30 V	DC +18 to +30 V
Memory			
Type of storage			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	2048 kByte Usable memory for user data	2048 kByte Usable memory for user data	2048 kByte Usable memory for user data
Time			
Clock			
• Type	Hardware clock, Synchronizable, Not battery backed	Hardware clock, Synchronizable, Not battery backed	Hardware clock, Synchronizable, Not battery backed
Configuration			
Configuration tool	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must be ordered separately)
Display			
Display type	STN, 4 Blue levels	STN, 256 Colors	STN, 256 Colors
Size	5.7 " (120 mm x 90 mm)	5.7 " (120 mm x 90 mm)	5.7 " (120 mm x 90 mm)
Resolution (WxH in pixel)	320 x 240	320 x 240	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Operating mode			
Operating elements	Touchscreen	Touchscreen	Touchscreen
Touchscreen	analog, resistive	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / -	USB / USB / -	USB / USB / -
Degree of protection			
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20	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	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	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
Ambient conditions			
Mounting position	Vertical	Vertical	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°	+/- 35°
max. relative humidity (in %)	90%	90%	90%
Temperature			
• Operation (vertical installation)	0 to +50°C	0 to +50°C	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options			
I/O devices	Printer	Printer	Printer

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SIMATIC TP 177B (incl. INOX)

Technical specifications (continued)

	TP 177B DP	TP 177B PN/DP	TP 177B PN/DP INOX (with stainless steel front)
Output port			
Interfaces	RS232 optional, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	RS232 optional, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	RS232 optional, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
PC card slot	No		
CF card slot	No	No	No
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	1 x USB	1 x USB	1 x USB
Ethernet	No	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	RISC 32Bit, 200 MHz	RISC 32Bit, 200 MHz	RISC 32Bit, 200 MHz
Functionality under WinCC flexible			
Applications/options	–	Sm@rt Service , Sm@rt Access	Sm@rt Service , Sm@rt Access
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status/control	With SIMATIC S7	With SIMATIC S7	With SIMATIC S7
Message system			
• Number of messages	2,000	2,000	2,000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating 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	2500 Text elements	2500 Text elements	2500 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen), Vector graphics	Bitmaps, Icons, Icon (full screen), Vector graphics	Bitmaps, Icons, Icon (full screen), Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden 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 medium support			
• PC card		No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes

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Technical specifications (continued)

	TP 177B DP	TP 177B PN/DP	TP 177B PN/DP INOX (with stainless steel front)
Recording			
• Recording/Printing	Messages, Report (shift log), Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), 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	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
• Fonts	Tahoma, Arial, WinCC flexible-Standard, Ideographic languages, 1 Other character sets can be loaded, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, 1 Other character sets can be loaded, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, 1 Other character sets can be loaded, all freely scalable
Transfer (Upload/Download)			
• Transfer of configuration	MPI/PROFIBUS DP, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using 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), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other non-Siemens drivers, See section "System Links"
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Dimensions			
Front of enclosure (W x H)	212 mm x 156 mm	212 mm x 156 mm	212 mm x 156 mm
Mounting cutout/Device depth (W x H/D) in mm	198 mm x 142 mm / 46 mm Device depth	198 mm x 142 mm / 46 mm Device depth	198 mm x 142 mm / 46 mm Device depth
Weights			
Weight	0.8 kg	0.8 kg	0.9 kg

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SIMATIC TP 177B (incl. INOX)

Ordering data

		Order No.
SIMATIC TP 177B		
Touch Panel with 5.7" STN display		
• Blue mode (4 levels)	F	**6AV6 642-0BC01-1AX0**
• Color (256 colors)	F	**6AV6 642-0BA01-1AX0**
• Color (256 colors) with stainless steel front	F	**6AV6 642-8BA10-0AA0**
incl. mounting accessories		
TP 177B starter kit	F	**6AV6 551-2EA01-1AA0**
Consisting of:		
• TP 177B with STN display, color		
• Configuration software SIMATIC WinCC flexible Compact		
• SIMATIC HMI Manual Collection (DVD), 5 languages (English, French, German, Italian, Spanish)		
• MPI cable (5 m)		
• Software update service for 1 year		
Configuration software		
• with SIMATIC WinCC flexible		See Chapter 4
Configuration set	D	**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) with SIMATIC WinCC flexible Compact engineering software		

	Order No.
Documentation (to be ordered separately)	
Operating Instructions TP 177micro/TP 177A/TP 177B/ OP 1770B (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 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B	**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	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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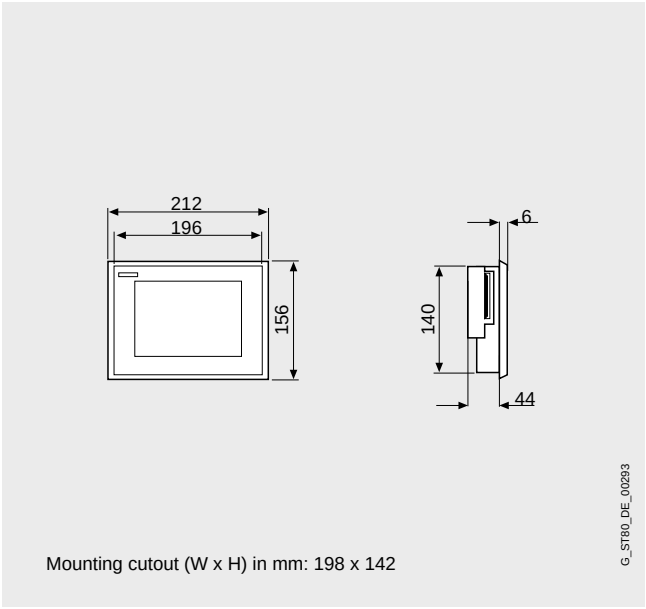
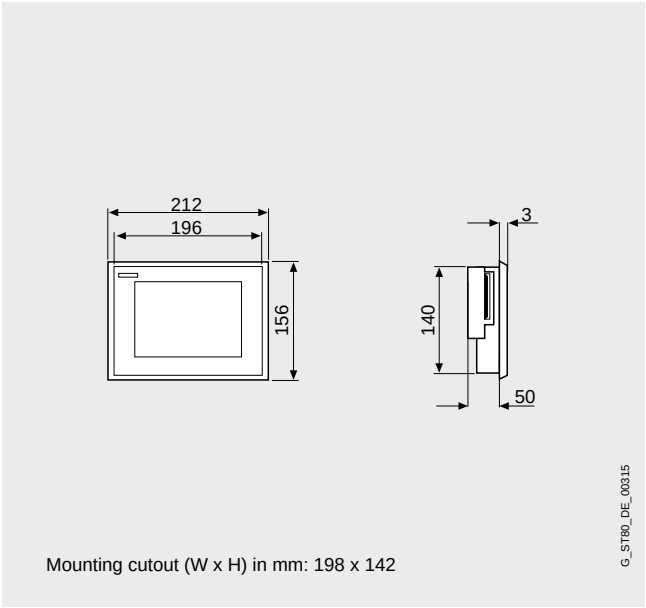
Dimensions



Mounting cutout (W x H) in mm: 198 x 142

SIMATIC TP 177B PN/DP and DP



Mounting cutout (W x H) in mm: 198 x 142

SIMATIC TP 177B PN/DP INOX

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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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 already 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 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
  - 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 all over the world:
  - 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 MMC, used for recipe data records 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, 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 panels are now 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
- CCFL[1)] Backlighting with long service life
- 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
- Multi Media Card slot, can be used for standard MMCs (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) **C**old **C**athode **F**luorescence **L**amps

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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 images. 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 (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 (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
- 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 (Compact 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 configuring, a " SINUMERIK HMI engineering package WinCC flexible" is also necessary.
  For further information, see the NC 60 Catalog.
- Sm@rt Service
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rt Access
  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.

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SIMATIC OP 177B

hnical specifications

	OP 177B DP (Bluemode)	OP 177B PN/DP (Color)
Supply voltage		
Supply voltage	DC 24 V	DC 24 V
permissible range	DC +18 to +30 V	DC +18 to +30 V
Memory		
Type of storage		
• Type	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	2048 kByte Usable memory for user data	2048 kByte Usable memory for user data
Time		
Clock		
• Type	Hardware clock, Synchronizable, Not battery backed	Hardware clock, Synchronizable, Not battery backed
Configuration		
Configuration tool	WinCC flexible Compact As of Version 2005 (must be ordered separately)	WinCC flexible Compact As of Version 2005 (must be ordered separately)
Display		
Display type	STN, 4 Blue levels	STN, 256 Colors
Size	5.7 " (120 x 90 mm)	5.7 " (120 x 90 mm)
Resolution (WxH in pixel)	320 x 240	320 x 240
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h
Operating mode		
Operating elements	Membrane keyboard	Membrane keyboard
Function keys, programmable	32 Function keys, 26 With LEDs	32 Function keys, 26 With LEDs
Touchscreen	analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / -	USB / USB / -
Degree of protection		
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	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	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

	OP 177B DP (Bluemode)	OP 177B PN/DP (Color)
Ambient conditions		
Mounting position	Vertical	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°
max. relative humidity (in %)	90%	90%
Temperature		
• Operation (vertical installation)	0 to +50°C	0 to +50°C
• Operation (max. tilt angle)	0 to +40°C	0 to +40°C
• Transport, storage	-20 to +60°C	-20 to +60°C
I/O/Options		
I/O devices	Printer	Printer
Type of output		
LED colors	green	green
Interfaces		
Interfaces	RS232 optional, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	RS232 optional, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
PC card slot	No	No
CF card slot	No	No
Multi Media Card slot	1 x Multi Media Card slot	1 x Multi Media Card slot
USB	1 x USB	1 x USB
Ethernet	No	1 x Ethernet (RJ45)
Operating systems		
Operating system	Windows CE	Windows CE
Processor		
Processor	RISC 32Bit, 200 MHz	RISC 32Bit, 200 MHz
Functionality under WinCC flexible		
Applications/options		Sm@rt Service , Sm@rt Access
Task planner	Yes	Yes
Help system	Yes	Yes
Status/control	With SIMATIC S7	With SIMATIC S7
Message system		
• Number of messages	2,000	2,000
• Bit messages	Yes	Yes
• Analog messages	Yes	Yes
• Message buffer	Circulating buffer (n x 256 Entries), Retentive, maintenance-free	Circulating 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 kByte integrated Flash, expandable	32 kByte integrated Flash, expandable

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Technical specifications (continued)

	OP 177B DP (Bluemode)	OP 177B PN/DP (Color)
Number of process images		
• Process images	500	500
• Variables	1,000	1,000
• Limit values	Yes	Yes
• Multiplexing	Yes	Yes
Image elements		
• Text objects	2500 Text elements	2500 Text elements
• Graphics object	Bitmaps, Icons, Icon (full screen), Vector graphics	Bitmaps, Icons, Icon (full screen), Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden 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
Data medium support		
• Multi Media Card	Yes	Yes
Recording		
• Recording/Printing	Messages, Report (shift log), Hardcopy	Messages, Report (shift log), 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	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
• Fonts	Tahoma, WinCC flexible-Standard, Ideographic languages, 1 Other character sets can be loaded, all freely scalable	Tahoma, WinCC flexible-Standard, Ideographic languages, 1 Other character sets can be loaded, all freely scalable

	OP 177B DP (Bluemode)	OP 177B PN/DP (Color)
Transfer (Upload/Download)		
• Transfer of configuration	MPI/PROFIBUS DP, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, Ethernet, using 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), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7-300/400, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other non-Siemens drivers, See section "System Links"
Expandability/openness		
• Open Platform Program	Yes	Yes
Dimensions		
Front of enclosure (W x H)	243 x 212.5 mm	243 x 212.5 mm
Mounting cutout/Device depth (W x H/D) in mm	229 x 196 / 45 Device depth	229 x 196 / 47 Device depth
Weights		
Weight	1 kg	1 kg

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SIMATIC OP 177B

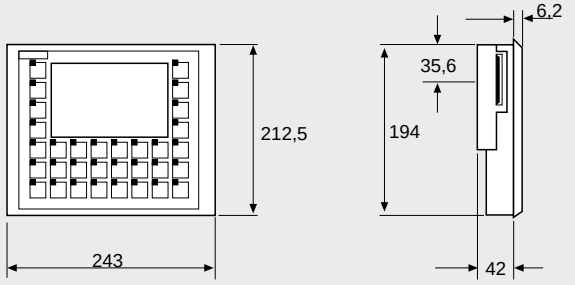
Ordering data

		Order No.
SIMATIC OP 177B		
Operator panel with 5.7" STN display,		
• Blue mode (4 levels)	F	**6AV6 642-0DC01-1AX0**
• Color (256 colors)	F	**6AV6 642-0DA01-1AX0**
incl. mounting accessories		
OP 177B starter kit	F	**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 (English, French, German, Italian, Spanish)		
• MPI cable (5 m), PC/PPI cable		
• Software update service for 1 year		
Configuration software		
• with SIMATIC WinCC flexible Compact		See Chapter 4
Configuration set	D	**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 Multi-master, PC/PPI cable Multimaster, MPI cable (5 m)		

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

	Order No.
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 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B	**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	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

Dimensions



Mounting cutout (W x H) in mm: 229 x 196

G_ST80_XX_00270

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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SIMATIC TP 277 6"

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.

Design

- 256-color TFT display
- CCFL[1)] 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 and higher
- 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
- The options 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 Fluorescence Lamps

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SIMATIC TP 277 6"

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 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 (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: Short-term and sequence archives
  - 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. 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 necessary.
  For further information, see the NC 60 Catalog.
- Sm@rt Service
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rt Access
  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.

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Technical specifications

	TP 277 6"
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +20.4 to +28.8 V
Memory	
Type of storage	
• Type	Flash / RAM
• Memory usable for project data/Options	4 MByte Usable memory for user data
Time	
Clock	
• Type	Software clock, Synchronizable, Not battery backed
Configuration	
Configuration tool	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)
Display	
Display type	TFT, 256 Colors
Size	5.7 "
Resolution (WxH in pixel)	320 x 240
MTBF backlighting (at 25 °C)	Approx. 60000 h
Operating mode	
Operating elements	Touchscreen
Touchscreen	analog, resistive
Numeric/alphabetical input	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / USB
Degree of protection	
Front	IP65, NEMA 4x (when installed)
Rear	IP20
Certifications & Standards	
Certifications	CE, UL, NEMA 4x
Ambient conditions	
Mounting position	Vertical
max. relative humidity (in %)	80%
Temperature	
• Operation	0 to +50°C
• Transport, storage	-20 to +60°C
I/O/Options	
I/O devices	Printer, Barcode reader
Output port	
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
Multi Media Card slot	1 x Multi Media Card slot
USB	1 x USB
Ethernet	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	RISC 32Bit

	TP 277 6"
Functionality under WinCC flexible	
Applications/options	ProAgent, Sm@rt Service , Sm@rt Access
Number of Visual Basic scripts	Number = 50
Task planner	Yes
Help system	Yes
Status/control	With SIMATIC S7
Message system	
• Number of messages	4,000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Circulating 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 (by means of optional memory card)
Number of process images	
• Process images	500
• Variables	2,048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	10000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden 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 medium support	
• Multi Media Card	Yes
Recording	
• Recording/Printing	Messages, Report (shift log), Color print, Hardcopy

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SIMATIC TP 277 6"

Technical specifications (continued)

	TP 277 6"
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
• Fonts	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic 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 "System Links"
Expandability/openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	212 x 156 mm
Mounting cutout/Device depth (W x H/D) in mm	197 x 141 / 45 Device depth
Weights	
Weight	0.78 kg

Ordering data

		Order No.
SIMATIC TP 277 6"	F	**6AV6 643-0AA01-1AX0**
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• 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)		
Applications/options		
when configuring with WinCC flexible		
• WinCC flexible /Sm@rtAccess		See Chapter 4
• WinCC flexible /Sm@rtService		See Chapter 4
• WinCC flexible /ProAgent		See Chapter 4
Documentation (to be ordered separately)		
Operating Instructions for TP 277 / OP 277		
• 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**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection	B	**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		
Accessories for supplementary ordering		See HMI accessories

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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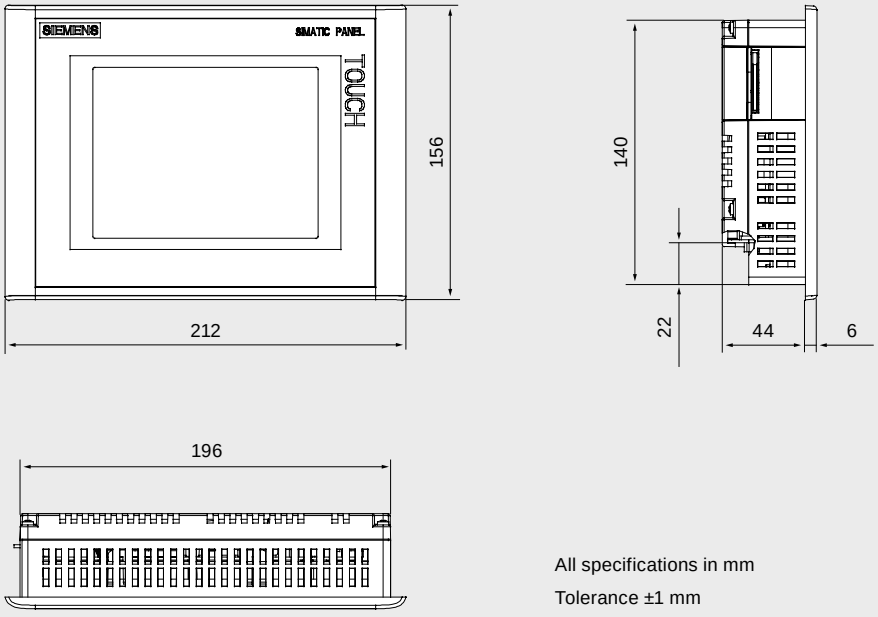
Dimensions



TP 277 6"

More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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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
- CCFL[1)] 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 and higher
- 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 Fluorescence Lamps

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Function

- Permanent window and template concept for creating screen templates
- Input/output fields;
  for visualizing and editing process parameters
- Function 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.
- 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 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 (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: Short-term and sequence archives
  - 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 necessary.
  For further information, see Catalog NC 60.
- Sm@rt Service:
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rt Access:
  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.

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SIMATIC OP 277 6"

Technical specifications

	OP 277 6"
Supply voltage	
Supply voltage	DC 24 V
Operating mode	
System keys	36
Connection for mouse/ keyboard/barcode reader	USB / USB / USB
Degree of protection	
Front	IP 65
Ambient conditions	
Mounting position	Vertical
max. relative humidity (in %)	80%
Output port	
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
USB	1 x USB (Universal Serial Bus)
Operating systems	
Operating system	Windows CE
Processor	
Processor	RISC 32Bit

	OP 277 6"
Functionality under WinCC flexible	
Task planner	Yes
Message system	
• Number of messages	2,000
• Bit messages	Yes
• Analog messages	Yes
Recipes	
• Recipes	300
• Data records per recipe	500
• Entries per data record	1000
Number of process images	
• Process images	500
• Variables	2,048
• Limit values	Yes
• Multiplexing	Yes
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 medium support	
• Multi Media Card	Yes
Languages	
• Online languages	16
Expandability/openness	
• Open Platform Program	Yes
Weights	
Weight	1.19 kg

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Ordering data		Order No.
SIMATIC OP 277 6”	F	**6AV6 643-0BA01-1AX0**
Configuration		
mit SIMATIC WinCC flexible		See Chapter 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• 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)		
Applications/options		
when configuring with WinCC flexible		
• WinCC flexible /Sm@rtAccess		See Chapter 4
• WinCC flexible /Sm@rtService		See Chapter 4
• WinCC flexible /ProAgent		See Chapter 4

	Order No.
Documentation (to be ordered separately)	
Operating Instructions for TP 277 / OP 277	
• 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**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B 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	
Accessories for supplementary ordering	See HMI accessories

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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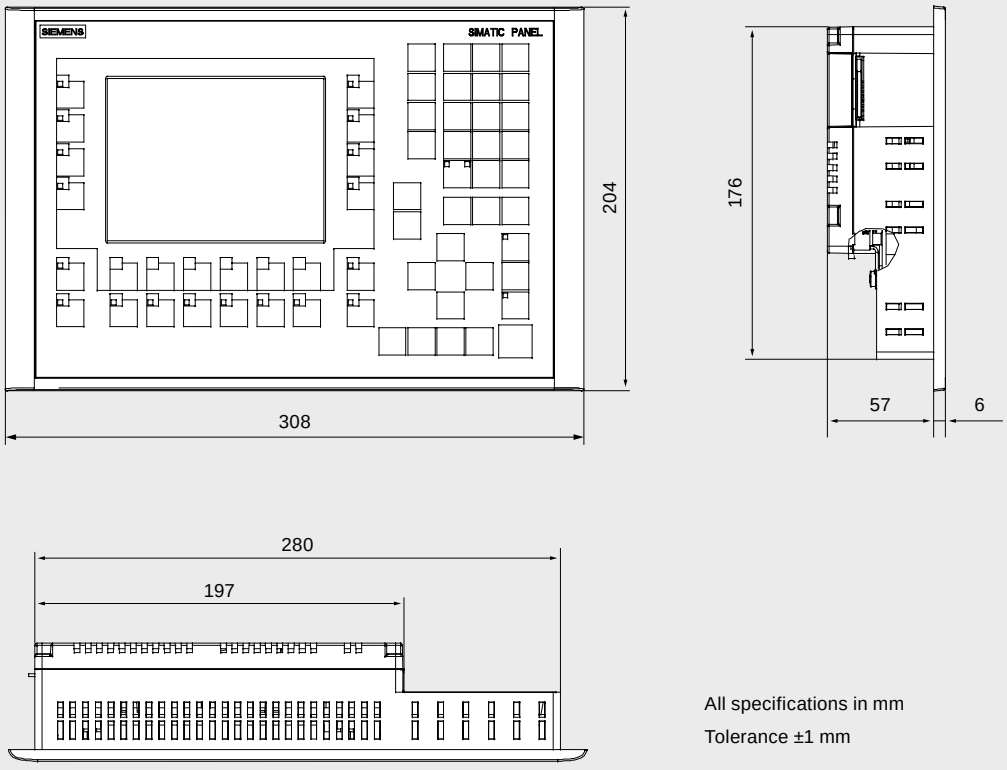
SIMATIC OP 277 6"

Dimensions



More information

Additional information is available in the Internet under:

http://www.siemens.com/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.

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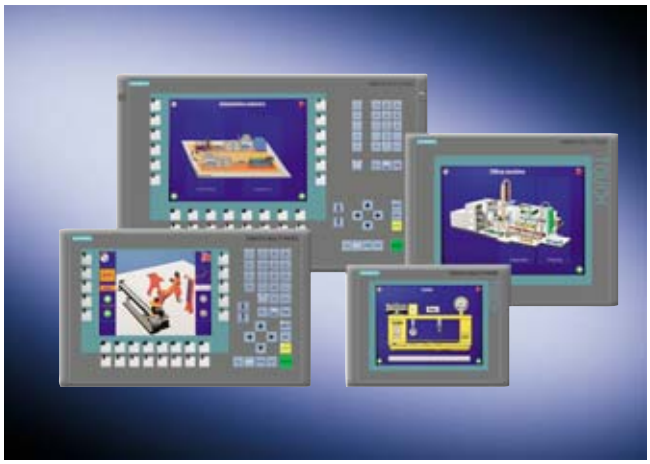
Overview



- 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 10" Key*:
  38 system keys, 36 user-configurable and freely inscribable function keys (28 with LEDs)
  MP 277 8" Key:
  38 system keys, 26 user-configurable and freely inscribable function keys (18 with LEDs)
  MP 277 8" and MP 277 10" Touch:
  Touch screen (analog/resistive)
- All interfaces (e.g. MPI, PROFIBUS DP, USB, Ethernet) are on-board

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.

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
  - WinAC MP 277/Software PLC (start of delivery 3Q/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 intranet/Internet
  - WinCC flexible/OPC-Server for communication with applications from various manufacturers
  - MS Pocket Internet Explorer (already included in the scope of delivery)
    IE6 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 the backlighting
- 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

They are used in a wide range of industries and applications which can be extended by means of the Multi Panel options, e.g. presentation of HTML documents via Microsoft Pocket Internet Explorer.

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.

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SIMATIC MP 277 (incl. INOX)

Design

- Compact design with low mounting depth
- The mounting dimensions of the 10" devices correspond to those of their predecessor
  See technical specifications for front dimensions
- 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 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
- 128 KB retentive memory for WinAC MP 277 data (data, times, counters, and flags)

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
  - Comprehensive 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 PC/CompactFlash Card or network drives over Ethernet)
  - Various archive types: Circular and sequential archives
  - 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: Internet Explorer 6 for Win CE
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Help texts
  for process images, 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 via Ethernet/USB/MPI/PROFIBUS DP/Modem/http, for download the project is compressed and transferred onto the CD/MultiMedia Card or the USB Stick (optional) as an option
  - 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
- Password system
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights

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Function (continued)

- 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

Configuration

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

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

Applications/options

- WinAC MP2007 software PLC for Multi Panels
  WinAC MP277 Option for MP277 (Software PLC similar to performance class CPU 315)
  The peripherals can be connected via Profibus DP
  Note: Utilization of the Software PLC requires WinCC flexible 2007 and MP277 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 2007
- 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 licence 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")
- PLCs from other manufacturers
  - 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".

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SIMATIC MP 277 (incl. INOX)

Technical specifications

SIMATIC MP 277	8" color TFT display, Touch	10" color TFT display, Touch	8" color TFT display, keyboard	10" color TFT display, keyboard	10" color TFT display, Touch with stainless steel front panel
Supply voltage					
Supply voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V	DC 24 V
permissible range	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +19.2 to +28.8 V
Memory					
Type of storage					
• Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	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	6 MByte Usable memory for user data
Time					
Clock					
• Type	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable
Configuration					
Configuration tool	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)	WinCC flexible Standard As of Version 2005 SP 1 (must be ordered separately)
Display					
Display type	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors
Size	7.5 "	10.4 "	7.5 "	10.4 "	10.4 "
Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Operating mode					
Operating elements	Touchscreen	Touchscreen	Membrane keyboard	Membrane keyboard	Touchscreen
Function keys, programmable			26 Function keys, 26 With LEDs	36 Function keys, 26 With LEDs	
System keys			36	36	
Touchscreen	analog, resistive	analog, resistive			analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Degree of protection					
Front	IP65	IP65	IP65	IP65	IP66K
Rear	IP20	IP20	IP20	IP20	IP20
Certifications & Standards					
Certifications	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL
Ambient conditions					
Mounting position	Vertical	Vertical	Vertical	Vertical	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°	+/- 35°	+/- 35°	+/- 35°
max. relative humidity (in %)	90%	90%	90%	90%	90%
Temperature					
• Operation	0 to +50°C	0 to +50°C	0 to +50°C	0 to +50°C	0 to +50°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options					
I/O devices	Printer, Barcode reader	Printer, Barcode reader	Printer, Barcode reader	Printer, Barcode reader	Printer, Barcode reader
Type of output					
LED colors			green	green	

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Technical specifications (continued)

SIMATIC MP 277	8" color TFT display, Touch	10" color TFT display, Touch	8" color TFT display, keyboard	10" color TFT display, keyboard	10" color TFT display, Touch with stainless steel front panel
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
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	1 x Multi Media Card slot
USB	2 x USB	2 x USB	2 x USB	2 x USB	2 x USB
Ethernet	1 x Ethernet (RJ45)	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	Windows CE
Processor					
Processor	ARM	ARM	ARM	ARM	ARM
Functionality under WinCC flexible					
Applications/options	ProAgent, Internet Explorer, Soft PLC, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Sm@rt Service , Sm@rt Access
Number of Visual Basic scripts	Number = 50	Number = 50	Number = 50	Number = 50	Number = 50
Task planner	Yes	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes	Yes
Status/control	With SIMATIC S7	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	4,000
• Bit messages	Yes	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free	Circulating buffer (n x 512 Entries), Retentive, maintenance-free
Recipes					
• Recipes	300	300	300	300	300
• Data records per recipe	500	500	500	500	500
• Entries per data record	1000	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	64 kByte integrated Flash, expandable
Number of process images					
• Process images	500	500	500	500	500
• Variables	2,048	2,048	2,048	2,048	2,048
• Limit values	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes
Image elements					
• Text objects	10000 Text elements	10000 Text elements	10000 Text elements	10000 Text elements	10000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons
Lists					
• Text lists	500	500	500	500	500
• Graphics list	400	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes	Yes

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SIMATIC MP 277 (incl. INOX)

Technical specifications (continued)

SIMATIC MP 277	8" color TFT display, Touch	10" color TFT display, Touch	8" color TFT display, keyboard	10" color TFT display, keyboard	10" color TFT display, Touch with stainless steel front panel
Archiving					
• Number of archives per project	20	20	20	20	20
• Number of measuring points per project	20	20	20	20	20
• Number of entries per archive	10,000	10,000	10,000	10,000	10,000
• Memory location	SD and Multi Media Card	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	50
• Passwords exportable	Yes	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32	32
Data medium support					
• Multi Media Card	Yes	Yes	Yes	Yes	Yes
Recording					
• Recording/Printing	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy
Fonts					
• Keyboard fonts	US American (English)	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	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
• Fonts	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible-Standard, Ideographic 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	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 "System Links"	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 "System Links"	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 "System Links"	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 "System Links"	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 "System Links"
Expandability/openness					
• Open Platform Program	Yes	Yes	Yes	Yes	Yes
Dimensions					
Front of enclosure (W x H)	240 x 180 mm	325 x 263 mm	352 x 221 mm	483 x 310 mm	325 x 263 mm
Mounting cutout/Device depth (W x H/D) in mm	226 x 166 / 60 mm Device depth	310 x 248 / 61 mm Device depth	338 x 206 / 61 mm Device depth	434 x 291 / 60 mm Device depth	310 x 248 / 61 mm Device depth
Weights					
Weight	1.61 kg	2.65 kg	2.25 kg	4.95 kg	4.2 kg

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Ordering data

		Order No.
SIMATIC MP 277		
Multi Panel with		
• 8" color TFT display, Touch	F	**6AV6 643-0CB01-1AX1**
• 10" color TFT display, Touch	F	**6AV6 643-0CD01-1AX1**
• 8" color TFT display, keyboard	F	**6AV6 643-0DB01-1AX1**
• 10" color TFT display, keyboard	F	**6AV6 643-0DD01-1AX1**
• 10" color TFT display, Touch with stainless steel front panel	F	**6AV6 643-8AD10-0AA1**
incl. mounting accessories		
SIMATIC MP 277 8" Touch Starter Package	F	**6AV6 652-3MB01-0AA0**
Consisting of:		
• SIMATIC MP 277 8" Touch		
• SIMATIC WinCC flexible 2007		
• SIMATIC HMI Manual Collection		
• Voucher for Software Update Service for 1 year		
• MPI cable, 5 m (only for download and test purposes)		
• PC/PPI cable (RS 232)		
SIMATIC MP 277 10" Touch Starter Package	F	**6AV6 652-3PB01-0AA0**
Consisting of:		
• SIMATIC MP 277 10" Touch		
• SIMATIC WinCC flexible 2007		
• SIMATIC HMI Manual Collection		
• Voucher for Software Update Service for 1 year		
• MPI cable, 5 m (only for download and test purposes)		
• PC/PPI cable (RS 232)		
Complete pre-assembled packages: SIMATIC MP 277 with WinAC MP 2007		
Package MP 277 8" Touch	F	**6AV6 652-3MC01-1AA0**
• MP 277 • Single license for MP 277 on USB stick[1)] • Standard MultiMediaCard (empty)		
Package MP 277 8" Key	F	**6AV6 652-3LC01-1AA0**
• MP 277 • Single license for MP 277 on USB stick[1)] • Standard MultiMediaCard (empty)		
Package MP 277 10" Touch	F	**6AV6 652-3PC01-1AA0**
• MP 277 • Single license for MP 277 on USB stick[1)] • Standard MultiMediaCard (empty)		
Package MP 277 10" Key	F	**6AV6 652-3NC01-1AA0**
• MP 277 • Single license for MP 277 on USB stick[1)] • Standard MultiMediaCard (empty)		

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

		Order No.
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of: • WinCC flexible Standard engineering software • Documentation DVD, 5 languages (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable, 5 m		
Applications/options		
When configuring with WinCC flexible		
• WinCC flexible /Sm@rtAccess		See Chapter 4
• WinCC flexible /Sm@rtService		See Chapter 4
• WinCC flexible /OPC-Server		See Chapter 4
• WinCC flexible /ProAgent		See Chapter 4
• WinCC flexible /Audit		See Chapter 4
• WinAC MP 2007 /Software SPS		See Page 2/121
Documentation (to be ordered separately)		
MP 277 Operating Instructions		
• German		**6AV6 691-1DJ01-0AA0**
• English		**6AV6 691-1DJ01-0AB0**
• French		**6AV6 691-1DJ01-0AC0**
• Italian		**6AV6 691-1DJ01-0AD0**
• Spanish		**6AV6 691-1DJ01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection	B	**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		
Accessories		
Accessories for supplementary ordering		See HMI accessories

1) Can only be used for license handling

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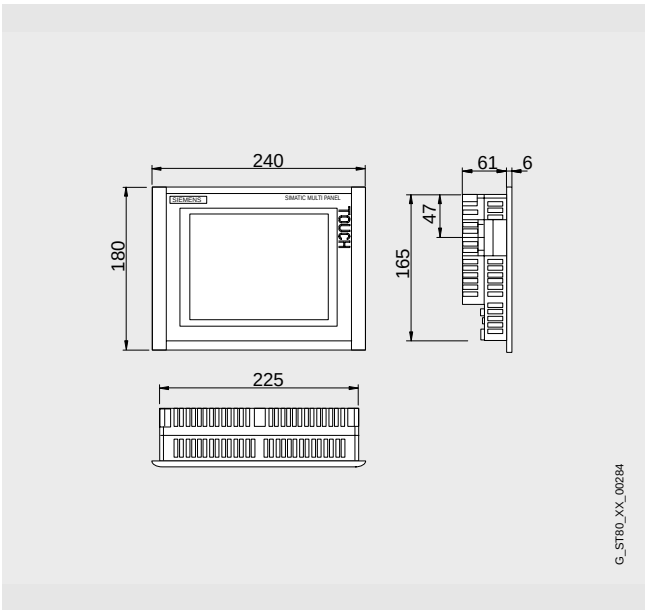
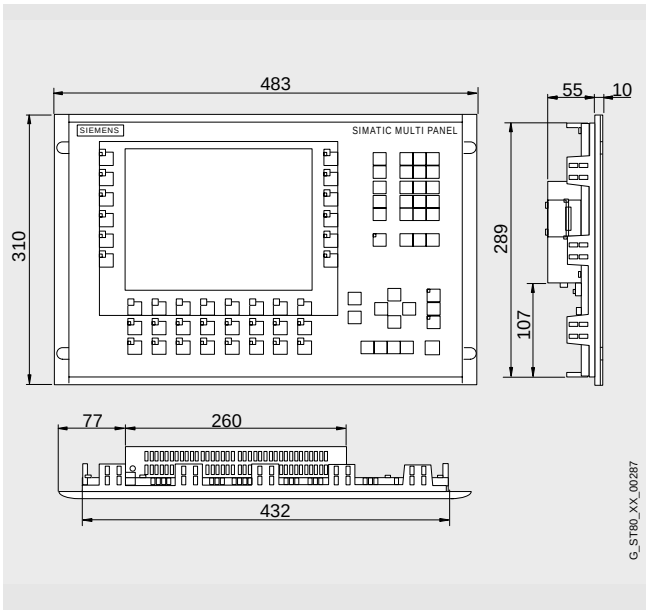
SIMATIC MP 277 (incl. INOX)

Dimensions

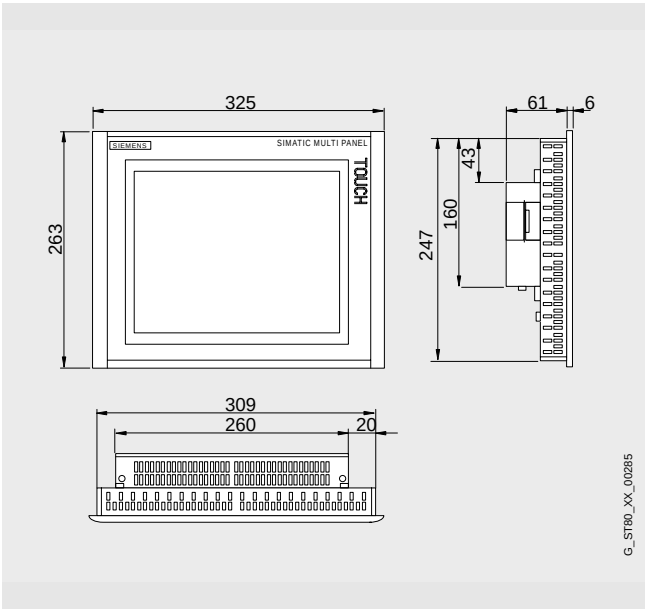
All specifications in mm (tolerance ± 1 mm)



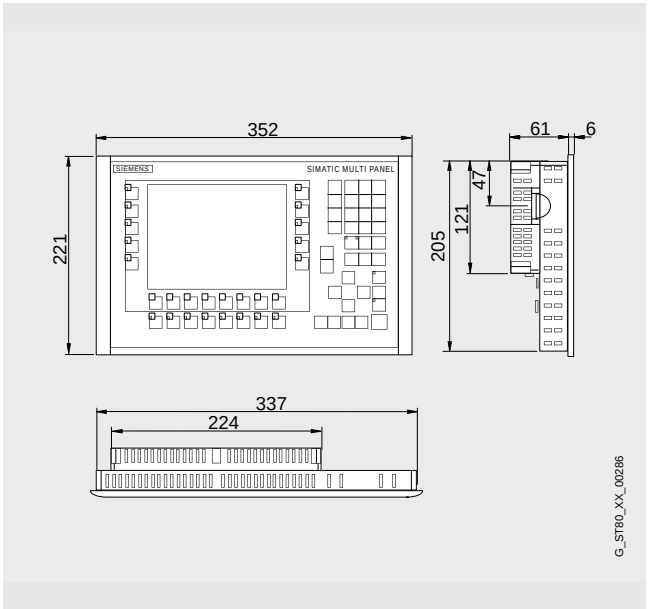
MP 277 8" Touch



MP 277 10" Touch with stainless steel front



MP 277 10" Touch



MP 277 8" Key

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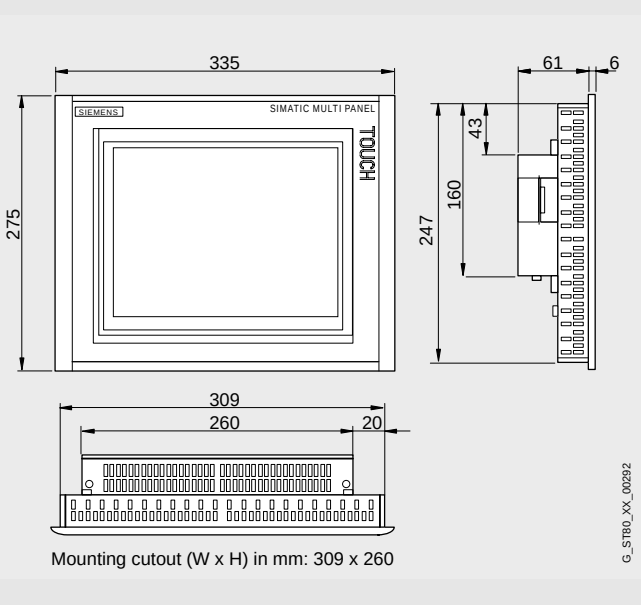
Dimensions (continued)

All specifications in mm (tolerance ± 1 mm)



Mounting cutout (W x H) in mm: 309 x 260

MP 277 10" Key

More information

Additional information is available in the Internet under:

http://www.siemens.com/mp

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.

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SIMATIC MP 370 (incl. INOX)

Overview

- Like operator panels, Multi Panels are used for controlling and monitoring machines locally.
- Their functionality can be expanded by the installation of additional Windows CE applications (Multi Panel and Panel options)
- SIMATIC MP 370 devices on the basis of Windows CE combine the ruggedness of Operator Panels with the flexibility of PCs
- Pixel-graphics 12.1" or 15.1" TFT display, color (256 colors)
- The MP 370 15" Touch is also available with a stainless steel front (DIN EN 1672-2). The stainless steel front is appropriate e.g. for the increased demands of the food and beverages industry.
- *MP 370 12" Keys:*
  38 system keys, 36 user-configurable and freely-inscribable function keys (36 with LEDs)
  MP 370 12" and MP 370 15" Touch:
  Touchscreen (analog/resistive)
- All interfaces (e.g. MPI, PROFIBUS DP, USB, Ethernet, serial) are on-board

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 (already included in scope of delivery)
- Reduction of service and commissioning costs through:
  - Backup/Restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP, RS 232 (serial) or optionally via PC/CF Card
  - Remote download/upload of the configuration and firmware
  - Specific drivers can be reloaded
  - Long service life of the backlighting
- Graphics library with off-the-shelf picture objects
- Can be used all over the world:
  - 32 languages can be configured (incl. Asian and Cyrillic character sets)
  - Up to 5 languages can be switched online.
- Standard hardware and software interfaces for increasing flexibility:
  - PC/CF Card slot for memory expansions, backup/restore or additional interfaces
  - Ethernet (TCP/IP) for central data and project management; when configuring with WinCC flexible, the control link is possible to SIMATIC S7
  - Standard Windows storage formats (CSV) for archives and recipes permit further processing with standard tools (e.g. Microsoft Excel)
- 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, stainless steel fronts (including gasket) provide protection against contamination by foods.

Application

The SIMATIC MP 370 Multi Panels can be used wherever machines and systems are controlled and monitored locally – in production, process and building automation alike. They are used in a wide range of industries and applications which can be extended by means of the Multi Panel options, e.g. through presentation of HTML documents via Microsoft Pocket Internet Explorer.

Windows CE fulfills the basic requirements for use in harsh industrial environments. 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.

The MP370 15" Touch with stainless steel front has been additionally designed for all industries requiring such. The front can be disinfected, and does not influence 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.

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Design

- 12.1" or 15.1" TFT color display, 256 colors
- *MP 370 12" Keys:*
  - Membrane keyboard, 38 system keys, 36 freely-inscribable function keys (36 with LED), of which 36 are softkeys
- *MP 370 12" and 15" Touch*:
  - Touch screen (analog/resistive)
- Compact construction with a mounting depth of only 65 mm (MP 370 12" Keys), 59 mm (MP 370 12" Touch) or 69 mm (MP 370 15" Touch)
- The front is resistant to various oils, greases and standard detergents.
- Degree of protection IP65/NEMA 4x/NEMA 12 (front) or IP20 (on the rear of the unit)
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - TTY/RS 232, RS 485/RS 422 interface for process connections (MPI, PROFIBUS DP up to 12 Mbit/s)
  - Serial RS 232 interface (printer, download/upload)
  - USB for mouse, keyboard, printer, barcode reader and downloading/uploading configurations
  - Ethernet interface (TCP/IP) for exchanging data with a higher-level PC, for connecting a network printer and downloading/uploading configurations
- Slot for Compact Flash card (CF card)
- Slot for PC card

Function

- Display and modification of process parameters
- Function keys (for MP 370B 12" keys only)
  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:
  - *MP 370 12":*
    SVGA resolution (800 x 600 pixels)
    MP 370 15" Touch:
    XGA resolution (1024 x 768 pixels)
    with 256 colors for picture elements, 16 colors for text
  - 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 period;
    reading ruler for determining the current values and displaying them in a table
  - Comprehensive image libraries (SIMATIC HMI symbol library)
  - Screen objects: Slider, gauge, clock
  - Cyclic function processing using timers
- Multiplex function for variables
- Signaling system
  - Administration of status, fault and system messages
  - Status and fault messages with message history
  - Pre-configured message image, message window and message line
- Archiving of messages and process values (on PC/CompactFlash Card or network drives over Ethernet)
  - Various archive types: Circular and sequential archives
  - 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
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Recipe management
  - With additional data storage (on PC/CompactFlash 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
- 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 ProTool variables (comparison operations, loops, etc.)
- Help texts
  for process images, 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 the template concept;
  - Creation of screen templates:
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC/CompactFlash 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/RS232 modem and CompactFlash 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
- 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
- Language selection:
  - Language-dependent texts and graphics
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights

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SIMATIC MP 370 (incl. INOX)

Function (continued)

- Visual Basic Runtime object model
- Service functions (optionally with "WinCC flexible /Sm@rt-Service")
  - 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

Configuration

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

Applications/options

- WinCC flexible /ProAgent;
  Targeted and fast process error diagnosis in systems and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote control and observation as well as communication between various SIMATIC HMI systems (see HMI software/ SIMATIC WinCC flexible runtime software/WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote maintenance and service of machines / systems via the Internet/Intranet (see HMI software / SIMATIC WinCC flexible runtime software/WinCC flexible RT options)
- WinCC flexible/OPC Server
  Communication with applications (e.g. MES, ERP or office applications) of various manufacturers (see HMI software / SIMATIC WinCC flexible runtime software/WinCC flexible RT options)

Integration

The MP 370 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens PLCs:
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - Omron
- Via Ethernet (TCP/IP) to superordinate PC, network printer
- Ethernet communication with the SIMATIC S7
- Multiprotocol-capable
- 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 licence WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring;
  For further details, see Catalog NC 60)

Note:

Further information can be found under "System interfaces".

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Technical specifications

SIMATIC MP 370	12" Touch	12" Key	15" Touch / 15" Touch INOX
Supply voltage			
Supply voltage	DC 24 V	DC 24 V	DC 24 V
permissible range	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V
Rated current	1.15 A	1.15 A	1.8 A
Power	28 W	28 W	41 W
Backup battery			
Backup battery	optional 3.6 V	optional 3.6 V	optional 3.6 V
Memory			
Type of storage			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	7168 kByte Usable memory for user data / 5689 kByte Memory for options	7168 kByte Usable memory for user data / 5689 kByte Memory for options	7168 kByte Usable memory for user data / 5689 kByte Memory for options
Time			
Clock			
• Type	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable
Configuration			
Configuration tool	ProTool As of Version 5.2 SP 3 or WinCC flexible Standard As of Version 2004 (must be ordered separately)	ProTool As of Version 5.2 SP 3 or WinCC flexible Standard As of Version 2004 (must be ordered separately)	ProTool As of Version 6 SP 2 or WinCC flexible Standard As of Version 2004 (must be ordered separately)
Display			
Display type	TFT, 256 Colors	TFT, 256 Colors	TFT, 256 Colors
Size	12.1 " (246 mm x 184 mm)	12.1 " (248 mm x 187 mm)	15.1 " (308 mm x 232 mm)
Resolution (WxH in pixel)	800 x 600	800 x 600	1024 x 768
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Operating mode			
Operating elements	Touchscreen	Membrane keyboard	Touchscreen
Function keys, programmable		36 Function keys, 36 With LEDs	
Membrane keyboard	No	Yes	No
System keys		38	
Touchscreen	analog, resistive		analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
Degree of protection			
Front	IP65	IP65	IP65
Rear	IP20	IP20	IP20
Certifications & Standards			
Certifications	CE, FM Class I Div. 2, cULus, EX zone 2/22	CE, FM Class I Div. 2, cULus, EX zone 2/22	CE, FM Class I Div. 2, cULus, EX zone 2/22, C-TICK
Ambient conditions			
Mounting position	Vertical	Vertical	Vertical
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°	+/- 35°
max. relative humidity (in %)	85%	85%	85%
Temperature			
• Operation (vertical installation)	0 to +50°C	0 to +50°C	0 to +50°C
• Operation (max. tilt angle)	0 to +35°C	0 to +35°C	0 to +35°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options			
I/O devices	Printer, Barcode reader	Printer, Barcode reader	Printer, Barcode reader

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SIMATIC MP 370 (incl. INOX)

Technical specifications (continued)

SIMATIC MP 370	12" Touch	12" Key	15" Touch / 15" Touch INOX
Type of output			
LED colors		green	
Acoustics	Buzzer	Buzzer	Buzzer
Interfaces	1 x TTY, 2 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x TTY, 2 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x TTY, 2 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
PC card slot	1 x PC card slot	1 x PC card slot	1 x PC card slot
CF card slot	1 x CF card slot	1 x CF card slot	1 x CF card slot
USB	1 x USB	1 x USB	1 x USB
Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Processor			
Processor	MIPS	MIPS	MIPS
Functionality under WinCC flexible			
Applications/options	ProAgent, Internet Explorer, ThinClient, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, Sm@rt Service , Sm@rt Access	ProAgent, Internet Explorer, ThinClient, Sm@rt Service , Sm@rt Access
Number of Visual Basic scripts	Number = 100	Number = 100	Number = 100
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status/control	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7
Message system			
• Number of messages	4,000	4,000	4,000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Circulating buffer (n x 1024 Entries), Not retentive	Circulating buffer (n x 1024 Entries), Not retentive	Circulating buffer (n x 1024 Entries), Not retentive
Recipes			
• Recipes	500	500	500
• Data records per recipe	1,000	1,000	1,000
• Entries per data record	1000	1000	1000
• Recipe memory	128 kByte integrated Flash, expandable	128 kByte integrated Flash, expandable	128 kByte integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	2,048	2,048	2,048
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	30000 Text elements	30000 Text elements	30000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons
Lists			
• Text lists	500	500	500
• Graphics list	500	500	500
• Libraries	Yes	Yes	Yes

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Technical specifications (continued)

SIMATIC MP 370	12" Touch	12" Key	15" Touch / 15" Touch INOX
Archiving			
• Number of archives per project	50	50	50
• Number of measuring points per project	50	50	50
• Number of entries per archive	50,000	50,000	50,000
• Archiving types	Long-term archive, short-term archive, message archive, process value archive	Long-term archive, short-term archive, message archive, process value archive	Long-term archive, short-term archive, message archive, process value archive
• Memory location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
• 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
• external evaluation	readable, e.g. with MS Excel, MS Access, etc.	readable, e.g. with MS Excel, MS Access, etc.	readable, e.g. with MS Excel, MS Access, etc.
• Size of archive	depending on free memory on ext. card/stick or on free hard disk space via network drive	depending on free memory on ext. card/stick or on free hard disk space via network drive	depending on free memory on ext. card/stick or on free hard disk space via network drive
• Online evaluation	Using trends	Using trends	Using trends
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Recording			
• Recording/Printing	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), 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
• Fonts	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable
Transfer (Upload/Download)			
• Transfer of configuration	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using 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), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, TI 505, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus), other non-Siemens drivers, See section "System Links"	S5, S7-200, S7- 300/400, TI 505, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus), other non-Siemens drivers, See section "System Links"
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Dimensions			
Front of enclosure (W x H)	335 x 275 mm	483 x 310 mm	400 x 310 mm
Mounting cutout/Device depth (W x H/D) in mm	310 x 248 / 59 mm Device depth	450 x 290 / 59 mm Device depth	368 x 290 / 69 mm Device depth
Weights			
Weight	4.5 kg	5.1 kg	5.7 kg

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SIMATIC MP 370 (incl. INOX)

Ordering data

		Order No.
SIMATIC MP 370		
Multi Panel with		
• 12" color TFT display, Touch	F	**6AV6 545-0DA10-0AX0**
• 12" color TFT display, Keyboard	F	**6AV6 542-0DA10-0AX0**
• 15" color TFT display, Touch	F	**6AV6 545-0DB10-0AX0**
• 15" color TFT display, Touch with stainless steel front	F	**6AV6 545-8DB10-0AA0**
incl. mounting accessories		
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
MP 370 configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• 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)		
Applications/options		
• WinCC flexible /Sm@rtAccess		See Chapter 4
• WinCC flexible /Sm@rtService		See Chapter 4
• WinCC flexible /OPC-Server		See Chapter 4
• WinCC flexible /ProAgent		See Chapter 4
• WinCC flexible /Audit		See Chapter 4

	Order No.
Documentation (to be ordered separately)	
Operating Instructions MP 370 (WinCC flexible)	
• German	**6AV6 691-1DE01-0AA0**
• English	**6AV6 691-1DE01-0AB0**
• French	**6AV6 691-1DE01-0AC0**
• Italian	**6AV6 691-1DE01-0AD0**
• Spanish	**6AV6 691-1DE01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B 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	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

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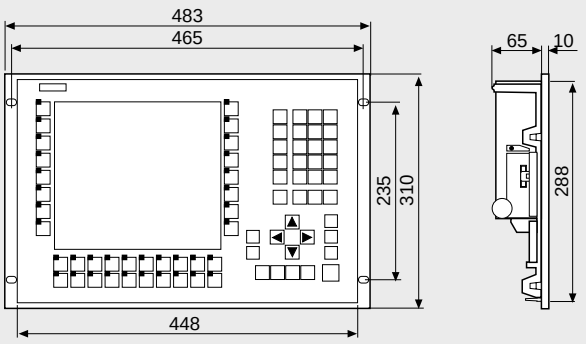
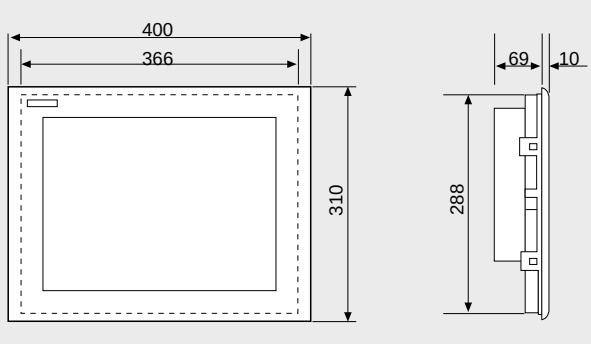
Dimensions



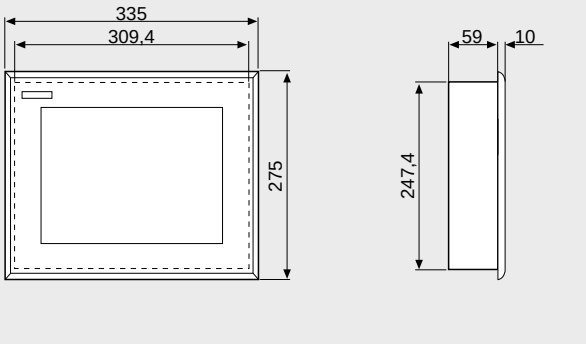
Panel cutout (W x H x D) in mm: 450 x 290 x 65

MP 370 12" Keys



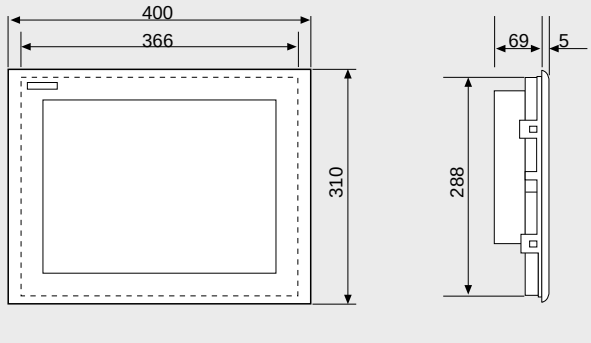
Panel cutout (W x H x D) in mm: 368 x 290 x 69

MP 370 15" Touch



Panel cutout (W x H x D) in mm: 310 x 248 x 59

MP 370 12" Touch



Panel cutout (W x H) in mm: 368 x 290

MP 370 15" Touch INOX

More information

Additional information is available in the Internet under:

http://www.siemens.com/mp

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.

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SIMATIC MP 377

Overview

- Like operator panels, Multi Panels (MP) are used for local machine operation and monitoring
- Their functionality can be expanded by the installation of 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 15.1" or 19" TFT display, color (64k colors)
- *MP 377 12" Key:*
  38 system keys, 36 user-configurable and freely inscribable function keys (36 with LEDs)
  MP 377 12" Touch, MP 377 15" Touch and MP 377 19" Touch:
  Touch screen (analog/resistive)
- All interfaces, e.g. MPI, PROFIBUS DP, USB, PROFINET (Ethernet TCP/IP), are on-board

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 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 intranet/Internet
  - WinCC flexible/OPC-Server for communication with applications from various manufacturers
  - MS Pocket Internet Explorer (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 the backlighting
- 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 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.

Design

- 12.1", 15.1", or 19" TFT Color Display, 64 k colors
- *MP 377 12" Key*:
  Membrane keyboard, 38 system keys, 36 freely inscribable function keys (36 with LED), of which 36 are softkeys
- *MP 377 12" Touch, 15" Touch, and 19" Touch:*
  Touch screen (analog/resistive)
- 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
- 512 KB retentive memory for WinAC MP 377 data (data, times, counters and flags)

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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:
  - *MP 377 12" Touch/Keys*:
    SVGA resolution (800 x 600 pixels)
    MP 377 15" Touch:
    XGA resolution (1024 x 768 pixels)
    MP 377 19" Touch:
    SXGA resolution (1280 x 1024 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
  - Comprehensive 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 PC/CompactFlash Card or network drives over Ethernet)
  - Various archive types: Circular and sequential archives
  - 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 PC/CompactFlash 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
- 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 images, 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
- Permanent window expanded by the template concept;
  - Creation of screen templates:
- 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

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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 PLCs:
  - 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 configuring;

For further information, see Catalog NC 60)

Note:

For further information, see "System interfaces"

Configuration

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

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 2007 Software PLC for Multi Panels
- WinAC MP377 option for MP377 (Software PLC)
  The peripherals can be connected via 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)

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Technical specifications

	12" Touch	12" Key	15" Touch	19" Touch
Supply voltage				
Supply voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
permissible range	DC +19.2 to +28.8 V	DC +19.2 to +28.8 V	DC +19.2 to +28.8 V	DC +19.2 to +28.8 V
Rated current	1.5 A	1.5 A	1.9 A	2.5 A
Memory				
Type of storage				
• Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	12288 kByte Usable memory for user data / 12288 kByte Memory for options	12288 kByte Usable memory for user data / 12288 kByte Memory for options	12288 kByte Usable memory for user data / 12288 kByte Memory for options	12288 kByte Usable memory for user data / 12288 kByte Memory for options
Time				
Clock				
• Type	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable	Hardware clock, battery backed, Synchronizable
Protocols				
Protocols (terminal link)				
• Sm@rtAccess	Yes	Yes	Yes	Yes
Configuration				
Configuration tool	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must be ordered separately)	WinCC flexible Standard As of Version 2007 (must be ordered separately)
Display				
Display type	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors	TFT, 65536 Colors
Size	12.1 " (246 x 184.5 mm)	12.1 " (246 x 184.5 mm)	15 " (304.1 x 228.1 mm)	19 " (376.3 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)	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h	Approx. 50000 h
Operating mode				
Operating elements	Touchscreen	Membrane keyboard	Touchscreen	Touchscreen
Function keys, programmable		36 Function keys, 36 With LEDs		
System keys		38		
Touchscreen	analog, resistive		analog, resistive	analog, resistive
Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Connection for mouse/ keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
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	IP20	IP20	IP20
Certifications & Standards				
Certifications	CE, cULus, C-TICK, NEMA 4, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, cULus, C-TICK, NEMA 4, NEMA 12	CE, cULus, C-TICK, NEMA 4, NEMA 12	cULus, C-TICK, NEMA 4, NEMA 12
Ambient conditions				
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°	+/- 35°	+/- 35°
max. relative humidity (in %)	90%	90%	90%	90%
Temperature				
• Operation (vertical installation)	0 to +50°C	0 to +50°C	0 to +50°C	0 to +50°C
• Transport, storage	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C
I/O/Options				
I/O devices	Printer, Card reader, Barcode reader	Printer, Card reader, Barcode reader	Printer, Card reader, Barcode reader	Printer, Card reader, Barcode reader

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SIMATIC MP 377

Technical specifications (continued)

	12" Touch	12" Key	15" Touch	19" Touch
Type of output				
LED colors		Red, green		
Acoustics	Sound signalWAV tone	Sound signalWAV tone	Sound signalWAV tone	Sound signalWAV tone
interfaces				
Interfaces	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)
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, Pocket Word, Pocket Excel, Sm@rt Service, Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Pocket Word, Pocket Excel, Sm@rt Service, Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Pocket Word, Pocket Excel, Sm@rt Service, Sm@rt Access	ProAgent, Internet Explorer, Soft PLC, Pocket Word, Pocket Excel, Sm@rt Service, Sm@rt Access
Number of Visual Basic scripts	Number = 100	Number = 100	Number = 100	Number = 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	Circulating buffer (n x 1024 Entries), Retentive, maintenance-free	Circulating buffer (n x 1024 Entries), Retentive, maintenance-free	Circulating buffer (n x 1024 Entries), Retentive, maintenance-free	Circulating 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
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	30000 Text elements	30000 Text elements	30000 Text elements	30000 Text elements
• Graphics object	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics	Bitmaps, Icons, Vector graphics
• dynamic objects	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons	Diagrams, Bar graphs, Sliders, Analog display, Hidden buttons
Lists				
• Text lists	500	500	500	500
• Graphics list	500	500	500	500
• Libraries	Yes	Yes	Yes	Yes

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Technical specifications (continued)

	12" Touch	12" Key	15" Touch	19" Touch
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/MultiMedia card, USB stick, Ethernet	CF card, SD/MultiMedia card, USB stick, Ethernet	CF card, SD/MultiMedia card, USB stick, Ethernet	CF card, SD/MultiMedia card, USB stick, Ethernet
• Data storage format	CSV file, can be read, e.g. in MS Excel, MS Access	CSV file, can be read, e.g. in MS Excel, MS Access	CSV file, can be read, e.g. in MS Excel, MS Access	CSV file, can be read, e.g. in MS Excel, MS Access
• external evaluation	can be read, e.g. with MS Excel, MS Access etc.	can be read, e.g. with MS Excel, MS Access etc.	can be read, e.g. with MS Excel, MS Access etc.	can be read, e.g. with MS Excel, MS Access etc.
• Size of archive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the network drive	Dependent on the memory space available on the external card/stick or spare hard disk memory via the 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
Data medium support				
• CF Card	Yes	Yes	Yes	Yes
• Multi Media Card	Yes	Yes	Yes	Yes
Recording				
• Recording/Printing	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), Color print, Hardcopy	Messages, Report (shift log), 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
• Fonts	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, Ideographic languages, 4 Other character sets can be loaded, all freely scalable
Transfer (Upload/Download)				
• Transfer of configuration	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition	MPI/PROFIBUS DP, serial, USB, Ethernet, using external storage medium, Automatic transfer recognition

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Technical specifications (continued)

	12" Touch	12" Key	15" Touch	19" Touch
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), other non-Siemens drivers, See section "System Links"	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), other non-Siemens drivers, See section "System Links"	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), other non-Siemens drivers, See section "System Links"	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), other non-Siemens drivers, See section "System Links"
Expandability/openness				
• Open Platform Program	Yes	Yes	Yes	Yes
Dimensions				
Front of enclosure (W x H)	335 x 275 mm	483 x 310 mm	400 x 310 mm	483 x 400 mm
Mounting cutout/Device depth (W x H/D) in mm	310 x 248 / 72 mm Device depth	450 x 290 / 59 mm Device depth	367 x 289 / 72 mm Device depth	449 x 379 / 75 mm Device depth
Weights				
Weight	3.8 kg	5.5 kg	4.7 kg	7.7 kg

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Ordering data

		Order No.
SIMATIC MP 377		
Multi Panel with		
• 12" color TFT display, Touch	F	**6AV6 644-0AA01-2AX0**
• 12" color TFT display, keyboard	F	**6AV6 644-0BA01-2AX0**
• 15" color TFT display, Touch	F	**6AV6 644-0AB01-2AX0**
• 19" color TFT display, Touch	F	**6AV6 644-0AC01-2AX0**
incl. mounting accessories		
Configuration		
with SIMATIC WinCC flexible		See Chapter 4
Configuration set MP 377	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• 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)		
Complete pre-assembled packages: SIMATIC MP 377 with WinAC MP 2007		
Package MP 377 12" Touch	F	**6AV6 652-4FC01-2AA0**
• MP 377		
• Single license for MP 377 on USB stick[1)]		
• Standard MultiMediaCard (empty)		
Package MP 377 12" Key	F	**6AV6 652-4EC01-2AA0**
• MP 377		
• Single license for MP 377 on USB stick[1)]		
• Standard MultiMediaCard (empty)		
Package MP 377 15" Touch	F	**6AV6 652-4GC01-2AA0**
• MP 377		
• Single license for MP 377 on USB stick[1)]		
• Standard MultiMediaCard (empty)		
Package MP 377 19" Touch	F	**6AV6 652-4HC01-2AA0**
• MP 377		
• Single license for MP 377 on USB stick[1)]		
• Standard MultiMediaCard (empty)		

	Order No.
Applications/options	
• WinCC flexible /ProAgent	See Chapter 4
• WinCC flexible /Sm@rtAccess	See Chapter 4
• WinCC flexible /Sm@rtService	See Chapter 4
• WinCC flexible /OPC-Server	See Chapter 4
• WinCC flexible /Audit	See Chapter 4
• WinAC MP 2007 / Software SPS	See Page 2/121
Documentation (to be ordered separately)	
Operating Instructions MP 377 (WinCC flexible)	
• German	**6AV6 691-1DR01-0AA0**
• English	**6AV6 691-1DR01-0AB0**
• French	**6AV6 691-1DR01-0AC0**
• Italian	**6AV6 691-1DR01-0AD0**
• Spanish	**6AV6 691-1DR01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-2AA0**
• English	**6AV6 691-1AB01-2AB0**
• French	**6AV6 691-1AB01-2AC0**
• Italian	**6AV6 691-1AB01-2AD0**
• Spanish	**6AV6 691-1AB01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B 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	
Accessories for supplementary ordering	See HMI accessories, from page 2/148

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3
1) Can only be used for license handling.

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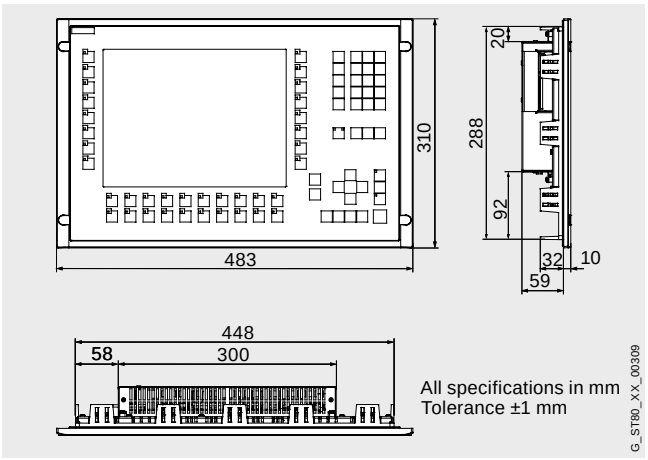
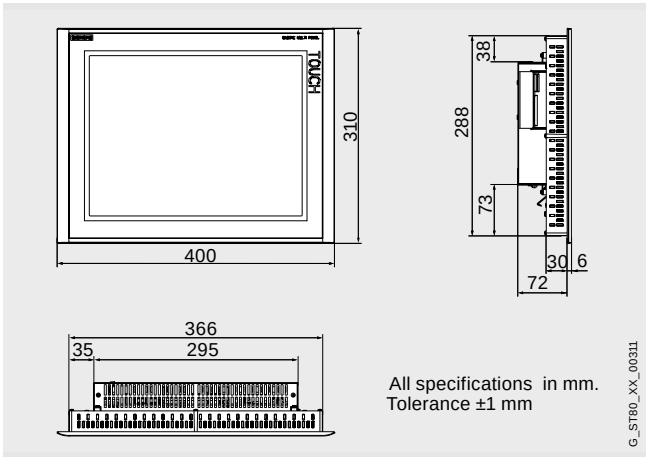
SIMATIC MP 377

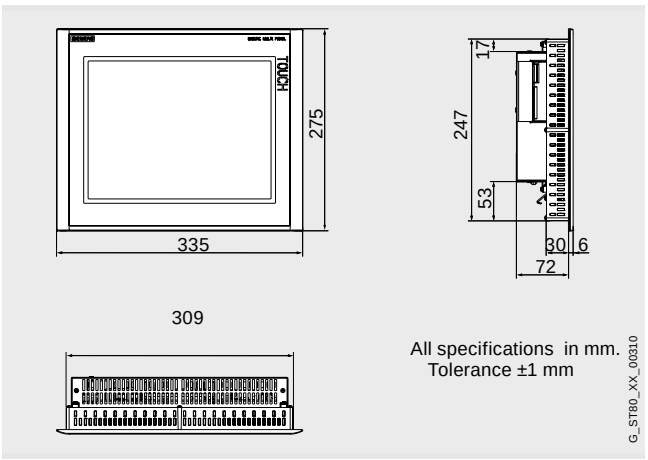
Dimensions



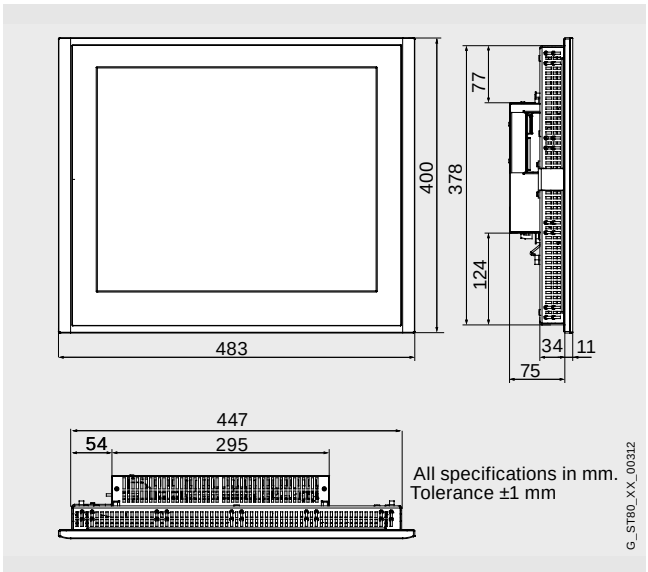
MP 377 12" Key



MP 377 15" Touch



MP 377 12" Touch



MP 377 19" Touch

More information

Additional information is available in the Internet under:

http://www.siemens.com/mp

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.

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Overview

- WinAC MP 2007 software PLC based on Windows CE, runs on all multifunctional platforms
- For both MP platforms 277 and 377, an optimized version is available
- 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 all data on a standard MultiMediaCard or standard USB stick

Application

The WinAC MP 2007 is a new 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 millisecond and costs are in the forefront. The WinAC MP2007 uses proven tools such as STEP 7 (V5.4/SP1 or higher) and WinCC flexible (Standard or higher as of version 2007). This makes it possible to upgrade or switch without any extra training for new tools. The user interface of the WinAC MP 2007 is supplied in the form of a "SIMATIC HMI example project". Users can thus copy the control elements that they require into their project. Of course, all operator functions of the WinAC MP 2007 are available after installing the option on the configuration computer in WinCC flexible (as of version 2007) in the function list!
The peripherals are connected via PROFIBUS DP. Here, ET I/O modules up to technology modules are available.

Processing WinCC flexible projects

Processing WinCC flexible projects is done with WinCC flexible 2007 (as of the Standard version)

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

The service concept of the WinAC MP 2007 on an HMI multifunction platform offers another major advantage. All data, operating systems, HMI data, PLC data, archives, recipes, licenses, etc. can be stored on a standard memory medium with the press of a button. The only exception is the content of the M-Ram memory (current status of flags, 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.

Design

The WinAC MP 2007 is fully based on a hardware CPU and is a real alternative for price-sensitive applications for which the stability and robustness of a hardware solution cannot be done without.

The functions of the WinAC MP 2007 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.

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 for typical applications and can be readjusted at any time if required.

For time-critical applications, an OB35 time module (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

The WinAC MP 2007 is available in two versions. Both versions define new CPU performance classes.

- One version is optimized for the Multi Panel platform 277. This version, namely WinAC MP 277, is based roughly on the CPU 315. It has a similar quantity framework but is not a 1:1 copy.
- The second version is optimized for the Multi Panel platform 377. This version, namely the WinAC MP 377, is roughly based on the CPU 317. All limit values, e.g. number of DB, FC, etc., preset as with a hardware CPU and cannot be changed by the user. Detailed technical data is provided in a separate chapter.

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SIMATIC WinAC MP 2007

Function

The principle of operation and the instruction set of the WinAC MP 2007 is basically identical to a hardware CPU. The settings for the WinAC MP 2007-specific parameters are implemented by means of the Hardware Config. Since WinAC MP 2007 and HMI application share a processor, however, there is a special response regarding the timing of the WinAC MP 2007. All PLC commands are more quickly processed by factors than on a hardware CPU, but this is required to created time reserves for the HMI application. This ensures a time-wise processor segmentation of approx 15% to 85% between WinAC MP and HMI application. In practice, that means that an OB1 on a soft CPU processes "n" times quicker but does not start the next cycle any sooner than with an HW CPU. Another advantage of the WinAC MP 2007 is that the HMI application can always be interrupted by WinAC MP 2007 time and process alarms.

Fast key response times can also be used with the implemented function "DP direct keys" with the WinAC MP 2007. This provides another performance advantage of the WinAC MP 2007.

Integration

Installation/licensing

The installation conceivably easy. Use ProSave (integrated in WinCC flexible) to load WinAC MP 277 or WinAC MP 377 simply onto the panel. The WinAC MP 2007 then reacts similarly to a hardware CPU.

A license key is required for the WinAC MP 2007. The license key is always provided together with WinAC. The license key is located on a standard USB stick and must be loaded separately on the MultiPanel after installation of the WinAC MP 2007 option.

Software bus

In addition to WinAC MP 2007, 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 2007. 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 ET200 and the modules that can be used within are utilized. Diverse technological components can also be used in this constellation of course.

Programming

The programming and configuration of WinAC MP 2007 is done with STEP 7 V5.4/SP1 (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.

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

Technical specifications

Type	WinAC MP 2007, version WinAC MP 277	WinAC MP 2007, version WinAC MP 377
Memory		
Type of storage		
• RAM		
- integrated	256 KByte	512 KByte
- expandable	No	No
CPU/blocks		
DB		
• Number, max.	1,024	2,048
• Size, max.	64 KByte	64 KByte
FB		
• Number, max.	1,024	2,048
• Size, max.	64 KByte	64 KByte
FC		
• Number, max.	1,024	2,048
• Size, max.	64 KByte	64 KByte
OB		
• Number, max.	18	18
• Size, max.	64 KByte	64 KByte
Nesting depth		
• per priority class	8	16
• additional within an error OB	2	2
Times/counters and their remanence		
S7 counter		
• Number	256	512
• Remanence		
- adjustable	Yes	Yes
- preset	8	8
• Counting range		
- lower limit	0	0
- upper limit	999	999
IEC counter		
• present	Yes	Yes
S7 times		
• Number	256	512
• Remanence		
- adjustable	Yes	Yes
- preset	0	0
• Time range		
- lower limit	10 ms	10 ms
- upper limit	9,990 s	9,990 s
IEC timer		
• present	Yes	Yes

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Technical specifications (continued)

Type	WinAC MP 2007, version WinAC MP 277	WinAC MP 2007, version WinAC MP 377
Data areas and their remanence		
Retentive data area in total (incl. times, counters, flags), max.	128 KByte	256 KByte
Flag		
• Number, max.	2 KByte	4 KByte
• Remanence available	Yes	Yes
Data blocks		
• Number, max.	1,024	2,048
• Size, max.	64 KByte	64 KByte
Local data		
• per priority class, max.	Adjustable, 16,384 bytes maximum for all priority classes	Adjustable, 16,384 bytes maximum for all priority classes
Address area		
I/O address area		
• Inputs	2 KByte	8 KByte
• Outputs	2 KByte	8 KByte
Process image		
• Inputs	2 KByte	2 KByte
• Outputs	2 KByte	2 KByte
• Inputs, adjustable	2 KByte	2 KByte
• Outputs, adjustable	2 KByte	2 KByte
• Inputs, preset	512 Byte	512 Byte
• Outputs, preset	512 Byte	512 Byte
• consistent data, max.	32 Byte	32 Byte
Hardware config.		
Number of DP masters		
• integrated	1	1
Time		
Operating hours counter		
• Number	8	8
• Number/Number range	0 to 7	0 to 7

Type	WinAC MP 2007, version WinAC MP 277	WinAC MP 2007, version WinAC MP 377
S7 message functions		
Process diagnostic messages	Yes	Yes
Test commissioning functions		
Status/control		
• Status/control variable	Yes	Yes
Forcing		
• Forcing	No	No
Diagnostic buffer		
• present	Yes	Yes
• Number of entries, max.	1,000; 120 preset	1,000; 120 preset
• adjustable	Yes	Yes
Communication functions		
Number of logical connections (also in network), max.	16	32
PG/OP communication	Yes	Yes
Routing	Yes	Yes
Global data communication		
• supported	No	No
S7 basic communication		
• supported	No	No
S7 communication		
• supported	Yes	Yes
• as server	Yes	Yes
• as client	Yes	Yes
• Useful data per job, max.	480 Byte	480 Byte
Number of connections		
• overall	16; DP max.8, rest PN	32; DP max.8, rest PN
• reserved for PG communication	1	1
• reserved for OP communication	1	1
• usable for routing	8	16

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SIMATIC WinAC MP 2007

Technical specifications (continued)

Type	WinAC MP 2007, version WinAC MP 277	WinAC MP 2007, version WinAC MP 377
1st interface		
DP master		
• Number of connections, max.	8	8
• Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	No	No
- S7 basic communication	No	No
- S7 communication	Yes	Yes
- equidistance support	No	No
- SYNC/FREEZE	Yes	Yes
- Activation/deactivation of DP slaves	Yes	Yes
- DPV1	Yes	Yes
• Transmission speeds, max.	12,000 kBit/s	12,000 kBit/s
• Number of DP slaves, max.	32	32
• Address area		
- Inputs, max.	2,048 KByte	8,192 KByte
- Outputs, max.	2,048 KByte	8,192 KByte
CPU/programming		
Configuration software		
• STEP 7	Yes	Yes
• WinCC flexible Compact	No	No
• WinCC flexible Standard	Yes	Yes
• WinCC flexible Advanced	Yes	Yes
Programming language		
• LAD	Yes	Yes
• FUP	Yes	Yes
• AWL	Yes	Yes
Cycle time monitoring		
• adjustable	Yes	Yes
• preset	6,000 ms	6,000 ms
Operating systems		
Operating system		
• Windows CE	Yes	Yes
Online languages		
Number	1; English	1; English

Ordering data

		Order No.
WinAC MP 2007, version WinAC MP 277 2) incl. a single license for MP 277 on USB stick 1) and electronic documentation	B	**6ES7 671-5EF00-0YA0**
WinAC MP 2007, version WinAC MP 377 2) incl. a single license for MP 377 on USB stick 1) and electronic documentation	B	**6ES7 671-7EG00-0YA0**
Complete pre-assembled packages		
Package MP 277 8" Touch • MP 277 • Single license for MP 277 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-3MC01-1AA0**
Package MP 277 8" Key • MP 277 • Single license for MP 277 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-3LC01-1AA0**
Package MP 277 10" Touch • MP 277 • Single license for MP 277 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-3PC01-1AA0**
Package MP 277 10" Key • MP 277 • Single license for MP 277 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-3NC01-1AA0**
Package MP 377 12" Touch • MP 377 • Single license for MP 377 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-4FC01-2AA0**
Package MP 377 12" Key • MP 377 • Single license for MP 377 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-4EC01-2AA0**
Package MP 377 15" Touch • MP 377 • Single license for MP 377 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-4GC01-2AA0**
Package MP 377 19" Touch • MP 377 • Single license for MP 377 on USB stick 1) • Standard SD Card (empty)	F	**6AV6 652-4HC01-2AA0**

B) Subject to export regulations: AL: N and ECCN: EAR99S
F) Subject to export regulations: AL: N and ECCN: 5D002ENC3
1) Can only be used for license handling
2) VCL version upon request

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Overview

SIMATIC THIN CLIENT is another member in the SIMATIC Panel family and the extremely robust hardware makes it ideal for industrial application.

Benefits

The SIMATIC THIN CLIENT is a **very economical** way of running a user station on-site on the machine. Typical application instances are a **second station** (WinCC flexible with Sm@rt-Access) in connection with another SIMATIC Panel or Panel PC.

Overcoming greater distances as **remote operation terminal** is enabled by using the existing Ethernet network.

The possibility of using **SCADA- and Office-SIMATIC IT functionality** (e.g. WinCC, SAP, MS-Excel) directly on the machine and on-site supports the vertical integration of the data flow from host systems down to the machine level (e.g. warehouse utilization).

The SIMATIC THIN CLIENT communicates via SmartAccess or the Standard RDP (Remote Desktop Protocol) by Microsoft with a host (SIMATIC Panel, Panel PC or Server) and **does not itself require any installations, licenses or additional software on the Thin Client**.

Design

SIMATIC THIN CLIENT is installation-compatible with the Multi Panels MP277 (10 inch) and MP377 (12 inch and 15 inch).

The device has IP54 degree of protection (splash-proof) and can be expanded with an option pack (6AV6671-6AP00-0AX0) to degree of protection IP65 (jet-proof).

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 64 k colors
- Resolution:
  - 640 x 480 pixels (10 inch)
  - 1024 x 768 pixels (15 inch)
- SIMATIC THIN CLIENT can operate as
  - Terminal Client (Sm@rtAccess and RDP) and as
  - WEB-Client (HTML)
- 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

The new Thin Client devices support automatic parameter definition with DHCP. As an alternative, you can also assign IP addresses manually. The PROFINET basic services (Lifelist, Topology view) are supported as of Q4/2007.

As of Q3/2007, SIMATIC THIN CLIENT will be delivered as an especially cost-effective solution. This aggressive price positioning is the best start for a considerable increase in quantities in SIMATIC Panel trade.

Mode of operation

Operation is possible via Touch or with a keyboard or mouse connected to a USB port. SIMATIC THIN CLIENT uses a 64 k color display, a USB and an Ethernet interface.
Both devices are compatible with the Multi Panels of corresponding size with regard to mounting cut-out and design.

The device is ideal as a second work station for larger systems because of the low price. Sm@rtAccess enables the connection with a WinCC flexible station. As a remote work station, the device can be run on machines with extremely high demands on mechanical robustness (e.g. vibration resistance).

Function

Commissioning is very simple. 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 configuration. This eliminates a Backup/Restore or Update for projects. This also greatly reduces the overall costs of the system (Total Costs of Ownership).

Integration

The RDP connection can be used for operating SCADA systems, such as WinCC, as well as Office applications such as MS-Excel or SAP directly on Thin Client on the machine on-site. Unlike Office viewers under Windows CE, data writing processes are also possible. RDP is a Microsoft standard protocol that is supported by all Windows operating systems. This makes it possible to visualize systems from other manufacturers on the SIMATIC THIN CLIENT and to link them into the system in this way.

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.

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SIMATIC Thin Client

Technical specifications

SIMATIC Thin Client	10"	15"
Supply voltage		
Supply voltage	DC 24 V	DC 24 V
permissible range	DC +19.2 to +28.8 V	DC +19.2 to +28.8 V
Memory		
Type of storage		
• Type	Flash / RAM	Flash / RAM
• Memory usable for project data/Options	No info	No info
Protocols		
• LLDP	Yes, from the end of 2007	Yes, from the end of 2007
• HTTP	Yes	Yes
• HTML	Yes	Yes
• XML	Yes	Yes
• RDP	Yes	Yes
• Sm@rtAccess	Yes	Yes
Display		
Display type	TFT, 65536 Colors	TFT, 65536 Colors
Size	10.4 "	15.1 "
Resolution (WxH in pixel)	640 x 480	1024 x 768
MTBF backlighting (at 25 °C)	Approx. 50000 h	Approx. 50000 h
Operating mode		
Operating elements	Touchscreen	Touchscreen
Touchscreen	analog, resistive	analog, resistive
Connection for mouse/keyboard/barcode reader	USB / USB	USB / USB

SIMATIC Thin Client	10"	15"
Degree of protection		
Front	IP54; IP65 ; NEMA 4x optionally (6AV6 671-6AP00-0AX0) (when installed)	IP54 IP65 ; NEMA 4x optionally (6AV6 671-6AP00-0AX0) (when installed)
Rear	IP20	IP20
Certifications & Standards		
Certifications	CE, cULus, C-Tick, NEMA 4x	CE, cULus, C-Tick, NEMA 4x
Ambient conditions		
maximum permissible angle of incliniation without external ventilation	+/- 35°	+/- 35°
max. relative humidity (in %)	85%; (Storage)	85%; (Storage)
Temperature		
• Operation (vertical installation)	0 to +50°C	0 to +50°C
• Transport, storage	-20 to +60°C	-20 to +60°C
Interfaces		
USB	1 x USB	1 x USB
Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Processor		
Processor	ARM, 240 MHz	ARM, 240 MHz
Dimensions		
Front of enclosure (W x H) in mm	325 x 263	400 x 310
Mounting cutout/Device depth (W x H/D) in mm	310 x 248/65 Device depth	368 x 290/65 Device depth
Weights		
Weight	2.2 kg	3.6 kg

Ordering data

		Order No.
SIMATIC Thin Client		
10“ device	D	**6AV6 646-0AA21-2AX0**
15“ device	D	**6AV6 646-0AB21-2AX0**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

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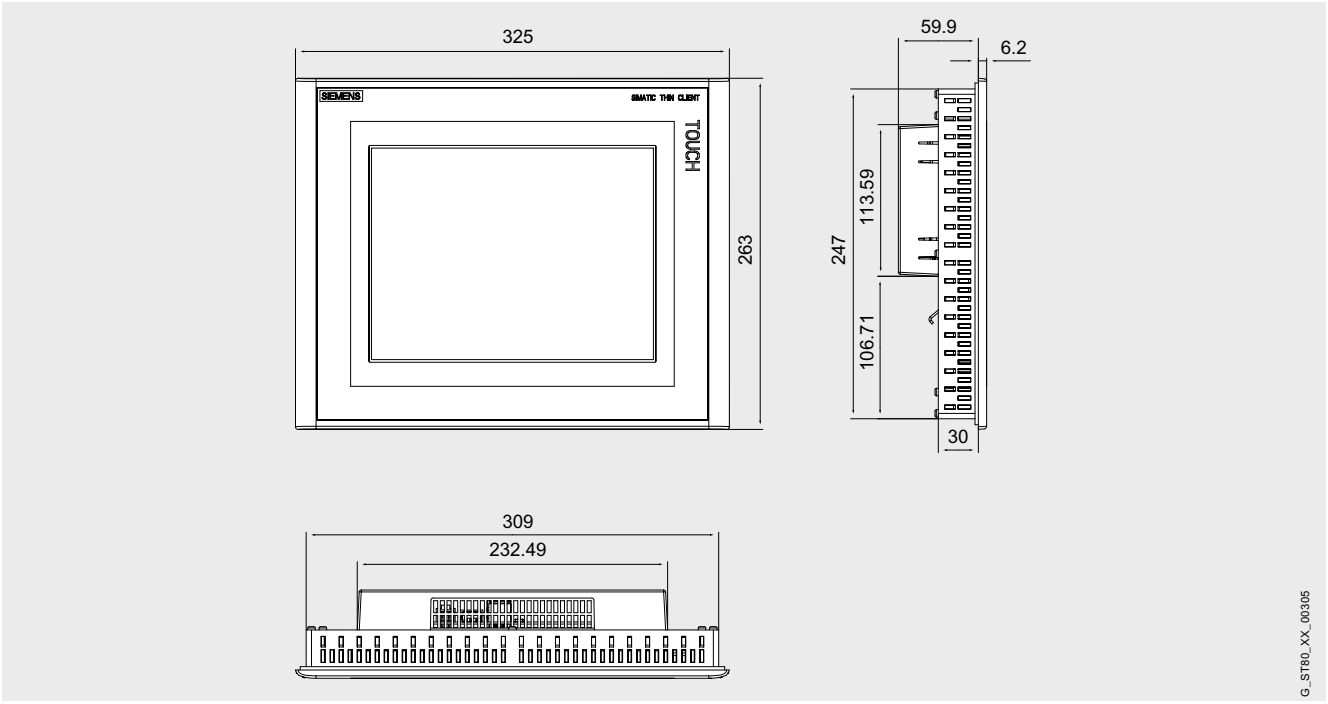
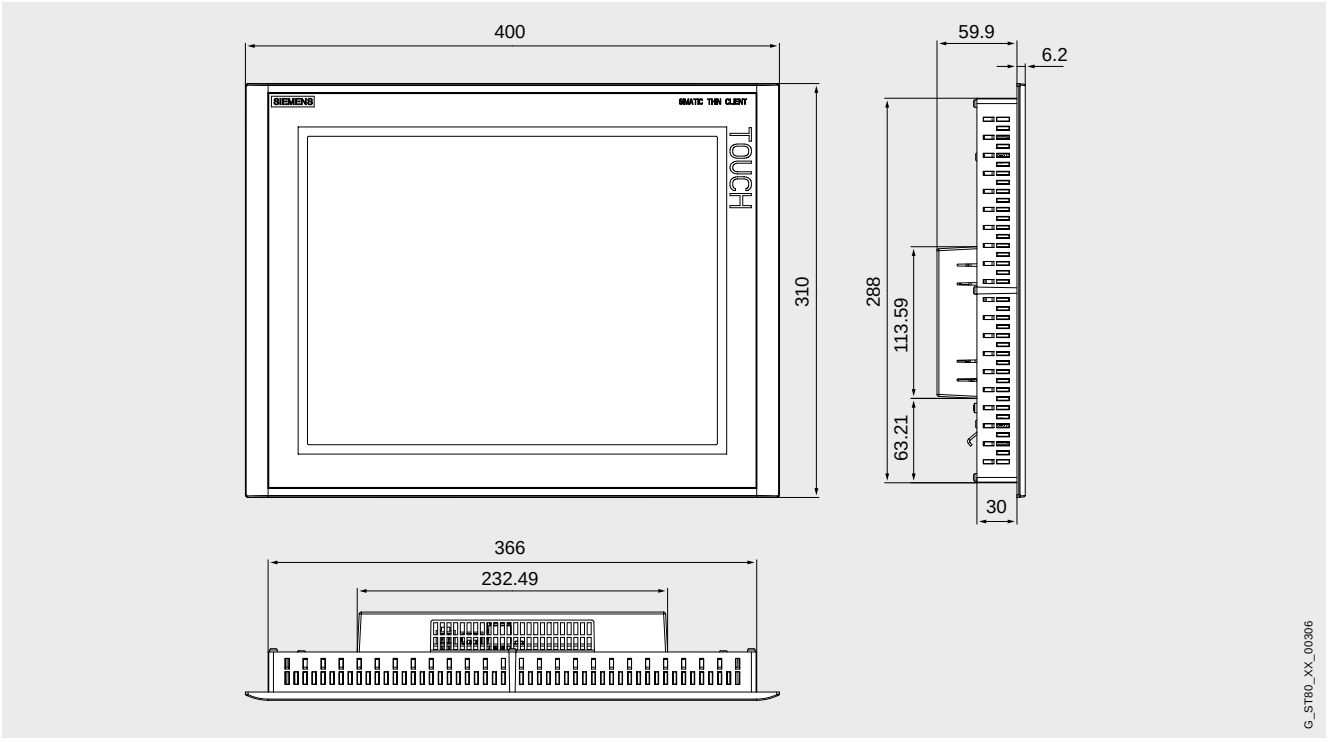
Dimensions



SIMATIC Thin Client 10" Touch



SIMATIC Thin Client 15" Touch

More information

Contact

Support Request:

Additional information is available in the Internet under:
http://www.siemens.com/automation/support-request

Internet:

Additional information is available in the Internet under:
http://www.siemens.com/automation/service&support

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MOBIC T8

Overview

The Mobile Industrial Communicator MOBIC T8 is a mobile, industry-standard Internet pad for local or worldwide access to the Intranet and Internet

- Mobile thanks to plug-in radio cards, Industrial Wireless LAN for local use or GSM/GPRS/HSCSD for worldwide use
- Industry-compatible thanks to very rugged, splash-proof and dust-tight design (IP65)
- High-resolution TFT display makes it easy to read, even under bad lighting
- Extensive language support thanks to multilingual design
- Operation using touch screen with pen or finger and using additional function keys in the right-hand side panel
- Standard operating system for Windows CE.NET and Internet-Explorer with Java Virtual Machine as the basic software
- Rechargeable battery module ensures operation throughout a complete work shift, i.e. typically 8 hours without peripherals
- e1 approval for vehicles in combination with charging station
- Silicon-free and therefore designed for use in industry

MOBIC T8 charging base/ charging station

- The MOBIC T8 is connected to the power supply via the charging base/charging station; the accumulator in the Mobic is then automatically charged
- The standardized mounting component on the VESA V100 charging base/charging station allows different supports to be used, such as an L-base or swan's neck, as well as wall mounting
- This is ideally suited for fixing the MOBIC in specific working environments (e.g. for mounting in the vehicle or fork-lift truck)

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Benefits

- Access to different information regardless of location thanks to integrated, modular communication functions
- Mobile access for commissioning and servicing of Touch Panels based on WinCC flexible /Sm@rtService
- Suitable for industrial applications thanks to rugged and shock-resistant design and degree of protection IP65.
- Only one device for 5 languages thanks to multi-language design
- Rechargeable battery module ensures operation throughout a complete work shift, i.e. typically 8 hours without peripherals
- Extremely easy to handle thanks to low weight and ergonomic design
- Fast display generation
- Silicon-free, therefore suitable for use in the automotive industry
- Fast start-up thanks to Instant On function in Windows CE.NET
- Investment protection through modular expansion capability over PCMCIA
- Certified to FM Class 1 Division 2
- e1 approval for installation in vehicles in combination with charging station

Application

The MOBIC T8 can be used in the following sectors:

- Service:
  - Field services
  - Vehicle servicing
  - Infrastructure operators
  - Building services

The service technician can be called from the central service desk, process the order and confirm completion of the work. The MOBIC T8 is integrated over Industrial Wireless LAN or over Ethernet at 10/100 Mbit/s in any IT network infrastructure.

- Production;
  e.g. production, test and quality data can be displayed, documented and archived while the process is running.
- Logistics and transport;
  e.g. used as a fork lift control system or for paperless warehouse management.

Mobile documentation

Information, for example, about machines that could only be displayed on a few stationary PCs in the factory is now available everywhere thanks to the mobility of the MOBIC T8. Central databases, e.g. user manuals or circuit diagrams, can be accessed by service personnel.

Disposition and mobile data input

The MOBIC T8 is used to schedule service tasks. The order data are transferred using radio transmission, processed online and the results are documented.

The MOBIC T8 has a wide range of applications thanks to the additional peripherals that can be connected, such as barcode readers, printers, keyboards or additional memory.

Application-specific and customized modifications can also be implemented using a standard operating system environment based on Windows CE.NET.

Suitable tools (MOBIC T8 Toolkit) are available to solution partners for implementing additional applications on the MOBIC T8.

Mobile commissioning and servicing with WinCC flexible /Sm@rtService

Using WinCC flexible /Sm@rtService and MOBIC T8, maintenance and servicing on WinCC flexible-based Touch Panels can be carried out hardwired or wireless via the Internet Explorer which is included in the standard delivery of the MOBIC.

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MOBIC T8

Application (continued)

Applications for MOBIC T8

Acquisition of data, e.g.:

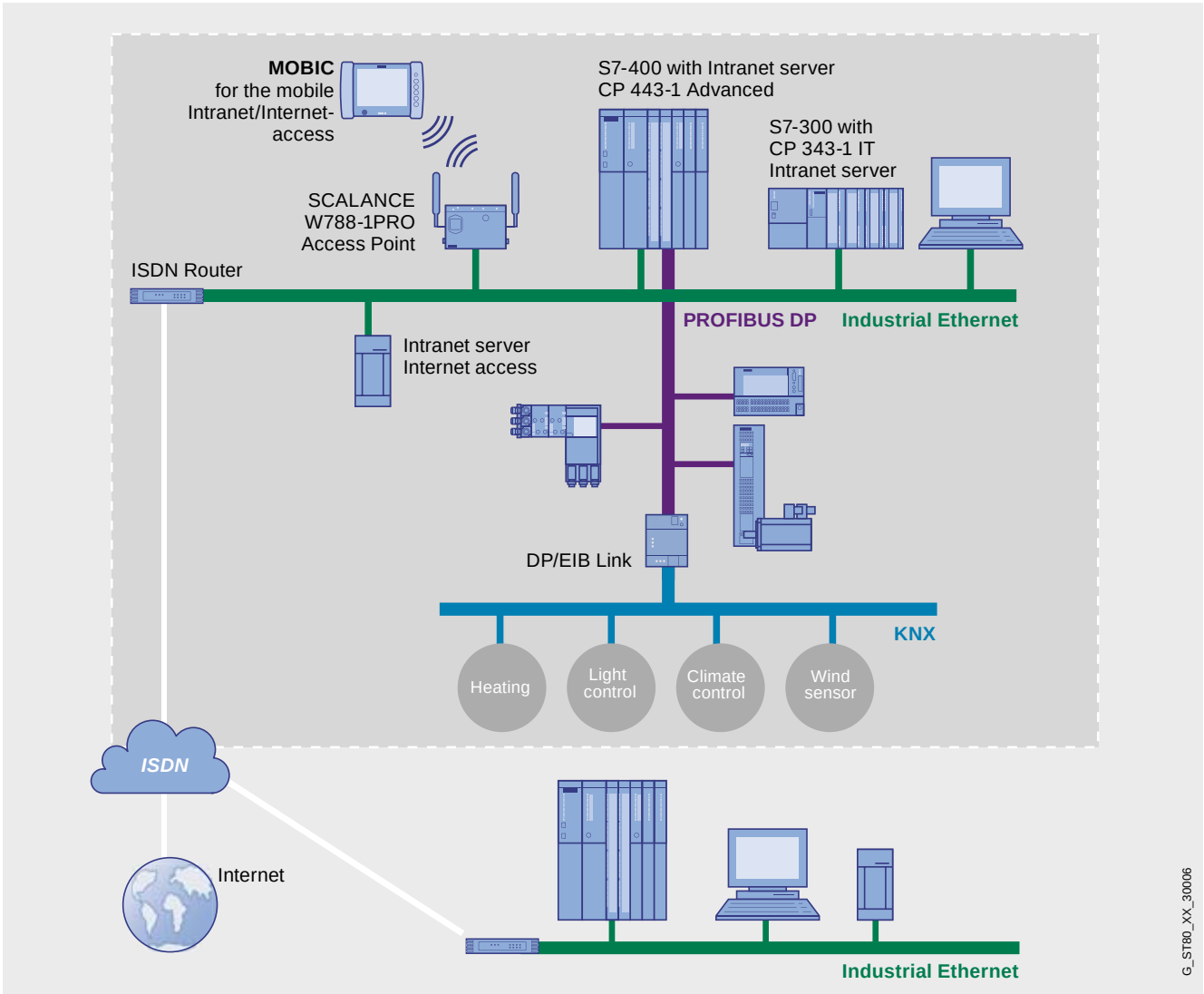
- Process data
- Measured values
- Spare parts data
- Service data
- Production and ERP data
- Quality data

Information from the Intranet/Internet, such as:

- Instructions, manuals
- Spare parts information
- Process and diagnostics data
- Warehouse plans
- Circuit diagrams
- Control cabinet diagrams
- Machine drawings

Work orders:

- Receiving
- Processing
- Documentation



Application example in industry

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Design

Software

- Windows CE.NET Professional Plus V4.1
- Microsoft WordPad
- Microsoft Fileviewer for Windows CE.NET:
  - Excel Viewer
  - Powerpoint Viewer
  - Image Viewer
  - PDF Viewer
- Citrix Terminal Client
- Windows CE Inbox Professional Plus V4.1
- Windows CE Internet Explorer V5.5 for Windows CE
- Java Virtual Machine with plug-in for Internet Explorer
- System software MOBIC
- Software keyboard with adjustable sizes
- Font recognition

Hardware

- CPU NEC VR4121
- Graphics Controller MQ 200
- 64 MB data register
- 32 MB program memory

Touchscreen color display

- TFT
- SVGA 800 x 600 pixels
- Backlit
- 5 function keys can be occupied for recurrent tasks
- 4 LEDs for status display

Interfaces

- Two PCMCIA interfaces for connecting
  - Radio cards
  - Expansions such as additional flash memory or barcode reader

Degree of protection IP65 is achieved by arrangement of the modules in the housing.

- 10/100 Mbit/s Ethernet interface according to IEEE 802.3/802.3u for connection to an industry or office network
- IrDA interface for bidirectional data transfer between a host, e.g. a Notebook, and MOBIC
- RS 232 interface
- USB interface, e.g. for connecting to an external printer, camera or keyboard
- Charging contacts for charging MOBIC in the MOBIC T8 charging cradle and charging station

Function

The Internet Explorer, with which users can dial into their local Intranet or the WWW, is an integral feature of the MOBIC T8.

Even Java applets on Internet pages can be displayed thanks to the Java Virtual Machine.

Information such as process and diagnostics data, control cabinet documentation, etc., and even product information and operating instructions can be polled via the Web.

Data can be accessed location-independently via radio, locally via wireless LAN cards or worldwide using GSM/GPRS/HSCSD cards. The modularity of the MOBIC T8 makes it ready even for future radio technologies such as UMTS.

The MOBIC T8 is extremely rugged:

- Degree of protection IP65
- Vibration and shock resistance to EN 61131-2
- Silicon-free, resistant to oils, greases and alcohol and, therefore, suitable for use in industry.

The MOBIC T8 can be operated by pressing its touch screen with a pen or finger. A software keyboard and a text recognition feature can be used to input text. Function keys to which individual functions have been assigned appear on the right-hand side of the screen.

The multilingual version supports 5 languages: English, French, German, Italian, and Spanish. To change the system language, you need to restart the MOBIC and use the menu and function keys accordingly.

The Windows CE.NET function can be used to draft, send and receive e-mails directly in-plant.

In addition to the standard Windows CE.NET operating system, system software to facilitate configuration of the MOBIC T8 (e.g. user-defined assignment of function keys) is also an integral feature.

Power is supplied to the MOBIC T8 via an external power pack. This charges the MOBIC T8 accumulator automatically or via the integrated charging contacts with the charging base/charging station.

The accumulator module ensures operation throughout a complete work shift, i.e., typically 8 hours, without peripherals.

MOBIC T8 charging base/station

A mounting bracket to VESA 100 standard is fitted on the rear of the charging base/charging station to support universal attachment to a variety of supports. It can be used to mount a number of charging bases/charging stations side by side in order, for example, to optimize the use of space on a work bench.

The MOBIC T8 can be removed from the charging base/charging station. The locking elements and the intrinsic weight of the MOBIC T8 ensure the contacting of the charging contacts between the MOBIC T8 and the charging station.

The MOBIC T8 standard power pack is used to operate the MOBIC T8 in the charging base/charging station.

A cable grip on the charging base/charging station prevents that the power supply connector is pulled out.

Once the MOBIC has been placed on the charging station, it is secured in place by the two colored locking elements. The retaining device secures the MOBIC in place on the charging station even in the event of high lateral forces. This is in order to ensure the safe charging via the charging contacts of the charging station and MOBIC T8.

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MOBIC T8

Technical specifications

	MOBIC T8
Software	
Operating system	• Microsoft Windows CE.NET Professional Plus V4.1
Applications	• Microsoft Windows CE Inbox • Microsoft WordPad • Microsoft Fileviewer for Windows CE.NET: - Excel Viewer - Powerpoint Viewer - Image Viewer - PDF Viewer
Browser	Microsoft Windows CE Internet Explorer V5.5
Java Virtual Machine	With plug-in for Internet Explorer
Software keyboard	Yes
Text recognition	Yes
System software	MOBIC system software
Client software	Microsoft Thin Client, Citrix Terminal Client
Hardware	
Interfaces	
• Connection to Ethernet according to IEEE 802.3/802.3u (10/100 Mbit/s)	RJ45 WLAN (CP 1515 to the internal PCMCIA interface)
• Connection for USB (12 Mbit/s)	USB socket connector
• Connection for RS 232 (115 kbit/s)	9-pin Sub-D connector
• Infrared connection IrDA (4 Mbit/s)	Sender/receiver on rear
• Connection for PCMCIA Type II	2 x PCMCIA Slot Type II (1x rear, 1 x integrated in battery compartment) (max. current input 300 mA per slot)
• Connection for headset	7-pole flange outlet
• Connection for power supply unit	2-pole socket connector (DC)
Charging contacts	For charging the MOBIC in the MOBIC T8 charging cradle and charging station
Display	
• Type	TFT, color display, backlit
• Display size	8.4“ (21.3 cm)
• Resolution	SVGA 800 x 600
• Touch screen	Resistive
• Surface protection	Replaceable cover foil
Control elements	
• Function keys	5 function keys on the right-hand side panel, freely configurable
• On/Off switch	In right-hand side panel
• Reset button	In battery compartment

	MOBIC T8
Indicator elements	
• Battery status display	1 LED (red)
• Windows CE message display	1 LED (green)
• Indicator LEDs	2 LEDs (yellow), user-defined function
Processor	NEC VR4121
Graphics controller	MQ 200
Memory	64 MB data memory (RAM) 32 MB program memory (Flash) (max. number of write cycles 100,000)
Service life	
• With standard rechargeable battery (included in the scope of supply)	Typically 8 hours for one charge
Rechargeable battery	7.4 V / 4.8 Ah Lithium Ion replaceable battery, max. charging time 5.5 h; typ. capacity after 500 charging cycles ≥ 3120 mAh Battery charging is only permitted for ambient temperatures between 0 °C and +40 °C. Typical operating time 8 h; the operating time is dependent on the connected peripherals (PCMCIA, USB) and the executing application.
Back-up battery (integrated)	NiMH 3.6 V, 300 mAh
Loudspeaker	Mono
Supply voltage for MOBIC T8	16 V DC, max. 1.6 A over MOBIC power supply
Supply voltage of power supply unit	100-240 V AC, 50/60 Hz
Power loss	Typ. 4.4 W; max. 8 W during operation, 48 mW in standby mode
Perm. ambient conditions	
• Operating temperature	
- MOBIC T8	0 … +50 °C
- recharging battery	0 … +40 °C
- power supply unit	0 … +40 °C
• Transport/storage temperature	-20 … +60 °C
• Relative humidity	max. 85% at 30 °C (with cover open, no condensation)
Degree of protection	
• Closed	IP65
• Open	IP20

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Technical specifications (continued)

	MOBIC T8
Mechanical conditions	
Vibration during operation	10 to 58 Hz, deflection 0.075 mm 10 cycles per axis, 1 octave/min. (IEC 60068-2-6, Test Fc)
Vibration during operation	58 to 150 Hz, deflection 9.8 m/s² 10 cycles per axis, 1 octave/min. (IEC 60068-2-6, Test Fc) Acceleration 150 m/s², shock duration 11 ms (IEC 60068-2-27, Test Ea)
Electromagnetic compatibility	
• Emitted interference FCC	EN 55 022 Class B Industrial environment (EN 50081-2; 1993) Residential areas (EN 50081-1; 1992)
• Noise immunity	Industrial environment (EN 61000-6-2; 1999) Residential area (EN 50082-1; 1997)
• Fall height	Up to 1.2 m with protecting cap closed (acc. to MIL Std 810E 516.4)
Material characteristics	Silicone-free
• MOBIC T8	Yes
• Power supply unit	No
Design	
• Dimensions (W x H x D) in mm	284 x 195 x 57
• Fixing	Four M4 screw inserts (max. tightening torque 2 Nm)
• Weight in kg	approx. 1.7 (incl. rechargeable battery)
Certification	CE, UL, CSA, FCC Class A, FM Class 1 Division 2; for installing the MOBIC in vehicles with charging stations: e1 approvals, EN 1789

	MOBIC T8
Charging base/charging station	
Interfaces	
• Connection for power supply unit	2-pole socket connector (DC)
- internal diameter (+ pole)	2.0 mm
- outer diameter (- pole)	5.5 mm
- length of contact socket	10 mm
Charging contacts	2-pole
• Permissible charging current, max.	3 A at 16 V DC
Control elements	
• For charging base	None
• For charging station	Unlatching button; optional lock
Charging unit (accessory)	
• MOBIC T8 power supply with cable	100 … 240 V AC/ 16 V DC, 218 mA
• 12 V car adapter	12 V DC/16 V DC, 375 mA
• 14 V car adapter	24 V DC/16 V DC, 375 mA
Perm. ambient conditions	
• Operating temperature	
- with MOBIC T8 V1.1C and higher	- 0 … +50 °C
- battery charging with MOBIC T8 V1.1C and higher	- 0 … +40 °C
• Storage/transport temperature	-20 … +80 °C
• Relative humidity	max. 95% (no condensation)
Degree of protection	
• Interface for power supply unit	IP54
Mechanical conditions	
• Vibration during operation with/without MOBIC T8	IEC 60068-2-6
• Shocks during operation with/without MOBIC T8	IEC 60068-2-27
Material characteristics	
• Charging base/charging station	UV-resistant; silicone-free Plastic acc. to UL 94 V-01
• Color of casing	Anthracite
• Color of fixing clips	Petrol (charging station)
Design	
• Dimensions (W x H x D) in mm	305 x 270 x 100
• Fixing	Wall mounting according to drilling template
- perm. operating angle	0 ° … 80 °
- adaptation to VESA FPMPMI	100 mm
• Weight in kg	
- charging station	approx. 3.5
- charging base	approx. 3.0
Certification	ECE 324 Regulation No. 21 (radial+head impact test) ESD test to EN 61000-4-2 UL 1950 Approval according to 72/245/EU guideline of the KBA (e1) for MOBIC T8 V1.1C and higher with charging base/charging station and car adapter 12V/24V EN 1789 cULus

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MOBIC T8

Ordering data

		Order No.
MOBIC T8		
Mobile rugged Internet Pad V1.2, operated using a Touch Panel, with charging contacts, connection to Ethernet (integrated) and radio (optional over PCMCIA), with standard operating system Windows CE.NET and standard software for industrial use. Runtime software, single license, Class B, incl. accumulator, pen, carrying belts, RS 232 cable and power supply unit (external); electronic manual on CD-ROM; German/English/French/ Spanish/Italian;		
• Multiple system languages, German, English, French, Spanish, Italian with EU/UK/US power supply connection	F	**6GK1 611-0TA01-1DX0**
• Chinese system language with EU power supply connection	F	**6GK1 611-0TA01-1DV0**
Accessories for solution providers		
MOBIC Toolkit MS-Embedded Visual Tool, MOBIC Programming Guide, 1 day training course, 8 hours support		**6GK1 906-1AC00**
Accessories		
MOBIC rechargeable battery For MOBIC T8, Lithium-ion battery, 4800 mAh/7.4 V		**6GK1 906-1BA00**
MOBIC power supply (external) For MOBIC T8, 16 V DC; 2.18 A, 100 … 240 V, without line supply cable		**6GK1 906-1CB00**
MOBIC line supply cable For MOBIC T8 power supply, 1.8 m		
• EU		**6GK1 906-1CA00**
• US		**6GK1 906-1CA01**
• UK		**6GK1 906-1CA02**
MOBIC carrying case For MOBIC T8		**6GK1 906-1DA00**

F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

		Order No.
Accessories (continued)		
MOBIC carrying belt For MOBIC T8, hand loops and shoulder strap		**6GK1 906-1EA00**
MOBIC display cover foil For MOBIC T8, 10 units		**6GK1 906-1FA00**
MOBIC pen For MOBIC T8, 10 units	A	**6GK1 906-1GA00**
MOBIC protective flap For MOBIC T8, for covering the connections		**6GK1 906-1HA00**
MOBIC headset adapter Adapter for connecting a commercially available stereo headset to the headset socket of MOBIC T8		**6GK1 901-5JB00**
MOBIC charging base For MOBIC T8 V1.1C and higher; base for loading the MOBIC T8, without fixing for the MOBIC T8; with VESA V100 connection on the rear, without its own power supply, for use with an external power supply or MOBIC T8 power supply		**6GK1 906-1JA00**
MOBIC charging station for MOBIC T8 V1.1C and higher; base for loading the MOBIC T8, with fixing for the MOBIC T8; without lock, with VESA V100 connection on the rear, without its own power supply, for use with an external power supply or MOBIC T8 power supply		**6GK1 906-1JB00**
MOBIC charging station with lock For MOBIC T8 V1.1C and higher; base for loading the MOBIC T8, with fixing for the MOBIC T8; can be locked, with VESA V100 connection on the rear, without its own power supply, for use with an external power supply or MOBIC T8 power supply		**6GK1 906-1JB01**

A) Subject to export regulations: AL: N and ECCN: EAR99H

More information

Additional information is available in the Internet under:

http://www.siemens.com/mobic

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Overview

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

- SIMATIC S7
- SIMATIC S5
- SIMATIC 505
- SIMOTION [2]
- SINUMERIK [3]
- Non-Siemens PLCs:
  - Allen Bradley PLC5/-11, 20, 30, 40, 60, 80 (DF1 protocol) or via KF2 module/DH+ network with PLC5 and SLC500/03, 04, 05
  - Allen Bradley SLC500/03, 04, 05 (DF1 protocol) or via KF-3 module/DH485 network with SLC500 and Micro Logix
  - Allen Bradley SLC500/00, 01, 02, 03, 04 and MicroLogix (DH485 protocol)
  - Allen Bradley ControlLogix and CompactLogix (Protocol Ethernet IP)
  - GE Fanuc 90-Micro, 90-30, 90-70 (SNP/SNPX protocol)
  - LG GLOFA GM with Cnet module (dedicated protocol)
  - Mitsubishi FX (FX protocol)
  - Mitsubishi FX, Series A, Series Q (MP 4 protocol)
  - Modicon 984-120, 130, 131, 141, 145, 380, 381, 385, 480, 485, 680, 685, 780, 785 (MODBUS protocol)
  - Modicon TSX Quantum CPU 113, 213, 424, 434, 534 and TSX Compact (MODBUS protocol)
  - Modicon Momentum, TSX Micro (TSX 37), TSX Premium (TSX 57), TSX Unity Premium, TSX Quantum or TSX Unity Quantum (Protocol MODBUS TCP/IP)
  - Omron SYSMAC C, SYSMAC α, SYSMAC CV (Link/MultiLink protocol)
  - Telemecanique TSX 17, TSX 47/67/87/107 (UNI-TELWAY protocol)
  - Telemecanique TSX 37, TSX 57 (UNI-TELWAY protocol)

For more detailed information, refer to the ProTool or WinCC flexible User Manuals, the Communication Manual for Windows-based systems and the ProTool or 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) For further information, see Catalog PM 10

3) Required under WinCC flexible: "SINUMERIK HMI copy license WinCC flexible CE" and "SINUMERIK HMI copy license OA". The SINUMERIK HMI engineering package WinCC flexible is also required for configuration.
For further information see Catalog NC 60.

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 370, 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 370, 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.

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Overview

Overview (continued)

Communication standard Version	SIMATIC HMI TP 177B DP/PN OP 177B DP/PN Mobile Panel 177 PN	 TP 277 OP 277 Mobile Panel 277 Mobile Panel 277 IWLAN	 MP277 MP370 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 MP277, MP377 and MP 370 OPC XML servers
3) Option WinCC flexible/OPC Server for SIMATIC Multi Panel required
4) Option WinCC flexible/Sm@rtAccess for SIMATIC Panel required
5) Option WinCC flexible/Sm@rtAccess for WinCC flexible Runtime required

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Overview

The following types of interface are supported in respect of the link between SIMATIC TP/OP/MP and SIMATIC S7.

- PPI interface:
  Link between SIMATIC TP/OP/MP and SIMATIC S7-200 via PPI. Communication runs on the PPI protocol, a standard FB as with SIMATIC S5 is not required.
- MPI interface:
  Link from SIMATIC TP/OP/MP to 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 bus backplane 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:
  Link from SIMATIC TP/OP/MP to SIMATIC S7 via the integrated PROFIBUS interface on the CPU or alternatively via the PROFIBUS interface on a separate interface module and the bus backplane 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:
  Link from SIMATIC TP/OP/MP to SIMATIC S7 via the integrated PROFINET interface on the CPU or alternatively via the Industrial Ethernet interface on a separate interface module and the bus backplane 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 one CPU is determined by its power (see Catalog ST 70); from the point of view of SIMATIC TP/OP/MPs the following restrictions apply:

- OP 73micro, TP 177micro: 1 connection
- OP 73: max. 2 connections
- OP 77A, TP 177A, OP 77B, TP177B, OP 177B, Mobile Panel 177: max. 4 connections
- TP 277, OP 277; Mobile Panel 277, MP 277, MP 370, MP 377: max. 6 connections
- PC with WinCC flexible Runtime: max. 8 connections

PPI interface

(not for OP73micro, TP 177micro, OP 73, OP 77A, TP 177A, OP 77B, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

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

However, a link between a SIMATIC TP/OP/MP and/or a PG and an S7-200 (sequential logic point-to-point link, i.e. from the point of view of the S7-200 only one connection is ever active at any one time) is also possible (network topology: **PPI** only).

MPI interface/PROFIBUS interface/ Industrial Ethernet interface

The multipoint-capable communication interfaces of SIMATIC TP/OP/MP and SIMATIC S7 are used. Options are:

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

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

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SIMATIC S7

Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI TD 200	OP73 micro TP 177micro	OP 73	Connection via
SIMATIC S7 (PPI/MPI)				
via *PPI* on **S7-200 (PPI)**	● 1)	—	—	**MPI cable** 4)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-200**	—	● 2)	● 3)	**MPI cable** 4)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-300, -400**	—	—	● 3)	**MPI cable** 4)
via *PPI* network **(PPI)** with max. 1 x **S7-200**	● 1)	—	—	**PPI network** 5) (see Catalog ST 70 and IK PI)
via *PPI* network **(PG/OP communication)** with max. 4 x **S7-200**	● 1)	● 2)	● 3)	**PPI network** 5) (see Catalog ST 70 and IK PI)
via *MPI* or *PROFIBUS network* (**PG/OP communication**) with max. 4 x **S7-200**	—	● 2)	● 3	**MPI or PROFIBUS network** 5) (see Catalog ST 70 and IK PI)
via *MPI* or *PROFIBUS network* (**PG/OP communication**) with max. 4 x **S7-300, -400, WinAC**	—	—	● 3)	**MPI or PROFIBUS network** 5) (see Catalog 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 200 can only be interfaced with max. 1 x S7-200 via PPI (PPI/MPI); network operation (parallel PG, etc.) possible
Transfer rate max. 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. transmission 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. transmission rate 1.5 Mbit/s

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

5) Bus connector 6GK1 500-0EA02

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Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI OP 77A TP 177A	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 277 MP 377	MP 370	WinCC flexible Runtime	Connection via
SIMATIC S7 (PPI/MPI)						
via *PPI* on **S7-200 (PPI)**	—	● 1) 2)	● 1) 2)	● 1)	● 1) 3)	**MPI cable** 11)
via *MPI* or *PROFIBUS* (**PG/OP communication**) on **S7-200**	● 4)	● 2) 5)	● 3) 5)	● 5)	● 3) 5)	**MPI cable** 11)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-300, -400**	● 4)	● 2)	● 2)	●	● 3)	**MPI cable** 11)
via *PPI* network **(PPI)** with max. 1 x **S7-200**	—	● 1) 2)	● 1) 2)	● 1)	● 1) 3)	**PPI network** 12) (see Catalog ST 70 and IK PI)
via *PPI* network **(PG/OP communication)** with max. 4 x **S7-200**	● 4)	● 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**	● 4)	● 2) 5)	● 2) 5)	● 5)	● 3) 5)	**MPI or PROFIBUS network** 12) (see Catalog ST 70 and IK PI)
via *MPI* or *PROFIBUS network* (**PG/OP communication**) with max. 4 x **S7-300, -400, WinAC**	● 4)	● 2)	● 2)	●	● 3)	**MPI or PROFIBUS network** 12) (see Catalog ST 70 and IK PI)
via *Industrial Ethernet (TCP/IP)* (**PG/OP communication**) with max. 4 x **S7-200, -300, -400, WinAC**	—	● 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 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.
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 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);
see 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
12) Bus connector 6GK1 500-0EA02

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SIMATIC S5

Overview

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

AS511 interface *(only MP 370, WinCC flexible Runtime)*

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 runs via the PG interface of SIMATIC S5 and uses the associated CPU resources, i.e., the performance capability of the SIMATIC TP/OP/MP is determined by the performance capability of the SIMATIC CPU used.

PROFIBUS DP interface *(not for OP 77A, TP 177A, 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:

- One or two SIMATIC TP/OP/MPs as SLAVES via a PROFIBUS network to a SIMATIC S5-95U with integrated PROFIBUS DP/master interface [6ES5 095-8ME01]
- Up to 30 SIMATIC TP/OP/MPs 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 TP/OP/MP (DP slave) 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 TP/OP/MP is required in the PLC (FB is included in scope of delivery).

Controller **Target hardware (PROTOCOL)** (physics)	**SIMATIC HMI** **OP 77A** **TP 177A**	**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 277** **MP 377**	**MP 370**	**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)	—	—	—	● ●	●	**6ES5 734-1BD20** [1] (3.2 m) **6XV1 440-2A…** (see HMI accessories/ connecting cables)
SIMATIC S5 (PROFIBUS DP + HMI)						
via *PROFIBUS DP* with 1 x **S5-95U/L2-DP/Master [6ES5 095-8ME02]**	—	● 2)	● 2)	●	● 3)	**PROFIBUS** [4] (see Catalog ST 50/IK PI)
via *PROFIBUS DP* with *IM 308C* 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)	—	● 2)	● 2)	●	● 3)	**PROFIBUS** [4] (see Catalog ST 50/IK PI)
via *PROFIBUS DP* with *CP 5431 FMS/DP* 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)	—	● 2)	● 2)	●	● 3)	**PROFIBUS** [4] (see Catalog ST 50/IK PI)

● System interface possible
— System interface not possible

1) PC cable with integrated level converter RS 232/TTY
2) 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.
3) Connection via integrated MPI/PROFIBUS interface, use the CP 5611 A2 with a standard PC
4) Bus connector 6GK1 500-0EA02

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Overview

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

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

The NITP connection runs via the PG interface of SIMATIC 505 and uses the associated CPU resources, i.e. the performance capability of the SIMATIC TP/OP/MP is determined by the performance capability of the SIMATIC CPU used.

PROFIBUS DP interface *(not for OP 77A, TP 177A, 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 TP/OP/MPs 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 TP/OP/MP (DP/slave) and SIMATIC 505 (DP/master) is implemented by means of 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 TP/OP/MP is required in the PLC (example of application ladder included in scope of delivery).

Controller **Target hardware (PROTOCOL)** (physics)	**SIMATIC HMI** **OP 77A** **TP 177A**	**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 277** **MP 377**	**MP 370**	**WinCC flexible Runtime**	**Connection via**
SIMATIC 505 (NITP)						
PLC 525, 535, 565T (RS 232)	—	● 1) 2)	● 1) 2)	— ●	●	**PPX: 2601 094-8001** 3) See online help 6)
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 ST 50/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 assignment.
2) For Touch Panel, Operator Panel, Multi Panel, the RS 422/RS 232 adapter 6AV6 671-8XJ00-0AX0 is required
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) Connection via integrated MPI/PROFIBUS interface, use the CP 5611 A2 with a standard 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

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PLCs from other manufacturers

Overview

Allen Bradley

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

DF1 interface
(not for OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 with OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 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 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)

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Overview (continued)

Modicon

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

MODBUS protocol
(not with OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 for OP 77A, TP 177A, 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 [1)]
(not for OP 77A, TP 177A, Mobile Panel 177 PN, Mobile Panel 277 IWLAN)

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).

1) Not for WinCC flexible Runtime

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PLCs from other manufacturers

Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI OP 77A TP 177A	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 277 MP 377	MP 370	WinCC flexible Runtime	Connection via
Allen Bradley (DF1)						
SLC 500/03,04,05 or MicroLogix (RS 232)	—	● 1) 2)	● 1) 2)	— ●	●	**1747 CP3** 7) See online help 9)
PLC 5/11,20,30,40,60,80 (RS 232)	—	● 1) 2)	● 1) 2)	— ●	●	**1784 CP10** 7) See online help 9)
PLC 5/11,20,30,40,60,80 (RS 422)	—	● 1)	● 1)	●	—	See online help 9)
via **KF2 gateway** and *DH+ network* with up to 4 x **SLC 500/00,01,02,03,04** or **PLC 5/11,20,30,40,60,80** (RS 232)	—	● 1) 2)	● 1) 2)	— ●	●	**1784 CP10** 7) 8) See online help 9)
via **KF3 gateway** and *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 232)	—	● 1) 2)	● 1) 2)	— ●	●	**1784 CP10** 7)8) See online help 9)
Allen Bradley (DH485)						
SLC 500/03,04,05 or **MicroLogix** (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 9)
via **AIC adapter** and *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 9)
via *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 485)	—	● 1)	● 1)	●	—	See online help 9)
Allen Bradley (Ethernet IP)						
via *Ethernet IP network* with up to 4 x **ControlLogix** or **CompactLogix**	—	● 3) 4)	● 4) 5)	●	● 6)	See online help 9)

● 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) For Touch Panel, Operator Panel, Multi Panel, the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
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) can be found in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

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Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI OP 77A TP 177A	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 277 MP 377	MP 370	WinCC flexible Runtime	Connection via
GE-Fanuc (SNP)						
GEF 90-Micro, 90-30, 90-70 (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 4)
via **adapter** with up to 4 x **GEF 90-Micro, 90-30, 90-70** (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 4)
via **adapter** with up to 4 x **GEF 90-Micro, 90-30, 90-70** ((RS 422)	—	● 1)	● 1)	●	—	See online help 4)
LG GLOFA (Dedicated)						
GLOFA-GM with Cnet-Modul (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 4)
With up to 4 x **GLOFA-GM with Cnet-Modul** (RS 422)	—	● 1)	● 1)	●	—	See online help 4)
Mitsubishi FX (Ethernet IP)						
FX0 (RS 422)	—	—	—	● 3)	●	SC-071 5)
	●	● 1)	● 1)	●	—	**6XV1 440-2P…** (max. 20 m)
FX (RS 422)	—	—	—	● 3)	●	SC-081 5)
	●	● 1)	● 1)	●	–	**6XV1 440-2P…** (max. 20 m)
Mitsubishi (MP4)						
• **Serie FX** with communications module • **Serie A** (AnN, AnA, AnU, AnS) with interface module • **Serie Q** (QnA, QnAS) mit Schnittstellenmodul (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 4)
via **FX-48SC-IF converter** with up to 4 PLCs • **Serie FX** with communications module • **Serie A** (AnN, AnA, AnU, AnS) with interface module • **Serie Q** (QnA, QnAS) with interface module (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 4)
with up to 4 PLCs • **Serie FX** with communications module • **Serie A** (AnN, AnA, AnU, AnS) with interface module • **Serie Q** (QnA, QnAS) with interface module (RS 422)	—	● 1)	● 1)	●	—	See online help 4)

● 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) For Touch Panel, Operator Panel, Multi Panel, the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required

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

4) Detailed information (cables used) can be found 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

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PLCs from other manufacturers

Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI OP 77A TP 177A	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 277 MP 377	MP 370	WinCC flexible Runtime	Connection via
Modicon (MODBUS)						
984-120, 130, 131, 141, 145, 380, 381, 185, 480, 485, 680, 685, 780, 785, or TSX-Quantum-CPU 113, 213, 424, 434, 534 (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 7)
via bridge BM85-000 or PLC with bridge functionality/ MODBUS PLUS – Network up to 4 x 984-120, ... or TSX Quantum – CPU 113, ... (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 7)
TSX Compact (RS 232)	—	● 1) 2)	● 1) 2)	●	●	See online help 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-Modul 140 NOE 771 01** or **TSX Unity Premium** or **TSX Premium** with **TCP/IP-Modul TSX ETY 110** or **TSX Micro** with **TCP/IP-Modul TSX ETY 410** or **Momentum** with **CPU-Adapter 171 CCC 980 30**	—	● 3) 4)	● 4) 5)	●	● 6)	See online help 7)
via **TCP/IP-Modbus Plus Bridge174 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))	●	● 6)	See online help 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) For Touch Panel, Operator Panel, Multi Panel, the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
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) can be found in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

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Overview (continued)

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI OP 77A TP 177A	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 277 MP 377	WinCC flexible Runtime	Connection via
Omron (Link/Multi Link)					
• **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	—	● 1) 2)	● 1) 2)	●	See online help 3)
via **Konverter NT-AL001** with up to 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	—	● 1) 2)	● 1) 2)	●	See online help 3)
with up to 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 422)	—	● 1)	● 1)	—	See online help 3)
Telemecanique (UNI-TELWAY)					
via **TSX SCA62 outlet** with **TSX 17** or **TSX 47/67/87/107** (RS 485)	—	● 1)	● 1)	—	See online help 3)
via **TSX SCA62 + ACC01 outlets** with **TSX 37/57** (RS 485)	—	● 1)	● 1)	—	See online help 3)
via **TSX SCA62 outlet** and *UNI-TELWAY network* with **4 x TSX 17** or **TSX 37/57** or **TSX 47/67/87/107** (RS 485)	—	● 1)	● 1)	—	See online help 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) For Touch Panel, Operator Panel, Multi Panel, the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required

3) Detailed information (cables used) can be found in the online help for WinCC flexible and in the Communication User Manual for Windows-based systems

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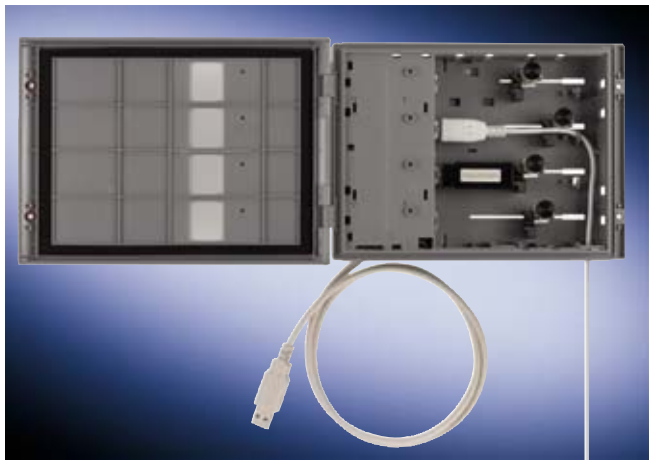
HMI Accessories

Overview

HMI accessories include:

- Industrial Hub4
- Connecting cables
- Connectors
- Mobile Panel accessories
- Memory cards
- Converters/adapters
- Service packs
- Protective covers
- Cover foils, battery and plug-in power supply

Overview



Industrial USB Hub 4, open

Note:
For further information about this product see chapter 3.

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Overview

Example – connecting cables

Key

P = PROCESS COUPLING

p = optional process coupling

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

U = Booting (filling in the case of a missing or damaged operating system)

MBP = Mobile Panel

	S5-TTY (PG-S5)	S5-TTY (TD/OP-S5)	S7 PG702	RS232 external	TD-PPI (incl. voltage)	RS232 zero modem	RS232/PPI multi-master cable	USB/PPI multi-master cable	MPI (PG-S7) up to 187.5 Mbaud
	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	-	P	-	-	-	D/U	-	-	P
TP177micro	-	-	-	-	-	-	D/U	D/U	-
TP177A	-	P	-	P	-	-	D/U	D/U	P
TP170B mono	-	P	-	P	-	D/U	-	-	P/D
TP170B color	-	P	-	P	-	D/U	-	-	P/D
TP177B DP	-	-	-	P 1)	-	-	D/U	-	P/D
TP177B PN/DP	-	-	-	P 1)	-	-	D/U	-	P/D
TP270-6	-	P	-	P	-	D/U	-	-	P/D
TP277-6	-	-	-	P 1)	-	-	D/U	-	P/D
MP270-6 T	-	P	-	P	-	D/U	-	-	P/D
MP277-8 T	-	-	-	P 1)	-	-	D/U	-	P/D
TP270-10	-	P	-	P	-	D/U	-	-	P/D
MP277-10 T	-	-	-	P 1)	-	-	D/U	-	P/D
MP370-12 T	-	P	-	P 1)	-	D/U	-	-	P/D
MP370-15 T	-	P	-	P 1)	-	D/U	-	-	P/D
MP377-12 T	-	-	-	P 1)	-	-	D/U	-	P/D
MP377-15 T	-	-	-	P 1)	-	-	D/U	-	P/D
MP377-19 T	-	-	-	P 1)	-	-	D/U	-	P/D

1) Only in conjunction with the RS422/232 converter

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Connecting cables

	S5-TTY (PG-S5)	S5-TTY (TD/OP-S5)	S7 PG702	RS232 external	TD-PPI (incl. voltage)	RS232 zero modem	RS232/PPI multi-master cable	USB/PPI multi-master cable	MPI (PG-S7)
	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
OP3	-	-	P	-	P [1]	-	-	-	-
OP73micro	-	-	-	-	P	-	D/U	D/U	P
OP73	-	-	-	-	P	-	D/U	D/U	P/D
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	-	-	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	-	-	P	-	D/U	-	-	P/D
MP270-10 K	P	-	-	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/U	-	P/D
MBP 170	-	-	-	-	-	-	-	-	-
MBP 177 DP	-	-	-	-	-	-	D/U	-	-
MBP 177 PN	-	-	-	-	-	-	D/U	-	-
MBP 277	-	-	-	-	-	-	D/U	-	-

	DP PtP	DP Standard	DP (Mobile Panel)	PN PtP Cross	PN Ethernet	PN (Mobile Panel)	Conv. 422-232	Conv. 232-TTY	90° angular (15-contact 1:1)
	6XV1 830-0Axxx	Standard Profibus (2-contact)	6XV1 440-4Axxx	6XV1 870-3RH20 [2]	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/D/U
TP170A	P	P	-	-	-	-	-	P	p/D/U
TP177micro	P	-	-	-	-	-	-	-	p/D/U
TP177A	P	P	-	-	-	-	-	-	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

1) With gender changer
2) Not possible with PN/IO, only with HUB/Switch
3) Only in conjunction with the RS422/232 converter

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	DP PtP	DP Standard	DP (Mobile Panel)	PN PtP Cross	PN Ethernet	PN (Mobile Panel)	Conv. 422-232	Conv. 232-TTY	90° angular (15-contact 1:1)
	6XV1 830-0Axxx	Standard Profibus (2-contact)	6XV1 440-4Axxx	6XV1 870-3RH20 [2]	Standard Ethernet CAT5	6XV1 440-4Bxxx	6AV6 671-8XE00-0AX0	6ES5 734-1BD20	6AV6 671-8XD00-0AX0
TP270-6	P/D	P/D	-	p/D	P/D	-	-	P	p/D/U
TP277-6	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	-	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	P/D	-	P	-	P/ D/U
MP377-15 T	P/D	P/D	-	P/D	P/D	-	P	-	P/ D/U
MP377-19 T	P/D	P/D	-	P/D	P/D	-	P	-	P/ D/U
OP3	P	-	-	-	-	-	-	-	-
OP73micro	P	-	-	-	-	-	-	-	-
OP73	P	P	-	-	-	-	-	-	-
OP7 PP	-	-	-	-	-	-	-	-	p/D/U
OP7 DP	P	P	-	-	-	-	-	-	p/D/U
OP7 DP12	P	P	-	-	-	-	-	-	p/D/U
OP77A	P	P	-	-	-	-	-	-	p/D/U
OP77B	P	P	-	-	-	-	-	P	p/D/U
OP17 PP	-	-	-	-	-	-	-	-	p/D/U
OP17 DP	P	P	-	-	-	-	-	-	p/D/U
OP17 DP12	P	P	-	-	-	-	-	-	p/D/U
OP170B	P	P	-	-	-	-	-	p	p/D/U
OP177B DP	P	P	-	-	-	-	P	-	p/D/U
OP177B PN/DP	P	P	-	P/D	P/D	-	P	-	p/D/U
OP270-6	P	p	-	p/D	P/D	-	-	P	p/D/U
OP277-6	P	P	-	P/D	P/D	-	P	-	p/D/U
MP277-8 K	P	P	-	P/D	P/D	-	P	-	p/D/U
OP270-10	P	p	-	p/D	P/D	-	-	P	p/D/U
MP270-10 K	P	P	-	P/D	P/D	-	-	P	p/D/U
MP277-10 K	P	P	-	P/D	P/D	-	P	-	p/D/U
MP370-12 K	P	P	-	P/D	P/D	-	-	P	p/D/U
MP377-12 K	P/D	P/D	-	P/D	P/D	-	P	-	P /D/U
MBP 170	-	-	P/D	-	-	-	-	P	-
MBP 177 DP	P/D	-	P/D	-	-	-	-	-	-
MBP 177 PN	-	-	-	-	-	P/D	-	-	-
MBP 277	-	-	P/D	-	-	P/D	-	-	-

1) With gender changer
2) Not possible with PN/IO, only with HUB/Switch
3) Only in conjunction with the RS422/232 converter

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Connecting cables

Ordering data	Order No.
Connecting cables 6ES5 731-1....	
for SIMATIC S5 (S5-90U to S5-155U), PG6xx (TTY, 20 mA)	
Standard lengths	
• 5.0 m	**6ES5 731-1BF00**
• 10.0 m	**6ES5 731-1CB00**
Custom lengths	
• Max. 200.0 m	**6ES5 731-1■■■0**
Connecting cables 6ES5 731-6....	**6ES5 731-6AG00**
for SIMATIC S5, interface adapter for PC 16-20 required for the connection between PG and connecting cable	
Connecting cables 6ES5 734-1....	
for SIMATIC S5, connecting cable between PLC 15-pin and PC 25-pin	
Standard lengths	
• 3.2 m	**6ES5 734-1BD20**
Connecting cables 6ES5 734-2....	
for SIMATIC S5, connecting cable between PG 7 and S5-90U to S5-155U	
Standard lengths	
• 10.0 m	**6ES5 734-2CB00**
Custom lengths	
• max. 1000.0 m	**6ES5 734-2■■■0**
Length codes see Appendix	
Connecting cables 6ES7 705-...	
for SIMATIC S7, connecting cable between PG 702 and SIMATIC S7 via PPI/MPI	
Standard length	
• 2.5 m [1]	**6ES7 705-0AA00-7BA0**
Non-heating apparatus cables 6ES7 900-1....	
for SIMATIC Box PC 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**
Connecting cables 6ES7 901-0...	
for SIMATIC S7 MPI cable between SIMATIC S7 and PG via MPI	
Standard length	
• 5.0 m [2]	**6ES7 901-0BF00-0AA0**

1) Included in OP3 scope of delivery
2) Included in PG scope of delivery

	Order No.
Connecting cables 6ES7 901-1...	
RS 232 cable	
• 5.0 m	**6ES7 901-1BF00-0XA0**
Connecting cables 6ES7 901-3...	**6ES7 901-3EB10-0XA0**
Process connecting cable	
For connecting TD 100C or TD 200C to S7-200	
Connecting cables 6XV1 440-2A...	
Connecting cable between TD/TP/OP and PLC S5-90U to -155U	
Standard lengths	
• 3.2 m	**6XV1 440-2AH32**
• 5.0 m	**6XV1 440-2AH50**
• 10.0 m	**6XV1 440-2AN10**
• 20.0 m	**6XV1 440-2AN20**
• 32.0 m	**6XV1 440-2AN32**
• 50.0 m	**6XV1 440-2AN50**
Custom lengths	
Max. 1000.0 m	**6XV1 440-2A■■■**
Length codes see Appendix	
Connecting cables 6XV1 440-2K...	
Connecting cable between TD/TP/OP and SIMATIC 505 PLC 545, 555; ALLEN BRADLEY SLC500 03,04 via RS232/15-pin socket and PC via RS232/9-pin male	
Standard lengths	
• 3.2 m	**6XV1 440-2KH32**
• 5.0 m	**6XV1 440-2KH50**
• 10.0 m	**6XV1 440-2KN10**
Adapter cable 6XV1 440-2U...	
between TD/OP (RS 232/15-pin socket) and non-Siemens PC cable (RS 232/9-pin socket)	
• 0.3 m	**6XV1 440-2UE32**
PROFIBUS connecting cable 830-1C	
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated 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	**6XV1 830-1CH15**
• 3.0 m	**6XV1 830-1CH30**

Note:
See appendix for length codes for connecting cables.

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Ordering data

	Order No.
Configuration cable 6ES5 734 for connecting PG 7xx to SIMATIC S5-90U to S5-155U via 25-pin socket/TTY (serial) 3)	
Standard lengths	
• 5.0 m	**6ES5 734-2BF00**
• 10.0 m	**6ES5 734-2CB00**
Custom lengths	
• max. 1000.0 m	**6ES5 734-2■■■0**
Length codes see Appendix	
Configuration cable 6ES7 for connecting PC/PG/OP/TD to SIMATIC S7-200/300/400 via 9-pin male/RS232 (serial)	
• between PG 702/OP3 1) and S7-200/300/400 via PPI/MPI	**6ES7 705-0AA00-7BA0**
• between OP7/OP17/OP27 2)/TD17 and S7-200/300/400 via MPI	**6ES7 901-0BF00-0AA0**
Connecting cable 6ES7 901 between HMI adapter and PC/TS adapter (RS232/null MODEM cable) for OP77B, TP 177A, TP 170B, OP 170B, TP/OP 270, MP 270, MP 370	
• 5.0 m	**6ES7 901-1BF00-0XA0**

		Order No.
RS 232/PPI multi-master cable	A	**6ES7 901-3CB30-0XA0**
USB/PPI multi-master cable For connecting the S7-200 to the serial PC/OP interface	A	**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		**6XV1 870-3RH10**
• 6.0 m		**6XV1 870-3RH60**
• 10.0 m		**6XV1 870-3RN10**

Note:
See appendix for length codes for connecting cables.

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

1) Included in OP3 scope of delivery
2) Included in PG scope of delivery
3) Except OP3 and OP7/DP

A) Subject to export regulations: AL: N and ECCN: EAR99H

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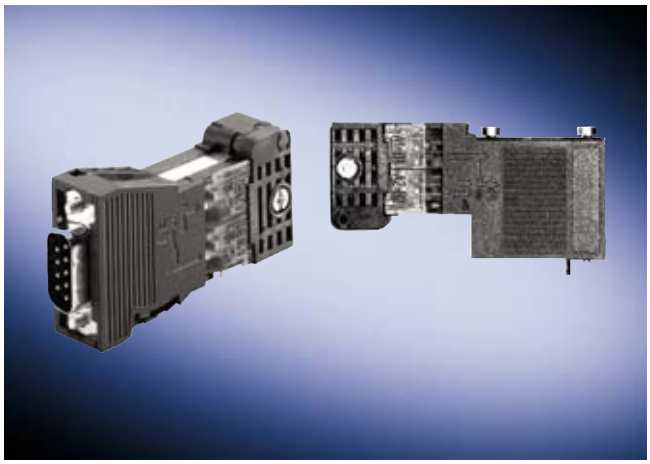
RS 485 bus connector

Overview



RS 485 bus connector

- This is used to connect PROFIBUS stations to the PROFIBUS bus cable
- Easy installation
- The insulation piercing method of the FastConnect connectors reduces installation time considerably
- Integrated matching resistors (not for 6ES7 972-0BA30-0XA0)
- Connection of PG using a special bus connector is possible without the need to install network nodes.

Ordering data

	Order No.
RS 485 bus connector with axial cable outlet (180°) For industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbit/s	**6GK1 500-0EA02**
RS 485 bus connector with 90° cable outlet With screw-terminals, max. transmission rate 12 Mbit/s	
• Without programmer port	**6ES7 972-0BA12-0XA0**
• With programmer port	**6ES7 972-0BB12-0XA0**
RS 485 bus connector with angled cable outlet (35°) With screw-terminals, max. transmission rate 12 Mbit/s	
• Without programmer port	**6ES7 972-0BA41-0XA0**
• With programmer port	**6ES7 972-0BB41-0XA0**
RS 485 bus connector with 30° cable outlet With screw-terminals, low-cost variant, max. transmission rate 1.5 Mbit/s	**6ES7 972-0BA30-0XA0**

		Order No.
PROFIBUS FastConnect bus connector RS 485 with 90° cable outlet With insulation displacement terminals, max. transmission rate 12 Mbit/s		
• Without programmer port		**6ES7 972-0BA50-0XA0**
• With programmer port		**6ES7 972-0BB50-0XA0**
PROFIBUS FastConnect bus connector RS 485 with angled cable outlet (35°) With insulation displacement terminals, max. transmission rate 12 Mbit/s		
• Without programmer port	A	**6ES7 972-0BA60-0XA0**
• With programmer port		**6ES7 972-0BB60-0XA0**
PROFIBUS FastConnect bus connector RS 485 Plug 180 With insulation displacement terminals, with 180° cable outlet, for industrial PC, SIMATIC HMI OP, OLM; max. transmission rate 12 Mbit/s		**6GK1 500-0FC00**

A) Subject to export regulations: AL: N and ECCN: EAR99H

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Overview

IE FC RJ45 Plug

- 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	**6GK1 901-1BB10-2AA0**
• 1 pack = 10 items	**6GK1 901-1BB10-2AB0**
• 1 pack = 50 items	**6GK1 901-1BB10-2AE0**
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	**6XV1 840-2AH10**
Preferred length	
• 1000 m	**6XV1 840-2AU10**
IE FC TP Flexible Cable GP 2 x 2 (Type B)	**6XV1 870-2B**
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 1,000 m; minimum order 20 m	
IE FC RJ45 Plug 90	
90° cable outlet; e.g. for ET 200S	
• 1 pack = 1 item	**6GK1 901-1BB20-2AA0**
• 1 pack = 10 items	**6GK1 901-1BB20-2AB0**
• 1 pack = 50 items	**6GK1 901-1BB20-2AE0**
IE FC RJ45 Plug 145	
145° cable outlet; e.g. for SIMOTION and SINAMICS	
• 1 pack = 1 item	**6GK1 901-1BB30-0AA0**
• 1 pack = 10 items	**6GK1 901-1BB30-0AB0**
• 1 pack = 50 items	**6GK1 901-1BB30-0AE0**

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Accessories for SIMATIC Mobile Panels

Overview

DP and PN junction box

Ordering data

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

A) Subject to export regulations: AL: N and ECCN: EAR99H

Technical specifications

Type	DP junction box Basic	PN junction box Basic	DP junction box Plus	PN junction box Plus
Supply voltage				
Supply voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
permissible range	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V	DC +20.4 to +28.8 V
Rated current	0.4 A	0.4 A	0.5 A	0.5 A
Power	10 W	–	12 W	–
Expansions to operator process communication				
Hot swapping	with emergency stop circuit interruption	with emergency stop circuit interruption	without emergency stop circuit interruption	without emergency stop circuit interruption
• Monitoring the STOP button	No	No	Yes	Yes
• Location identifier	Yes	Yes	Yes	Yes
Degree of protection				
Enclosure according to EN 60529	IP65	IP65	IP65	IP65
Enclosure according to NEMA	NEMA 4, NEMA 12	NEMA 4, NEMA 12	NEMA 4, NEMA 12	NEMA 4, NEMA 12
Certifications & Standards				
Certifications	CE, cULus, C-TICK, NEMA 4, NEMA 12	CE, cULus, C-TICK, NEMA 4, NEMA 12	CE, cULus, C-TICK, NEMA 4, NEMA 12	CE, cULus, C-TICK, NEMA 4, NEMA 12
Ambient conditions				
max. relative humidity (in %)	85%	85%	85%	85%
Temperature				
• Operation (vertical installation)	0 to +50°C	0 to +50°C	0 to +50°C	0 to +50°C
• Transport, storage	-20 to +70°C	-20 to +70°C	-20 to +70°C	-20 to +70°C
Interfaces	1 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	2 x Ethernet	1 x RS-232, 1 x RS-422, 1 x RS-485 (Max. 12 Mbit/s)	2 x Ethernet
Functionality under WinCC flexible				
• Connection point identification	Yes	Yes	Yes	Yes
Dimensions				
External dimensions (W x H x D) in mm	160 x 120 x 70	230 x 120 x 80	160 x 120 x 70	230 x 120 x 80
Weights				
Weight	0.35 kg	0.45 kg	0.4 kg	0.5 kg

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Overview

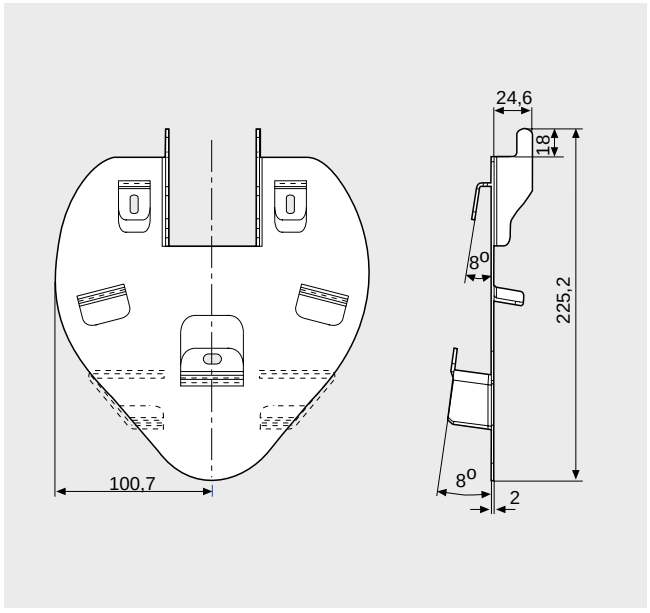
Replacement key for Mobile Panel

Wall mounting bracket for Mobile Panel, front and side view

Ordering data

	Order No.
Replacement key for Mobile Panels (pack of 10 keys)	**6AV6 574-1AG04-4AA0**
Wall mounting bracket for Mobile Panels	**6AV6 574-1AF04-4AA0**

Dimensions



SIMATIC Mobile Panel wall-mounting bracket

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Accessories for SIMATIC Mobile Panels

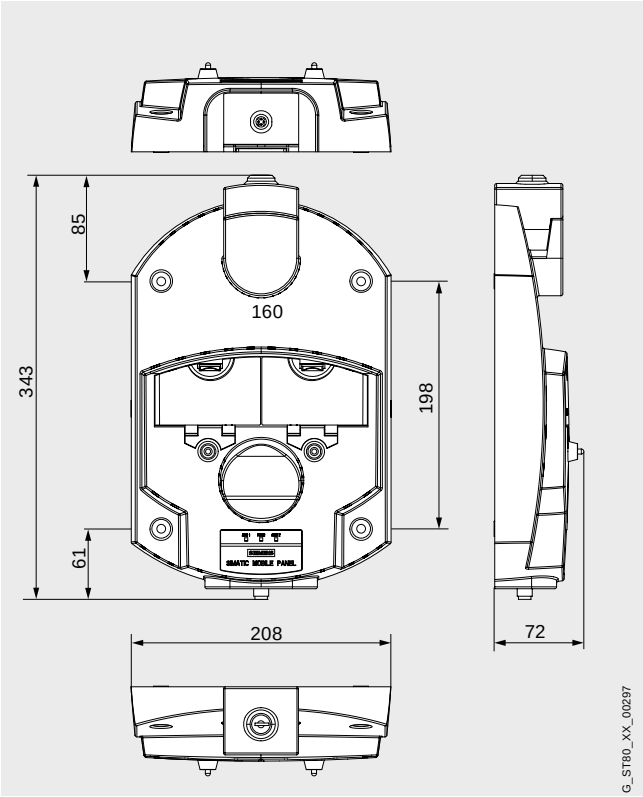
Overview

Charging base

Technical specifications

Type	Charging base
Supply voltage	
Supply voltage	DC 24 V
permissible range	DC +19.2 to +28.8 V
Rated current	3.2 A
Power	77 W
Degree of protection	
IP65 at front	Yes
IP65 rear	Yes
Enclosure according to EN 60529	IP65
Certifications & Standards	
Certifications	CE, cULus, C-TICK
Ambient conditions	
max. relative humidity (in %)	85%
Temperature	
•Operation (vertical installation)	0 to +40°C
•Transport, storage	-20 to +60°C
Dimensions	
External dimensions (W x H x D) in mm	208 x 333 x 75
Weights	
Weight	1.1 kg

Dimensions



Ordering data

	Order No.
Charger for Mobile Panels 277(F) IWLAN	**6AV6 671-5CE00-0AX0**

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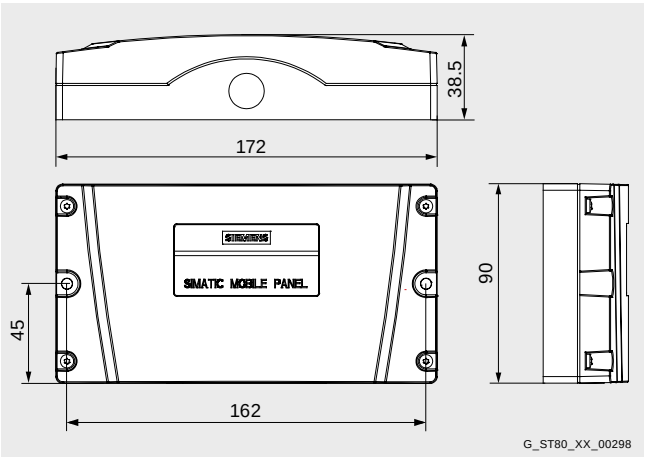
Overview

Transponder

Dimensions



Technical specifications

Type	Transponder
Supply voltage	
Via battery	Yes
• Number of batteries	3
• Battery type	Type AA
• Lifetime of battery, typ.	5 years
Degree of protection	
IP65 at front	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
Ambient conditions	
max. relative humidity (in %)	85%
Temperature	
• Operation (vertical installation)	0 to +50°C
• Transport, storage	-20 to +60°C
Interfaces	
Transmit frequency	2.4 GHz; Passive, frequency range: 2400 to 2483.5 MHz
Range of transmitter	8 m
Transmission angle	93 deg
Number of adjustable identifiers, max.	65,534
Functionality under WinCC flexible	
• Zones	Yes
• Effective range	Yes
Dimensions	
External dimensions (W x H x D) in mm	172 x 90 x 38.5
Weights	
Weight	0.3 kg

Ordering data

	Order No.
Transponder for Mobile Panels 277	**6AV6 671-5CM00-0AX0**

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Memory cards

Overview

PC card adapter with Compact Flash Card

CompactFlash Card, 128 MB

Multi Media Card, 64 MB

USB 2.0 memory stick (USB Flash Drive) with 1 GByte memory.
Released for MP 277/MP 377 and Mobile Panel 277.

Ordering data

		Order No.
Memory cards		
• PC Card, 512 MB, comprising: PC card adapter with Compact Flash Card 512 MB	A	**6AV6 574-2AC00-2AF1**
• Compact Flash Card, 512 MB		**6AV6 574-2AC00-2AA1**
• SD card, 256 MByte for MP 377	A	**6AV6 671-8XB10-0AX0**
• Multi Media Card, 128 MByte for Mobile Panel 177, OP 77B, TP/OP 177B, MP 377	A	**6AV6 671-1CB00-0AX1**
• USB 2.0 memory stick (USB Flash Drive) with 1 GByte memory for MP277/MP 377 and Mobile Panel 277	A	**6ES7 648-0DC30-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

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Overview

RS232 to TTY PC converter

RS422 to RS232 converter

90° angle adapter, 9-pin for RS422/485

Ordering data

		Order No.
RS232 to TTY converter, 20 mA between TD/OP/TP and S5-90U to S5-155U, for TP/OP 170B, TP/OP 270, MP 270B		**6ES5 734-1BD20**
RS422 to RS232 converter, V.24 between TD/TP/OP and non-Siemens PLC with RS232 interface, for TP 177B, OP 177B, TP/OP 277-6, MP 277-8T/K, MP 277-10T/K	A	**6AV6 671-8XJ00-0AX0**
90° angle adapter between TD/OP and connecting cable		**6XV1 440-2DE32**
90° angle adapter, 9-pin for RS422/485		**6AV6 671-8XD00-0AX0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

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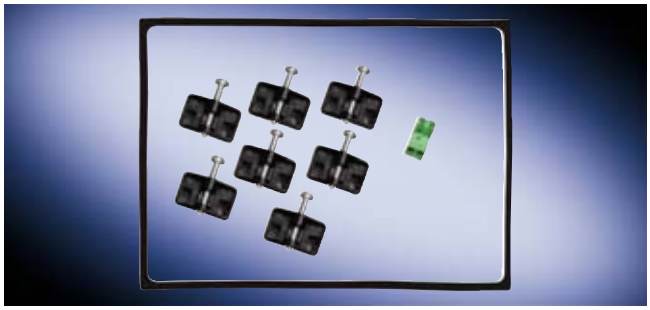
Service packages

Overview



Examples: Service pack for SIMATIC Panel

The service packs listed below are available:

- PP7/17
- TD 17, OP 7, OP 17
- OP 73micro, OP 73, OP 77A/B
- TP 170micro, TP 070, TP 170A/B, OP 170B
- TP 177micro, TP 177A, TP/OP 177B
- Mobile Panels 177/277
- TP/OP 270 6”
- TP 270 10”, OP 270 10”
- TP 277 6", OP 277 6"
- MP 277 8" Touch/Key, MP 277 10" Touch/Keys
- MP 370 Keys, TP 270 10"
- MP 370 Touch
- MP 377 Touch/Keys

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Ordering data	Order No.
Service pack for PP7/17 Consisting of: • 1 PP7 gasket • 1 PP17-I/PP17-II gasket • 5 tensioning clamps • PP7 plug-in terminal strip • PP17-I/PP17-II plug-in terminal strip	**6AV3 678-3XC30**
Service pack for TD17, OP7/17 Consisting of: • 1 TD17 gasket • 1 OP7 gasket • 1 OP17 gasket • 5 tensioning clamps • Plug-in terminal strip (twin block)	**6AV3 678-1CC10**
Service pack for OP 73micro, OP 73, OP 77A/B, Consisting of: • 2 mounting seals • 4 tensioning clamps • Plug-in terminal strip (twin block)	**6AV6 671-1XA00-0AX0**
Service pack for TP 170micro, TP070, TP 170A/B, OP 170B, TP 270 6", OP 270 6", MP 277 8" Touch Consisting of: • Mounting seals • 2 sets of labeling strips for OPs • 7 tensioning clamps • Plug-in terminal strip (twin block)	**6AV6 574-1AA00-4AX0**
Service pack for MP 370 Touch, TP 270 10", C7 636 Touch Consisting of: • Mounting seals • 10 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench	**6AV6 574-1AA00-2CX0**
Service pack for TP 177micro, TP 177A, TP/OP 177B Consisting of: • 2 mounting seals • 7 tensioning clamps • Plug-in terminal strip (twin block)	**6AV6 671-2XA00-0AX0**
Service pack for Mobile Panels 177/277 Consisting of: • Blanking plugs for cable duct • 2 x cable glands for junction box • 1 set of screws for junction box cover • 2 x terminal box (12-pin) • 1 x terminal box (3-pin) • Blanking cap for junction box	**6AV6 574-1AA04-4AA0**

	Order No.
Service pack for Mobile Panel 277(F) IWLAN Consisting of: • 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)	**6AV6 671-5CA00-0AX1**
Service pack for OP 270 10" Consisting of: • 1 mounting seal • 10 tensioning clamps • Plug-in terminal strip (twin block) • 2 sets of slide-in labels • Socket wrench	**6AV6 574-1AA00-2DX0**
Service pack for MP 277 series Consisting of: • Mounting seal • 2 sets of labeling strips • 10 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench	**6AV6 671-3XA01-0AX0**
Service pack for MP 277 10" Touch INOX	**6AV6 675-3AA00-0AX0**
Service pack for MP 370 Keys/ MP 377 Keys Consisting of: • Mounting seals • 2 sets of labeling strips for OPs • 7 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench	**6AV6 574-1AA00-2BX0**
Service pack for MP 377 Touch	**6AV6 671-4XA00-0AX0**
Service pack for Industrial USB Hub 4	**6AV6 671-3EA01-0AX0**
Key labeling strips MP 370 Keys/ MP 377 Keys for function keys, without labeling, 2 sets each (plastic)	**6AV6 574-1AB00-2BA0**
Key labeling strips for Mobile Panel 277 Packet for labelling 6 devices (2 sheets per set) incl. spare stickers for cover caps	**6AV6 671-5BF00-0AX0**

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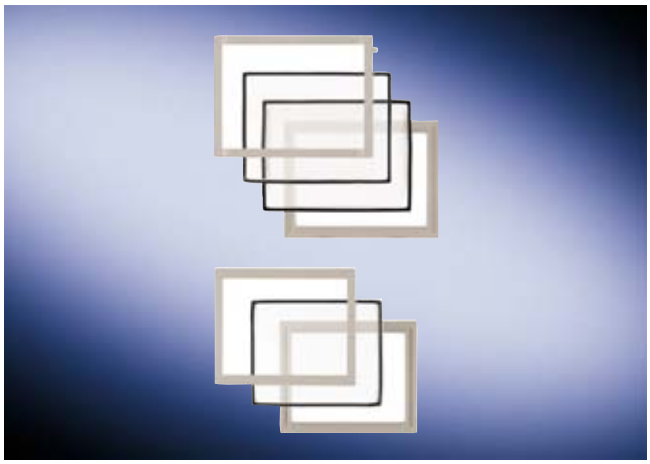
Protective covers

Overview



Protective covers for:

- TP 070
- TP 170micro
- TP 177micro
- TP 170A/B
- TP 177A/B
- TP 270 6":
- MP 270B 6" Touch
- TP 277 6"
- OP 77 A/B
- OP 177B

Ordering data

	Order No.
Protective covers for TP 070, TP 170micro, TP 177micro, TP 170A/B, TP 177A/B, TP 270 6“, MP 270 6“ Touch, TP 277 6" (2 sets) 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 270 6“ Touch)	**6AV6 574-1AE00-4AX0**
Protective covers for OP 77A/B (2 sets) Consisting of: • 2 cover frames • 2 base frames • 2 protective covers	**6AV6 671-1AJ00-0AX0**
Protective covers for OP 177B (2 sets) Consisting of: • 2 cover frames • 2 base frames • 2 protective covers	**6AV6 671-2DJ00-0AX0**
Protective covers for MP 277 10" Touch (2 sets) Consisting of: • 2 cover frames • 2 base frames • 2 protective covers	**6AV6 671-3CK00-0AX0**

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Ordering data

Order No.

Cover foil

		Order No.
Blank faceplates for TD 100C For printing customized keyboard layouts; 6 perforated foils per sheet; 10 sheets per packing unit		**6ES7 272-1BF00-7AA0**
Blank faceplates for TD 200C	A	**6ES7 272-1AF00-7AA0**
For printing customized keyboard layouts; 3 perforated foils per sheet; 10 sheets per packing unit		
Cover foil for TP 070, TP 170A/B (pack of 10 each)		**6AV6 574-1AD00-4AX0**
Cover foil for TP 177micro, TP 177A/B, OP 177B (pack of 10 each)		**6AV6 671-2XC0-0AX0**
Cover foil for Mobile Panel 177 (pack of 10 each)		**6AV6 574-1AD04-4AA0**
Cover foil for Mobile Panel 277 Tough film to protect the touch display from dirt and scratches (set of 2)		**6AV6 671-5BC00-0AX0**
Cover foil for TP 270 6", TP 277 6", MP 270B 6" Touch (pack of 10 each)		**6AV6 574-1AD00-4DX0**
Cover foil for TP 270 10“, MP 270B 10“, MP 370 12“ Touch, MP 377 12" Touch (pack of 10 each)		**6AV6 574-1AD00-4CX0**
Cover foil for MP 370 15” Touch, MP 377 15" Touch (pack of 10 each)		**6AV6 574-1AD00-4EX0**
Cover foil for MP 277 to protect the Touch front against fouling/scratching (set of 10 each)		
• for MP 277 10" Touch		**6AV6 574-1AD00-4CX0**
• for MP 277 8" Touch		**6AV6 574-1AD00-4DX0**
Cover foil for MP 377 19" Touch		**6AV7 672-1CE00-0AA0**
Protective pocket for labeling strips for Mobile Panel 170 and 177 (5 items) for labelling strips for Mobile Panel 177 and 277		**6AV6 574-1AB04-4AA0**
Cover foil for Panel PCs 477/577/677/877 For protecting the touch screen against dirt/scratches		
• For 12" Touch		**6AV7 671-2BA00-0AA0**
• For 15" Touch		**6AV7 671-4BA00-0AA0**
• For 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677/877 For labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

Battery and plug-in power supply

	Order No.
Backup battery Lithium battery, 3.6 V DC; 1.7 Ah; for TD17,OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B and MP 370	**W79084-E1001-B2**
Plug-in power supply • 230 V AC/24 V DC	**6ES7 705-0AA00-1AA0**

1) Not authorized for sale in the EU

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Recommended printers for Panels and Multi Panels

Overview

Print functions of SIMATIC HMI Panels

	Hardcopy	Print log [1]	Alarm log On/Off	Print fault message buffer	Event message buffer	Event record with filter	Print data record	Print all data records	Recipe table of contents	Header/footer
OP 77B	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
TP/OP 177B	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
TP/OP 277	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
MP 277	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
MP 370	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
MP 377	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)

● Functionality possible
— Functionality not possible

1) Variable, messages, recipes
2) Included in log

Note:
OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A do not have a printer interface

Approved printers, sources of supply and printer settings

A summary of approved printers, sources of supply and required printer settings can be found on the Internet at
http://www4.ad.siemens.de/news/csi/en/11376409

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SIMATIC Panel PC

3

3/2 **Introduction**
3/6 SIMATIC Panel PC 477 embedded
3/13 SIMATIC Panel PC 477B embedded
3/19 SIMATIC Panel PC 577
3/25 SIMATIC Panel PC 677 (incl. INOX)
3/34 SIMATIC Panel PC 677B

3/44 **Expansion components**
3/44 SIMATIC PC DiagMonitor
3/45 SIMATIC PC/PG Image Creator, Image & Partition Creator
3/47 SIMATIC Panel PC Remote Kit
3/49 3.5" disk drive, USB 1.11
3/50 Industrial USB Hub 4
3/51 SIMATIC PC BIOS Manager
3/52 SIMATIC PC USB FlashDrive

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Introduction

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 Panel PC 477 embedded

Compact, rugged and maintenance-free Panel PC in embedded technology

- Only 75 mm mounting depth (19" display 477B: 98 mm)
- No rotating parts (without fan and hard disk)
- High security due to the Microsoft Windows XP embedded operating system
- Ready-to-use devices with optionally preinstalled software
- HMI: Innovative HMI software WinCC flexible (incl. archives and recipes)
- HMI/RTX: Similar to HMI, with real-time-capable software PLC WinAC RTX as well
- Expandable with PC/104(+) plug-in cards
- Retentive memory on board (NV-RAM, usable with WinAC RTX)

SIMATIC Panel PC 577

Industry functionality and high performance at an attractive price

- Expandable by 3 PCI slots
- Multifaceted interfaces (COM, LPT, PS2, audio in/out, GB Ethernet)

SIMATIC Panel PC 677

Compact, powerful and very rugged

- High performance thanks to latest process technology from Intel
- Dual Core technology: Panel PC 677B 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 (at 677B, NV-RAM, usable with WinAC RTX)

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Overview (continued)

	SIMATIC Panel PC 477 embedded	SIMATIC Panel PC 477B embedded	SIMATIC Panel PC 577	SIMATIC Panel PC 677	SIMATIC Panel PC 677B
Design					
Centralized configuration	●	●	●	●	●
Distributed configuration (via remote kit)				● 2)	● 2)
Display					
Size	12"/15" TFT	12"/15"/19" TFT	12"/15"/19" TFT	12"/15"/15" INOX/ 19" TFT	12"/15"/17"/ 19" TFT
Resolution	800 x 600 / 1024 x 768	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	800 x 600 / 1024 x 768 / 1280 x 1024
Control elements					
Membrane keyboard	● 3)	● 3)	● 3)	● 3)	● 3)
Touch screen	●	●	●	●	●
General features					
Processor	Intel Celeron 650 MHz; Intel Pentium 3 933 MHz	Intel Celeron M 1.0 GHz	Intel Celeron 2.0 GHz; Intel Pentium 4 2.4 GHz	Intel Celeron M 1.5 GHz; Intel Pentium M 1.6 GHz; Intel Pentium M 2.0 GHz	Intel Celeron M 1.86 GHz; Intel Core 2 Duo 1.66 GHz; Intel Core 2 Duo 2.16 GHz
Main memory	512 MB	1 GB	256 MB; 512 MB; 1 GB, expandable to 3 GB	256 MB; 512 MB; 1 GB; 2 GB	512 MB; 1 GB; 2 GB; 3 GB; 4 GB
Expansion slots	3 x PC/104+ 11) 1 x CF slot	3 x PC/104 11) 2 x CF slot (1 x accessible from outside)	3 x PCI (one slot specially prepared for WinAC slot module)	2 x PCI, 1 x CF slot	2 x PCI or 1 x PCI and 1 x PCIe 4x; 1 x CF slot
Operating system	Windows XP embedded on CF Card	Windows XP embedded on CF Card	None, Windows 2000 Professional MUI; Windows XP Professional MUI	None, Windows 2000 Professional MUI; Windows XP Professional MUI	None; Windows 2000 Professional MUI; Windows XP Professional MUI; Windows XP embedded on CF

● Available
Not available

1) Expandable via plug-in card
2) With optional remote kit up to 30 m
3) 12" / 15"displays
4) 15" / 19" displays
5) Only with 24 V DC power supply and Pentium 4 Mobile
6) 24 V DC / 230 V AC
7) With Celeron 650 MHz; max. 45 °C with Pentium 3 933 MHz
8) 15 W taken into account for each PCI/PCIe slot
9) 10 W taken into account for each PCI/ISA slot
10) 3 W taken into account for each PC/104 slot
11) With optional expansion frame

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Introduction

Overview (continued)

	SIMATIC Panel PC 477 embedded	SIMATIC Panel PC 477B embedded	SIMATIC Panel PC 577	SIMATIC Panel PC 677	SIMATIC Panel PC 677B
Interfaces					
PROFIBUS/MPI	●	●	1)	●	●
Ethernet	10/100 Mbit	10/100/1000 Mbit	10/100/1000 Mbit	10/100 Mbit	10/100/1000 Mbit
PS/2 (mouse /keyboard)			●		
USB	●	●	●	●	●
Serial interface	●	●	●	●	●
Parallel interface			●		
Audio in/out			●		
Graphics interface	●	●	●	●	●
Ambient conditions					
Vibration load during operation	1 g	1 g	0,25 g	1 g	1 g
Shock loading during operation	5 g	5 g	1 g	5 g	5 g
Permissible temperature during operation with maximum configuration	+5° C to +45° C; max. 50° C in installation space, 40 °C if at the front 7)	+5° C to +45° C; max. 50° C in installation space, max. 40° C if at the front	+5 °C to +45 °C	+5 °C to +45 °C max. 50 °C in installation space, max. 40 °C if at the front	+5 °C to +45 °C max. 50 °C in installation space, max. 40 °C if at the front
Heat loss in maximum configuration					
12"/15" display	80 W / 85 W 6) 10)	80 W 10)	190 W 8)	max. 140 W 8)	max. 140 W 8)
19" display		110 W 10)	210 W 8)	max. 163 W 8)	max. 163 W 8)

● Available
Not available

1) Expandable via plug-in card
2) With optional remote kit up to 30 m
3) 12“ / 15“ displays
4) 15“ / 19“ displays
5) Only with 24 V DC power supply and Pentium 4 Mobile
6) 24 V DC / 230 V AC
7) With Celeron 650 MHz; max. 45 °C with Pentium 3 933 MHz
8) 15 W taken into account for each PCI/PCIe slot
9) 10 W taken into account for each PCI/ISA slot
10) 3 W taken into account for each PC/104 slot
11) With optional expansion frame

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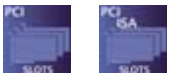
Overview

The following symbols have been devised in order to provide a simple means of indicating the outstanding product features of SIMATIC PCs.

Symbol	Description
	Maximum computer performance thanks to state-of-the-art PC technology
	Expandability with supplementary module
	High investment protection due to long product service life (at least 2.5 years) and long spare-parts availability (at least 5 years)
	High system availability due to data backup options (e.g. RAID1 system)
	High system availability thanks to efficient device diagnostics (e.g., monitoring, logging and signaling function via LAN with SIMATIC PC DiagMonitor)

Symbol	Description
	High degree of resistance to vibration and shock loads and high ambient temperatures
	Space-saving system concept thanks to minimum outside dimensions
	Remote PC display concept possible
	Centralized PC display concept

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 577: 0.25 g) and a shock load of 5 g (Panel PC 577: 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

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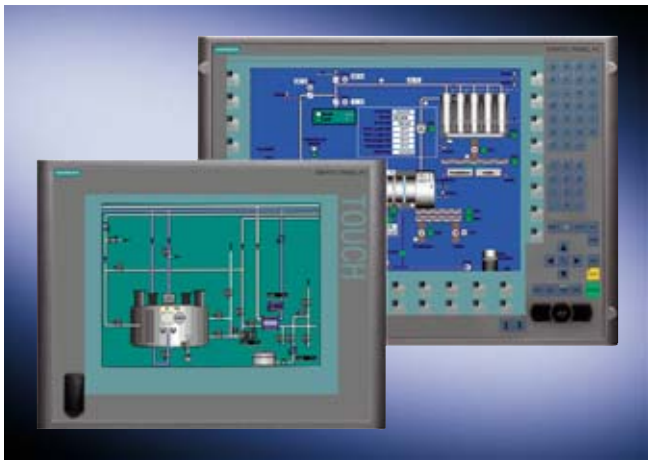
SIMATIC Panel PC 477 embedded

Overview



- Embedded PC platform with high degree of industrial compatibility for demanding tasks in the area of PC-based automation
- Maintenance-free (without rotating parts such as fans and hard disks)
- Rugged construction:
  The PC can withstand the harshest mechanical stress and maintains reliable operation
- Compact construction (only 75 mm mounting depth)
- High investment protection
- Fast integration capability
- Front panel versions:
  - 12" and 15" TFT Touch
  - 12“ and 15“ TFT Key

Benefits

- High industrial capability thanks to extremely rugged design, even in the event of strong vibration and impact loads
- 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 equipment construction:
  - USB 2.0 ports on front and rear for quick and easy connection of additional hardware components
- High industrial capability thanks to integrated PROFIBUS DP/MPI and Ethernet interfaces
- Maintenance-free thanks to a lack of rotating parts (fans and hard disk)
- Minimization of downtime through increased system availability:
  - efficient self-diagnosis (SIMATIC PC DiagMonitor)
  - the high security and reliability of an embedded platform
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Ready-to-run, complete solutions (software is already installed and preconfigured) for visualization and automation in connection with WinCC flexible and WinAC RTX.

Application

SIMATIC Panel PC 477 embedded is designed for use on site at the machine where ruggedness and maximum reliability (i.e. the security of an embedded platform) are the most important requirements and the openness of a PC is also necessary (e.g. the addition of new modules and connection of peripherals such as printers, keyboards, etc.).

Due to the low mounting depth of only 75 mm, it can also be used where mounting space is at a premium.

The PC is used in both production automation and in process automation and is installed in control cabinets and desks, 19" cabinets/racks and swivel arms (gantries).

A SIMATIC Panel PC is the ideal platform for PC-based Automation:

- PC-based visualization locally at the machine with SIMATIC WinCC flexible 2005
- PC-based control with SIMATIC WinAC RTX 2005
- SIMATIC WinCC Web Client for Web-based solutions with WinCC / Web Navigator

Siemens offers a complete modular system of automation components that complement one another perfectly.

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Design

The Panel PC 477 embedded is a compact unit comprising an operating unit with integral computer unit

Components of the computer unit:

- Rugged metal casing, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
  - Intel Celeron 650 MHz
  - Intel Pentium 3, 933 MHz
- Main memory basic configuration:
  - 512 MB
- Compact Flash Drive with preinstalled Windows XP embedded (Image) operating system
- Graphics on board (VGA analog, 1024 x 768)
- Interfaces:
  - 2 x 10/100 Ethernet on-board
  - PROFIBUS DP/MPI on-board, electrically isolated (optional)
  - 3 x USB 2.0 port, 500 mA (1 x front)
  - 1 x COM1 (RS232)
- Free slots for expansion:
  - 3 x PC/104 plus (over expansion frame)
- Power supply: 110 V/230 V AC (autorange), 50/60 Hz or 24 V DC

Optional additional equipment for OEM solutions: (customer-specific solutions)

- Second Compact Flash Drive or 2.5" hard disk (≥ 40 GB)

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 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 and an integrated mouse

15" Touch

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen

They have a USB 2.0 interface on the front for connecting external I/O devices such as a mouse or keyboard and satisfy the requirements of IP65 degree of protection IP65 and NEMA 4. All operating units are also available optionally without a USB interface on the front.

Expansion components

SIMATIC PC DiagMonitor

- PC diagnostics/signaling software for 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 PC/PG Image & Partition Creator

- Software tool for preventive data back-up of the contents of bulk storage (CF cards, hard disks)
- Fast, bit-exact restoration of system and data partitions; user software and special installations are also backed up.
- Software tool for adaptation of hard disk partitioning

3.5" disk drive, USB

The USB diskette 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. The scope of delivery includes a 1 m long USB cable. The diskette drive complies with the USB 1.1 standard. 3.5" high density diskettes can be used (1.44 MB).

Operation of the USB diskette 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 PC USB FlashDrive

- Mobile memory medium for SIMATIC PC/PG
- Fast data transfer (USB 2.0) and high memory capacity
- 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"

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SIMATIC Panel PC 477 embedded

Function

- Integrated, configurable monitoring functions (program execution (watchdog), internal enclosure temperature)
- Enhanced diagnostic / messaging via Ethernet, e-mail, text message, and for direct input in SIMATIC software via OPC (optional via SIMATIC PC DiagMonitor)

Integration

Integrated interfaces:

- Ethernet
  The integrated Ethernet interfaces (10/100 Mbit/s) can be used for IT communication and for data exchange with automation devices such as SIMATIC S7 (with the SOFTNET S7 software packages).
- PROFIBUS (optional)
  The floating PROFIBUS interface (12 Mbit/s) can be used to connect distributed field devices or to interface to the SIMATIC S7 (with the software packages "SOFTNET for PROFIBUS").
- Other interfaces
  For connecting additional I/O devices, 3 free slots are available for PC/104 Plus modules as well as 3 USB (Universal Serial Bus) interfaces and one serial interface.

SIMATIC Panel PC 477 HMI and HMI/RTX

- Quick start in automation solutions with embedded automation
  - SIMATIC WinCC flexible RT preinstalled and ready to run (Panel PC 477-HMI) or SIMATIC WinCC flexible and SIMATIC WinAC RTX preinstalled ready to run (Panel PC 477-HMI/RTX)
  - PROFIBUS and Industrial Ethernet ready 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 further PC applications
  - Expandable with PC/104+ cards
  - Connection option for USB devices, flat panel monitor or standard screen
  - Use of the WinAC ODK with SIMATIC WinAC RTX
- Data retentivity for WinAC RTX without uninterruptible power supply (UPS)

Technical specifications

	SIMATIC Panel PC 477 embedded
General features	
• Processor	Intel Pentium III Technology; Intel Celeron 650 MHz, Intel Pentium III 933 MHz
• Memory type	SDRAM-133
• Main memory	512 MB
• Free slots	3 x PC104+ (via spec. expansion frame)
• Operating system	Windows XP Embedded
• Additional info on operating system	Language: EN
• SIMATIC Software	Optionally with pre-installed software bundle SIMATIC WinCC flexible or WinCC flexible / WinAC RTX
Drives	
• Diskette drive	optional via external USB floppy disk drive
• Optical drives	possible as external drive via USB
• Hard disk/Mass storage	Compact Flash Drive, 512 MB or 1GB
interfaces	
• Graphics interface	DVI-I usable for additional display unit (VGA via adapter); color depth 16 bit, video memory up to 32MB, resolution in each case as integrated display
• Connection for keyboard/mouse	USB / USB
• serial interface	COM1: 1 x V.24 (RS232)
• PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5611-compatible
• USB	1x at front, 2x at rear, USB 2.0 (500mA)
• Ethernet	onboard, 2 x 10/100 Mbps, RJ-45, no plug-in card necessary
• Multimedia	no
Supply voltage	
• Supply voltage	110 V / 230 V AC (autorange) 50/60 Hz; optional 24 V DC
Monitoring functions	
• Temperature	Yes
• Watchdog	Yes
• Status LEDs	no
Ambient conditions	
• Vibration load in operation	Tested to DIN IEC 68-2-6: 10 - 58 Hz: 0.075 mm, 58 - 200 Hz: 9.8 m/s² (1 g)
• Shock loading in operation	Tested to DIN IEC 68-2-29: 50 m/s² (5 g), 30 ms, 100 shocks
• maximum permissible installation angle +/-	35° opposite the vertical
• Ambient temperature in operation	+5°C to +45°C in full configuration; fanless
Certifications & Standards	
• Approval	CE, cULus(508)
• EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2

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Technical specifications (continued)

Front panel	12" Touch	12" Keys	15" Touch	15" Keys
Display	12" TFT touch display	12" TFT display	15" TFT touch display	15" TFT display
• Resolution (WxH in pixel)	800 x 600	800 x 600	1024 x 768	1024 x 768
• 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
Operating mode				
• Function keys	No	36	No	36
• alphanumeric keyboard	No	Yes	No	Yes
• Touchscreen (analog/resistive)	Yes	No	Yes	No
• Mouse, at front	No	yes	No	yes
Design				
• central design	Yes	Yes	Yes	Yes
• distributed design	No	No	No	No
Dimensions				
• Install. dimensions, centralized design (W x H x D without optical drive) in mm	368x290x75	450x290x75	450x290x75	450x321x75
• Operator panel (W x H) in mm	400x310 (7 HU)	483x310 (19", 7 HU)	483x310 (19", 7 HU)	483x355 (19", 8 HU)
Weights				
• Panel PC in central design, approx.	7.3 kg	7.7 kg	8.3 kg	8.7 kg
General features				
• Accessory components	Touch protective foil	Slide-in keyboard labels	Touch protective foil	Slide-in keyboard labels
• Power loss in full configuration	24 V DC: max. 80 W, 230 V AC: max. 85 W (3 W included per slot)	24 V DC: max. 80 W, 230 V AC: max. 85 W (3 W included per slot)	24 V DC: max. 80 W, 230 V AC: max. 85 W (3 W included per slot)	24 V DC: max. 80 W, 230 V AC: max. 85 W (3 W included per slot)

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SIMATIC Panel PC 477 embedded

Ordering data

Order No.

Panel PC configuration

		Order No.
SIMATIC Panel PC 477 embedded	D	6AV7 84 ■ 0 ■■ 1 0 0 ■ B 0
Front panels:		
• 12" TFT Touch		1
• 12" TFT Key		2
• 15" TFT Touch		3
• 15" TFT Key		4
Power supply:		
• 24 V DC		A
• 110/230 V AC, power cable for Europe		B
Processor:		
• Intel Celeron 650 MHz		C
• Intel Celeron 650 MHz, PROFIBUS DP 12 (on-board)		D
• Intel Pentium 3, 933 MHz		E
• Intel Pentium 3, 933 MHz, PROFIBUS DP 12 (on-board)		F
Mass storage:		
With operating system, Windows embedded preinstalled		
• CompactFlash 512 MB		B
• CompactFlash 1 GB		C
• CompactFlash 2 GB		D
With operating system and HMI, WinCC flexible preinstalled, Windows XP embedded preinstalled		
• CompactFlash 1 GB, RT 128 PT		F
• CompactFlash 1 GB, RT 512 PT		G
• CompactFlash 1 GB, RT 2048 PT		H
• CompactFlash 2 GB, RT 128 PT		R
• CompactFlash 2 GB, RT 512 PT		S
• CompactFlash 2 GB, RT 2048 PT		T
With operating system and HMI/RTX Windows XP embedded preinstalled, Win AC RTX pre-installed and configured		
• CompactFlash 1 GB, RT 128 PT		L
• CompactFlash 1 GB, RT 512 PT		M
• CompactFlash 1 GB, RT 2048 PT		N
• CompactFlash 2 GB, RT 128 PT		U
• CompactFlash 2 GB, RT 512 PT		V
• CompactFlash 2 GB, RT 2048 PT		W

Storage versions

		Order No.
12" TFT Touch 24 V DC power supply, Celeron 650 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 841-0AD10-0CB0**
12" TFT Touch 24 V DC power supply, Pentium P3 933 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 841-0AF10-0CB0**
12" TFT Keys 24 V DC power supply, Pentium P3 933 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 842-0AF10-0CB0**
15" TFT Touch 24 V DC power supply, Celeron 650 MHz, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 843-0AC10-0CB0**
15" TFT Touch 24 V DC power supply, Pentium P3 933 MHz, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 843-0AE10-0CB0**
15" TFT Touch 24 V DC power supply, Pentium P3 933 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 843-0AF10-0CB0**
15" TFT Touch 110/230 V AC power supply, Pentium P3 933 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 843-0BF10-0CB0**
15" TFT Keys 24 V DC power supply, Pentium P3 933 MHz, with PROFIBUS DP 12, 512 MB RAM, 1 GB CompactFlash with Windows XP embedded	D	**6AV7 844-0AF10-0CB0**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

Please note:

HMI and HMI/RTX turnkey complete solutions are supplied (the software is already preinstalled and configured) for visualization and automation in combination with WinCC flexible and WinAC RTX. Further embedded variants based on Microbox are listed under SIMATIC PC based Control.

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Ordering data

		Order No.
Accessories		
Cover foil for Panel PCs 477/577/677		
For protecting the touch screen against dirt/scratches		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19“ Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677		**6AV7 672-0DA00-0AA0**
For labeling softkeys and function keys, blank, supplied in sets of 10		
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**

		Order No.
Expansion components		
SIMATIC PC/PG DiagMonitor V3.1	B	**6ES7 648-6CA03-1YX0**
Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)		
SIMATIC PC/PG Image & Partition Creator		**6ES7 648-6AA04-0YX0**
Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Ger/En/Fr/Sp/It)		
3.5" disk drive, USB	A	**6FC5 235-0AA05-1AA2**
With 1 m connecting cable		
Compact Flash Card		
• 256 MB	A	**6ES7 648-2BF01-0XC0**
• 512 MB	A	**6ES7 648-2BF01-0XD0**
• 1 GB	A	**6ES7 648-2BF01-0XE0**
• 2 GB	A	**6ES7 648-2BF01-0XF0**
SIMATIC PC USB FlashDrive		**6ES7 648-0DC20-0AA0**
512 MB, USB 2.0, metal enclosure, boot capability		
Expansion kit PC/104	A	**6AG4 070-0BA00-0XA0**
For integration of PC/104 modules (packing unit contains 6 expansion frames)		
Industrial USB Hub 4	A	**6AV6 671-3AH00-0AX0**
4 x USB 2.0, IP65 for control cabinet door or DIN rail		

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

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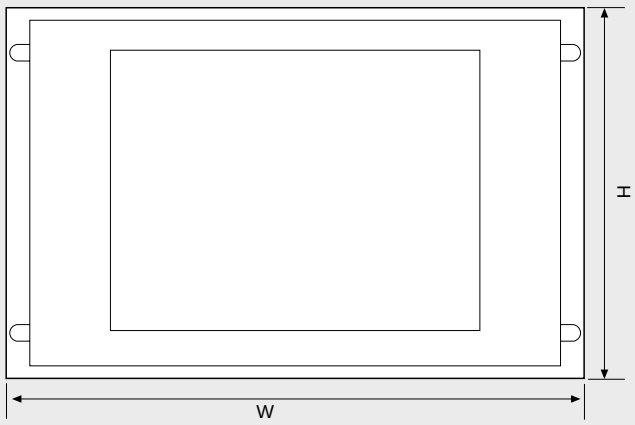
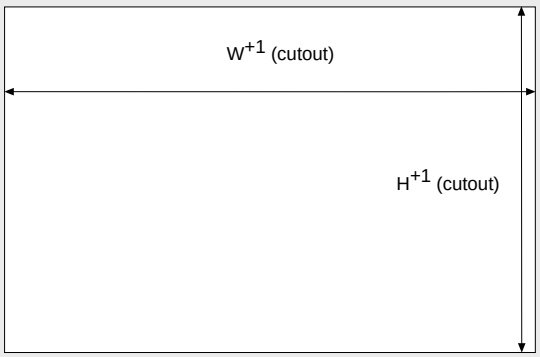
SIMATIC Panel PC 477 embedded

Dimensions





Front dimensions

Touch panels	W	H
12"	400	310
15"	483	310
Key panels	**W**	**H**
12"	483	310
15"	483	355

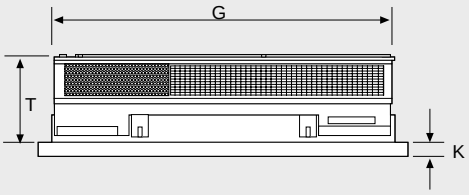
Installation cutouts

Touch panels	W+1	H+1
12"	368	290
15"	450	290
Key panels	**W+1**	**H+1**
12"	450	290
15"	450	321*

* In addition: two 25 x 5 mm recesses on the top side for keyboard slide-in label channels

G_ST80_DE_00272

Installation cut-out



Operator panels PC 477	G	K	T
Touch panels			
12"	289	3	75
15"	289	3	75
Key panels			
12"	289	3	75
15"	324	3	75

All dimensions without screw protrusions

G_ST80_XX_00276

Operator control unit and complete unit

More information

You will find more information in the Internet at:

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

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.

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Overview

Panel PC 477B 19" version

- 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 structure (only 75 mm mounting depth for 12"/15")
- High degree of investment protection
- Fast integration capability
- Front panel versions:
  - 12“ and 15“ TFT Touch
  - 12“ and 15“ TFT Key
  - 19" Touch

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:
  - 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 and Ethernet interfaces
- Maintenance-free due to lack of rotating components (fan and hard disk)
- Reduction in standstill times thanks to high system availability
  - Efficient self-diagnostics (SIMATIC PC DiagMonitor)
  - High reliability and security of an embedded platform
- Integral part of Totally Integrated Automation (TIA):
  - Enhanced productivity, reduction of engineering costs, reduction of lifecycle costs
- Turnkey complete solution is supplied (the software is already installed and preconfigured) for visualization and automation in combination with WinCC flexible and WinAC RTX.

Application

SIMATIC Panel PC 477B embedded is designed for use on site directly at the machine, whereby the focus is on a combination of ruggedness and maximum reliability (i.e. 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 in 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

Siemens offers the complete set of building blocks of automation components that are designed to interact perfectly. an.

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SIMATIC Panel PC 477B embedded

Design

The Panel PC 477B embedded is a compact unit comprising an operator control unit with an integrated computing unit.

Components of the computer unit:

- Rugged metal housing, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
  - Intel Celeron M 1.0 GHz
- Main memory basic configuration:
  - 1 GB (DDR2 SDRAM)
  - Battery-buffered retentive memory 2 MB
- Compact Flash Drive (internal) with pre-installed Windows XP embedded (Image) and optional software
- Graphics on board (VGA analog, 1024 x 768)
- Interfaces:
  - 2 x Ethernet on board (10/100/1000 Mbit/s)
  - PROFIBUS DP/MPI on board, floating
  - 5 x USB 2.0 port, 500 mA (1 x front)
  - 1 x COM1 (RS232)
  - 1x DVI-I (for connecting a second display unit)
- Free slots for expansion:
  - 1x Compact Flash Slot (accessible externally)
  - 3 x PC/104 (over expansion frame)
- Power supply: 24 V DC

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 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 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 (SXGA)
- Resistive analog touch screen

They are equipped with an USB 2.0 interface at the front for connecting external I/O devices such as a mouse or keyboard and fulfill the requirements of IP65 degree of protection IP65 and NEMA 4. All computing units are also optionally available with a front USB interface.

Expansion components

SIMATIC PC DiagMonitor

- PC diagnostics/alarm software for the early detection and diagnosis 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 PC/PG 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; application software and special installations are also backed up
- Software tool for adaptation of hard disk partitioning

3.5" disk drive, USB

The USB diskette 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 diskette drive complies with the USB 1.1 standard. 3.5" high density diskettes can be used (1.44 MB).

Operation of the USB diskette 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 PC USB FlashDrive

- Mobile memory medium for SIMATIC PC/PG
- High-speed data transfer (USB 2.0) and high memory capacity
- 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"

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Function

- Integrated, parameterizable monitoring functions (program execution (watchdog)), temperature inside housing
- Expanded diagnostics/alarms over Ethernet, e-mail, SMS and for direct infeed in SIMATIC software over OPC (optionally through SIMATIC PC DiagMonitor)

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 onboard
  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

Three spare slots for PC/104-Plus modules are available as well as five USB interfaces (Universal Serial Bus) and one serial interface for connecting additional I/O devices.

SIMATIC Panel PC 477B-HMI and -HMI/RTX

HMI and HMI/RTX turnkey complete solutions (the software is already preinstalled and configured) for visualization and automation in combination with WinCC flexible and WinAC RTX.

- Rapid kick-off in automation solutions with Embedded Automation
- SIMATIC WinCC flexible RT preinstalled and ready to switch on (Panel PC 477B HMI) or SIMATIC WinCC flexible and SIMATIC WinAC RTX preinstalled and ready to switch on (Panel PC 477B HMI/RTX)
- PROFIBUS and Industrial Ethernet pre-configured for use in a SIMATIC environment
- Configuration and programming with SIMATIC WinCC flexible ES and SIMATIC STEP 7 over Industrial Ethernet or PROFIBUS
- Flexibility of a PC-based automation environment
- Open for additional PC applications
- Expandable with PC/104+ - or PCI 104 cards (PCI interface)
- Facilities to connect USB devices, flat panel monitor or screen
- Implementation of WinAC ODK with SIMATIC WinAC RTX
- Data retention for WinAC RTX without uninterruptible power supply (UPS)

Technical specifications

	Panel PC 477B embedded
General features	
• Processor	Intel Pentium M Technology; Intel Celeron M 1.0 GHz
• Memory type	DDR2-RAM
• Main memory	1 GB
• Free slots	3 x PC/104 (over spec. expansion frame)
• Operating system	Windows XP Embedded
• Additional OS information	Language: EN
• SIMATIC Software	Optional with pre-installed bundle software SIMATIC WinCC flexible or WinCC flexible / WinAC RTX
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 1GB or 2GB
Interfaces	
• Graphics interface	DVI-I can be used for additional display device (VGA via adapter); color depth 16 bit, graphics memory up to 32 MB, resolution based on integrated display
• Connection for keyboard/mouse	USB / USB
• Serial interface	COM1: 1 x V.24 (RS232)
• PROFIBUS/MPI	Onboard, floating, max. 12 MB/s, no plug-in card required, CP 5611 compatible
• USB	1x front-side, 2x rear -side, USB 2.0 (500mA)
• Ethernet	onboard, 2 x 10/100/1000 MB, RJ45, no slot required
• Multimedia	No
Supply voltage	
• Supply voltage	24 V DC
Monitoring functions	
• Temperature	Yes
• Watchdog	Yes
• Status LEDs	Yes (rear-side)
• Front-side based on EN 60529	IP65 (front-side) based on EN60529 and NEMA4
Ambient conditions	
• Vibration load during operation	Tested in accordance with DIN IEC 60068-2-6: 10 - 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s² (1 g)
• Shock loading during operation	Tested in accordance with DIN IEC 60068-2-7: 50 m/s² (5 g), 30 ms, 100 shocks
• Relative air humidity	Tested in accordance with DIN IEC 60068-78, DIN IEC 68-2-30: 5% to 80% at 25° C (no condensation)
• Maximum permissible installation angle +/-	30° over vertical
• Ambient temperature in operation	+5°C to +45°C in maximum configuration; no fan
Certifications & standards	
• Approval	CE, cULus(508)
• EMC	CE, 55022A, EN 61000-6-4, EN 61000-6-2

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SIMATIC Panel PC 477B embedded

Technical specifications (continued)

Front panel	12" Touch	12" Keys	15" Touch	15" Keys	19" Touch
Display	12" TFT Touch	12" TFT Keys	15" TFT Touch	15" TFT Key	19" TFT Touch
• Resolution (WxH in pixels)	800x600	800x600	1024x768	1024x768	1280x1024
• MTBF backlit display (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 front-side	No	Yes	No	Yes	No
Design					
• Centralized configuration	Yes	Yes	Yes	Yes	Yes
• Decentralized configuration	No	No	No	No	No
Dimensions					
• Mounting dimensions of the centralized configuration (W x H x D, without optical drive) in mm	368x290x75	450x290x75	450x290x75	450x321x75	450x380x88
• Operator control unit (W x H)in mm	400x310 (7 HU)	483x310 (19", 7 HU)	483x310 (19", 7 HU)	483x355 (19", 8 HU)	483x400 (19", 9 HU)
Weights					
• Panel PC in a centralized configuration approx.	7.3 kg	7.7 kg	8.3 kg	8.7 kg	14.3 kg
General features					
• Add-on components	Touch cover foil	Keyboard insertable strips	Touch cover foil	Keyboard insertable strips	Touch cover foil
• Heat loss in maximum configuration	24 V DC: max. 70 W (contains 3 W per slot)	24 V DC: max. 70 W (contains 3 W per slot)	24 V DC: max. 70 W (contains 3 W per slot)	24 V DC: max. 70 W (contains 3 W per slot)	24 V DC: max. 90 W (contains 3 W per slot)

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Ordering data

Order No.

Panel PC Configurator (all versions ex stock)

SIMATIC Panel PC 477B embedded	D	**6ES7 676**	■	**BA00**	**0**	■	■	**0**
Celeron M 1.0 GHz processor, main memory 1 GB DDR2 SDRAM, power supply 24 V DC, PROFIBUS DP interface								
Front panels:								
• 12" TFT Touch			**1**					
• 12" TFT Key			**2**					
• 15" TFT Touch			**3**					
• 15" TFT Key			**4**					
• 19" TFT Touch			**6**					
Mass storage:								
• CompactFlash 1 GB						**B**		
• CompactFlash 2 GB						**C**		
• CompactFlash 4 GB [1]						**D**		
• With operating system, Windows XP embedded preinstalled							**A**	
With operating system and HMI, Windows XP embedded preinstalled, WinCC flexible RT (incl. archives / recipes) preinstalled								
• Number of tags 128 PT							**C**	
• Number of tags 512 PT							**D**	
• Number of tags 2048 PT							**E**	
With operating system and HMI/RTX Windows XP embedded preinstalled, WinCC flexible RT (incl. archives / recipes) preinstalled, Win AC RTX preinstalled and configured								
• Number of tags 128 PT [1]							**F**	
• Number of tags 512 PT [1]							**G**	
• Number of tags 2048 PT [1]							**H**	

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1
1) Estimated start of delivery is October 2007

		Order No.
Accessories		
Cover foil for Panel PCs 477/577/677		
For protecting the touch screen against dirt/scratches		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677		**6AV7 672-0DA00-0AA0**
For labeling softkeys and function keys, blank, supplied in sets of 10		
Expansion components		
SIMATIC PC/PG DiagMonitor V3.1	B	**6ES7 648-6CA03-1YX0**
Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)		
SIMATIC PC/PG Image & Partition Creator		**6ES7 648-6AA04-0YX0**
Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Ger/En/Fr/Sp/It)		
3.5" disk drive, USB	A	**6FC5 235-0AA05-1AA2**
With 1 m connecting cable		
Compact Flash Card		
• 256 MB	A	**6ES7 648-2BF01-0XC0**
• 512 MB	A	**6ES7 648-2BF01-0XD0**
• 1 GB	A	**6ES7 648-2BF01-0XE0**
• 2 GB	A	**6ES7 648-2BF01-0XF0**
• 4 GB [1]		**6ES7 648-2BF01-0XG0**
SIMATIC PC USB FlashDrive	A	**6ES7 648-0DC30-0AA0**
1 GB, USB 2.0, metal enclosure, bootable		
Expansion kit PC/104	A	**6AG4 070-0BA00-0XA0**
For integration of PC/104 modules (packing unit contains 6 expansion frames)		
Industrial USB Hub 4	A	**6AV6 671-3AH00-0AX0**
4 x USB 2.0, IP65 for control cabinet door or DIN rail		

Please note:

The scope of supply of the Panel PC 477B mainly comprises the Panel PC and a software pack, i.e. CompactFlash card with preinstalled and configured software as well as all the necessary license keys. After the CompactFlash card has been inserted in the (internal) slot provided, the unit is ready for switching on.

Note:

Further embedded variants based on Microbox PC are listed under SIMATIC PC based Control.

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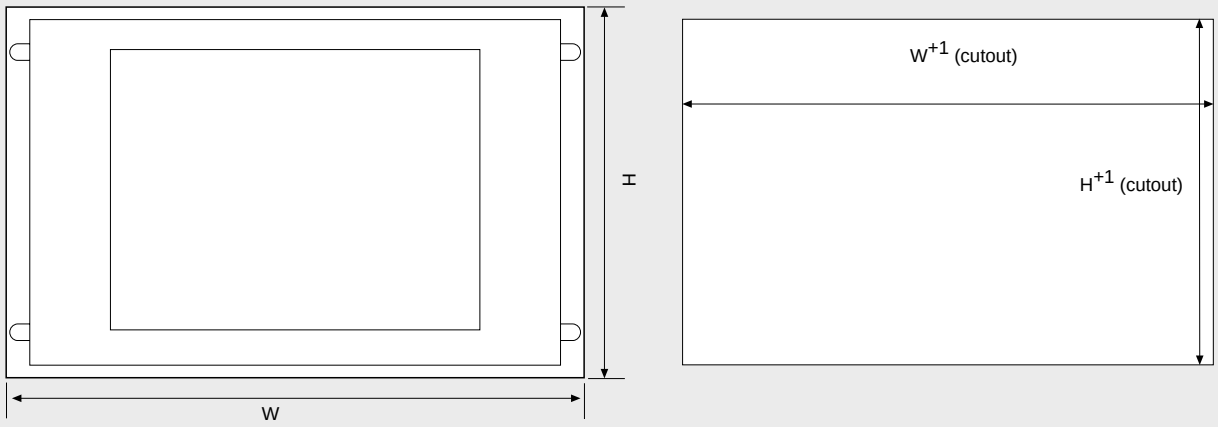
SIMATIC Panel PC 477B embedded

Dimensions



Front dimensions

Touch panels	W	H
12"	400	310
15"	483	310
19"	483	400

Key panels	W	H
12"	483	310
15"	483	355

Installation cutouts

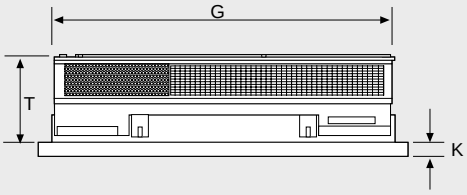
Touch panels	W^{+1}	H^{+1}
12"	368	290
15"	450	290
19"	450	380

Key panels	W^{+1}	H^{+1}
12"	450	290
15"	450	321*

* In addition: two 25 x 5 mm recesses on the top side for keyboard slide-in label channels

G_ST80_XX_00290

Installation cutout



Operator panels PC 477B	G	K	T
Touch panels			
12"	289	3	75
15"	289	3	75
19"	307	11	98
Key panels			
12"	289	3	75
15"	324	3	75

All dimensions without screw protrusions

G_ST80_ _0028

Operating unit and complete unit

More information

You will find more information in the Internet at:

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

Note:

Do you need a specific modification or expansion to the products described here? Then refer to "Customer-specific products". Information is available here about additional, generally available sector products as well as the possibilities for customer-specific modification and adaptation.

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Overview

- Industry-standard PC platform for demanding operator control and monitoring tasks
- Maximum performance thanks to high processor performance at an attractive entry-level price
- Front panel versions:
  - 12“, 15“ and 19“ TFT Touch
  - 12“ and 15“ TFT Key

Benefits

- Suitable for industrial environments subject to vibration and shock loads
- Investment protection thanks to guaranteed availability of spare parts
- USB port for quick and easy connection of required components
- Integrated Ethernet interface
- Minimization of downtimes thanks to increased system availability:
  - Data backup solutions (preventative data backup)
  - Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

The SIMATIC Panel PC 577 is used in production and process automation and can be installed into control cabinets and control panels.

A SIMATIC Panel PC 577 is a platform for PC-based Automation:

- PC-based visualization locally 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 a complete modular system of automation components that complement one another perfectly.

The SIMATIC Panel PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

Design

The Panel PC 577 comprises a computer unit and an operator unit.

Components of the computer unit:

- Metal housing, resistant to vibration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 2.0 GHz
- Memory:
  - 256 MB DDR 400
- Hard disk: ≥ 40 GB;
- Interfaces:
  - 1 x GB Ethernet on-board
  - 4 x USB on rear side (USB 2.0),1 x USB on the front (USB 2.0)
  - 1 x serial V.24 (9-pin)
  - 1 x parallel
- Free slots for expansion:
  - 3 x PCI (slots with card retainer, 1 slot specially prepared for WinAC Slot module)
- Power supply: 110 V/230 V AC (autorange) 50/60 Hz

Optional additional components:

- 2.4 GHz Intel Pentium 4 processor
- 512 MB DDR 400, 1 GB DDR 400, expandable to 3 GB
- Diskette drive, optional via USB, can be ordered as accessory
- DVD-ROM or DVD±RW±R drives optional
- Operating system: Windows 2000 MUI or Windows XP Professional MUI

Components of the operator control unit:

The front panels are available in the following designs:

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen
- USB 2.0 port on front

15" Touch

- 15.1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen
- USB 2.0 port on front

19” Touch

- 19.1“ TFT color display, 1280 x 1024 pixels (SXGA)
- Resistive analog touch screen
- USB 2.0 port on front

12" Key

- 12.1" 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 2.0 port on front

15" Key

- 15.1“ 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 2.0 port on front

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SIMATIC Panel PC 577

Design (continued)

Expansion components

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive data backup of hard disk contents
- Fast, bit-exact restoration of system and data partitions; application software and special installations are also backed up.
- Software tool for adaptation of hard disk partitioning

3.5" disk drive, USB

The USB diskette 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 diskette drive complies with the USB 1.1 standard.

3.5" high density diskettes can be used (1.44 MB).

Operation of the USB diskette drive with SIMATIC Panel PCs:

- Windows XP: Possible without separate driver
- Windows 2000: The required driver is included in the scope of supply of the operating system

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

- Integrated, configurable monitoring functions for program execution (watchdog), internal enclosure temperature, fan speed

Integration

Integrated interfaces

- Ethernet
  The integrated Ethernet interface (10/100/1000 Mbit/s) can be used for IT communication and for data exchange with automation devices such as SIMATIC S7 (with the SOFTNET S7 software package).
- Other interfaces
  For connecting additional I/O devices, 3 free PCI slots are available for PC modules, USB 2.0 (Universal Serial Bus), and serial/parallel interfaces, as well as multi-media and graphics interfaces.

Technical specifications

	Panel PC 577
General features	
• Processor	Intel Pentium 4 Technology; Intel Celeron 2.0 GHz, Intel Pentium 4 2.4 GHz
• Memory type	DDR-400
• Main memory	256 MB, 512 MB or 1 GB, max. 3 GB
• Free slots	3x PCI (slot with board retainer)
• Operating system	Windows 2000 Prof. (Multi Language), Windows XP Prof. (Multi Language), opt. without operating system
• Additional info on operating system	Multi Language: DE, EN, IT, FR, SP, KOR, CHN (Traditional), CHN (Simplified), JPN
• SIMATIC Software	Optionally in package with SIMATIC WinCC or WinCC flexible
Drives	
• Diskette drive	optional via external USB drive
• Optical drives	optional: DVD-ROM or DVD±R±RW ; rear, lateral operation
• Hard disk/Mass storage	2.5" EIDE hard disk ≥ 40 GB, vibration and oscillation-resistant mounting
interfaces	
• Graphics interface	VGA interface can be used for additional display unit; color depth 32 bit, 8-128 MB shared memory
• Connection for keyboard/mouse	PS/2 or USB; PS/2 or USB
• Parallel interface	LPT1 (EPP/ECP)
• serial interface	COM1: 1 x V.24 (RS232)
• PROFIBUS/MPI	can be implemented with plug-in card
• USB	1x at front, 4x at rear, USB 2.0 (500 mA)
• Ethernet	onboard, 10/100/1000 Mbps, RJ-45, no plug-in card necessary
• Multimedia	Audio in/out, microphone in, joystick port

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Technical specifications (continued)

	Panel PC 577
Supply voltage	
• Supply voltage	110V AC/ 230V (autorange) 50/60 Hz
Monitoring functions	
• Temperature	Yes
• Watchdog	Yes
• Status LEDs	no
Degree of protection	
• Front to EN 60529	IP65 (front) to EN 60259 and NEMA4

	Panel PC 577
Ambient conditions	
• Vibration load in operation	Tested to DIN IEC 68-2-6: 20 to 58 Hz: 0.0185 mm, 58 to 200 Hz: 2.5 m/s^2 (0.25g)
• Shock loading in operation	Tested to DIN IEC 68-2-29: 10 m/s^2 (1g), 30 ms, 100 shocks
• Relative humidity	Tested to DIN IEC 60068-78, DIN IEC 68-2-30: 5% to 80% at 25° C (no condensation)
• maximum permissible installation angle +/-	5° opposed to vertical
• Ambient temperature in operation	+5°C to +45°C with full configuration
Certifications & Standards	
• Approval	CE, cULus (508), C-Tick
• EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2

Frontpanel	12" Touch	12" Keys	15" Touch	15" Keys	19" Touch
Display	12" TFT touch display	12" TFT display	15" TFT touch display	15" TFT display	19" TFT touch display
• 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
Operating mode					
• Function keys	No	36	No	36	No
• alphanumeric keyboard	No	Yes	No	Yes	No
• Touchscreen (analog/resistive)	Yes	No	Yes	No	Yes
• Mouse, at front	No	yes	No	yes	No
Design					
• central design	Yes	Yes	Yes	Yes	Yes
• distributed design	No	No	No	No	No
Dimensions					
• Install. dimensions, centralized design (W x H x D without optical drive) in mm	368x290x152	450x290x137	450x290x155	450x321x162	449x380x160
• additional mounting depth (optical drive)	27 mm	27 mm	27 mm	27 mm	27 mm
• Operator panel (W x H) in mm	400x310 (7 HU)	483x310 (19", 7 HU)	483x310 (19", 7 HU)	483x355 (19", 8 HU)	483x400 (19", 9 HU)
Weights					
• Panel PC in central design, approx.	11 kg	12 kg	13 kg	13 kg	18 kg
General features					
• Accessory components	Touch protective foil	Slide-in keyboard labels	Touch protective foil	Slide-in keyboard labels	Touch protective foil
• Expansion components	SIMATIC NET communications modules	SIMATIC NET communications modules	SIMATIC NET communications modules	SIMATIC NET communications modules	SIMATIC NET communications modules
• Power loss in full configuration	max. 190W (15 W included per slot)	max. 190W (15 W included per slot)	max. 190W (15 W included per slot)	max. 190W (15 W included per slot)	max. 210W (15W included per slot)

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SIMATIC Panel PC 577

Ordering data

Order No.

Panel PC configuration

SIMATIC Panel PC 577	D	**6AV7 82 ■ - 0 A ■ ■ 0 - ■ A ■ 0**
Front panels:		
• 12" TFT Touch		**0**
• 12“ TFT Key		**1**
• 15" TFT Touch		**2**
• 15“ TFT Key		**3**
• 19" TFT Touch		**4**
Processor:		
• Celeron 2.0 GHz		**A**
• Pentium 4, 2.4 GHz		**B**
Main memory		
• 256 MB DDR 400		**0**
• 512 MB DDR 400		**1**
• 1 GB DDR 400		**2**
Optical drives:		
• Without[1)]		**0**
• DVD ROM		**1**
• DVD±RW±R (DVD burner)		**2**
Operating system:		
• Without operating system		**A**
• Windows 2000 Professional SP4 Multilanguage (English, French, German, Italian, Japanese, Korean, simplified Chinese, Spanish, traditional Chinese)		**B**
• Windows XP Professional SP2 Multilanguage (English, French, German, Italian, Japanese, Korean, simplified Chinese, Spanish, traditional Chinese)		**C**

Storage versions

		Order No.
12" TFT Touch Celeron 2.0 GHz 256 MB RAM DVD-ROM drive Windows XP Prof. SP2 MUI	D	**6AV7 820-0AA00-1AC0**
12" TFT Keys Celeron 2.0 GHz 256 MB RAM DVD-ROM drive Windows XP Prof. SP2 MUI	D	**6AV7 821-0AA00-1AC0**
15" TFT Touch Pentium 4 2.4 GHz 512 MB RAM DVD-ROM drive Windows XP Prof. SP2 MUI	D	**6AV7 822-0AB10-1AC0**
15" TFT Keys Pentium 4 2.4 GHz 512 MB RAM DVD-ROM drive Windows XP Prof. SP2 MUI	D	**6AV7 823-0AB10-1AC0**
19" TFT Touch Pentium 4 2.4 GHz 512 MB RAM DVD-ROM drive Windows XP Prof. SP2 MUI	D	**6AV7 824-0AB10-1AC0**

Accessories

		Order No.
Cover foil for Panel PCs 477/577/677 For protecting the touch screen against dirt/scratches		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677 for labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
Memory expansion Set contains two memory chips for dual-channel mode		
• 512 MB DDR SDRAM (2 x 256 MB)	A	**6ES7 648-2AD30-0FB0**
• 1.0 GB DDR SDRAM (2 x 512 MB)		**6ES7 648-2AD40-0FB0**
• 2.0 GB DDR SDRAM (2 x 1.0 GB)		**6ES7 648-2AD50-0FB0**
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**
Fixing elements for 19" Panel PC 577, 677 For screw mounting of 19" touch screen from the front		**6AV7 672-8KE00-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H
D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) Not recommended for applications with WinCC/WinCC flexible

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Ordering data

	Order No.
Expansion components	
SIMATIC PC/PG Image & Partition Creator Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Eng/Ger/Fr/Sp/It)	**6ES7 648-6AA04-0YX0**
3.5" disk drive, USB with 1 m connecting cable	**6FC5 235-0AA05-1AA2**
Industrial USB Hub 4 4 x USB 2.0, IP65 for control cabinet door or DIN rail	**6AV7 671-3AH00-0AX0**

		Order No.
Communication components		
CP 1613-A2 PCI card (32-bit) for connection of a programming device or PC to Industrial Ethernet	A	**6GK1 161-3AA01**
CP 1616 PCI card (32 bit) for connection to PROFINET IO with 4-PORT-REAL-TIME-SWITCH (RJ45) via Development Kit		**6GK1 161-6AA00**
CP 5611-A2 PCI card (32-bit) for connection of a programming device or PC to PROFIBUS	A	**6GK1 561-1AA01**
CP 5613-A2 PCI card (32-bit) for connection of a PC to PROFIBUS		**6GK1 561-3AA01**

A) Subject to export regulations: AL: N and ECCN: EAR99H

3

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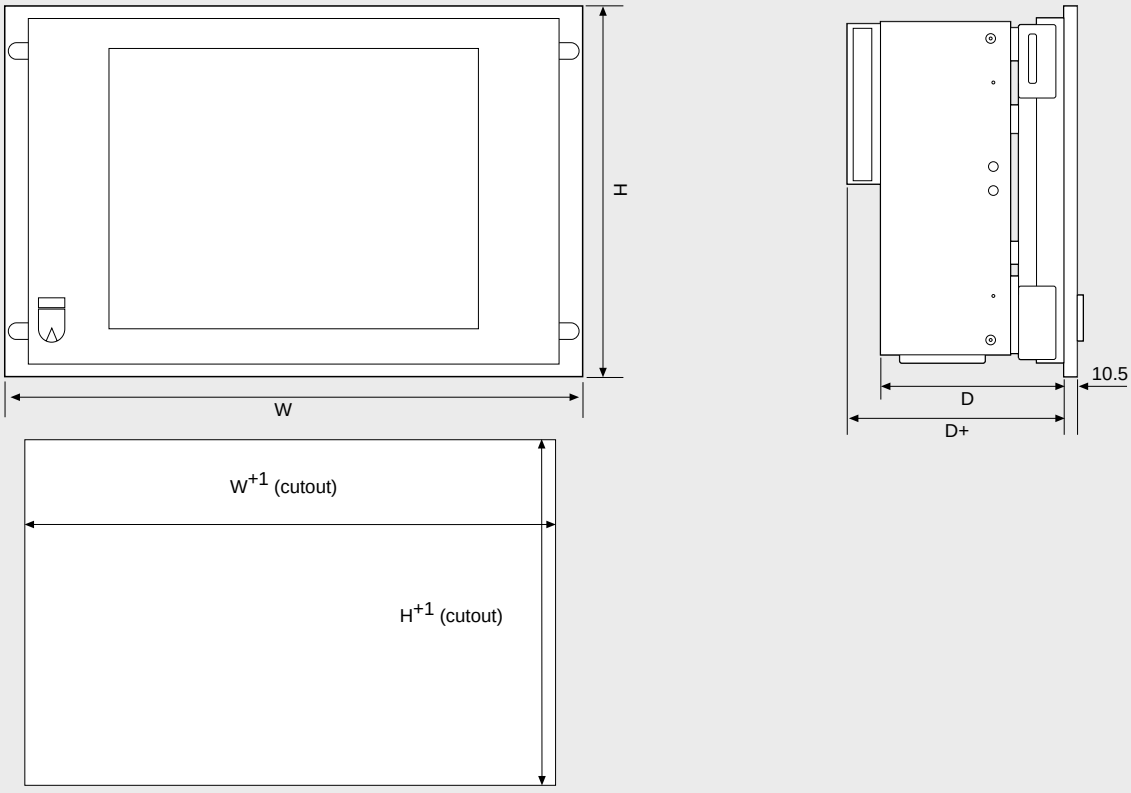
SIMATIC Panel PC 577

Dimensions



Front dimensions	W	H
Touch		
12"	400	310
15"	483	311
19 "	483	400
Key		
12"	483	310
15"	483	355

Installation cutouts	W+1	H+1	D	D+
Touch				
12"	368	290	152	179
15"	450	290	155	182
19"	450	380	182	210
Key				
12"	450	290	137	164
15"	450	321	162	189

G_ST80_XX_00282

More information

You will find more information in the Internet at:

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

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.

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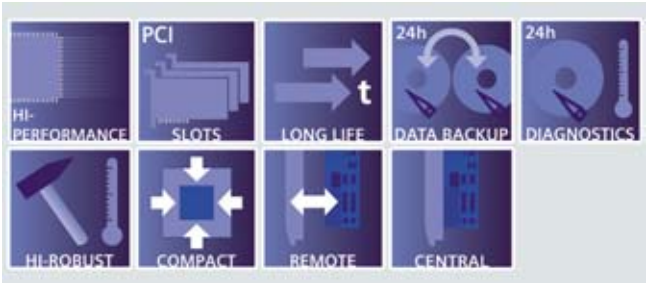
SIMATIC Panel PC 677 (incl. INOX)

Overview



- PC platform with high degree of industrial compatibility for demanding tasks in the area of PC-based automation
- Rugged construction:
  The PC can withstand the harshest mechanical stress and maintains reliable operation
- Compact design
- High degree of investment protection
- Fast integration capability
- Front panel versions:
  - 12“, 15“ and 19“ TFT Touch
  - 12“ and 15“ TFT Key
  - 15" TFT Touch, stainless steel/INOX
- Operator control unit can be located at a distance of up to 30 m from the computer unit (optional)

Benefits

- High industrial capability thanks to extremely rugged design, even resistant against strong vibration and impact loads
- High investment security thanks to assured availability of spare parts (for a period of 5 years following the end of active marketing)
- Optimum continuity of components for long-term machine concepts without the need for repeated engineering outlay
- Time and cost savings thanks to service-friendly equipment design:
  - Operator control unit and computer unit can be simply hinged open for fast replacement of components or for future expansion
  - 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 and Ethernet interfaces
- Operational reliability:
  The optional direct key module can be used to run the process independently of the operating system and without delay directly via PROFIBUS DP.
- 2 x ≥ 60 GB SATA hard disk system (RAID1 controller function is integrated into the chip set and can be connected to implement a mirror disk system over BIOS)
- Minimization of downtimes through increased system availability
  - Efficient self-diagnosis (SIMATIC PC DiagMonitor)
  - Solutions for preventive data backup
- Integral component of Totally Integrated Automation (TIA): increased productivity, minimized engineering outlay, reduced life cycle costs
- Additional installation possibilities by separating the computer unit and operator control unit using the Remote Kit (up to 30 m, available optionally as an accessory)

Application

The SIMATIC Panel PC 677 is conceived for use direct on site at the machine. Due to the lower mounting depth of only 105/130 mm, it can also be used where mounting space is at a premium.

The PC is used in both production automation and in process automation and is installed in control cabinets and desks, 19" cabinets/racks and swivel arms (gantries).

With the 15" Touch INOX front, it is permissible to use the Panel PC 677 in the food and beverages industry.

A SIMATIC Panel PC is the ideal platform for PC-based Automation:

- PC-based visualization locally 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 a complete modular system of automation components that complement one another perfectly.

The SIMATIC Panel PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

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SIMATIC Panel PC 677 (incl. INOX)

Design

The Panel PC 677 comprises of a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal housing, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
  - Mobile Intel 915 GM Express Chipset
  - Intel Celeron M 370/1.5 GHz or
  - Intel Pentium M 730/1.6 GHz or
  - Intel Pentium M 760/2.0 GHz
- Main memory basic configuration: 256 MB
- 3.5“ SATA hard disk: ≥ 40 GB; the special vibration-absorbing hard disk holder ensures reliable operation even in case of extremely high mechanical loading
- Graphics on-board
- Interfaces:
  - 2 x 10/100 Ethernet on-board
  - PROFIBUS DP/MPI on-board, electrically isolated
  - 4 x USB 2.0 connection
  - 1 x serial V.24 (9-pin)
- Free slots for expansion:
  - 2 x PCI (slots with card retainer)
  - 1 x slot for Compact Flash Card
- Power supply: 110 V/230 V AC (autorange), 50/60 Hz or 24 V DC

Optional additional components:

- Main memory expansion to 512 MB, 1 GB or 2 GB
- SATA hard disk ≥ 80 GB
- Double hard disk module 2 x ≥ 60 GB SATA
- DVD-ROM drive
- DVD±RW± R combination drive
- Direct control key module

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, 1024x768 (XGA)
- Resistive analog touch screen
- Stainless steel front, designed for use in the food & beverages industry
- Developed based on DIN EN 1672-2
- Polished surface (stainless steel 1.4301, hairline grinding, grain 240)
- IP66 at the front
- Without USB front interface
- Display shattering protection
- Optimized frame profile, so that liquids can run off
- Minimal number of grooves and joints
- Decorative film tested against chemicals according to DIN 42115, Part 2
- Mounted only using tensioned frame, gasket material suitable for food (EDPM, according to FDA 21 CFR 177.2006)

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.

Side view of the Panel PC 677

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Design (continued)

Expansion components

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

SIMATIC PC DiagMonitor

- PC diagnostics/alarm software for the early detection and diagnosis 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

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive data backup of hard disk contents
- Fast, bit-exact restoration of system and data partitions; application software and special installations are also backed up.
- Software tool for adaptation of hard disk partitioning

3.5" disk drive, USB

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 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. The scope of delivery includes a 1 m long USB cable. The diskette drive complies with the USB 1.1 standard. 3.5" high density diskettes can be used (1.44 MB).

SIMATIC PC USB FlashDrive

- Mobile memory medium for SIMATIC PC/PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

Industrial USB Hub 4

- USB peripherals can be connected and operated via the USB Hub 4 without opening the control cabinet door
- 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 casing, fan speed)
- Expanded diagnostics/messages over Ethernet, e-mail, text message and for feeding directly into SIMATIC software via OPC (optionally via SIMATIC PC DiagMonitor)
- RAID1 for automatic data mirroring on two SATA hard disks

Integration

Integrated interfaces

- Ethernet
  The integrated Ethernet interfaces (10/100 Mbit/s) can be used for IT communication and for data transfer to programmable controllers such as SIMATIC S7 (with software packages “SOFTNET S7”).
- PROFIBUS
  The isolated PROFIBUS interface (12 Mbit/s) can be used for connecting distributed field devices or for interfacing to SIMATIC S7 (with the software package "SOFTNET for PROFIBUS").
- Additional interfaces
  For connecting additional I/O devices, 2 spare slots are provided for PCI modules as well as a Compact Flash Card interface, 5 USB 2.0 interfaces (Universal Serial Bus) and a serial interface.

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SIMATIC Panel PC 677 (incl. INOX)

Technical specifications

	Panel PC 677
General features	
• Processor	Intel Pentium M Technology (2nd Generation); Intel Celeron M 370, 1.5 GHz, 400 MHz FSB, 1MB SLC; Intel Pentium M 730, 1.6 GHz, 533 MHz FSB, 2MB SLC; Intel Pentium M 760, 2.0 GHz, 533 MHz FSB, 2MB SLC
• Memory type	DDR2-533
• Main memory	256 MB to 2 GB
• Free slots	2x PCI (slots with board retainer), 1x slot for Compact Flash Card
• Operating system	Windows 2000 Prof. (Multi Language), Windows XP Prof. (Multi Language), opt. without operating system
• Additional info on operating system	Multi Language: DE, EN, IT, FR, SP, KOR, CHN (Traditional), CHN (Simplified), JPN
• SIMATIC Software	Optionally in package with SIMATIC WinCC or WinCC flexible
Drives	
• Diskette drive	optional: via external USB diskette drive
• Optical drives	optional: DVD-ROM or DVD±R±RW combi-drive; on rear, can be operated from side
• Hard disk/Mass storage	3.5" SATA-RAID hard disk ≥ 40 GB, optional ≥ 80 GB, optional: 2x 2.5" SATA hard disk module(≥ 60GB). RAID1 controller on board. All drives with vibration-resistant mountings.
interfaces	
• Graphics interface	DVI-I usable for additional display unit (VGA via adapter); color depth 32 bit,, 8-128 MB Shared Memory
• Connection for keyboard/mouse	USB / USB
• Parallel interface	optional: via PCI card
• serial interface	COM1: 1 x V.24 (RS232)
• PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP5611-compatible
• USB	1x at front, 4x at rear, USB 2.0 (500mA)
• Ethernet	onboard, 2 x 10/100 Mbps, RJ-45, no plug-in card necessary
• Multimedia	no

	Panel PC 677
Supply voltage	
• Supply voltage	110 V / 230 V AC (autorange) 50/60 Hz; optional 24 V DC
Monitoring functions	
• Temperature	Yes
• Watchdog	Yes
• Status LEDs	Power, temperature (on front panel)
Degree of protection	
• Front to EN 60529	IP65 (front) to EN 60259 and NEMA4
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 60068-78, DIN IEC 68-2-30: 5% to 80% at 25° C (no condensation)
• maximum permissible installation angle +/-	20°
• Ambient temperature in operation	In full configuration: +5°C to +45°C or +5°C to +50°C in installation space, if at front max. 40°C
Certifications & Standards	
• Approval	CE, CULus (508)
• EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2

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Technical specifications

Front panel	12“ Touch	12“ Keys	15“ Touch	15“ Keys	19“ Touch
Display	12" TFT Touch	12" TFT Key	15" TFT Touch	15" TFT Key	19" TFT Touch
• 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, tempera-ture-dependent	50000 h in 24 h permanent operation, tempera-ture-dependent	50000 h in 24 h permanent operation, tempera-ture-dependent	50000 h in 24 h permanent operation, tempera-ture-dependent	50000 h in 24 h permanent operation, tempera-ture-dependent
Operating mode					
• Function keys	No	36 with LEDs	No	36 with LEDs	No
• alphanumeric keyboard	No	Yes	No	Yes	No
• Touchscreen (analog/resistive)	Yes	No	Yes	No	Yes
• Mouse, at front	No	yes	No	yes	No
Design					
• central design	Yes	Yes	Yes	Yes	Yes
• distributed design	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/D) in mm	368x290 / 141 (incl. optical drive)	450x290 / 122 (incl. optical drive)	450x290 / 138 (incl. optical drive)	450x321 / 141 (incl. optical drive)	450x380 / 147 (incl. optical drive)
• Install. dimensions, centralized design (W x H x D without optical drive) in mm	368x290x122	450x290x104	450x290x120	450x321x123	450x380x129
• additional mounting depth (optical drive)	20 mm	20 mm	20 mm	20 mm	20 mm
• Operator panel (W x H) in mm	400x310 (7 HU)	483x310 (19", 7 HU)	483x310 (19", 7 HU)	483x355 (19", 8 HU)	483x400 (19", 9 HU)
• Install. dimensions, operator panel with distributed design (W x H x D) in mm	368x290x87	450x290x69	450x290x85	450x321x89	450x380x94
• Install. dimensions, computer unit with distributed design (W x H x D) in mm	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)
Weights					
• Panel PC in central design, approx.	13 kg	12 kg	14 kg	16 kg	17 kg
• Operator panel in distributed design, approx.	6 kg	5 kg	7 kg	9 kg	10 kg
• Computer unit in distributed design, approx.	7 kg	7 kg	7 kg	7 kg	7 kg
General features					
• 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
• 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 full configuration	max. 140 W (15 W included per slot)	max. 140 W (15 W included per slot)	max. 140 W (15 W included per slot)	max. 140 W (15 W included per slot)	max. 163 W (15 W included per slot)

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SIMATIC Panel PC 677 (incl. INOX)

Ordering data

Order No.

Panel PC configurator (contract-based production and delivery)

| | | |

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Ordering data

		Order No.
Accessories		
Cover foil for Panel PC 477/577/677 For protecting the touch screen against dirt/scratches (set of 10)		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foils for Panel PCs 477/577/677 For labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
Memory expansion		
• 256 MB DDR2 533 SODIMM	A	**6ES7 648-2AG20-0GA0**
• 512 MB DDR2 533 SODIMM	A	**6ES7 648-2AG30-0GA0**
• 1 GB DDR2 533 SODIMM	A	**6ES7 648-2AG40-0GA0**
Direct control key module for Panel PC 677	A	**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**
Fixing elements for 19" Panel PC 577, 677 for screw mounting of 19" touch screen from the front		**6AV7 672-8KE00-0AA0**

		Order No.
Expansion components		
SIMATIC PC/PG DiagMonitor V3.1 Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)	B	**6ES7 648-6CA03-1YX0**
SIMATIC PC/PG Image & Partition Creator Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Eng/Ger/Fr/Sp/It)		**6ES7 648-6AA04-0YX0**
3.5" disk drive, USB With 1 m connecting cable		**6FC5 235-0AA05-1AA2**
SIMATIC PC USB FlashDrive 1 GB, USB 2.0, metal enclosure, boot capability	A	**6ES7 648-0DC30-0AA0**
SIMATIC Panel PC Remote Kit for the separate configuration of control unit and PC		
• 24 V DC, 5 m	A	**6AV7 671-1EA00-5AA1**
• 24 V DC, 10 m	A	**6AV7 671-1EA01-0AA1**
• 24 V DC, 15 m	A	**6AV7 671-1EA01-5AA1**
• 24 V DC, 20 m	A	**6AV7 671-1EA02-0AA1**
• 24 V DC, 30 m	A	**6AV7 671-1EA03-0AA1**
• 110/220 V AC, 5 m	A	**6AV7 671-1EA10-5AA1**
• 110/220 V AC, 10 m	A	**6AV7 671-1EA11-0AA1**
• 110/220 V AC, 15 m	A	**6AV7 671-1EA11-5AA1**
• 110/220 V AC, 20 m	A	**6AV7 671-1EA12-0AA1**
• 110/220 V AC, 30 m	A	**6AV7 671-1EA13-0AA1**
Uninterruptible power supplies		
SITOP power, 15 A DC UPS module, with USB port with charger unit for 24 V lead battery, input 24 V/16 A DC, output 24 V/15 A DC		**6EP1 931-2EC41**
SITOP power, battery module 24 V/3.2 Ah for DC UPS module 15 A		**6EP1 935-6MD11**
Industrial USB Hub 4 4 x USB 2.0 interfaces, IP65 for installation on control cabinet door or on DIN rail	A	**6AV6 671-3AH00-0AX0**
Communication components		
PCI interface card With COM1, COM2 and LPT interfaces	A	**6ES7 648-2CA00-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

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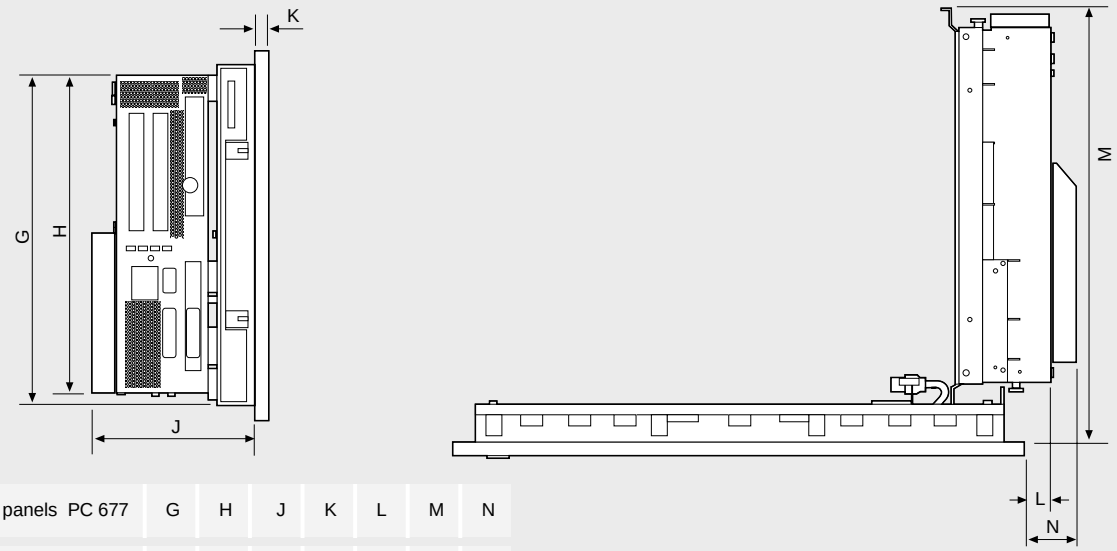
SIMATIC Panel PC 677 (incl. INOX)

Dimensions

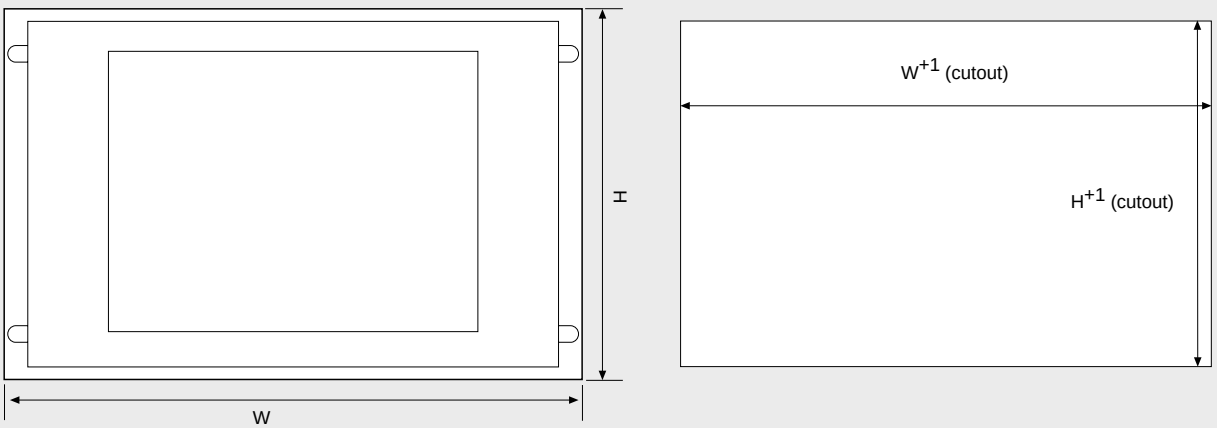


Operator panels PC 677	G	H	J	K	L	M	N
Touch panels							
12"	289	271	141	11	53	369	71
15"	289	271	138	11	24	367	42
19"	378	271	147	11	18	376	36
Key panels							
12"	289	271	122	11	42	351	59
15"	324	271	141	11	31	370	48

All dimensions without screw protrusions

G_ST80_XX_00208

Operator control unit and complete unit



Front dimensions

Touch panels	W	H
12"	400	310
15"	483	310
19"	483	400

Key panels	W	H
12"	483	310
15"	483	355

Installation cutouts

Touch panels	W^{+1}	H^{+1}
12"	368	290
15"	450	290
19"	450	380

Key panels	W^{+1}	H^{+1}
12"	450	290
15"	450	321*

* In addition: two 25 x 5 mm recesses on the top side for keyboard slide-in label channels

G_ST80_XX_00239

Mounting cutout

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More information

You will find more information in the Internet at:

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

Note

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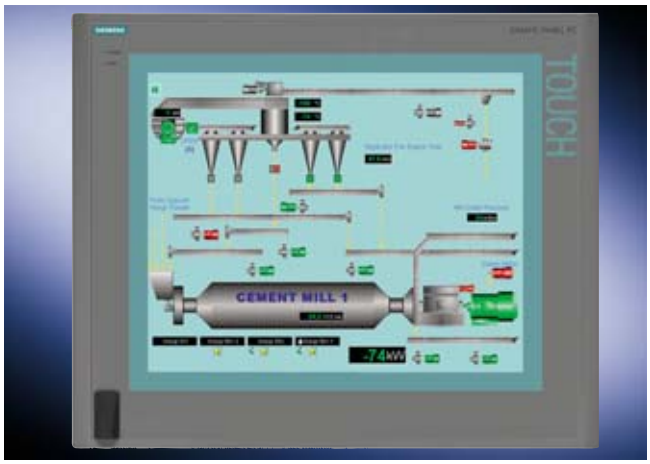
SIMATIC Panel PC 677B

Overview



Panel PC 677B 17" version

- 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“, 17” and 19“ TFT Touch
  - 12“ and 15“ TFT Key
- 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:
  - The operating unit and computing unit can be simply hinged apart for the rapid replacement of components or for future 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 and two-Gigabit 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 GB 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 PC DiagMonitor)
  - Solutions for preventative data security
- Integral part 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 is supported by WinAC RTX 2005 SP2.

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).

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Design

The Panel PC 677B comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal housing, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
  - Mobile Intel 945G chip set
  - Intel Celeron M 440/1.86 GHz or
  - Intel Core 2 Duo T5500 / Dual Core, 1.66 GHz or
  - Intel Core 2 Duo T7400 / Dual Core, 2.16 GHz
- Main memory basic configuration: 512 MB
- 3.5" SATA hard disk: ≥ 80 GB;
  the special vibration-absorbing hard disk ensures reliable operation even under extreme mechanical stress
- Graphics on-board
- Interfaces:
  - 2 x 10/100/1000 Ethernet
  - PROFIBUS DP/MPI on board, floating
  - 4 x USB 2.0 connection
  - 1 x serial V.24 (9-pin)
- Retentive memory:
  - 512 KB NV RAM for Win AC RTX without UPS
- Free slots for expansion:
  - 2 x PCI (slots with card retainer)
  - 1 x slot for Compact Flash Card
- Power supply: 110 V / 230 V AC (autorange), 50/60 Hz or 24 V DC

Optional additional components:

- Main memory expansion to 1, 2 3 or 4 GB
- SATA hard disk ≥ 160 GB
- Dual hard disk module 2 x ≥ 80 GB 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
- 1x PCIe x4 / 1x PCI instead of 2x PCI slots (with card retainers)
- Direct control 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

17" Touch

- 17,1" TFT color display, 1280 x 1024 pixels (SXGA)
- Resistive analog touch screen
- Installation compatible to 19" touch

19" Touch

- 9.1" 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.

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SIMATIC Panel PC 677B

Design (continued)

Expansion components

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

SIMATIC PC DiagMonitor

- PC diagnostics/alarm software for the early detection and diagnosis of PC problems
- Comprehensive monitoring of temperature, fan, 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 PC/PG Image & Partition Creator

- Software tool for preventive data back-up of the contents of the hard disks
- High-speed, restoring of system and data partitions with bit accuracy; application software and special installations are also backed up
- Software tool for adaptation of hard disk partitioning

3.5" disk drive, USB

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 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 diskette drive complies with the USB 1.1 standard. 3.5" high density diskettes can be used (1.44 MB).

SIMATIC PC USB FlashDrive

- Mobile memory medium for SIMATIC PC/PG
- Fast data transfer (USB 2.0) and high memory capacity
- Ultra-compact and rugged

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, e-mail, SMS and for direct infeed in SIMATIC software over OPC (optionally through SIMATIC PC 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 packages "SOFTNET for PROFIBUS").
- *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.

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Technical specifications

	Panel PC 677B
General features	
• Processor	Intel Core 2 Duo technology; Intel Celeron M 440, 1.86 GHz, 533 MHz FSB, 1MB SLC; Intel Core 2 Duo T5500, Dual Core, 1.66 GHz, 667 MHz FSB, 2 MB SLC; Intel Core 2 Duo, Dual Core, 2,16 GHz, 667 MHz FSB, 4MB SLC
• Main memory	512 MB to 4 GB
• Free slots	2x PC I or 1x PCIe 4x and 1x PCI (slots with card retainer), 1x slot for Compact Flash Card (accessible from outside)
• Operating system	Windows 2000 Prof. (multi-language), Windows XP embedded (English) on 2GB CF card (CF card slot accessible from outside), opt. without operating system
• Additional OS information	Multi-language: DE, EN, IT, FR, SP, KOR, CHN (traditional), CHN (simplified), JPN
• SIMATIC Software	Optional in package with SIMATIC WinCC or WinCC flexible
Drives	
• Floppy drive	Optional: via external USB floppy drive
• Optical drives	Optional: DVD±R±RW combo drive; at the rear, operable from the side
• Hard disk/mass storage	3.5" SATA hard disk ≥ 80 GB, optional ≥ 160 GB, optional: 2 x 2.5" SATA hard disk module (≥ 80 GB) in configuration individual disks or, RAID 1 (controller onboard); all drives oscillation-damped; alternative to hard disk and optical drive: 2. (internal) CF card slot, empty (as option only with Windows XP embedded)
Interfaces	
• Graphics interface	DVI-I can be used for additional display device (VGA via adapter); color depth 32 bit
• Connection for keyboard/mouse	USB / USB
• Serial interface	COM1: 1 x V.24 (RS232)
• PROFIBUS/MPI	Optional onboard, floating, max. 12 MB, no slot required, CP5611 compatible
• USB	1x front-side, 4x rear -side, USB 2.0 (500mA)

	Panel PC 677B
Supply voltage	
• Supply voltage	110 V / 230 V AC (auto range) 50/60 Hz; optionally 24 V DC
Monitoring functions	
• Temperature	Yes
• Watchdog	Yes
• Status LEDs	Power, temperature (front-side)
Degree of protection	
• Front-side based on EN 60529	IP65 (front-side) based on EN60529 and NEMA4
Ambient conditions	
• Vibration load during operation	Tested in accordance with DIN IEC 68-2-6: 10 to 58 Hz: 0.075 mm, 58 to 200 Hz: 9.8 m/s^2 (1g)
• Shock loading during operation	Tested in accordance with DIN IEC 68-2-29: 50 m/s^2 (5g), 30 ms, 100 shocks
• Relative air humidity	Tested in accordance with 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°
• Ambient temperature in operation	In maximum configuration: +5° C to +45° C or +5°C to +50° C in installation space, max. 40° C if front-side
Certifications & standards	
• Approval	CE, CULus (508)
• EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2

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SIMATIC Panel PC 677B

Technical specifications (continued)

Front panel	12" TFT Touch	12" TFT Keys	15" TFT Touch	15" TFT Keys	17" TFT Touch Display	19" TFT Touch Display
Display						
• Screen diagonals	12 "	12 "	15 "	15"	17 "	19 "
• Resolution (WxH in pixels)	800x600	800x600	1024x768	1024 x 768	1280x1024	1280x1024
• MTBF backlit display (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	50000 h at 24 h continuous operation, temperature-dependent
Type of operation						
• Function keys	No	36 with LEDs	No	36 with LEDs	No	No
• Alphanumeric keyboard	No	Yes	No	Yes	No	No
• Touch screen (analog/resistive)	Yes	No	Yes	No	Yes	Yes
• Mouse front-side	No	Yes	No	Yes	No	No
Design						
• Centralized configuration	Yes	Yes	Yes	Yes	Yes	Yes
• Decentralized configuration	Yes; via Remote Kit	Yes; via Remote Kit	Yes; via Remote Kit	Yes; via Remote Kit	Yes; via Remote Kit	Yes; via Remote Kit
Dimensions						
• Installation cutout/device depth (W x H/D) in mm	368x290 / 141 (incl. optical drive)	450x290 / 122 (incl. optical drive)	450x321 / 141 (incl. optical drive)	450 x 321 / 145 (incl. optical drive)	450x380 / 147 (incl. optical drive)	450x380 / 147 (incl. optical drive)
• Mounting dimensions of the centralized configuration (W x H x D, without optical drive) in mm	368x290x122	450x290x104	450x290x120	450 x 321 x 124	450x380x129	450x380x129
• Additional mounting depth (optical drive)	20 mm	20 mm	20 mm	21 mm	20 mm	20 mm
• Operator control unit (W x H) in mm	400x310 (7 HU)	483x310 (19", 7 HU)	483x310 (19", 7 HU)	483 x 355 (19", 8 HU)	483x400 (19", 9 HU)	483x400 (19", 9 HU)
• Mounting dimensions of operator control unit of the decentralized configuration (W x H x D) in mm	368x290x87	450x290x69	450x290x85	450 x 321 x 89	450x380x94	450x380x94
• Mounting dimensions of computer unit of the decentralized configuration (W x H x D) in mm	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)	298 x 301 x 100; (298 x 301 x 80 without CD)	298x301x100; (298x301x80 without CD)	298x301x100; (298x301x80 without CD)
Weights						
• Panel PC in a centralized configuration approx.	11 kg	11 kg	13 kg	16 kg	16 kg	16 kg
• Control unit in a decentralized configuration approx.	6 kg	6 kg	8 kg	9 kg	11 kg	11 kg
• Control unit in a decentralized configuration approx.	6 kg	6 kg	6 kg	7 kg	6 kg	6 kg
General features						
• Add-on components	Touch cover foil, Remote Kit	Keyboard insertable strips, direct control key module, Remote Kit	Touch cover foil (not for Inox front), Remote Kit	Keyboard insertable strips, direct control key module, Remote Kit	Touch cover foil, Remote Kit, mounting elements for front screw assembly	Touch cover foil, Remote Kit, mounting elements for front screw assembly
• Expansion components	Uninterrupted power supply (UPS), SIMATIC NET communication modules, DiagMonitor, Image&Partition Creator	Uninterrupted power supply (UPS), SIMATIC NET communication modules, DiagMonitor, Image&Partition Creator	Uninterrupted power supply (UPS), SIMATIC NET communication modules, DiagMonitor, Image&Partition Creator	Uninterrupted power supply (UPS), SIMATIC NET communication modules	Uninterrupted power supply (UPS), SIMATIC NET communication modules, DiagMonitor, Image&Partition Creator	Uninterrupted power supply (UPS), SIMATIC NET communication modules, DiagMonitor, Image&Partition Creator
• Heat loss in maximum configuration	max. 140 W (contains 15 W per slot)	max. 140 W (contains 15 W per slot)	max. 140 W (contains 15 W per slot)	max. 140 W (contains 15 W per slot)	max. 163 W (contains 15 W per slot)	max. 163 W (contains 15 W per slot)

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Ordering data

Order No.

Panel PC configurator (contract-based production and delivery)

		Order No.
SIMATIC Panel PC 677B	D	**6AV7 87 ■ - ■■■■■ - ■■■ 0**
Front panels:		
• 12" TFT Touch		**0**
• 12“ TFT Key		**1**
• 15" TFT Touch		**2**
• 15“ TFT Key		**3**
• 17" TFT Touch		**4**
• 19" TFT Touch		**5**
Front-panel options:		
• With front USB port		**0**
• Without front USB port		**1**
Power supply:		
• 24 V DC		**A**
• 110/230 V AC, power cable for Europe		**B**
• 110/230 V AC		**C**
Processor:		
• Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MB SLC, slots (spare): 2 x PCI		**A**
• Intel Celeron M 440 / 1.86 GHz, 533 MHz FSB, 1 MB SLC, slots (spare): 1x PCIe x4 and 1x PCI		**B**
• Intel Core 2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MB SLC, slots (spare): 2 x PCI		**C**
• Intel Core 2 Duo T5500 / Dual Core, 1.66 GHz, 677 MHz FSB, 2 MB SLC, slots (spare): 1x PCIe x4 and 1x PCI		**D**
• Intel Core 2 Duo T7400 / Dual Core, 2,16 GHz, 677 MHz FSB, 4 MB SLC, slots (spare): 2x PCI		**E**
• Intel Core 2 Duo T7400 / Dual Core, 2,16 GHz, 677 MHz FSB, 4 MB SLC, slots (spare): 1x PCIe x4 and 1x PCI		**F**

Panel PC configurator (continued)

		Order No.
SIMATIC Panel PC 677B	D	**6AV7 87 ■ - ■■■■■ - ■■■ 0**
Main memory:		
• 512 MB DDR2		**1**
• 1 GB DDR2		**2**
• 2 GB DDR2		**3**
• 3 GB DDR2		**4**
• 4 GB DDR2		**5**
Mass storage:		
• 80 GB SATA hard disk		**0**
• 160 GB SATA hard disk		**1**
• RAID1 dual hard disk module 2 x 80 GB SATA, preconfigured		**2**
• Dual hard disk module 2 x 80 GB SATA		**3**
• 2nd CF card slot (only in combination with Windows XP embedded), internal, empty, only without opt. drive and without HDD		**4** **0**
Optical drives:		
• Without		**0**
• DVD±RW±R Combo drive		**1**
Communication interfaces:		
• PROFIBUS/MPI; 2 x Gbit Ethernet, 512 KB NV-RAM		**A**
Operating system:		
• Without operating system		**A**
• Windows 2000 Professional Multi-Language [1) 2)]		**B**
• Windows XP Professional Multi-Language [1)]		**C**
• Windows XP embedded (English) [3)] on 2 GB CF card		**F**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) Multilanguage means: Eng./Ger./Fr./Ital./Sp./trad Chin./ simpl. Chin./Korean/Japanese

2) With Windows 2000, only one core can be used with the dual-core processors

3) Only without RAID 1 option.

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SIMATIC Panel PC 677B

Ordering data

		Order No.
Delivery versions (from stock)		
12" TFT Touch 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 870-0BC20-1AC0**
12" TFT Keys 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 871-0BC20-1AC0**
15" TFT Touch 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 872-0BC20-1AC0**
15" TFT Keys 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 873-0BC20-1AC0**
17" TFT Touch 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 874-0BC20-1AC0**
19" TFT Touch 110/230 V AC power supply Core 2 Duo T5500, 1.66 GHz, 2 x PCI 1 GB RAM, 80 GB HDD, DVD±R±RW burner Windows XP Prof. MUI (SP2) (D/F/I/SP/CHN traditional/CHN simplified/Korean/Japanese)	D	**6AV7 875-0BC20-1AC0**

A) Subject to export regulations: AL: N and ECCN: EAR99H
D) Subject to export regulations: AL: N and ECCN: 5D992B1

		Order No.
Accessories		
Cover foil for Panel PC 477/577/677(B)/Flat Panel For protecting the touch screen against dirt/scratches (set of 10)		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 17" Touch		**6AV7 672-1CF00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foils for Panel PC 477/577/677(B) For labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
Memory expansion		
• 512 MB DDR2 667 SODIMM	A	**6ES7 648-2AG30-0HA0**
• 1 GB DDR2 667 SODIMM	A	**6ES7 648-2AG40-0HA0**
• 2 GB DDR2 667 SODIMM	A	**6ES7 648-2AG50-0HA0**
Direct control key module for Panel PC 677(B)	A	**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 900-1EA00-0XA0**
Mounting elements for 17"/19" Panel PC 577, 677(B) For screw mounting of the 17" and 19" Touchfront from the front		**6AV7 672-8KE00-0AA0**

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Ordering data

Order No.

Expansion components

		Order No.
SIMATIC PC/PG DiagMonitor V3.1 Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)	B	**6ES7 648-6CA03-1YX0**
SIMATIC PC/PG Image & Partition Creator Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Eng/Ger/Fr/Sp/It)		**6ES7 648-6AA04-0YX0**
3.5" disk drive, USB With 1 m connecting cable		**6FC5 235-0AA05-1AA2**
SIMATIC PC USB FlashDrive 1 GB, USB 2.0, metal enclosure, boot capability	A	**6ES7 648-0DC30-0AA0**
SIMATIC Panel PC Remote Kit for the separate configuration of control unit and PC		
• 24 V DC, 5 m	A	**6AV7 671-1EA00-5AA1**
• 24 V DC, 10 m	A	**6AV7 671-1EA01-0AA1**
• 24 V DC, 15 m	A	**6AV7 671-1EA01-5AA1**
• 24 V DC, 20 m	A	**6AV7 671-1EA02-0AA1**
• 24 V DC, 30 m	A	**6AV7 671-1EA03-0AA1**
• 110/220 V AC, 5 m	A	**6AV7 671-1EA10-5AA1**
• 110/220 V AC, 10 m	A	**6AV7 671-1EA11-0AA1**
• 110/220 V AC, 15 m	A	**6AV7 671-1EA11-5AA1**
• 110/220 V AC, 20 m	A	**6AV7 671-1EA12-0AA1**
• 110/220 V AC, 30 m	A	**6AV7 671-1EA13-0AA1**

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

Uninterruptible power supplies

		Order No.
SITOP power, 15 A DC UPS module, with USB port with charger unit for 24 V lead battery, input 24 V/16 A DC, output 24 V/15 A DC		**6EP1 931-2EC41**
SITOP power, battery module 24 V/3.2 Ah for DC UPS module 15 A		**6EP1 935-6MD11**
Industrial USB Hub 4 4 x USB 2.0 interfaces, IP65 for installation on control cabinet door or on DIN rail	A	**6AV6 671-3AH00-0AX0**

Communication components

		Order No.
PCI interface card With COM1, COM2 and LPT interfaces	A	**6ES7 648-2CA00-0AA0**

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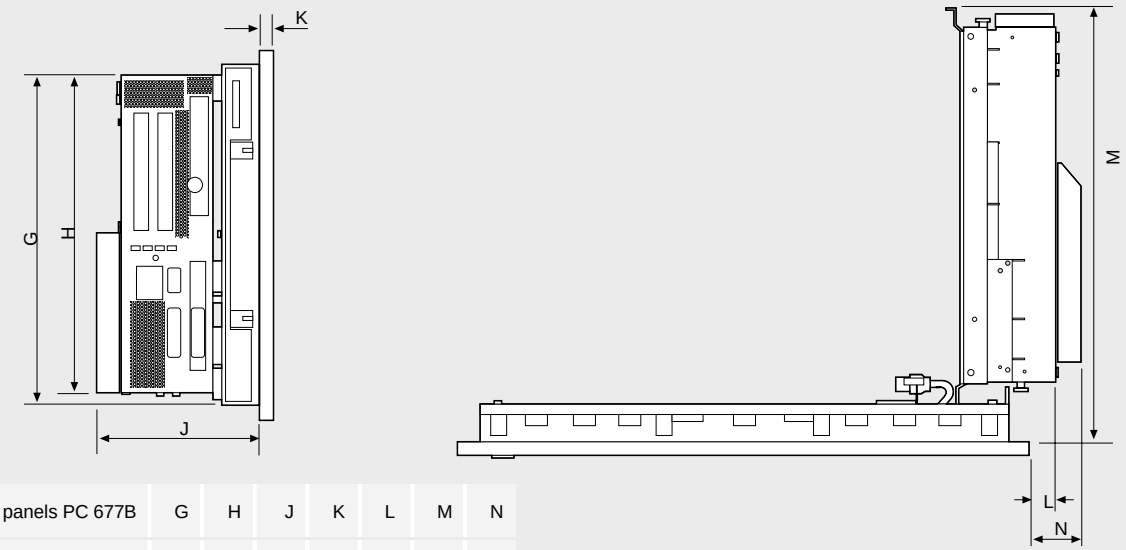
SIMATIC Panel PC 677B

Dimensions

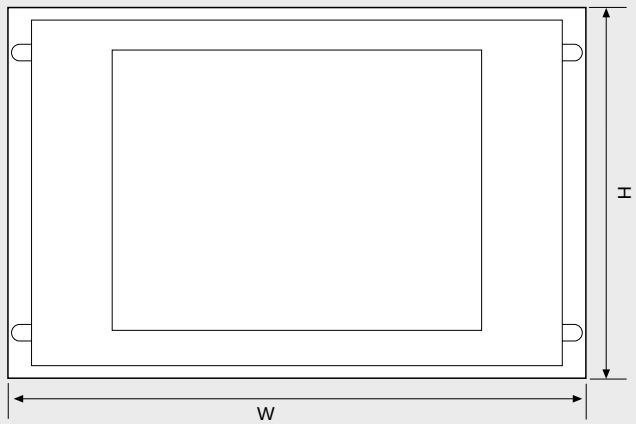


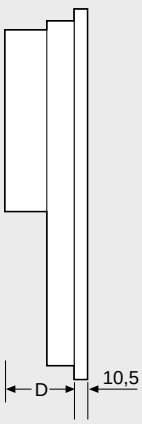
Operator panels PC 677B	G	H	J	K	L	M	N
Touch panels							
12"	289	271	141	11	53	369	71
15"	289	271	138	11	24	367	42
17"	378	271	147	11	18	376	36
19"	378	271	147	11	18	376	36
Key panels							
12"	289	271	122	11	42	351	59
15"	324	271	141	11	31	370	48

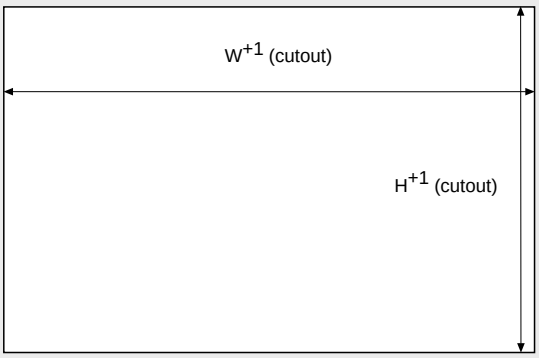
All dimensions without screw protrusions

G_ST80_XX_00288

Operating unit and complete unit







Front dimensions	W	H
Touch panels		
12"	400	310
15"	483	310
17"	483	400
19"	483	400

Installation cutout	W+1	H+1	D
Touch panels			
12"	368	290	51
15"	450	290	55
17"	450	380	57
19"	450	380	57

G_ST80_DE_00289

Installation cutout

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More information

You will find more information in the Internet at:

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

Note:

Do you need a specific modification or expansion to the products described here? Then refer to "Customer-specific products". Information is available here about additional, generally available sector products as well as the possibilities for customer-specific modification and adaptation.

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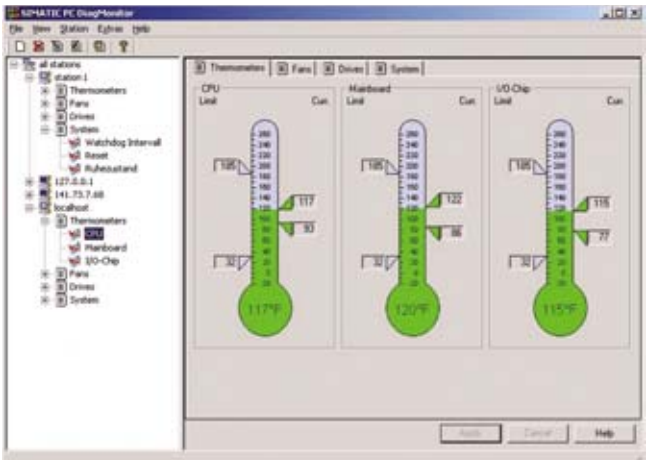
SIMATIC PC DiagMonitor

Overview



The SIMATIC PC 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 PC both locally and remotely.

It is used with SIMATIC Microbox PC 420/427B, Box PC 627/627B, Rack PC IL 43/840/847B, Panel PC 477/477B/677/677B 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 (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integral log function, comprehensive text messages, online help English/German
- Worldwide diagnosis over the Internet thanks to integrated web server function

Reduced costs thanks to reduced downtimes

- Fast information thanks to communication via e-mail and SMS
- Fast response thanks to communication in the application through OPC (client) and SNMP

Function

The SIMATIC PC DiagMonitor monitors, signals and communicates with an external server, acts in the event of an alarm and logs the system states of the SIMATIC PCs.

It monitors:

- the processor and internal device temperatures
- the fans
- the system status by means of "watchdog"
- the function of the hard disk or RAID 1

It signals:

- the number of operating hours for activating maintenance periods
- every alarm and logs in lists
- overshoot/undershoot of permissible operating temperature
- program interruption following a watchdog timeout
- hard disk problems through evaluation of the S.M.A.R.T. diagnostic byte

It communicates:

- locally with an OPC client
- locally via DLL or SNMP with a central server
- remotely over LAN, e-mail, text messages
- with diagnostic LEDs on the device
- worldwide over the Internet through a web server

It acts in the event of an alarm:

- by starting customer applications
- by executing a "Reset"
- by simple linking/activation of PC tools

It logs:

- all messages and commands in a log file automatically
- the measuring data (temperature, fan) over the operating period

It visualizes:

- the recorded measuring data (with trend analysis)

It synchronizes:

- system time over LAN (e.g. maintenance-free operation without CMOS battery)

System requirements:

Executable under Windows 2000/XP Professional

Ordering data

	Order No.
SIMATIC PC DiagMonitor Software tool for monitoring the SIMATIC PC, incl. manual on CD ROM (English, German), single license	**6ES7 648-6CA03-1YX0**

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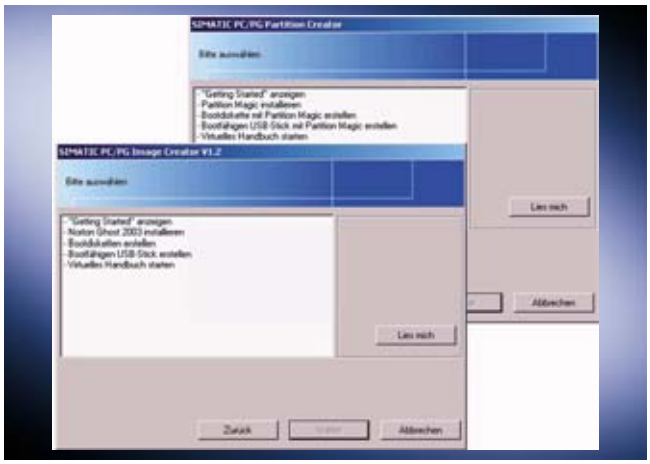
Overview



SIMATIC PC/PG Image Creator is the software tool for quick and easy back-up and restoring of the content of hard disks (images of individual partitions or complete hard disks). This software can be ordered through the Configurator for the SIMATIC PCs.

The single product **SIMATIC PC/PG Image & Partition Creator** comprises in addition to the SIMATIC PC/PG Image Creator the software tool SIMATIC PC/PG Partition Creator, which allows subsequent hard disk partitioning without the loss of data.

Both products are designed for easy handling:

- Direct starting by booting the CD. No installation required
- Menu-driven creation of a bootable USB Flash drive as an alternative start medium from which Image Creator and/or Partition Creator can be started.
- Can be used independently of the operating system due to starting from separate boot medium
- Minimal hardware requirements

Benefits

SIMATIC PC/PG Image Creator

Data security at low cost

Hard disk contents can be saved quickly accurate to a bit and securely

Reduced costs thanks to reduced downtimes

A significantly shorter time is required to restore a hard disk installation than is required for a new installation.

- Following replacement of a hard disk, the unit is ready for operation in just a few minutes
- Software failure due to application errors, operator errors or computer viruses is rectified in a matter of minutes
- No time-consuming reinstallation in the event of a fault
- The most recently backed up hard disk contents are restored quickly, reliably and accurate to a single bit

New functions in V2.0:

- Saving "at the press of a button" or time-controlled
- Image Creator in separate boot area on the hard disk
- Boot menu can be created, for easy starting of Image Creator from the USB FlashDrive

SIMATIC PC/PG Partition Creator

Hard disk partitions can be modified without the need for reinstallation

- The SIMATIC PC/PG Partition Creator tool that is a part of SIMATIC PC/PG Image & Partition Creator allows the hard disk partitions to be matched to your requirements without the need for reinstallation. It is still possible to execute the existing installation.
  Partition Creator cannot be used on systems with Windows Server operating systems!

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SIMATIC PC/PG Image Creator, Image & Partition Creator

Function

- Both software tools can be started with their full scope of functions directly from the CD, without installation.
- SIMATIC PCs and programming devices are automatically supported by integration of the correct drivers.
- Booting of the CD also from external USB CD/DVD drive (if supported by the unit)
- If no CD/DVD is available, boot diskettes or bootable USB sticks (if supported by unit) can be produced.
- CD Autostart under Windows offers menu-based installation on the unit or direct generation of a boot diskette or bootable USB stick (if supported by the unit).
- The software tools are based on the current versions of Symantec Ghost 2003 or Symantec Partition Magic 8.0

SIMATIC PC/PG Image Creator saves the hard disk image on:

- Second partition
- Second hard disk
- CD/DVD writer
- USB CD/DVD writer or USB hard drive
- Server or directly connected PC

The SIMATIC PC/PG Partition Creator included in the SIMATIC PC/PG Image & Partition Creator offers functions for modifying hard disk partitions:

- Increase or decrease existing system and data partitions without loss of data
- Creating new partitions or deleting existing partitions
- Simple configuration of multi-boot systems. Installation of a boot manager
- Extremely simple operation using menus. "Virtual manual" clarifies the most important input actions using multimedia support (sound and image).

The previous installation continues to function as before for all the listed functions (unless required partitions have been deleted).

System requirements:

Executes on SIMATIC PCs/PGs with Windows 98, Windows NT4 Workstation, Windows 2000/XP Professional

Ordering data

		Order No.
SIMATIC PC/PG Image Creator V1.2	A	Order using SIMATIC PC Configurator
Software tool for preventive data backup for SIMATIC PCs, incl. manual on CD ROM (English, German, French, Spanish, Italian)		
SIMATIC PC/PG Image & Partition Creator V2.0		**6ES7 648-6AA04-0YX0**
Software tool for data backup and hard disk partitioning for SIMATIC PCs/PGs, incl. manual on CD ROM (English, German, French, Spanish, Italian)		

A) Subject to export regulations: AL: N and ECCN: EAR99H

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Overview

The Remote Kit makes it possible to separate the Panel PC 677/677B 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
- For use with all SIMATIC Panel PC 677 and PC 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

Application

The Panel PC Remote Kit is designed for use exclusively with a Panel PC 677 or Panel PC 677B. BIOS version V05.01.05 or higher is required when using a Panel PC 677.
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 677, 677B operator control units
Supported operator control units	All Panel PC 677, 677B operator control units: • 12" Touch/Key • 15" Touch/Key • 17" Touch (only Panel PC 677B) • 19" Touch
Cable sets	• 5 m • 10 m • 15 m • 20 m • 30 m
Front panel functionality	As centralized installation with the following constraint in respect of USB functionality: • Distance 5 m: USB 2.0, and only one external 2.0 Hub • Distance > 5 m: USB 1.1, and only one external 1.1 Hub
External ports	2 additional USB ports on the remote module (on the rear of the remote operator control unit)
Power supply	24 V DC; 20.4 ... 28.8 V DC or 110-240 V AC; 50/60 Hz
Approvals	CE, cULus (UL 508)
Scope of supply	• Remote module • Cable set • Mounting accessories for the PC677(B) computer unit • European power supply cable (with the AC option)

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SIMATIC Panel PC Remote Kit

Ordering data

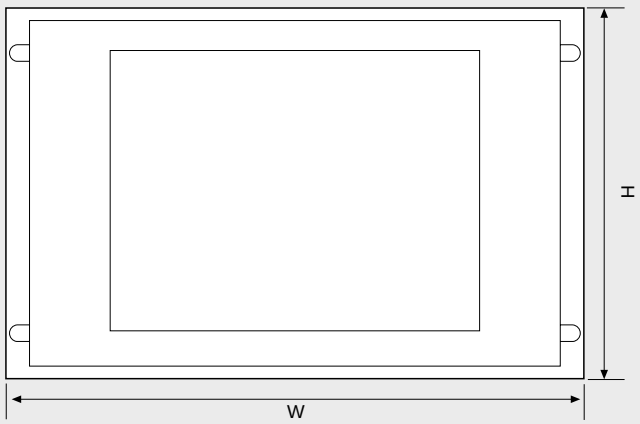
		Order No.
SIMATIC Panel PC Remote Kit		
24 V DC, 5 m	A	**6AV7 671-1EA00-5AA1**
24 V DC, 10 m	A	**6AV7 671-1EA01-0AA1**
24 V DC, 15 m	A	**6AV7 671-1EA01-5AA1**
24 V DC, 20 m	A	**6AV7 671-1EA02-0AA1**
24 V DC, 30 m	A	**6AV7 671-1EA03-0AA1**
100/240 V AC, 5 m	A	**6AV7 671-1EA10-5AA1**
100/240 V AC, 10 m	A	**6AV7 671-1EA11-0AA1**
100/240 V AC, 15 m	A	**6AV7 671-1EA11-5AA1**
100/240 V AC, 20 m	A	**6AV7 671-1EA12-0AA1**
100/240 V AC, 30 m	A	**6AV7 671-1EA13-0AA1**

		Order No.
Accessories		
Power supply cable		
• Europe: D/F/NL/E/B/A/S/FIN [1]		**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**
Sub-components of the Remote Kit		
(only available individually as spare parts)		
• 24 V DC remote module with fixing accessories	A	**6AV7 671-1EX01-0AD0**
• 110 … 240 V AC remote module with fixing accessories	A	**6AV7 671-1EX01-0BD0**
• USB amplifier/CAT6 converter		**6AV7 671-1EX02-0AB0**
• 5 m cable set (DVI, USB standard cable)		**6AV7 671-1EX10-5AA0**
• 10 m cable set (DVI, Cat 6 cable)		**6AV7 671-1EX11-0AA0**
• 15 m cable set (DVI, Cat 6 cable)	A	**6AV7 671-1EX11-5AA0**
• 20 m cable set (DVI, Cat 6 cable)		**6AV7 671-1EX12-0AA0**
• 30 m cable set (DVI, Cat 6 cable)		**6AV7 671-1EX13-0AA0**

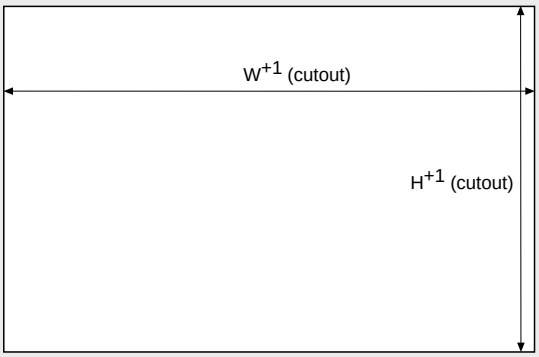
A) Subject to export regulations: AL: N and ECCN: EAR99H

1) A European power supply cable is included in the scope of delivery of the AC (100 … 240 V) version of the Remote Kit.

Dimensions



Front dimensions	W	H
Touch panels		
12"	400	310
15"	483	310
19"	483	400
Key Panels		
12"	483	310
15"	483	355



Installation cutout	W+1	H+1	D
Touch panels			
12"	368	290	95
15"	450	290	93
19"	450	380	102
Key Panels			
12"	450	290	77
15"	450	321*	96

* In addition: two recesses 25 x 5 mm on the top side for keyboard slide-in label channels

G_ST80_XX_00267

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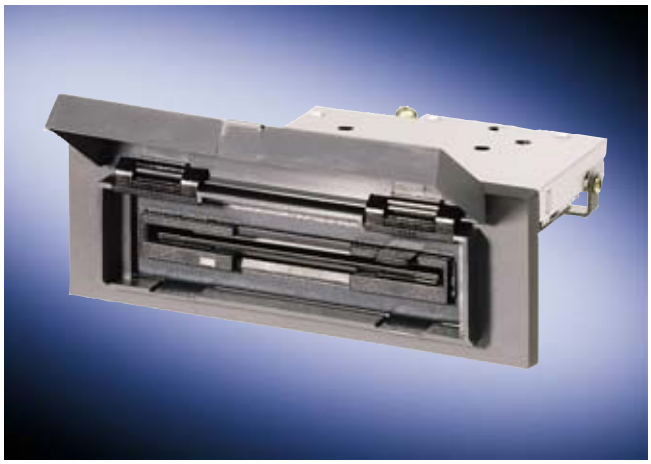
Overview



The 3.5" floppy disk drive is suitable for archiving user data and can be installed in front panels. The connection is made via the USB interface.

Function

The 3.5" floppy disk drive is designed for the transfer of user data. Installation in front panels makes it possible to transfer data without opening the control cabinet door. You can use high density (1.2/1.44 MB) 3.5" floppy disks to store user data.

Integration

The floppy disk drive is suitable for connecting to:

- SINUMERIK PCU 50/PCU 70 with Windows XP
- SINUMERIK PCU 50/PCU 70 with Windows NT 4.0 and PCU-Base software 07.03.03 or higher
- 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

Product name	SINUMERIK 3.5" USB 1.1 floppy disk drive
Input voltage	5.25 V DC
Power consumption, max.	2.5 W
Degree of protection to DIN EN 60529 (IEC 60529)	
• Front	IP54
• Rear	IP00
Humidity rating in accordance with DIN EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (+32 °F).
Relative humidity	
• Storage	5 ... 90% at -22 ... +60 °C (-7.6 ... +140 °F)
• Transport	5 ... 95% at -40 ... +65 °C (-40 ... +149 °F)
• Operation	20 ... 80% at +4 ... +51.7 °C (+39.2 ... +125 °F)
Ambient temperature	
• 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	5 m (16.4 ft)
Dimensions	
• Width	145 mm (5.71 in)
• Height	50 mm (1.97 in)
• Depth	161 mm (6.34 in)
Approx. weight	0.32 kg (0.71 lb)

Ordering data

		Order No.
SINUMERIK 3.5" floppy disk drive, USB 1.1 Incl. connecting cable Length: 1 m (3.28 ft)	A	**6FC5 235-0AA05-1AA2**
Accessories		
Cover For SINUMERIK floppy disk drive and card reader with masking frame, cover, and bearing bracket		**6FC5 247-0AA20-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

More information

Note for SIMATIC Panel PCs

The USB 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.

Note for SINUMERIK PCU 50/PCU 70

A SINUMERIK PCU 50/PCU 70 (566 MHz/1.2 GHz) with BIOS V02.03.07 and Windows NT4.0 V07.03.03 or Windows XP V07.03.02.01 operating system is required to operate the USB floppy disk drive.

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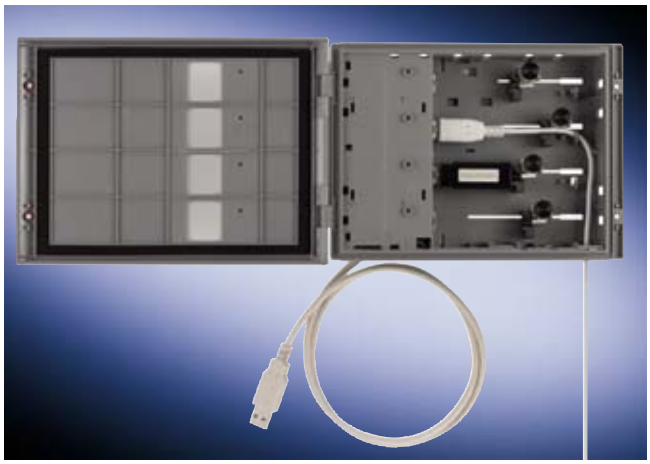
Industrial USB Hub 4

Overview



Industrial USB Hub 4, open

- The Industrial USB Hub 4 is essentially used as a USB hub for the connection of peripherals to Multi Panels and Panel PCs with an integral USB interface
- USB peripherals can be connected to the panel and operated via the USB Hub 4 without opening the cabinet door
- The Industrial USB Hub 4 differs from commercially available USB hubs mainly in its suitability for use in rugged industrial environments (IP65).

Design

The 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

Integration

The Industrial USB Hub 4 is suitable for connection to:

- MP 277/ MP 377
- SIMATIC Panel PC

Recommended operating system

- Windows 2000/XP/XP embedded

Technical specifications

	6AV6 671-3AH00-0AX0
Supply voltage	
• Supply voltage	24 V DC
• permissible range	+20.4 to +28.8 V DC
Degree of protection	
• IP65 at front	Yes
• IP20 rear	Yes
Certifications & Standards	
• Certifications	CE
Ambient conditions	
• max. relative humidity (in %)	90%
• Temperature	
- Operation (vertical installation)	0 to +50°C
- Transport, storage	-20 to +60°C
• 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
• Mounting cutout/Device depth (W x H/D) in mm	182 mm x 138 mm / 50 mm Device depth
Weights	
• Weight	0.5 kg

Ordering data

		Order No.
Industrial USB Hub 4	A	**6AV6 671-3AH00-0AX0**
Service pack for Industrial USB Hub 4		See HMI accessories service packets

A) 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 2000/XP operating systems. The appropriate drivers are supplied with the operating system software.

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Overview

The SIMATIC PC BIOS Manager is a software tool that is used to process CMOS and DMI data from the BIOS configuration of a SIMATIC PC.
The tool is obtained by downloading it from the Internet using the Automation Value Card from Customer Support

http://www.siemens.com/simatic/bios-manager

Benefits

Reduced costs due to quick, simple CMOS processing

- CMOS data duplicated by means of a read out, saved in a file, data written to the CMOS
- CMOS data saved for documentation and restoration purposes
- DMI data read out and saved as a text file (e.g., PC serial number)

Application

Wherever the SIMATIC PC is put to industrial use, it is expanded by both modules and software and the BIOS settings (CMOS data) modified accordingly. In this environment, the SIMATIC PC BIOS Manager is used as:

production tool

For quick configuration of identical CMOS data

- Reading CMOS data from the BIOS
- Saving CMOS data in a file tagged with a user text
- Writing the saved CMOS data into BIOS

service/quality tool

- Quick, simple storage of PC system data for QM purposes
- CMOS data transferred to an end user
- Uncomplicated CMOS restoration on site

Function

The SIMATIC PC BIOS Manager offers the following functions:

- Reading CMOS data from the BIOS
- Saving CMOS data in a file tagged with a user text
- Writing the saved CMOS data into BIOS
- Scanning BIOS DMI data
- Saving BIOS DMI data in a text file (basic format for printer output)
- Switching language (German/English)
- Help function

System requirements:

The SIMATIC PC BIOS Manager executes with all SIMATIC PCs in combination with MSDOS 6.x or FreeDOS.
DOS (FreeDOS), which is necessary for creating a bootable diskette, is included in the download.

Ordering data

	Order No.
SIMATIC PC BIOS Manager Software tool for processing special BIOS data (CMOS, DMI data) for SIMATIC PCs	As download from Customer Support http://www.siemens.com/simatic/bios-manager

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SIMATIC PC USB FlashDrive

Overview

The SIMATIC PC USB FlashDrive is the ideal mobile storage medium for SIMATIC PCs/PGs and SINUMERIK components. Thanks to the rugged and ultra-compact construction in a metal enclosure, fast data transfer (USB 2.0) and the high memory capacity of 1 GB, the USB FlashDrive is ideally suited for use in industrial applications. It replaces diskettes and CD-ROMs as data memory. It is supplied ready to boot and prepared for special tasks (e.g. as a start medium for SIMATIC PC BIOS-Manager, SIMATIC PC Image Creator).

Benefits

Ultra-compact and rugged

- Two USB Flash drives can be plugged into the SIMATIC PC one above the other
- Especially suitable for use in industrial environments thanks to the metal enclosure

High 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)

Application

The SIMATIC PC USB FlashDrive is a fast and easy-to-use medium for saving your data (e.g. recipes, configuration data) and transporting it from one place to another, or to use it as a boot medium, e.g. for SIMATIC PC BIOS Manager or SIMATIC PC Image Creator.

Function

The following functions have been integrated:

- Formatted for boot capability incl. preinstalled operating system (FreeDOS) for use as a boot medium, e.g., for SIMATIC PC Image Creator
- High performance for faster data transfer – USB 2.0 (high-speed)
- High memory capacity of 1 GB
- Read to use – "Plug & Play", with Windows XP/Windows 2000 driver installation is not necessary
- Data protection with write-protection switch
- Status LED for data transfer and operating state
- SIMATIC PC BIOS-Manager, a software tool for the management of BIOS (CMOS) data for SIMATIC PCs is included in the scope of supply.

Recommended operating systems:

- Windows 2000/XP/XP embedded

Technical specifications

SIMATIC PC USB FlashDrive	
Supported operating systems	Windows 98/2000/XP
Write protection	Via switch
Approval	CE
Temperature	
• During operation	+5 to +55 °C
• Storage	-20 to +70 °C
Equipment dimensions (L x W x H) in mm	52.7 x 13.5 x 5.5
Weight, approx.	13.5 g

Ordering data

	Order No.
SIMATIC PC USB FlashDrive A	
1 GB, USB 2.0, metal enclosure, boot capability, for SIMATIC PC: Rack PC, Box PC and Panel PC (477Embedded/577/677) and for SIMATIC PG and SINUMERIK components	
• 1 ... 9 units	**6ES7 648-0DC30-0AA0**
• 10 units and above	**6ES7 648-0DC30-0AA0**
• 100 units and above	**6ES7 648-0DC30-0AA0**
• 1000 units and above	**6ES7 648-0DC30-0AA0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

Notice:
For orders of more than 100, delivery time may be extended.

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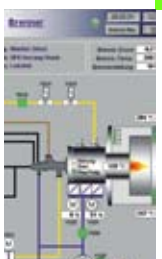
HMI Software

4



4/2	Introduction
4/5	**SIMATIC WinCC flexible engineering software**
4/5	SIMATIC WinCC flexible ES
4/10	**SIMATIC WinCC flexible ES Options**
4/10	WinCC flexible /ChangeControl
4/11	**SIMATIC WinCC flexible runtime software**
4/11	SIMATIC WinCC flexible RT
4/18	WinCC flexible /Archives
4/20	WinCC flexible /Recipes
4/22	WinCC flexible /Audit
4/23	WinCC flexible /SIMATIC Logon
4/25	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
4/47	WinCC Optionen
4/48	WinCC/Server
4/50	WinCC/Web Navigator
4/54	WinCC/Central Archive Server (CAS)
4/55	WinCC/Redundancy
4/56	SIMATIC Maintenance Station
4/60	WinCC/ProAgent
4/61	WinCC/DataMonitor
4/63	WinCC/DowntimeMonitor
4/65	WinCC/ProcessMonitor
4/67	WinCC/Connectivity Pack
4/69	WinCC/IndustrialDataBridge
4/71	WinCC/Client Access License (CAL)
4/72	WinCC/User Archives
4/73	WinCC/ChangeControl & WinCC/Audit
4/75	SIMATIC Logon
4/76	WinCC/IndustrialX
4/77	WinCC/ODK
4/78	WinCC/Comprehensive Support
4/79	WinCC add-ons and partner management
4/81	**SIMATIC ProAgent process diagnostics software**
4/81	SIMATIC ProAgent

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Introduction

Overview

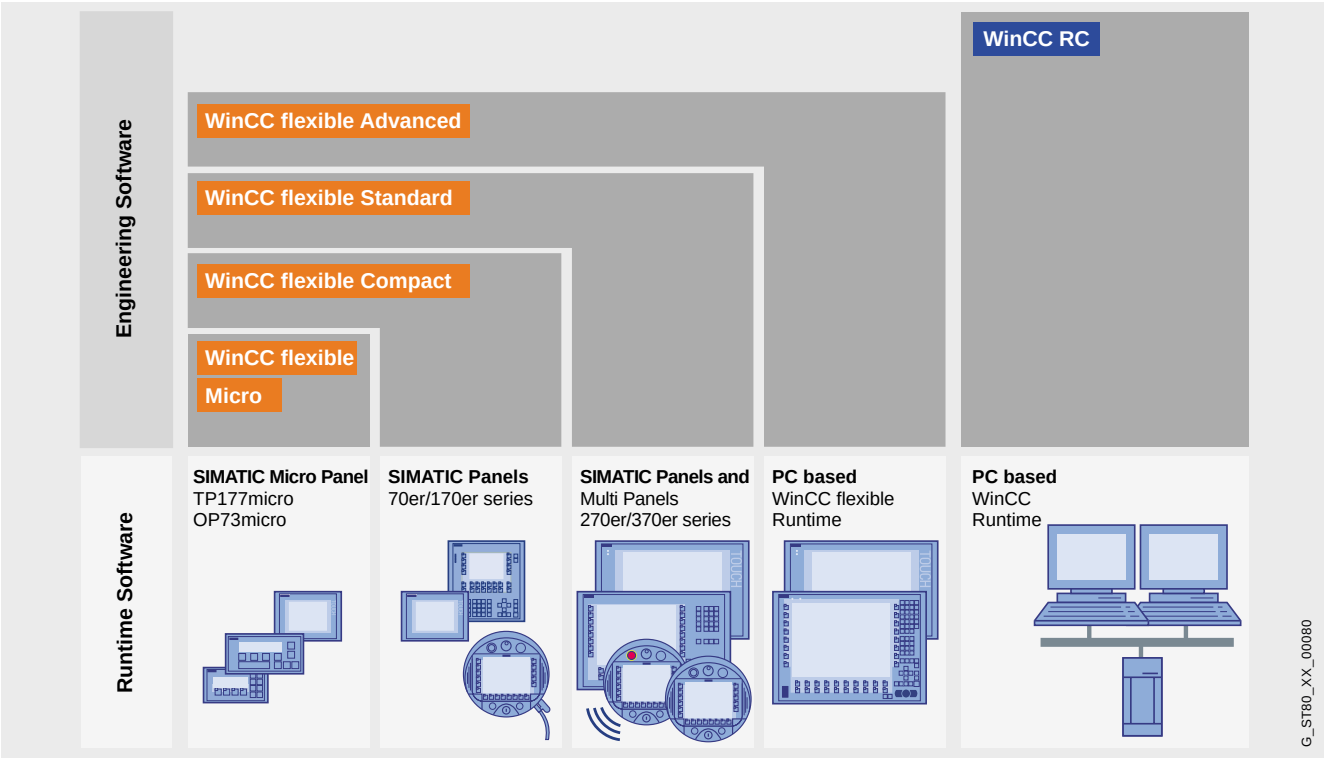
With the SIMATIC WinCC flexible and SIMATIC WinCC product families, SIMATIC HMI offers visualization and configuration software for the complete scope of applications:

- 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 configuring the WinCC flexible Runtime for PC as well as SIMATIC HMI control units, 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 the SIMATIC HMI software products. WinCC flexible offers an essential hub for applications close to the machine (until now this has been covered by the ProTool family) with respect to configuration efficiency and new automation concepts. For process-oriented plant and mechanical engineering as well as series production of machines, SIMATIC WinCC flexible 2007 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
- Safe, flexible and world-wide access to process data
- New SIMATIC HMI devices



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Overview (continued)

Changing from the ProTool family to WinCC flexible is possible by simply using the same or converting the old configuration data.

SIMATIC WinCC will remain the process visualization system for plant monitoring with single or multiple station solutions and the platform for IT & Business integration under Windows 2000 and XP Professional.

The next step will be to use WinCC flexible also as the platform for integrating the SIMATIC WinCC visualization system. As is the case today for ProTool V6 projects, WinCC V6 projects will then also be compatible.

SIMATIC WinCC flexible ES engineering software

- Newly developed family of configuration systems with WinCC flexible Micro/Compact/Standard/Advanced for SIMATIC operator panels, the HMI part of SIMATIC C7 as well as for the PC-based visualization software WinCC flexible RT
  - SIMATIC Micro Panels
  - SIMATIC Mobile Panels
  - SIMATIC Panels of the 70/170/270 series as well as C7-635 and C7-636
  - SIMATIC Multi Panels of the 270/370 series
  - SIMATIC WinCC flexible RT
- Executable under Windows 2000/XP Professional
- Expanded integration into Totally Integrated Automation (TIA): STEP 7, SIMOTION, Component Based Automation (CBA)
- 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 RT visualization software

- Modular PC-based HMI solution for single-user systems directly at the machine (further development of ProTool/Pro RT)
- Executable under Windows 2000/XP Professional
- 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 with VB scripts and customized ActiveX controls (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 – with 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 2000, 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

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Introduction

Overview (continued)

	SIMATIC WinCC flexible RT	SIMATIC WinCC
Area of application	HMI software designed primarily for use in in-process applications in (series) machine production	Process visualization software for controlling and monitoring both simple and complex automation solutions
Configurations	Single-user system, usually 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/Internet	Single- and multi-user system as well as distributed systems Internet capability using the WinCC/Web Navigator option Data integrity with redundant solutions Integrated Historian functionality Processing of high quantity frameworks
Strategies	Integrated solution system taking in both operator panels and PC-based operator stations running WinCC flexible Runtime	High-quality SCADA functionality and integration platform for ERP/MES solutions based on the integrated Historian functionality (IT & business integration)
Configuring	An integrated family of configuration tools for integrated solutions Fast configuration due to preconfigured objects and referenced image blocks Table-based editors for efficient mass data processing Intelligent tools to simplify the configuration of complex tasks, e.g., user guidance, automatic compilation	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	HMI basic functionality can be expanded using option packages Standard functions can be expanded quickly and easily using VB scripts Jog mode is possible	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	Custom made solutions based on ActiveX controls are possible (Open Platform Program) Access to runtime display objects using VB scripts	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 diagnosis 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 and
  - 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

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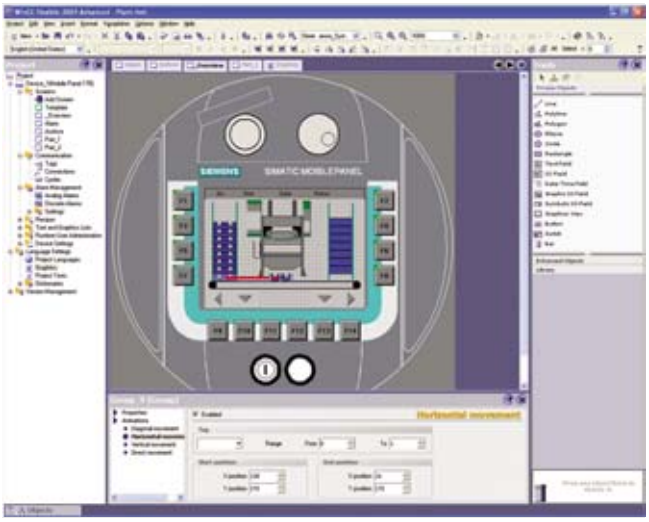
Overview



- Uniform family of **engineering tools** for configuring SIMATIC HMI Operator Panels, the operator control part of SIMATIC C7 units, SIMOTION/SINUMERIK Panel PCs as well as the PC-based visualization software WinCC flexible Runtime
- Executable under Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2007 Advanced
  - SIMATIC WinCC flexible 2007 Standard
  - SIMATIC WinCC flexible 2007 Compact
  - SIMATIC WinCC flexible 2007 Micro

Benefits

- Uniformity of configuration software reduces training, maintenance and updating requirements, and guarantees future compatibility
- Minimization of engineering requirements and reduction in life cycle costs through Totally Integrated Automation (TIA)
- Minimization of configuration requirements through repeated use of scalable, dynamic objects
- Intelligent tools for simple and efficient configuration:
  - Wizard for definition of basic structure for an HMI project
  - Table-based editors simplify the generation and processing of objects of the same type, e.g. for variables, texts or messages
  - Graphic configuration simplifies complex tasks such as the definition of trajectories or the generation of fundamental operator prompting
- Comprehensive support of multi-language configurations for global use
  - Selectable views for multi-language input of configuration data
  - System-specific and user-specific dictionaries
  - Export/import of language-dependent texts
- Investment protection through
  - Importing of configuration from the configuration tools of the ProTool range
  - Transfer of static picture components and variables from WinCC V6.0

Application

SIMATIC WinCC flexible Micro/Compact/Standard/Advanced are innovative engineering tools for configuring 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
  - 70 Series Panels: OP 73, OP 77A, OP 77B
  - 170 Series Panels: TP 170A, TP 177A, TP 170B, TP 177B, OP 170B, OP 177B
  - 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
  - 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
  - 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
  - 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
  - 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, 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 configuration, an HSP (Hardware Support Package) is required that can be downloaded free of charge via the following link:
http://www4.ad.siemens.com/ww/view/com/19241467

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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 (Version V5.3 and higher or Professional Edition 2004)
  - Administration of the HMI projects within STEP 7
  - Shared use of communication settings and process point definitions, i.e., symbols and messages
  - Display of the HMI engineering objects in the SIMATIC manager of STEP 7
  - Transfer of configuration data to PROFIBUS via 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
- Templates 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

Function (continued)

Import/export

- From texts for translation
- Import of variables and connections
- 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
- Easy 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

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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

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 configuration data with OP/TP27 and OP/TP37; analog conversion within ProTool V6.0
- Conversion of OP3 or OP7 configuration data to OP73 or OP77B
- Transfer of WinCC V6.0 project components (in version 2005/2007 static picture components and variables 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

System requirements	WinCC flexible Engineering Software
Operating system	Windows 2000 SP4, Windows XP Professional SP2 For multilingual configurations: Windows 2000 SP4 MUI, Windows XP Professional SP2 MUI For SIMATIC WinCC flexible 2007 Micro: Additionally Windows XP Home SP2
Processor	Pentium 4 (or comparable) processor running at 1.6 GHz or faster
Resolution	1024 x 768 or higher
Main memory	RAM ≥ 1 GB, ≥ 512 MB for WinCC flexible Micro
Hard disk (free memory space) 1)	≥ 1 GB
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

Options

SIMATIC WinCC flexible /ChangeControl

WinCC flexible/ChangeControl enables consistent backup of configuration data. 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.

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.

Note:

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

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SIMATIC WinCC flexible ES

Ordering data

		Order No.
WinCC flexible 2007 Advanced Floating license, on DVD incl. license key, includes: • Engineering software for configuring WinCC flexible Runtime on PC/Panel PC basis as well as Micro Panels and 70/170/270/370 series Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for WinCC flexible Runtime as well as Micro 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	D	**6AV6 613-0AA51-2CA5**
WinCC flexible 2007 Standard Floating license, on DVD incl. license key, includes: • Engineering software for configuring Micro Panels and 70/170/270/370 series Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for Micro 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	D	**6AV6 612-0AA51-2CA5**
WinCC flexible 2007 Compact Floating license, on DVD incl. license key, includes: • Engineering software for configuring Micro Panels and 70/170 series Panels incl. C7-635 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for Micro Panels and 70/170 series Panels incl. C7-635 • Native drivers • Electronic documentation (.pdf) in German, English, French, Italian, Spanish, simplified Chinese, traditional Chinese, Korean, Japanese	D	**6AV6 611-0AA51-2CA5**
WinCC flexible 2007 Micro Floating license, on DVD without license key, includes: • Engineering software for configuring Micro Panels • Electronic documentation (.pdf) in English, German, French, Italian, Spanish	D	**6AV6 610-0AA01-2CA8**
WinCC flexible/ChangeControl for WinCC flexible 2007 Compact/Standard/Advanced [3] Floating license, option, license key only	D	**6AV6 613-6AA01-2AB5**
Power Packs		
SIMATIC WinCC flexible Power Packs Single license, license key only		
• WinCC flexible 2007 Standard to 2007 Advanced	D	**6AV6 613-2CD01-2AD5**
• WinCC flexible 2007 Compact to 2007 Advanced	D	**6AV6 613-2BD01-2AD5**
• WinCC flexible 2007 Standard to 2007 Standard	D	**6AV6 612-2BC01-2AD5**
Software Update Service		
Software Update Service SIMATIC WinCC flexible [2]		
• WinCC flexible Advanced	D	**6AV6 613-0AA00-0AL0**
• WinCC flexible Standard	D	**6AV6 612-0AA00-0AL0**
• WinCC flexible Compact	D	**6AV6 611-0AA00-0AL0**
Upgrades		
SIMATIC ProTool to SIMATIC WinCC flexible 2007		
• ProTool/Lite to WinCC flexible 2007 Compact	D	**6AV6 611-3AA51-2CE5**
• ProTool to WinCC flexible 2007 Standard	D	**6AV6 612-3AA51-2CE5**
• ProTool/Pro to WinCC flexible 2007 Advanced	D	**6AV6 613-3AA51-2CE5**
SIMATIC WinCC flexible 2004/2005 to SIMATIC WinCC flexible 2007		
• WinCC flexible 2004/2005 Compact to WinCC flexible 2007 Compact, incl. ChangeControl option [1]	D	**6AV6 611-0AA51-2CE5**
• WinCC flexible 2004/2005 Standard to WinCC flexible 2007 Standard, incl. ChangeControl option [1]	D	**6AV6 612-0AA51-2CE5**
• WinCC flexible 2004/2005 Advanced to WinCC flexible 2007 Advanced, incl. ChangeControl option [1]	D	**6AV6 613-0AA51-2CE5**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

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.

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Ordering data

		Order No.
Versions for China/Taiwan/Korea/Japan		
WinCC flexible 2007 ASIA Standard Floating license, on DVD incl. license key, includes: • Engineering software for configuring Micro Panels and 70/170/270/370 series Panels incl. C7-635/636 • Simulation software for Micro 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	D	**6AV6 612-0AA11-2CA5**
WinCC flexible 2007 ASIA Advanced Floating license, on DVD incl. license key, includes: • Engineering software for configuring WinCC flexible Runtime as well as Micro Panels and 70/170/270/370 series Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for WinCC flexible Runtime as well as Micro 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	D	**6AV6 613-0AA11-2CA5**

1) A separate license for WinCC flexible/ChangeControl must be purchased for each engineering station.

		Order No.
Documentation (must be ordered separately)		
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-2AA0**
• English		**6AV6 691-1CA01-2AB0**
• French		**6AV6 691-1CA01-2AC0**
• Italian		**6AV6 691-1CA01-2AD0**
• Spanish		**6AV6 691-1CA01-2AE0**
WinCC flexible Micro User Manual		
• German		**6AV6 691-1AA01-2AA0**
• English		**6AV6 691-1AA01-2AB0**
• French		**6AV6 691-1AA01-2AC0**
• Italian		**6AV6 691-1AA01-2AD0**
• Spanish		**6AV6 691-1AA01-2AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-2AA0**
• English		**6AV6 691-1AB01-2AB0**
• French		**6AV6 691-1AB01-2AC0**
• Italian		**6AV6 691-1AB01-2AD0**
• Spanish		**6AV6 691-1AB01-2AE0**
SIMATIC HMI Manual Collection Electronic documentation, on DVD 5 languages (English, French, German, Italian, Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	B	**6AV6 691-1SA01-0AX0**

B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1

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? Then look up "customer-specific products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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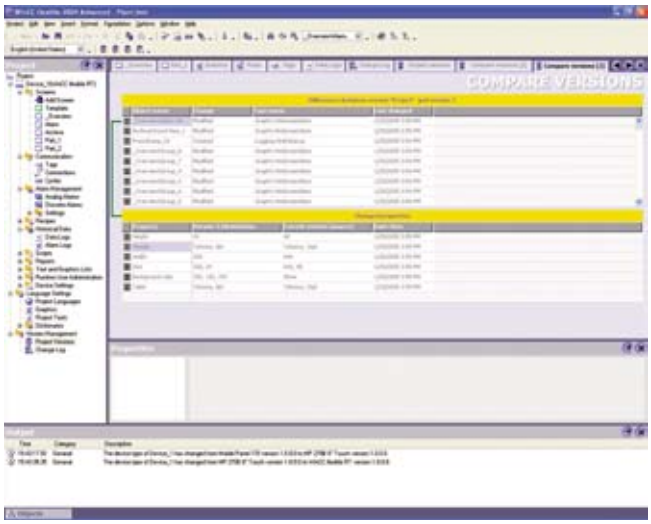
WinCC flexible/ChangeControl

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)
- Comparison function for determination of differences between two project versions, i.e. between the current version and a saved version
- 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 2007 Compact/Standard/Advanced 1)		
Floating license, option, license key only	D	**6AV6 613-6AA01-2AB5**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) The ChangeControl option has not been released for integrated operation with STEP 7.

More information

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 the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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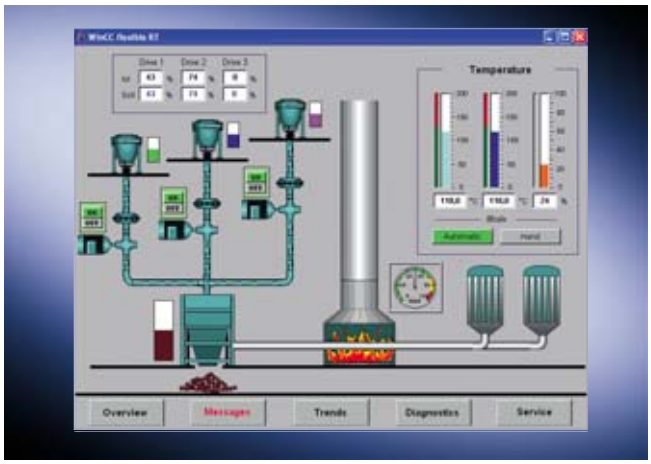
Overview



- **PC-based visualization software** for single-user systems directly at the machine
- Executable under Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2007 Runtime with 128, 512 or 2048 PowerTags
- SIMATIC WinCC flexible Runtime is configured with SIMATIC WinCC flexible Advanced engineering 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
  - Microbox 420
  - Panel PC 477
  - Panel PC 577
  - Panel PC 677
  - Panel PC 877
- SIMOTION Panel PCs
  - PCR, PCR-Touch
- SINUMERIK Panel PCs
  - OP010, OP012, OP015
  - TP012, TP015, OP015A
- Standard PCs with resolutions (W x H in pixels) of:
  - 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200

Design

SIMATIC WinCC flexible Runtime is available as a software package with 128, 512 and 2048 PowerTags. The term PowerTags is applied only to process variables that have a process connection to the PLC. Variables with no process link, constant limit values of variables and messages (up to 4000 bit-triggered messages) are also available as additional system performance.

The scope of WinCC flexible Runtime functions includes the central HMI components for visualization and signaling, and can be expanded appropriate to requirements and costs using option packages.

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

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SIMATIC WinCC flexible RT

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

Alarms and messages

- Discrete alarms and analog messages as well as event-driven Alarm-S message procedure with SIMATIC S7
- Freely-definable message classes for definition of acknowledgment response and display of message events

Archiving of alarms and process values [1)]

- Archiving in CSV files or ODBC databases
- Online evaluation of process value archives through trend curve graphics
- Evaluation of alarm logs using e.g., standard Microsoft tools

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; separate runtime licenses must be purchased

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Function (continued)

System requirements	WinCC flexible Runtime
Operating system	Windows 2000 SP4, Windows XP Professional SP1 and SP2 Windows XP Embedded [1]
Processor [4]	
• Minimum	Pentium II, 233 MHz
• Recommended	≥ Pentium III, 500 MHz
Graphics	
• Minimum	VGA
• Recommended	SVGA with hardware acceleration
Resolution	
• Minimum	640 x 480
• Recommended	1024 x 768 to 1600 x 1200
RAM [2]	
• Minimum	128 MB
• Recommended	≥ 256 MB
Hard disk (free memory space) [3]	≥ 100 MB
CD-ROM	for software installation

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

2) RAM requirements are determined primarily by the size of the graphics used.

3) Without taking archives into account.
In addition to the space needed by WinCC flexible, Windows also requires space on the hard disk; e.g., for the swap file. The following formula has proven itself in the past: The size of the swap file = 3 x the size of the RAM.
For further information, refer to your Windows documentation

4) More powerful systems (Pentium 4 and higher) may be required in order to use options

Options

SIMATIC WinCC flexible/Archives

- Archiving of alarms and process values
  - Archiving in CSV files or ODBC databases
  - Online evaluation of process value archives through trend curve graphics
  - Evaluation of alarm logs using e.g., standard Microsoft tools

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 PLC
  - Import/export of CSV files

SIMATIC WinCC flexible /Audit

- Recording of operator actions in an Audit Trail
- The ChangeControl option supports users in respect of plant validation.
- Can be checked using security mechanism if changes are made subsequently.
- Simplified compliance with GMP directives

SIMATIC Logon

- Central plant-wide user management
- Set up or block users plant-wide and across applications
- The central user management with SIMATIC Logon uses the Windows mechanisms

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/Sm@rtService

- Remote maintenance and servicing of machines and plant via Internet/intranet
- Event-driven sending of e-mails
- System diagnostics visualized via device-specific html pages

SIMATIC WinCC flexible/Sm@rtAccess

- Flexible solution for access to process data from any location
- Communication between different SIMATIC HMI systems

Note:

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

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

Note:

For further information, refer to "SIMATIC ProAgent process diagnosis software".

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SIMATIC WinCC flexible RT

Integration

SIMATIC WinCC flexible Runtime supports linking to:

Protocol	PC interfaces
SIMATIC S5 via AS511 (TTY)	
S5-90U S5-95U 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)	COM1/COM2 [13]
SIMATIC S5 via PROFIBUS DP [1]	
S5-95U/L2-DP master S5-115U (CPU 941, 942, 943, 944, 945) S5-135U (CPU 928A, 928B) S5-155U (CPU 946/947, 948)	CP 5512 [2] CP 5611 [2]
SIMATIC S7 via PPI	
S7-200	CP 5512 [2] CP 5611 A2 [2] CP 5613 A2 CP 5614 A2 PC/PPI adapter [3]
SIMATIC S7 via MPI	
S7-200 (except CPU 212) [4] S7-300 S7-400 WinAC Basis (V3.0 and higher) WinAC RTX	CP 5512 [2] CP 5611 A2 [2] CP 5613 A2 CP 5614 A2 PC/MPI adapter [6] PC adapter USB [6] Teleservice V5.1
SIMATIC S7 via PROFIBUS DP [5]	
S7-215 [4] S7-300 CPUs with integr. PROFIBUS interface S7-300 with CP 342-5 S7-400 CPUs with integr. PROFIBUS interface S7-400 with CP 443-5 or IM 467 WinAC Basis (V3.0 and higher) WinAC RTX	CP 5512 [2] CP 5611 A2 [2] CP 5613 A2 CP 5614 A2
SIMATIC S7 via Ethernet (TCP/IP)	
S7-200 with CP 243-1 S7-300 with CP 343-1 S7-400 with CP 443-1 WinAC Basis (V3.0 and higher) WinAC RTX	CP 1612 [7] CP 1613 A2
SIMATIC S7 via integrated interface	
WinAC Basis (V2.0 and higher) WinAC RTX	Internal system interface
SIMATIC 505 NITP	
SIMATIC 500/505 RS 232/RS 422	COM1/COM2
SIMATIC 505 via PROFIBUS DP	
SIMATIC 545/555 with CP 5434	CP 5512 [2] CP 5611 A2 [2]

Protocol	PC interfaces
SIMOTION [8]	
SINUMERIK [9]	
PLCs from other manufacturers	
Allen Bradley (DF1/DH485)	COM1/COM2
Allen Bradley (Ethernet IP)	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 RT is passive (DP slave); the function block required for the link is included in the scope of delivery of WinCC flexible
2) For Panel PC 477/677/877 via internal MPI interface
3) Only point-to-point to S7-200; no configuration download, operating systems: Windows 2000/XP; Order number: 6ES7 901-3CB30-0AX0
4) Constraint with regard to baud rate for S7-200; see Catalog ST 70
5) WinCC flexible RT is active (master); 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 included in scope of delivery, "WinCC flexible/OPC Server for WinCC flexible Runtime" required for OPC Server
11) "WinCC flexible/Sm@rtAccess for WinCC flexible Runtime" options required
12) OPC and HTTP communication are additive, i.e. can be used in conjunction with the PLC links listed above For information about SIMATIC Panels that support OPC/http communication, see the overview under "System interfaces".
13) Via PC cable with integrated level converter RS 232/TTY; Order No.: 6ES5 734-1BD20

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

Application note

In conjunction 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"

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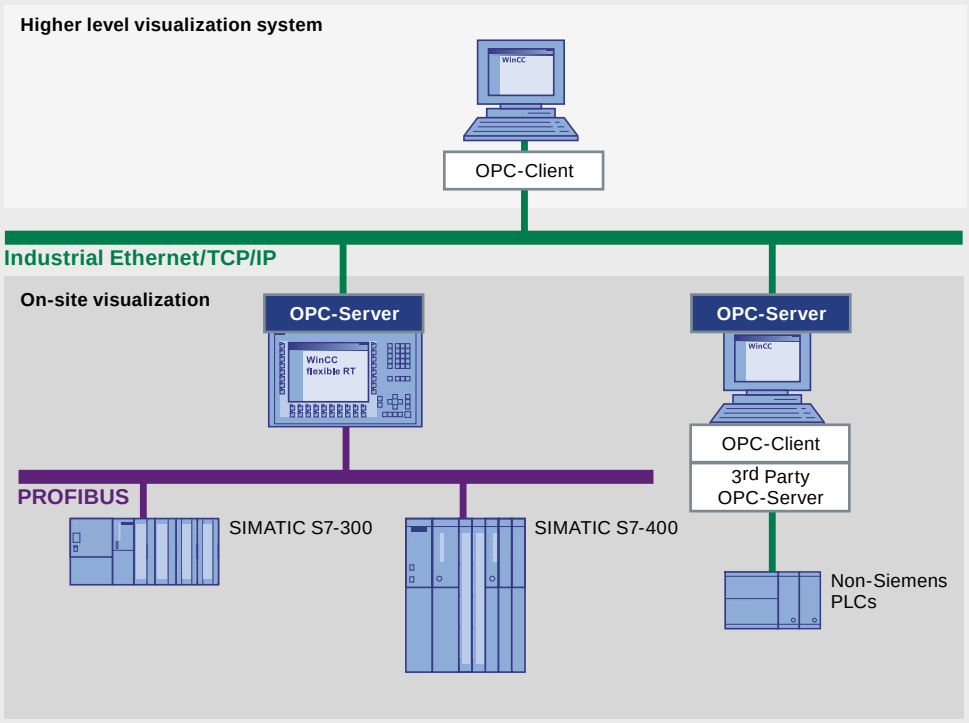
Integration (continued)



SIMATIC WinCC flexible Runtime application example

Technical specifications

Type	SIMATIC WinCC flexible Runtime
	The specifications are maximum values
Displays	500
• Fields per screen	400
• Variables per screen	400
• Static text	30000
• Graphics objects	2000
• Complex objects per display (e.g. bars)	40
• Trends	800
• Graphics lists [1]	500
• Text lists [1]	500
• Number of entries in symbol tables	3500
Variables	2048 [3]
Messages bit-triggered / analog	4000 / 500
• Message text (no. of characters)	80
• Number of process values per message	8
• Size of message buffer	1024
• Pending message events	500
Archives [4]	100
• Archivable data	Process values (max. 100), messages
• Max. number of entries per archive (incl. sequence archive)	500000
• Archive types	Short-term archive, sequence archive (max. 400 per archive)
• Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interface to ODBC database (database not included in scope of delivery)

Type	SIMATIC WinCC flexible Runtime
Recipes [4]	1000
• Elements per recipe	2000 [3]
• Data records per recipe	5000 [2]
Password protection	
• User rights	32
• Number of user groups	10
Visual Basic scripts	200
Online languages, max.	16
Communication	
SIMATIC S7 MPI interface/ PROFIBUS DP interface	
• Number of connectable stations, max.	Depending on the scope of the configuration (communication) from the point of view of WinCC flexible Runtime, as many as 8 connections are possible
SIMATIC S7 PPI interface	
• Number of connectable stations, max.	1 from viewpoint of WinCC flexible Runtime
SIMATIC S5 PROFIBUS DP interface	
• Number of connectable stations, max.	1 from viewpoint of WinCC flexible Runtime
Multi-protocol operation	Yes, OPC Client or SIMATIC HMI HTTP protocol are additive, i.e. can be used in conjunction with other PLC links

1) Together only 500 text and graphics lists
2) Dependent on memory medium used
3) Dependent on number of licensed PowerTags
4) Options for SIMATIC WinCC flexible Runtime

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SIMATIC WinCC flexible RT

Ordering data

		Order No.
SIMATIC WinCC flexible 2007 Runtime		
for PC systems; incl. SW for PC systems options [1] Single license, on CD-ROM incl. licensing, for:		
• 128 PowerTags (RT 128)	D	**6AV6 613-1BA51-2CA0**
• 512 PowerTags (RT 512)	D	**6AV6 613-1DA51-2CA0**
• 2048 PowerTags (RT 2048)	D	**6AV6 613-1FA51-2CA0**
Power Packs		
SIMATIC WinCC flexible 2007 Runtime		
Single license, only authorization for PowerTags, from		
• 128 to 512 PowerTags	D	**6AV6 613-4BD01-2AD0**
• 128 to 2048 PowerTags	D	**6AV6 613-4BF01-2AD0**
• 512 to 2048 PowerTags	D	**6AV6 613-4DF01-2AD0**
Upgrades		
SIMATIC ProTool/Pro RT to SIMATIC WinCC flexible 2007		
• ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2007 Runtime 128 PowerTags [2]	D	**6AV6 613-3BB51-2CE0**
• ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2007 Runtime 512 PowerTags [2]	D	**6AV6 613-3CD51-2CE0**
• ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2007 Runtime 512 PowerTags [2]	D	**6AV6 613-3DD51-2CE0**
• ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2007 Runtime 2048 PowerTags [2]	D	**6AV6 613-3FF51-2CE0**

		Order No.
Upgrades (continued)		
SIMATIC WinCC flexible 2004/2005 Runtime to SIMATIC WinCC flexible 2007 Runtime		
• SIMATIC WinCC flexible RT 2004/2005 to WinCC flexible RT 2007; PowerTags incl. Runtime options for:	D	**6AV6 613-1XA51-2CE0**
- WinCC flexible/Sm@rtAccess		
- Sm@rtService		
- OPC server		
- Logs		
- Recipes		
- ProAgent		
- Audit		
• Panel options:	D	**6AV6 618-7XX01-2AF0**
- SIMATIC WinCC flexible 2004/2005 to WinCC flexible 2007		
- SIMATIC Panel Options for WinCC flexible 2007		
- 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		
- WinCC flexible Audit for SIMATIC Panel		

D) Subject to export regulations: AL: N and ECCN: 5D992B1

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

2) each including a single license WinCC flexible/Archives and WinCC flexible/Recipes

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Bestelldaten

	Order No.
Documentation (must be ordered separately)	
User Manual WinCC flexible Runtime	
• German	**6AV6 691-1BA01-2AA0**
• English	**6AV6 691-1BA01-2AB0**
• French	**6AV6 691-1BA01-2AC0**
• Italian	**6AV6 691-1BA01-2AD0**
• Spanish	**6AV6 691-1BA01-2AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-2AA0**
• English	**6AV6 691-1CA01-2AB0**
• French	**6AV6 691-1CA01-2AC0**
• Italian	**6AV6 691-1CA01-2AD0**
• Spanish	**6AV6 691-1CA01-2AE0**
SIMATIC HMI Manual Collection B	**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	
Communication via Industrial Ethernet	
CP 1613-A2 A	**6GK1 161-3AA01**
PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	
SIMATIC NET IE S7-1613/2006	
Software for S7 and S5 communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, Windows 2003 Server, Windows 2000 Professional/Server; for CP 1613/CP 1613 A2 German/English	
• Single license	**6GK1 716-1CB64-3AA0**
• Upgrade package	**6GK1 716-1CB64-3AE0**

	Order No.
Communication via PROFIBUS	
CP 5613-A2	**6GK1 561-3AA01**
PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	
CP 5614-A2	**6GK1 561-4AA01**
PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	
SIMATIC NET PB S7-5613/2006	
Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional; Windows 2003 Server, 2000 Professional/Server, for CP 5613, CP 5614, EL/FO German/English	
• Single license	**6GK1 713-5CB64-3AA0**
• Upgrade package	**6GK1 713-5CB64-3AE0**
CP 5512	**6GK1 551-2AA00**
PCMCIA card (32-bit CARDBUS) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in WinCC flexible).	
CP 5611-A2 A	**6GK1 561-1AA01**
PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC flexible basic package)	
CP 5611 MPI A	**6GK1 561-1AM01**
Comprising CP 5611 A2 (32-bit) and MPI cable, 5 m	
PC/PPI adapter A	**6ES7 901-3CB30-0XA0**
RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 kbit/s	
PC/MPI adapter	**6ES7 972-0CA23-0XA0**
RS 232, 9-pin; male with RS 232/MPI converter	
PC adapter USB	**6ES7 972-0CB20-0XA0**
For use with Windows 2000/XP	

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

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? Then look up "customer-specific products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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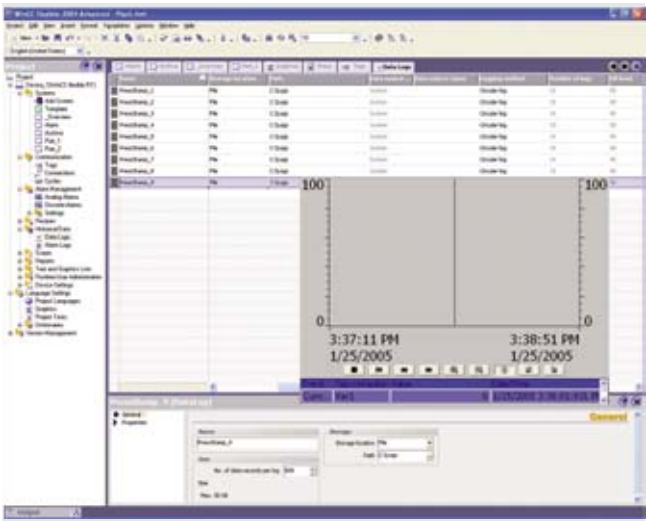
WinCC flexible/Archives

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 necessary for each operator station

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, manual or process-controlled relocation of process values and messages to the long-term archive
- Relocated data read in during runtime, and selective analysis using WinCC flexible Runtime
  - Presentation and evaluation of archived process values using a configurable trend display. Reading the values is supported by a read line.
  - Presentation and evaluation of archived messages using a configurable message display.
  - Convenient navigation in the archives
- External evaluation of the archives through standard Microsoft tools
- Different types of archive are supported: sequence archives and short-term archives
- Archiving of process values and messages on external archiving media supported by Windows
  - CSV files
  - ODBC databases (e.g. MS-Access)
- Powerful standard functions permit convenient and flexible use of the archives

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Technical specifications

Type	WinCC flexible /Archives
	The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Archives	100
• Archivable data	Process values, messages
• Cyclical trigger for archiving process values (variables)	1 s
• Max. number of entries per archive (incl. sequence archive)	500.000 1)
• Archive types	• Circulating archive • Sequence archive (max. 400 per archive)
• Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interface to ODBC database (database not included in scope of delivery)

1) Dependent on memory medium used

Bestelldaten

	Order No.
WinCC flexible /Archives for WinCC flexible 2007 Runtime 1) Single license, license key only	**6AV6 618-7ED01-2AB0**
WinCC flexible/ Archives+Recipes for WinCC flexible 2007 Runtime 1) Single license for each option, license key only	**6AV6 618-7GD01-2AB0**

1) One license is required for each operator station. A license is not required for the engineering system for configuring the runtime option.

More information

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 the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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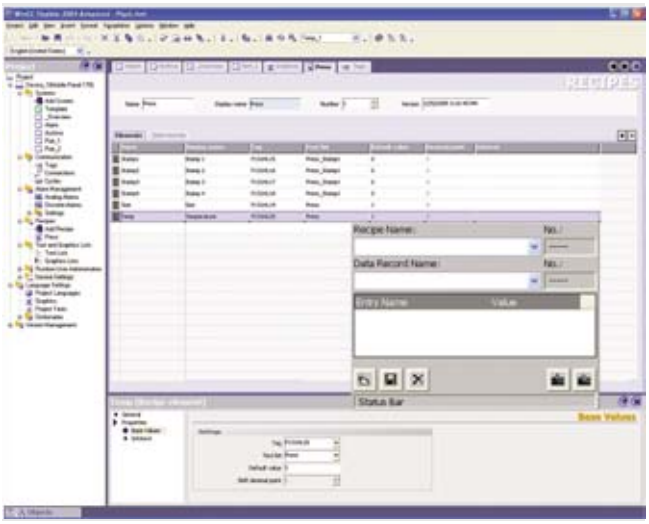
WinCC flexible/Recipes

Overview



- Option for SIMATIC WinCC flexible Runtime for managing data sets in recipes that contain related machine or production data
- The data of a data set can be transferred, for example, from the operator panel to the PLC to switch production to a different product version
- One license is necessary for each operator station

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.

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Technical specifications

Type	WinCC flexible /Recipes
	The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Recipes	1000
• Entries per recipe	2000 1)
• Data records per recipe	5000 2)
• User data length in bytes per data record	8000 KB 2)

1) Dependent on number of licensed PowerTags
2) Dependent on memory medium used

Ordering data

	Order No.
WinCC flexible /Recipes for WinCC flexible 2007 Runtime 1) Single license, license key only	**6AV6 618-7FD01-2AB0**
WinCC flexible/ Archives+Recipes for WinCC flexible 2007 Runtime 1) Single license for each option, license key only	**6AV6 618-7GD01-2AB0**

1) One license is required for each operator station. A license is not required for the engineering system for configuring the runtime option.

More information

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 the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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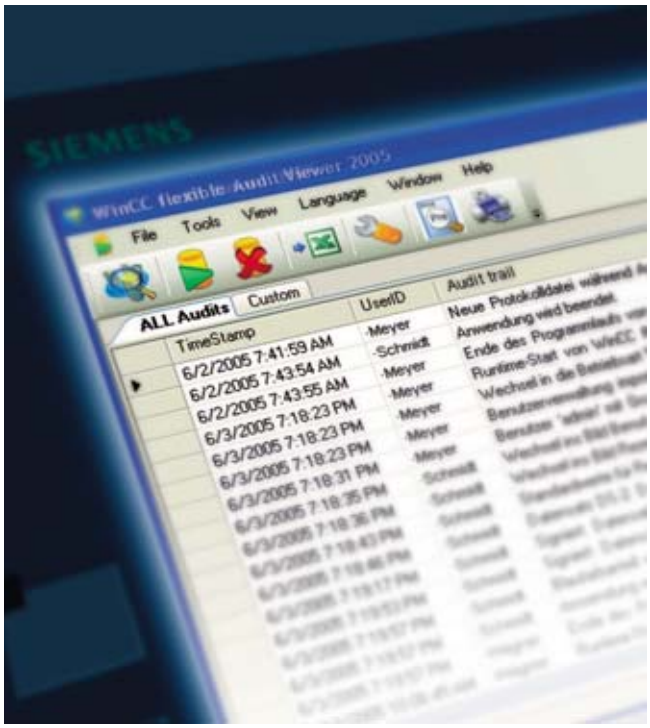
WinCC flexible /Audit

Overview



- Option for SIMATIC WinCC flexible Runtime as well as SIMATIC Panels for recording operations in an audit trail, and electronic signature
- An easy-to-use configuration included as standard in WinCC flexible 2007 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 ChangeControl option supports the user with plant validation.
- Available for the following SIMATIC HMI systems: TP/OP270, TP/OP277, MP 270B, MP 277, MP 370, MP 377, WinCC flexible Runtime
- A runtime license is required for every operator control unit (Panel/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.
- Restrictions:
  - WinCC flexible/Audit cannot be used in combination with Asiatic character sets on panels.

1) CSV Comma separated Values
2) The FDA (Food and Drug Administration) is the American public health body;
3) 21 CFR Part 11- law on plant validation

Technical specifications

	WinCC flexible /Audit
Archive for Audit Trail use on the Panel	• Plug-in flash memory card on the panel • In the higher-level PC (memory medium) connected to the panel via Ethernet
Archive for Audit Trail use of WinCC flexible Runtime	On the PC (storage medium)
Execution platform	
• SIMATIC Panels	Mobile Panel 277, TP/OP 270, TP/OP 277
• SIMATIC Multi Panels	MP 270B, MP 277, MP 370, MP 377
• PCs	SIMATIC WinCC flexible Runtime

Ordering data

	Order No.
WinCC flexible/Audit for SIMATIC Panel Single license, license key only	**6AV6 618-7HB01-2AB0**
WinCC flexible/Audit for WinCC flexible RT 2007 Single license, license key only	**6AV6 618-7HD01-2AB0**

More information

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 the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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Overview

- Option for connecting SIMATIC WinCC flexible Runtime and SIMATIC Panels to central user administration.
- The option SIMATIC Logon for WinCC flexible enables user administration on a central computer for one or more WinCC flexible Runtime and SIMATIC Panels that are connected on a network.
- Every user log-on or log-off on e.g. SIMATIC Panel is passed on over the network to the central computer with SIMATIC Logon and is evaluated there for whether the user is configured in the central user administration and has the respective user rights.
- Licensing: The SIMATIC Logon (basic license) option and SIMATIC Logon Remote Access (3-pack license) for WinCC flexible authorize the user to connect 4 WinCC flexible devices to the central user administration.
- Several SIMATIC Logon Remote Access (3-pack as well as 10-pack) licenses can be installed on the central station with the central user administration in order to increase the number of connectable WinCC flexible stations.
- ·The option SIMATIC Logon for WinCC flexible in combination with the Audit and ChangeControl option supports the user in meeting the requirements in accordance with FDA 21 CFR Part 11 and EU178.

Benefits

- The plant operator configures all the users of his respective operator, maintenance and service personnel for all machines in the system (or systems) centrally. The configuration of users on each individual machine with the respective travel times is no longer required.
- Thus all password rules defined in the central station with SIMATIC Logon using Windows also apply for all WinCC flexible stations (Panels and PCs)

Function

- The option SIMATIC Logon (SL) provides a central user administration for several WinCC flexible devices.
- SL is installed on a central station, on which the respective WinCC flexible stations (PCs with WinCC flexible Runtime or/and SIMATIC Panel as of class 270 and higher) are connected through an Ethernet network.
- In the WinCC flexible station, the user administration of WinCC flexible indicates which user groups exist with which user rights and on which central station the central user administration will be stored with user groups of the same name. Every user defined in a user group of the same name on the central station has access to the connected WinCC flexible stations.
- If the network fails between the central station with SIMATIC Logon and WinCC flexible station, the operation is handled through a local, predefined emergency user.
- The password aging and the password regulations for the structure of a password are defined according to the configuration on the central station and then also apply for all decentrally connected WinCC flexible stations or the respective users.
- Several SIMATIC Logon Remote Access Licenses can be loaded on a central station which increases the number of WinCC flexible stations that can be connected to the central user administration. Examples: Two 10-pack licenses of SIMATIC Logon for WinCC flexible are added for connecting 20 WinCC flexible stations to the central user administration.

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WinCC flexible /SIMATIC Logon

Technical specifications

	SIMATIC Logon for WinCC flexible
Licenses	• The licenses are **not** stored on the WinCC flexible station, but on the central PC with SIMATIC Logon The licenses can be loaded multiple times onto the central PC with SIMATIC Logon. The number of connections of WinCC flexible Panel or PCs is increased accordingly. Example: 2x 10-pack licenses permit the connection of 20 WinCC flexible devices (Panels or PCs).
Execution platform	
• SIMATIC Panels	Mobile Panel 277, TP/OP 270, TP/OP 277
• SIMATIC Multi Panels	MP 270B, MP 277, MP 370 and MP 377
• PCs	SIMATIC WinCC flexible Runtime

Ordering data

	Order No.
SIMATIC Logon Remote Access (3 clients) for WinCC flexible 3-pack license (e.g. for connecting 3 SIMATIC Panels)	**6ES7 658-7BA00-2YA0**
SIMATIC Logon Remote Access (10 clients) for WinCC flexible 10-pack license (e.g. for connecting 10 SIMATIC Panels)	**6ES7 658-7BB00-2YA**
SIMATIC Logon V1.4.1 Basic license (e.g. for connecting one SIMATIC Panel)	**6ES7 658-7BX41-2YA0**

More information

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 the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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Overview

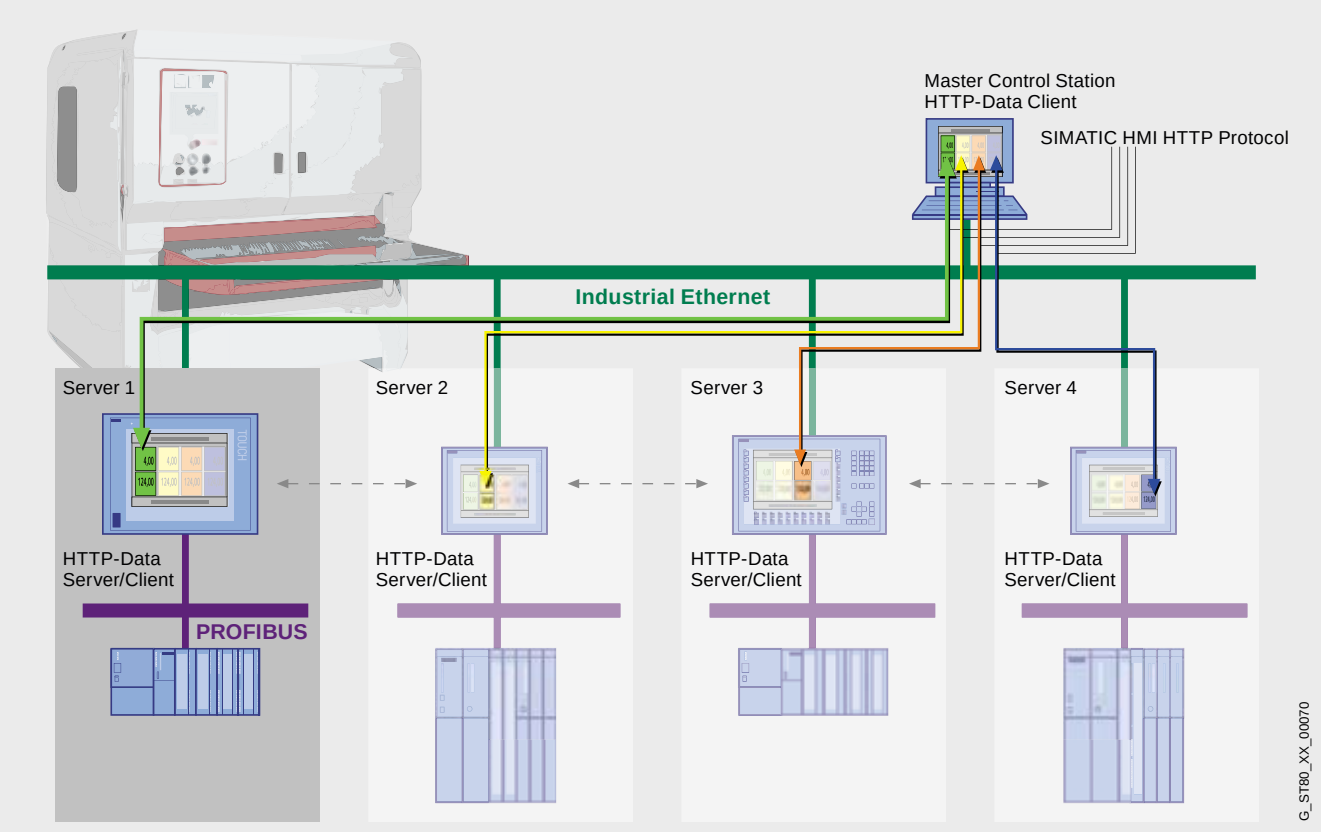
- Option for SIMATIC WinCC flexible Runtime plus SIMATIC Panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - Mobile Panel 177 PN, Mobile Panel 277
  - TP 177B PN/DP, OP 177B PN/DP
  - TP 270, TP 277, OP 270, OP 277
  - MP 270B, MP 277, 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.
- One license is required for each operator station.

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 HMI systems at machine level as data servers for higher-level automation components such as control systems or office systems. For example, process values from various machines can be output in a master display.
- Control and monitoring of spatially distributed machines with several operator stations by just one operator
- Operator control and monitoring of HMI systems at machine level from a central station (e.g. the master station of a production line, or from a control room)



Communication between HMI systems using Industrial Ethernet:
use of HMI systems at machine level as data servers for higher-level automation components

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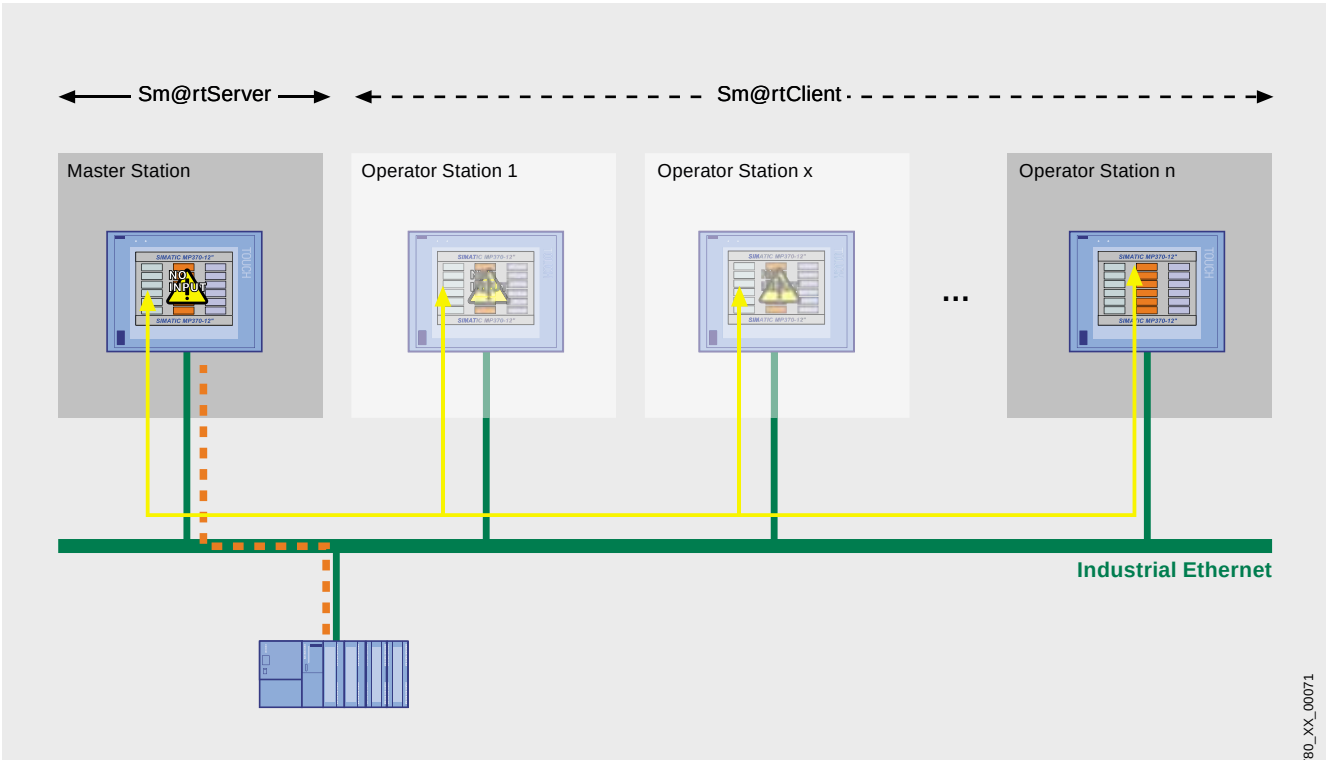
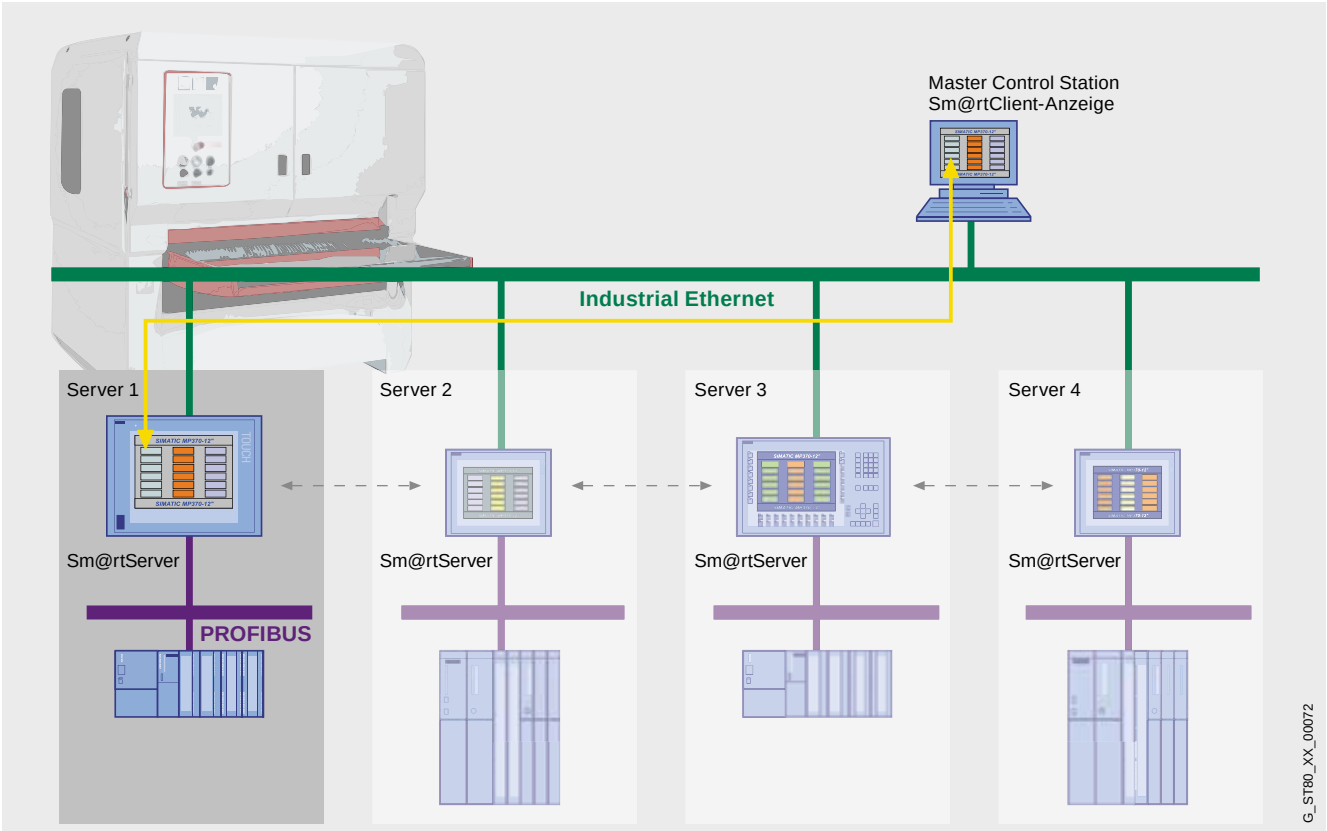
Application (continued)



Application of Sm@rtClient concept: coordinated operation of several operator stations



Application of Sm@rtClient display: operator control and monitoring of HMI systems used at machine level from a central station

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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.

Technical specifications

Type	WinCC flexible /Sm@rtAccess
	The specifications are maximum values
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 270B, MP 277, MP 370, MP 377
• PCs	WinCC flexible Runtime
Sm@rtAccess SIMATIC HMI HTTP protocol	
Number of connections for one client	
• for Panels/Multi Panels	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, Mobile Panel 277, OP 177B PN/DP, TP 177B PN/DP, OP 270/TP 270/MP 270B, MP277 as Sm@rtServer	3 for 6“ devices 2 for 8" and 10“ devices
• MP 370/MP 377 as Sm@rtServer	3 for 12“ devices 2 for 15“ devices
• MP 377	1 for 19" devices
• for WinCC flexible Runtime	5
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. In the context of the MP 277 8" and 10" devices, Mobile Panel 277 as well as the MP 377, parallel operation of the runtime options ProAgent, Sm@rtAccess and Sm@rtService is also possible. Limitation: a maximum of 2 clients can be connected with a Sm@rtServer.

Ordering data

Ordering data	Order No.
WinCC flexible /Sm@rtAccess for SIMATIC Panel [1)]	
Single license, license key only	**6AV6 618-7AB01-2AB0**
WinCC flexible/Sm@rtAccess for WinCC flexible 2007 Runtime [1)]	
Single license, license key only	**6AV6 618-7AD01-2AB0**

1) A license is required for each operator station. The engineering system does not require a license for configuring the runtime option.

More information

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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WinCC flexible/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 270B, MP 277, MP 370, MP 377
  - WinCC flexible Runtime
- One license is required for each operator station but not for the Remote Service PC.

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 e-mails to experts for fast elimination of faults

Function

Remote operation and monitoring of SIMATIC HMI systems over Industrial Ethernet or over Intranet/Internet

For access to an HMI system, Microsoft Internet Explorer V6.0 SP1 and higher is all that is required.

Integrated web server to provide standard HTML pages
The following functions can be accessed from the Homepage:

- Remote operation of the HMI system over the Intranet/Internet with the Internet Explorer
- Starting and stopping HMI runtime for maintenance purposes
- Remote access to recipe data sets, passwords and information specific to the HMI system
- Access to the files of the HMI system using the file explorer
- Downloading configuration data from the Intranet/Internet
- Supplement with own HTML pages

Sending e-mails to the maintenance personnel over SMTP server (Simple Mail Transfer Protocol)

- Events that trigger sending of an e-mail:
  - Message of a message class
  - Configurable standard functions: changes in value of a variable, operation of a function key, scripts, etc.
- Possible contents of an e-mail
  - Title
  - Message text with process variables
  - date/time
- Optional implementation of e-mail/text message gateways supports access to standard networks (external service provider is necessary)

Standard functions support convenient use of maintenance and service functions. With WinCC flexible, maintenance and service functions can be configured quickly and easily.

Password protection can be activated for access to the HMI system as an option. Different passwords can be configured for different functions.

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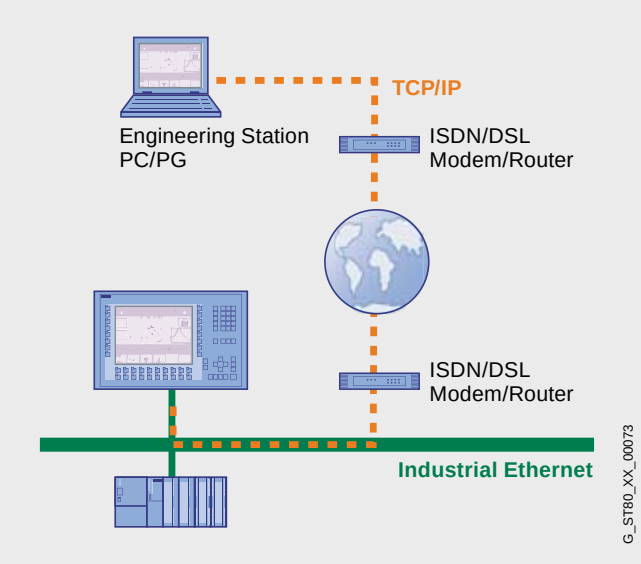
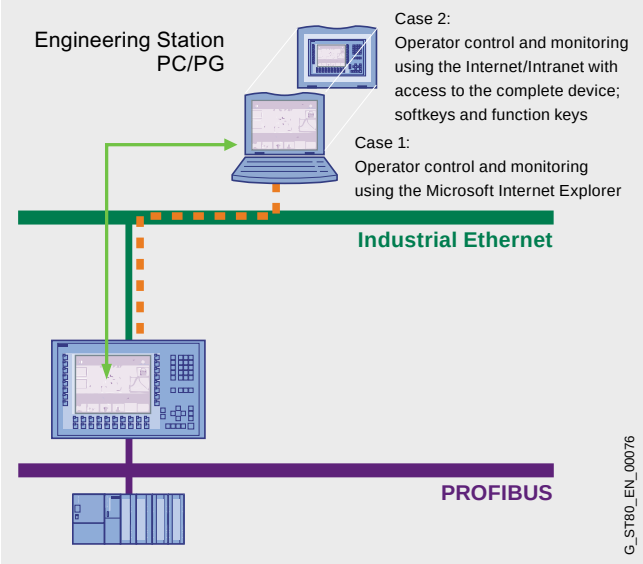
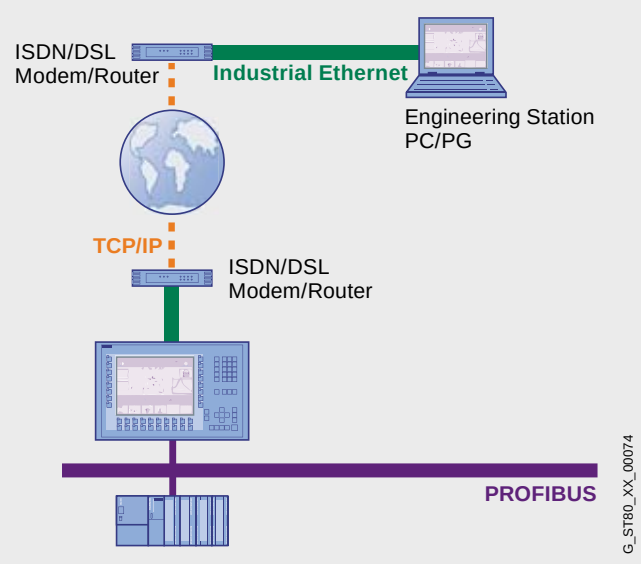
Function (continued)



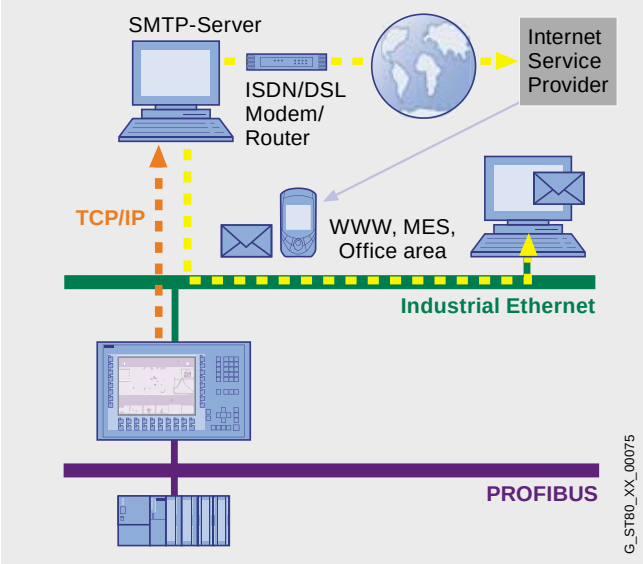
Remote operation and monitoring of SIMATIC HMI systems over Industrial Ethernet or over Intranet/Internet



Remote operation and monitoring of SIMATIC HMI systems over Industrial Ethernet or over Intranet/Internet



Remote operation and monitoring of SIMATIC HMI systems over Industrial Ethernet or over Intranet/Internet



Sending e-mails to the maintenance personnel over SMTP server (Simple Mail Transfer Protocol)

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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 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 e-mails	• via SMTP server • Subject, message texts with 250 characters of text per e-mail; 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. In the context of the MP 277 8" and 10" devices, Mobile Panel 277 as well as the MP 377, parallel operation of the runtime options ProAgent, Sm@rtAccess and Sm@rtService is also possible. Limitation: a maximum of 2 clients can be connected with a Sm@rtServer.

Ordering data

	Order No.
WinCC flexible /Sm@rtService for SIMATIC Panels [1]	
Single license, license key only	**6AV6 618-7BB01-2AB0**
WinCC flexible /Sm@rtService for WinCC flexible Runtime 2007 [1]	
Single license, license key only	**6AV6 618-7BD01-2AB0**

1) One license is required for each operator station. The remote service PC and engineering system do not require a license for configuring the runtime option.

More information

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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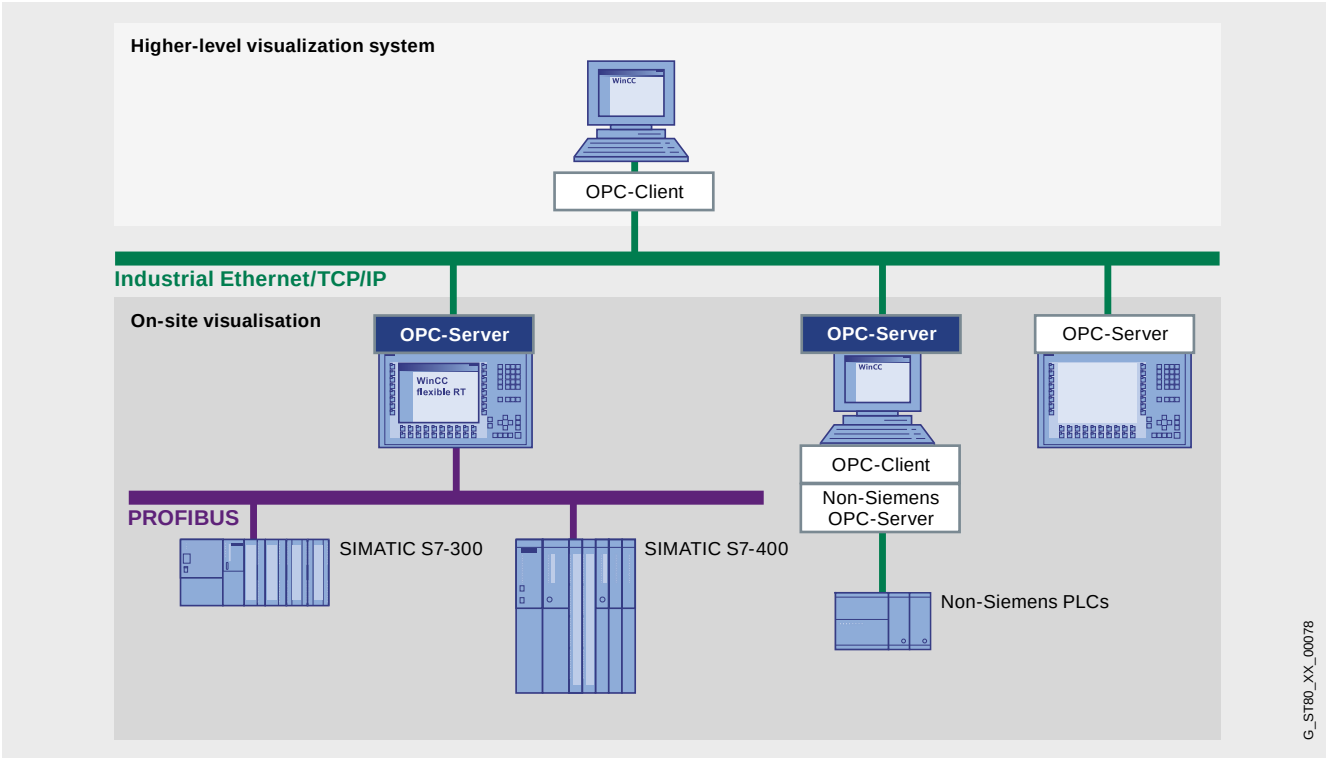
Overview



- Option for SIMATIC WinCC flexible Runtime 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.

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WinCC flexible/OPC Server

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

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 [1]	
Single license, license key only	**6AV6 618-7CC01-2AB0**
WinCC flexible /OPC-Server for WinCC flexible Runtime 2007 [1]	
Single license, license key only	**6AV6 618-7CD01-2AB0**

1) A license is required for each operator station.
The engineering system does not require a license for configuring the runtime option.

More information

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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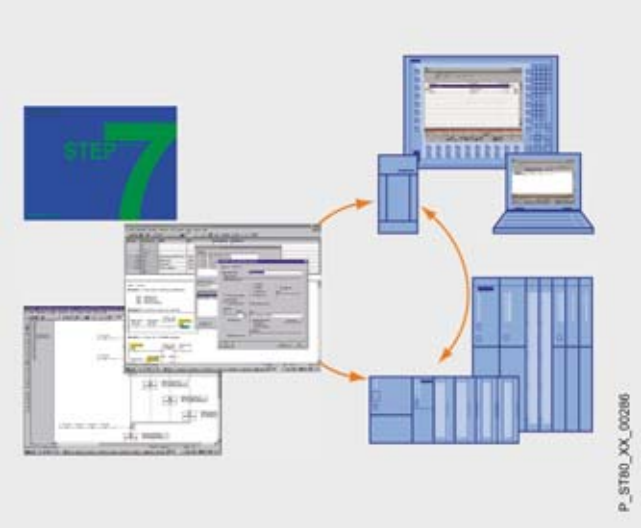
Overview



- Targeted and rapid process diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with regard to memory and program execution time

Note:
For further information, refer to
"SIMATIC ProAgent Process Diagnostics Software".

Ordering data

	Order No.
WinCC flexible /ProAgent	
Software option package for process diagnostics based on S7-PDIAG V5.3 and higher, S7-HighGraph V5.3 and higher; S7-GRAPH V5.3 and higher; functional enhancement for SIMATIC WinCC flexible; electronic documentation in English, French, German, Italian and Spanish	
• **WinCC flexible/ProAgent for SIMATIC Panels** [1] Runtime license (single license) executable on: TP/OP 270, TP/OP277, MP 270B, MP277, and MP 370, MP 377	**6AV6 618-7DB01-2AB0**
• **WinCC flexible/ProAgent for WinCC flexible Runtime 2007** [1] Runtime license (single license)	**6AV6 618-7DD01-2AB0**
Documentation (must be ordered separately)	
SIMATIC HMI Manual Collection B 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**

B) Subject to export regulations: AL: N and ECCN: EAR99S

1) One license is required for each operator station.
The engineering system does not require a license for configuring the runtime option.

More information

Note

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about the Open Platform Program for the creation of user-specific functions and controls for WinCC flexible.

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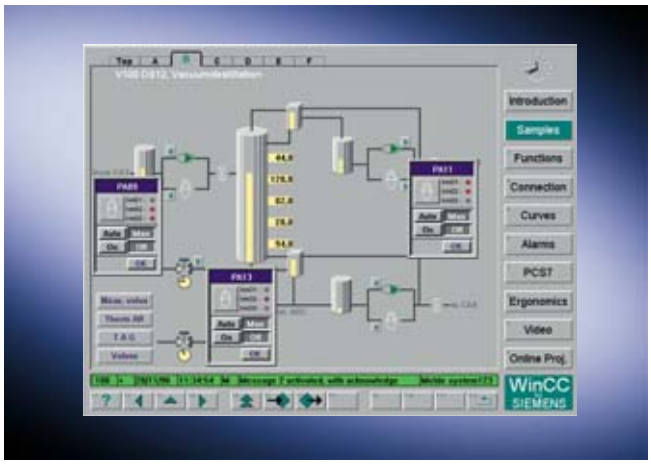
SIMATIC WinCC

Overview



- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and plants in all sectors - with 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 A&D) and WinCC add-ons have been developed (by Siemens-internal and external partners).
- Current versions:
  - **SIMATIC WinCC V6.2:**
    Runs under Windows XP Professional/Windows 2003 Server/ Windows 2003 Server R2 and Windows 2000 Professional

Benefits

- For universal applications
  - Solutions for all sectors
  - Multilingual for worldwide use
  - Integration in all automation solutions
- All HMI functions on board
  - User administration
  - Operator control and monitoring
  - Reporting, acknowledging and archiving of results
  - Acquisition, sealing and archiving of measured values (incl. backup)
  - Logging and documentation of process data and configuration data
- Configurable easily and efficiently
  - Configuration wizards save time for more important work
  - In the picture thanks to cross-reference lists and screen properties display
  - Configuration of multilingual applications
  - Configuring tool for configuring bulk data
- System-wide scalability
  - Expandable from single-user to client-server configuration
  - Increased availability through redundant server
  - Process visualization over the Web with the WinCC Web-Navigator
- Open standards for easy integration
  - Powerful real-time database MS SQL Server 2005
  - Open for application modules with ActiveX Controls
  - Visual Basic for Applications for individual expansions
  - OLE for Process Control for communication between products of different manufacturers
- Process visualization with Plant Intelligence
  - Integrated, high-performance Historian based on Microsoft SQL Server 2005
  - Integrated evaluation functions for online analysis (statistical process control)
  - Production optimization with the help of various options
- Expansion through options and add-ons
  - Options for scalable configurations
  - Options to increase availability
  - Options for IT & Business Integration
  - Options for SCADA expansions
  - Options for validation according to FDA 21 CFR Part 11
- Part of Totally Integrated Automation
  - Direct access to configuration of variables and alarms in the SIMATIC PLC
  - Integrated diagnostic functions for increasing productivity

Application

SIMATIC WinCC is designed for visualizing and operating processes, production flows, machines and plants. With its powerful process interfaces (to the SIMATIC range in particular) and secure data archiving, WinCC provides fault-tolerant solutions for instrumentation and control.

The non-sector-specific basic system can be implemented universally in all automation applications. Sector-specific solutions can be implemented, for example, using WinCC options (e.g. FDA options for the pharmaceuticals industry) and sector-specific add-ons (e.g. for water processing).

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Design

SIMATIC WinCC is available as a complete package and as a runtime package with 128, 256,1024, 8192, 65536 PowerTags. PowerTags are data points that are connected to PLCs or other data sources over a WinCC channel. Up to 32 alarms can be obtained from one data point. Internal variables are also available without coupling as additional system performance. WinCC V6 also contains 512 archive variables. For larger quantities, separate archive licenses can be obtained.

Licenses for a multi-user configuration

The system software must be installed on the server with the necessary number of PowerTags as well as the WinCC/Server option. An RT128 license is sufficient for the clients in the basic version. An RC128 license is required for configuration on clients.

Function

The powerful configuration functions of SIMATIC WinCC contribute to a reduced engineering and training overhead and lead to a more flexible use of personnel and greater operational reliability. If you are familiar with Microsoft Windows, you will be able to master WinCC Explorer, WinCC's central control point.

In combination with other SIMATIC components, the system makes use of additional functions such as process diagnostics and maintenance. All SIMATIC engineering tools work together when functions are configured.

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. WinCC station extensions are also possible for control tasks with a minimum amount of engineering overhead.

WinCC editors	Task or configurable runtime functionality
WinCC Explorer	Centralized project management for fast 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	Report and log system for time- and event-controlled documentation of messages, operator interventions and current process data in the form of user reports or project documentation in a freely selectable 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 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 interfaces	For individual access to WinCC data and functions and for integration in user programs with VBA, VB Script, C-API (ODK), C-Script (ANSI-C)

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Integration

Integration in enterprise-wide solutions (IT and Business Integration)

WinCC is based on Microsoft technologies, ensuring maximum openness and scope for integration. ActiveX controls support technology- and sector-specific expansions. Even cross-vendor communication is made easy. Why? Because WinCC is OPC-compliant and can, therefore, be used as an OPC client and server. Furthermore, in addition to access to current process values, it also supports standards such as OPC HDA (Historical Data Access) and OPC Alarm & Events. Other important features include: Visual Basic for Applications (VBA) for user-specific expansions to the WinCC Graphics Designer and Visual Basic Scripting (VBS) as an easy-to-learn, open runtime language. Professional application developers can also use ANSI-C on request. What's more, the ODK (Open Development Kit) makes access to APIs really easy.

The WinCC V6.2 basic system features an integrated powerful and scalable Historian function based on the Microsoft SQL Server 2005. The possibilities thereby afforded to users are endless: From high-performance archiving of current process data through long-term archiving with high data compression and beyond to a central information hub in the form of an enterprise-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, open interfaces, special options (Connectivity Pack , IndustrialData-Bridge, Client Access licenses) provide the basis for effective IT and Business Integration.

Integration into automation solutions

WinCC is an open process visualization system and supports the connection of all types of PLC.

Released communications software

Only communications software with the versions listed (or higher) can be used. SIMATIC NET upgrades are available for upgrading older product versions.

Number of connectable PLCs

The number of PLCs that can be connected via Industrial Ethernet CP 1613 with a maximum message-frame length of 512 KB is determined as follows:

Type of connection	Number of stations
SIMATIC S5 Ethernet Layer 4 + TCP/IP	Up to 60
SIMATIC S5 Ethernet TF	Up to 60
SIMATIC S7 Protocol Suite	Up to 64
SIMATIC 505 Ethernet Layer 4 + TCP/IP	Up to 60

Up to 8 (with CP 5611) or up to 44 (CP 5613) PLCs can be connected via PROFIBUS. The use of Industrial Ethernet is recommended for approx. 10 PLCs and more.

Mixed operation with different PLCs

With their multiprotocol stack, CP 1613 and CP 5613 communications processors support the parallel operation of two protocols, e.g. for mixed operation of a variety of PLCs via a bus cable. WinCC supports the operation of two interface boards of the same type only in conjunction with the following channels: SIMATIC S5 Ethernet Layer 4 (2 x CP 1613), SIMATIC S7 Protocol Suite (2 x CP 1613, 2 x CP 5613) and PROFIBUS DP (4 x CP 5613; max. 122 slaves per CP 5613). In addition to communication via Industrial Ethernet CP 1613 or PROFIBUS CP 5613 one CP 5611 can be used for communication with SIMATIC S7 via MPI.

Client/server communication

Communication between the clients and server takes place on TCP/IP. We recommend setting up a separate PC LAN. For small projects with a correspondingly low volume of message frames, a SIMATIC NET Industrial Ethernet can be used for both process communication (WinCC/Server ↔ PLC) and for PC-PC communication (WinCC/Client ↔ WinCC/Server).

Communication redundancy

WinCC itself does not support redundant LAN interfaces. The S7-REDCONNECT software package is required for the redundant connection of PCs via 2 x Industrial Ethernet on SIMATIC S7. This connects the SIMATIC S7 with applications on the PC, e.g. SIMATIC WinCC. Pure communications redundancy can also be achieved by setting up optical rings (see Catalog IK PI).

Channel DLL PROFIBUS DP

In accordance with the PROFIBUS standard, there is always a fixed assignment between DP/slaves and a DP master, i.e., a second WinCC station (DP/master) cannot have access to the same PLCs (DP/slave). This means that redundant operation of two WinCC stations using the PROFIBUS-DP link is not possible.

Connection to non-Siemens PLCs:

OPC (OLE for Process Control) is recommended for the connection of non-Siemens PLCs.

For up-to-date instructions and information about OPC servers from all vendors, please visit:
http://www.opcfoundation.org/05_man.asp

WinCC supports the following standards:

- OPC Data Access V1.1
- OPC Data Access V2.05a
- OPC Data Access V3.0
- OPC XML Data Access V1.01 (Connectivity Pack)
- OPC HDA V1.2 (Connectivity Pack)
- OPC A&E V1.1 (Connectivity Pack)

Additional information is available in the Internet:

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

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Integration (continued)

Overview of interfaces

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 Ethernet TF	Channel DLL for S5-TF communication
SIMATIC S5 Programmer Port AS511	Channel DLL and driver for serial communication with S5 via AS511 protocol on programmer 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 on 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
Cross-vendor	
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 makes process data available for OPC clients
PROFIBUS FMS	Channel DLL for PROFIBUS FMS
PROFIBUS DP	Channel DLL for PROFIBUS DP

1) Application note:
The parallel use of the OPC client channel supports, 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.

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Integration (continued)

Components for communication between PG/PC and SIMATIC for WinCC V6.2

Industrial Ethernet	SIMATIC S5 Ethernet (TF)	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 TF Channel DLL for S5-TF communication	●						im Basispaket enthalten
SIMATIC S5 Ethernet Layer 4 Channel DLL for S5-Layer 4 communication + TCP/IP		●	●				im Basispaket enthalten
SIMATIC S7 Protocol Suite Channel DLL for S7 functions				●			im Basispaket enthalten
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication					●		im Basispaket enthalten
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication						●	im Basispaket enthalten
Communication components for OS/OP expansion							
CP 1612 PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)			●	●		●	**6GK1 161-2AA00**
SOFTNET-S7 2006 [2] Communication software for S7 functions (max. 64 connections) • for Windows 2000/XP/2003 Server			●	●			**6GK1 704-1CW64-3AA0**
SOFTNET-S7 Lean 2006 [2] [3] Communications software for S7 functions (max. 8 connections) • for Windows 2000/XP/2003 Server			●	●			**6GK1 704-1LW64-3AA0**
CP 1613 PCI card for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	●	●	●	●	●	●	**6GK1 161-3AA00**
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 2006 [2] Communication software for S7 functions and S5/505-Layer 4-communication with TCP/IP • for Windows 2000/XP/2003 Server		●	●	●	●		**6GK1 716-1CB64-3AA0**
TF-1613 2006 [2] Communication software for TF functions and S5/505-Layer 4-communication with TCP/IP • for Windows 2000/XP/2003 Server	●	●	●		●		**6GK1 716-1TB64-3AA0**

● System interface possible

1) Via any interface board with NDIS 3.0 interface; no separate communications software required
2) See order data for upgrade packages
3) SOFTNET-S7 Lean 2006 included in the scope of supply of WinCC V6.2

Additional information is available in the Internet:

http://www4.ad.siemens.de/view/cs/com/14627901

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Integration (continued)

Components for communication between PG/PC and SIMATIC for WinCC V6.2

PROFIBUS	SIMATIC S5 PROFIBUS FDL	SIMATIC S7 Protocol Suite	PROFIBUS DP	PROFIBUS FMS	Order No.
WinCC – Channel DLL					
SIMATIC S5 PROFIBUS FDL Channel DLL for S5-FDL	●				im Basispaket erhalten
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		●			im Basispaket erhalten
PROFIBUS DP Channel DLL for PROFIBUS DP			●		im Basispaket erhalten
PROFIBUS FMS Channel DLL for PROFIBUS FMS				●	im Basispaket erhalten
Communication components for OS/OP expansion					
CP 5611 A2 PCI card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		●			**6GK1 561-1AA01**
CP 5512 PCMCIA card (Cardbus 32-bit) for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		●			**6GK1 551-2AA00**
PC/MPI adapter RS 232, 9-pin; male with RS 232/MPI converter max. 19.2 kbit/s		●			**6ES7 972-0CA23-0XA0**
CP 5613 A2 PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	●	●	●	●	**6GK1 561-3AA01**
S7-5613 2006 [1] Communications software for S7 functions + FDL • for Windows 2000/XP/2003 Server	●	●			**6GK1 713-5CB64-3AA0**
DP-5613 2006 [1] Communication software for DP-Master + FDL • for Windows 2000/XP/2003 Server	●		●		**6GK1 713-5DB64-3AA0**
FMS-5613 2006 [1] Communication software for PROFIBUS-FMS + FDL • for Windows 2000/XP/2003 Server	●			●	**6GK1 713-5FB64-3AA0**

● System interface possible

1) Upgrade package

Additional information is available in the Internet under:

http://www4.ad.siemens.de/view/cs/com/14628484

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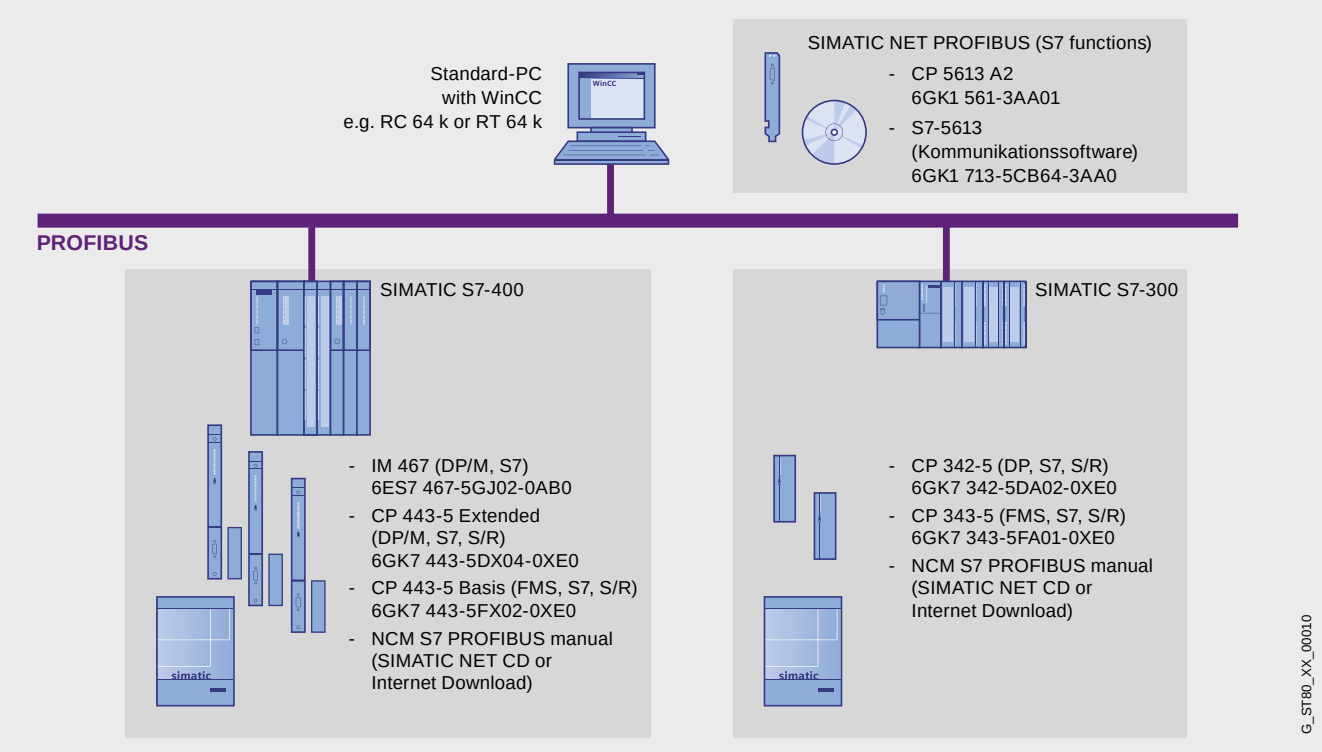
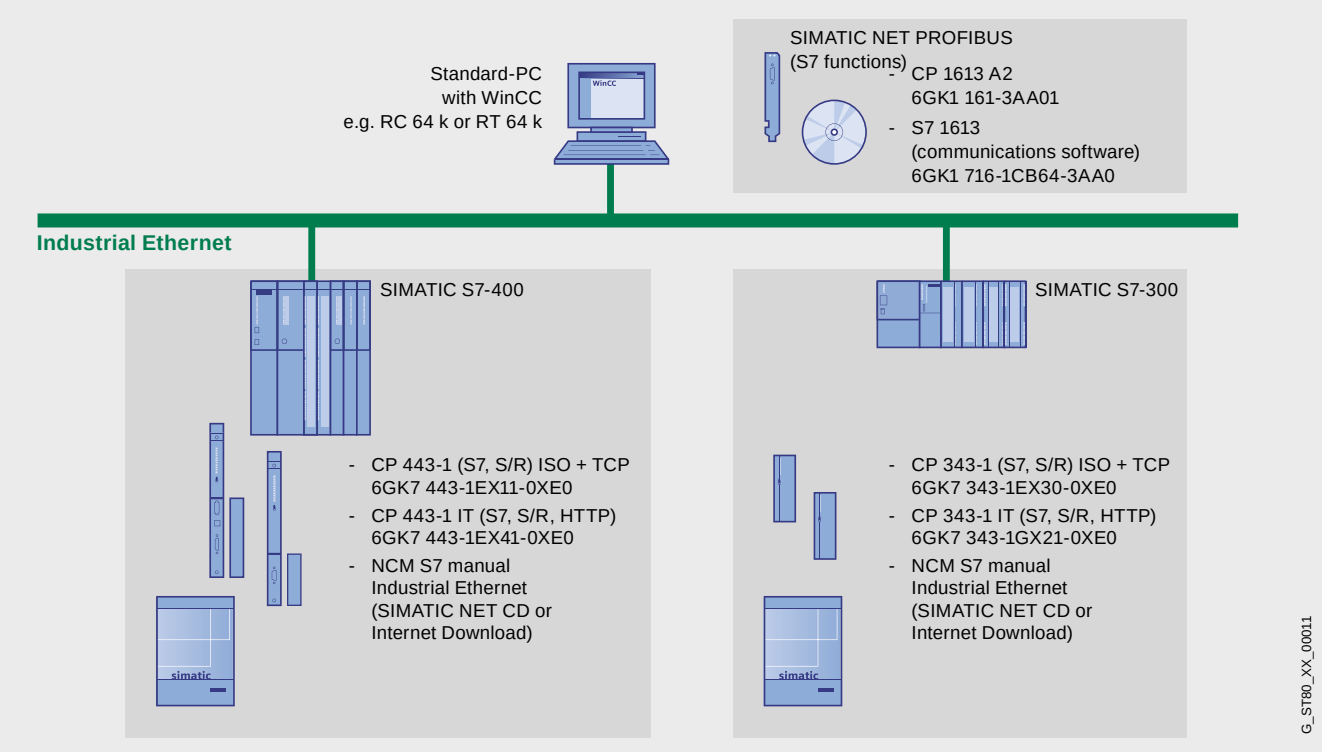
Integration (continued)

Communication examples



WinCC single-user system: PROFIBUS with S7 communication



WinCC single-user system: Industrial Ethernet with S7 communication

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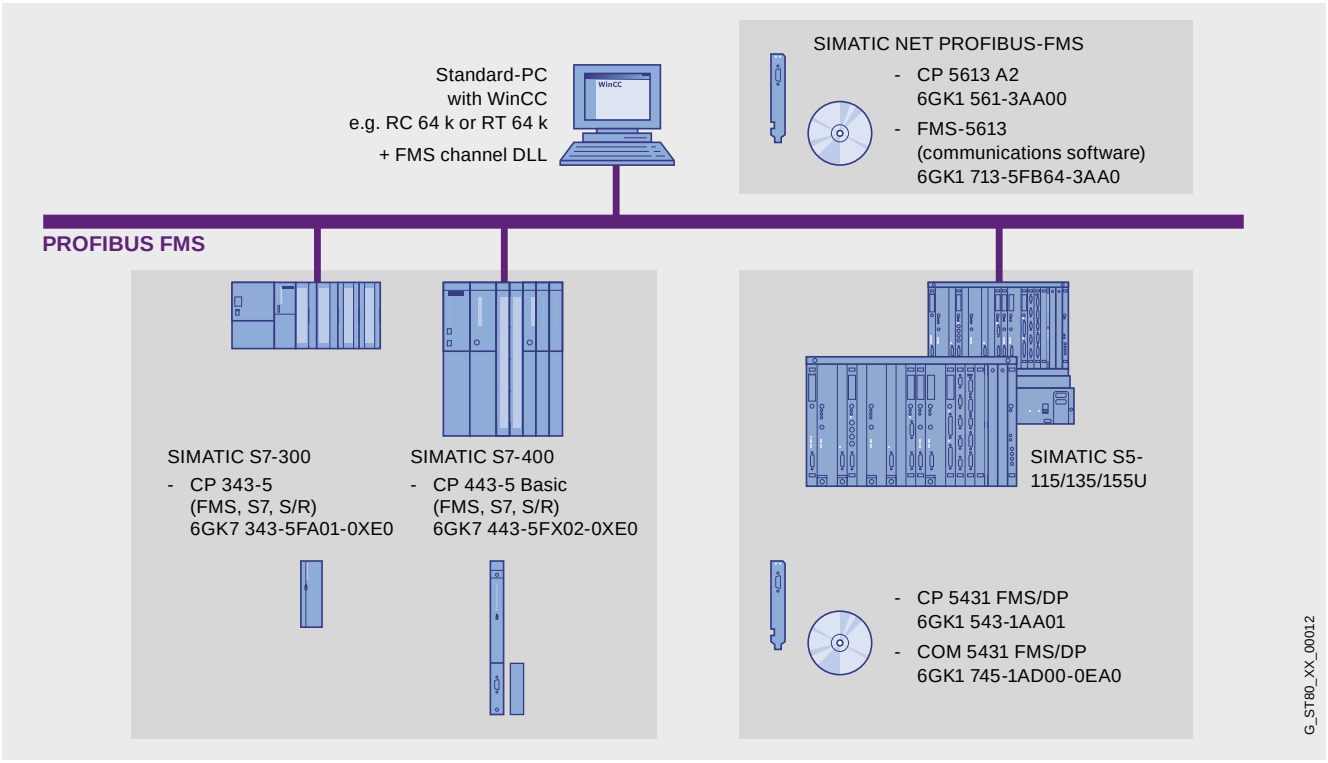
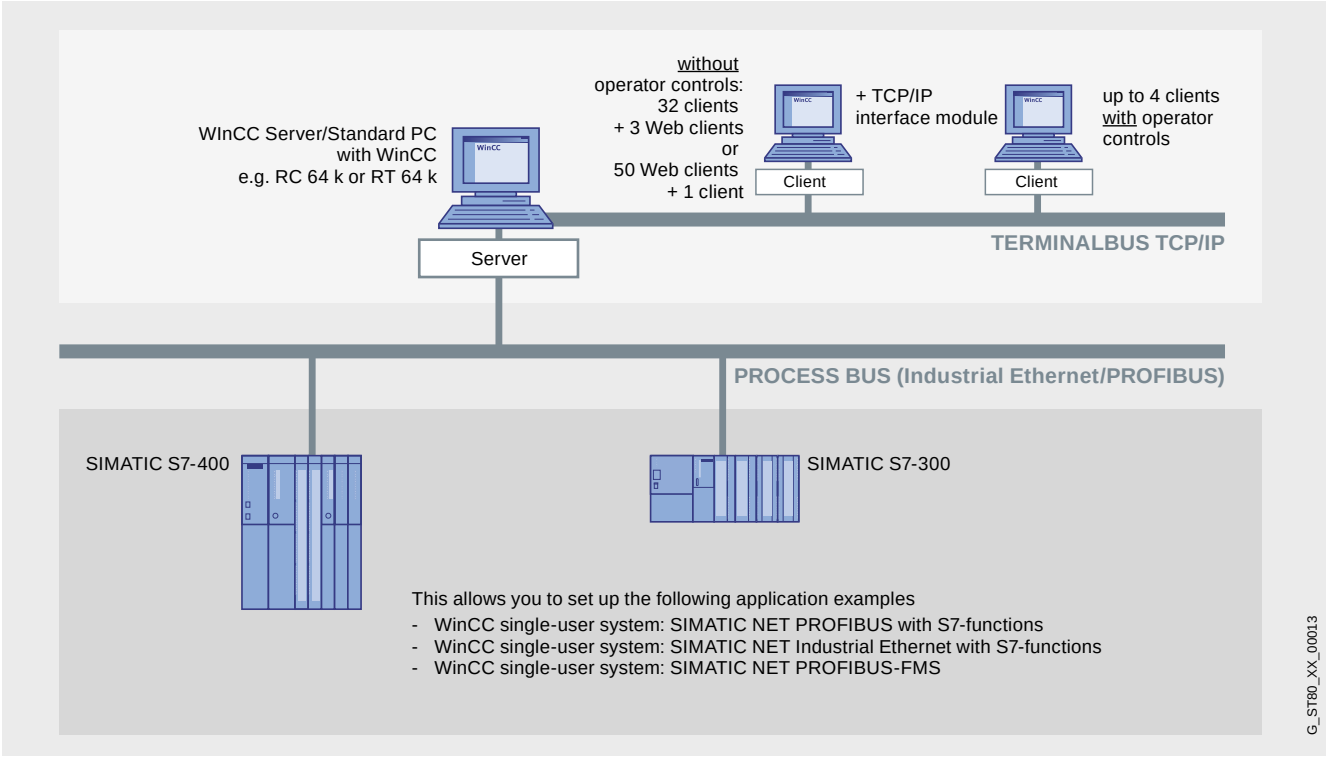
Integration (continued)



WinCC single-user system: PROFIBUS FMS



WinCC multi-user system with operator controllable server

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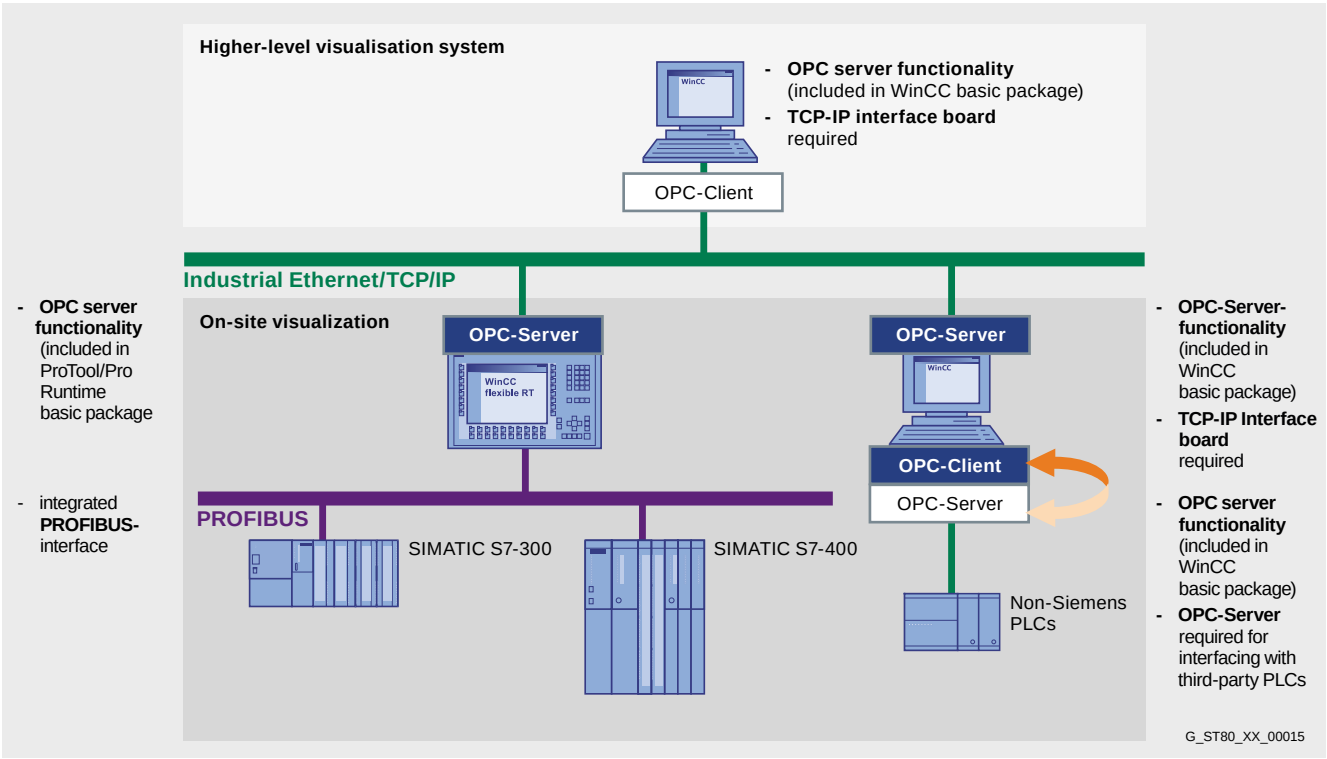
Integration (continued)



OPC link

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Technical specifications

Type	SIMATIC WinCC V6.2
Operating system	Windows XP Professional SP2, Windows 2000 Professional SP4, Windows Server 2003 SP1, Windows Server 2003 R2 WebClient/DataMonitor Client additionally: Windows XP SP2, Windows Server 2003 terminal services
PC hardware requirements	
Processor type [1]	
• Minimum	Single-user station/server: Pentium III, 1 GHz Central archive server: Pentium 4, 2 GHz Client: Pentium III, 600 MHz WebClient/DataMonitor Client: Pentium III, 300 MHz
• Recommended	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
RAM	
• Minimum	Single-user station: 512 MB, server: 1 GB Central archive server: 1 GB Client: 512 MB WebClient/DataMonitor Client: 256 MB
• Recommended	Single-user station: >= 1 GB, server: >1 GB Central archive server: ≥ 2 GB Client: 512 MB WebClient/DataMonitor Client: 512 MB
Graphics card	
• Minimum	SVGA (16 MB), 800 x 600
• Recommended	SXGA (32 MB), 1280 x 1024
Hard disk drive	
• Minimum	Single-user station/server: 20 GB Client: 5 GB WebClient/DataMonitor Client: 5 GB
• Recommended	Single-user station/server: 80 GB Client: 20 GB WebClient/DataMonitor Client: 10 GB
• Hard disk (free memory space for installation)	
- minimum	Server: 1.5 GB Client: 1 Gbyte
- recommended	Server: >10 GB Client: >1.5 GB
CD-ROM/DVD-ROM/diskette drive	for software installation

1) An AMD system with comparable performance can also be used

Type	SIMATIC WinCC V6.2
Functionality/Quantity framework	
Messages (number)	50.000
• Message text (number of characters)	10 x 256
• Alarm log	> 500,000 messages [1]
• Process values per message	10
• Continuous number of messages, max.	Central archive server: 100/sec Server/single-user station: 10/sec
• Burst of messages, max.	Server/single-user station: 2,000/10 sec 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/sec
User archive	
• Archives (recipes)	System-limited [3]
• Data records per user archive	65.536 [3]
• Fields per user archive	500 [3]
Graphics system	
• Number of screens	System-limited [1]
• Number of objects per screen	System-limited [1]
• Number of controllable fields per screen	System-limited [1]
Process variables	64 K [4]
Trends	
• Curve windows per image	25
• Curves per curve window	80
User administration	
• User groups	128
• Number of users	128
• Authorization groups	999
Configuration languages	5 European (Eng, Fre, Ger, Ita, Spa), 4 Asian (simpl.+trad. Chi/Kor/Jpn) [5]
Protocols	
• Message sequence reports (concurrent)	1 per server/single-user station
• Message archive reports (concurrent)	3
• User reports	System-limited [1]
• Report lines per group	66
• Variables per report	300 [6]
Multi-user station	
• 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 available memory space
2) Dependent on number of licensed archive variables
3) The sum of the number of fields and number of data sets must not exceed a value of 320,000
4) Dependent on number of licensed PowerTags
5) Current version V6.2
6) The number of variables per report is dependent on process communication performance

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Ordering data

	Order No.
SIMATIC WinCC system software V6.2	
Runtime packages on CD-ROM	
Language/script versions: DE/EN/FR/IT/ES; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC06-2AX0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD06-2AX0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE06-2AX0**
• 8192 PowerTags (RT 8192)	**6AV6 381-1BH06-2AX0**
• 65536 PowerTags (RT 65536)	**6AV6 381-1BF06-2AX0**
Incl. 512 archive tags each	
Complete packages on CD-ROM	
Language versions: DE/EN/FR/IT/ES; with license for	
• 128 PowerTags (RC 128)	**6AV6 381-1BM06-2AX0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN06-2AX0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP06-2AX0**
• 8192 PowerTags (RC 8192)	**6AV6 381-1BS06-2AX0**
• 65536 PowerTags (RC 65536)	**6AV6 381-1BQ06-2AX0**
Incl. 512 archive tags each	
SIMATIC WinCC system software V6.2	
Runtime packages on CD-ROM	
Language versions: English/ simplified and traditional Chinese/ Korean/Taiwanese/Japanese; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC06-2AV0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD06-2AV0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE06-2AV0**
• 8192 PowerTags (RT 8192)	**6AV6 381-1BH06-2AV0**
• 65536 PowerTags (RT Max)	**6AV6 381-1BF06-2AV0**
Incl. 512 archive tags each	
Complete packages on CD-ROM	
Language versions: English/ simplified and traditional Chinese/ Korean/Taiwanese/Japanese; with license for	
• 128 PowerTags (RC 128)	**6AV6 381-1BM06-2AV0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN06-2AV0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP06-2AV0**
• 8192 PowerTags (RC 8192)	**6AV6 381-1BS06-2AV0**
• 65536 PowerTags (RC Max)	**6AV6 381-1BQ06-2AV0**
Incl. 512 archive tags each	

	Order No.
SIMATIC WinCC V6.2 PowerPacks	
For upgrading from:	
Runtime packages	
• 128 to 256 PowerTags	**6AV6 371-1BD06-2AX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE06-2AX0**
• 128 to 8192 PowerTags	**6AV6 371-1BK06-2AX0**
• 128 to 65536 PowerTags	**6AV6 371-1BF06-2AX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG06-2AX0**
• 256 to 8192 PowerTags	**6AV6 371-1BL06-2AX0**
• 256 to 65536 PowerTags	**6AV6 371-1BH06-2AX0**
• 1024 to 8192 PowerTags	**6AV6 371-1BM06-2AX0**
• 1024 to 65536 PowerTags	**6AV6 371-1BJ06-2AX0**
• 8192 to 65536 PowerTags	**6AV6 371-1BN06-2AX0**
Complete packages	
• 128 to 256 PowerTags	**6AV6 371-1BD16-2AX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE16-2AX0**
• 128 to 8192 PowerTags	**6AV6 371-1BK16-2AX0**
• 128 to 65536 PowerTags	**6AV6 371-1BF16-2AX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG16-2AX0**
• 256 to 8192 PowerTags	**6AV6 371-1BL16-2AX0**
• 256 to 65536 PowerTags	**6AV6 371-1BH16-2AX0**
• 1024 to 8192 PowerTags	**6AV6 371-1BM16-2AX0**
• 1024 to 65536 PowerTags	**6AV6 371-1BJ16-2AX0**
• 8192 to 65536 PowerTags	**6AV6 371-1BN16-2AX0**
SIMATIC WinCC V6.2 Archive	
• 1500 archives	**6AV6 371-1DQ16-2AX0**
• 5000 archives	**6AV6 371-1DQ16-2BX0**
• 10000 archives	**6AV6 371-1DQ16-2CX0**
• 30000 archives	**6AV6 371-1DQ16-2EX0**
• 80000 archives	**6AV6 371-1DQ16-2GX0**
• 120000 archives	**6AV6 371-1DQ16-2JX0**
SIMATIC WinCC V6.2 Archive PowerPacks	
For upgrading archiving from:	
• 1500 to 5000 archive tags	**6AV6 371-1DQ16-2AB0**
• 5000 to 10000 archive tags	**6AV6 371-1DQ16-2BC0**
• 10000 to 30000 archive tags	**6AV6 371-1DQ16-2CE0**
• 30000 to 80000 archive tags	**6AV6 371-1DQ16-2EG0**
• 80000 to 120000 archive tags	**6AV6 371-1DQ16-2GJ0**

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Ordering data

Order No.

SIMATIC WinCC Upgrade/Comprehensive Support

WinCC V6 Upgrade [1]		
For upgrading the RT version:		
• from V5.x to V6.2	B	**6AV6 381-1AA06-2AX4**
• from V6.x to V6.2	B	**6AV6 381-1AA06-2AX3**
• from V5.x ASIA to V6.2 ASIA	B	**6AV6 381-1AA06-2AV4**
• from V6.x ASIA to V6.2 ASIA	B	**6AV6 381-1AA06-2AV3**
For upgrading the RC version:		
• from V5.x to V6.2	B	**6AV6 381-1AB06-2AX4**
• from V6.x to V6.2	B	**6AV6 381-1AB06-2AX3**
• from V5.x ASIA to V6.2 ASIA	B	**6AV6 381-1AB06-2AV4**
• from V6.x ASIA to V6.2 ASIA	B	**6AV6 381-1AB06-2AV3**
WinCC Comprehensive Support [2]		
contains current updates/upgrades for WinCC basic software und options:		
• 1 license		**6AV6 381-1AA00-0AX5**
• 3 licenses		**6AV6 381-1AA00-0BX5**
• 10 licenses		**6AV6 381-1AA00-0CX5**

SIMATIC WinCC documentation (to be ordered separately)

SIMATIC WinCC V6 Communication Manual	
Communication manual for process communication and OPC communication from WinCC V6	
• German	**6AV6 392-1CA06-0AA0**
• English	**6AV6 392-1CA06-0AB0**

SIMATIC WinCC communication via Industrial Ethernet

CP 1612		**6GK1 161-2AA00**
PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)		
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 diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English		
• Single license for 1 installation		**6GK1 704-1CW64-3AA0**
• Upgrade package		**6GK1 704-1CW64-3AE0**

1) In accordance with license stipulations, 1 upgrade package must be ordered for each WinCC station.

2) Comprehensive support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiry. In accordance with license stipulations, 1 comprehensive support package must be ordered for each WinCC station.

Order No.

SIMATIC WinCC communication via Industrial Ethernet (continued)

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 diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server, for CP 1512 and CP 1612 German/English		
• Single license for 1 installation		**6GK1 704-1LW64-3AA0**
• Upgrade package		**6GK1 704-1LW64-3AE0**
CP 1613 A2	A	**6GK1 161-3AA01**
PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)		
S7-1613 Edition 2006		
Software for S7 and S5 communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1613/CP 1613 A2 German/English		
• Single license for 1 installation		**6GK1 716-1CB64-3AA0**
• Upgrade package		**6GK1 716-1CB64-3AE0**
TF-1613 2006		**6GK1 716-1TB64-3AA0**
Software for TF protocol, S5-compatible communication incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows XP Professional/2003 Server/ 2000 Professional/Server		

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S

4

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SIMATIC WinCC

Ordering data

		Order No.
SIMATIC WinCC 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)	A	**6GK1 561-1AA01**
CP 5611 MPI Comprising CP 5611 A2 (32-bit) and MPI cable, 5 m	A	**6GK1 561-1AM01**
CP 5512 PCMCIA card (CARDBUS 32-bit) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in the WinCC basic package)		**6GK1 551-2AA00**
PC/MPI adapter RS 232, 9-pin; male with RS 232/MPI converter, max. 19.2 kbit/s		**6ES7 972-0CA23-0XA0**
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 2006 Software for S7 communication incl. PG/OP protocol, OPC server, for 32 bit Windows XP Professional, 2003 Server, 2000 Professional/Server; English/German		
• Single license for 1 installation		**6GK1 713-5CB64-3AA0**
• Upgrade package		**6GK1 713-5CB64-3AE0**
DP-5613 Edition 2006 Software for DP protocol incl. PG/OP communication, FDL, DP OPC server, for 32 bit Windows XP Professional, 2003 Server, 2000 Professional/Server; English/German		
• Single license for 1 installation		**6GK1 713-5DB64-3AA0**
• Upgrade package		**6GK1 713-5DB64-3AE0**
FMS-5613 Edition 2006 Software for FMS protocol incl. PG/OP communication, FDL, FMS OPC server, for 32 bit Windows XP Professional, 2003 Server, 2000 Professional/Server; English/German		
• Single license for 1 installation		**6GK1 713-5FB64-3AA0**
• Upgrade package		**6GK1 713-5FB64-3AE0**

		Order No.
Hardware for control technology functions		
DCF-77 receiver for time synchronization		
• DCF77 (Europe)		**2XV9 450-1AR14**
• GPS (world-wide)	E	**2XV9 450-1AR13**
Multi-VGA		
• 2 screens	A	**6ES7 652-0XX03-1XE0**
• 4 screens	A	**6ES7 652-0XX03-1XE1**
Chip card reader		**6ES7 652-0XX01-1XC0**
Chip card for chip card reader (10 units in the package)		**6ES7 652-0XX05-1XD1**

A) Subject to export regulations: AL: N and ECCN: EAR99H
E) Subject to export regulations: AL: N and ECCN: 7A994

Note:

For further information on control technology options see Catalog ST PCS 7

More information

WinCC language versions

SIMATIC WinCC is also available in simplified Chinese, traditional Chinese, Japanese and Korean specifically for the Asian market. These versions of WinCC are aimed at machine manufacturers, plant engineering companies and exporters servicing China, Taiwan, Korea and Japan.

In addition to all the familiar WinCC functions, WinCC ASIA features the configuration interface in the relevant national language as well as in 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 supplied on a separate DVD containing all the language versions listed above. The associated documentation can be ordered from the Siemens subsidiaries in China, Korea, Taiwan or Japan.

The runtime licenses are not language-specific. The English data handling program (Automation License Manager – ALM) can run on the Chinese, Korean and Japanese versions of Windows.

Additional information is available in the Internet:

http://www.siemens.com/wincc

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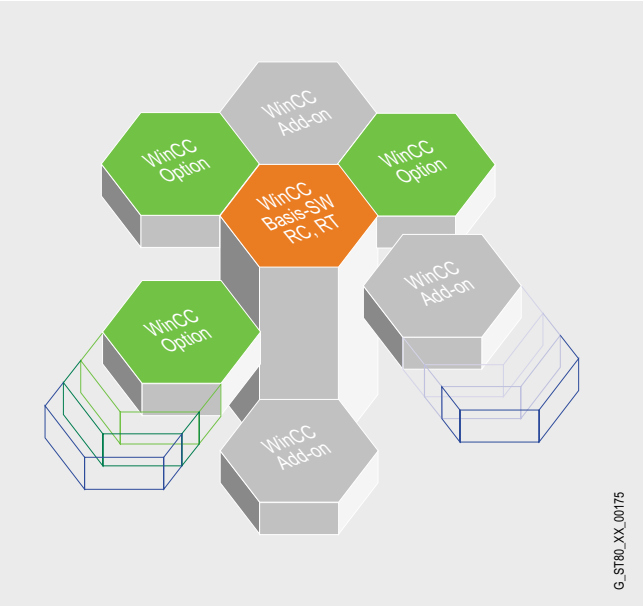
Overview



- The universal WinCC basic software is the basis for modular expansions. These functional expansions can be obtained in the form of WinCC options and as WinCC add-ons.
- WinCC options are created by WinCC Development and are Siemens Automation and Drives 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 to increase 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 (from WinCC V6.2)
  - for the detection and analysis of standstill times for machines and systems
- WinCC/ProcessMonitor (from WinCC V6.2)
  - management information system and quality analysis
- 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 (from WinCC V6.2)
  - 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
- WinCC/Client Access License (from WinCC V6)
  - access from (office) PCs to WinCC archive data

Options for SCADA expansions

- WinCC/User Archives
  - to manage data sets in user archives

Options for industry-specific expansions (FDA compliant)

- 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 Active-X objects in a VB development environment
- WinCC/ODK
  - for the use of open programming interfaces (Open Development Kit)

Options for comprehensive support

- WinCC/Comprehensive Support
  - extensive support package; contains current updates/ upgrades for WinCC basic software and options.

More information

WinCC options

Additional information is available in the Internet:

http://www.siemens.com/wincc/options

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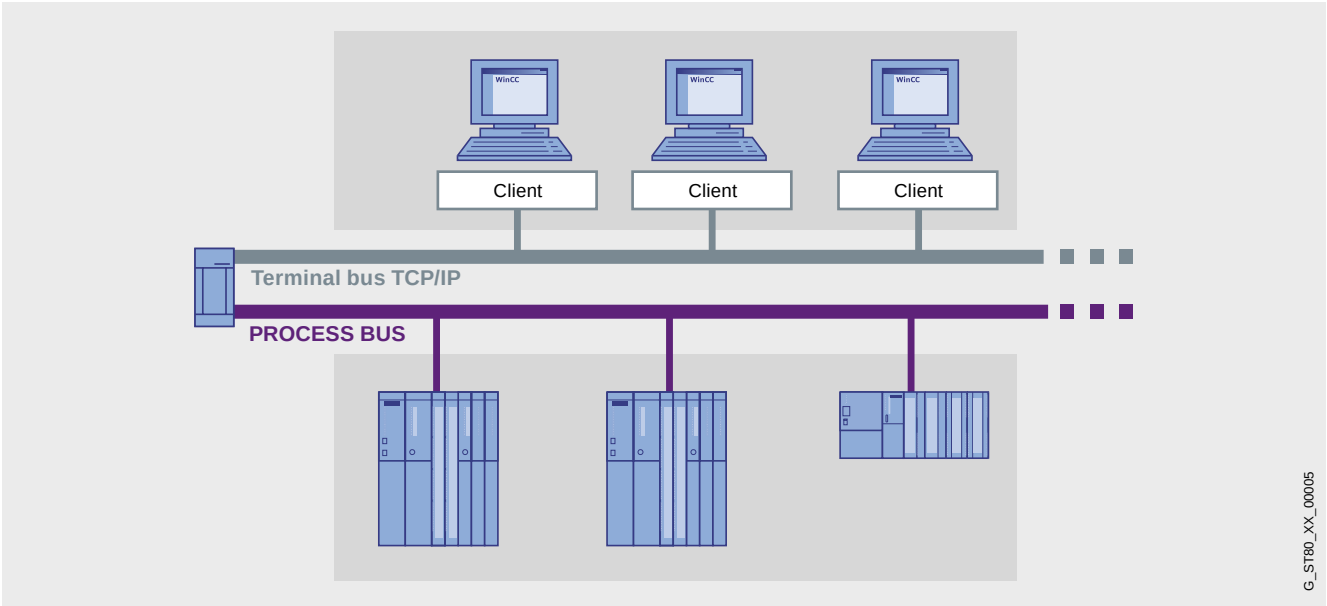
WinCC/Server

Overview



- Option for SIMATIC WinCC, which permits the configuration of a powerful client/server system
- One of the following operating systems must be available to install the option on the server: Windows Server 2003 (for V6) or Windows Server 2003 R2 (for V6.2)
- 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 clients [1)]
- One license is required for each server.

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)

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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 V6.2	**6AV6 371-1CA06-2AX0**

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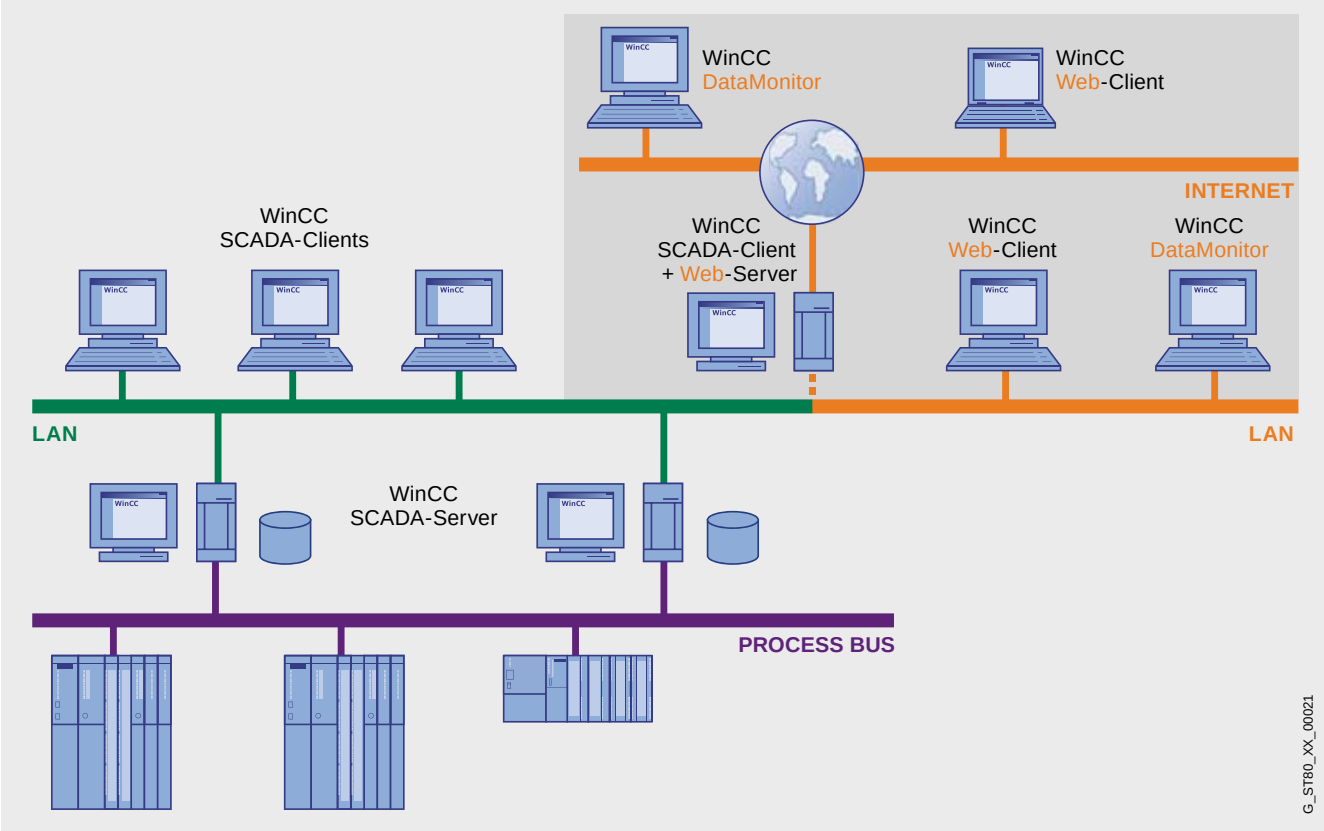
WinCC/Web Navigator

Overview



- Option for SIMATIC WinCC for operator control and monitoring of plants via the Internet, in-house intranet or LAN
- Configuration from:
  - a Web Server running the SIMATIC WinCC software as single-user, client or software version and
  - a Web Client for 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 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.

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Benefits

- Operator control and monitoring over large distances on different platforms (PC, on-site panel, mobile PDA)
- Large configurations with up to 50 operator stations
- Fast updating thanks to event-driven communication
- Optimally dimensioned clients for HMI, evaluation, service & diagnostics
- Loading configuration data for the Web usually without modification
- Low maintenance costs due to central software administration
- High security standards and availability
  - Increased security due to separating WinCC server and Web server (Web server in a reliable environment)
  - Support of prevalent security mechanisms (router, firewall, proxy server)
  - Access rights and user administration

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

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 StepUp 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.

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WinCC/Web Navigator

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 (MS Internet Explorer V6 SP1 or SP2) is all that is required to display WinCC process screens on the Web Client.

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 popular security mechanisms that can be used for applications on the Internet, e.g., routers, firewalls and proxy servers.

Ordering data

	Order No.
WinCC/Web Navigator	
V6.2; for WinCC V6.2	
• Base Pack (3 client licenses)	**6AV6 371-1DH06-2AX0**
• 10 client licenses	**6AV6 371-1DH06-2BX0**
• 25 client licenses	**6AV6 371-1DH06-2CX0**
• 50 client licenses	**6AV6 371-1DH06-2DX0**
V6.2 ASIA; for WinCC V6.2 ASIA	
• Base Pack (3 client licenses)	**6AV6 371-1DH06-2AV0**
• 10 client licenses	**6AV6 371-1DH06-2BV0**
• 25 client licenses	**6AV6 371-1DH06-2CV0**
• 50 client licenses	**6AV6 371-1DH06-2DV0**
WinCC/Web Navigator PowerPacks	
V6.2 (for ASIA variants as well)	
• From 3 to 10 clients	**6AV6 371-1DH06-2AB0**
• From 10 to 25 clients	**6AV6 371-1DH06-2BC0**
• From 25 to 50 clients	**6AV6 371-1DH06-2CD0**
WinCC/Web Navigator Diagnostics Client	
• for WinCC V6.2	**6AV6 371-1DH06-2EX0**
• for WinCC V6.2 ASIA	**6AV6 371-1DH06-2EV0**
WinCC/Web Navigator Diagnostics Server	
• for WinCC V6.2	**6AV6 371-1DH06-2FX0**
• for WinCC V6.2 ASIA	**6AV6 371-1DH06-2FV0**
WinCC/Web Navigator Upgrade	
V1.x on V6.2	
• For 3 clients	**6AV6 371-1DH06-2AX4**
• For 10 clients	**6AV6 371-1DH06-2BX4**
• For 25 clients	**6AV6 371-1DH06-2CX4**
• For 50 clients	**6AV6 371-1DH06-2DX4**
V6.x on V6.2	
• For 3, 10, 25, 50 clients [1]	**6AV6 371-1DH06-2XX3**
• For Web Navigator Diagnostics Client	**6AV6 371-1DH06-2EX3**
• For Web Navigator Diagnostics Server	**6AV6 371-1DH06-2FX3**
V6.x ASIA to V6.2 ASIA	
• For 3, 10, 25, 50 clients [1]	**6AV6 371-1DH06-2XV3**
WinCC / Web Load Balancing V6.2	
• Load Balancing	**6AV6 371-1DH06-2JX0**
• Load Balancing Step Up	**6AV6 371-1DH06-2FJ0**

1) incl. upgrade for diagnostics client, diagnostics server, Load Balancing and Load Balancing StepUp

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More information

System requirements – Web server

For WinCC/Web Navigator V6.2

- Windows 2000 Professional Service Pack 4 (max. 3 clients)
- Windows XP Professional or Service Pack 2 (max. 3 clients)
- Windows Server 2003 SP1 or Windows Server 2003 R2
- Internet Explorer V6.0 SP1 or SP2
- Microsoft SQL Server 2005 SP1 (scope of supply of WinCC)
- WinCC basic system V6.2

System requirements – Web client

For WinCC/Web Navigator V6.2

- Windows XP Professional Service Pack 2
- Windows 2000 Professional Service Pack 4
- Windows Server 2003 SP1 or Windows Server 2003 R2
- Windows XP Home with Service Pack 2
- Windows Server 2003 terminal services
- Windows XP embedded (only when using Panel PC 477)
- Internet Explorer V6.0 SP1 or SP2

WinCC Web Navigator V6.2 ASIA

(requires SIMATIC WinCC V6.2 ASIA)

The functions included in this version differ from the standard version of WinCC/Web Navigator V6.2 as follows:

- This version does not allow an Asian Web Navigator client to access a non-Asian server and vice versa.

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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 V6.2 contains all licenses for the central archive server including 1500 archive variables.. The number of archive variables can be increased to 120,000 using power packs or other 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 V6.2 basic packages	
WinCC/CAS V6.2 [1] in language versions:	**6AV6 371-1DQ16-2XX0**
• German	
• English	
• French	
• Spanish	
• Italian	
WinCC/CAS V6.2 ASIA [2] in language versions	**6AV6 371-1DQ16-2XV0**
• Simplified Chinese	
• Traditional Chinese	
• Korean	
• Japanese	
• English	

1) Documentation in language versions German/English/French

2) Documentation in language versions English/Simplified Chinese/ Japanese

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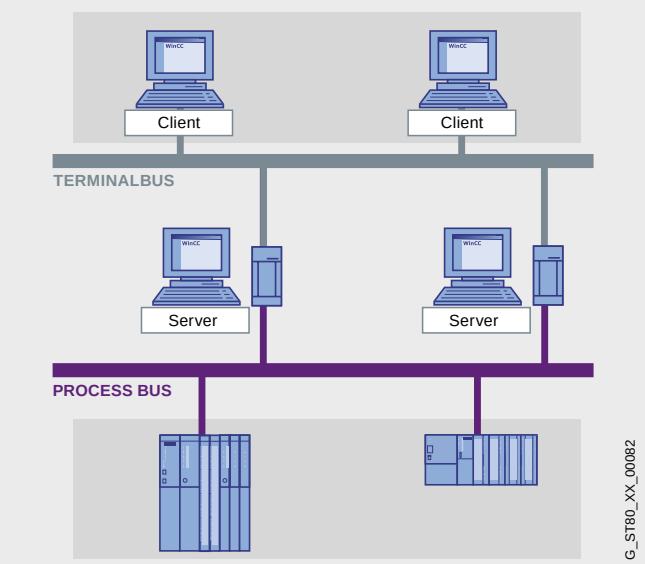
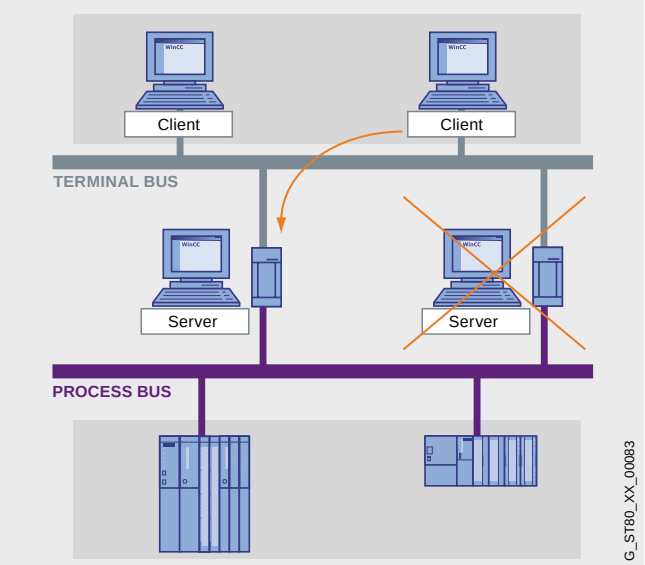
Overview



- 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 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



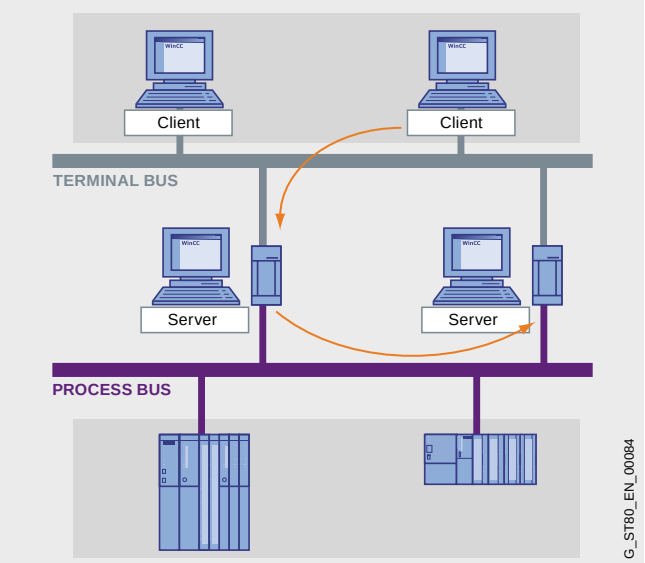
Function

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 V6.2	**6AV6 371-1CF06-2AX0**

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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
- Display 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 diagnosis and maintenance of machines and plants. This is an option package for STEP 7 V5.4 and WinCC V6.2 that generates a WinCC maintenance view for a STEP 7 project/multiproject.

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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)
- The SIMATIC NET licenses required for the plant configuration

Requirements for operation of a SIMATIC Maintenance Station

- The WinCC licenses (V6.2) required for the plant configuration

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&M[1])" in accordance with the PROFIBUS International specification.
- Export[2] 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 languages[3], 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.

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SIMATIC Maintenance Station

Technical specifications

Hardware requirements

System	Clock frequency	Main memory	Free hard disk space
Engineering station	2.8 GHz	1 GB	15 GB
Maintenance Station Stand-alone / WinCC-Station "Single-user Workstation"	2.8 GHz	1 GB	15 GB
Maintenance Station Server / WinCC Server	2.8 GHz	1 GB	15 GB
Maintenance Station Client / WinCC Client	2.8 GHz	512 MB	3 GB

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

Requirements for the integration of devices

Type	Integration	Comment
SIMATIC S7 controllers / I/O		
• S7-300 [1]	Yes	
• S7-400	Yes	
• WinAC	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

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Ordering data

		Order No.
SIMATIC Maintenance Station 2007 SP1		
Software for implementation of a plant-oriented asset management system		
• Basic package with engineering software (Floating License) and Runtime License for 100 devices	D	**6ES7 840-0WD00-0YA0**
• Powerpack 100 Runtime License for 100 additional devices	D	**6ES7 840-0WD10-0YD0**
• Powerpack 500 Runtime License for 500 additional devices	D	**6ES7 840-0WD20-0YD0**
• Powerpack 1000 Runtime License for 1000 additional devices	D	**6ES7 840-0WD30-0YD0**
• Update from Version 2007 to Version 2007 SP1	D	**6ES7 840-0WD00-0YE0**
• Basic demo package 2007 SP1	D	**6ES7 840-0WD00-0YA7**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

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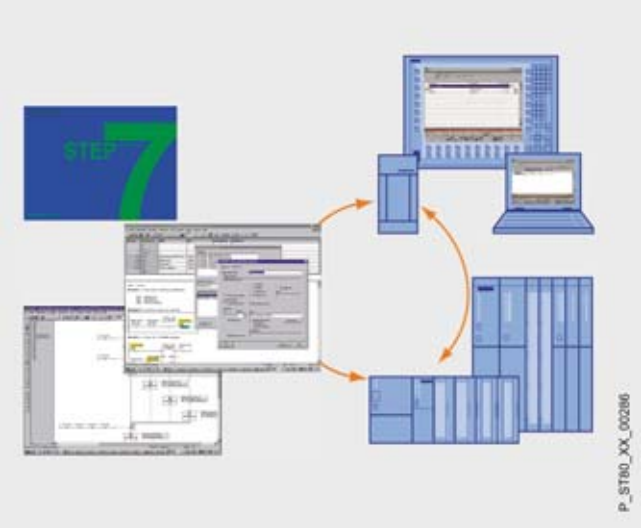
WinCC/ProAgent

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		
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 an FI45, 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), for WinCC version:		
• V5.1 (ProAgent V5.6)		**6AV6 371-1DG05-6AX0**
• V6.2 (ProAgent V6.0 SP4)		**6AV6 371-1DG06-0EX0**
Upgrade		
• to SIMATIC WinCC/ProAgent V5.6		**6AV6 371-1DG05-6AX4**
• to SIMATIC WinCC/ProAgent V6.0 SP4		**6AV6 371-1DG06-0EX4**
Documentation (must be ordered separately)		
SIMATIC HMI Document Collection	B	**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		

B) Subject to export regulations: AL: N and ECCN: EAR99S

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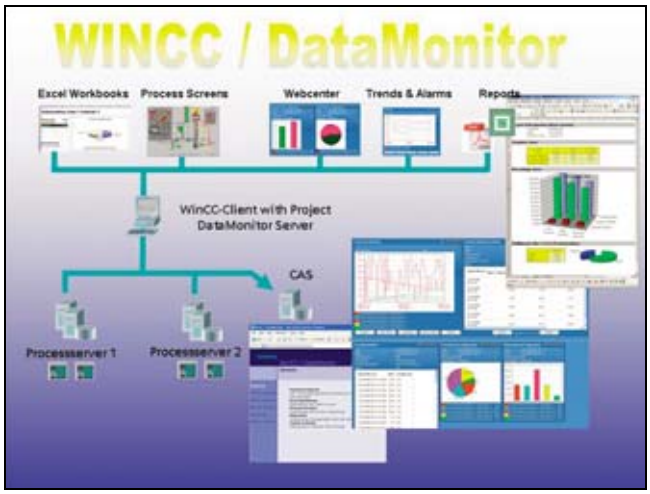
Overview



- 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. The DataMonitor is a component of Simatic WinCC / Plant Intelligence and can be used by machine operators and corporate managers to obtain information.
- The DataMonitor Web Edition contains a suite of internet-capable tools:
  - Process Builder - Tool for simple visualization and navigation through WinCC screens using Internet Explorer (view only)
  - Trends and Alarms - Internet Explorer-based display tool (tables and graphs) for WinCC archive as well as for relocated data
  - Excel Workbooks - Protocol tool that integrates WinCC archives and online values into MS Excel and supports online analysis
  - Published Reports - Event- or time-driven execution of Excel or PDF reports for the output of process data and analysis results
  - Webcenter - Individual configuration of Internet pages and summary of information within a portal in terms of WinCC applications
- DataMonitor Web Edition 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.

Benefits

- 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

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WinCC/DataMonitor

Function

- All tools are fully Internet-compatible and, therefore, support access via any type of connection (LAN, GSM, radio, modem, Internet, etc.).
- All popular security mechanisms such as login/password, firewalls, encryption, etc. are supported.
- Users can combine the available tools at will. Licensing only takes into account simultaneous access to one Web server.
- For display purposes, screens from the WinCC project can be used or special overview displays configured. Animations, scripts, navigation and access rights remain valid.
- The WinCC/DataMonitor 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.
- Created reports can be planned so that they are automatically distributed by email after creation.
- 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 WebEdition V6.2; for WinCC V6.2	
• 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 WebEdition V6.2 ASIA; for WinCC V6.2 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 Powerpacks 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**
WinCC/DataMonitor Upgrade	
• from V6.x to V6.2	**6AV6 371-1DN06-2XX3**
• from V6.x ASIA to V6.2 ASIA	**6AV6 371-1DN06-2XV3**

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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.

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WinCC/DowntimeMonitor

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 Gant 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.

Ordering data

	Order No.
WinCC/DowntimeMonitor V1.0 for WinCC V6.2	
• 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 V6.2	
• 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**

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Overview

The entry point to SIMATIC Plant Intelligence can be through options for the SIMATIC WinCC process visualization system. The WinCC/ProcessMonitor is a component of WinCC Plant Intelligence and is used for collecting, manipulating, evaluating, and storing process values. Integrating the ProcessMonitor 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 ProcessMonitor 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 Process Monitor provides ActiveX control elements that can be used for displaying historical data originating from a user-definable time period and from various data sources. These controls are integrated in WinCC images for presenting the aggregated and stored data in the Process-Monitor.
- The recorded data is stored in an online database set and can be moved to an offline database set.
- The basic package contains 50 KPI. Further licenses are available in levels of up to 250 and 1500 KPI.

Benefits

- Targeted analysis and interpretation of messages for working out optimization strategies.
- Targeted analysis and interpretation of process value histories during production to increase quality.
- Identification of major disturbances and weak points.
- Decision making based on customer-specific performance indicators.
- Identification of the events that lead to cost-intensive failures.
- Detection of undesirable process activities.
- Entry point for an extended process analysis with upgrade options in the MES software SIMATIC IT.

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WinCC/ProcessMonitor

Function

- Storage and presentation of process data that is prepared using pre-defined, user-defined, and context-dependent statistic calculation operations.
- Utilization of limit value monitoring for measured values in WinCC; above, below, within, or outside the limits.
- The following pre-defined statistic calculations are available: Mean value, standard deviation in time period, variance, maximum in time period, minimum in time period, highest value in time period, highest value with time data, minimum value with time data, difference between minimum and maximum value, total over a certain time period.
- Calculation of customer-specific individual **K**ey **P**erformance **I**ndicators with VBS (Visual Basic Scripting).
- Integration of the three other controls, that is Trend View, XY Trend View, and Message Analyzer in WinCC for displaying data from WinCC Tag Management, WinCC Tag Logging, and WinCC Alarm Logging
- The WinCC ProcessMonitor Trend View provides up to 64 values from WinCC or ProcessMonitor. Display of the various time intervals (Overlay Trend) or alternatively different process values can be chosen over the same time interval (Standard Trend).
- The WinCC ProcessMonitor XY Trend View: Display of dependencies of two different tags. Data sources are the ProcessMonitor and WinCC Taglogging.
- Filtering, analysis and display of WinCC messages in the Message Analyzer. The results are displayed in a bar chart based on algorithm-based calculations.
- The controls can be displayed on intranet or Internet using the option WinCC/Web Navigator.
- For ad-hoc analyses for process data (from the ProcessMonitor- and WinCC Tag Logging) stored in the ProcessMonitor or in WinCC Tag Logging archive at runtime calculations can be defined, the results of which can be output in Control.

Ordering data

	Order No.
WinCC/ProcessMonitor V1.0 for WinCC V6.2	
• 50 KPI	**6AV6 372-1DA06-2BX0**
• 250 KPI	**6AV6 372-1DA06-2DX0**
• 1500 KPI	**6AV6 372-1DA06-2FX0**
WinCC/ProcessMonitor Powerpacks V6.2	
• From 50 to 250 KPI	**6AV6 372-1DA06-2BD0**
• From 250 to 1500 KPI	**6AV6 372-1DA06-2DF0**

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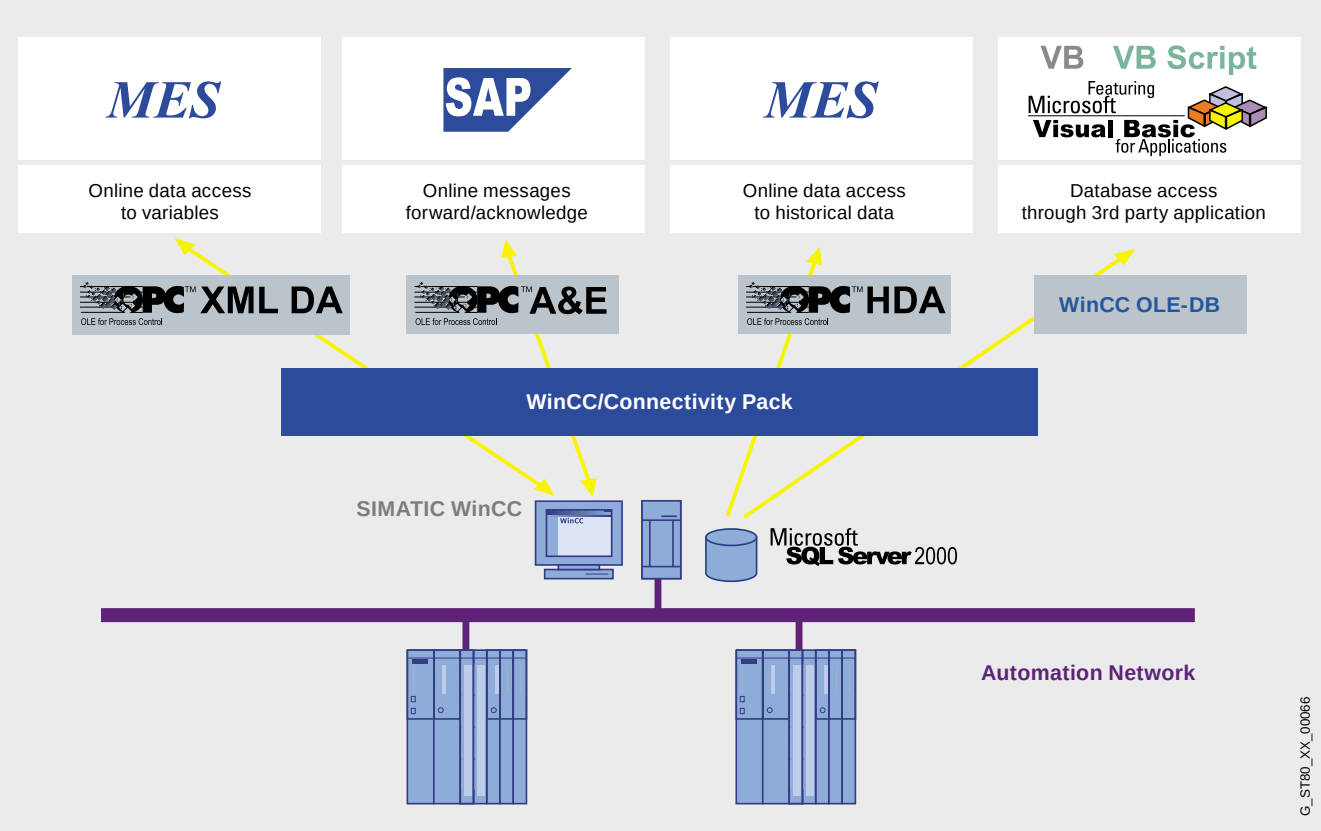
Overview



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.

- New features in WinCC V6 and higher include 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.
- When the Connectivity Station is used, an additional ConnectivityPack 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.
- 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 only

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WinCC/Connectivity Pack

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.

WinCC OPC XML DA servers make cross-platform communication between Windows and non-Windows systems possible, even via the Internet. This enables read and write WinCC online values (external and internal WinCC variables) to be exchanged with non-Siemens systems.

WinCC OLE-DB makes standardized and user-friendly access to WinCC archive data possible (MS SQL Server 2005). In exactly the same way as access via the OPC HDA and OPC A&E interfaces, access via the WinCC OLE DB provider makes all WinCC archive data available along with the associated process values and message/user texts. The WinCC OLE-DB provider also supports analysis functions such as minimum, maximum, message hit list, etc.

The WinCC Connectivity Station was designed as a stand-alone gateway to WinCC server data. It supports access to WinCC server data over the OPC channels described as well as those for process values (not alarms) over OLE DB . Access to the 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.

The Connectivity Station is planned over NCM PC Manager or SIMATIC Manager.

Ordering data

	Order No.
WinCC/Connectivity Pack V6	
Basic packages	
• WinCC/Connectivity Pack V6.2	**6AV6 371-1DR06-2AX0**
• WinCC/Connectivity Station V6.2	**6AV6 371-1DR16-2AX0**
Upgrade	
• WinCC/Connectivity Pack V6.x -> V6.2	**6AV6 371-1DR06-2AX3**

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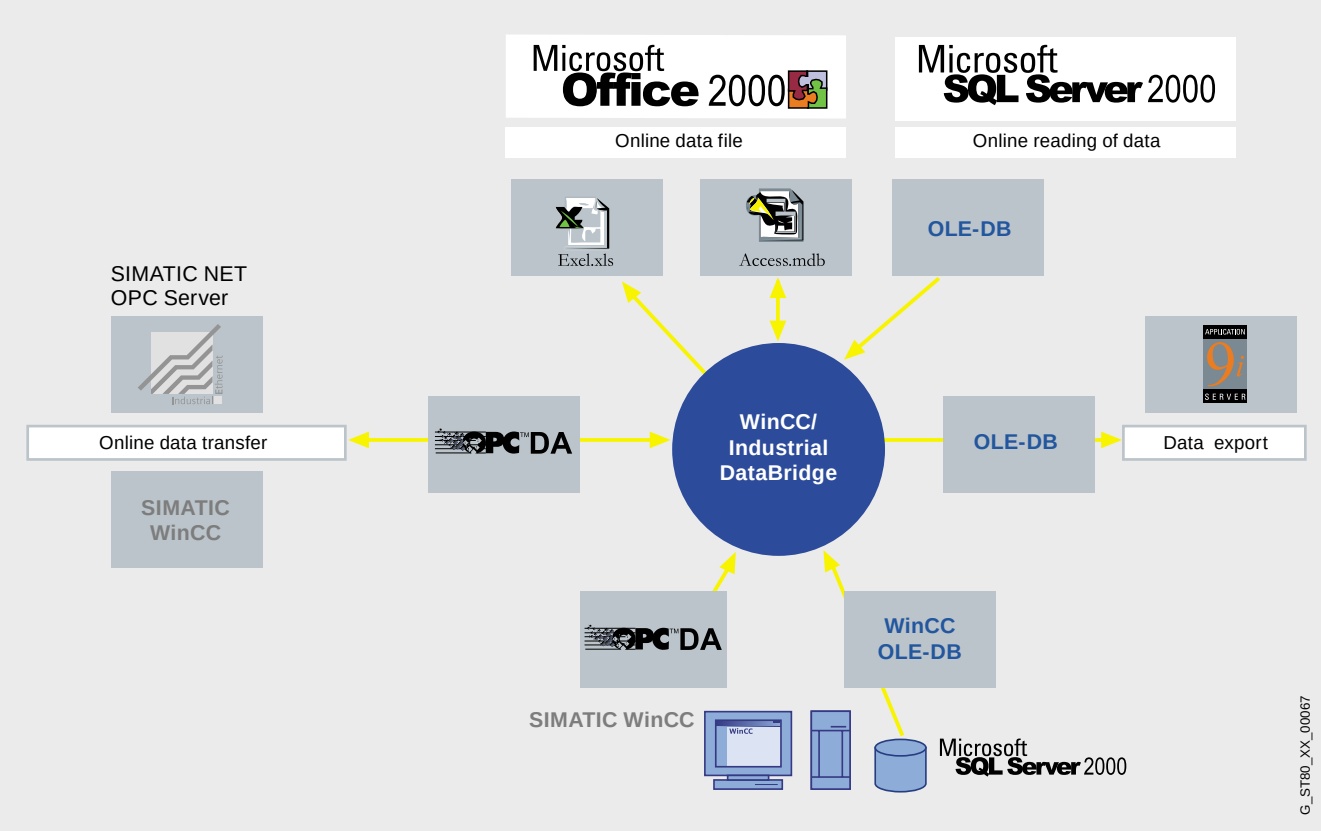
Overview



- 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 even be used, e.g., in conjunction with SIMATIC NET and SIMATIC WinAC.
- Option only for WinCC V6
- A WinCC/Client Access license is required for computers without installed licenses 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 option 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.

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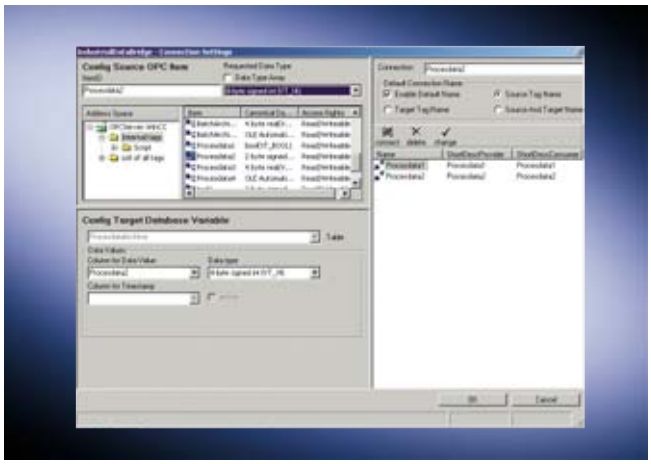
WinCC/IndustrialDataBridge

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 targets. On the database side, various transmission mechanisms are supported.

Interfaces:

As data source:

- OPC Data Access 1.0, 2.0 and 3.0 (e.g., SIMATIC WinCC, SIMATIC ProTool/Pro, SIMATIC WinAC and SIMATIC NET as OPC Server)
- WinCC OLE-DB
- Databases through SQL/OLE DB/ODBC (WinCC User Archives, Microsoft Access, Microsoft SQL, Oracle)
- Send/Receive with TCP native, UDP, ISO on TCP
- WinAC ODK

As data destination:

- OPC Data Access 1.0 and 2.0 and 3.0 (e.g., SIMATIC WinCC, SIMATIC ProTool/Pro, SIMATIC WinAC and SIMATIC NET as OPC Server)
- Databases through SQL/OLE DB/ODBC (WinCC User Archives, Microsoft Access, Microsoft SQL, Oracle)
- Microsoft Excel
- Send/Receive with TCP native, UDP, ISO on TCP
- WinAC ODK
- CSV

Note:
Access to the WinCC database is released separately.

Ordering data

	Order No.
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 2048 tags	**6AV6 371-1DX06-1CX0**
• with 10000 tags	**6AV6 371-1DX06-1DX0**
WinCC/IndustrialDataBridge Power Pack	
• from 128 to 512 tags	**6AV6 371-1DX06-1AB0**
• from 128 to 2048 tags	**6AV6 371-1DX06-1AC0**
• from 128 to 10000 tags	**6AV6 371-1DX06-1AD0**
• from 512 to 2048 tags	**6AV6 371-1DX06-1BC0**
• from 512 to 10000 tags	**6AV6 371-1DX06-1BD0**
• from 2048 to 10000 tags	**6AV6 371-1DX06-1CD0**

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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/Industrial-DataBridge.
- 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 client access to historical WinCC data	**6AV6 371-1ES06-0AX0**
WinCC/Client Access License per processor For access to historical WinCC data; any number of clients per processor	**6AV6 371-1ES06-0CX0**

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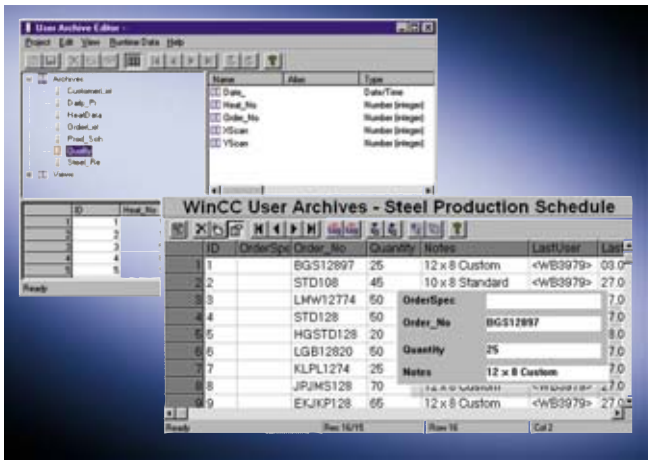
WinCC/User Archives

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 PLC) write these data sets and exchange them if required.
- A license is only required for the server (or single-user system).

New features in WinCC V6 and higher:

The WinCC/User Archives option can now also be used in the context of the WinCC/Web Navigator (see also WinCC/Web Navigator option).

Benefits

- Storage and management of any user data in records
- Flexible display using ActiveX controls, either in table or formula view
- Easy interfacing of record fields to the process via direct variable interfacing
- Import/export functions for further processing with other tools (e.g. MS Excel)

Function

- Entry of parameter sets (e.g. operating parameters for a machine) in WinCC, storage in the user archive and transfer to the automation level
- Continuous acquisition of production parameters by the automation system and their transfer to WinCC at the end of a shift
- Acquisition of batch data
- Entry of production parameters
- Management of stock-keeping data

Using a special editor, WinCC user archives can be simply created and filled with data. Special ActiveX controls (table view and formula view) are used to display data from the user archives at runtime.

Data records and fields from the user archives are linked to the process with direct tag linking.

Import and export functions support the import and export of data from and to external applications (for example MS Excel). Freely selectable filter criteria support the clearly comprehensible display of records. The view can be switched between a table view and a formula view.

WinCC provides functions for the user-defined organization of data storage in the user archives, which influence the archive, data records and fields. Archives can thus be created, opened, closed or reset and records or field contents can be read, written or overwritten.

Sequential archives can record batch data, shift production or product quality data and fulfill statutory documentation requirements by recording on a continuous basis.

Ordering data

	Order No.
WinCC/User Archives	
• for WinCC V6.2	**6AV6 371-1CB06-2AX0**

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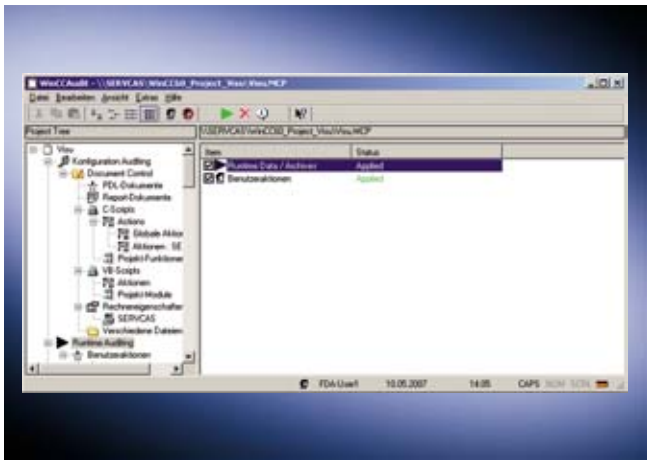
Overview



- **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, which contains all data and files of a WinCC project status. 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
- Quick, easy and gap-free tracing of all operator actions and all engineering changes
- Extensive decrease in system downtimes with 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 configuring the audit trail content
- The project version definition for logging WinCC projects
- The document management for logging WinCC system images, scripts, reports and other documents and recording change information
- The audit viewer for visualizing, exporting and printing WinCC and WinCC flexible audit trails. The viewer is available as an executable program under Windows, as well as OCX with WinCC Runtime.
- The audit trail, which tracks all changes in respect of both engineering and plant operation in a separate SQL database. The audit trail can be set up as a central audit trail for a number of projects or even just for a single project.

WinCC/ChangeControl and WinCC/Audit support both single-user and multi-user systems, client/server architectures and even the WinCC redundancy system. No redundant audit trail is created however.

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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.

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 and when has carried out what conditions on the machine. 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 RC for WinCC V6.2 For the configuration of the audit trail incl. RT	B	**6AV6 371-1DV26-2AX0**
WinCC/Audit RC for WinCC V6.2 For the configuration of the audit trail incl. RT	B	**6AV6 371-1DV16-2AX0**
WinCC/Audit RT Creation of the audit trail in RT	B	**6AV6 371-1DV06-2AX0**

B) 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:

http://www.ad.siemens.com/hmi/html_76/products/software/wincc/fda01.htm

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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. High availability is assured thanks to primary/secondary domain controllers.

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/Change Control 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 V1.3 SP1 Central user management for WinCC V6.2; Runtime license for an operator station	**6ES7 658-7BX31-2YA0**

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.ad.siemens.com/hmi/html_76/products/software/wincc/fda01.htm

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WinCC/IndustrialX

Overview

- WinCC/IndustrialX makes it even easier to develop a visualization solution in which customized objects can be standardized
- A license must be installed on every development computer (the current version of Visual Basic is required on the development computer)

Benefits

- Easy creation with configuration assistants (Wizards)
- Rapid familiarization due to the use of standards: ActiveX technique, creation with the aid of Visual Basic
- Central creation and modification of object representations of a similar type (typing) saves time and money
- Configuration of intelligent, sector-specific objects (graphical display and logical processing) with know-how protection
- Flexible implementation: in WinCC displays and in other Windows applications (e.g. Internet Explorer, Excel)

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

- Configuration of intelligent, sector-specific objects (graphical display and logical processing) with know-how protection
- Data structures supply objects (templates)
- By active process data supply, customized ActiveX components compliant to Web Navigator can be created
- Integration in WinCC through structure names

Ordering data

	Order No.
WinCC/IndustrialX	
• V6.2 for WinCC V6.2	**6AV6 371-1EL16-2AX0**

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Overview

WinCC/ODK (Open Development Kit)

- WinCC option for using the open programming interfaces that can be used to access the data and functions of WinCC configuration and the WinCC runtime system
- The interfaces are designed as "C application programming interfaces" (C-APIs).
- Scope of supply:
  - CD-ROM with examples
  - Voucher for a one-day intensive seminar

Benefits

- Individual system expansions via an open, standard programming language
- Access to data and functions of the WinCC configuration and runtime system
- Development of customer's own applications and add-ons for the WinCC basic system

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	
V6.0 SP4; for WinCC V6.2	**6AV6 371-1CC06-0EX0**
WinCC/ODK upgrade	
to V6.0 SP4	**6AV6 371-1CC06-0EX4**

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WinCC/Comprehensive Support

Overview

- With Comprehensive Support, WinCC offers an SUS (Software Update Service) as a comprehensive support package.
- The overall package includes the latest updates/upgrades for WinCC incl. options.
- The WinCC user receives a welcome package and update products are sent automatically for a period of 12 months. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiration.
- WinCC Comprehensive Support has to be purchased for each WinCC System (single-user system, server, client). In order to ensure that users of multiple systems can gain access to WinCC Comprehensive Support at a competitive price, in WinCC V6 and higher, in addition to the package with one license, a discounted package with 3 and 10 licenses is available.

Benefits

- Automatic distribution of current upgrades and service packs for WinCC ensures that the latest WinCC version is always available

Ordering data

	Order No.
WinCC/Comprehensive Support[1]	
Automatic delivery of current updates/upgrades for WinCC basic software and options as well as the Knowledge Base CD valid for	
• 1 license	**6AV6 381-1AA00-0AX5**
• 3 licenses	**6AV6 381-1AA00-0BX5**
• 10 licenses	**6AV6 381-1AA00-0CX5**

1) Comprehensive Support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiration.

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Overview

WinCC Add-ons – Solutions for all sectors and technologies

The basic system is designed to be independent of any specific technology or industrial sector, to be modular and flexibly expandable and to permit not only simple single-user applications in machine construction, but also complex multi-user solutions or even distributed systems with several servers and clients in plant engineering. WinCC Premium Add-ons are supplementary products that have been created by competent partners working in the specifc sectors and technologies and represent interesting expansions for WinCC.

WinCC Premium Add-ons are not A&D products, but the products of partners who are committed to compying 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-on for Connectivity:

- **PM OPEN Hosts**
  Connectivity tool for connection of SAP/R3
- **PM OPEN Export**
  for exporting WinCC data to local media or storage media released in the network
- **PM OPEN TCP/IP**
  permits the bidirectional exchange of WinCC data (tags, messages) with one or more computers that communicate via TCP/IP protocol
- **PM OPEN PI**
  permits a flexible and quickly configurable connection of WinCC to the PI software product (**P**lant **I**nformation System from OSI Inc.)

Premium Add-on for process management :

- **PM ANALYZE**
  for analysis of fault and operating messages, as well as process values.
- **PM CONTROL**
  is a recipe system for convenient generation and modification of recipes.
- **PM QUALITY**
  is an archive system for the administration of job and batch-related production and process data.

Premium Add-on for diagnostics and maintenance:

- **System diagnostics instrumentation and control**
  for reading out the status of the instrumentation and control
- **PM MAINT**
  is a tool for the maintenance of production plants
- **Alarm Management**
  for transmitting fault messages via various communication paths, such as GSM, LAN, Email

Premium Add-on for sector and technology solutions:

- **ACRON V6**
  is used for long-term archiving and logging of process data for small to medium-sized plants, specifically in the water supply and treatment industry.
- **Sm@rtlib HVAC**
  offers control and component blocks for heating, ventilation and air-conditioning (HVAC) systems.

Premium Add-on for configuration tools:

- **DCC TranslationEditor** for translating multi-lingual projects with in-built security, convenience and globalization features.

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WinCC add-ons and partner management

Overview (continued)

Competent partners

With SIMATIC HMI, 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 Centers

Mannheim
Emphasis on process management
- Sector-independent solutions and products in the fields: Production, environmental protection, maintenance and diagnostics
- Connectivity tools, system integration, connection to SAP R/3
- Support of FDA validation and WinCC ODK
- Support for advanced users with application of ODK and VBA

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
- Customized workshops, e.g. training for VBS, VBA, C-

Barcelona
Emphasis on production automation and logistics
- Solutions for integration of WinCC into MES and ERP
- Development of WinCC add-ons

Nice
- Solutions in food and beverages industry, pharmaceuticals and process engineering
- Batch processes
- Migration of SIMATIC TI, Teleperm M and PCS systems to WinCC
- Custom made expansions
- FDA support
- Migration of TI plants

More information

WinCC Competence Centers

Additional information is available in the Internet:
http://www.siemens.com/wincc/competencecenter

Siemens Solution Partner Automation

Additional information is available in the Internet:
http:siemens.com/automation/solutionpartner

WinCC Premium Add-on

Additional information is available in the Internet:
http://www.siemens.com/winCC/addons

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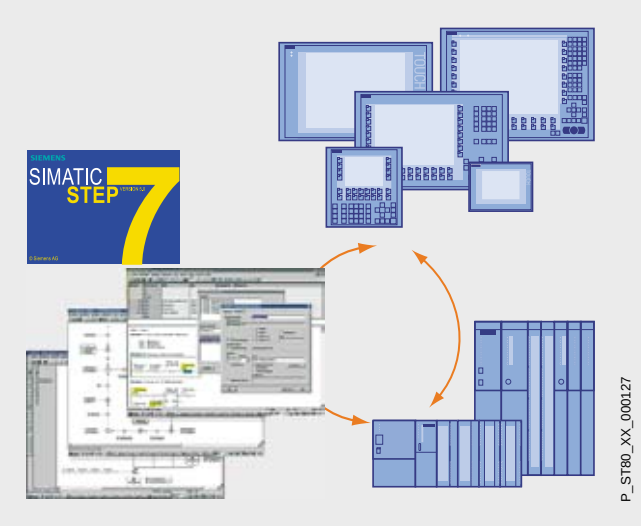
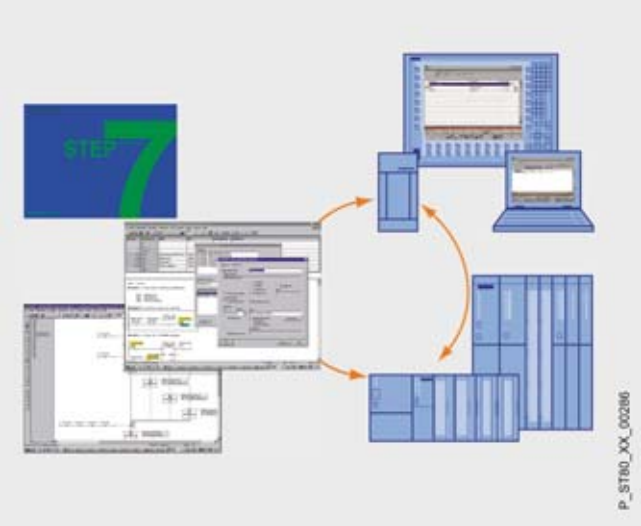
Overview

- Process diagnostics software for quick, selective fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:
  Optimum interaction between STEP 7 engineering tools and SIMATIC HMI
- Standard user interface



Process fault diagnostics with ProAgent for ProTool and WinCC flexible/ProAgent as well as the STEP 7 engineering tools



Process fault 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 diagnosis with SIMATIC ProAgent will provide information about the location and cause of that fault and support personnel with troubleshooting.

The ProAgent solution has been optimized specifically for use with SIMATIC S7-300/S7-400 and SIMATIC WinAC. It can be used in combination with the S7-PDIAG, S7-GRAPH and S7-HiGraph[1)] STEP 7 engineering tools. The ProAgent option package features standard displays that are updated with process-specific data during runtime.

1) Process diagnostics with S7-HiGraph in combination with OP/TP/MP270/277, MP370/377 as well as with C7636 and PC RT systems.

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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 comment[1)]
- Consistency test in RT:
  Inconsistent diagnostic units are marked with icons. This permits quick locating of faults regarding configured data in the commissioning phase.
- Direct, unit-related entry point in the diagnostic display from user displays by using ProAgent functions
- Unit or message-related entry to STEP 7 (LAD/STL/FD editor, S7-GRAPH, HW CONFIG (upon system error messages)), supported fully automatically [2)]
- Unit or message-related entry to STEP 7, supported fully automatically[3)]
- Graphic display of step sequences (overview display)[4)]

1) In combination with OP/TP/MP 270/277, MP370/377, C7 636, ProTool/Pro RT, WinCC/ProAgent as of V6.0 and WinCC flexible /ProAgent
2) WinCC/ProAgent as of V5.5 and WinCC flexible 2007/ProAgent on PC RT
3) Only WinCC/ProAgent as of V5.5
4) WinCC flexible 2007/ProAgent, WinCC/ProAgent as of V5.6 in combination with S7-GRAPH as of V5.1 (OCX is delivered as of S7-GRAPH 5.1)

Standardized user interface with standard displays

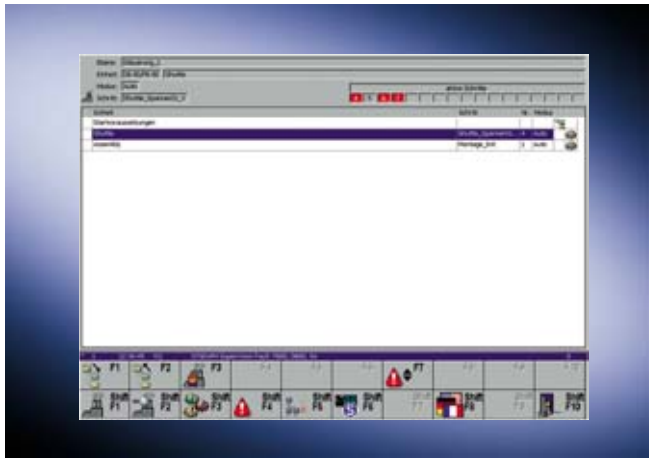
- Message display
- Unit overview
- Diagnostics detail display
- Motion display
- Sequencer operating display

The displayed image contents are related to the previously selected units or messages. This means that the proper. context-sensitive diagnostics display can be called up based on a message or a selected technological unit.

Message display

All of the existing process messages are shown in the message display. Context-sensitive branching to other diagnostic displays is also possible with a selected message. The operating personnel can also take the message directly from the erroneous operands and react immediately without having to perform any other operations on the HMI device. WinCC flexible allows this function on the Windows CE-based devices /TP/MP 270/277, MP370/377 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.

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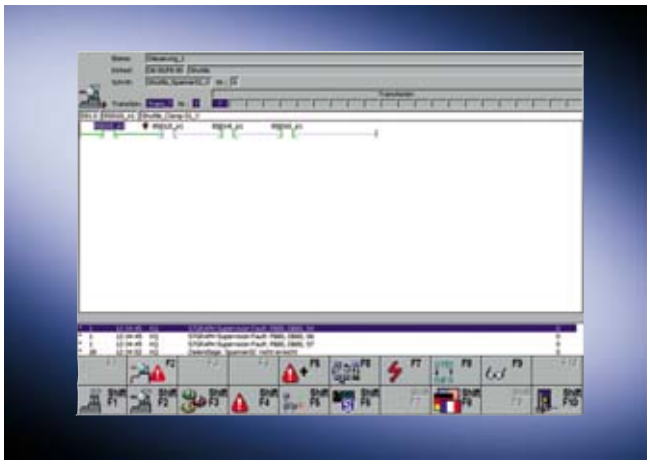
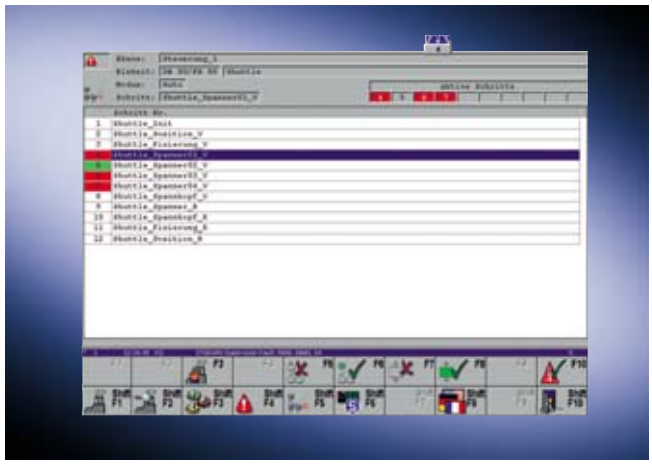
Function (continued)

Diagnostics detail display



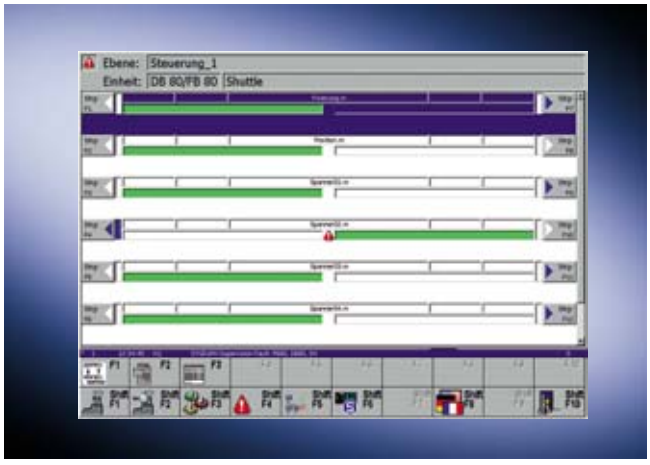
The diagnostic detail display shows the faulty operands at the time of origination of a process error. As an option, current status information can also be displayed. The diagnostics results are either displayed in a ladder diagram (LAD), statement list (STL), or in a clearly arranged signal list overview. 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.

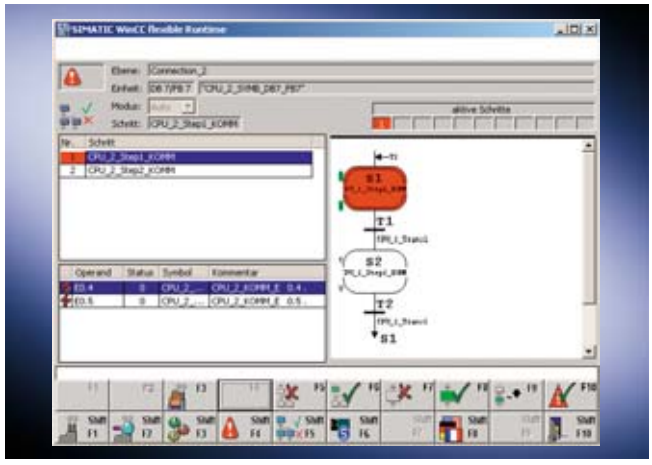
Motion display



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 2007/ProAgent and WinCC/ProAgent[1)] also offer capabilities for graphic monitoring and sequencer diagnostics. This gives the user the ability to monitor active/faulty steps as well as the fault cause, e.g. faulty transition conditions, simultaneously on the HMI device.

1) WinCC/ProAgent as of V5.6 in combination with S7-GRAPH as of V5.1 (OCX is delivered as of S7-GRAPH 5.1)

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SIMATIC ProAgent

Technical specifications

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible/ ProAgent
Interfaces					
• Can be used in conjunction with programmable controllers	SIMATIC S7: S7-300/S7-400	SIMATIC S7: S7-300/S7-400	SIMATIC S7: S7-300/S7-400, WinAC	SIMATIC S7: S7-300/S7-400; WinAC	SIMATIC S7: S7-300/S7-400; WinAC
• Types of connection	SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP	SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP	SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP, Industrial Ethernet, TCP/IP (V6.0 SP2 and higher)	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
• Device/resolution in pixels/display	OP27/320 x 240/ monochrome	TP 270/OP 270, 6"	PC/1024 x 768	PC/1024 x 768	
	OP27/320 x 240/ color	MP 270B, 10" Key/Touch	PC/800 x 600		
	OP37/640 x 480/ color	MP 370, Key/Touch	Panel PC 15"/1024 x 768, Key/Touch	Panel PC 677/877 15"/1024 x 768, Key/Touch	
	TP27-6/320 x 240/ monochrome		Panel PC 12"/800 x 600, Key/Touch		
	TP27-6/320 x 240/ color		Panel PC, 10"/640 x 480		
	TP27-10/640 x 480/ color		Panel PC 577; 15"/1024 x 768, Touch		
	TP37/640 x 480/ color		FI45/1024 x 768	FI45/1024 x 768	
	C7-626/320 x 240/ monochrome				
Number of languages for online language selection	5 (de/en/fr/it/es)	5 (de/en/fr/it/es)	5 (de/en/fr/it/es)	3 (de/en/fr)	5 (de/en/fr/it/es)
Functionality					
Modification of HMI diagnostics data management in RT	No	No	No	WinCC/ProAgent V6.0 and higher	No
Unit overview	Yes	Yes	Yes	Yes	Yes
Message display	Yes	Yes	Yes	Yes	Yes
Sequencer operating display	No	Yes	Yes	Yes	Yes
Diagnostics detail display	Yes	Yes	Yes	Yes	Yes
• Display STL/LAD/signal list	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/Yes
• Display of operands with symbol and comment	OP27, C7-626, TP27-6: Default setting symbols	Yes	Yes	Yes	Yes
Criteria analysis	When fault occurs/ current status	When fault occurs/ current status	When fault occurs/ current status/	When fault occurs/ current status/ can be archived	When fault occurs/ current status
Motion display					
• Number of viewable movements	OP27, C7-626, TP27-6: 4; OP37, TP27-10, TP37: 5	6	6	6	6
• Directions of motion	2	2	2	2	2
• Number of viewable end positions per movement	8	16	16	16	16

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Technical specifications (continued)

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible/ ProAgent
Documentation					
In electronic format	de/en/fr/it/es; included in scope of delivery	de/en/fr/it/es; included in scope of delivery	de/en/fr/it/es; included in scope of delivery	de/en/fr; included in scope of delivery	de/en/fr/it/es; included in scope of delivery
Requirements					
HMI software	ProTool V6.0	ProTool V6.0	ProTool/Pro V6.0	WinCC V6.2 (ProAgent V6.0 + SP4)	WinCC flexible 2007
Operating system: Configuration	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 and higher)	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 and higher)	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 and higher)	*WinCC/ProAgent V6.0 + SP4:* Windows 2000 + SP3, Windows XP + SP2, Windows Server 2003 + SP1	Windows 2000 + SP4, Windows XP + SP2,
Operating system Runtime	Runtime Operator Panel	Windows CE 3.0	Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 and higher)	*WinCC/ProAgent V6.0 + SP4:* Windows 2000 + SP3, Windows XP + SP2, Windows Server 2003 + SP1	*WinCC flexible/ ProAgent for SIMATIC Panels:* Windows CE 3.0 *WinCC flexible/ ProAgent for WinCC flexible Runtime:* Windows 2000 + SP4, Windows XP + SP2
STEP 7	V5.0 and higher	V5.0 and higher	V5.0 and higher	V5.3 and higher	V5.3 and higher
• S7-GRAPH	V5.0 and higher	V5.0 and higher	V5.0 and higher	V5.3 and higher	V5.2 + SP3 and higher
• S7-PDIAG	V4.02 and higher	V4.02 and higher	V4.02 and higher	V5.1 and higher	V5.1 and higher
• S7-HiGraph	No	V5.0 and higher	V5.0 and higher	No	V5.3 and higher
Type of delivery (one license is required for each target hardware)	License key	Runtime license	Runtime license	CD-ROM/ Runtime license	Runtime license

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SIMATIC ProAgent process diagnostics software

SIMATIC ProAgent

Ordering data

		Order No.
SIMATIC ProAgent		
Software option package for process diagnostics based on S7-GRAPH, S7-PDIAG and S7-HiGraph [1], can be loaded with SIMATIC ProTool configuring software V6.0 and higher [2]; functional enhancement for ProTool, electronic documentation in English, French, German, Italian and Spanish		
• **SIMATIC ProAgent for OP** Functions and standard screens for use on an OP27/OP37, TP27/TP37 or C7-626 in English, French, German, Italian and Spanish, runtime license (single license)	B	**6AV3 681-1AB06-0AX0**
• **SIMATIC ProAgent/MP** Functions and standard screens for use on an OP 27x/TP 27x and MP 277/MP 37x keys in English, French, German, Italian and Spanish, runtime license (single license)	B	**6AV3 681-1CB06-0AX0**
• **SIMATIC ProAgent/PC** Functions and standard screens for use on a Panel PC 670/870 10“, 12“ and 15“ Key, PC (resolutions 640 x 480, 800 x 600 and 1024 x 768 pixels) in English, French, German, Italian and Spanish, runtime license (single licenses)	B	**6AV3 681-1BB06-0AX0**

	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:	
• V5.1 (ProAgent V5.6)	**6AV6 371-1DG05-6AX0**
• V6.2 (ProAgent V6.0 SP4)	**6AV6 371-1DG06-0EX0**
Upgrade	
• to V5.6	**6AV6 371-1DG05-6AX4**
• to V6.0 (SP4)	**6AV6 371-1DG06-0EX4**
SIMATIC WinCC flexible / ProAgent	
Software option package for process error diagnosis based on S7 PDIAG V5.1 and higher, S7 GRAPH V5.2 + SP3 and higher; S7 HiGRAPH V5.3 and higher. Functional enhancement for SIMATIC WinCC flexible; electronic documentation in English, French, German, Italian and Spanish	
• **WinCC flexible/ProAgent for SIMATIC Panels** Runtime license (Single License) executable on OP/TP/MP 270/277, MP 370/377	**6AV6 618-7DB01-2AB0**
• **WinCC flexible /ProAgent for WinCC flexible Runtime** Runtime license (single license)	**6AV6 618-7DD01-2AB0**
Documentation (must be ordered separately)	
SIMATIC HMI Manual Collection B	**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	

B) Subject to export regulations: AL: N and ECCN: EAR99S

1) Only in combination with ProAgent/MP and ProAgent/PC

2) Configuring software included on ProTool CD V6

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HMI PC Complete Systems

5

5/2 **Embedded PC systems**
5/2 SIMATIC Panel PC 477-HMI, -HMI/RTX
5/5 SIMATIC Panel PC 477B-HMI, -HMI/RTX

5/7 **HMI Packages with WinCC flexible and WinCC**

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SIMATIC Panel PC 477-HMI, -HMI/RTX

Overview

- Quick start in automation solutions with embedded automation
  - SIMATIC WinCC flexible RT preinstalled and ready-to-run (Panel PC 477-HMI) or SIMATIC WinCC flexible and SIMATIC WinAC RTX preinstalled and ready-to-run (Panel PC 477-HMI/RTX)
  - PROFIBUS and Industrial Ethernet completely configured for use in a SIMATIC environment
  - configuration and programming with SIMATIC WinCC flexible ES and SIMATIC STEP 7 via Industrial Ethernet or PROFIBUS
- Robust operation
  - diskless operation based on Compact Flash card (1 GB CF card) and Windows XP embedded
  - fanless operation
- Flexibility of a PC-based automation environment
  - open for additional PC applications
  - expandable with PC/104+ cards
  - connectivity for USB devices, flat-panel monitor or screen
  - use of WinAC ODK with SIMATIC WinAC RTX
- Data retentivity for WinAC RTX even without uninterruptible power supply (UPS)

Application

The SIMATIC Panel PC 477 combines the ruggedness of an embedded platform with the openness of a PC perfectly:

Its flexibility permits the integration of various applications of an automation solution on one and the same hardware. The fanless and diskless configuration of the Panel PC enables installation directly at the machine and in harsh environments. Using the Ethernet and PROFIBUS interfaces, the system can be integrated into existing automation environments (SIMATIC world, Siemens drive systems).

Panel PC 477 is the preferred platform if the following criteria have to be met for the automation solution:

- Compact, rugged and maintenance-free
- Integration of various tasks such as visualization, control or data processing on one hardware platform
- Use of application-specific hardware and software
- Machine-level use

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Ordering data

Order No.

Panel PC configuration

| | | |

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SIMATIC Panel PC 477-HMI, -HMI/RTX

Ordering data		Order No.
Accessories		
Cover foil for Panel PCs 477/577/677 For protecting the touch screen against dirt/scratches		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19“ Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677 For labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
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**
Expansion components		
SIMATIC PC/PG DiagMonitor V3.1 Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)		**6ES7 648-6CA03-1YX0**
SIMATIC PC/PG Image & Partition Creator Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Ger/En/Fr/Sp/It)		**6ES7 648-6AA04-0YX0**
3.5" disk drive, USB With 1 m connecting cable	A	**6FC5 235-0AA05-1AA2**
Compact Flash Card		
• 256 MB	A	**6ES7 648-2BF01-0XC0**
• 512 MB	A	**6ES7 648-2BF01-0XD0**
• 1 GB	A	**6ES7 648-2BF01-0XE0**
• 2 GB	A	**6ES7 648-2BF01-0XF0**
SIMATIC PC USB FlashDrive 1 GB, USB 2.0, metal enclosure, boot capability	A	**6ES7 648-0DC30-0AA0**
Expansion kit PC/104 For integration of PC/104 modules (packing unit contains 6 expansion frames)	A	**6AG4 070-0BA00-0XA0**
Industrial HUB 4 4 x USB 2.0, IP65 for control cabinet door or DIN rail	A	**6AV6 671-3AH00-0AX0**

A) Subject to export regulations: AL: N and ECCN: EAR99H

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Overview

- Quick start in automation solutions with Embedded Automation
  - SIMATIC WinCC flexible RT pre-installed ready for operation (Panel PC 477-HMI) or SIMATIC WinCC flexible and SIMATIC WinAC RTX pre-installed ready for operation (Panel PC 477-HMI/RTX)
  - PROFIBUS and Industrial Ethernet configured for application in a SIMATIC environment
  - Configuration and programming with SIMATIC WinCC flexible ES and SIMATIC STEP 7 via Industrial Ethernet or PROFIBUS
- Rugged operation
  - No hard-drive operation based on Compact-Flash-Card (1 GByte CF-Card) and Windows XP embedded
  - Operation without fan
- Flexibility of a PC-based automation environment
  - Open for other PC applications
  - Can be expanded with PC/104+ cards
  - Capability of connection for USB devices, Flat Panel monitor or screen
  - Application of WinAC ODK with SIMATIC WinAC RTX
- Data retention for WinAC RTX without uninterruptible power supply (UPS)

Application

The SIMATIC Panel PC 477B is the perfect combination of the ruggedness of an embedded platform and the openness of a PC:

It offers the flexibility for integrating various tasks of an automation solution on a hardware device. The fan and hard disk free design of the Panel PC permits use of the solution directly on the machine in a rugged environment. The Ethernet and PROFIBUS interfaces allow the system to be integrated in existing automation environments (SIMATIC world, Siemens drive systems).

The Panel PC 477 is the platform, where the following criteria are to be met for the automation solution:

- Compact, rugged and maintenance-free
- Integration of various tasks such as visualization, control or data processing on the same hardware
- Utilization of application-specific hardware and software
- Machine-oriented application

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SIMATIC Panel PC 477B-HMI, -HMI/RTX

Ordering data

Order No.

Panel PC Configurator (all versions ex stock)

		Order No.
SIMATIC Panel PC 477B embedded	D	**6ES7 676-■BA00-0■■0**
Celeron M 1.0 GHz processor, main memory 1 GB DDR2 SDRAM, power supply 24 V DC, PROFIBUS DP interface		
Front panels:		
• 12" TFT Touch		**1**
• 12" TFT Key		**2**
• 15" TFT Touch		**3**
• 15" TFT Key		**4**
• 19" TFT Touch		**6**
Mass storage:		
• CompactFlash 1 GB		**B**
• CompactFlash 2 GB		**C**
• CompactFlash 4 GB [1]		**D**
Ooperating system:		
With operating system, Windows XP embedded preinstalled		**A**
With operating system and HMI, Windows XP embedded preinstalled, WinCC flexible RT (incl. archives / recipes) preinstalled		
• Number of tags 128 PT		**C**
• Number of tags 512 PT		**D**
• Number of tags 2048 PT		**E**
With operating system and HMI/RTX Windows XP embedded preinstalled, WinCC flexible RT (incl. archives / recipes) preinstalled, Win AC RTX preinstalled and configured		
• Number of tags 128 PT [1]		**F**
• Number of tags 512 PT [1]		**G**
• Number of tags 2048 PT [1]		**H**

A) Subject to export regulations: AL: N and ECCN: EAR99H
B) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1

		Order No.
Accessories		
Cover foil for Panel PCs 477/577/677		
For protecting the touch screen against dirt/scratches		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Labeling foil for Panel PCs 477/577/677		**6AV7 672-0DA00-0AA0**
For labeling softkeys and function keys, blank, supplied in sets of 10		
Expansion components		
SIMATIC PC/PG DiagMonitor V3.1	B	**6ES7 648-6CA03-1YX0**
Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)		
SIMATIC PC/PG Image & Partition Creator		**6ES7 648-6AA04-0YX0**
Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Ger/En/Fr/Sp/It)		
3.5" disk drive, USB	A	**6FC5 235-0AA05-1AA2**
With 1 m connecting cable		
Compact Flash Card		
• 256 Mbyte	A	**6ES7 648-2BF01-0XC0**
• 512 MB	A	**6ES7 648-2BF01-0XD0**
• 1 Gbyte	A	**6ES7 648-2BF01-0XE0**
• 2 Gbyte	A	**6ES7 648-2BF01-0XF0**
• 4 GB [1]		**6ES7 648-2BF01-0XG0**
SIMATIC PC USB FlashDrive	A	**6ES7 648-0DC30-0AA0**
1 GB, USB 2.0, metal enclosure, bootable		
Expansion kit PC/104	A	**6AG4 070-0BA00-0XA0**
For integration of PC/104 modules (packing unit contains 6 expansion frames)		
Industrial USB Hub 4	A	**6AV6 671-3AH00-0AX0**
4 x USB 2.0, IP65 for control cabinet door or DIN rail		

1) Estimated start of delivery is October 2007.

Please note:

The scope of supply of the Panel PC 477B mainly comprises the Panel PC and a software pack, i.e. CompactFlash card with preinstalled and configured software as well as all the necessary license keys. After the CompactFlash card has been inserted in the (internal) slot provided, the unit is ready for switching on.

Note:

Other complete turnkey solutions (the software is already installed and configured) on Microbox PC basis can be found under SIMATIC PC based Control.

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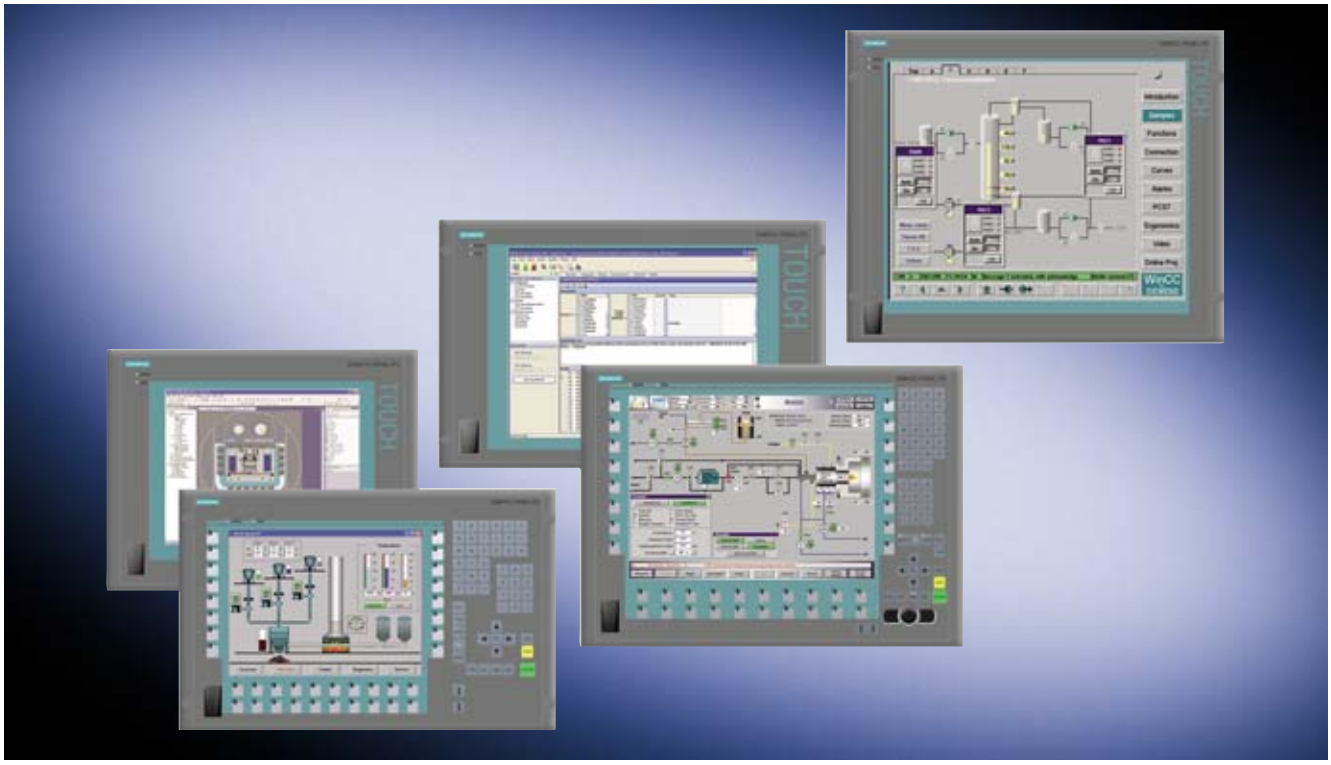
Overview



SIMATIC Panel PC with SIMATIC WinCC flexible

- SIMATIC Panel PC 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 Panel PC is ordered together with the WinCC flexible Runtime software. It cannot be ordered subsequently.
- In combination with the Panel PC 477/477B there are turn-key solutions, i.e. the runtime software is already preinstalled.

SIMATIC Panel PC with SIMATIC WinCC

- The SIMATIC Panel PC 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 Panel PC is ordered together with the WinCC software. It cannot be ordered subsequently.

Benefits

- Easy to order
- Cost savings in contrast to ordering components individually
- Optimally tuned hardware for the SIMATIC HMI software
- System-tested solution

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HMI packages with WinCC flexible and WinCC

Design

SIMATIC Panel PC with SIMATIC WinCC flexible

The order configurator gives you a free choice of how the Panel 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. You can choose from the following types of license:

- License for 128 Power Tags
- License for 512 Power Tags
- License for 2048 Power Tags

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 Panel PC with SIMATIC WinCC

The order configurator gives you a free choice of how the Panel 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. 256 MB
- Min. 10 GB 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.

Licenses are required for WinCC Runtime. You can choose from the following types of license:

- License for 128 Power Tags
- License for 256 Power Tags
- License for 1024 Power Tags
- License for 8192 Power Tags (for WinCC V6.2)
- License for 65536 Power Tags

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.

Ordering data

		Order No.	
SIMATIC WinCC flexible Package [1) 2)] **(incl. Archives and Recipes)**	D	**6AV6 623-2** ■	**A00 0AA0**
Includes runtime license			
• 128 Power Tags			**B**
• 512 Power Tags			**D**
• 2048 Power Tags			**F**
SIMATIC WinCC Package [1)]		**6AV6 382-2** ■	**A06 2AX0**
WinCC V6.2 Runtime [2) 3)]			
• 128 Power Tags			**C**
• 256 Power Tags			**D**
• 1024 Power Tags			**E**
• 8192 Power Tags			**H**
• 65536 Power Tags			**F**
Communication via on-board interfaces			

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) Only when a Panel PC is ordered simultaneously

2) The current version will always be supplied

3) Through a license, not through authorization

Note:

For ordering data for Panel PCs and accessories, see configurators in "SIMATIC Panel PCs"

More information

Additional information is available in the Internet:

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

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6

Customized Products

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6/53 Flat Panel 15,1"

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6/55 Flat Panel 15,1"

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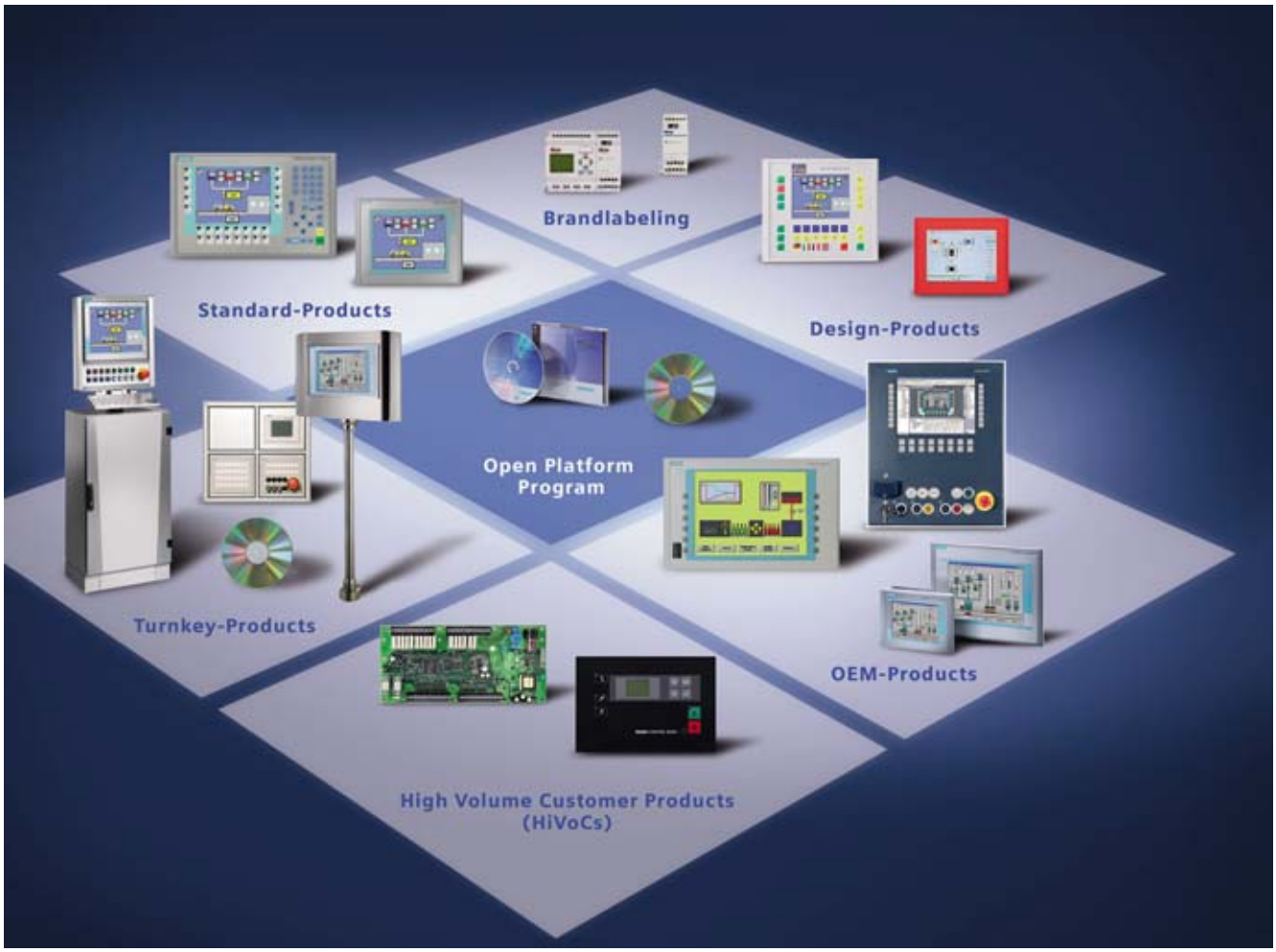
Introduction

Overview



This presents an overview of customer-specific modifications of the SIMATIC HMI products with examples for the various sectors.

It includes both customer-specific product modifications for fulfilling individual requirements as well as product examples for selected sectors such as the automotive industry, general mechanical engineering, the food and beverages industry and pharmaceuticals.

Design products

Customer-specific design involves structural modifications of SIMATIC HMI products for seamless adaptation to the individual machine and plant design and the special operating philosophy of the customers.

The possibilities for modification are:

- Changing the company logo and device type designation
- Changing the keyboard colors, key labels or key symbols
- Different housing color (front frame)

Design products are completely compatible with the technology and functionality of the standard products. The similar technology enables, among other things, replacement with standard devices in case of unit failure if the machine or plant supplier does not have a customized product available in their own spare parts store at the time.

OEM products

Product modifications for OEM (original equipment manufacturer) customers are suitable for individual industrial automation tasks that cannot be solved using standard products or panels that were simply modified in respect of their design.

OEM products are individual solutions based on SIMATIC HMI standard components. They are specified, offered, developed and supplied on an individual, customer-specific basis.

For this purpose, we simply combine – as in a system of building blocks – standard components, customized components and additional software function enhancements required to create a SIMATIC HMI OEM device.

Possible modifications:

- Changes to the keyboard layout, key size/design and key arrangement
- Freely-definable front dimensions and device mechanics
- Integration in the housing for desktop or support arm installations
- Different processors and memory media
- Different display technologies, sizes and resolutions
- Decentralized configuration
- Additional modules or interfaces
- Freely-selectable Windows versions as operating system, preinstalled SIMATIC HMI software packages

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Overview (continued)

It is frequently the case, however, that new OEM products are efficiently and cost effectively based on existing OEM products (see product examples). In such cases, the end product is considered to be a customized modification of an existing OEM product.

Our OEM devices are available in all performance classes: From OEM Push Button Panels through Text Displays, Touch and Operator Panels right up to multifunctional platforms (MP) and Panel PCs with far-reaching changes in hardware, equipment and software. Customized OEM products are developed and produced in various stages in accordance with quality standards.

Turnkey products

The customer-specific turnkey products are ready to set up and switch on, combined and constructed according to the specifications of the customer and according to the specific technical requirements of the HMI products. With turnkey products, the HMI products are tested and supplied e.g. as complete operator stations, i.e. installed in special housings, wired and supplied with the specified software.

- Optimized HMI operator panel: ergonomic, functional, certified and tested
- Optimum mechanical installation of devices, with defined high degree of protection
- Flexible design and wiring
- Variable installation (support arm, stand, wall mounting)
- Certified according to VDE, CE and UL (according to agreement and statutory directives)
- Vibration and shock-tested
- Packed for safe transport
- Tested thermal cycling with passive cooling, and therefore with specified ambient temperature
- Customized software suite with electronic software release management

Customized SIMATIC HMI turnkey products are "ready-to-install" and "ready-to-use" with the quality of series products, and all from one source.

Open Platform Program

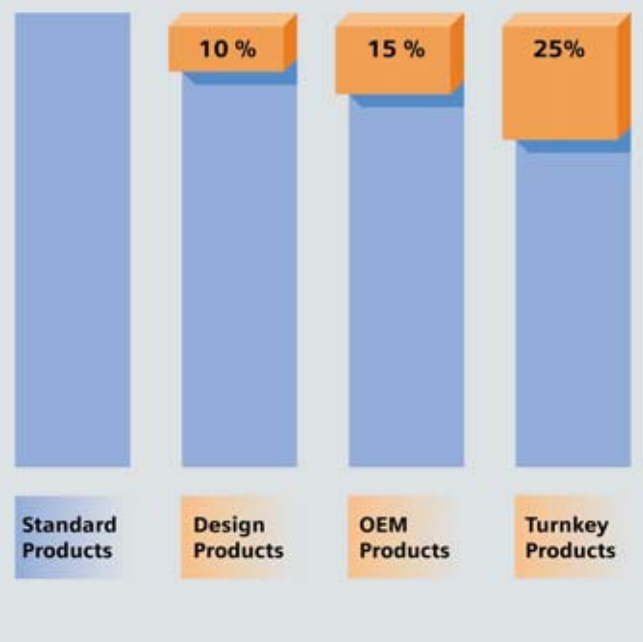
SIMATIC HMI panels with Windows CE operating system and panel PC are open for software function expansions from WinCC flexible or for customer applications.

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 supports the optimum adaptation and fast implementation of customized hardware and software solutions:

- Customer applications
- Expansions of SIMATIC HMI software WinCC flexible using ActiveX controls
- Customer's specific project functions or tasks that interact with WinCC flexible

The basis is the SIMATIC HMI - WinCE platform, i.e. Windows CE-based SIMATIC HMI panels from TP 177B, as standard product or as OEM product and also Panel PC products. As an option, SIMATIC HMI panels can also be used as platforms for other CE software.

Proportion of customer-specific modifications compared to SIMATIC HMI standard products



Product examples from the various industries

SIMATIC HMI products are provided with additional features in order to facilitate optimum use in specific sectors of industry. Stainless steel front panels for the food, beverages and tobacco industry are one such example. With the exception of their front panels, the devices are identical to standard products in respect of function and technology.

We can offer products for the following sectors:

- Automotive industry – HMI for production automation
- General machine construction
- Food, beverages and tobacco industries
- Chemical and pharmaceutical industries.

Customized products for various industries are developed and produced in association with a customized product agreement.

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Overview

For machines and systems, SIMATIC HMI products are important for individual ccorporate design when making purchase 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 type designation adaptation
- **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 coloring 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 the HMI Design Center with professional industrial designers:

- 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

Services of the *HMI Design Center*:

- Design and specifications of the desired, customer-specific design version A, B or C with the approval of the customer
- Getting customer approval: Release
- Design draft and release of sample template
- Archiving

Reaction times of the *HMI Design Center*

- 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 further information).

A quotation will be made for any further changes and consultation services.

In the context of the 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

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Selection and ordering data

Ordering notes

Explanations of tables with selection and ordering data

"Device type" and "Order No. of associated standard device"

- "Type info" and "Order No." of the HMI product to be modified.
- Delivery of a design version can start two months after start of delivery for a standard device at the earliest.

"Design version"

- Type of modification desired, according to design versions

"Minimum order quantity"

- In order to be able to offer high-quality products at prices that can compete on the global market, a minimum annual quantity and minimum order quantity must be specified.
- A comprehensive presentation of all possible design devices appears in the overview tables, along with associated minimum quantities.

Prices and non-recurring costs

- Customized design devices are subject to a premium in addition to the standard device price.
- One-off costs for design and implementation of the design version in the plant are added to the adapted unit price. The extent of these costs will vary depending on device and design.

Processing

Orders for customized designs have to be processed in accordance with a specific procedure. Two customer approval stages are designed to ensure that the end product complies absolutely and fully with expectations. Order processing takes place at our stores in Nuremberg, as of one unit or more per order!

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 after expiration of warranty (upon delivery completion).

Micro Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Operator Panel OP 73micro	**6AV6 640-0BA11-0AX0**	A	25
		B	25
		C [1]	50
Touch Panel TP 070	**6AV6 545-0AA15-2AX0**	A	25
		C [1]	25
Touch Panel TP 177micro	**6AV6 640-0CA11-0AX0**	A	25
		B	25
		C [1]	50

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis.

Mobile Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Mobile Panel 177 DP [1]	**6AV6 645-0AA01-0AX0**	A	75
		B	75
Mobile Panel 177 DP [1] with stop button	**6AV6 645-0AB01-0AX0**	A	75
		B	75
Mobile Panel 177 DP [1] with stop button	**6AV6 645-0AC01-0AX0**	A	75
		B	75
Mobile Panel 177 PN [1]	**6AV6 645-0BA01-0AX0**	A	75
		B	75
Mobile Panel 177 PN [1] with stop button	**6AV6 645-0BB01-0AX0**	A	75
		B	75
Mobile Panel 177 PN [1] with stop button	**6AV6 645-0BC01-0AX0**	A	75
		B	75
Mobile Panel 277 with acknowledgement button	**6AV6 645-0CA01-0AX0**	A	75
		B	75
Mobile Panel 277 with acknowledgement button and STOP button	**6AV6 645-0CB01-0AX0**	A	75
		B	75
Mobile Panel 277 with acknowledgement button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton	**6AV6 645-0CC01-0AX0**	A	75
		B	75

1) Start of delivery 2 months after start of delivery of standard device

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Selection and ordering data (continued)

Operator Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Operator Panel OP73	**6AV6 641-0AA01-0AX0**	A	25
		B	25
		C [2]	50
Operator Panel OP77A	**6AV6 641-0BA11-0AX0**	A	25
		B	25
		C [2]	50
Operator Panel OP77B	**6AV6 641-0CA01-0AX0**	A	25
		B	25
		C	50
Operator Panel OP177B DP bluemode [1]	**6AV6 642-0DC01-1AX0**	A	25
		B	25
		C [2]	50
Operator Panel OP270 10"	**6AV6 542-0CC10-0AX0**	A	25
		B	25
		C [2]	50
Operator Panel OP277 6"	**6AV6 643-0BA01-1AX0**	A	25
		B	25
		C [2]	50

1) Start of delivery 2 months after start of delivery of standard device
2) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Touch Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Touch Panel TP177A	**6AV6 642-0AA11-0AX0**	A	25
		B	25
		C [2]	50
Touch Panel TP177B color [1]	**6AV6 642-0BA01-1AX0**	A	25
		B	25
		C [2]	50
Touch Panel TP177B blue mode [1]	**6AV6 642-0BC01-1AX0**	A	25
		B	25
		C [2]	50
Touch Panel TP177B PN/DP color INOX	**6AV6 642-8BA10-0AA0**	A	25
		B	25
Touch Panel TP270 10"	**6AV6 545-0CC10-0AX0**	A	25
		B	25
		C [2]	50
Touch Panel TP270 6"	**6AV6 643-0AA01-1AX0**	A	25
		B	25
		C [2]	50

1) Start of delivery 2 months after start of delivery of standard device
2) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

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Selection and ordering data (continued)

Multi Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Multi Panel MP277 8" Touch	**6AV6 643-0CB01-1AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP277 8" Tasten	**6AV6 643-0DB01-1AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP277 10" Touch	**6AV6 643-0CD01-1AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP277 10" Tasten	**6AV6 643-0DD01-1AX0**	A	25
		B	25
		C [1]	25
Multi Panel MP277 10" Touch INOX	**6AV6 643-8AD10-0AA0**	A	25
		B	25
Multi Panel MP370 12" Touch	**6AV6 645-0DA10-0AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP370 12" Keys	**6AV6 642-0DA10-0AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP370 15" Touch	**6AV6 645-0DB10-0AX0**	A	25
		B	25
		C [1]	50
Multi Panel MP370 15" Touch INOX	**6AV6 645-8DB10-0AA0**	A	25
		B	25

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

C7

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
C7-635 Keys	**6ES7 635-2EB02-0AE3**	A	25
		B	25
		C [1]	50
C7-635 Touch	**6ES7 635-2EC00-0AE3**	A	25
		B	25
		C [1]	50
C7-636 Keys	**6ES7 636-2EC00-0AE3**	A	25
		B	25
		C [1]	50
C7-636 Touch	**6ES7 636-2EB00-0AE3**	A	25
		B	25
		C [1]	50
C7-633	**6ES7 636-2EB00-0AE3**	A	25
		B	25
		C [1]	50

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

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Selection and ordering data (continued)

Flat Panels

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
12" Flat Panel	**depending on the configuration**	A	25
		B	25
		C [1]	50
15" Flat Panel	**depending on the configuration**	A	25
		B	25
		C [1]	50
17" Flat Panel	**depending on the configuration**	A	25
		B	25
		C [1]	50
19" Flat Panel	**depending on the configuration**	A	25
		B	25
		C [1]	50

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Panel PC

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Panel PC 477 12" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477 12" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477 15" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477 15" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477 19" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477B 12" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477B 12" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477B 15" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477B 15" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 477B 19" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

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Selection and ordering data (continued)

Panel PC (continued)

Device type	Order No. of associated standard device	Design version	Minimum order quantity per year
Panel PC 577 12" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 577 12" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 577 15" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 577 15" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 577 19" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677 12" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677 12" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677 15" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677 15" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677 15" Touch INOX	**depending on the configuration**	A	25
		B	25
Panel PC 677 19" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 12" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 12" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 15" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 15" Keys	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 17" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50
Panel PC 677B 19" Touch	**depending on the configuration**	A	25
		B	25
		C [1]	50

1) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

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More information

Contacts

Please contact your local/national Siemens HMI representative (visit our Internet site for more information).

Additional information is available in the Internet:

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

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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 – 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 device mechanics
  - A variety of processors for customized performance
  - A variety of memory media and capacities
  - 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 the automotive industry and the food, beverages and tobacco industries, as well as in the plastics-processing industry are benefiting from our experience of delivering tried and tested OEM versions and industry standards.

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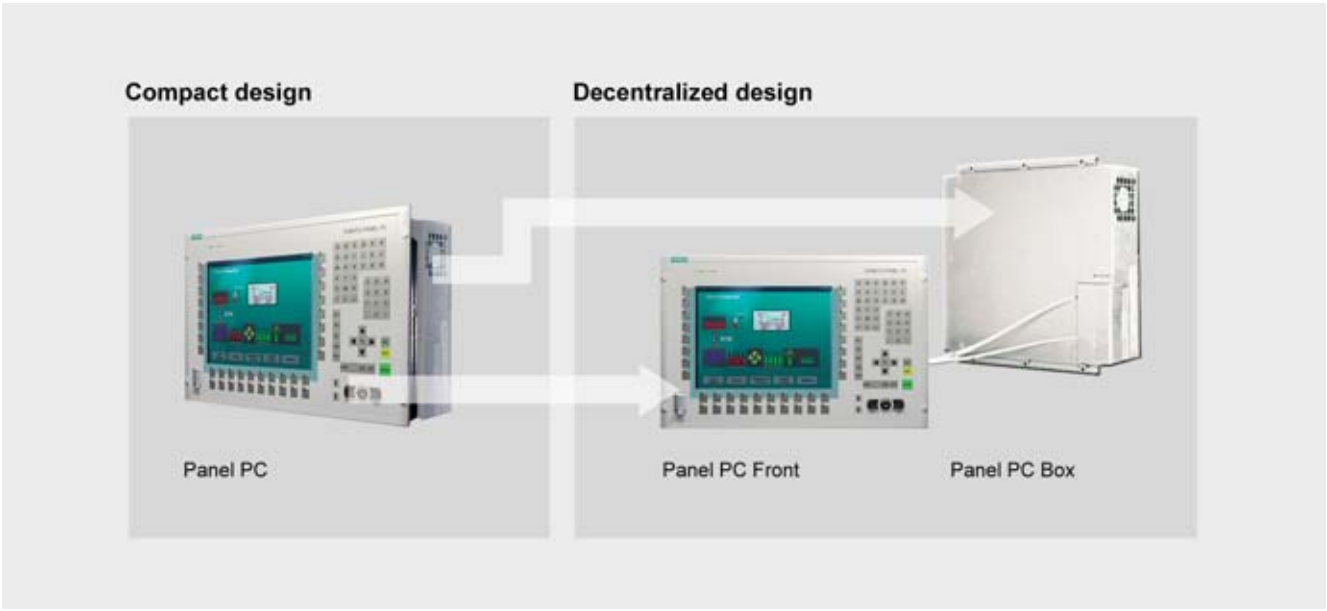
HMI links – Area of application and distance

Overview



Decentralized design with HMI Links

In a distributed configuration, the panel PC front and the panel PC box are physically separated from each other. They remain connected by cable. As a result, the front can even be installed in harsh environmental conditions, while the box is operated in a suitable environment.

- **HMI Short Link**
  Design for distances up to 5 m
- **HMI VGA Link**
  Design for distances up to 20 m with Flat Panels
- **HMI Remote Kit Link**
  Design for distances up to 30 m
- **HMI Remote Operate System** for all panels and panel PCs
  Design for any distances

Benefits

- Panel PCs can be used with the HMI Links without sacrificing display quality in harsh industrial environments.
- Image and operating data are transmitted without any special software on the PC.
- The transmission rate is real time because the signals are only transmitted over special HW modules.
- Information is received simultaneously at the terminals. (Minimal delay resulting from transmission path propagation times).
- With Remote Operate SW, additional software is installed on the panel PC and/or client and on the server.

Application

- Automotive industry
  - Mechanically and electromagnetically loaded environments (e.g. welding systems, presses) or also clean room requirements
  - Large machines and distributed systems
  - Connection of several terminals to one industrial PC

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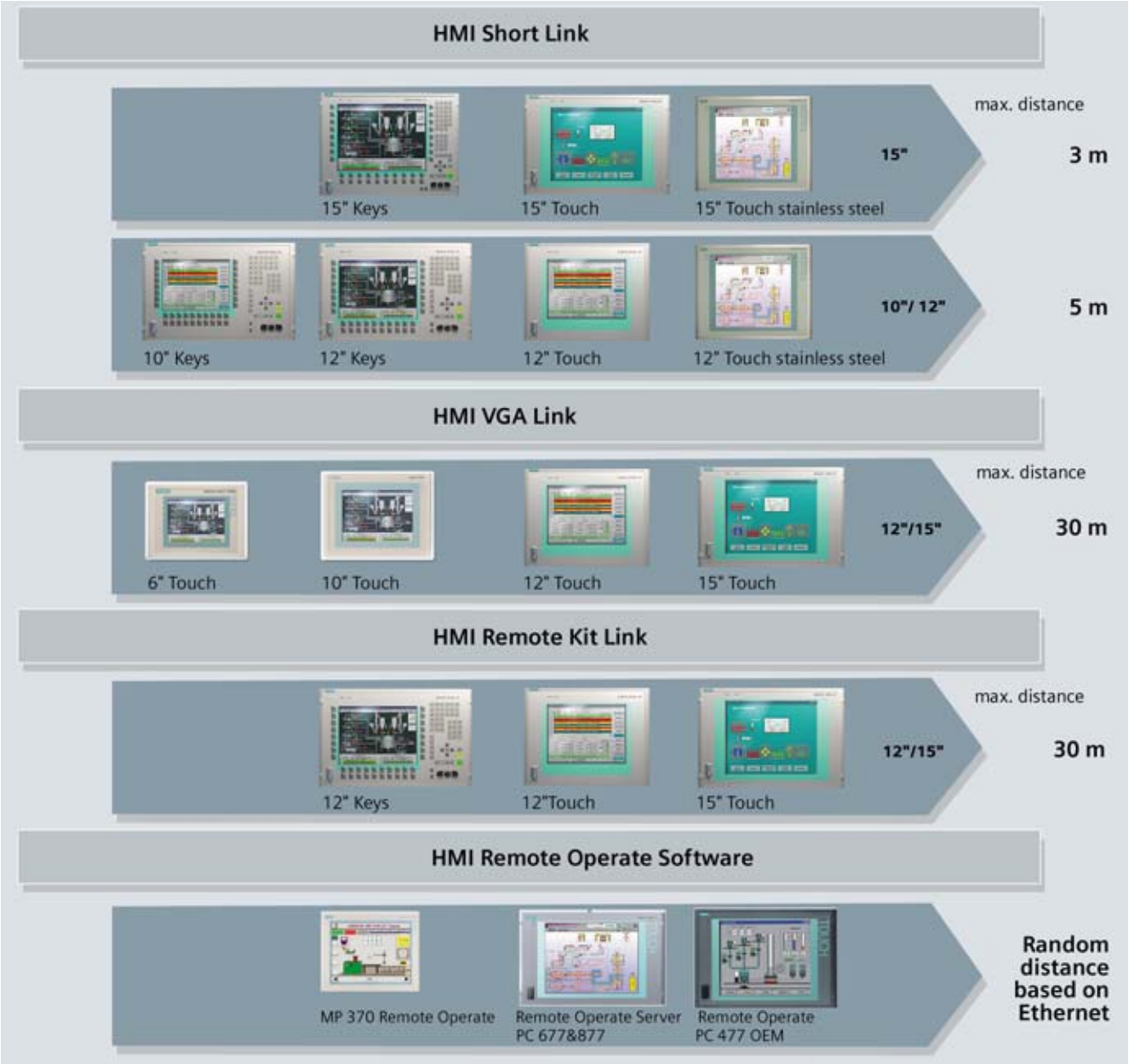
Application (continued)



Possible applications for HMI links

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HMI Links

Overview

HMI Short Link

HMI Short Link with Panel PC and Panel PC Box

Der HMI Short Link is based on existing PC interfaces. This requires special connection lines between the PC and the Panel Front.

- Separate transfer of signals from the keyboard,
- Touch screen or mouse and I/O connections
- Via USB (Universal Serial Bus) and the display information via LVDS (low voltage differential signaling)
- No auxiliary power supply on front panel
- No driver software required (independent of the operating system)

HMI VGA Link

HMI VGA Link with LCD Monitor and Panel PC Box

The HMI VGA Link is based on existing PC interfaces – respective PC box and LCD monitor. This requires connection lines between the PC box and the Panel Front.

- Separate transfer of signals from the keyboard, touch screen or mouse as well as I/O connected via USB (Universal Serial Bus) and the display information via VGA / DVI-I connection
- Auxiliary power supply on front panel / LCD monitor is required
- No driver software required (independent of the operating system)

HMI Cu Link

HMI with Panel PC Front and Panel PC Box

The HMI Cu Link is based on special transmission technology for image and input signals. This requires a send and a receive module. The HMI Cu Link connecting cable is used to supply power and transmit all the required signals.

- Common transfer of signals from keyboard and touchscreen or mouse as well as the connectable I/O and the transfer of display information as well as the
- Panel power supply via plug-in cable
- No driver software required (independent of the operating system)
- Supply voltage terminal 24 V DC via plug-in cable
- Additional send and receive modules required (PC: Transmitter, Panel PC front: Receiver)
- For distances of up to 35 m, the front USB interface on the panel is not required, the serial touch-controller is used in this case

HMI Remote Operate Software

The HMI Remote Operate Software is an industrial, Ethernet-based remote control (see “OEM products, software”).

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Overview

Single terminal mode – simple distributed configuration – one operator station

Single terminal mode

Optional with:
- HMI Short Link
- HMI VGA Link
- HMI Remote Kit Link
- HMI Remote Operate Software

Panel PC + additional terminal = 2 operator stations

Terminal mode with panel PC

Optional with:
- HMI VGA Link
- HMI Remote Kit Link
- HMI Remote Operate Software

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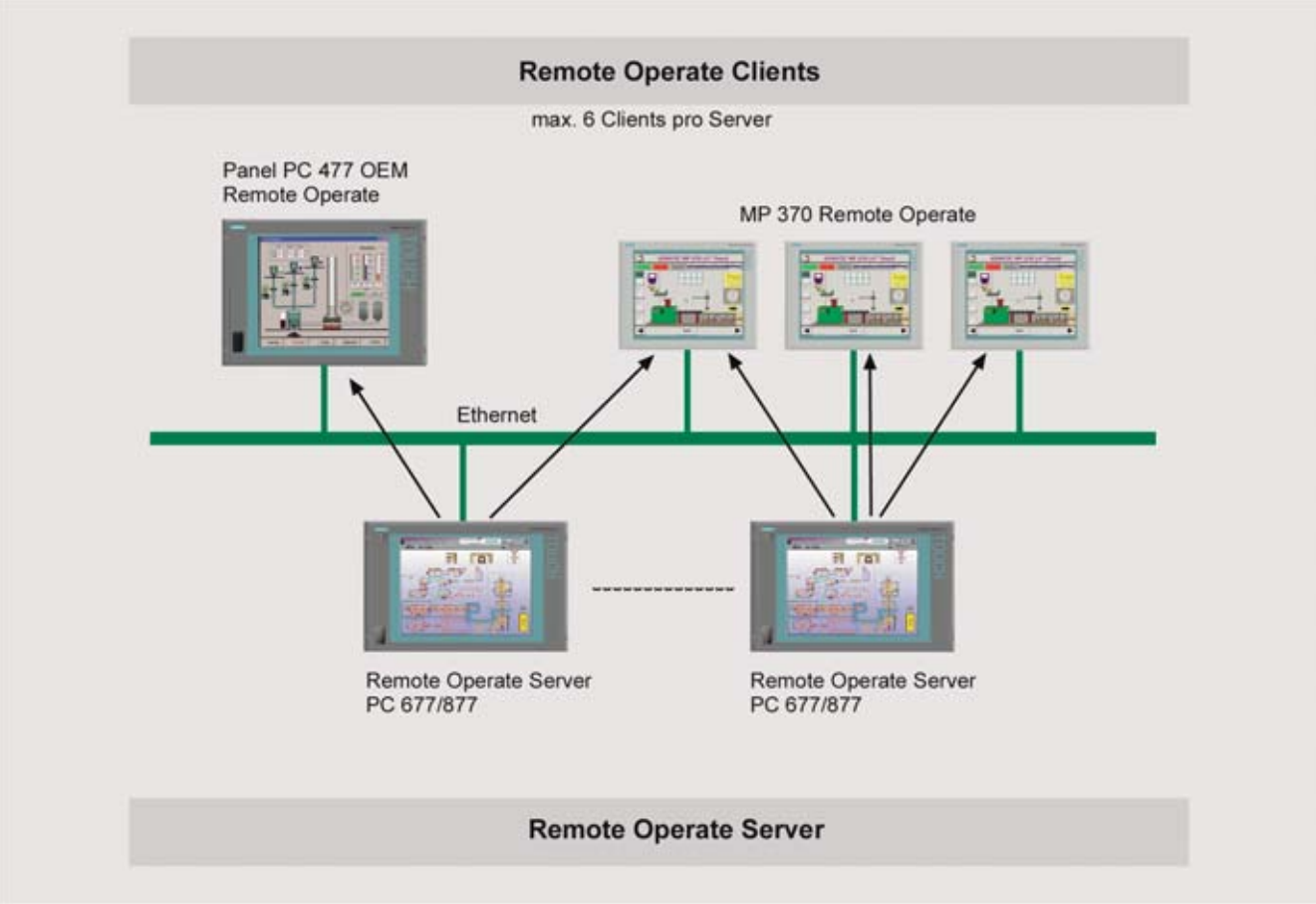
Remote Operate Software

Application

Remote Operate Software



Panel PC connected to Thin Clients

Multi-user system with Panel PCs for up to six operator stations based on Thin Clients with MP370 and PC477-OEM

- With operational locking mechanism
- In a software application with identical screen content
- Same screen resolution
- Without server operating system
- Industrial remote control
  - Independent of the installed software
- Identical images on all devices
- 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

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Overview

MP 277 6" Touch monochrome upright

Using panels in upright position is required in smaller spaces. The MP 277 6" Touch monochrome with upright display (portrait format) expands the range of standard panels in customer-specific projects.

Benefits

- Upright installation for narrow installation spaces on the machine
- Upright display (portrait format) of the screen content
- Adapted engineering system: "What you see is what you get".
- Proven functionality of the SIMATIC HMI standard products
- In combination with WinAC MP 2007, a compact combination of HMI and controller

Area of application

The MP 277 6" Touch monochrome upright is designed for upright installation with display of the screen content in portrait format as well as for WinAC MP 2007 applications. The device is suitable for installation in machines with narrow installation spaces, e.g. packaging machines, baking machines and more.

Design

- Special features:
  - display 6", monochrome, upright,
  - second RS485 interface (1xUSB not installed) for customer-specific communication protocol
- Other design features of the device are comparable to the relevant standard products
- Outer dimensions and installation cut-out is the same as for the respective standard product
- Angle adapter required for communication:
  - RS422/RS485 angle adapter

Technical data

- Display 5.7", monochrome (blue mode)
- Resolution 240 x 320 pixels

The modified orientation of the display and the resolution must be considered accordingly in the configuration of the user interface.

Special features: Interfaces

- Second RS485 interface (1xUSB not installed) for customer-specific communication protocol

The remaining technical data corresponds to the basic standard device MP 277 8" Touch.

Modification options

- Customized design
- Resistant and rugged stainless steel front with smoothed surface to permit easy cleaning
- Customer-specific applications for Windows CE-based panels (Open Platform Program)

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MP 277 8" Touch upright

Overview

MP 277 8" Touch upright

Using panels in upright position is required in smaller spaces. The MP 277 8" Touch with upright display (portrait format) expands the range of standard panels in customer-specific projects.

Benefits

- Upright installation for narrow installation spaces on the machine
- Upright display (portrait format) of the screen content
- Adapted engineering system: "What you see is what you get".
- Proven functionality of the SIMATIC HMI standard products
- In combination with WinAC MP 2007, a compact combination of HMI and controller

Area of application

The MP 277 8" Touch upright is designed for upright installation with display of the screen content in portrait format as well as for WinAC MP 2007 applications. The device is suitable for installation in machines with narrow installation spaces, e.g. packaging machines, baking machines and more.

Design

- MP 277 8" Touch with customer-specific front and customer-specific control elements
- Membrane covering the display for increased impermeability and as display shattering protection
- The mechanical concept for the front is designed for fastening from behind in a control box
- Outer dimensions and installation cut-out are customer-specific
- Further design features of the device correspond with that of the basic standard product
- Angle adapter required for communication:
  - RS422/RS485 angle adapter

Technical specifications

- Display 7.5" TFT color
- Resolution 480 x 640 pixels

The modified orientation of the display and the resolution must be considered accordingly in the configuration of the user interface.

Special features:

- Type of installation:
  Rear installation
- Degree of protection:
  IP65 (in combination with customer-specific housing and seal)
- Control elements
  3 keys 24 V DC integrated, EMERGENCY STOP
- Installation dimensions:

Housing	OEM MP 277 T 8“
Outer dimensions W x H x D (mm)	233 x 322 x 66.5
Installation cut-out W x H (mm)	229 x 318
Installation depth (mm)	min. 67 [1]
Type of protection	
• Front	max. IP65 [2]
• Rear	IP20
Weight (kg)	approx. 2.7

1) The installation depth increases by the thickness of the housing seal to be provided by the customer (compressed).
2) Depends on installation technology and the housing seal used

The remaining technical data corresponds with the basic standard device MP 277 8" Touch.

Modification options

- Customized design
- Resistant and rugged stainless steel front with smoothed surface to permit easy cleaning
- Customer-specific applications for Windows CE-based panels (Open Platform Program)

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Ordering data

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
- Product agreement with the main conditions for technology, quantity planning and logistics, service and repair agreements

Processing

Customized OEM 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, the Developer Service.

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

Identified repairs are performed. Other repair concepts can be defined with the product agreement.

The required customer-specific spare parts (device fronts) are to be stored and provided by the customer after expiration of warranty (upon delivery completion).

More information

SIMATIC contacts in your area

Additional information is available in the Internet under:
http://www.siemens.com/hmi-oem

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HMI Operator stations

Overview

Turnkey products are SIMATIC HMI products or "ready-to-run" operator stations, i.e. prefabricated and ready-to-run SIMATIC Panels, Multi Panels or Flat Panels and Panel PCs, installed in customer-specific housings.

Operator stations for SIMATIC Multi Panels and Thin Client with 10" or larger displays (diagonal)

Variant 1 A – device enclosure

Variant 1 B – device enclosure

Variant 2 A – with one row of control elements

Variant 2 B – with one row of control elements

Variant 3 A – with two rows of control elements

Variant 3 B – with two rows of control elements

Variant 4 A – with two rows of control elements and external keyboards

Variant 4 B – with two rows of control elements and external keyboard

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Overview (continued)

Operator stations for SIMATIC Panel PCs and Flat Panels

Variant 1 A – device enclosure

Variant 1 B – device enclosure

Variant 2 A – with one row of control elements

Variant 2 B – with one row of control elements

Variant 3 A – with control elements, two rows

Variant 3 B – mit Bedienelementen, zweireihig

Variant 4 A – with control elements, two rows and external keyboardr

Variant 4 B – with control elements, two rows and external keyboard

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HMI Operator stations

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 were 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.

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

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

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Technical specifications

	SIMATIC Panels MP 277 10" Keys/Touch, MP 370 12" Keys/Touch, MP 370 15" Touch, MP 377 12" Keys/Touch, MP 377 15" Touch, MP 377 19" Touch, Thin Client 10" Touch, Thin Client 15" Touch							
	Configuration 1		Configuration 2		Configuration 3		Configuration 4	
	A	B	A	B	A	B	A	B
Housing data								
Width in mm (min.-max.)	444 - 591	430-663	444 - 591	430-663	444 - 591	430-663	444 - 591	430-663
Height in mm (min.-max.)	384 - 569	362-490	533 - 569	476-601	533 - 569	542-601	533 - 569	542-601
Depth in mm	131	99	131	99	131	99	131	99
Weight in kg (min.-max.)	9 - 11	9-11	9 - 11	9-11	10 -12	10-12	13-15	13-15
Material	Aluminum	Aluminium	Aluminium	Aluminium	Aluminum	Aluminium	Aluminum	Aluminium
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Approvals	CE	CE	CE	CE	CE	CE	CE	CE
24 V fan in housing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Housing locking device	hinged	Double-bit key 3	hinged	Double-bit key 3	hinged	Double-bit key 3	hinged	Double-bit key 3
Control elements	-	-	3SB, single-row	3SB, single-row	3SB, double-row	3SB, double-row	3SB, triple-row	3SB, triple-row
Keyboard	-	-	-	-	-	-	Attachment keyboard with touch-pad	Attachment keyboard in stainless-steel housing with touchpad
Permitted temperature range								
Housing ambient temperature	0 … 40 °C	0 - 40 °C	0 … 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C
Installation options								
Support arm mounting (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mounted on stand (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	SIMATIC Flat Panels 12"/15"/17"/19" Touch, 12"/15"/17"/19" pure display							
	Configuration 1		Configuration 2		Configuration 3		Configuration 4	
	A	B	A	B	A	B	A	B
Housing data								
Width in mm (min.-max.)	509 - 591	595	509 - 591	595	509 - 591	595	509 - 591	595
Height in mm (min.-max.)	419 - 509	407-536	569 - 659	521-650	569 - 659	587-672	697 - 787	701-830
Depth in mm	131	180	131	180	131	180	131	180
Weight in kg (min.-max.)	9-11	9-11	9-11	9-11	10-12	10-12	13-15	13-15
Material	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Approvals	CE	CE	CE	CE	CE	CE	CE	CE
24 V fan in housing	-		-		-		-	
Housing locking device	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key 3
Control elements	-	-	3SB, single-row	3SB, single-row	3SB, double-row	3SB, double-row	3SB, double-row	3SB, double-row
Keyboard	-	-	-	-	-	-	In keyboard drawer	In keyboard drawer
Permitted temperature range								
Housing ambient temperature	5 - 40 °C	5 - 40 °C	5 - 40 °C	5 - 40 °C	5 - 40 °C	5 - 40 °C	5 - 40 °C	5 - 40 °C
Installation options								
Support arm mounting (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mounted on stand (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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Technical specifications (continued)

	SIMATIC Panel PC 477B 12" Keys/Touch, 477B 15" Keys/Touch, 477B 19" Touch, 677B 12" Keys/Touch, 677B 15" Keys/Touch, 677B 17" Touch , 677B 19" Touch							
	Configuration 1		Configuration 2		Configuration 3		Configuration 4	
	A	B	A	B	A	B	A	B
Housing data								
Width in mm (min.-max.)	509 - 591	599	509 - 591	595	509 - 591	595	509 - 591	595
Height in mm (min.-max.)	419 - 509	407-536	569 - 659	521-650	569 - 659	587-672	697 - 787	701-830
Depth in mm	209	180	209	180	209	180	209	180
Weight in kg (min.-max.)	23 - 25	23-25	24 - 28	24-28	26 - 30	26-30	27 - 31	27-31
Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Approvals	CE	CE	CE	CE	CE	CE	CE	CE
24 V fan in housing	-	-	-	-	-	-	-	-
Housing locking device	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key 3	Double-bit key	Double-bit key
Control elements	-	-	3SB, single-row	3SB, single-row	3SB, double-row	3SB, double-row	3SB, double-row	3SB, double-row
Keyboard	-	-	-	-	-	-	In keyboard drawer	In keyboard drawer
Permitted temperature range								
Housing ambient temperature without supplementary board	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in	5 - 40 °C, without supplementary boards plugged in
Installation options								
Support arm mounting (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mounted on stand (optional)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Other Panels, Panel PCs and Flat Panels on request

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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 your local/national Siemens HMI representative

Additional information is available in the Internet under:
http://www.siemens.com/hmi-oem

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Overview

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.

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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 offer 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 invent everything from the scratch.

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 open operating system Windows CE 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.

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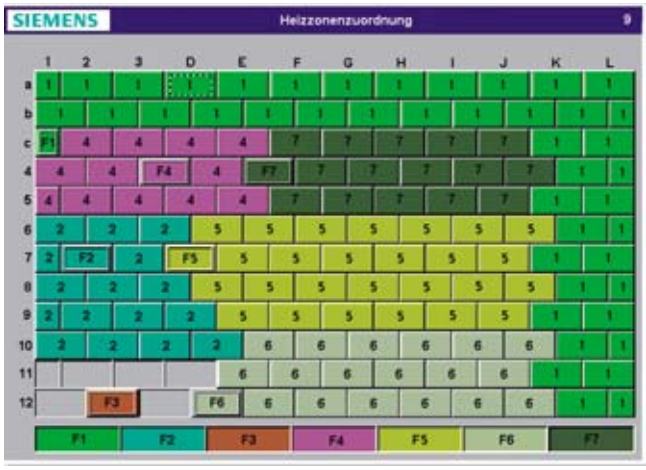
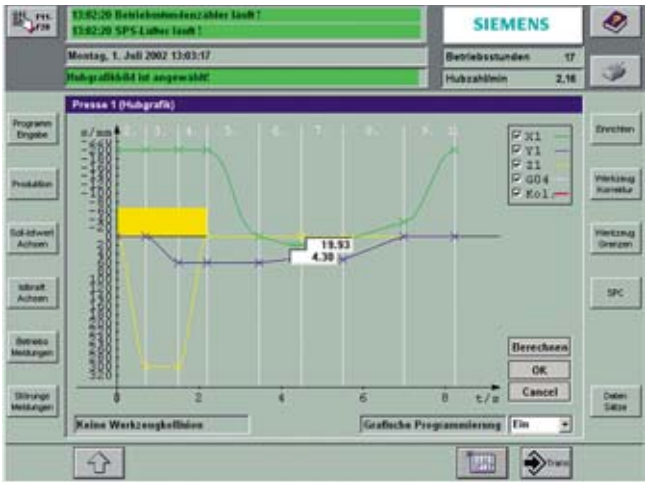
Function

In order to meet specific requirements, WinCC flexible, non-Siemens products or user-specific applications can be used.





SIMATIC WinCC flexible, the standard configuring 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.

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 MB	64 MB/128 MB	256 MB
Flash	16 MB	16 MB/64 MB	64 MB
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 ST 80.

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Selection and ordering data

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 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/OP170B, TP/OP177B, TP/OP270B, 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 of 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 of 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.

		Order No.
MP-SDK 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, Germany • 5 hours of technical support via e-mail or telephone • Software update service for 1 year Order only in conjunction with a product agreement	D	**6AV6 574-3AA00-0AA0**
WinCC flexible SDK for PC Software Development Kit for the creation of ProTool supplements under Windows32 on PC. Consisting of: • WinCC flexible SDK • Documentation • 1 day workshop in Erlangen, Germany • 5 hours of technical support via e-mail or telephone • Software update service for 1 year	D	**6AV6 574-3AB00-0AA0**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

More information

Additional information is available in the Internet:
http://www.siemens.com/hmi-oem

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Customized products from various sectors

Introduction

Overview

SIMATIC HMI products are fitted 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:

- Automotive industry – HMI for factory automation
- General machine construction
- Food, beverages and tobacco industries
- Chemical and pharmaceutical industries.

Customized products for various industries are developed and produced in association with a customized product agreement.

Examples:

- Use in the *automobile industry*:
  - Mobile Panel 10" Remote Operate
  - HMI operator stations
  - Front panel for Panel PC, 12" and 15" with navigation keys on the side
  - Push Button Panels PP17-I PROFIsafe, PP17-I PN PROFIsafe, PP 17-II PN
- Use in *mechanical engineering*, general:
  - Panel PC 477 OEM
  - Embedded Panel PC
  - Front panel for Panel PC, 15" Touch + Key, honing oil resistant
  - Flat Panels 6.4" and 10.4" with and without Touch
  - Panels for upright installation, TP 177 B color, MP 277 6" and 8" Touch
  - Remote Operate Software
- Use in the *food and beverages industry, chemical and pharmaceutical industry*:
  - Panels and Panel PCs with stainless steel front
  - HMI stainless steel operator stations
  - Flat Panel 15" Touch in stainless steel housing

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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 frame 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 control elements
  - 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 production, the fault-free operation of production facilities is of paramount importance. The requirements of industrial control housings 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 Panel PC 477 OEM and the Panel PC 677, the Panel PC 877 and Flat Panels are also suitable for use as operator PCs for the automotive industry.

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Design

- The modular design with a variety of aluminum frames and expansions can support all required device combinations. A variety of operator stations appear in the overview:
  - modular aluminum control housing system for the installation of an HMI Panel or Panel PC (see "Overview", page 6/31, image in the upper left-hand column, figure at the left)
  - modular aluminum control housing system for the combination of a number of HMI Panels (see "Overview", page 6/31, image in the upper left-hand column, figure at the right)
  - modular aluminum control housing system for the combination of a number of HMI Panels, Panel PCs and SIMATIC S7 PLCs (see "Overview", page 6/31, image in the lower left-hand column)
- 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
- UL/CSA

Technical specifications – Examples from the automotive industry

Type	HMI operator control unit	Operator PC unit operator panel + PLC
Components		
Computer unit	Panel PC 677 • Pentium M 1.6 GHz, 512 MByte RAM • 80 Gbyte HD, DVD/CD-RW • MPI/PROFIBUS+ 2 x Ethernet interface 10/100 Mbit • Europe default 230 V	PC Box V3 based on Panel PC 677 • Pentium M 2 GHz, 1 Gbyte RAM • 40 Gbyte HD • MPI/ PROFIBUS + 2 x Ethernet interface 10/100 Mbit • Europe default 230 V
Front panel	PC 677 15“ Touch, 15“ XGA 1024x768 resolution	Customized front with 2x6 control keys, 15“ XGA 1024x768 resolution
Additional components		• PP17-I PROFIsafe • PP17-II • S7-400 configuration
Additional components		
Operator panel housing	CC-4000, mounted on stand	• VIP 6000 (upper part) • IW 6900 (lower part)
Dimensions	578x764x183 mm	630x1870x636 mm
Operator panel	with slide-in label	–
Keyboard	Sasse stainless steel keyboard IP65	Sasse stainless steel keyboard
Mouse	Track-Ball integrated in the keyboard	Optical mouse
Elements	3 x 3SB3 elements with labeling plates, 1 x EMERGENCY STOP, 1x machine circuit-breaker, signal light processing possible	2 x 4 add-on control elements, 1 x EMERGENCY STOP
Locking	• E1-locking for housing lock • E7 key-operated switch	Customized housing lock
Mounting	Installation in operator panel housing with electrical wiring	Installation in operator panel housing with electrical wiring
Ventilation	–	–
Terminals	Use of 3-wire terminals	Use of Wago terminals
Core identification	Yes	Yes
Base profile	• Icotec • RJ45 Ethernet port	• Icotec • RJ45 Ethernet port
Software	• Win XP, Prof. Multilanguage • Win CC V6.0 SP4 • SIMATIC STEP 7 Prof V5.4	• 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

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Technical specifications (continued)

Type	Operator terminals (OTs)
Components	• PP17-I PROFIsafe • PP17-II • TP 170B
Additional components	
Operator panel housing	VIP 6000
Dimensions	622 x 585.5 x 210 mm
Elements	• 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 housing lock
Mounting	Installation in operator panel housing 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 No. is allocated during the product agreement process.

SIMATIC contacts in your area

Additional information is available in the Internet:
http://www.siemens.com/automation/partners

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PP17 PROFINET and PROFIsafe

Overview

PP17-I PROFIsafe: Front and rear views

Push Button Panels PP17 with connections for EMERGENCY STOP via F-DI as well as PP17 with PROFINET communication 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-I*

- Pre-perforated cut-outs for 22.5 mm standard add-on components such as key switches and EMERGENCY STOP
- Fail-safe operation of EMERGENCY STOP buttons by using PROFIsafe communication
- Simultaneous standard mode and fail-safe mode
- Non-interchangeable coded plug-type terminals

In addition to the basic features, the following is offered with the *PP17-I PROFIsafe*

- Rear-side parameter module for monitoring PROFIBUS communication
- and for setting the PROFIsafe address

In addition to the basic features, the following is offered with the *PP17 PN*

- LEDs for monitoring the PROFINET communication
- PROFINET communication, line-capable
- DIL switch for setting the PROFIsafe address

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Application

The pushbutton 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. Up to two or four two-channel EMERGENCY STOP buttons can be connected. Concerning safety-relevant signals, SIL 3 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 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

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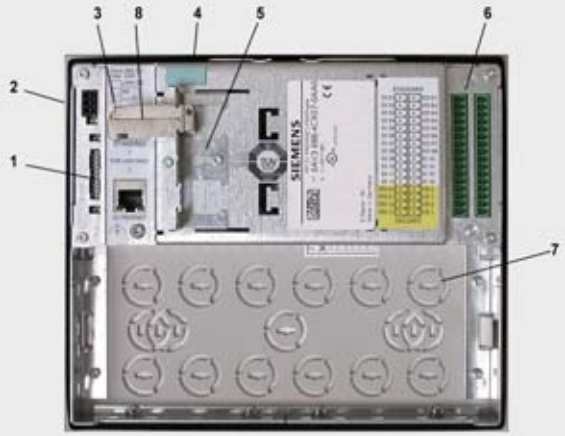
PP17 PROFINET and PROFIsafe

Design

External dimensions and mounting cutout are the same as those for the standard product PP17-I.

PP17-I PROFIsafe

PP17-II PROFINET-PROFIsafe



1 DIL switch for setting the PROFIsafe address
2 Interface for connecting power supply
3 PROFINET interfaces and LEDs for monitoring PROFINET communication
4 Writable label for marking operating device, e.g. with the device name
5 Screws for securing the plate for strain-relief assembly of the PROFINET connectors
6 Digital display and digital outputs
7 Punch-out pieces for inserting standard elements
8 PROFINET connectors

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Technical specifications

	PP17-I PROFIsafe	PP17-I PN PROFIsafe	PP17-II PN
Control elements			
Short-stroke keys	16	16	32
Number of F-channels for EMERGENCY STOP			
Number of connectable EMERGENCY STOP buttons	1 to 4	1 to 2	---
Maximum cable length	10 m	10 m	---
Discrepancy time	100 ms	500 ms	---
Response time	40 to 72 ms	40 to 70 ms	---
Functionality			
Enable input	Yes	Yes	Yes
Slots for 22.5 mm standard elements	max. 12	max. 12	---
Non-interchangeable coded plug-type terminals	Yes	Yes	---
Interfaces			
PROFIBUS DP	1 x RS 485 up to 12 Mbaud	---	---
Ethernet	---	2 x RJ45 10/100Mbit for line topologies	2 x RJ45 10/100Mbit for line topologies
Connection to controller	S7-300F, S7-400F	S7-300F, S7-400F	S7-300, S7-400
Protocol Standard communication	PROFIBUS DP V.1 without alarm diagnostics	PROFINET IO	PROFINET IO
Fail-safe communication	PROFIsafe V1.0 mode	PROFIsafe V2 mode	---
Additional digital inputs	8 to 14	16	16
Additional digital outputs	8 to 14	8	16
Output current	100 mA max.	100 mA max.	100 mA max.
Summation current (per group of 8 outputs each)	300 mA for all outputs	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
Option package	SIMATIC S7 - Distributed Safety V5.3 and higher	SIMATIC S7 - Distributed Safety V5.4 and higher HSP (Hardware Support Package)	---
Certification	cULus, CE, SIL 3/Cat. 4 (with FB "F_PP17I_SIL3")	cULus, CE, SIL 3, PL e	cULus, CE

For further technical specifications refer to the respective operating instructions.

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PP17 PROFINET and PROFIsafe

Ordering data

		Order No.
SIMATIC PP17-I PROFIsafe	A	**6AV3 688-4CX02-0AA0**
Pushbutton panel with PROFIsafe communication and max. 4 F-DI for EMERGENCY STOP applications, incl. mounting accessories and 1 sheet of slide-in labels		
• Delivery time		Available ex stock
• Minimum order quantity		None; can be ordered individually
• Project quantities or ongoing supply		Orders as per customer forecast [1]
• Repairs		only identified repairs
SIMATIC PP17-I PN PROFIsafe	A	**6AV3 688-4CX07-0AA0**
Pushbutton panel with 16 short-stroke keys and 22.5 cut-outs for control elements, PROFINET communication, PROFIsafe communication and max. 2 F-DI for EMERGENCY STOP applications, incl. mounting accessories and 1 sheet of slide-in labels		
• Delivery time		Available ex stock
• Minimum order quantity		None; can be ordered individually
• Project quantities or ongoing supply		Orders as per customer forecast [1]
• Repairs		only identified repairs
SIMATIC PP17-II PN	A	**6AV3 688-4EY06-0AA0**
Pushbutton Panel with 32 short-stroke keys, PROFINET communication, incl. mounting accessories and 1 sheet of slide-in labels,		
• Delivery time		Available ex stock
• Minimum order quantity		None; can be ordered individually
• Project quantities or ongoing supply		Orders as per customer forecast [1]
• Repairs		through spare-parts service

A) Subject to export regulations: AL: N and ECCN: EAR99H

1) For ongoing supply or the delivery of larger quantities to OEM customers, product planning and production are based on customer forecasts.

	Order No.
Documentation (to be ordered separately)	
PP17-I PROFIsafe User Manual incl. CD-ROM, with Word template for creating slide-in labels, with GSD file and F-FB for SIL3/Cat. 4	Only available by download
• German	**6AV3 991-1XB01-0AA0** Download: http://support.automation.siemens.com/WW/view/de/21913151
• English	**6AV3 991-1XB01-0AB0** Download: http://support.automation.siemens.com/WW/view/en/21913151
PP17-I PROFIsafe Short Operating Instructions	Only available by download
• German	**6AV3 678-8LA00-0AA0** Download: http://support.automation.siemens.com/WW/view/de/22227029
• English	**6AV3 678-8LA00-0AB0** Download: http://support.automation.siemens.com/WW/view/en/22227029
Operating instructions PP17-I PN PROFIsafe, PP17-II PN and software, with Word template for writing the slide-in labels, with GSD file	Only available by download
• German	**6AV3 991-1XB01-0AA0** Download: http://support.automation.siemens.com/WW/view/de/25023739
• English	**6AV3 991-1XB01-0AB0** Download: http://support.automation.siemens.com/WW/view/en/25023739
Accessories for supplementary ordering	
Set of slide-in labels	**6AV3 671-8CB00**

More information

Additional information is available in the Internet under:
http://www.siemens.com/automation/partners

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Front panel with motion keys at side

Overview

Front panel 15" with function keys at side for Panel PC in the automotive industry

The front panel 15.1" with motion keys at side is designed as a front unit for Panel PC. The motion 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 PLC
- Non-interchangeable terminals

Application

Application example: Control 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 by employing an external keyboard and pointing device, where however, 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, which are connected by using non-interchangeable terminals, e.g. using vacant inputs of a push-button panel to the PLC
- Display surface resistant to welding beads
- USB interface at the front
- External dimensions and mounting cutout as for corresponding standard product
- Degree of protection IP65 at the front

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Front panel with motion keys at side

Technical specifications

Type	Front panel 15" with lateral function keys
Display	15.1" TFT
Resolution (pixels)	1024 x 768 pixels
General features	As front panel 15.1" for Panel PC 677
Characteristics	
Interfaces	USB interface at the front
Connectable to Panel PC	PC 477, PC 677 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 options

- 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 No. 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

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Mobile Panel 277 10" Remote Operate

Overview

Application example

Design

RO Client 800 x 600 Pixel and RO Server 1024 x 768 Pixel

Benefits

Preconfigured SIMATIC WinCC plant mimics of a stationary operating station (e.g. with PC 677) without other configuration and adaptation work are shown brilliantly and clearly legible on a mobile operator control unit.

Server and client are optimized for the following resolutions:

- Remote Operate Server with 1024 x 768 pixels
- Remote Operate Client with 800 x 600 pixels

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

Application

- Automotive industry, production automationg

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Mobile Panel 277 10" Remote Operate

Technical specifications

Type	Mobile Panel 277 10" Remote Operate
Display	10“ touchscreen SVGA with 800x600 pixels TFT display with 65,536 colors
Operation	Touch screen with touch pen and pen holder Three-stage enable button (dead man's switch) integrated in handle, stop button. Function keys, key switch, and backlit button 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 display of existing WinCC configurations from, for example, a Panel PC 677 15"
Ambient conditions	Degree of protection IP65 all-round Ambient temperature in operation 0 °C … 40 °C Drop height up to 1.0 m

Selection and ordering data

Ordering data for terminal boxes, connection cable and accessories as for Mobile Panel 277 PH/DP.

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 OEM 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.

- 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 your local/national Siemens HMI representative

Additional information is available in the Internet under:
http://www.siemens.com/hmi-oem

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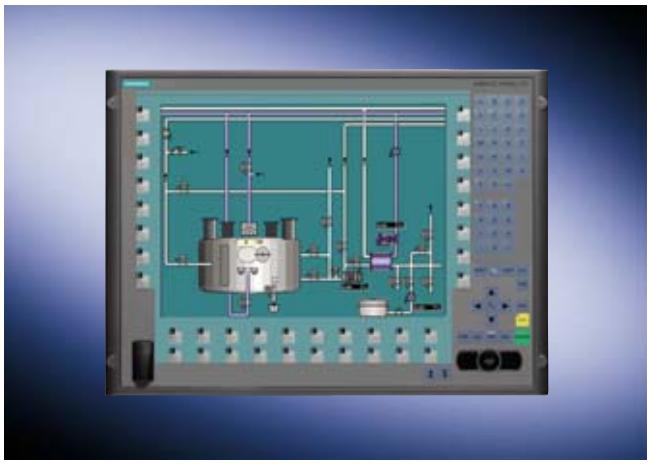
Panel PC 477B OEM

Overview



Rugged and powerful systems are required in industrial applications. SIMATIC Panel PCs have been designed to a high standard, offering special resilience for use in industrial environments as well as strong performance capability. Where the solutions required for individual automation tasks cannot be implemented using standard products, custom made versions of these devices can be used. The SIMATIC Panel PC 477B is the ideal embedded solution for use in harsh industrial environments. This particularly compact and rugged Panel PC is ideal for use on machines and, due to its lack of fans and hard disk, it is completely maintenance-free.

- Combining particularly compact dimensions with high performance
- Maintenance-free in operation with CompactFlash due to absence of fans
- Ambient temperature up to 50 °C without fans
- High degree of ruggedness thanks to high resistance to shock and vibration
- Processors up to Intel Celeron M 1.0 GHz
- Main memory up to 1 GB
- Compact Flash memory from 256 MB for maximum availability
- Ethernet and PROFIBUS (optional) on board
- Long-term availability of PC components from the Intel embedded range

Optional custom made expansions

- Hard disk with buffered suspension
- 2nd Compact Flash Card
- Combination of Compact Flash Card and hard disk in one device

Benefits

- Security against manipulation through customized Windows XP embedded
- Increased system availability (faster booting, write-protected system partition)
- Increased data security thanks to CompactFlash memory
- Without fans
- Hard disk for large data quantities or cyclic writing
- Combined hard disk + Compact Flash memory
- Retentive memory
- Compact or distributed configuration
- Worldwide service network
- Turnkey product, ready to use (pre-installed software, operator station)
- Customer support for producing user-specific Windows XP embedded images
- Free evaluation tool from Microsoft for the production of user-specific images

Application

Windows XP embedded or Windows XP Professional permit customers to select a standard operating system or to increase the security by using an embedded system. Combination with a Flash memory opens up new perspectives in practice. Operating system and applications on a protected Compact Flash card provide a secure and stable system with short boot times. The additional hard disk can save temporary data (data tracing, product tracing, temporary image files or plant statuses), or also memory-intensive databases, SQL servers. Even on failure of the hard disk, production can be continued if manual mode is provided.

The innovative WinCC flexible visualization software and automation software based on WinAC RTX are ideal for configuration. Individual hardware, software and design modifications and expansions for the PC477B OEM are available on request.

Application examples

- Printing machines
- Pick-and-place machines
- Brake test stands
- Paint mixing plants
- Wind power plants
- Injection molding machines
- Information terminals
- Building management
- Storage systems
- Automatic baking machines

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Panel PC 477B OEM

Technical specifications

General features	
Display	
• Size / resolution (pixels)	12" TFT / 800 x 600 Touch or Keys 15" TFT / 1024 x 768 Touch or Keys 19" TFT / 1280 x 1024 Touch
Processor	Intel Celeron 1.0 GHz
Main memory	1 GB
Operating system	Microsoft Windows XP Professional Microsoft Windows XP embedded
Hard disk	60 Gbyte shock and vibration resistant
Floppy/CD ROM drive	Connection via USB interface (not included in the scope of delivery)
Vibration load during operation	10 to 58 Hz, 0.0375 mm 58 to 200 Hz: 4.9 m/s2 (0.5g)
Shock loading during operation	50 m/s2 (5g), 30 ms
Ambient temperature during operation	+5°C to +45°C with HD +50°C with CompactFlash Card
Relative humidity during operation	Tested in accordance with DIN IEC 68-2-3/68-2-30/68-2-56 5% to 80% at +25°C No condensation

Ordering data

The Panel PC 477B OEM will be available for delivery from the third quarter of 2007 depending on the configuration.

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)
- Training in XP embedded generation

There is a minimum annual quantity/purchase quantity (minimum quantity per type: 50), which is agreed with the customer for the project.

Customized products can only be ordered in conjunction with a product agreement.

Options for Panel PC 477B OEM

Mass storage

- Hard disk
- 256 Mbyte, 512 Mbyte, 1024 Mbyte, 2048 Mbyte Compact Flash memory
- Combined hard disk and Flash memory

Operating system

- Windows XP Professional (with hard disk only)
- Windows XP embedded

HMI software

- SIMATIC WinCC flexible 128 Power Tags (RT)
- SIMATIC WinCC flexible 512 Power Tags (RT)
- SIMATIC WinCC flexible 2048 Power Tags (RT)

Soft PLC software

- WinAC RTX

Type of communication

- Via integrated interfaces
- Industrial communication modules

Preinstalled software

Customized SIMATIC Panel PCs can be provided with all software ready for use.

- TIA software packages included in one Order No. (package)
- SW image provided by customer installed prior to delivery [2) 4)]
- Siemens-specific SW image installed prior to delivery [1) 2) 3)]

The WinAC RTX and WinCC flexible TIA software products are tested with standard operating system images and released on a customer-specific basis. If changes are made to the operating system constellation (generation under Windows XP embedded), you will need to confirm the functionality of the TIA software by means of a system test.

Operator station

The devices can be supplied mounted in optimized operator stations.

Non-recurring costs

- Customer training for Windows XPe and 5 h hotline support
- Creating a custom made image for Windows XPe, if applicable with WinCC flexible + WinAC RTX
- Creating a custom made image for Windows XPe with customer applications

A customer-specific Order No. is allocated during the product agreement process.

1) Only available when ordered with a Panel PC

2) Only in conjunction with a product agreement

3) Take non-recurring costs into account for software image generation by Siemens

4) With integration of Siemens TIA software, a safe system is produced

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TP 177 B color PN/DP for upright installation

Overview

Use of the panels in portrait format is required wherever mounting space is limited. The TP 177 B color PN/DP in portrait format extends the range of standard panels in customized projects.

Benefits

- Upright installation 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

Application

The TP 177 B color PN/DP is designed for upright installation with display of the screen contents in portrait format. The device is suitable for installation in machines where only limited space is available, e.g. packaging machines, automatic baking machines etc.

Design

- The device design corresponds to that 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

- Ambient temperature during operation: Max. 50 degrees Celsius (vertical position)
- Mounting space in addition to panel cutout
  + 50 mm below and above the device
  + 15 mm on left and right
  + 10 mm behind the device

The remaining technical specifications correspond to those of the associated standard device TP 177 B color PN/DP.

Modification options

- Customized design
- Resistant and rugged stainless steel front with finely ground surface for simple cleaning
- Customer-specific applications for Windows CE-based panels (Open Platform Program)

Ordering data

		Order No.
TP 177B color PN/DP portrait format	F	**6AV6 642-...**
otherwise as 6AV6 642-0BA01-1AX0		
• Delivery time		Ex-stock in agreement with customer planning
• Minimum order quantity		50 units per year
• Spare parts and repairs		Identified repair

F) Subject to export regulations: AL: N and ECCN: 5D002ENC3

More information

Bid preparation

Product specification according to customer requirements.

Bid 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: from 30), 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.

SIMATIC contacts in your area

Additional information is available in the Internet under:
http://www.siemens.com/automation/partners

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Front panel 15" Touch and Key for Panel PC, resistant to honing oil

Overview

The Front Panel Touch and Key is designed as a front unit for Panel PC. 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 inefficiency
- Touch pen operation avoids contamination of display area
- Ergonomically shaped touch pen which cannot be lost
- Simple cleaning
- Resistant to coolants and lubricants

Application

The front panel for Panel PCs with touch screen and membrane keyboard has been designed for operator control and monitoring at machine level for machine construction applications, where honing oil and lubricants are used.

The touch and key front is always used if efficient operation of the machine is associated with the following requirements:

- Intuitive operation using graphic representation on display
- Specific command inputs using fixed command inputs
- Effective inputs in forms using the integrated numeric and alphanumeric keyboard

Also in applications with increased environmental influences such as dirt and oil. The homogenous foil surface without joints or edges permits easy cleaning, and is resistant to coolants and lubricants.

Application examples

- Printing machinery
- 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 front

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Front panel 15" Touch and Key for Panel PC, resistant to honing oil

Technical specifications

Type	Front panel 15" Touch + Key, resistant to honing oil
Display	15.1" TFT Touch
Resolution (pixels)	1024 x 768 pixels
General features	As front panel 15.1" Touch for Panel PC 677
Special features	
Interfaces	without USB interface at the front
Can be connected to Panel PC	PC 477, PC 677 compact and distributed design
Number of keys	58 system keys and alphanumeric keys 20 function keys with LED
Resistance	Tested with: Castrol Honilo 981 honing oil

More information

Bid preparation

Product specification according to customer requirements.

Bid 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

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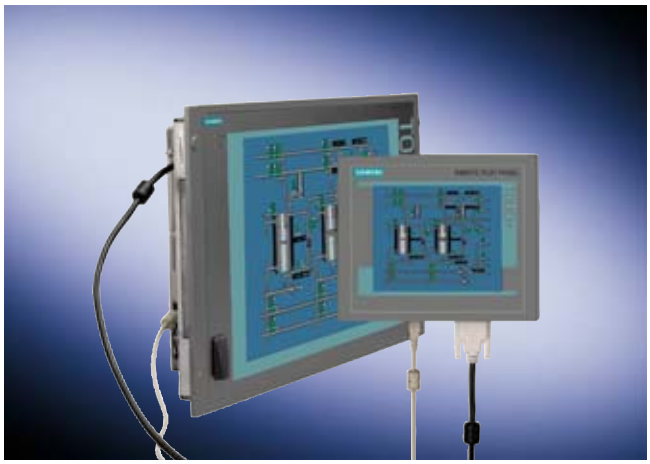
Flat Panels 6.4" and 10.4" for Panel PC

Overview



The Flat Panel 6.4" TFT Touch and Flat Panel 10.4" TFT Touch are designed as display and control units for Panel PCs. The products round off the spectrum of standard flat panels at the lower end for customized projects for smaller display sizes with VGA/SVGA resolution.

Benefits

- Compact Flat Panels for small mounting spaces
- VGA/SVGA resolution e.g. also as secondary display for Panel PC 677
- Functions compatible with the SIMATIC HMI standard Flat Panels

Application

The Flat Panels for Panel PCs without touch screen are designed for operation and monitoring at machine level in machine construction applications where PC functions are required but only a small mounting space is available for the display.

Design

- Functions compatible with the SIMATIC HMI standard Flat Panels
- Versions with and without touch operation

Technical specifications

Flat Panel	**6,4”**	**10,4”**
Display	6.4" TFT with/without Touch	10.4" TFT with/without Touch
Resolution (pixels)	640 x 480 pixels (VGA)	800 x 600 pixels (SVGA)
General features	As other SIMATIC HMI Flat Panels	As other SIMATIC HMI Flat Panels
Special features		
Power Supply	24 V DC	24 V DC
Installation dimensions	Same dimensions as TP 277- 6", front W x H (212 x 156) mm, panel cutout W x H x D (198 x 142 x 59) mm	Same dimensions as MP 277-10", front W x H (335 x 275) mm, panel cutout W x H x D (282 x 178 x 59) mm
Can be connected to SIMATIC PC	Panel PC 677, SIMATIC Box PC and Rack PC	Panel PC 677, SIMATIC Box PC and Rack PC

Modification options

- Customized design
- Modification of front design, e.g. stainless steel front

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Ordering data

		Order No.
Flat Panel 6.4" TFT	A	**6AV7 461-6AA00-0AA0**
Otherwise corresponding to FP 77-12 to FP 77-19		
• Delivery time		Ex-stock in agreement with customer planning
• Minimum order quantity		30 units per year
• Spare parts and repairs		Identified repair
Flat Panel 6.4" TFT Touch	A	**6AV7 461-6TA00-0AA0**
Otherwise corresponding to FP 77-12 to FP 77-19		
• Delivery time		Ex-stock in agreement with customer planning
• Minimum order quantity		30 units per year
• Spare parts and repairs		Identified repair
Flat Panel 10,4" TFT	A	**6AV7 461-7AA00-0AA0**
Otherwise corresponding to FP 77-12 to FP 77-19		
• Delivery time		Ex-stock in agreement with customer planning
• Minimum order quantity		30 units per year
• Spare parts and repairs		Identified repair
Flat Panel 10.4" TFT Touch	A	**6AV7 461-7TA00-0AA0**
Otherwise corresponding to FP 77-12 to FP 77-19		
• Delivery time		Ex-stock in agreement with customer planning
• Minimum order quantity		30 units per year
• Spare parts and repairs		Identified repair

A) Subject to export regulations: AL: N and ECCN: EAR99H

A product agreement with minimum quantities is required for the development and supply of customized products.

Please contact your local/national Siemens HMI representative.

More information

Bid preparation

Product specification according to customer requirements.

Bid 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 which must be agreed upon with the customer in 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.

SIMATIC contacts in your area

Additional information is available in the Internet under:

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Panels and Panel PCs with stainless steel front

Overview

The following SIMATIC HMI Panels and Panel PCs with stainless steel fronts are available as standard products:

- TP 177 B color PN/DP INOX
- MP 277 10" Touch INOX
- MP 370 15" Touch INOX
- Panel PC 677 15" Touch INOX

The SIMATIC Panels with touch screens and stainless steel fronts have been designed for use in the food, beverage 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
  - foil 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 IP66 (partly IP66K)

Benefits

- Resistant and rugged stainless steel fronts with finely ground surface for simple cleaning
- Optimized frame design with a slight projection to the cabinet and so that liquids can run off
- Minimal number of grooves and joints for increased resistance to cleaning and disinfection agents
- Non-migrating, food-standard sealing material (flat seals to FDA 21 CFR 177.2006) and display splash protection to avoid contamination by foodstuffs
- The device front is based on DIN EN 1672-2
- Decorative film tested against chemicals according to DIN 42115, Part 2
- Proven functionality of the SIMATIC HMI standard products

Application

Panels and Panel PCs with touch screen and stainless steel front are designed for use in the food, beverage and tobacco industry for operation and monitoring at the food processing machinery.

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

The technical specifications can be obtained from the sections on Panels and Panel PCs.

Selection and ordering data

The ordering data of the SIMATIC HMI standard products with stainless steel front can be obtained from the corresponding sections on Panels and Panel PCs.

Modification options

- Customized design
  - use of the company name instead of the Siemens logo and modification of the type designation
  - changing the background color
- Panel PC with distributed design
- Customer-specific hardware modifications such as the design and dimensions of the front plate, selection of the display, 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 applications for Windows CE-based panels (Open Platform Program)
- 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 IP66)

A product agreement with minimum quantities is required for the implementation of customized modifications.

Please contact your local/national Siemens HMI representative.

More information

Explanations

- EN 1672-2, edition: 2003-04 (draft standard), Food Production Machinery – General Design Guidelines – Part 2: Hygiene Requirements; German edition EN 1672-2: 2003
- DIN 10516, edition: 2002-01, Food Hygiene – Cleaning and Disinfection
- LMHV – German regulation on food hygiene
- FDA – Food and Drug Administration

SIMATIC partners close to you

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Overview

SIMATIC HMI Panel or Panel PC mounted in a stainless steel cabinet as a ready-to-install and ready-to-use terminal which is ergonomic, functional and with high degree of protection (e.g. up to complete degree of protection IP66K) as well as tested heat dissipation

The equipped and wired turnkey solutions are based on the hygienic design requirements of the food and beverage industry as well as other hygiene and wet areas, pharmaceuticals and fine chemicals.

Benefits

- Simpler cleaning thanks to resistant and rugged stainless steel front with smooth surface with fewer grooves and gaps
- High complete degree of protection IP66 (or IP66K) for increased tightness and ruggedness
- Gaskets appropriate for food applications (approved flat gaskets according to FDA 21 CFR 177.2006 and KTW)
- Display splinter protection to avoid contamination of food
- Optimized frame design of panels with a slight projection to the cabinet and so that liquids can run off
- Developed based on DIN EN 1672-2
- Decoration foil of panels tested for resistance to chemicals according to DIN 42115, Part 2. The foil material is resistant to the usual detergents and disinfectants of correct concentration.

Application

SIMATIC HMI customized stainless steel terminals are suitable for use in moist environments with hygiene conditions. Hygienic design also covers simple cleaning and avoidance of product contamination (food, medicines etc.).

Design

Design of stainless steel terminal

- For Panels and Panel PC
- 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
- Hairline finish of surface with 240 grade grain

Control box completely assembled, wired, tested, with passive cooling

Certifications/Approvals

- IP66 or IP66K, NEMA 4, 4x, 12
- CE, cULus
- Hygiene design available soon

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Technical specifications

The following data are examples of the size of the stainless steel housing when using touch displays of customized Panels and Panel PCs with stainless steel front (compact and with distributed design).

Panel/Panel PC	MP 277 10“ Touch INOX	MP 370 15“ Touch INOX	Panel PC 677 15" Touch INOX distributed configuration and Flat Panel 15" Touch	Panel PC 677 15" Touch INOX compact
Display size	10.4”	15“	15”	15”
Stainless steel enclosure				
• Width (mm)	575	720	720	720
• Height (mm)	444	524	524	524
• Depth (mm)	123	123	123	163
Coupling (GTH)	48	48	48	60

With specified ambient temperature during operation depending on customized requirements.

Modification options

- Other HMI devices, display sizes and resolutions
- External stainless steel keyboard
- Front/enclosure design and cable routing (without hygienic design)
- Specified flanges of enclosure manufacturers

A product agreement with minimum quantities is required for the development and supply of customized products.

Please contact your local/national Siemens HMI representative.

More information

Bid preparation

Product specification according to customer requirements.

Bid 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 which must be agreed upon with the customer in 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.

SIMATIC contacts in your area

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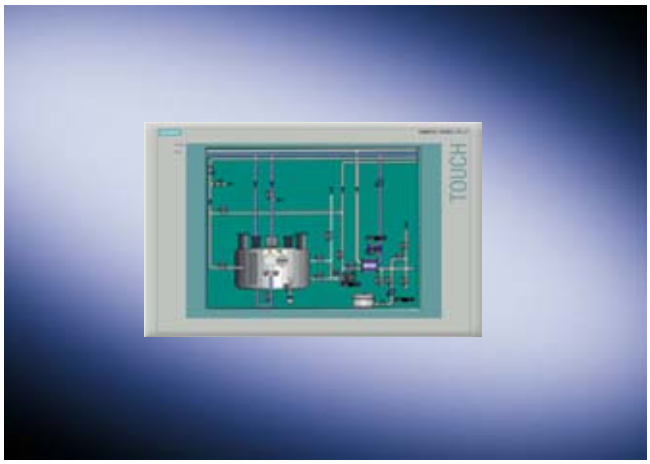
Overview



The Flat Panel 15.1" TFT Touch is designed as a display and control unit for SIMATIC PCs in the food, beverage, tobacco, pharmaceutical and associated industries.

The Flat Panel is simple to clean and can be directly mounted on the control cabinet or in the plant without a support arm construction.

Benefits

- Flat Panel with stainless steel front for control cabinet installation
- Suitable for the product's splash zone
- Easier cleaning because of the resistant and rugged stainless steel front with smooth surface
  - Minimal gaps and grooves
- Optimized front design, so that liquids can run off
- The decoration foil on the display provides additional protection against shattering
- High degree of protection IP66 on front for increased impermeability and ruggedness, resistant against dust and moisture and against standard cleaning and disinfection agents
- Application e.g. also as secondary display for Panel PC 677
- Function-compatible with the SIMATIC HMI Standard Flat Panels

Application

The Flat Panels for Panel PCs with touch screen are designed for machine-level operator control and monitoring in the food and beverage industry, pharmaceutical and related branches, where PC functions are required but due to space requirements and hygiene requirements the PC must be set up at a different location.

Design

- Function-compatible with the SIMATIC HMI Standard Flat Panels
- Housing seal EPDM, sulfur-free
- Decoration foil laminated over display, no display cut-out
- 240 grain brushed stainless steel surface

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Flat Panel 15.1"

Technical specifications

Flat Panel	**15,1”**
Display	15.1" TFT with Touch
Resolution (pixels)	1024 x 768 pixels (XGA)
General features	Similar to other SIMATIC HMI Flat Panels
Special features	
Front	Stainless steel
Power supply	24 V DC
Type of protection	IP66 front, NEMA 4, 4x, 12
Outer dimensions (panel without fastening fixtures/holder)	Width x height x depth in mm 383 × 324 × 72
Can be connected to SIMATIC PC	PC 677, remaining SIMATIC Box and Rack PCs

Modification options

- Customized design
- 230 V AC power supply
- Can be installed up to 30 m away from the computer unit

Ordering data

		Order No.
Flat Panel 15,1“ TFT Touch INOX	A	Customer-specific
Otherwise according to FP 77-12 to FP 77-19		
• Delivery time		Ex stock/works in accordance with customer plans
• Minimum quantity		20 units per year
• Repairs and spare parts		Identified repairs

A) Subject to export regulations: AL: N and ECCN: EAR99H

A product agreement with minimum quantities is required for the development and supply of customized products.

Please contact your local/national Siemens HMI representative.

More information

Bid preparation

Product specification according to customer requirements.

Bid preparation by SIMATIC HMI specialists, specification of:

- Non-recurring costs
- Prototype costs
- Standard unit prices
- General conditions (product agreement)

The minimum annual volume/purchase quantity for the project is to be defined (minimum quantity) together with the customer.

Customized products can only be ordered in conjunction with a product agreement.

Within the scope of the product agreement, a customer-specific Order No. is defined.

SIMATIC partners in your area

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Overview

The Flat Panel 15.1" TFT Touch is designed as a display and operating unit for a SIMATIC PC in the food and beverage industry, pharmaceuticals and related branches. The Flat Panel is easy to clean and can be installed in the product's splash zone in a suitable control cabinet.

Benefits

- Flat Panel ready for connection and installation, in flat stainless steel enclosure
- Simpler cleaning thanks to resistant and rugged stainless steel enclosure with smooth surface with fewer grooves and gaps
- Optimized enclosure design with rounded top and bottom edges for automatic running-off of liquids
- Direct control cabinet attachment, without support arm construction
- Fatigue-free operation resulting from tilting of panel by +/- 20° from the vertical in association with the wide reading angle of up to 170° horizontally and vertically
- Complete decoration foil provides additional protection against display splinter
- High complete degree of protection IP66 at the front for increased sealing and ruggedness, resistant to dust and moisture as well as standard detergent and disinfectant.
- Application e.g. also as secondary display for Panel PC 677
- Functions compatible with the SIMATIC HMI standard Flat Panels

Application

The Flat Panels for Panel PCs with touch screen are designed for operator control and monitoring at machine level in the pharmaceutical and associated industries where PC functions are required but have to be positioned remote from the PC because of the available space and the hygiene requirements.

Design

- Functions compatible with the SIMATIC HMI standard Flat Panels
- EPDM enclosure gasket, sulfur-free
- Decoratione foil laminated over display, no display cutout
- Stainless steel surface with 240 grade grain hairline finish

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Flat Panel 15.1"

Technical specifications

Flat Panel	**15,1”**
Display	15.1" TFT with Touch
Resolution (pixels)	1280 x 1024 pixels (XGA)
General features	Similar to SIMATIC HMI Flat Panels
Special features	
Connecting cables	1.8 m
Power Supply	230 V AC
Degree of protection	Complete IP 65, NEMA 4
OSD – on-screen display	Not accessible during operation
External dimensions (panel without mounting system/holder)	Width × height × depth in mm 383 × 324 × 72
Can be connected to SIMATIC PC	PC 677, other SIMATIC Box PCs and Rack PCs

Modification options

- Customized design
- Front/enclosure system and cable routing
- Other display sizes and resolutions
- 230 V AC power supply
- VESA connection 75 or 100 mm

or specified flanges of enclosure manufacturers

- High degree of protection IP66 or IP66K
- Installation is possible up to 5 m from computer unit

Ordering data

		Order No.
Flat Panel 15.1" TFT Touch	A	Customized
Otherwise corresponding to FP 77-12 to FP 77-19		
• Delivery time		Ex-stock / ex-factory in agreement with customer planning
• Minimum order quantity		20 units per year
• Spare parts and repairs		Identified repair

A) Subject to export regulations: AL: N and ECCN: EAR99H

A product agreement with minimum quantities is required for the development and supply of customized products.

Please contact your local/national Siemens HMI representative.

More information

Bid preparation

Product specification according to customer requirements.

Bid 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 which must be agreed upon with the customer in 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.

SIMATIC contacts in your area

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Industrial LCD Monitors

7

7/2 SIMATIC flat panels

7/6 SCD Monitors

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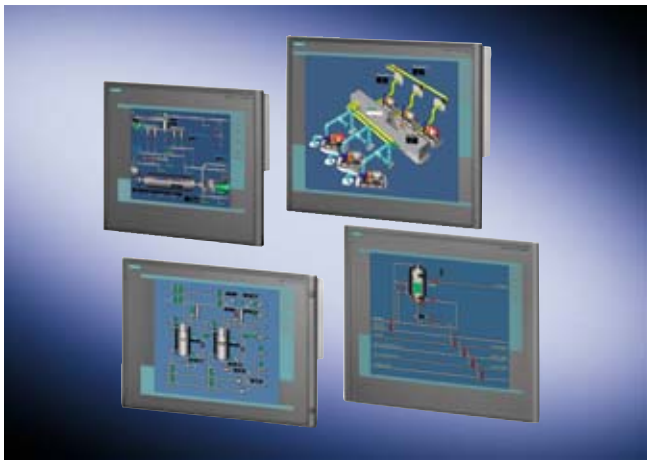
Overview



- The Flat Panels are rugged industry-standard LCD monitors.
- They can be used in any application in which CRT monitors are used.
- Installation
  - They are equally suited to installation in the machine, in control cabinets, consoles and gantries or in 19" racks.
- Possible operation:
  - Simple display devices without operator functionality
  - Optional devices with touch control
  - Rear connection of I/O devices (optional)

Benefits

- Rugged industrial type:
  - Failsafe and with a long service life thanks to a high degree of shock and vibration resistance as well as extremely high electromagnetic compatibility.
  - Housing front to degree of protection IP65/NEMA4 against the ingress of dust and water
  - Scratch-resistant, non-reflective glass screen, i.e. high mechanical protection against pressure and protection against scratching
  - Complies with the CE standard for industry
- Multiple variants
- No X-rays
- Low energy requirements
- Less tiring work:
  - Large viewing angle of up to 170° horizontally and vertically
  - Focused, high-contrast picture display
  - No flickering, uniform brightness
  - Automatic picture adjustment (Auto Adjust)
- Configuration using On-Screen Display (OSD)
- Small space requirements and low weight
- Long service life

Application

The Flat Panels are used in applications in which the PC computer unit and operation/display unit have to be installed separately for technical or application-specific reasons. SIMATIC Flat Panels can be directly connected to any PC, but are designed especially for operation with the SIMATIC Box 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, also optional with 100-240 V AC (50/60Hz)
- Can be located up to 5 m from the computing unit

Scope of delivery:

- Power supply cable for variants with AC power supply unit
- Connecting cables 1.8 m (other cable lengths available separately as accessories)
- Operating instructions, 2 languages (German and English)
- CD-ROM with hardware drivers and documentation

Special functions of extended version

- Can be located up to 30 m from the computing unit
- Rear USB interface
- Dimmable backlit display
- Combined DC / AC power supply
- EX22 approval (available soon)
- Marine approvals

Special features for switch-over from CRT monitors on LCD monitors

Resolution:
When the corresponding LCD monitor is selected, make sure that the resolution of the LCD monitor is suitable for the visualization application.

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Technical specifications

	12“ Flat Panel	15“ Flat Panel	17“ Flat Panel	19“ Flat Panel
Supply voltage				
•Supply voltage	24 V DC , optional additional 100 to 240 V AC	24 V DC , optional additional 100 to 240 V AC	24 V DC , optional additional 100 to 240 V AC	24 V DC , optional additional 100 to 240 V AC
•Permissible frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
•Power consumption, max.	35 VA	25 VA		55 VA
General features				
•Non-reflective and tempered mineral glass screen	yes	yes	yes	yes
•Mains switch	no	no	no	no
•Distance to PC	5 m, optional up to 30 m	5 m, optional up to 30 m	5 m, optional up to 30 m	5 m, optional up to 30 m
Display				
•On Screen Display (OSD) configuration	yes, rear	yes, rear	yes, rear	yes, rear
•Design of the display	12" TFT	15" TFT	17"; TFT	19" TFT
•visible area (H x V) in mm	246 x 184.5	304 x 228	334 x 270	376 x 301
•Viewing angle	140° x 120° (min)	100° x 90 ° (min)	160° x 160°	170° x 170°
•Pixel pitch	0.3075 x 0.3075 mm	0.297 x 0.297 mm	0.264 x 0.264 mm	0.294 x 0.294 mm
•Resolution (WxH in pixel)	800 x 600	1024 x 768	1280 x 1024	1280 x 1024
•Image refresh rate	60 to 75 Hz	60 to 75 Hz	60 to 75 Hz	60 to 75 Hz
•Line frequency	25 to 48 kHz	46.7 to 62.5 kHz	25 to 48 KHz	30 to 80 KHz
•Brightness/contrast	> 350 cd/m² / 450:1	> 260 cd/m² / 350:1	> 300 cd/m² / 650:1	> 300 cd/m² / 300:1
•Number of colors	262 k	16.2 million	16.7 million	16.7 million
•MTBF backlighting (at 25 °C)	50,000 h, in 24h continuous operation, temperature-dependent	50,000 h, in 24h continuous operation, temperature-dependent	50,000 h continuous operation, temperature dependent	50,000 h, in 24h continuous operation, temperature-dependent
Operating mode				
•Touchscreen	Analog-resistive, optional	Analog-resistive, optional	Analog resistive, optional	Analog-resistive, optional
•Connection for mouse/ keyboard/barcode reader	via USB at the rear	via USB at the rear	via USB at the rear	via USB at the rear
Degree of protection				
•Front to EN 60529	IP65, NEMA4	IP65, NEMA4	IP65, NEMA4	IP65, NEMA4
•Rear complies with EN 60529	IP20	IP20	IP20	IP20
Certifications & Standards				
•Certifications	cULus (UL 508), NEMA4	cULus (UL 508), NEMA4	cULus (UL 508), NEMA4	cULus (UL 508), NEMA4
•EMC	CE EN 55011 class A	CE EN 55011 class A	CE EN 55011 class A	CE EN 55011 class A
•Ship building approval	GL, ABS, NK, LRS	GL, ABS, NK, LRS	GL, ABS, NK, LRS	GL, ABS, NK, LRS
Standards, approvals, certificates				
•CE symbol	yes	yes	yes	yes
•UL Approval	yes	yes	yes	yes
Ambient conditions				
•Vibration load in operation	1 g (10 m/s²)	1 g (10 m/s²)	1 g (10 m/s²)	1 g (10 m/s²)
•Shock loading in operation	5 g (50 m/s²)	5 g (50 m/s²)	5 g (50 m/s²)	5 g (50 m/s²)
•Temperature				
- Ambient temperature in operation	5 to +45 °C	5 to +45 °C	5 to +45 °C	5 to +45 °C
•Mounting				
- Rack mounting	no	yes (IP54)	yes (IP54)	yes (IP54)
- Front mounting	no (IP65)	yes (IP65)	yes (IP65)	yes (IP65)
- Inclined position for console installation	-20°/+70°	-20°/+70°	-20°/+70°	-20°/+70°

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Technical specifications (continued)

	12“ Flat Panel	15“ Flat Panel	17“ Flat Panel	19“ Flat Panel
Interfaces				
•Graphics interface	Standard VGA interface 15-pin D-sub / digital DVI-D interface	Standard VGA interface 15-pin D-sub / digital DVI-D interface	Standard VGA interface 15-pin D-sub / digital DVI-D interface	Standard VGA interface 15-pin D-sub / digital DVI-D interface
•interface for touch	USB (V1.1)	USB (V1.1)	USB (V1.1)	USB (V1.1)
•USB interface for touchscreen	Optional	Optional	Optional	Optional
Dimensions				
•External dimensions (W x H x D) in mm	400 x 310 x 61.5	483 x 310 x 54		483 x 400 x 56
•Mounting 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
Weights				
•Weight, approx.	5 kg	6.4 kg		10.2 kg

Ordering Data

	Order No.
Flat Panel Monitor	**6AV7 861-■■■■0-1AA0**
Display size	
•12“	**1**
•15“	**2**
•17“	**4**
•19“	**3**
Operator functionality:	
•Display devices without operator functionality	**A**
•Touch	**T**
Power supply	
•24 V DC (can only be ordered in "Standard" versions)	**A0**
•100 ..240 V AC (and Euro cable) and 24 V DC	**B**
Version	
•Standard: Can be located up to 5 m away	**0**
•Extended: Can be located up to 30 m away, special functions - marine approvals - dimmable backlit display - Ex22 (17" and 19" only)	**1**

* This version can be ordered as standard and extended version. Enter **0** for standard version, **1** for extended version.

		Order No.
Accessories		
Mounting elements for Panel PC 57x/67x/87/Flat Panel For screw mounting the 19" front panel at the front, e.g., in 19" rack cabinet		**6AV7 672-8KE00-0AA0**
Connecting cables for standard and extended versions		
•Video (VGA)		
- 3.0 m		**6AV7 860-0AH30-0AA0**
- 5.0 m		**6AV7 860-0AH50-0AA0**
•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 version		
•Cable set 10 m (DVI-D, CAT5 cable (USB), USB transmitter module)	A	**6AV7 860-1EX21-0AA1**
•Cable set 15m (DVI-D, CAT5 cable (USB), USB transmitter module)	A	**6AV7 860-1EX21-5AA1**
•Cable set 20m (DVI-D, CAT5 cable (USB), USB transmitter module)	A	**6AV7 860-1EX22-0AA1**
•Cable set 30m (DVI-D, CAT5 cable (USB), USB transmitter module)	A	**6AV7 860-1EX23-0AA1**
SIMATIC PC network cable, 230 V AC, straight, 3 m, for:		
•Europe		**6ES7 900-0AA00-0AX0**
•United Kingdom		**6ES7 900-0BA00-0AX0**
•Switzerland		**6ES7 900-0CA00-0AX0**
•U.S.A.		**6ES7 900-0DA00-0AX0**
•Italy		**6ES7 900-0EA00-0AX0**
•China		**6ES7 900-0FA00-0AX0**

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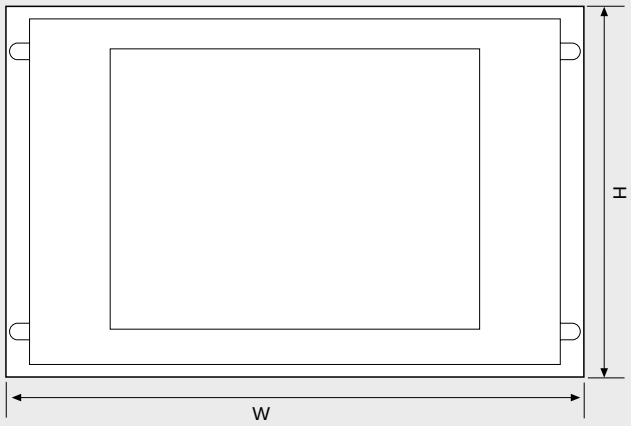
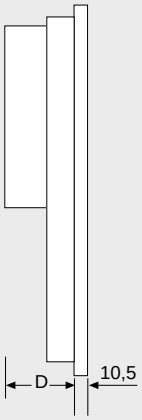
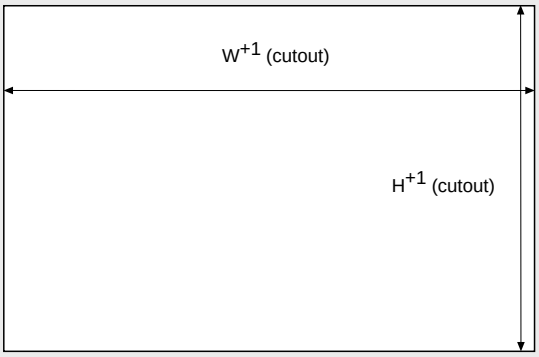
Dimensions







Front dimensions	W	H	
Touch panels			
12"	400	310	
15"	483	310	
17"	483	400	
19"	483	400	
Installation cutout	**W+1**	**H+1**	**D**
Touch panels			
12"	368	290	51
15"	450	290	55
17"	450	380	57
19"	450	380	57

G_ST80_XX_00238

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Overview

- The SCD 1297/1597/1997 monitors are LCD monitors in a rugged industrial design.
- They can be used in any application in which CRT monitors are used.

Rack-mounting version:

- Rack-mounting units (for control cabinets, control desks and gantries)
- 19" rack-mounting units (for 19" racks)
- Desktop models only (19" display)

Type of operator control:

- Simple display devices
- Panels with touch operator control
- Devices with keyboard/mouse operator control (19" rack units only)

Benefits

- Rugged industrial design:
  - High shock and vibration resistance as well as extremely high EMC compatibility make for a fail-safe and long-lasting design
  - Enclosure rated IP65, resistant against dust and humidity
  - Mineral glass screen, high mechanical protection against pressures and scratch resistance
  - Meets CE standard "Industry"
- Variety of versions
- No X-rays
- Lower energy requirement
- Fatigue-proof operation:
  - Large reading angle
  - Sharp and high-contrast graphic display
  - No flicker, uniform brightness
  - Automatic display adjustment (Auto Adjust)
- Configuration using on-screen display (OSD)
- Small space requirement and low weight
- Long service life

Design

- Rugged aluminum enclosure
- 12"/15"/19" TFT display
- Anti-glare and hardened mineral glass screen
- Simple display, touch screen or membrane keyboard (with 36 function keys)
- Line frequency 30-80 kHz
- Refresh frequency 50-72 Hz
- Power supply 100-240 V AC, 12 V DC and 24 V DC
- Can be located up to 20 m from the computing unit

The industrial LCD monitors SCD 1297, 1597, 1997 come in two rack-mounting versions:

- As rack-mounting units
  (for control cabinets, control desks and gantries)
  - SCD 1297/1597/1997-E – display unit only
  - SCD 1297/1597/1997-ET with analog resistive touch screen
  - SCD 1297/1597-K with keyboard and mouse functionality
- As 19" rack-mounting units for 19" racks
  - SCD 1297/1597-R – display unit only
  - SCD 1297/1597-RT with analog resistive touch screen

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

Special features for switch-over from CRT monitors to LCD monitors

- Screen diagonal:
  The rough formula for LCD monitors is: "Display size in inch plus 2", corresponds to the comparable CRT monitor size (14" CRT equivalent to 12" LCD).
- Resolution:
  When the corresponding LCD monitor is selected, make sure that the resolution of the LCD monitor is suitable for the visualization application.

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Technical specifications

12“ Monitore	SCD 1297-E/-ET	SCD 1297-K	SCD 1297-R/-RT
Supply voltage			
• Supply voltage	110 / 230 V AC, optional 24 V DC	110 / 230 V AC, optional 24 V DC	110 / 230 V AC, optional 24 V DC
• Frequency/power consumption	47 to 63 Hz / 30 VA	47 to 63 Hz / 30 VA	47 to 63 Hz / 30 VA
• Mains switch	no	no	no
• Display	Full screen	Full screen	Full screen
Display			
• Design of the display	12" TFT	12" TFT	12" TFT
• Screen diagonal	12"	12"	12"
• visible area (HxV) in mm	246 x 184	246 x 184	246 x 184
• Viewing angle	120° x 100°	120° x 100°	120° x 100°
• Pixel pitch	0.31 x 0.31	0.31 x 0.31	0.31 x 0.31
• optimum resolution (in pixels)	800 x 600	800 x 600	800 x 600
• Image refresh rate	50 to 72 Hz	50 to 72 Hz	50 to 72 Hz
• Line frequency	30 to 80 KHz	30 to 80 KHz	30 to 80 KHz
• Brightness/contrast (typical)	300 cd/m² / 300:1	250 cd/m² / 300:1	300 cd/m² / 300:1
• Number of colors	256 K	256 K	256 K
• MTBF backlighting (up to 50 %, at 25 °C)	50,000 h	50,000 h	50,000 h
Operating mode			
• Function keys	no	36 with LEDs	no
• Membrane keyboard & piezo mouse	no	yes	no
• Touchscreen	Optional (1297-ET)	no	Optional (1297-RT)
Degree of protection			
• Degree of protection to EN 60529	IP65	IP65	IP54
Ambient conditions			
• Temperature			
- Ambient temperature in operation	0 to +40°C	0 to +40°C	0 to +40°C
Interfaces			
• Design of interface, analog video signal (VGA)	yes	yes	yes
• PS/2 interfaces for keyboard & mouse	no	yes	no
• serial interface for touchscreen	Optional	no	Optional (1297-RT)
Dimensions			
• External dimensions (W x H x D) in mm	364 x 284 x 76	483 x 310 x 98	483 x 266 x 80
• Mounting cutout/depth (W x H x D) in mm	334,4 x 252 x 76	312 x 288 x 97	-
• Weight	5	5	5

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Technical specifications (continued)

15“ Monitore	SCD 1597-E/-ET	SCD 1597-K	SCD 1597-R/-RT
Supply voltage			
• Supply voltage	110 / 230 V AC, optional 24 V DC	110 / 230 V AC, optional 24 V DC	110 / 230 V AC, optional 24 V DC
• Frequency/power consumption	47 to 63 Hz / 30 VA	47 to 63 Hz / 30 VA	47 to 63 Hz / 30 VA
• Mains switch	no	no	no
• Display	Full screen	Full screen	Full screen
Display			
• Design of the display	15" TFT	15" TFT	15" TFT
• Screen diagonal	15"	15"	15"
• visible area (HxV) in mm	304 x 228	304 x 228	304 x 228
• Viewing angle	130° x 110°	130° x 110°	130° x 110°
• Pixel pitch	0.30 x 0.30	0.30 x 0.30	0.30 x 0.30
• optimum resolution (in pixels)	1024 x 768	1024 x 768	1024 x 768
• Image refresh rate	50 to 72 Hz	50 to 72 Hz	50 to 72 Hz
• Line frequency	30 to 80 KHz	30 to 80 KHz	30 to 80 KHz
• Brightness/contrast (typical)	250 cd/m² / 300:1	250 cd/m² / 300:1	250 cd/m² / 300:1
• Number of colors	16 million	16 million	16 million
• MTBF backlighting (up to 50 %, at 25 °C)	35,000 h	35,000 h	35,000 h
Operating mode			
• Function keys	no	36 with LEDs	no
• Membrane keyboard & piezo mouse	no	yes	no
• Touchscreen	Optional	no	Optional
Degree of protection			
• Degree of protection to EN 60529	IP65	IP65	IP54
Ambient conditions			
• Temperature			
- Ambient temperature in operation	0 to +40°C	0 to +40°C	0 to +40°C
Interfaces			
• Design of interface, analog video signal (VGA)	yes	yes	yes
• PS/2 interfaces for keyboard & mouse	no	yes	no
• serial interface for touchscreen	Optional	no	Optional
Dimensions			
• External dimensions (W x H x D) in mm	428 x 336 x 83	483 x 355 x 95	483 x 311 x 83
• Mounting cutout/depth (W x H x D) in mm	394 x 306 x 83	448 x 333 x 95	-
• Weight	5.5	5.5	5.5

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Technical specifications (continued)

19“ Monitore	SCD 1997-E/-ET	SCD 1997-R/-RT	SCD 19101-D/-DT
Supply voltage			
• Supply voltage	110 / 230 V AC	110 / 230 V AC	110 / 230 V AC
• Frequency/power consumption	47 to 63 Hz / 60 VA	47 to 63 Hz / 60 VA	47to 63 Hz / 60 VA
• Mains switch	rear	rear	rear
• Display	Full screen	Full screen	Full screen
Display			
• Design of the display	19" TFT	19" TFT	19" TFT
• Screen diagonal	19"	19"	19"
• visible area (HxV) in mm	359 x 287	359 x 287	359 x 287
• Viewing angle	170° x 170°	170° x 170°	170° x 170°
• Pixel pitch	0.28 x 0.28	0.28 x 0.28	0.28 x 0.28
• optimum resolution (in pixels)	1280 x 1024	1280 x 1024	1280 x 1024
• Image refresh rate	30 to 100 Hz	30 to 100 Hz	30 to 100 Hz
• Line frequency	50 to 97 KHz	50 to 97 KHz	50 to 97 KHz
• Brightness/contrast (typical)	270 cd/m² / 400:1	270 cd/m² / 400:1	270 cd/m² / 400:1
• Number of colors	16 million	16 million	16 million
• MTBF backlighting (up to 50 %, at 25 °C)	50.000 h	50.000 h	50.000 h
Operating mode			
• Function keys	no	no	no
• Membrane keyboard & piezo mouse	no	no	no
• Touchscreen	Optional	Optional	Optional
Degree of protection			
• Degree of protection to EN 60529	IP65	IP54	IP20
Ambient conditions			
• Temperature			
- Ambient temperature in operation	0 to +40°C	0 to +40°C	0 to +40°C
Mounting			
• Design of interface, analog video signal (VGA)	yes	yes	yes
• PS/2 interfaces for keyboard & mouse	no	no	no
• serial interface for touchscreen	Optional/serial	Optional/serial	Optional/USB
Dimensions			
• External dimensions (W x H x D) in mm	481 x 385 x 89	483 x 400 x 89	465 x 444 x 91 (base depth 240)
• Mounting cutout/depth (W x H x D) in mm	450 x 353.4 x 89	-	465 x 444 x 91 (base depth 240)
• Weight	10	10	7

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Ordering Data

	Order No.
LCD monitors	**6AV8 101 ■■■ 00 0 ■ A 1**
Monitor/type	
• 12" TFT (SCD 1297)	**0**
• 15" TFT (SCD 1597)	**1**
• 19" TFT (SCD 1997)	**3**
Rack-mounting version:	
• Rack-mount unit	**B**
• 19“ rack unit (R)	**C**
Operator functionality:	
• Display devices without operator functionality	**A**
• Touch (T)	**B**
• Keyboard (only rack-mount units, not 19")	**C**
Connecting cable:	
• Video + Touch	
- 1.8 m	**B**
- 5.0 m	**D**
- 10.0 m	**F**
- 20.0 m	**H**
• Video (not for Keyboard and Touch operator functionality)	
- 20.0 m	**J**
• Video + 2*PS/2 (for Keyboard operator functionality only)	
- 1.8 m	**L**
- 5.0 m	**N**
• Video + X27 (for Keyboard operator functionality only)	
- 10.0 m	**Q**
- 20.0 m	**S**

		Order No.
Accessories		
Connecting cable		
• Video + Touch		
- 1.8 m		**6AV8 107-0BA00-0AA0**
- 5.0 m		**6AV8 107-0DA00-0AA0**
- 10.0 m		**6AV8 107-0FA00-0AA0**
- 20.0 m		**6AV8 107-0HA00-0AA0**
• Video		
- 20.0 m		**6AV8 107-0HB00-0AA0**
• Video + 2*PS/2		
- 1.8 m		**6AV8 107-0BC00-0AA0**
- 5.0 m		**6AV8 107-0DC00-0AA0**
• Video + X27		
- 10.0 m		**6AV8 107-0FC00-0AA0**
- 20.0 m		**6AV8 107-0HC00-0AA0**
100 … 240 V AC power supply unit for SCD monitor (with bracket + power supply cable)		**6AV8 107-1AA00-0AA0**
Slide-in label		
• for SCD 1297-K		**6AV8 107-2AA00-0AA0**
• for SCD 1597-K		**6AV8 107-2AB00-0AA0**
Desktop models		
19" LCD monitors SCD 19101-D, desktop model (design identical to SCD 1898-I)	A	**6GF6 220-1DA01**
19" Touch LCD monitors SCD 19101-DT, desktop model (design identical to the successor of SCD 1898-IT, but with USB Touch)	A	**6GF6 220-1DB01**

A) Subject to export regulations: AL: N and ECCN: EAR99H

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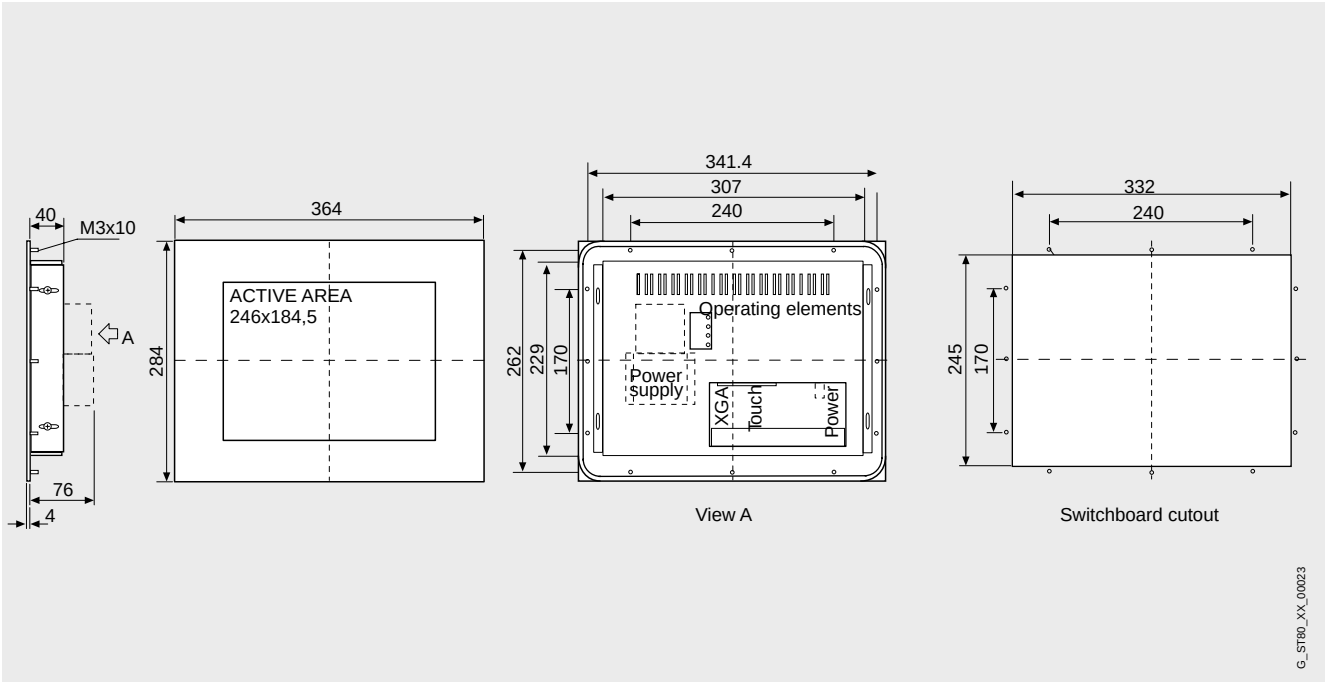
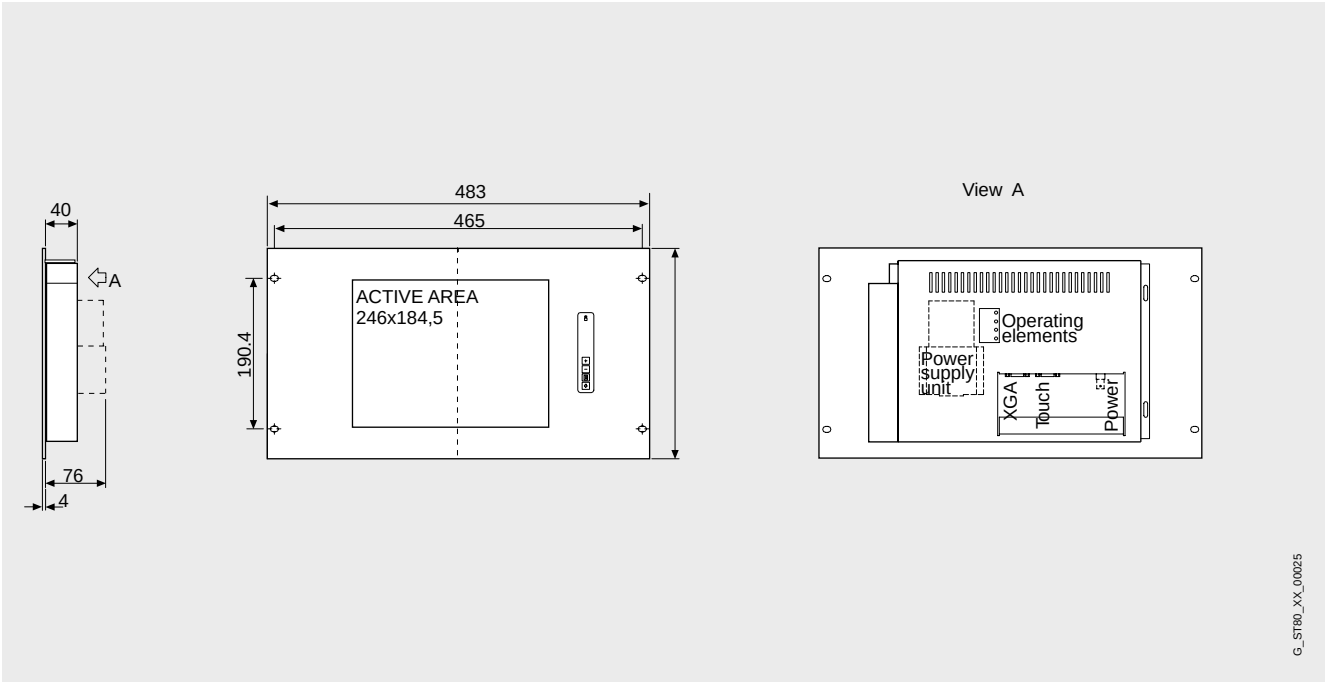
Dimensional drawings



SCD 1297-E, SCD 1297-ET



SCD 1297-R, SCD 1297-RT

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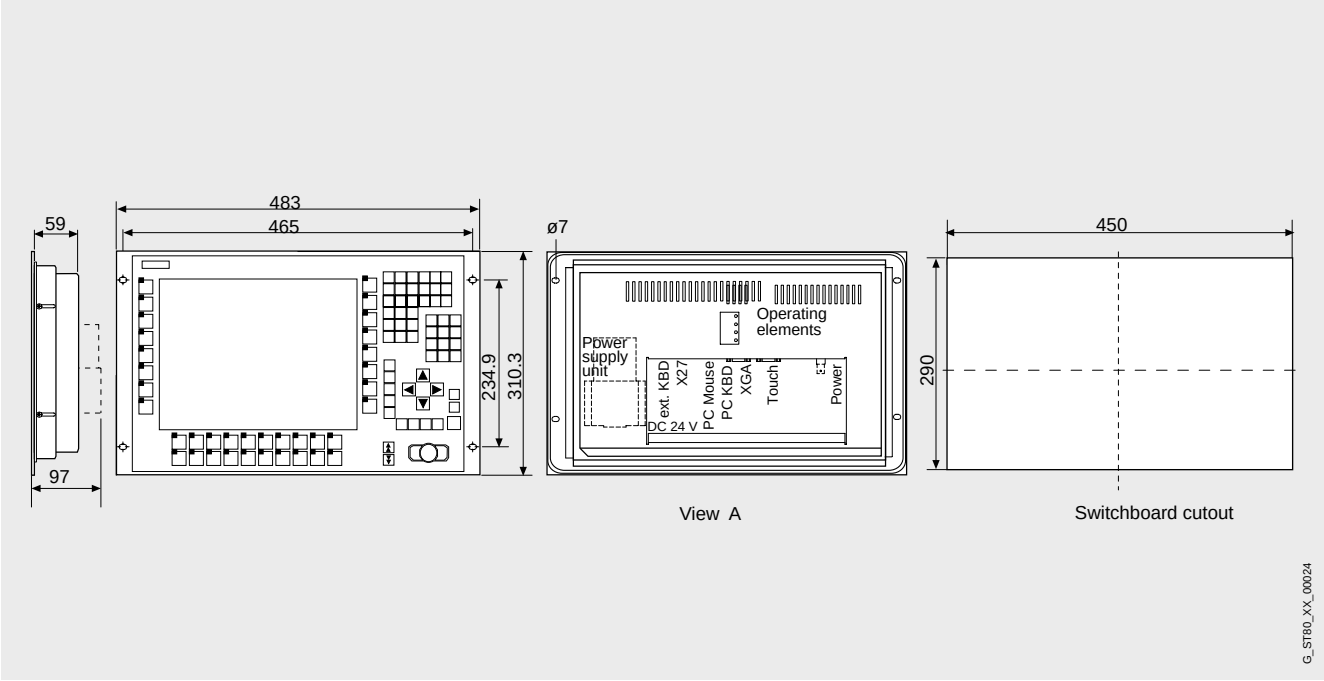
Dimensional drawings (continued)



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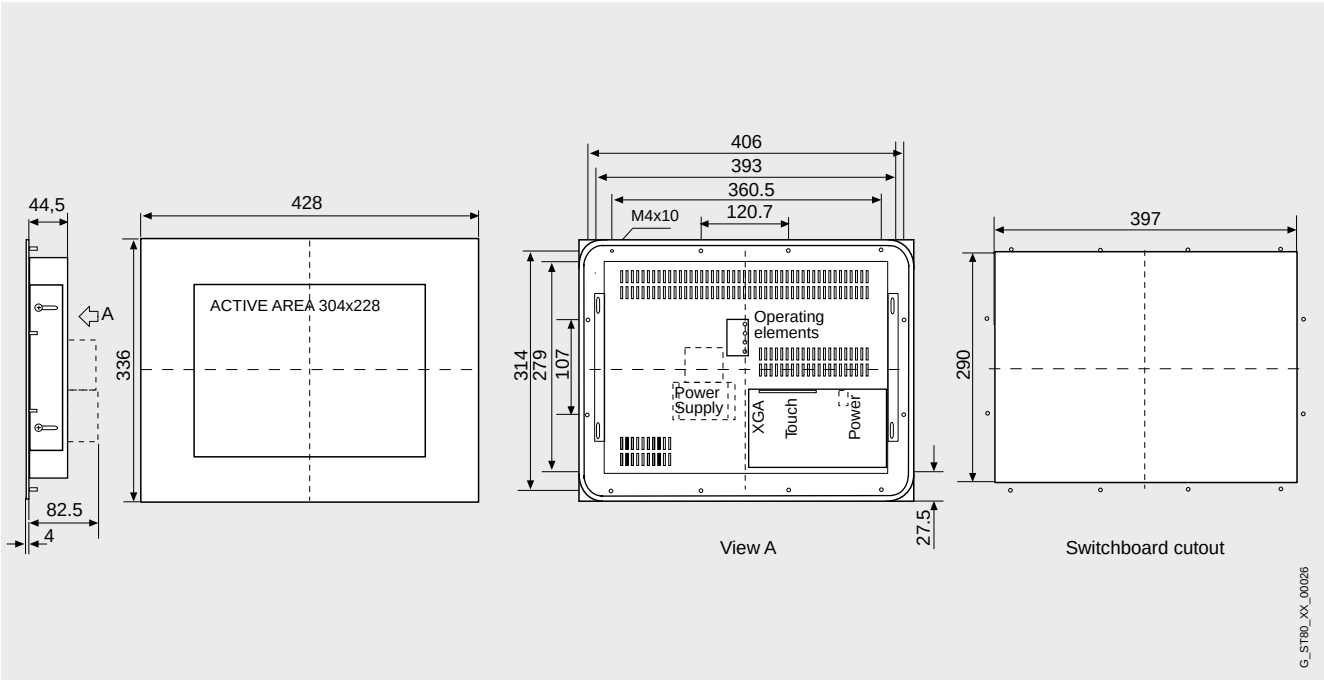

SCD 1597-E, SCD 1597-ET

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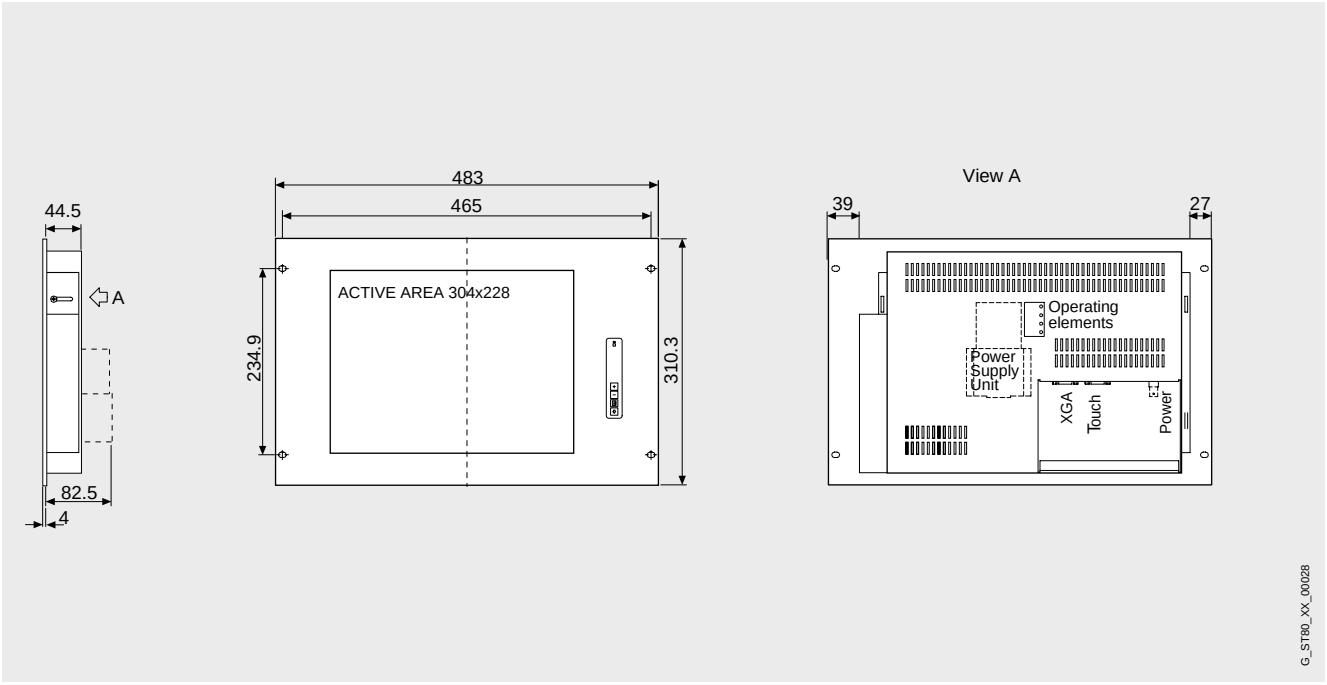
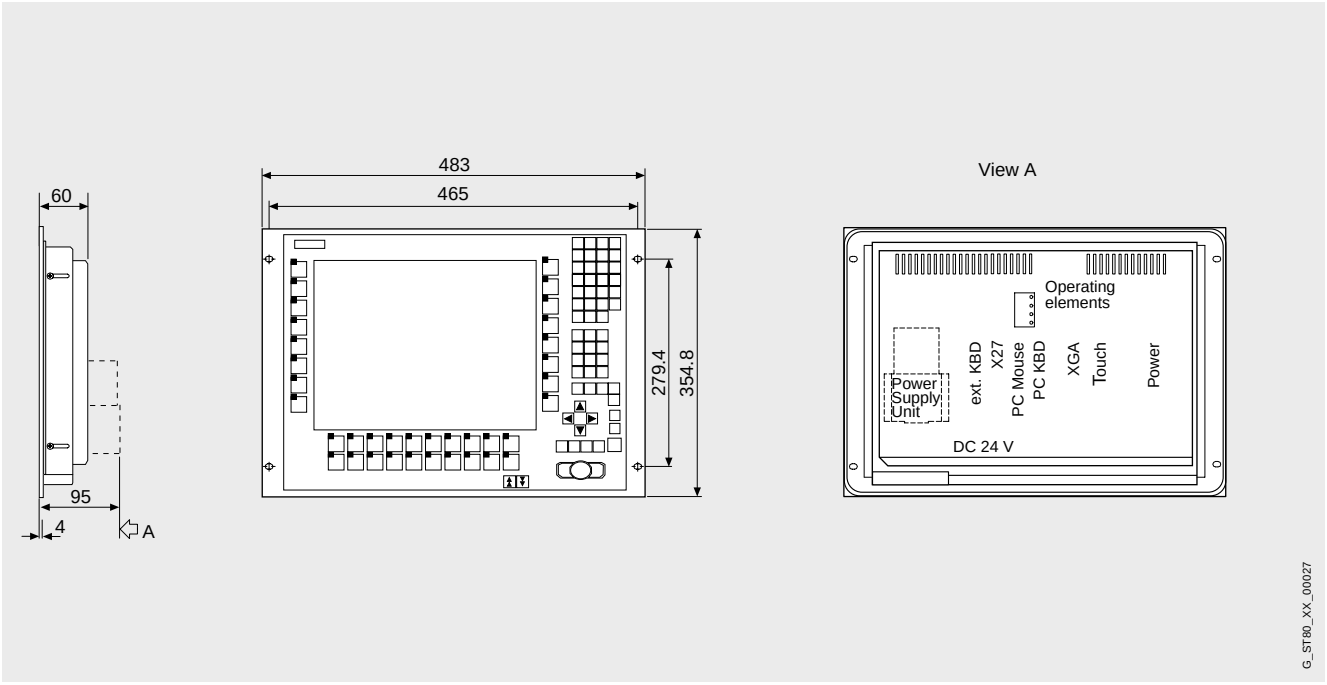
Dimensional drawings (continued)



SCD 1597-R, SCD 1597-RT



SCD 1597-K

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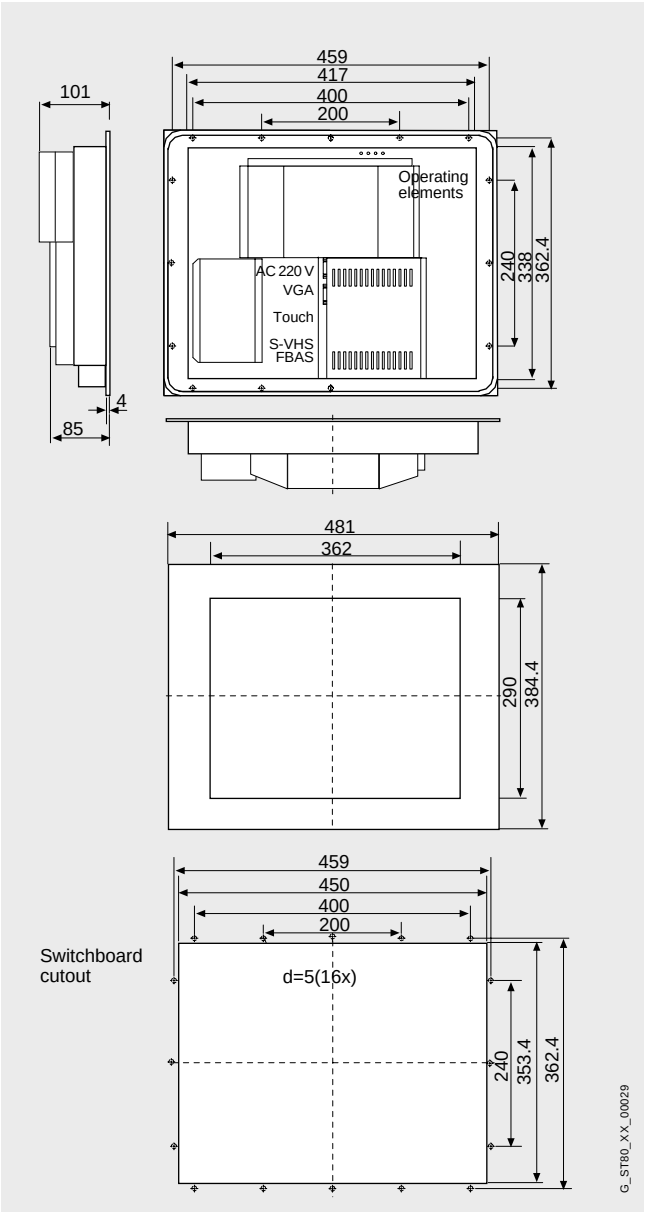
Dimensional drawings (continued)



SCD 1997-E/ET

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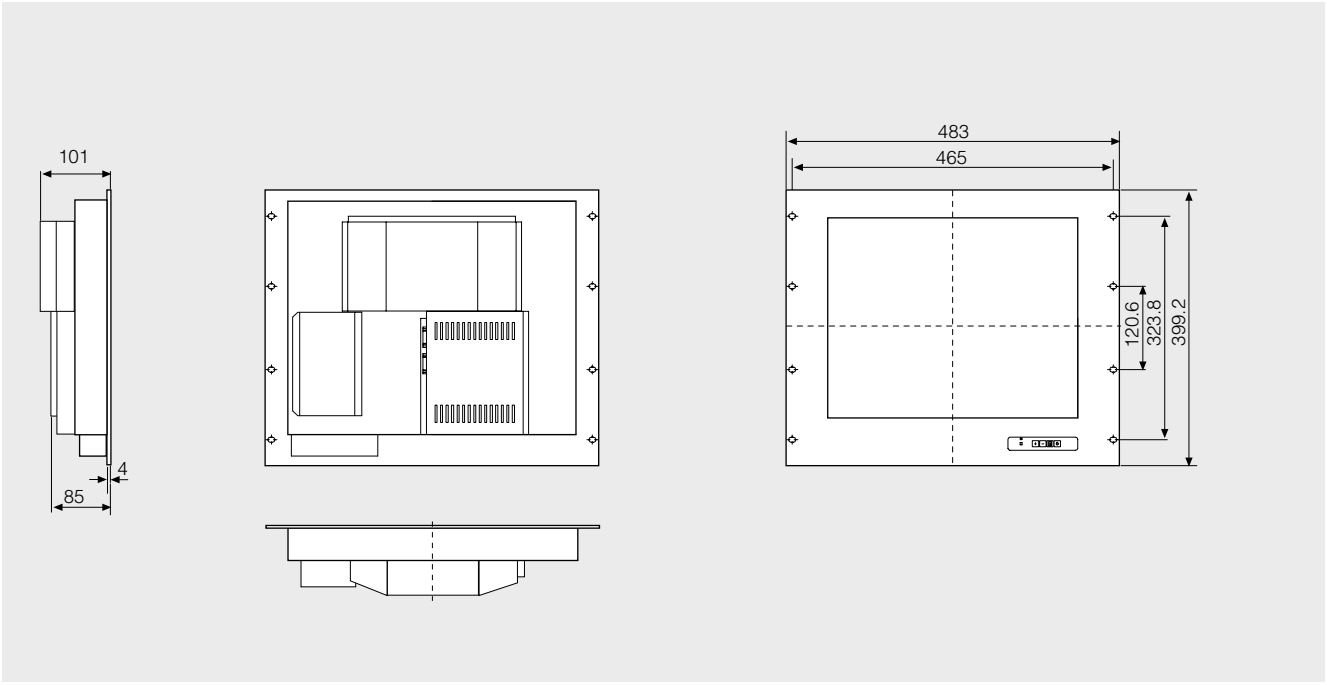
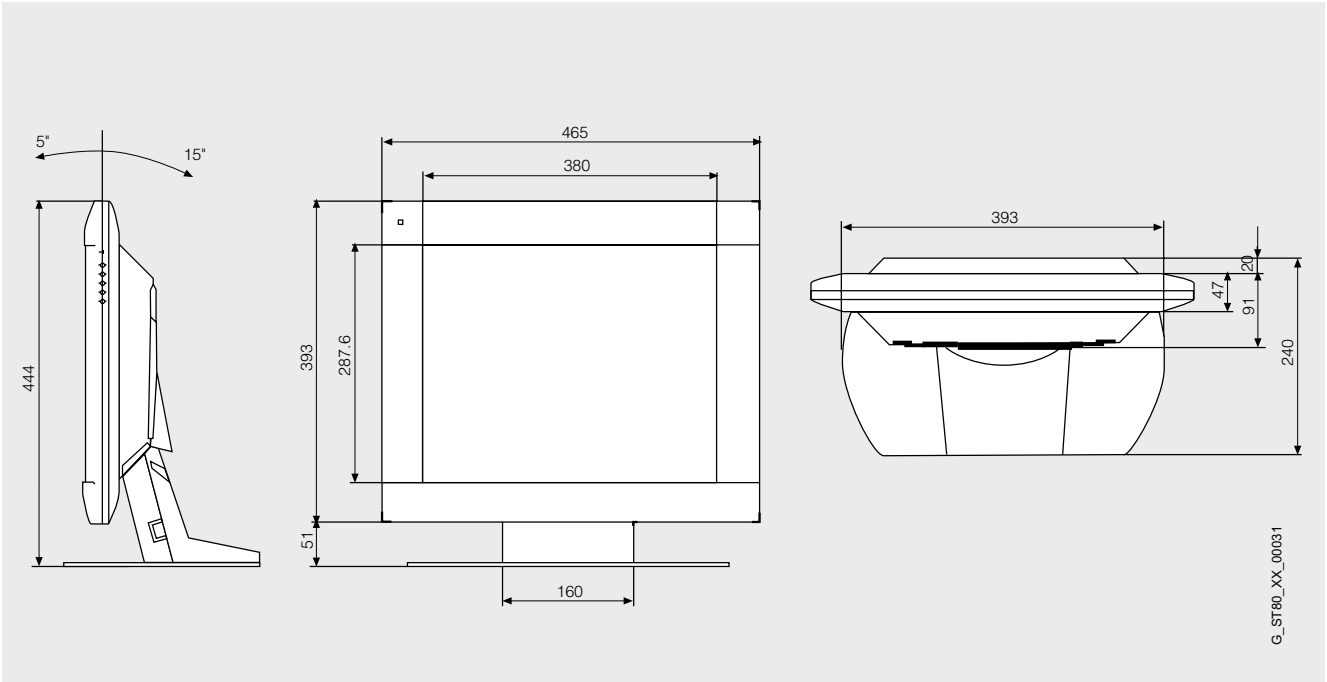
Dimensional drawings (continued)



SCD 1997-R/RT



SCD 19101-D/DT

More information

Additional information is available in the Internet under:

http://www.siemens.com/industrial-lcd

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8 Appendix

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Training

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Contact

Visit our site on the Internet at:

www.siemens.com/sitrain

or let us advise you personally. You can request our latest training catalog from:

SITRAIN Customer Support Germany:

Phone: +49 (0)1805 / 23 56 11
(0.14 €/min from the German landline network)

Fax: +49 (0)1805 / 23 56 12
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SITRAIN highlights

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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 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 A&D products as well as interaction of the products in systems. Telecourses, teach-yourself software and seminars with a presenter on the Web supplement our classic range of courses.

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.

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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.de/sitrain

SITRAIN courses for SIMATIC HMI

Target Group:
- Decision makers, sales personnel
- Project managers, project assistants
- Programmers
- Startup engineers, configuration engineers
- Service personnel
- Operators, users
- Maintenance personnel

Title	Target Group							Duration/ Medium	Short Title
SIMATIC ProTool/Pro									
SIMATIC ProTool/Pro System Course			✔	✔	✔	✔	✔	3 days	ST-BPROPRS
Operator Panels with Pro Tool – Engineering			✔	✔	✔			3 days	ST-SSP705
SIMATIC ProTool/Pro	✔	✔	✔	✔	✔	✔	✔	CD-ROM	SM-PROTOO
SIMATIC ProTool/Pro	✔	✔	✔	✔	✔	✔	✔	WBT	WT-PROTOO
SIMATIC WinCC flexible									
SIMATIC WinCC flexible, Conversion Workshop	✔	✔	✔	✔	✔	✔	✔	1 day	ST-WCCFWS
SIMATIC WinCC flexible, System Course 1	✔	✔	✔	✔	✔	✔	✔	3 days	ST-WCCFSYS1
SIMATIC WinCC flexible Options			✔	✔	✔			1 day	ST-WCCFO
SIMATIC WinCC flexible	✔	✔	✔	✔	✔	✔	✔	WBT	WT-WCCFLEX
SIMATIC WinCC									
SIMATIC WinCC V6, System Course			✔	✔	✔	✔	✔	5 days	ST-BWINCCS
SIMATIC WinCC V6, Options, Network, Database			✔	✔				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

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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/EWG “Electromagnetic Compatibility” (EMC guideline)
- 73/23/EWG “Electrical Equipment for Use Within Specific Voltage Limits” (low voltage guideline)

The EU conformity declarartion is available for examination by the appropriate authorites at:

SIMATIC HMI:
Siemens AG,
Automation and Drives
Dept. A&D AS SM ID
Postfach 4848
90327 Nürnberg
Federal Republic of Germany

SIMATIC, SIMATIC NET, SIMATIC PC:
Siemens AG,
Automation and Drives
Dept. A&D AS RD4
Postfach 1963
92209 Amberg
Federal Republic of Germany

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Siemens contacts worldwide

Overview

At

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

you can find details of Siemens contact partners worldwide responsible for particular technologies.

You can obtain in most cases a contact partner for

- Technical Support,
- Spare parts/repairs,
- Service,
- Training,
- Sales or
- Consultation/engineering.

You start by selecting a

- Country,
- Product or
- Sector.

By further specifying the remaining criteria you will find exactly the right contact partner with his/her respective expertise.

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Partner

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 decision-makers 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:
http://www.siemens.de/competencecenter

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Siemens Solution Partner Automation and Power Distribution

Overview

Products and systems from Siemens Automation and Drives provide the ideal platform for all automation tasks.

Siemens Solution Partners offer customized future-proof solutions with products and systems from Siemens Automation and Drives. The basis: qualified product and system knowledge coupled with a high degree of solutions and industry-related expertise.

In the Siemens Solution Partner Program you are certain to find the optimum partner for your specific requirements. Since more than 570 companies worldwide belong to the program, you can be sure to get expert support at your location.

The Solution Partner Finder, available to you on the Internet, is a comprehensive database in which all Solution Partners, together with their performance profiles, present themselves.

In addition to the search criteria Technology, Sector and Country, you can also search by Company and ZIP Code. From there it is only a small step to making the first contact.

Call up the Solution Partner Finder as follows:

- CA 01 on CD-ROM:
  On the start page via "Contacts & Partners; Siemens Solution Partner Automation and Power Distribution"
- CA 01 online:
  Go directly to the Solution Partner Finder:
  www.siemens.com/automation/partnerfinder

Additional information about the Siemens Solution Partner Program is available in the Internet at:
www.siemens.com/automation/solutionpartner

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Information and Ordering in the Internet and on CD-ROM

A&D 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.

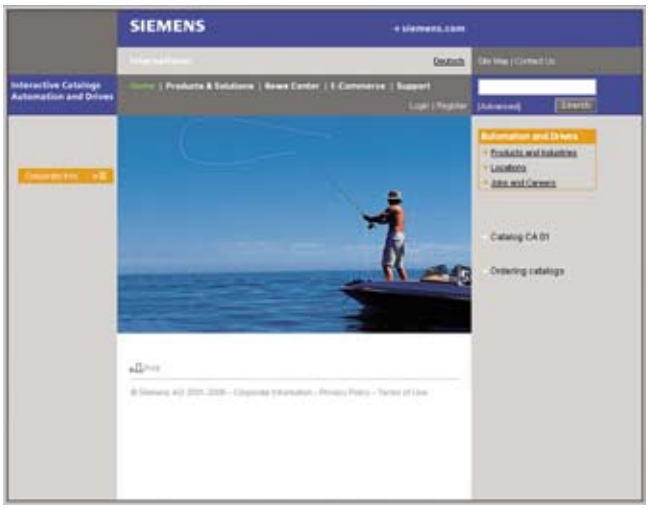
The Siemens Automation and Drives Group (A&D) has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

http://www.siemens.com/automation

you will find everything you need to know about products, systems and services.

Product Selection Using the Offline Mall of Automation and Drives



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 Automation and Drives 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 CD-ROM or DVD.

Easy Shopping with the A&D Mall

The A&D 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 A&D Mall in the Internet under:

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

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Our services for every phase of your project

In the face of harsh competition you need optimum conditions to keep ahead all the time:
A strong starting position. A sophisticated strategy and team for the necessary support – in every phase.
Service & Support from Siemens provides this support with a complete range of different services for automation and drives.

In every phase: from planning and startup to maintenance and upgrading.

Our specialists know when and where to act to keep the productivity and cost-effectiveness of your system running in top form.

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.

Tel.: +49 (0)180 50 50 222
Fax: +49 (0)180 50 50 223
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. [1)]

Configuration and Software Engineering

Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project. [1)]

Service On Site

With Service On Site we offer services for startup and maintenance, essential for ensuring system availability.

In Germany
0180 50 50 444 [1)]

Repairs and Spare Parts

In the operating phase of a machine or automation system we provide a comprehensive repair and spare parts service ensuring the highest degree of operating safety and reliability.

In Germany
0180 50 50 446 [1)]

Optimization and Upgrading

To enhance productivity and save costs in your project we offer high-quality services in optimization and upgrading. [1)]

1) For country-specific telephone numbers go to our Internet site at: *http://www.siemens.com/automation/service&support*

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Knowledge Base on CD-ROM
Automation Value Card

Knowledge Base on CD-ROM

For locations without online connections to the Internet there are excerpts of the free part of the information sources available on CD-ROM (Service & Support Knowledge Base). This CD-ROM contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service and Technical Support.

The CD-ROM also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The CD-ROM will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on CD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** CD from your Siemens contact.

Order No. **6ZB5310-0EP30-0BA2**

Orders via the Internet
(with Automation Value Card or credit card) at:

http://www.siemens.com/automation/service&support

in the Shop domain.

Automation Value Card

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 high-quality Support Tools in our Online Shop, 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.

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.

Automation Value Card Order Nos.	
Credits	Order No.
200	**6ES7 997-0BA00-0XA0**
500	**6ES7 997-0BB00-0XA0**
1000	**6ES7 997-0BC00-0XA0**
10000	**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
Support Tools in the Support Shop	
"System Utilities"	Tools that can be used directly for configuration, analysis and testing
"Applications"	Complete topic solutions including ready-tested software
"Functions & Samples"	Adaptable blocks for accelerating your developments

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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 Automation & Drives offers various types of software license:

- Floating license
- Single license
- Rental license
- Trial license
- Factory 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 Automation & Drives 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/automation/mall
(A&D Mall Online-Help System)

A&D/Software licenses/En 03.08.06

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Suggestions for improving the catalog

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Conditions of sale and delivery
Export regulations

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SINAMICS G130 Drive Converter Chassis Units, SINAMICS G150 Drive Converter Cabinet Units	D 11
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SIMODRIVE 611 universal and POSMO	DA 65.4
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IEC Squirrel-Cage Motors	D 81.1
IEC Squirrel-Cage Motors · New Generation 1LE1	D 81.1 N
PDF: Geared Motors	*M 15*
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• Converter Systems SIMODRIVE 611/POSMO	
Automation Systems for Machine Tools SINAMICS	NC 61
• Main Spindle/Feed Motors	
• Drive System SINAMICS S120	
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