Catalog ST 80 · 2006

simatic hmi

Human Machine Interface Systems

SIEMENS

Industrial Drives & Controls Ltd,
Drivetec House,
Aqueduct Business Park,
Marple,
Stockport,
Cheshire, SK6 5LD.

Tel: 0161 427 0022
Fax: 0161 427 0033
E-mail: sales@drives-and-controls.co.uk

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1) Available in German and English.
For further information contact your
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Trademarks

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Aqueduct Business Park,
Marple,
Stockport,
Cheshire, SK6 5LD.

Tel: 0161 427 0022
Fax: 0161 427 0033
E-mail: sales@drives-and-controls.co.uk

Human Machine Interface Systems

Catalog ST 80 · 2006

Supersedes:
Catalog ST 80 · 2005

The products contained in this catalog are also contained in the electronic Catalog CA 01.
Order No.:
CD: E86060-D4001-A110-C3-7600

Please contact your nearest Siemens branch office.

The products and systems listed in this catalog are manu-actured/distributed using a certified quality management system which complies with DIN EN ISO 9001 Certified Registration No. 2613-05).
The certificates are recognized in all IQNet countries.

SIEMENS

Welcome to Automation and Drives

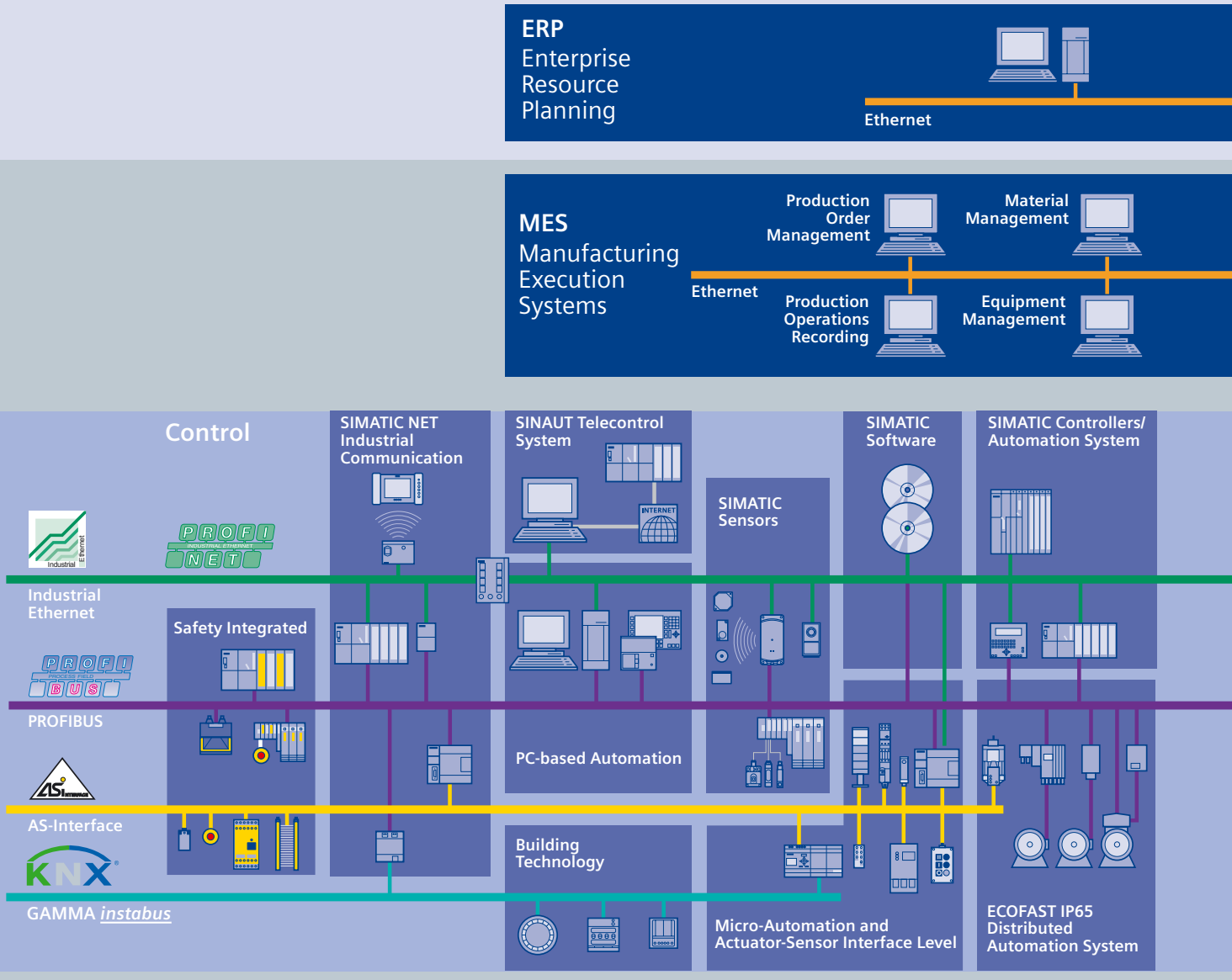
We would like to welcome you to Automation and Drives and our comprehensive range of products, systems, solutions and services for production and process automation and building technology worldwide.

With Totally Integrated Automation and Totally Integrated Power, we deliver solution platforms based on standards that offer you a considerable savings potential.

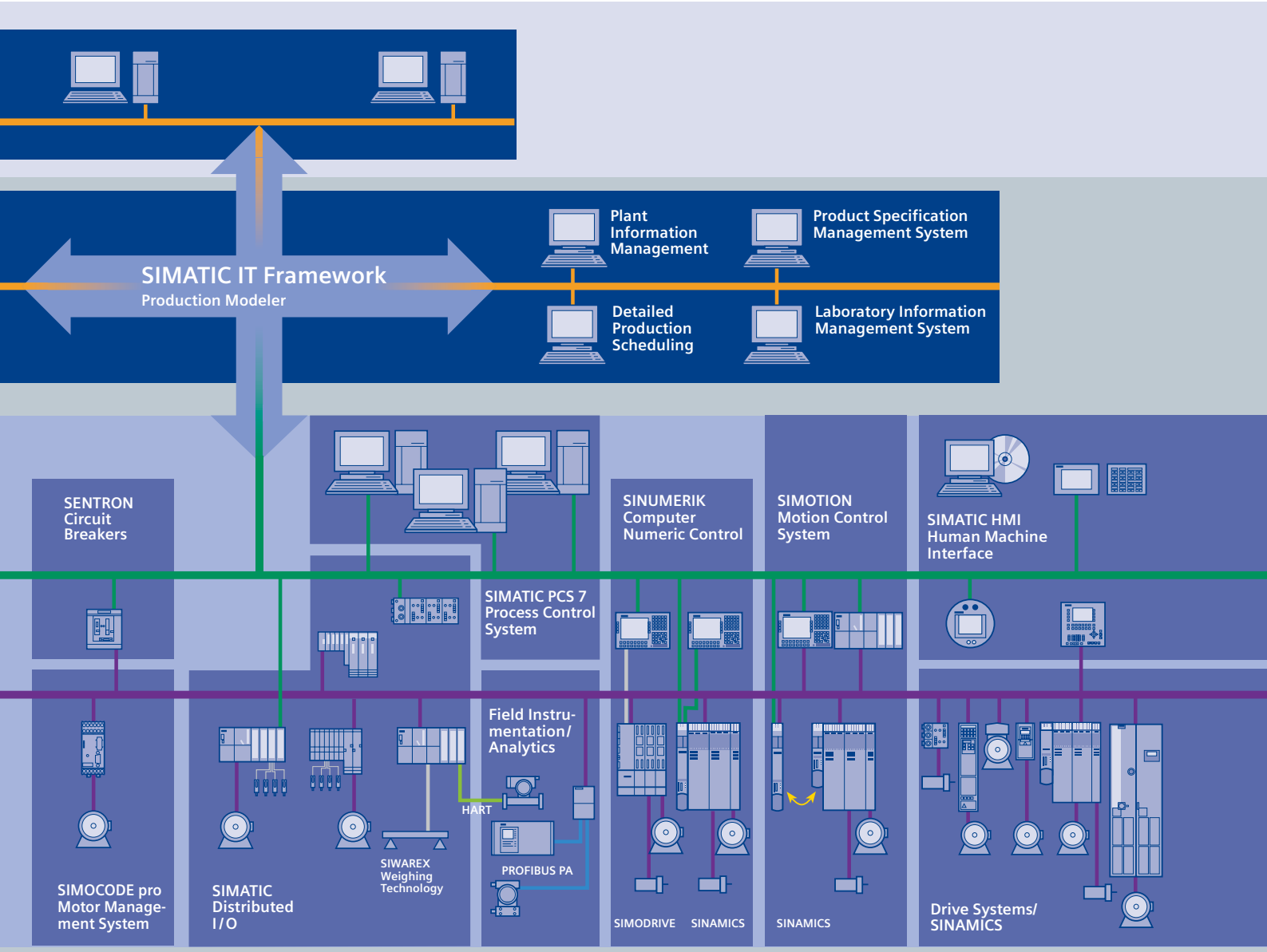
Discover the world of our technology now. If you need more detailed information, please contact one of your regional Siemens partners.
They will be glad to assist you.

Totally Integrated Automation – innovations for more productivity

With the launch of Totally Integrated Automation, we were the first ones on the market to consistently implement the trend from equipment to an integrated automation solution, and have continuously improved the system ever since.
Whether your industry is process- and production-oriented or a hybrid, Totally Integrated Automation is a unique "common solution" platform that covers all the sectors.
Totally Integrated Automation is an integrated platform for the entire production line - from receiving to technical processing



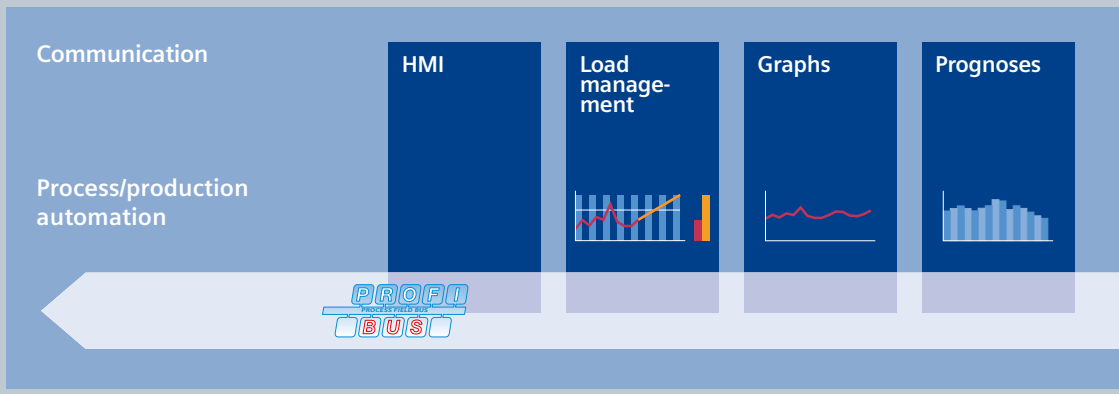
and production areas to shipping. Thanks to the system-oriented engineering environment, integrated, open communications as well as intelligent diagnostics options, your plant now benefits in every phase of the life cycle.
In fact, to this day we are the only company worldwide that can offer a control system based on an integrated platform for both the production and process industry.

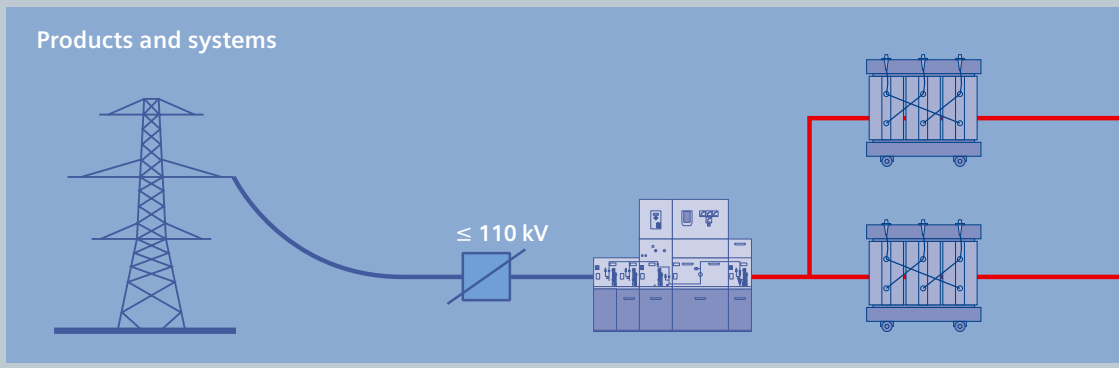


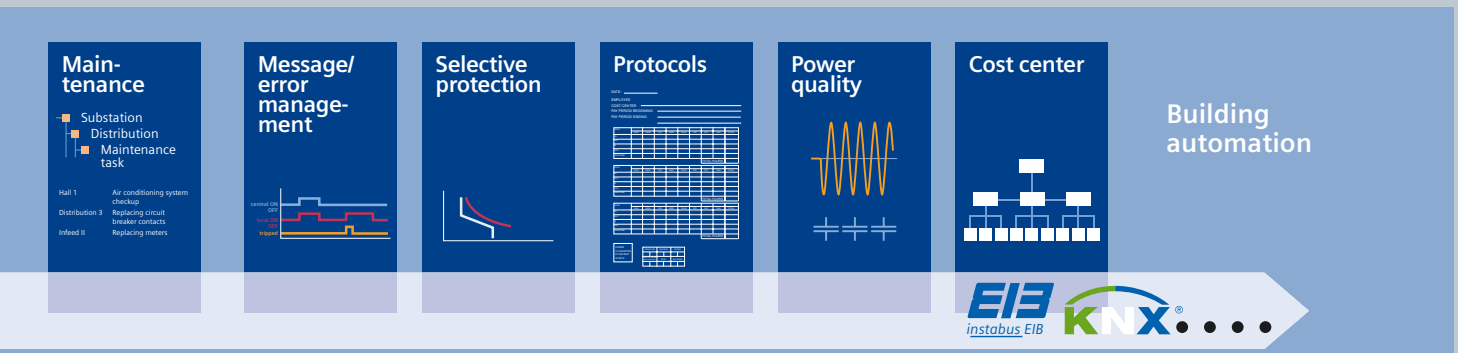
Totally Integrated Power – energy distribution and management from one source

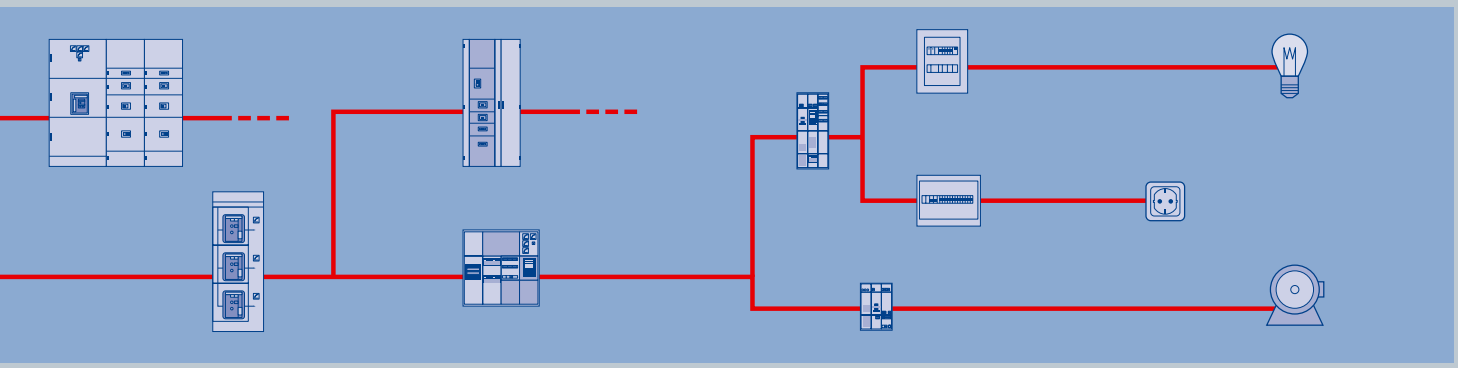
Totally Integrated Power™ by Siemens offers integrated solutions for energy distribution in functional and industrial buildings covering everything from medium-high voltage to power outlets.

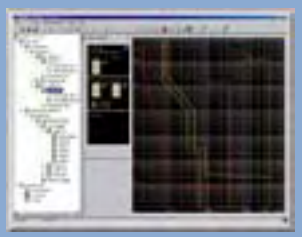
Totally Integrated Power™ is based on integration in planning and configuration as well as coordinated products and systems. In addition, it features communications and software modules for connecting power distribution systems to industrial automation and building automation, thereby offering a substantial savings potential.

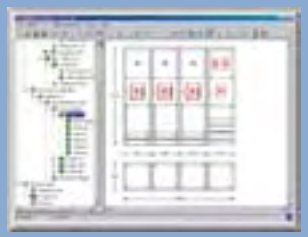




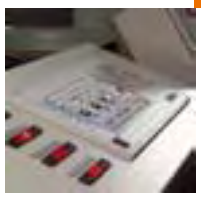

Main-
tenance
Substation
Distribution
Maintenance
task
Hall 1
Air conditioning system
checkup
Distribution 3
Replacing circuit
breaker contacts
Infeed II
Replacing meters
Message/
error
manage-
ment
Selective
protection
Protocols
Power
quality
Cost center
Building
automation
instabus EIB
KNX







Achieving transparency and lowering costs: SIMATIC HMI operator control and monitoring systems



The interface between the operator and the machine – the Human Machine Interface, or HMI – connects the world of automation with the individual requirements of the operator. Operator control and monitoring means total control of the process, keeping machinery and plants operating smoothly, availability and productivity.

Making increasing complex systems easier and easier

An area of conflict. Processes are becoming more sophisticated and the requirements on the functionality of machines and plant are growing. The operator must monitor, control and think about so many things all at once. The human machine interface has to offer the operator the highest degree of transparency. With every new HMI innovation, it is our intention to make increasingly complex matters more and more simple. We shape innovations in HMI technology and implement them in solutions that are at the forefront of development.

Everything from a single source

With SIMATIC HMI, Siemens A&D has a complete spectrum of innovative as well as attractively priced products and systems for the wide range of different tasks of operator control and monitoring, not to mention customized solutions: From operator panels and visualization software for human-machine interface systems at the machine to a SCADA system for a wide range of different requirements in process visualization.

Well-equipped for integration in the world of automation

With their open, standardized interfaces in hardware and software, SIMATIC HMI products can be integrated into the production level, automation level and the management level at any time. They can be connected to almost any PLC on the market; the configuration and visualization software is multi-lingual, even encompassing ideographic Asian languages – so there are no barriers to worldwide implementation.

Part of the corporate IT landscape

Whether it is used for business optimization, quality assurance at the MES level (Manufacturing Execution System) or to provide management data for the corporate managers (ERP – Enterprise Resource Planning): beyond the boundaries of the automated process, SIMATIC HMI will become an integral component of the corporate IT landscape.

Integrated into the World Wide Web

SIMATIC HMI turns the Web into the control desk – within the plant as well as in the global network. Using the WinCC/Web Navigator, you can monitor and operate plants over the Internet or the internal company intranet. Operator panels such as the SIMATIC MP 370 Multi Panel can be integrated as rugged Thin Clients that simultaneously provide a link between the automation level and the control desk.

And over wireless LAN or cell phone connections, you can use portable Thin Clients such as laptops, organizers or WebPads. The process, service or management information is then available to the respective users. At the machine level, many operator panels support remote operation, for example as a link between the automation level and the control desk, through to service and diagnostics over the Web.

Enhanced plant availability

All operator panels and panel PCs are designed from the very beginning for operation under harsh industrial conditions. WinCC redundant process visualization systems ensure high plant availability during operation. The process diagnostics ProAgent from SIMATIC HMI supports you effectively with error locating and rectification and therefore significantly reduces downtimes. In addition, special software options, such as SIMATIC WinBDE support the preventive maintenance of machines and plants.

More than a human-machine interface

The multi panels under Windows CE encompass the advantages of two different worlds: On the one hand, the ruggedness of an operator panel, and on the other hand the flexibility typical of the PC. Siemens is the first manufacturer to implement this new class of multifunctional platforms. Apart from the classical HMI functions, other automation functions, such as control functions, can execute at the same time. And for PC-based Automation, the SIMATIC Panel PCs are available as compact automation platforms.

All the advantages of Totally Integrated Automation

Totally Integrated Automation from Siemens is the most successful automation concept worldwide with a potential for savings that was previously unknown. TIA supports complete integration of the individual automation components from the PLC, distributed I/O and drive systems through the HMI right up to the production management level. And you will always profit from the three-fold integration of configuration or programming, data management and communication. The impressive consequence: drastic reduction in engineering costs of an automation solution and therefore in overall costs.

As a component part of TIA, SIMATIC HMI supports system-wide engineering under Windows, accesses shared data and has integrated communication. In this way, the WinCC flexible engineering software can be integrated into the central programming software of the SIMATIC world, SIMATIC STEP 7, and it can be used to configure all the operator panels. The engineering software of SIMATIC HMI also accesses variables and signal lists of the PLC and uses their communications parameters. This prevents time-consuming repeat entries and the associated sources of error from the very beginning.

Interacting with other SIMATIC components, SIMATIC HMI supports system and process diagnostics during normal operation. This enables you to activate STEP 7 diagnostics directly from WinCC for comprehensive error diagnosis from the circuit diagram through to the PLC program. And with SIMATIC ProAgent, process diagnosis signals from the PLC are displayed on operator panels or visualization systems – without the need for additional configuration work on the HMI system or additional diagnostic instruments.

The expert partner for automation solutions

With SIMATIC HMI, not only do you get excellent products for your requirements, but we also support you in selecting a partner for your automation solution. In our global network of Siemens Automation Solution Providers, you will find expert contacts who are close by and are always up-to-date with SIMATIC HMI systems. Building on WinCC, the Siemens-internal WinCC Competence Centers create technology-specific products as well as customized and sector-specific solutions. WinCC Professionals are external system integrators who combine WinCC expertise with their sector and technology know-how in tailor-made, cost-effective solutions. Numerous products from our business partners that operate optimally with WinCC are available as WinCC add-ons.

Investment security included

You will always benefit from our many years of experience in the field of automation engineering. This also applies to our global service network with its competent support. Further services, such as the software update service, training and even ordering over the Internet round off our range of products and services.

SIMATIC HMI

The Human Machine Interface

SIMATIC HMI
The complete world of operator control and monitoring

Process visualization

SIMATIC WinCC
The SCADA system for scaleable process visualization for every requirement – from the single-user system to the redundant multi-user system – as well as for plant monitoring and operation over the Internet. WinCC is the ideal information hub for IT and business integration, such as for integration in MES and ERP systems.

Operator control and monitoring at the machine

SIMATIC Push Button Panels
Operator panels that can be connected to the bus for easy, direct operation of the machine.

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

SIMATIC Mobile Panels
Mobile operator panels for direct operation of plant and machinery from any location.

SIMATIC Panels
Compact, rugged operator panels for implementation directly at the machine – finely graded in performance and user-friendliness as text displays, operator panels and touch panels.

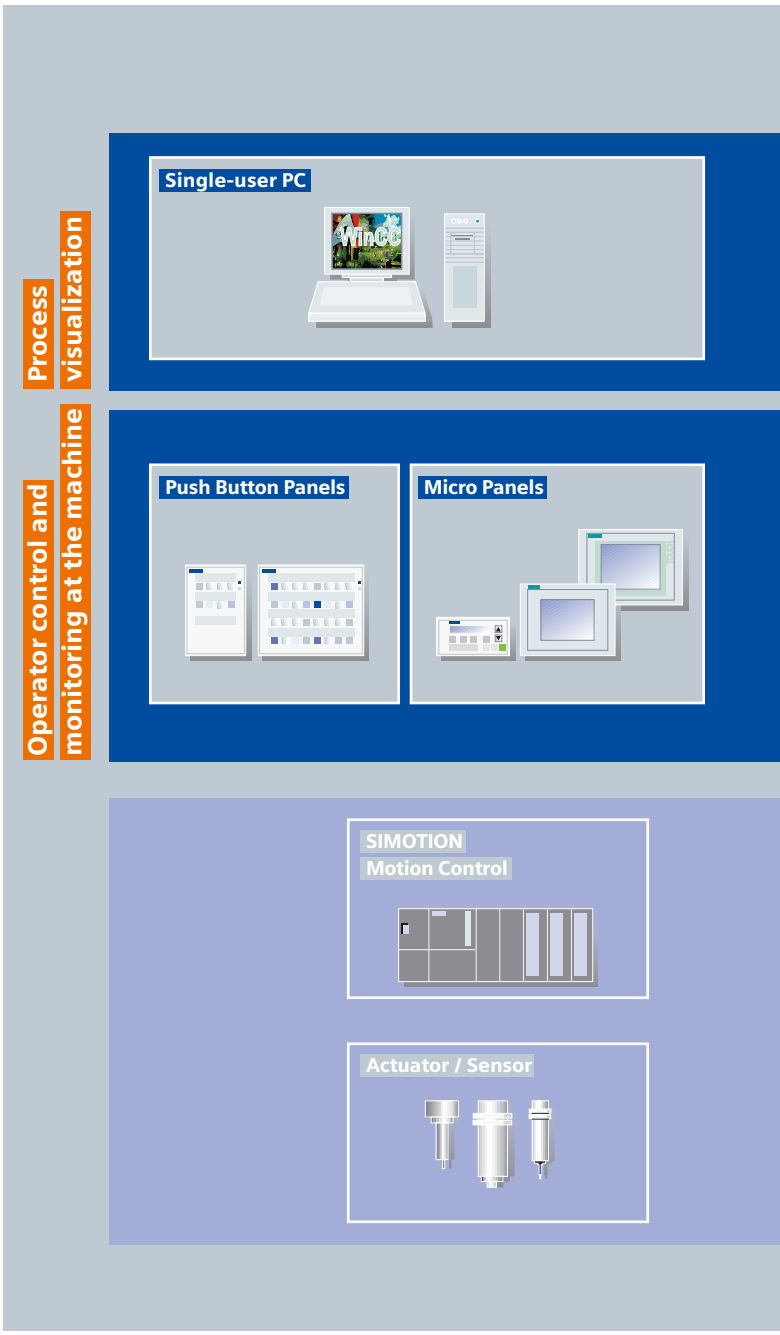
SIMATIC Multi Panels
Multifunctional platforms that, apart from visualization, also perform other automation tasks such as control functions.

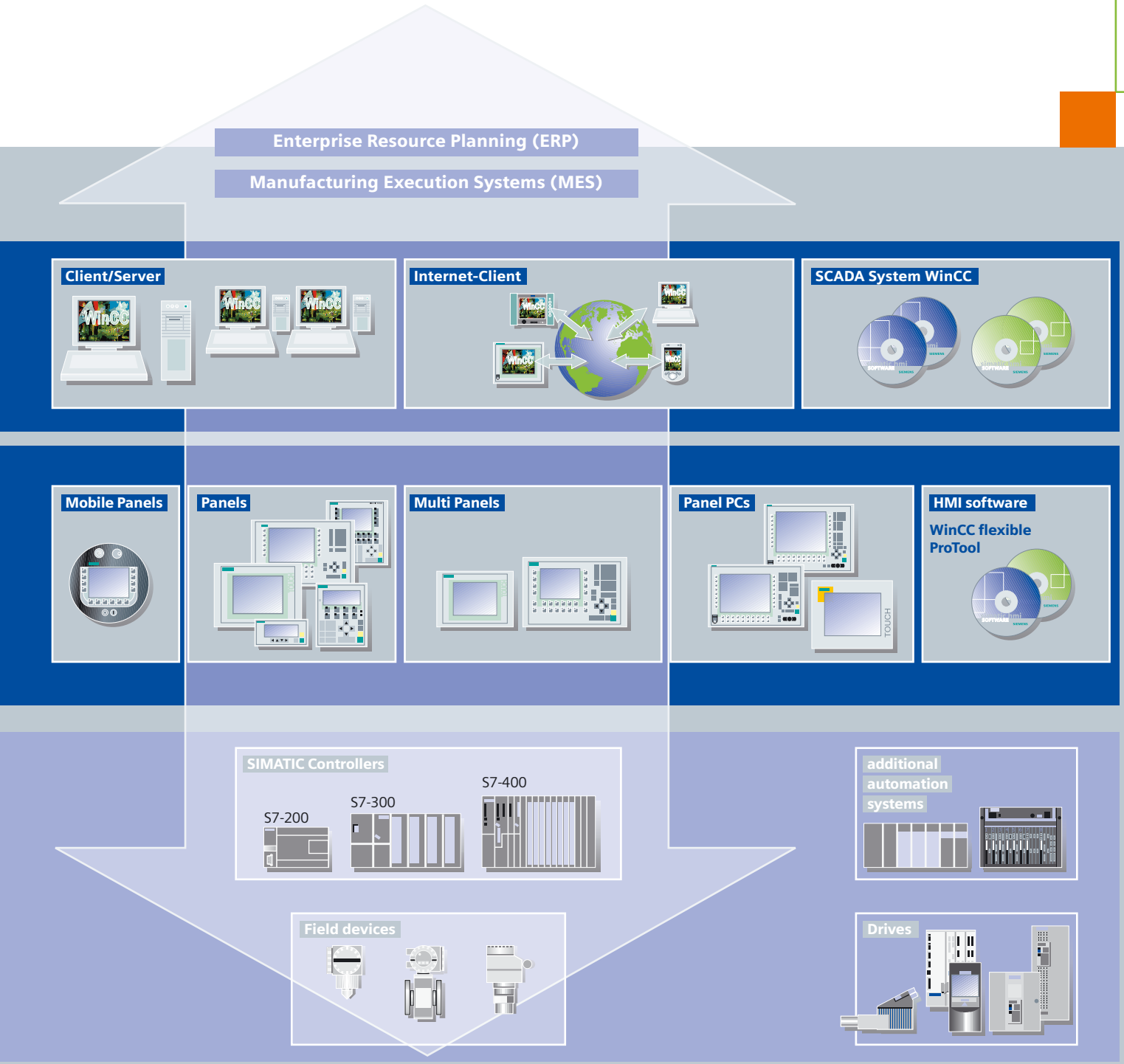
SIMATIC Panel PCs
Industrial platforms for PC visualization on site or for the many different automation tasks of PC-based Automation.

SIMATIC WinCC flexible
The new system-wide, flexible HMI software for all graphical operator panels – from the micro panel to the PC platform. Ideal for operation and monitoring at the machine with stationary, mobile or distributed operator panels. Additional options support operation, service and diagnosis over the Web.

SIMATIC ProTool
Integrated, system-wide configuring software under Windows for all SIMATIC HMI operator panels.

SIMATIC ProTool/Pro
Visualization software for PC-based operator control and monitoring directly at the machine. They permit short response times and safe process operation.

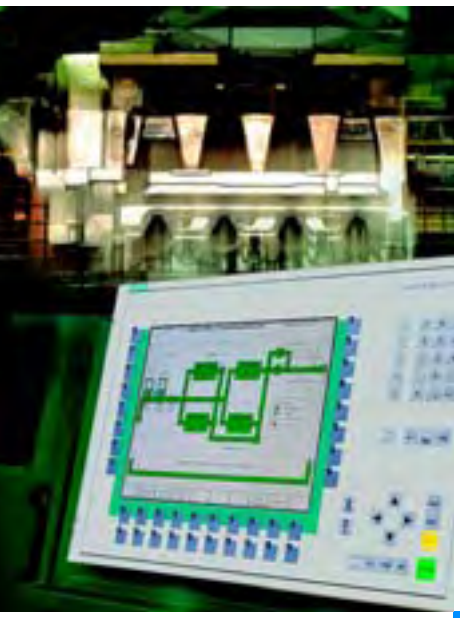



Enterprise Resource Planning (ERP)
Manufacturing Execution Systems (MES)
Client/Server
Internet-Client
SCADA System WinCC
Mobile Panels
Panels
Multi Panels
Panel PCs
HMI software
WinCC flexible
ProTool
SIMATIC Controllers
S7-200
S7-300
S7-400
additional
automation
systems
Field devices
Drives

SIMATIC HMI
The Human Machine Interface

Operator Control and Monitoring Devices

2



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 offer simple and secure hot-swapping and can be used flexibly on machines or systems.

Panels

Text Panels TD17, OP3/7/17
as text displays (TD) for simple message display or as operator panels (OP) for operator control and monitoring using a membrane keyboard.

70/170/270 series Graphic Panels
With pixel-graphics display for realistic representation of sequences (for 170B and higher also 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.

Benefits

Rugged and compact for use at machine level.

With IP65/NEMA 4 degree of protection 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 IP65 degree of protection 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

SIMATICProTool or SIMATIC WinCC flexible are tools for the uniform configuration of all SIMATIC Panels, as well as PC-based systems with the visualization software ProTool/Pro Runtime or 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 ProTool and WinCC flexible are integral components 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 ProTool or WinCC flexible including the online help and the complete documentation is multilingual. Up to 32 languages can be used in one project. And all this is complemented by global servicing and support from Siemens.

Configuration overview

	ProTool configuring software				WinCC flexible engineering software			
	TP-Designer	ProTool/Lite	ProTool	ProTool/Pro	Micro	Compact	Standard	Advanced
Micro Panels								
• OP 73micro					●	●	●	●
• TP 070	●							
• TP 170micro					●	●	●	●
• TP 177micro					●	●	●	●
Mobile Panels								
• Mobile Panel 177						● 1)	● 1)	● 1)
Text Panels								
• TD17/OP3/OP7/OP17		●	●	●				
Panels – 70 series								
• OP 73						●	●	●
• OP 77A/B						●	●	●
Panels – 170 series								
• TP 170A/ TP/OP 170B/		●	●	●		●	●	●
• TP 177A						●	●	●
• TP/OP 177B						● 1)	● 1)	● 1)
Panels – 270 series								
• TP 270/ OP 270			●	●			●	●
Multi Panels – 270 series								
• MP 270B 6"							●	●
• MP 270B 10"			●	●			●	●
Multi Panels – 370 series								
• MP 370			●	●			●	●

● Possible

1) WinCC flexible 2005 and higher

Introduction

Technological overview

	Micro Panels	Mobile Panels	Panels			
			Text Panels	70 series	170 series	270 series
	TD100C [1] *TD 200/TD 200C* [1] *OP 73micro* *TP 070* [1] *TP 170micro* *TP 177micro*	*Mobile Panel 177*	*TD17* *OP3/OP7/OP17*	*OP 73* *OP 77A/B*	*TP 170A* *TP/OP 170B* *TP 177A* *TP/OP 177B*	*TP 270* *OP 270*
Display	*TD100C/ TD 200/ TD 200C:* Text display *OP 73micro:* 3“ LCD *TP 070/ TP 170micro/ TP 177micro:* 5,7" STN	5.7" STN	Text display	*OP 73:* 3“ LCD *OP 77A/B:* 4.5” LCD	5.7" STN	5.7" / 10.4" STN
• Colors	*TD100C/ TD 200/ TD 200C/ OP 73micro:* Monochrome *TP 070/ TP 170micro/ TP 177micro:* 4 blue modes	256 colors	Monochrome	Monochrome	*TP 170A/ TP 177A OP 170B:* 4 blue modes *TP 170B:* 4 blue modes/ 16 colors *TP/OP 177B:* 4 blue modes/ 256 colors	256 colors
Control elements						
• Membrane keyboard	● (TD 100C/ TD 200/ TD 200C/ OP 73micro)	–	●	●	●	●
• Touch screen	● (TP 070/ TP 170micro/ TP 177micro)	–	–	–	●	●
• Membrane keyboard and Touch	–	●	–	–	● (OP 177B only)	–
Interfaces/protocols						
• Serial / MPI / PROFIBUS DP	● / ● / –	● / ● [10] / ● [10]	● / ● / ● [2]	● / ● / ●	● / ● / ●	● / ● / ●
• USB / Ethernet	– / –	– / ● [6]	– / –	● [4] / –	● / ● [8]	● / optional
• MMC /CF / PC card slot	– / – / –	● / – / –	– / – / –	● [4] / – / –	● / ● [3][5] / –	– / ● / –
Memory (available for user data)	*TD 100C/TD 200/ TD 200C/TP 070 OP 73micro:* 128 KB *TP 170micro/ TP 177micro:* 256 KB	2,048 KB	*TD17/OP3/OP7:* 128 KB *OP17:* 256 KB	*OP 73/OP 77A:* 256 KB *OP 77B* 1,024 KB	*TP 170A:* 320 KB *TP 177A* 512 KB *TP 170B/OP 170B:* 768 KB *TP/OP 177B:* approx. 2 MB	2 MB
Interface with PLC						
• SIMATIC S7 / WinAC	S7-200 only	● / ●	● / ●	● / ●	● / ●	● / ●
• SIMATIC S5 / 505	– / –	● / ●	● [2] / ● [2]	● [7] / ● [7]	● [5] / ● [5]	● / ●
• SINUMERIK / SIMOTION	– / –	● / ●	● [2] / –	– / –	● [3] / ● [5]	● / ●
• Non-Siemens controllers	–	●	● [2]	● [7]	● [5]	●
Applications/options with ProTool						
• ProAgent	–	–	–	–	–	●
• ThinClient/MP	–	–	–	–	–	–
• MS Pocket Internet Explorer	–	–	–	–	–	–
• WinAC MP	–	–	–	–	–	–
Applications/options with WinCC flexible						
• ProAgent	–	–	–	–	–	●
• Sm@rtService	–	● [6]	–	–	● [8]	●
• Sm@rtAccess	–	● [6]	–	–	● [8]	●
• OPC server	–	–	–	–	–	–
• ThinClient/MP	–	–	–	–	–	–
• MS Pocket Internet Explorer	–	–	–	–	–	–
• WinAC MP	–	–	–	–	–	–

● available – not available

Technological overview (continued)

	Multi Panels	
	270 series *MP 270B*	**370 series** *MP 370*
Display	5.7" / 10.4" TFT	12.1" / 15.1" TFT
• Colors	256 colors	256 colors
Control elements		
• Membrane keyboard	●	●
• Touch screen	●	●
• Membrane keyboard and Touch	-	-
Interfaces/protocols		
• Serial / MPI / PROFIBUS DP	● / ● / ●	● / ● / ●
• USB / Ethernet	● / ●	● / ●
• MMC /CF / PC card slot	- / ● / ●	- / ● / ●
Memory (available for user data)	5 MB	12 MB
Interface with PLC		
• SIMATIC S7 / WinAC	● / ●	● / ●
• SIMATIC S5 / 505	● / ●	● / ●
• SINUMERIK / SIMOTION	● / ●	● / ●
• Non-Siemens controllers	●	●
Applications/options with ProTool/Pro		
• ProAgent	●	●
• ThinClient/MP	● (MP 270B 10″)	● (MP 370 12″ Touch, MP 370 15“ Touch)
• MS Pocket Internet Explorer	●	●
• WinAC MP	-	●
Applications/options with WinCC flexible		
• ProAgent	●	●
• Sm@rtService	●	●
• Sm@rtAccess	●	●
• OPC server	●	●
• ThinClient/MP	● (MP 270B 10″)	● (MP 370 12″ Touch, MP 370 15“ Touch)
• MS Pocket Internet Explorer	●	●

● available
- not available

Footnotes to page 2/4:

1) The TP 070 is configured using TP-Designer and the TD200/TD200C is configured with Micro/WIN
2) Except OP3
3) Except TP 170A
4) OP 77B only
5) Not on TP 177A, TP/OP 177B (S5 only)
6) Mobile Panel 177 PN only
7) Only an S7-200/300/400 can be connected to OP 73 and OP 77A
8) TP/OP 177B color only
9) TP/OP 177B only
10) Mobile Panel 177 DP only

Introduction

Functionality (when configuring with ProTool)

	Micro panels	Panels			Multi panels	
		Text panels	170 series	270 series	270 series	370 series
	TD 100C/ TD 200/ TD 200C TP 070 [3]	*TD17/ OP3/OP7/OP17*	*TP 170A/ TP/OP 170B*	*TP 270/ OP 270*	*MP 270B 10"*	*MP 370*
• Status signals/fault signals	*TD 100C: 40 / – TD 200: 80 / – TP 070: –/ –*	*TD17*: 999 / – *OP3:* 499 / – *OP7*: 499 / 499 *OP17:* 999 / 999	*TP 170A:* 1,000 / – *TP 170B/ OP 170B*: 1,000 / 1,000	2,000 / 2,000	2,000 / 2,000	2,000 / 2,000
• Message buffer (number of entries)	–	*OP3:* – *TD17/OP7/OP17*: 256	*TP 170A* [5]: – *TP/ OP 170B* [5]: 128	512	512	1,024
• Recipes	–	*TD17/OP3:* – *OP7/OP17:* 99	*TP 170A:* – *TP/OP 170B:* 100	300	300	500
• Process diagrams	*TP 070:* 20	*TD17:* – *OP3:* 40 *OP7/OP17*: 99	*TP 170A:* 50 *TP/ OP 170B:* 100	300	300	300
• Bar/curve diagrams (pixel graphics)	• / – (TP 070 only)	– / –	• / • [1]	• / •	• / •	• / •
• Variables	*TP 070:* 50	*TD17:* 1,000 *OP3:* 1,024 *OP7/OP17:* 2,048	*TP 170A:* 500 *TP/OP 170B:* 1,000	2,048	2,048	2,048
• Archiving	-	-	-	•	•	•
• Visual Basic Scripts	-	-	-	•	•	•
• Online languages	1	3	5 [1]	5	5	5
• Password protection	• (TD 100C/ TD 200C only)	•	•	•	•	•
• Print functions	-	• [2]	• [1]	•	•	•
• PG functions (STATUS/CONTROL) with SIMATIC S5/S7	-	• [4]	-	•	•	•

• available
- not available

1) Except TP 170A
2) Except TD17/OP3
3) The TP 070 is configured using TP-Designer and the TD200/TD200C are configured with Micro/WIN
4) Except TD17
5) Non-retentive

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*	*OP 73* [2] */ OP 77A* [2] */ OP 77B*	*TP 170A/ TP/OP 170B/ TP 177A/ TP/OP 177B*	*TP 270/ OP 270*	*MP 270B*	*MP 370*
• No. of messages	*OP 73micro:* 250 *TP 170micro/ TP 177micro:* 500	2,000	*OP 73:* 500 *OP 77A/ OP 77B:* 1,000	*TP 170A/ TP 177A:* 1,000 *TP/OP 170B / TP/OP 177B:* 2,000	4,000	4,000	4,000
• Message buffer (number of entries)	128 [3]	256	*OP 73*: 150 *OP 77A/B*: 256 [3]	*TP 170A:* 128 [3] *TP/OP 170B* [3] */ TP 177A* [3] */ TP/OP 177B:* 256	512	512	1,024
• Recipes	-	100	100	*TP 170A:* – *TP/OP 170B / TP/OP 177B:* 100	300	300	500
• Process diagrams	250	500	500	*TP 170A:* 250 *TP/OP 170B / TP/OP 177B:* 500	500	500	500
• Bar/curve diagrams (pixel graphics)	● / -	● / ●	● / -	● / ● [1]	● / ●	● / ●	● / ●
• Variables	*OP 73micro:* 500 *TP 170micro/ TP 177micro:* 250	1,024	1,000	*TP 170A/ TP 177A:* 500 *TP/OP 170B / TP/OP 177B:* 1,000	2,048	2,048	2,048
• Archiving	-	-	-	-	●	●	●
• Visual Basic Scripts	-	-	-	-	●	●	●
• Online languages	5	5	5	5	5	5	5
• User management (security)	●	●	●	●	●	●	●
• Print functions	-	●	● [2]	● [1]	●	●	●
• PG functions (STATUS/CONTROL) with SIMATIC S5/S7	-	-	-	● [4]	●	●	●

● available
- not available

1) Except TP 170A/TP 177A
2) OP 77B only
3) Non-retentive
4) TP/OP 177B only

SIMATIC PP7

Overview

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

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

Benefits

- Up to 90% time savings: Pushbuttons, switches and lamps do not have to be fitted and wired individually
- Use of standard cables, for example, makes 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

The push button panels impress customers with their compact design:

- Factory-fitted with 8 short-stroke keys, that can be labeled as required using insertable strips
- Smooth front that is easy to clean; the front is resistant to various oils, greases and standard detergents
- Long-life, multi-color, surface-lighting LEDs in all short-stroke keys
- Additional digital inputs for flexible expansions
- Pre-perforated cutouts for additional standard 22.5 mm components (pushbuttons, lamps, emergency stop pushbuttons, key switches)
- Rear display with mini-keypad to display operating states and in plain text for changing the default settings
- The PP7 is designed to match the OP7 and they can therefore be mounted side by side
- Low-maintenance because batteries are not required
- All parameters are located in a memory module that can easily be replaced

Function

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

Integration

The push button panels can be connected to

- SIMATIC S7-200/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/S7-300/S7-400/** **WinAC Software PLC / Slot PLC** (9-pin female connector/RS 485),[3] [4]	**bus connector, bus cable and MPI network** (see Catalog ST 70/IK PI)
SIMATIC S5/S7 (PROFIBUS DP as standard slave)	
using PROFIBUS to max. 1 x **S7-200** (CPU 215-DP) using MPI protocol **S7-300/-400** with integrated PROFIBUS interface **S7-300** with CP 342-5 **S7-400** with CP 443-5	**PROFIBUS** [5] (see Catalog ST 70/IK PI)
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] (see Catalog ST 70/IK PI)
Non-Siemens PLCs (PROFIBUS DP master)	
using PROFIBUS DP	**PROFIBUS** [5] (see Catalog ST 70/IK PI)

1) PP7 suitable up to 1.5 Mbit/s
2) Standard PG/PC MPI cable cannot be used
3) S7-200 only 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
Operating mode	
• Control elements	Membrane keyboard
• Operating options	Keys
• Function keys, programmable	8 function keys, 8 with LEDs
• Membrane keyboard	Yes
• Touch screen	No
• Number of keys	8 short-stroke keys
Digital inputs	
• Voltage (DC)	24 V
• Additional digital inputs	4
Typ. service life	
• Short-stroke keys (on-off operations)	1,500,000
Digital outputs	
• LEDs (ON period)	100 %
Functionality	
• Short-stroke keys/digital inputs as pushbutton or switch	Yes
• Integrated flashing rate for LEDs	0.5 Hz
• Pushbutton and lamp test	Yes
• Max.	1000 ms
• Enabling input	No
• Max. number of slots for 22.5 mm standard elements	5
Interfaces	1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Permissible range	+18 V to +30 V DC
• Rated current	0.2 A
Degree of protection	
• Front	IP65
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions	
• Front panel W x H (mm)	144 x 204
• Mounting cutout/depth W x H x D (mm)	130 x 190/53 mm depth of unit
• Weight	0.8 kg
Ambient conditions	
• Max. permissible angle of inclination without external fan	+/- 35°
• Max. relative humidity (in %)	95%
• Temperature	
- Operation (vertical installation)	0 to +55 °C
- Operation (max. angle of inclination)	0 to +55 °C
- Transportation and storage	-20 to +70 °C
Miscellaneous	
• Free hotline	Yes
• Warranty period in years	1 year
Functionality (under ProTool)	
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION and other non-Siemens drivers

SIMATIC PP7

2

Ordering data

	Order No.
SIMATIC PP7 A 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	**6AV3 688-3AA03-0AX0**
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 for supplementary ordering	
PROFIBUS connecting cable 830-1T For connection of terminal unit, pre-assembled with two sub D connectors, 9-pin, 3 m	**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
Service package for PP7, PP17-I, PP17-II Consisting of: • 1 x PP7 gasket • 1 x PP17-I/PP17-II gasket • 5 x tensioning clamps • PP7 plug-in terminal strip • PP17-I/PP17-II plug-in terminal strips	**6AV3 678-3XC30**

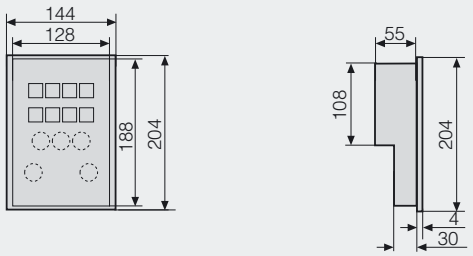
Note:
Commercially available printing film can be used as labeling strips for the keyboard. Word templates are enclosed with the manual on a diskette.

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

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

Dimension drawings

Dimensions in mm



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

G_ST80_XX_00061

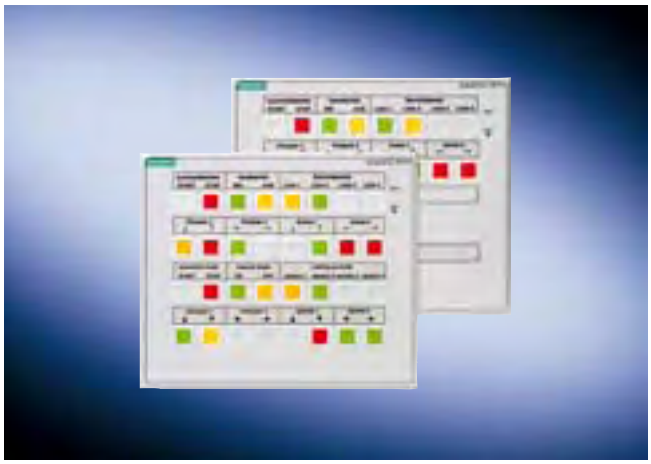
More information

For further information, visit our website at

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.

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

The push button panels impress customers with their compact design:

- Factory-fitted with short-stroke keys, that can be labeled as required, also in color, using insertable strips
- Smooth front that is easy to clean;
  The front is resistant to various oils, greases and standard detergents
- Long-life, multi-color, wide-area LEDs in all short-stroke keys
- Additional digital inputs and outputs for flexible expansions
- Pre-perforated cutouts for additional standard 22.5 mm components (push buttons, lamps, etc.) for PP17-I
- Rear display with keypad to display operating states in plain text for changing the default settings
- Central enable input
- The PP17 is designed to match the OP17 and they can therefore be mounted together
- Low-maintenance because batteries are not required
- All parameters are located in a memory module that can easily be replaced

Function

- LED color modes (e.g., red, green, orange, 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

SIMATIC PP17

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

PLC **Target hardware (PROTOCOL)** (connector/physics)	**SIMATIC PP17**[1] **Connected 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** (see Catalog ST 70/IK PI)
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] (see Catalog ST 70/IK PI)
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] (see Catalog ST 70/IK PI)
Non-Siemens controllers (PROFIBUS DP master)	
using PROFIBUS DP	**PROFIBUS** [5] (see Catalog ST 70/IK PI)

1) PP17 suitable up to 12 Mbit/s
2) Standard PG/PC MPI cable cannot be used
3) S7-200 only via MPI (CPU 212 not possible)
4) S7-200 CPU 215-DP also possible on PROFIBUS DP interface via MPI protocol
5) Bus connector: 6GK1 500-0EA02

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

Technical specifications

	PP17-I	**PP17-II**
Operating mode		
• Control elements	Membrane keyboard	Membrane keyboard
• Operating options	Keys	Keys
• Function keys, programmable	16 function keys, 16 with LEDs	32 function keys, 32 with LEDs
• Membrane keyboard	Yes	Yes
• Touch screen	No	No
• Numeric/alphanumeric input	No/No	No/No
• Number of keys	16 short-stroke keys	32 short-stroke keys
Type of output		
• LED colors	Red, yellow, green	Red, yellow, green
• LED color modes	3	3
• LED Anzahl	16	32

Technical specifications (continued)

	PP17-I	**PP17-II**
Digital inputs		
• Voltage (DC)	24 V	24 V
• Additional digital inputs	16	16
Typ. service life		
• Short-stroke keys (on-off operat.)	1,500,000	1,500,000
Digital outputs		
• Total power	12 W	12 W
• Additional digital outputs	16	16
• In groups of	4	4
• Aggregate current per group, max.	500 mA	500 mA
• Short-circuit protection	Yes	Yes
• LEDs (ON period)	100	100
Functionality		
• Short-stroke keys/digital inputs as pushbutton or switch	Yes	Yes
• Integrated flashing rate for LEDs	0.5 Hz	0.5 Hz
• Integrated flashing rate for digital outputs	0.5 Hz or 2 Hz	0.5 Hz or 2 Hz
• Pushbutton and lamp test	Yes	Yes
• Max.	1000 ms	1000 ms
• Enabling input	Yes	Yes
• Max. number of slots for 22.5 mm standard elements	12	0
Interfaces (some only as options)		
• Interfaces	1 x RS485 max. 12 Mbit/s	1 x RS485 max. 12 Mbit/s
Supply voltage		
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.2 A	0.4 A
Degree of protection		
• Front	IP65	IP65
• Rear	IP20	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions		
• Front panel W x H (mm)	240 x 204	240 x 204
• Mounting cutout/depth W x H x D (mm)	226 x 190/53 depth of unit	226 x 190/53 depth of unit
Ambient conditions		
• Max. relative humidity (in %)	95%	95%
• Mounting position	Vertical	Vertical
• Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
Temperature		
• Operation (vertical installation)	0 to +55 °C	0 to +55 °C
• Operation (max. angle of inclination)	0 to +55 °C	0 to +55 °C
• Transportation and storage	-20 to +70 °C	-20 to +70 °C
Functionality (under ProTool)		
Protocols		
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION and other non-Siemens drivers	S5, S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF485), OMRON (LINK/Multilink) and other non-Siemens drivers

1) Ohmic load

Ordering data

		Order No.
SIMATIC PP17		
Push Button Panel incl. mounting accessories:		
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 p re-perforated cutouts for additional components		
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		
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 for supplementary ordering		
PROFIBUS connecting cable 830-1T For connection of terminal unit, pre-assembled with two sub D connectors, 9-pin, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
Service package for PP7, PP17-I, PP17-II Consisting of:		**6AV3 678-3XC30**
• 1 x PP7 gasket		
• 1 x PP17-I/PP17-II gasket		
• 5 x tensioning clamps		
• PP7 plug-in terminal strip		
• PP17-I/PP17-II plug-in terminal strips		

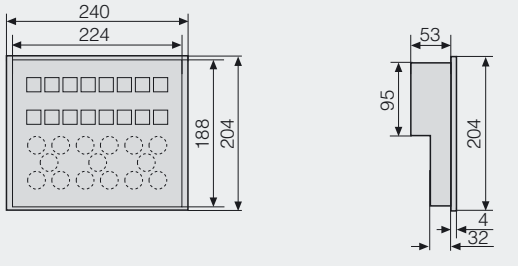
Note:
Commercially available printing film can be used as labeling strips for the keyboard. Word templates are enclosed with the manual on a diskette.

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

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

Dimension drawings

Dimensions in mm



Panel cutout (B x H) in mm: 226 x 190

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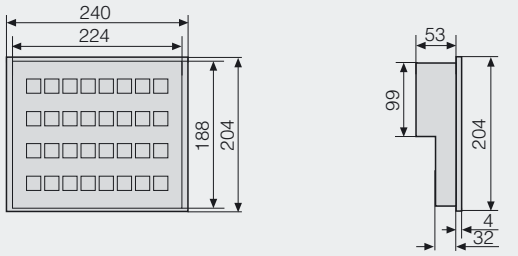
PP17-I

Dimensions in mm



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

G_ST80_XX_00060

PP17-II

More information

For further information, visit our website at

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.

TD 100C Text Display

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 text displays to one S7-200.

The TD 100C features:

- Rugged plastics housing with IP65 degree of protection (front):
  Increased watertightness due 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.
- Integral 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 statical 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.

Technical specifications

	TD 100C Text Display
Power supply	
• Input voltage	
- Rated value (DC)	24 V
• Input current	
- Rated value at 24 V DC	25 mA
MPI	
• Transmission rate (PPI), max.	187.5 kBit/s
1st interface	
• Physical characteristics	RS 485
Functionality	
• PPI	Yes
- Number of stations	126
Operator control and monitoring	
• Display	
- Type	LC display (reflecting)
- Number of lines	4
- Number of characters per line	10
- Height of characters	3.34 mm
Environmental requirements	
• Operating temperature	0 °C to 60 °C
• Storage/transportation temperature	-20 °C to 70 °C
• Degree of protection and class of protection	
- IP65	Yes; IP65 front, NEMA4 / IP20
Dimensions and weight	
• Width	90 mm
• Height	76 mm
• Depth	36 mm
• Installation cutout, width	82 mm
• Installation cutout, height	69.5 mm
• Cabinet/control panel thickness	1.5 mm
• Weight, approx.	120 g

Ordering data

		Order No.
TD 100C Text Display 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		**6ES7 272-1BA10-0YA0**
Connecting cables For connecting TD 100C or TD 200C to S7-200	A	**6ES7 901-3EB10-0XA0**
Blank film For printing customized key-board layouts; 6 perforated foils per sheet; 10 sheets per packing unit		**6ES7 272-1BF00-7AA0**
PROFIBUS bus connector, IP20 with 90° cable outlet		
• Without PG connection		**6ES7 972-0BA12-0XA0**
• With PG connection		**6ES7 972-0BB12-0XA0**
PROFIBUS bus connector, IP20 with 35° cable outlet		
• Without PG connection		**6ES7 972-0BA41-0XA0**
• With PG connection		**6ES7 972-0BB41-0XA0**
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**

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

TD 200 Text Display

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 with SIMATIC S7-200.

It supports:

- Display of message texts
- Operator actions 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 cable supplied. A separate power supply is not required. It is also possible to connect several TD 200 displays to one S7-200.

The TD 200 features:

- Rugged plastics housing with degree of protection IP65 (front):
  Increased watertightness due to absence of slots for labeling strips.
- Mounting depth 27 mm:
  The TD 200 can be mounted without additional accessories in control cabinets or operator panels, or used as a handheld unit.
- Backlit LCD;
  easy to read even under poor lighting conditions
- User-friendly layout of input keys,
  some of 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 bus cables are then available instead of the connection cable.
- User-specific labeling strips:
  It is necessary to remove the rear of the housing before fitting the labeling strips. Therefore, please fit the strips before installing the device.

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.

Technical specifications

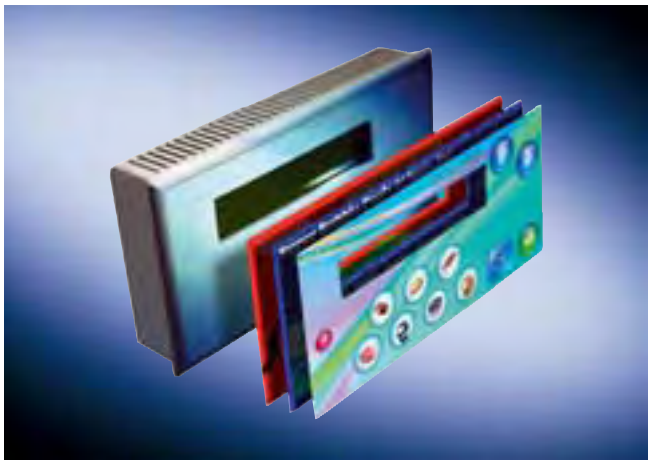
	TD 200 Text Display
Power supply	
• Input voltage	
- Rated value (DC)	24 V; Power supplied through the S7-200 communications interface or optional external power supply unit. The CPU sensor power supply (24 V DC) is not brought into load
• Input current	
- Rated value at 24 V DC	120 mA
MPI	
• Transmission rate (PPI), max.	187.5 kBit/s
1st interface	
• Physical characteristics	RS 485
Functionality	
• PPI	Yes
- Number of stations	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 per line: Chinese
- Height of characters	5 mm
Environmental requirements	
• Operating temperature	0 °C to 60 °C
• Storage/transportation temperature	-40 °C to 70 °C
• Degree of protection and class of protection	
- IP65	Yes; frontal
Dimensions and weight	
• Weight, approx.	250 g
• Width	148 mm
• Height	76 mm
• Depth	27 mm
• Installation cutout, width	138 mm
• Installation cutout, height	68 mm
• Cabinet/control panel thickness	0.3 mm; 0.3 to 4 mm

Ordering data

	Order No.
TD 200 Text Display for connecting to SIMATIC S7-200; used with STEP 7 Micro/WIN V3.2 SP4 and higher.	**6ES7 272-0AA30-0YA0**
PROFIBUS bus connector IP20 with 90° cable feeder	
• without PG connection	**6ES7 972-0BA12-0XA0**
• with PG connection	**6ES7 972-0BB12-0XA0**
PROFIBUS bus connector IP20 with 35° cable feeder	
• without PG connection	**6ES7 972-0BA41-0XA0**
• with PG connection	**6ES7 972-0BB41-0XA0**
PROFIBUS FC Standard Cable for connecting to PPI; standard type with special design for quick mounting, 2-wire, shielded, sold by the meter, up to 1000m, minimum order 20 m	**6XV1 830-0EH10**

TD 200C Text Display

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 optimum solution for all HMI tasks with SIMATIC S7-200. Individual printing of the surface of the device enables it to be perfectly matched to the application environment.

It supports:

- Display of message texts
- Operator actions 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 200 features:

- Rugged plastics housing with degree of protection IP65 (front):
  Increased watertightness due to absence of slots for labeling strips.
- Mounting depth 27 mm:
  The TD 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.

Technical specifications

	TD 200C Text Display
Power supply	
• Input voltage	
- Rated value (DC)	24 V; Power supplied through the S7-200 communications interface or optional external power supply unit. The CPU sensor power supply (24 V DC) is not brought into load
• Input current	
- Rated value at 24 V DC	120 mA
MPI	
• Transmission rate (PPI), max.	187.5 kBit/s
1st interface	
• Physical characteristics	RS 485
Functionality	
• PPI	Yes
- Number of stations	126; S7-200, OP, TP, TBP, PG/PC
Operator control and monitoring	
• Display	
- Type	STN graphics display, LED backlighting
- Number of lines	2
- Number of characters per line	20; Chars/line: ASCII, Cyrillic; 10 chars per line: Chinese
- Height of characters	5 mm
Environmental requirements	
• Operating temperature	0 °C to 60 °C
• Storage/transportation temperature	-20 °C to 70 °C
• Degree of protection and class of protection	
- IP65	Yes; frontal
Dimensions and weight	
• Weight, approx.	200 g
• Width	148 mm
• Height	76 mm
• Depth	28 mm
• Installation cutout, width	138 mm
• Installation cutout, height	68 mm
• Cabinet/control panel thickness	0.3 mm; 0.3 to 4 mm

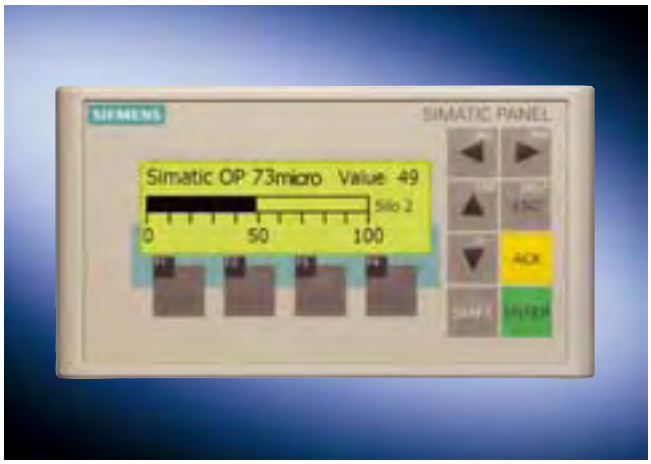
Ordering data

		Order No.
TD 200C Text Display With individually configurable operator controls and displays on the device front; for connecting to SIMATIC S7-200; can be used with STEP 7-Micro/WIN V4 and higher		**6ES7 272-1AA10-0YA0**
Blank film For printing customized keyboard layouts; 3 perforated films per sheet; 10 sheets per package unit	A	**6ES7 272-1AF00-7AA0**
PROFIBUS bus connector IP20 with 90° cable feeder		
• without PG connection		**6ES7 972-0BA12-0XA0**
• with PG connection		**6ES7 972-0BB12-0XA0**
PROFIBUS bus connector IP20 with 35° cable feeder		
• without PG connection		**6ES7 972-0BA41-0XA0**
• with PG connection		**6ES7 972-0BB41-0XA0**
PROFIBUS FC standard cable for connecting to PPI; standard type with special design for quick mounting, 2-wire, shielded, sold by the meter, up to 1000 m, minimum order 20 m		**6XV1 830-0EH10**

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

SIMATIC OP 73micro

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 the OP3 and TD200

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 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
- User administration (security) according to the requirements of the various sectors
  - Authentication using password
- Signaling system
  - Discrete alarms
  - 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)
- Simple 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

Function (continued)

Configuring

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

When configuring with WinCC flexible Micro:

WinCC flexible 2004 SP1 Micro or higher is used for device configuration. SP1 for WinCC flexible 2004 Micro can be downloaded via the following Internet link:

http://support.automation.siemens.com/WW/view/de/20986804/133100

The device is a standard feature of WinCC flexible 2005 Micro and higher.

Configuration using WinCC flexible Compact, Standard or Advanced:

You will need to use WinCC flexible 2004 SP1 and higher for device configuration with WinCC flexible Compact, Standard or Advanced. An HSP (Hardware Support Package) is required for this version.

The HSP for WinCC flexible 2004 SP1 can be downloaded free of charge via the following link:

http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

The device is a standard feature of WinCC flexible 2005 and higher.

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

	SIMATIC OP 73micro
Display	
• Display type	STN liquid crystal display (LCD)
• Size	3"
• Resolution (W x H in pixels)	160 x 48
• Colors	2 black/white
• MTBF of background lighting (at 25 °C)	approx. 100,000 hours
Operating mode	
• Control elements	Membrane keyboard
• Function keys, programmable	4 function keys
• System keys	8
• Touch screen	No
Processor/HW	
• Processor	ARM
Memory	
• Type	Flash/RAM
• Usable memory for project data	128 KB user memory/without additional memory for options
Interfaces	1 x RS485 max. 0.1875 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
Clock/type	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification and standards (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, UL, CSA, cULus, C-TICK
Mechanical components/dimensions	
• Front panel W x H (mm)	154 x 84
• Mounting cutout/depth W x H x D (mm)	138 x 68/28.5 mm depth of unit
• Weight	0.25 kg

SIMATIC OP 73micro

2

Technical specifications (continued)

	SIMATIC OP 73micro
Ambient conditions	
• Max. relative humidity (in %)	95%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 90°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	WinCC flexible
Functionality (with WinCC flexible)	
• Scheduler	No
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200
Signaling system	
• Number of messages	250
• Discrete alarms	Yes
• Analog messages	No
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 128 entries each
Process images/number	250
Picture elements	
• Text objects	1000 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
- Libraries	Yes
Variables	500
Security	
• Number of user groups	1
• Number of access rights	1
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	WinCC flexible standard, ideographic languages
Transfer under ProTool (upload/download)	
• Transfer of the configuration	Serial

Ordering data

		Order No.
SIMATIC OP 73micro Operator Panel for connection to the SIMATIC S7-200, with 3" display, monochrome incl. mounting accessories	B	**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 download and test purposes)		**6AV6 650-0BA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 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 CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

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

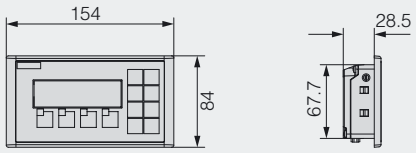
Ordering data

		Order No.
Accessories for supplementary ordering		
Service pack Consisting of: • Installation sealing • 5 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 671-1XA00-0AX0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
RS 485 bus connector with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter 1 x 90° angle adapter, 9-pin for RS485/422 interface	A	**6AV6 671-8XD00-0AX0**
PC/PPI Multimaster cable for image update and image booting on OP 73micro	A	**6ES7 901-3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 138 +1 x 68 + 0.7

More information

For further information, visit our website at

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.

SIMATIC TP 070

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Pixel graphics 5.7" STN touch screen (analog/resistive), Bluemode (4 levels)
- Specifically for SIMATIC S7-200:
  Communication to the PLC is performed via the integrated interface over a point-to-point connection
- Connected to the PLC via MPI or PROFIBUS DP cable
- Configuration with TP Designer (STEP 7 Micro/WIN Toolbox)

Benefits

- Fast configuring and start-up
- Service-friendly thanks to maintenance-free design and the long service life of the backlighting
- Standard bus cable instead of parallel wiring
- Can be used worldwide: 5 standard languages can be configured

Application

The Touch Panels TP 070 can be used wherever direct operator control and monitoring of small machines and plants is required locally – whether in manufacturing automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

The TP 070 is specially designed for use with the SIMATIC S7-200. With their quick response times, they are also ideally suited to jog mode.

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
- A protective cover is available as an option to achieve NEMA 4 degree of protection as well as for additional protection from dirt and scratching
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- Plug-type terminals for connection of a 24 V DC power supply (200 mA)
- 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 initiation of functions and actions. Up to 16 functions can be configured simultaneously
- Graphics
  can be used as ICON 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 editor (such as PaintShop, Designer or CorelDraw).
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays
  for the graphical display of dynamic values
- Configuration languages;
  5 configuration languages, 1 online language
- Mathematical functions
- Simple maintenance and configuration through:
  - Individual contrast setting and calibration
  - Clean screen
  - No batteries are necessary

Configuration

The TP 070 is configured using the configuring software STEP 7 Micro/WIN Toolbox "TP Designer". Configuration of the TP 070 is described in detail in the Online Help of TP Designer.

TP Designer can be used as stand-alone software or integrated in STEP 7 Micro/Win.

A PC/PPI adaptor cable is needed to download the configuration.

Integration

The TP 070 can be connected to all SIMATIC S7-200 CPUs (except CPU 212) using standard MPI bus cables or PROFIBUS DP cables.

Note:
For further information, see "System interfaces"

Technical specifications

	SIMATIC TP 070
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Control elements	Touch screen
• Numeric/alphanumeric input	Yes/No
Processor/HW	
• Processor	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	128 KB user memory/without additional memory for options
Interfaces (some only as options)	1 x RS485 max. 0.0192 Mbit/s
Supply voltage	
• Permissible range	+18 V to +30 V DC
• Rated current	0.24 A
Clock/type	Software clock, without battery backup
Degree of protection (some only as options)	
• Front	IP65, NEMA 4; (when mounted)
• Rear	IP20
Certification and standards (some only as options)	CE, FM Class I Div. 2, UL, CSA, cULus
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.7 kg

	SIMATIC TP 070
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	MicroWin
Protocols	
• Interface to PLC (may only be an option)	S7-200
Process images	30
Picture elements	
• Text objects	80 text elements
• Number	80
• Fields per screen	20
• Variables per screen	10
• Graphics objects	Bit maps, icons, background pictures
• Alphanumeric fields	50
• Numeric fields	50
Variables	50
Fonts	
• Language (keyboard fonts)	US English
Languages	
• Online languages	1
• Project languages	G/E/F/I/S
• Character set	Tahoma, all freely scalable
Transfer under ProTool (upload/download)	
• Transfer of the configuration	Serial

SIMATIC TP 070

2

Ordering data

		Order No.
SIMATIC TP 070 Touch panel for connection to the SIMATIC S7-200, 5.7" STN display	B	**6AV6 545-0AA15-2AX0**
Configuration		
TP Designer for TP 070 V1.0 for configuration and parameterization of the TP 070; incl. documentation, on CD-ROM	C	**6ES7 850-2BC00-0YX0**
Documentation (to be ordered separately)		
TP 070 Manual		
• German		**6AV6 591-1DC01-0AA0**
• English		**6AV6 591-1DC01-0AB0**
• French		**6AV6 591-1DC01-0AC0**
• Italian		**6AV6 591-1DC01-0AD0**
• Spanish		**6AV6 591-1DC01-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Protective foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service package comprising: • Gaskets • 2 sets of labeling strips (for OPs) • 7 clamps • Clamp-type terminal strip (block of two)		**6AV6 574-1AA00-4AX0**
PC/PPI Multimaster cable [1] for connection of the S7-200 to serial PC/OP interface		**6ES7 901-3CB03-0XA0**
PROFIBUS 830-1T connecting cable For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, 3 m		**6XV1 830-1CH30**
System interfaces		See page 2/169
Connecting cables		See page 2/180

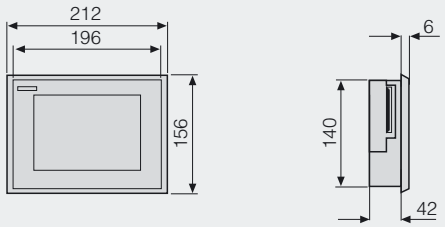
1) The PC/PPI cable with the Order No.: 6ES7 901-3BF21-0XA0 can be used further

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

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

Dimension drawings

Dimensions in mm



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

G_ST80_XX_00065

More information

For further information, visit our website at

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.

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the touch panel class with graphical capability complete with all the basic functions required for simple tasks
- Pixel graphics STN display (Bluemode) with touch screen (analog/resistive)
- Specifically for SIMATIC S7-200:
  Communication to the PLC is performed via the integrated interface over a point-to-point connection
- Connected to the PLC via MPI or PROFIBUS DP cable
- The SIMATIC TP 170micro is the redesigned SIMATIC TP 070 Touch Panel

Benefits

- Fast configuring and start-up
- Service-friendly thanks to maintenance-free design and the long service life of the backlighting, batteries are not required
- To protect against fouling and scratching, a protective cover is available as an option
- Worldwide implementation:
  - Wide range of languages can be configured (incl. Asian and Cyrillic fonts)
  - Online language can be selected directly on the device

Application

The TP 170micro Touch Panels can be used in all applications in which operator control and monitoring of small machines and installations is required locally – whether in production automation, process automation or building services automation. They are in use in an extensive range of sectors and applications.

The TP 170micro is specially designed for use with SIMATIC S7-200. With their quick response times, they are also ideally suited to jog mode.

Design

- STN display, CCFL[1)] backlit, Bluemode
- Resistive analog Touch
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option for achieving the NEMA 4 degree of protection and as additional protection against fouling and scratching
- Numeric "on-screen" system keyboard for decimal, binary and hexadecimal numeric formats
- Clamp-type terminals for connection of a power supply
- An interface for connecting the MPI connecting cable to the PLC or configuration computer via a PPI adapter is integrated.

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 the buttons
- Graphics
  can be used as ICON 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 editor (such as PaintShop, Designer or CorelDraw).
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays
  for the graphical display of dynamic values
- Language selection
  - Languages can be directly selected on the panel, incl. Asian and Cyrillic character sets
- User administration (security)
  - Authentication using password
- Message system
  - Bit messages
  - Freely-definable message classes (e.g. status/fault messages) for definition of acknowledgment response and display of message events
  - Message history
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Template concept;
  generation of screen templates
- Simple maintenance and configuration through:
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Individual contrast setting and touch calibration
  - Clean screen
  - Maintenance-free, batteries are not required

SIMATIC TP 170micro

Function (continued)

Configuration

Configuration of the TP 170micro is carried out using the SIMATIC WinCC flexible Micro, Compact, Standard or Advanced engineering software (see HMI software/ SIMATIC WinCC flexible engineering software).

Importing of TP-Designer projects (TP 070) into WinCC flexible is not possible.

A PC/PPI adaptor cable is needed to download the configuration.

Integration

The TP 170micro can be connected to all SIMATIC S7-200 CPUs (except for the CPU 212) using the standard MPI bus cables or PROFIBUS DP cables (integration into networks possible).

Note:
For further information, see "System interfaces"

Technical specifications

	SIMATIC TP 170micro
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/No
Processor/HW	
• Processor	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	256 KB user memory/without additional memory for options
Interfaces	1 x RS485 max. 0.1875 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 V to +30 V DC
• Rated current	0.24 A
Clock/type	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA, cULus, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.75 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C

	SIMATIC TP 170micro
Configuring	
• Configuration tool	WinCC flexible
Protocols	
• Interface to control (may only be an option)	S7-200
Signaling system	
• Number of messages	500
• Discrete alarms	Yes
• Message length (in characters)	1 x 80
• Number of process values per message	8
• Message buffer	Ring buffer, 128 entries each
Process images	250
Picture elements	
• Text objects	500 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
Variables	250
Security	
• Number of user groups	1
• Number of access rights	1
Fonts	
• Keyboard fonts	US English
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, ideographic languages, all freely scalable
Transfer under ProTool (upload/download)	
• Transfer of the configuration	Serial

Ordering data

		Order No.
SIMATIC TP 170micro Touch Panel for connection to the SIMATIC S7-200, 5.7" STN display	B	**6AV6 640-0CA01-0AX0**
Configuring		
with SIMATIC WinCC flexible		See Section 4
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
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 CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
PC/PPI cable Multimaster (for download and test purposes) For connecting the S7-200 to a serial PC/OP interface and for configuration download for Micro Panels	A	**6ES7 901-3CB30-0XA0**
PROFIBUS connecting cable 830-1T For connection of terminal unit, pre-assembled with two sub D connectors, 9-pin, 3 m		**6XV1 830-1CH30**
System interfaces		See page 2/169
Connecting cables		See page 2/180

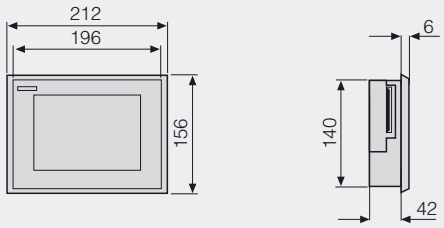
A) Subject to export regulations AL: N and ECCN: EAR99H

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

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

Dimension drawings

Dimensions in mm



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

More information

For further information, visit our website at

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.

2

SIMATIC TP 177micro

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the touch panel class with graphical capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN touch screen (analog/resistive), Blue-mode (4 levels)
- Specifically for SIMATIC S7-200:
  Communication to the PLC is performed via the integrated interface over a point-to-point connection
- Connected to the PLC via MPI or PROFIBUS DP cable
- The SIMATIC TP 177micro is the redesigned successor to the SIMATIC TP 070/TP 170micro touch panels

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.
- TP 070 configurations cannot be transferred from TP Designer.

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 hexa-decimal 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 direct in the configuring tool
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Bars
  for the graphical display of dynamic values
- Changing languages
  - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
- User administration (security)
  - Authentication using password
- Signaling system
  - Discrete alarms
  - 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

Function (continued)

Configuring

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

When configuring with WinCC flexible Micro:

WinCC flexible 2004 SP1 Micro or higher is used for device configuration. SP1 for WinCC flexible 2004 Micro can be downloaded via the following Internet link:

http://support.automation.siemens.com/WW/view/de/20986804/133100

The device is a standard feature of WinCC flexible 2005 Micro and higher.

Configuration using WinCC flexible Compact, Standard or Advanced:

You will need to use WinCC flexible 2004 SP1 and higher for device configuration with WinCC flexible Compact, Standard or Advanced. An HSP (Hardware Support Package) is required for this version.

The HSP for WinCC flexible 2004 SP1 can be downloaded free of charge via the following link:

http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

The device is a standard feature of WinCC flexible 2005 and higher.

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

	SIMATIC TP 177micro
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	
• Processor	N/A
Memory	
• Type	Flash/RAM
• Usable memory for project data	256 KB user memory/without additional memory for options
Interfaces	1 x RS485 max. 0.1875 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Output	6 W
Clock/type	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.75 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	WinCC flexible

SIMATIC TP 177micro

Technical specifications (continued)

	SIMATIC TP 177micro
Functionality (with WinCC flexible)	
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200
Signaling system	
• Number of messages	500
• Discrete alarms	Yes
• Analog messages	No
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 128 entries each
Process images/number	
• Process images	250
Picture elements	
• Text objects	500 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
Lists	
• Text lists	150
• Graphics lists	0
• Libraries	Yes
Variables	250
Security	
• Number of user groups	2
• Number of access rights	32
Languages	
• Online languages	5
• Project 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 under ProTool (upload/download)	
• Transfer of the configuration	Serial

Ordering data

		Order No.
SIMATIC TP 177micro Touch Panel for connection to the SIMATIC S7-200, 5.7" STN display	B	**6AV6 640-0CA11-0AX0**
TP 177micro starter package Consisting of: • TP 177micro Touch Panel • SIMATIC WinCC flexible Micro 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)	B	**6AV6 650-0DA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 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 CD-ROM 5 languages (English, French, German, Italian, Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

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

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

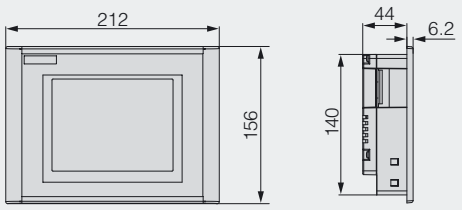
Ordering data

		Order No.
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 671-2XC00-0AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • Mounting clamps • Plug-in terminal block (twin block)		**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For terminal connection, precut/preassembled with two sub D connectors, 9-pin, **terminated at both ends**, 3 m		**6XV1 830-1CH30**
RS 485 bus connector with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter 1 x 90° angle adapter, 9-pin for RS485/422 interface	A	**6AV6 671-8XD00-0AX0**
PC/PPI Multimaster cable For connecting the S7-200 to a serial PC/OP interface and for configuration download for Micro Panels	A	**6ES7 901-3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 197+1 x 141+1

More information

For further information, visit our website at

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.

SIMATIC Mobile Panel 177

Overview

- 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 implementation thanks to hot swapping
- Pixel graphics, brilliant 5.7" color STN display with touch screen (analog/resistive), 256 colors
- PROFIBUS or PROFINET variants
- 14 user-configurable and user-inscribable function keys (8 with LED)
- 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
- Fast system availability after plugging into the junction box
- Connected to the PLC and power supply via the junction box and the connecting cable

Benefits

- Plugging and unplugging during operation without interrupting the Emergency-Stop circuit (with “Plus“ junction box variants) and without generating bus errors
- Fast, precise setup and positioning
- Reliable operation with tried and tested safety concept (Safety Category 3 acc. to EN 954-1)
- Ergonomic and compact with low weight (approx. 1.3 kg)
- Rugged for industrial use
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Graphics library available with pre-configured images
- The data in the message buffer are retained when the Mobile Panel is unplugged, without batteries
- Worldwide implementation:
  - 32 languages can be configured (incl. Asian and Cyrillic fonts)
  - Switching between up to 5 online languages is possible directly on the Mobile Panel
- Reduction of service and commissioning costs through:
  - Backup/restore over a process interface or optionally over a standard MMC (Multi Media Card).
  - Configuration transfer with automatic transfer recognition over all device interfaces
  - Long service life of backlighting
- Simple engineering supported with comprehensive documentation on the SIMATIC HMI Manual Collection CD

Application

In every sector or application, when mobility is paramount in the operation and monitoring of machines and plants on site, SIMATIC Mobile Panels offer decisive advantages: Machine operators or start-up engineers can move to the point from which they have the best view of the workpiece or process. Even in large production plants, complex or enclosed machines, long conveyor and production lines and in materials handling, mobile operator panels support quick and accurate setting up and positioning during start-up. During retrofitting, maintenance or troubleshooting, they ensure shorter downtimes.

Design

- Ergonomic and compact with different holding and gripping points (suitable for right-handed and left-handed personnel)
- Pixel graphics, brilliant 5.7" color STN display with 256 colors and touch screen (analog/resistive)
- 14 user-configurable and user-inscribable function keys (8 with LED)
- The front is resistant to various oils, greases and standard detergents
- 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.
- Extreme impact resistance thanks to the double-wall construction and rounded casing.
  (The Mobile Panel will withstand a fall from a height of 1.5 m without sustaining any damage.)
- Dust-proof and jet-proof casing with degree of protection IP65 on all sides
- Integrated serial, MPI and PROFIBUS interface (up to 12 Mbit/s) for the Mobile Panel 177 DP

Or

- Integral Ethernet (PROFINET) interface (up to 100 Mbit/s) with the Mobile Panel 177 PN
- Slot for a standard Multi Media Card (MMC) for backup and restoration or for storing recipes
- Connection to the PLC via the rugged and reliable junction boxes with IP65 degree of protection:
  - “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.
    The emergency stop circuit is not interrupted even if the Mobile Panel is unplugged. 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 speed up the Mobile Panel connection process (following a brief period of disconnection from the junction box) still further.
- 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 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 connection 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 177 establishes the connection to the controllers after being plugged into the junction boxes and following a short running-up period. An optional rechargeable battery pack can be used to speed up the Mobile Panel connection process (following a brief period of disconnection from the junction box) still further.

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. A Mobile Panel 177 DP (PROFIBUS) cannot be connected to a PN (PROFINET) junction box and vice versa and is mechanically blocked.

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).

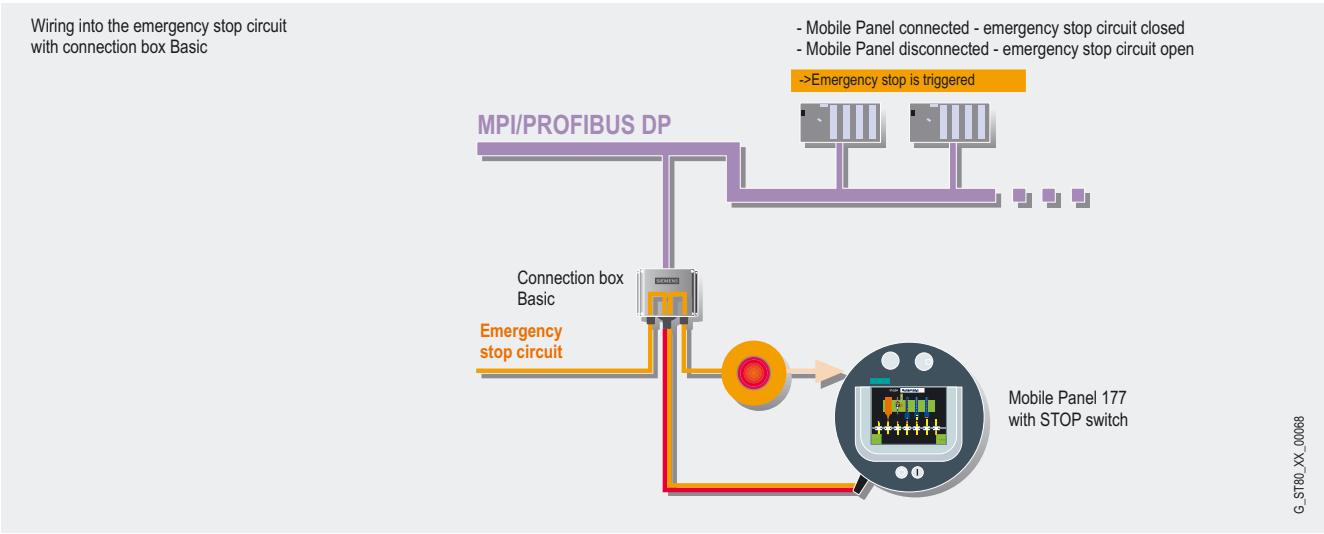
SIMATIC Mobile Panel 177

Design (continued)

Connection at one point of the machine

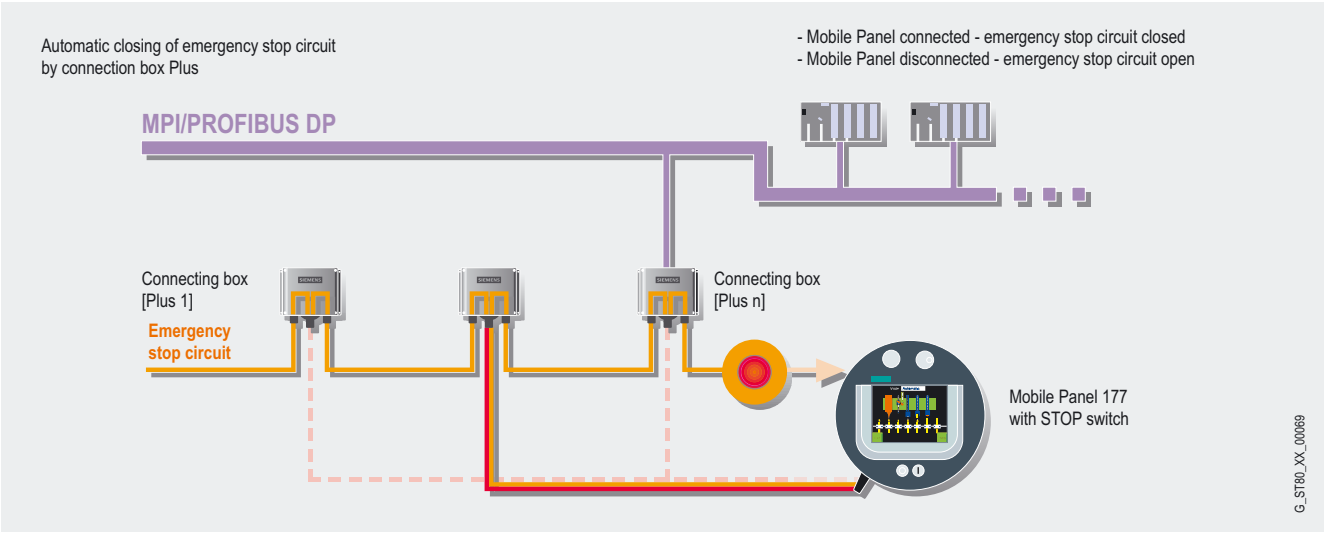
When the “Basic“ junction box variant is used, unplugging the Mobile Panel interrupts the emergency stop circuit and, therefore, triggers the emergency stop function.

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



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.



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 function that is frequently used such as "Acknowledge message" can therefore be assigned to a function key.
- Additional command elements
  such as hand wheels, key-operated switches and illuminated pushbutton units can be connected to a variable or as direct control through PROFIBUS DP input I/O (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).
  The configuration software provides a comprehensive library of graphics and various objects. All editors with an OLE interface can be used as graphics editor (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  simple geometric forms (e.g. lines, circles and rectangles) can be created directly in the configuration software
- Text fields
  for labeling function keys, process diagrams and process values in any font size
- Curve displays and bars
  are used for graphical display of dynamic values
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection;
  5 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
  - Privileges specific to user groups
- Message 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
- Message buffer
  - Non-volatile, maintenance-free and battery-free message buffer. Messages are retained even when the Mobile Panel is unplugged.
- Recipe management
  - With additional data storage (on optional MMC)
  - Online/offline processing at 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 diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Task planner
  for cyclic function processing
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window and template concept
  - generation of screen templates
- Simple maintenance and configuration through
  - Backup and restoring of project, operating system, recipe records and firmware on the optional standard MMC (Multi Media Card)
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Project transfer 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 operation and monitoring of SIMATIC HMI systems over TCP/IP networks
  - Sm@rtAccess for communication between HMI systems over TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system and a great deal more

Configuration

Configuration is carried out using the SIMATIC WinCC flexible Compact, Standard or Advanced configuration software (see HMI software/engineering software SIMATIC WinCC flexible). SIMATIC WinCC flexible represents a consistent further development of the well-proven ProTool family. Projects generated using ProTool can easily migrate to WinCC. If WinCC flexible can be started directly from SIMATIC Manager, the data can be accessed directly in STEP 7 when the panel is configured. Duplicated data input and data management is therefore avoided.

Projects created using ProTool for the Mobile Panel 170 can be easily reused in WinCC flexible.

SIMATIC Mobile Panel 177

Integration

Communication with the PLC is possible with the Mobile Panel 177 DP over PROFIBUS DP at up to 12 Mbit/s, over the MPI or serial interfaces. The interfaces are integrated. Various drivers – also for non-Siemens PLCs – are included in the standard scope of supply.

Communication with the PLC is possible with the Mobile Panel 177 PN over PROFINET at up to 100 Mbit/s. The interface is integrated. Drivers are included in the standard scope of supply.

Using the DP junction 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
- Non-Siemens controllers
  - Allen Bradley
  - Mitsubishi
  - Modicon Modbus
  - GE-Fanuc
  - LG GLOFA GM
  - Omron
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

Using the PN junction boxes, Mobile Panel 177 PN can be connected to:

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

Note:
For further information see "System interfaces".

Technical specifications

Type	SIMATIC Mobile Panel 177 DP	SIMATIC Mobile Panel 177 DP	SIMATIC Mobile Panel 177 DP
Design variant	With integrated enabling button	With integrated enabling button and STOP pushbutton	With integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Display	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240	320 x 240
• Colors	256 colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours	approx. 50,000 hours
Control elements			
• Operating options	Touch and Key	Touch and Key	Touch and Key
• Programmable, inscribable function keys	14 (8 with green LED)	14 (8 with green LED)	14 (8 with green LED)
• Numeric/alphanumeric input	Yes/Yes [1]	Yes/Yes [1]	Yes/Yes [1]
• STOP pushbutton	No	2-channel, positive latching, can be wired into emergency-stop circuit	2-channel, positive latching, can be wired into emergency-stop circuit
• Enable switch	2-channel, 3-stage	2-channel, 3-stage	2-channel, 3-stage
• Handwheel	No	No	Yes
• Key-operated switch	No	No	Yes, with 3 switch positions, key can be removed in any one position
• Illuminated pushbutton	No	No	Yes
Expansions for operator-process communication			
• Direct keys/LEDs (buttons, function keys and control elements such as handwheel, key-operated switch and illuminated pushbutton unit) as I/O peripherals	Via DP direct keys	Via DP direct keys	Via DP direct keys
Operating system	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Available memory for user data	2048 KB	2048 KB	2048 KB
Interfaces	1 x RS422, 1 x RS485	1 x RS422, 1 x RS485	1 x RS422, 1 x RS485
• MMC slot (Multi Media Card)	1	1	1
Connection to controller	S5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (V 3.0 and higher), SIMOTION, Allen Bradley (DF1), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (V 3.0 and higher), SIMOTION, Allen Bradley (DF1), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (V 3.0 and higher), SIMOTION, Allen Bradley (DF1), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs
Clock	Software clock, synchronized, not battery-backed	Software clock, synchronized, not battery-backed	Software clock, synchronized, not battery-backed

Technical specifications (continued)

Type	SIMATIC Mobile Panel 177 DP	SIMATIC Mobile Panel 177 DP	SIMATIC Mobile Panel 177 DP
Supply voltage	via junction box	via junction box	via junction box
Degree of protection			
• Front	IP65	IP65	IP65
• Rear	IP65	IP65	IP65
Ambient conditions			
• Temperature			
- Operation	0 to +40 °C	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
• Max. relative humidity	80%	80%	80%
External dimensions in mm	W 245/D 58	W 245/D 58	W 245/D 58
Weight	1.3 kg	1.3 kg	1.3 kg
Certification	cULus, CE, C-Tick, SIBE	cULus, CE, C-Tick, SIBE	cULus, CE, C-Tick, SIBE
Functionality with WinCC flexible			
Signaling system			
• Number of messages	2000	2000	2000
• Discrete alarms	Yes	Yes	Yes
• Analog alarms	Yes	Yes	Yes
• Number of process values per message	8	8	8
• Message buffer	Retentive and maintenance-free ring buffer, 256 entries each	Retentive and maintenance-free ring buffer, 256 entries each	Retentive and maintenance-free ring buffer, 256 entries each
Recipes	100	100	100
• Data records per recipe	200	200	200
• Elements per data set	200	200	200
• Recipe memory	32 KB integrated Flash, expandable 2)	32 KB integrated Flash, expandable 2)	32 KB integrated Flash, expandable 2)
Process images	500	500	500
• Text objects	2500 text elements	2500 text elements	2500 text elements
• Variables per screen	50	50	50
• Fields per screen	50	50	50
• Graphics objects	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
• Libraries	Yes	Yes	Yes
Variables	1024	1024	1024
User administration (security)			
• Number of user groups	50	50	50
• Number of authorizations	32	32	32
Connection point recognition	Yes	Yes	Yes
Online languages	5	5	5
• Project languages (incl. system messages)	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages
Help texts	Yes	Yes	Yes
Scheduler (timer)	Yes	Yes	Yes
WinCC flexible options			
• Sm@rtAccess	No	No	No
• Sm@rtService	No	No	No
Engineering software	WinCC flexible 2005 Compact and higher (to be ordered separately)	WinCC flexible 2005 Compact and higher (to be ordered separately)	WinCC flexible 2005 Compact and higher (to be ordered separately)
• Transfer of the project	Serial/MPI/PROFIBUS DP/ automatic transfer recognition	Serial/MPI/PROFIBUS DP/ automatic transfer recognition	Serial/MPI/PROFIBUS DP/ automatic transfer recognition

1) Only English font can be displayed

2) By means of optional MMC

SIMATIC Mobile Panel 177

2

Technical specifications (continued)

Type	DP Basic junction box	DP Plus junction box
Interfaces	1 x RS 232, 1 x RS 422, 1 x RS 485 max. 12 Mbit/s	1 x RS 232, 1 x RS 422, 1 x RS 485 max. 12 Mbit/s
Expansions for operator-process communication		
• Hot swapping	With interruption in emergency-stop circuit	Without interruption in emergency-stop circuit
• Monitoring of the STOP pushbutton	No	Yes
• Location recognition (by hardware)	Yes	Yes
Connection-point identification	Yes	Yes
Degree of protection of casing	IP65	IP65
Supply voltage	24 V DC	24 V DC
Dimensions		
• External dimensions W x H x D in mm	160 x 120 x 70	160 x 120 x 70
Weight	0.35 kg	0.4 kg
Ambient conditions		
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Transportation and storage	-20 to +70 °C	-20 to +70 °C

Type	SIMATIC Mobile Panel 177 PN	SIMATIC Mobile Panel 177 PN	SIMATIC Mobile Panel 177 PN
Design variant	With integrated enabling button	With integrated enabling button and STOP pushbutton	With integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton
Display	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240	320 x 240
• Colors	256 colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours	approx. 50,000 hours
Control elements			
• Operating options	Touch and Key	Touch and Key	Touch and Key
• Programmable, inscribable function keys	14 (8 with green LED)	14 (8 with green LED)	14 (8 with green LED)
• Numeric/alphanumeric input	Yes/Yes [1]	Yes/Yes [1]	Yes/Yes [1]
• STOP pushbutton	No	2-channel, positive latching, can be wired into emergency-stop circuit	2-channel, positive latching, can be wired into emergency-stop circuit
• Enable switch	2-channel, 3-stage	2-channel, 3-stage	2-channel, 3-stage
• Handwheel	No	No	Yes
• Key-operated switch	No	No	Yes, with 3 switch positions, key can be removed in any one position
• Illuminated pushbutton	No	No	Yes
Expansions for operator-process communication			
• PROFINET I/O direct keys/LEDs (buttons, function keys and control elements such as handwheel, mode selector and illuminated pushbutton unit) as I/O peripherals	Via PROFINET 10 [1]	Via PROFINET 10 [1]	Via PROFINET 10 [1]
Operating system	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Available memory for user data	2048 KB	2048 KB	2048 KB
Interfaces	1 x Ethernet with 10/100 Mbit/s 1 x RS 485	1 x Ethernet with 10/100 Mbit/s 1 x RS 485	1 x Ethernet with 10/100 Mbit/s 1 x RS 485
• MMC slot (Multi Media Card)	1	1	1
Connection to controller	S7-200, S7-300/400, WinAC software, SIMOTION	S7-200, S7-300/400, WinAC software, SIMOTION	S7-200, S7-300/400, WinAC software, SIMOTION
Clock	Software clock, synchronized, not battery-backed	Software clock, synchronized, n ot battery-backed	Software clock, synchronized, n ot battery-backed

Technical specifications (continued)

Type	SIMATIC Mobile Panel 177 PN	SIMATIC Mobile Panel 177 PN	SIMATIC Mobile Panel 177 PN
Supply voltage	via junction box	via junction box	via junction box
Degree of protection			
• Front	IP65	IP65	IP65
• Rear	IP65	IP65	IP65
Ambient conditions			
• Temperature			
- Operation	0 to +40 °C	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
• Max. relative humidity	80%	80%	80%
External dimensions in mm	W 245/D 58	W 245/D 58	W 245/D 58
Weight	1.3 kg	1.3 kg	1.3 kg
Certification	cULus, CE, C-Tick, SIBE	cULus, CE, C-Tick, SIBE	cULus, CE, C-Tick, SIBE
Functionality with WinCC flexible			
Signaling system			
• Number of messages	2000	2000	2000
• Discrete alarms	Yes	Yes	Yes
• Analog alarms	Yes	Yes	Yes
• Number of process values per message	8	8	8
• Message buffer	Retentive and maintenance-free ring buffer, 256 entries each	Retentive and maintenance-free ring buffer, 256 entries each	Retentive and maintenance-free ring buffer, 256 entries each
Recipes	100	100	100
• Data records per recipe	200	200	200
• Elements per data set	200	200	200
• Recipe memory	32 KB integrated Flash, expandable [2)]	32 KB integrated Flash, expandable [2)]	32 KB integrated Flash, expandable [2)]
Process images	500	500	500
• Text objects	2500 text elements	2500 text elements	2500 text elements
• Variables per screen	50	50	50
• Fields per screen	50	50	50
• Graphics objects	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
• Libraries	Yes	Yes	Yes
Variables	1024	1024	1024
User administration (security)			
• Number of user groups	50	50	50
• Number of authorizations	32	32	32
Connection point recognition	Yes	Yes	Yes
Online languages	5	5	5
• Project languages (incl. system messages)	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Chinese (simplified), Chinese (traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages
Help texts	Yes	Yes	Yes
Scheduler (timer)	Yes	Yes	Yes
WinCC flexible options			
• Sm@rtAccess	Yes	Yes	Yes
• Sm@rtService	Yes	Yes	Yes
Configuring software	WinCC flexible 2005 Compact and higher (to be ordered separately)	WinCC flexible 2005 Compact and higher (to be ordered separately)	WinCC flexible 2005 Compact and higher (to be ordered separately)
• Transfer of the configuration	Serial/PROFINET/automatic transfer recognition	Serial/PROFINET/automatic transfer recognition	Serial/PROFINET/automatic transfer recognition

1) PROFINET I/O direct key functionality only with WinCC flexible 2005 SP1

SIMATIC Mobile Panel 177

Technical specifications (continued)

Type	PN Basic junction box	PN Plus junction box
Interfaces	2 x Ethernet with 10/100 Mbit/s, integrated switch	2 x Ethernet with 10/100 Mbit/s, integrated switch
Expansions for operator-process communication		
• Hot swapping	With interruption in emergency-stop circuit	Without interruption in emergency-stop circuit
• Monitoring of the STOP pushbutton	No	Yes
• Location recognition (by hardware)	Yes	Yes
Connection-point identification	Yes	Yes
Degree of protection of casing	IP65	IP65
Supply voltage	24 V DC	24 V DC
Dimensions		
• External dimensions W x H x D in mm	230 x 120 x 80	230 x 120 x 80
Weight	0.45 kg	0.5 kg
Ambient conditions		
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Transportation and storage	-20 to +70 °C	-20 to +70 °C
• Max. relative humidity	85%	85%

Ordering data

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

		Order No.
Mobile Panel 177 PN Plus starter kit • Mobile Panel 177 PN with integrated enabling button, STOP pushbutton, handwheel, key-operated switch and illuminated pushbutton • PN Plus junction box • PN 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	B	**6AV6 651-5DA01-0AA0**
Mobile Panel 177 DP Plus starter kit • 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	B	**6AV6 651-5BA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 4

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

Ordering data

		Order No.
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**
WinCC flexible User Manual Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
WinCC flexible communication User Manual		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
• French		**6AV6 691-1CA01-0AC0**
• Italian		**6AV6 691-1CA01-0AD0**
• Spanish		**6AV6 691-1CA01-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

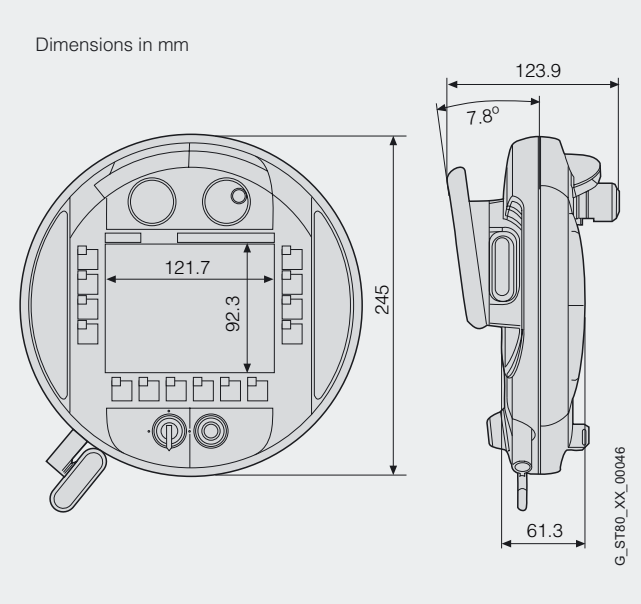
		Order No.
Mobile Panel accessories		
DP junction box for Mobile Panels (MPI/PROFIBUS)		
• Basic	A	**6AV6 671-5AE00-0AX0**
• Plus	A	**6AV6 671-5AE10-0AX0**
PN junction box for Mobile Panel (PROFINET)		
• Basic	A	**6AV6 671-5AE01-0AX0**
• Plus	A	**6AV6 671-5AE11-0AX0**
DP connecting cable (MPI/PROFIBUS)		
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**
• 10 m		**6XV1 440-4BN10**
• 15 m		**6XV1 440-4BN15**
• 25 m		**6XV1 440-4BN25**
Intermediate lengths [1]		
• 8 m		**6XV1 440-4BH80**
• 20 m		**6XV1 440-4BN20**
Accumulator option pack for Mobile Panels (DP and PN) [2]		**6AV6 671-5AD00-0AX0**
Wall holder for Mobile Panels		**6AV6 574-1AF04-4AA0**
MMC (Multi Media Card), 64 MB	A	**6AV6 671-1CB00-0AX0**
Cover foil to protect the touch front against fouling/scratching (set of 10)		**6AV6 574-1AD04-4AA0**
Protective pocket for labeling strips (set of 5)		**6AV6 574-1AB04-4AA0**
Service package for Mobile Panel 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**
Mobile Panel spare keys (pack of 10)		**6AV6574-1AG04-4AAO**

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

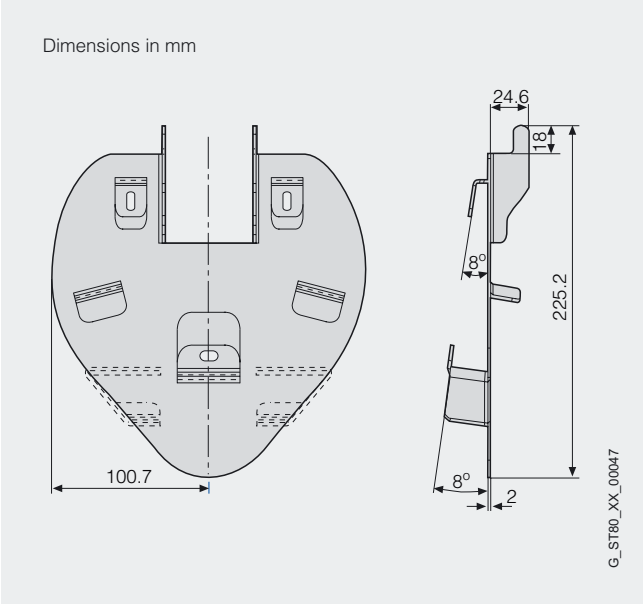
1) Delivery period approx. 6 weeks
2) Does not apply to Mobile Panel 170

SIMATIC Mobile Panel 177

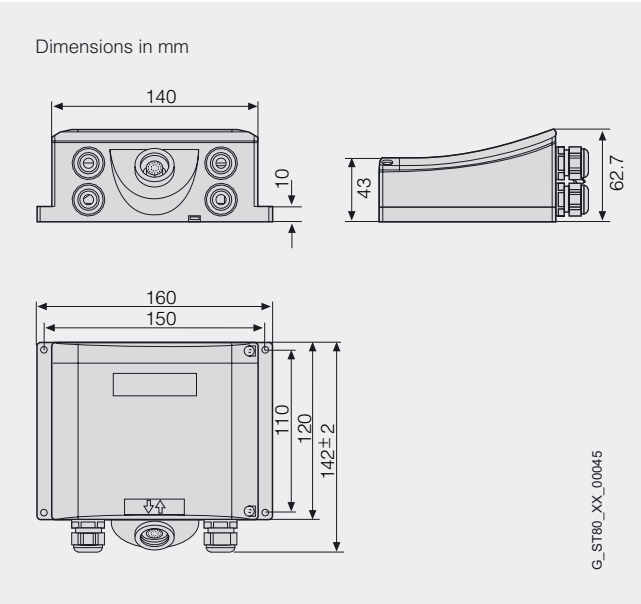
Dimension drawings



SIMATIC Mobile Panel front and rear views



Wall mount for SIMATIC Mobile Panel



DP junction box for SIMATIC Mobile Panel

More information

For further information, visit our website at

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

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

Overview

- Text display for message display and storage
- Can be used both direct at the machine and in a control room
- LED-backlit LCD:
  - 4 lines, 20 characters/line; character height 11 mm or
  - 8 lines, 40 characters/line; character height 6 mm.
- 7 system keys
- Alternatively, the TP 177 Touch Panel can also be used as a text-only display panel.

Benefits

- Clearly contrasting display, easier to read
- Large keys for enhanced operating reliability
- Fast variable updating
- Easy handling and configuration
- Maintenance-free thanks to electronic fuse

Application

The TD17 Text Displays can be used in all applications in which monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

The TD17 is simply for display purposes and does not support intervention in the process.

Design

The TD17 Text Display is based on OP7/OP17 technology.

- LED-backlit LCD:
  - 4-line, 20 characters/line; character height 11 mm or
  - 8-line, 40 characters/line; character height 6 mm.
- 7 system keys
- Metal-reinforced plastic housing with membrane front
- The front is resistant to various oils, greases and standard detergents
- Small mounting depth
- Electronic fuse

Function

Message functions

- Integration of up to 8 process values per message
- Status message and system message buffers
- Scrolling through messages
- Definition of message priorities
- Date and time in messages
- Upper-case and lower-case text can be mixed

Further functions

- Loadable firmware
- Contrast adjustment
- Convenient native drivers for wide range of non-Siemens PLCs
- Backup/restore of firmware and user data (ProSave)
- PLC tasks for activating PLC-controlled actions
- Language selection from 3 online languages

Configuration

Configuration is performed using the software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see Configuration software or Visualization software)

Integration

The TD17 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- Non-Siemens PLCs, including
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

Note:
For further information, see "System interfaces".

SIMATIC TD17

Technical specifications

	SIMATIC TD17
Display	
• Display type	LC-Display
• Number of lines (max.)	8
• Characters per line (max.)	40
• Character height (mm)	6 or11
• Colors	Monochrome
• MTBF of background lighting (at 25 °C)	approx. 200,000 hours
Operating mode	
• Operating options	Keys
• Membrane keyboard	Yes
• System keys	7
Processor/HW	
• Processor	X86
Operating systems	RMOS
Memory	
• Type	Flash/RAM
• Usable memory for project data	128 KB user memory/without additional memory for options
Interfaces	1 x TTY, 1 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
Supply voltage	
• Supply voltage	18 V DC
• Permissible range	+30 V to +24 V DC
• Rated current	0.34 A
• Output	8.4 W
• Backup battery	Optional 3.6 V
Clock	Hardware clock battery-backed and synchronized
Degree of protection	
• Front	IP65 (when mounted) -
• Rear	IP20
Certification (some only as options)	CE, PRS, FM Class I Div. 2, UL, EX zone 22
Mechanical components/ dimensions	
• Front panel W x H (mm)	240 x 98
• Mounting cutout/depth W x H x D (mm)	231 x 89/47 mm depth of unit
• Weight	0.9 kg

	SIMATIC TD17
Ambient conditions	
• Max. relative humidity (in %)	95%
• Mounting position	Vertical
- Max. permissible angle of inclination withou t external fan	+/- 90°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C
- Transportation and storage	-25 to +70 °C
Configuring	
• Configuration tool	ProTool
Functionality (under ProTool)	
• Password protection (number of levels)	10
• Help system	Yes
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Status messages	999
• System messages	Yes
• Message length (lines x characters)	2 x 40
• Number of process values in messages	8
• Message buffer	Battery-backed ring buffer, 256 entries each
Languages	
• Online languages	3
• Project languages	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H
Transfer of the configuration	Serial

2

Ordering data

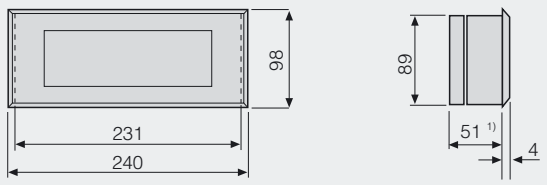
	Order No.
SIMATIC TD17 Text display, 8 lines, 40 characters/line, incl. mounting accessories	**6AV3 017-1NE30-0AX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
Documentation (to be ordered separately)	
TD17 Manual Multi-language (English, French, German, Italian and Spanish)	**6AV3 991-1AE00-0AX0**
Communication manual Instructions for connection of TD/OP to the controller	
• German	**6AV3 991-1BC05-1AA0**
• English	**6AV3 991-1BC05-1AB0**
• French	**6AV3 991-1BC05-1AC0**
• Italian	**6AV3 991-1BC05-1AD0**
• Spanish	**6AV3 991-1BC05-1AE0**
SIMATIC HMI C **Manual Collection** Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); Comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering	
Service package **for TD17, OP7 and OP17** 1) comprising: • 1 x TD17 gasket • 1 x OP7 gasket • 1 x OP17 gasket • 5 x clamping blocks • 2-pin plug-in terminal strip	**6AV3 678-1CC10**
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, MP 370	**W79084-E1001-B2**
RS 485 bus connector **with axial cable outlet (180°)**	**6GK1 500-0EA02**
System interfaces	See page 2/160
Connecting cables	See page 2/180

1) Included in scope of supply

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

Dimension drawings

Dimensions in mm



1) Depth includes connectors and cable connectors

Panel cutout (W x H) in mm: 231 x 89

G_ST80_XX_00062

More information

For further information, visit our website at

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.

SIMATIC OP3

Overview

- Operator Panel for controlling and monitoring machines and systems.
- Specifically for SIMATIC S7
- Can also be used as a handheld device
- LED-backlit LCD: 2 lines, 20 characters/line; character height 5 mm
- 18 system keys, 5 of which are user-configurable function keys
- The OP3 Operator Panel is soon to be replaced by its innovative successor, the SIMATIC OP 73.

Benefits

- Easy handling and configuration
- Small and compact
- Extensive functionality, e.g.:
  - Linear conversion
  - Variable limit values
  - PG function STATUS/CONTROL of variables

Application

The OP3 Operator Panels can be used in all small-scale applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Design

- LED-backlit LCD, 2-line, 20 characters/line; character height 5 mm
- 18 system keys, of which 5 are freely configurable function keys
- Plastic housing with membrane front
- The front is resistant to various oils, greases and standard detergents
- Small mounting depth

Function

Operator functions

- Alphanumeric setpoint input using system keys
- Softkeys (function of the keys can be configured context-sensitive)

Message functions

- Display of process values
- Management and processing of status messages
- Date and time in messages
- Definition of message priorities

Further functions

- Limit monitoring of inputs
- STATUS VAR/CONTROL VAR in combination with SIMATIC S7
- Password protection
- Language selection from 3 online languages
- Contrast adjustment
- Linear conversion
- Variable limit values

Configuration

Configuration is performed using the software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see Configuration Software or Visualization software)

Integration

Fast and easy coupling to SIMATIC S7-200, S7-300, S7-400 PLCs (PPI or MPI) is possible over the integral interface.

An additional master (e.g. PG or OP) is permissible in the PPI network.

Note
For further information, see "System interfaces".

Technical specifications

	SIMATIC OP3
Display	
• Display type	LC display
• Number of lines (max.)	2
• Characters per line (max.)	20
• Character height (mm)	5
• Colors	Monochrome
• MTBF of background lighting (at 25 °C)	approx. 200,000 hours
Operating mode	
• Operating options	Keys
• Function keys, programmable	5 function keys
• Membrane keyboard	Yes
• System keys	18
• Numeric/alphanumeric input	Yes/No
Processor/HW	
• Processor	X86
Operating system	RMOS
Memory	
• Type	Flash/RAM
• Usable memory for project data	128 KB user memory/without additional memory for options
Interfaces	1 x RS232, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 V to +30 V DC
• Rated current	0.07 A
• Output	2.4 W
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65
• Rear	IP20
Certification (some only as options)	CE, GL, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, EX zone 22
Mechanical components/ dimensions	
• Front panel W x H (mm)	148 x 76
• Mounting cutout/depth W x H x D (mm)	138 x 68/25 mm depth of unit
• Weight	0.25 kg

	SIMATIC OP3
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 180°
• Temperature	
- Operation (vertical installation)	0 to +60 °C
- Operation (max. angle of inclination)	0 to +60 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	ProTool
Functionality (under ProTool)	
• Password protection (number of levels)	10
• Help system	No
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7
Protocols	
• Interface to PLC (may only be an option)	S7-200, S7-300/400
Signaling system	
• Status messages	499
• System messages	Yes
• Message length (lines x characters)	2 x 20
• Number of process values in messages	8
• Process images	40
• Fields per screen	20
Languages	
• Online languages	3
• Project languages	G/E/F/I/S
Transfer of the configuration	MPI/PROFIBUS DP (if available), serial

SIMATIC OP3

2

Ordering data

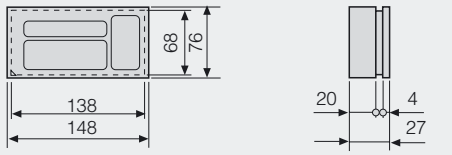
		Order No.
SIMATIC OP3		**6AV3 503-1DB10**
Operator Panel, 2 lines, 20 characters/line, 18 system keys, incl. mounting accessories:		
• Cable (2.5 m) for point-to-point connection to SIMATIC S7 and for transferring the configuration data from PC/PG with the MPI card		
• Cable (3 m) for transferring the configuration data from PC/PG with RS 232 interface		
• Cable (5 m) for 24 V DC power supply		
Configuring		
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
Documentation (to be ordered separately)		
OP3 Manual		
• German		**6AV3 591-1AD00-1AA0**
• English		**6AV3 591-1AD00-1AB0**
• French		**6AV3 591-1AD00-1AC0**
• Italian		**6AV3 591-1AD00-1AD0**
• Spanish		**6AV3 591-1AD00-1AE0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		
Plug-in power supply		
For easy configuring of OP3:		
• 230 V AC/24 V DC		**6ES7 705-0AA00-1AA0**
• 115 V AC/24 V DC [1]		**6ES7 705-0AA00-1BA0**
System interfaces		See page 2/160
Connecting cables		See page 2/180

1) Not authorized for sale in the EU

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

Dimension drawings

Dimensions in mm



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

G_ST80_XX_00057

More information

For further information, visit our website at

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.

Overview

- Compact, multi-functional operator panel for operator control and monitoring of machines and plants
- LED-backlit LCD: 4-line, 20 characters/line; character height 8 mm
- 22 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)

Benefits

- Clearly contrasting display, easier to read
- Large keys for enhanced operating reliability
- Fast variable updating
- Extensive functionality for efficient HMI – from receipe management through linear conversion as far as the backing up and restoring of firmware and user data
- Easy handling and configuration
- Maintenance-free thanks to electronic fuse

Application

The OP7 Operator Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Design

- LED-backlit LCD, 4-line, 20 characters/line; character height 8 mm
- 22 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- Plastic housing with membrane front
- The front is resistant to various oils, greases and standard detergents
- Small mounting depth
- Electronic fuse
- Interfaces:
  - *OP7/PP:*
    RS 232/TTY, RS 485/422
  - *OP7/DP:*
    RS 232, RS 485/422,
    PPI/MPI/PROFIBUS DP up to 1.5 Mbit/s
  - *OP7/DP-12:*
    RS 232/TTY, RS 485/422,
    PPI/MPI/PROFIBUS DP up to 12 Mbit/s

Function

Operator functions

- Alphanumeric/numerical setpoint input via system keys
- Softkeys (function of keys can be configured depending on screen)
- Slide-in labels for all function keys

Signaling functions

- Process value display
- Management and processing of status and fault messages
- Messages with date and time stamp
- Definition of message priorities
- Differentiation between first-up and last-up messages
- Help texts for alarms, screens, etc.

Additional functions

- Limit value check for entries
- STATE VAR/CONTROL VAR in conjunction with SIMATIC S5 and S7
- Password protection
- Language selection with 3 online languages
- 17 languages can be configured incl. system messages (incl. Cyrillic character sets)
- Contrast settings
- PLC requests to trigger PLC-controlled actions
- Recipe management
- DP direct keys for fast and deterministic operator actions
- Linear conversion
- Native drivers for non-Siemens PLCs
- PROFIBUS DP up to 12 Mbit/s
- Variable limit values
- Printer port via integrated interface

Service concept

- Backup/restoration of configuration, firmware and recipe data sets
- Loadable firmware

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see Configuration or Visualization software)

Integration

The OP7 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- Non-Siemens PLCs, e.g.
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

Note:
For further information, see "System interfaces".

SIMATIC OP7

Technical specifications

	SIMATIC OP7/PP	SIMATIC OP7/DP	SIMATIC OP7/DP-12
Display			
• Display type	LC display	LC display	LC display
• Number of lines (max.)	4	4	4
• Characters per line (max.)	20	20	20
• Character height (mm)	8	8	8
• Colors	Black/white	Black/white	Black/white
• MTBF of background lighting (at 25 °C)	approx. 100,000 hours	approx. 100,000 hours	approx. 100,000 hours
Operating mode			
• Control elements	Membrane keyboard	Membrane keyboard	Membrane keyboard
• Operating options	Keys	Keys	Keys
• Function keys, programmable	8 function keys, 4 with LEDs	8 function keys, 4 with LEDs	8 function keys, 4 with LEDs
• Membrane keyboard	Yes	Yes	Yes
• System keys	22	22	22
• Numeric/alphanumeric input	Yes/No	Yes/No	Yes/No
Processor/HW			
• Processor	X86	X86	X86
Operating systems	RMOS	RMOS	RMOS
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Usable memory for project data	128 KB user memory/without additional memory for options	128 KB user memory/without additional memory for options	128 KB user memory/without additional memory for options
Interfaces	1 x TTY, 1 x RS232, 1 x RS485 max. 1.5 Mbit/s	1 x RS232, 1 x RS422, 1 x RS485 max. 1.5 Mbit/s	1 x TTY, 1 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
Supply voltage			
• Supply voltage	24 V DC	24 V DC	24 V DC
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.19 A	0.19 A	0.19 A
Clock	Software clock, without battery backup	Software clock, without battery backup	Software clock, without battery backup
Degree of protection			
• Front	IP65 (when mounted) NEMA 4	IP65 (when mounted) NEMA 4	IP65 (when mounted) NEMA 4
• Rear	IP 20	IP 20	IP 20
Certification (some only as options)	CE, GL, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22	CE, GL, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22	CE, GL, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22
Mechanical components/ dimensions			
• Front panel W x H (mm)	144 x 180	144 x 180	144 x 180
• Mounting cutout/depth W x H x D (mm)	135 x 171/38.5 mm depth of unit	135 x 171/38.5 mm depth of unit	135 x 171/38.5 mm depth of unit
• Weight	0.43 kg	0.43 kg	0.43 kg
Ambient conditions			
• Max. relative humidity (in %)	95%	95%	95%
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of nclination without external fan	+/- 90°	+/- 90°	+/- 90°
• Temperature			
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +35 °C	0 to +35 °C
- Transportation and storage	-25 to +70 °C	-25 to +70 °C	-25 to +70 °C

Technical specifications (continued)

	SIMATIC OP7/PP	SIMATIC OP7/DP	SIMATIC OP7/DP-12
Expansions for operator-process communication (may only be an option)			
• DP direct LEDs (LEDs as S7 output I/O)	K1...K4	K1...K4	K1...K4
• DP direct keys (buttons as input peripherals)	F1...F4, K1...K41 byte or coded	F1...F4, K1...K41 byte or coded	F1...F4, K1...K41 byte or coded
Peripherals/applications/options			
• I/O	Printer	Printer	Printer
Configuring			
• Configuration tool	ProTool	ProTool	ProTool
• Configuration tool	-	-	WinCC flexible
Functionality (under ProTool)			
• Password protection (number of levels)	10	10	10
• Help system	Yes	Yes	Yes
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
• PG function (status/control)	Yes	Yes	Yes
Protocols			
• Interface to PLC (may only be an option)	S7-200, S7-300/400, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus)	S5, S7-200, S7-300/400Win AC, SINUMERIK	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus)
Signaling system			
• Status messages	499	499	499
• Alarm messages	499	499	499
• System messages	Yes	Yes	Yes
• Message length (lines x characters)	4 x 20	4 x 20	4 x 20
• Number of process values in messages	8	8	8
• Acknowledgement groups	4	4	4
• Alarm indicator	Yes	Yes	Yes
• Message buffer	Ring buffer, each	Ring buffer, 256 entries each	Ring buffer, 256 entries each
Recipes			
• Recipes	99	99	99
• Data records per recipe	99	99	99
• Entries/data record	99	99	99
• Recipe memory	4 KB integrated Flash	4 KB integrated Flash	4 KB integrated Flash
Number			
• Process images	99	99	99
Logging/printer driver			
• Print functions	Messages, hardcopy not possible	Messages, hardcopy not possible	Messages, hardcopy not possible
Fonts			
• Language (keyboard fonts)	E/F/G/I/S, Russian	E/F/G/I/S, Russian	E/F/G/I/S, Russian
Languages			
• Online languages	3	3	3
• Project languages	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H
Transfer of the configuration	Serial	Serial	Serial

SIMATIC OP7

Ordering data	Order No.
SIMATIC OP7	
Operator Panel, 4 lines, 20 characters/line, 22 system keys; incl. mounting accessories:	
• **OP7/PP** for connection to SIMATIC S5/505 and PLCs from other vendors, with - 1 x RS 232/TTY interface - 1 x RS 422/RS 485 interface	**6AV3 607-1JC00-0AX1**
• **OP7/DP** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other vendors, with - 1 x RS 232 interface - 1 x PPI/MPI/PROFIBUS DP interface, 1.5 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 607-1JC20-0AX1**
• **OP7/DP-12** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other vendors, with - 1 x RS 232/TTY interface - 1 x PPI/MPI/PROFIBUS DP interface, 12 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 607-1JC30-0AX1**
Configuring	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4

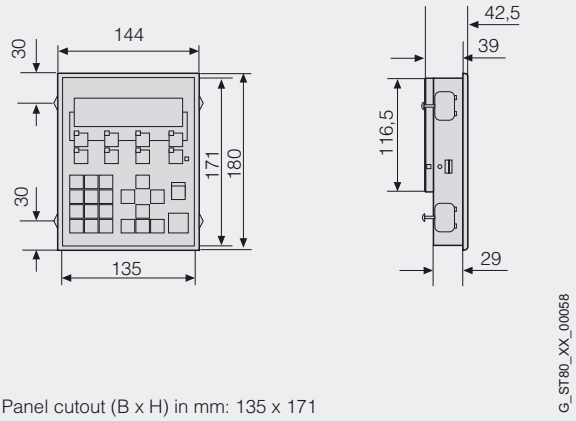
		Order No.
Documentation (to be ordered separately)		
OP7/OP17 Manual		
• German		**6AV3 991-1AE05-1AA0**
• English		**6AV3 991-1AE05-1AB0**
• French		**6AV3 991-1AE05-1AC0**
• Italian		**6AV3 991-1AE05-1AD0**
• Spanish		**6AV3 991-1AE05-1AE0**
Communication User Manual		
Instructions for connection of TD/OP to the PLC		
• German		**6AV3 991-1BC05-1AA0**
• English		**6AV3 991-1BC05-1AB0**
• French		**6AV3 991-1BC05-1AC0**
• Italian		**6AV3 991-1BC05-1AD0**
• Spanish		**6AV3 991-1BC05-1AE0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories for supplementary ordering		
Service pack for TD17 [1], OP7 and OP17		**6AV3 678-1CC10**
Consisting of: • 1 x TD17 gasket • 1 x OP7 gasket • 1 x OP17 gasket • 5 x clamping blocks • 2-pin plug-in terminal strip		
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/160
Connecting cables		See page 2/180

1) Included in scope of delivery

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

Dimension drawings

Dimensions in mm



Panel cutout (B x H) in mm: 135 x 171

More information

For further information, visit our website at

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.

SIMATIC OP17

Overview

- High-performance operator panel for easy operator control and monitoring of machines and plants
- LED-backlit LCD:
  - 4-line, 20 characters/line; character height 11 mm or
  - 8-line, 40 characters/line; character height 6 mm
- 22 system keys, 24 freely-configurable and freely-inscribable function keys (16 with LEDs)

Benefits

- Contrast-rich display
- Large keys for improved operational reliability
- Fast variable update
- Extensive functionality for efficient operator control and monitoring – from recipe management through linear conversion all the way to backup/restoration of firmware and user data
- Easy to handle and configure
- Electronic fuse protection

Application

The OP17 Operator Panels can be used in all applications in which operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Design

- LED-backlit LCD;
  - 4 lines, 20 characters/line; character height 11 mm or
  - 8 lines, 40 characters/line; character height 6 mm
- 22 system keys, 24 freely-configurable and freely-inscribable function keys (16 with LEDs)
- Plastic enclosure with membrane front
- The front is resistant to various oils, greases and standard detergents
- Low mounting depth
- Electronic fuse protection
- Optional battery can be used (required for message buffer and clock)
- Interfaces:
  - *OP17/PP:*
    RS 232/TTY, RS 485/422
  - *OP17/DP:*
    RS 232, RS 485/422,
    PPI/MPI/PROFIBUS DP up to 1.5 Mbit/s
  - *OP17/DP-12:*
    RS 232/TTY, RS 485/422,
    PPI/MPI/PROFIBUS DP up to 12 Mbit/s

Function

Operator functions

- Alphanumeric/numerical setpoint input via system keys
- Softkeys (function of keys can be configured depending on screen)
- Slide-in labels for all function keys
- Some function keys with LED

Signaling functions

- Process value display
- Management and processing of status and fault messages
- Messages with date and time stamp
- Definition of message priorities
- Differentiation between first-up and last-up messages
- Help texts for alarms, screens, etc.
- Mixed use of uppercase and lowercase

Additional functions

- Limit value check for entries
- STATE VAR/CONTROL VAR in conjunction with SIMATIC S5 and S7
- Password protection
- Language selection with 3 online languages
- 17 languages can be configured incl. system messages (incl. Cyrillic character sets)
- Contrast settings
- PLC requests to trigger PLC-controlled actions
- Recipe management
- DP direct keys for fast and deterministic operator actions
- Linear conversion
- Native drivers for non-Siemens PLCs
- PROFIBUS DP up to 12 Mbit/s
- Variable limit values
- Internal real-time clock
- 48 clock prompts
- Printer port

Service concept

- Backup/restoration of configuration, firmware and recipe data sets
- Loadable firmware

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see Configuration or Visualization software)

Integration

The OP17 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- Non-Siemens PLCs, e.g.
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

Note:
For further information, see "System interfaces".

Technical specifications

	SIMATIC OP17/PP	SIMATIC OP17/DP	SIMATIC OP17/DP-12
Display			
• Display type	LC display	LC display	LC display
• Number of lines (max.)	8	8	8
• Characters per line (max.)	40	40	40
• Character height (mm)	6 or 11	6 or 11	6 or 11
• Colors	Black/white	Black/white	Black/white
• MTBF of background lighting (at 25 °C)	approx. 200,000 hours	approx. 200,000 hours	approx. 200,000 hours
Operating mode			
• Control elements	Membrane keyboard	Membrane keyboard	Membrane keyboard
• Operating options	Keys	Keys	Keys
• Function keys, programmable	24 function keys, 16 with LEDs	24 function keys, 16 with LEDs	24 function keys, 16 with LEDs
• Membrane keyboard	Yes	Yes	Yes
• System keys	22	22	22
• Numeric/alphanumeric input	Yes/No	Yes/No	Yes/No
Processor/HW	X86	X86	X86
Operating systems	RMOS	RMOS	RMOS
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Usable memory for project data	256 KB user memory/without additional memory for options	256 KB user memory/without additional memory for options	256 KB user memory/without additional memory for options
Interfaces	1 x TTY, 2 x RS232, 1 x RS422, 1 x RS485 max. 1.5 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 max. 1.5 Mbit/s	1 x TTY, 2 x RS232, 1 x RS422, 1x RS485 max. 12 Mbit/s
Supply voltage			
• Supply voltage	24 V DC	24 V DC	24 V DC
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.34 A	0.34 A	0.34 A
• Output	10 W	10 W	10 W
• Backup battery	Optional 3.6 V	Optional 3.6 V	Optional 3.6 V
Clock	Hardware clock battery-backed and synchronized	Hardware clock battery-backed and synchronized	Hardware clock battery-backed and synchronized
Degree of protection			
• Front	IP65 (when mounted) -	IP65 (when mounted) -	IP65 (when mounted) -
• Rear	IP 20	IP 20	IP 20
Certification (some only as options)	CE, PRS, FM Class I Div. 2, UL, EX zone 22	CE, PRS, FM Class I Div. 2, UL, EX zone 22	CE, PRS, FM Class I Div. 2, UL, EX zone 22
Mechanical components/ dimensions			
• Front panel W x H (mm)	240 x 204	240 x 204	240 x 204
• Mounting cutout/depth W x H x D (mm)	231 x 195/50 mm depth of unit	231 x 195/50 mm depth of unit	231 x 195/50 mm depth of unit
• Weight	0.96 kg	0.96 kg	0.96 kg
Ambient conditions			
• Max. relative humidity (in %)	95%	95%	95%
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 90°	+/- 90°	+/- 90°
• Temperature			
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +35 °C	0 to +35 °C
- Transportation and storage	-25 to +70 °C	-25 to +70 °C	-25 to +70 °C
Expansions for operator-process communication (may only be an option)			
• DP direct LEDs (LEDs as S7 output I/O)		S1...S16, K1...K16	K1...K16
• DP direct keys (buttons as input peripherals)		S1...S16, F1...F8, K1...K16	F1...F8, K1...K16

SIMATIC OP17

2

Technical specifications (continued)

	SIMATIC OP17/PP	SIMATIC OP17/DP	SIMATIC OP17/DP-12
Peripherals/applications/options			
• I/O	Printer	Printer	Printer
Configuring			
• Configuration tool	ProTool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible	WinCC flexible
Functionality (under ProTool)			
• Timer	Yes	Yes	Yes
• Password protection (number of levels)	10	10	10
• Help system	Yes	Yes	Yes
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
• PG function (status/control)	Yes	Yes	Yes
Protocols			
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system			
• Status messages	999	999	999
• Alarm messages	999	999	999
• System messages	Yes	Yes	Yes
• Message length (lines x characters)	2 x 40	2 x 40	2 x 40
• Number of process values in messages	8	8	8
• Acknowledgement groups	4	4	4
• Alarm indicator	Yes	Yes	Yes
• Message buffer	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each
Recipes			
• Recipes	99	99	99
• Data records per recipe	99	99	99
• Entries/data record	99	99	99
• Recipe memory	20 KB integrated Flash	20 KB integrated Flash	20 KB integrated Flash
Process images	99	99	99
Picture elements			
• Text objects	31,680 text elements	31,680 text elements	31,680 text elements
• Number	31,680	31,680	31,680
• Fields per screen	99	99	99
• Variables per screen	792	792	792
• Graphics objects	Character graphics	Character graphics	Character graphics
Lists			
• Variables	2048	2048	2048
• Initial values	2048	2048	2048
• Limit values	Yes	Yes	Yes
Logging/printer driver			
• Print functions	Messages not possible	Messages not possible	Messages not possible
• Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts			
• Language (keyboard fonts)	E/F/G/I/S, Russian	E/F/G/I/S, Russian	E/F/G/I/S, Russian
Languages			
• Online languages	3	3	3
• Project languages	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, DK, FIN, GR, NL, N, PL, P, RUS, S, CZ / SK, TR, H
Transfer of the configuration	Serial	Serial	Serial

Ordering data	Order No.
SIMATIC OP17	
Operator Panel, 4-line, 20 characters/line or 8-line, 40 characters/line, 22 system keys; incl. mounting accessories	
• **OP17/PP** for connection to SIMATIC S5/505 and PLCs from other vendors, with - 2 x RS 232/TTY interface - 1 x RS 422/RS 485 interface	**6AV3 617-1JC00-0AX1**
• **OP17/DP** for connection to SIMATIC S5/S7, PROFIBUS DP and PLCs from other vendors, with - 2 x RS 232 interface - 1 x PPI/MPI/PROFIBUS DP interface, 1.5 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 617-1JC20-0AX1**
• **OP17/DP-12** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other vendors, with - 2 x RS 232/TTY interface - 1 x PPI/MPI/PROFIBUS DP interface, 12 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 617-1JC30-0AX1**
Configuring	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4

		Order No.
Documentation (to be ordered separately)		
OP7/OP17 Manual		
• German		**6AV3 991-1AE05-1AA0**
• English		**6AV3 991-1AE05-1AB0**
• French		**6AV3 991-1AE05-1AC0**
• Italian		**6AV3 991-1AE05-1AD0**
• Spanish		**6AV3 991-1AE05-1AE0**
Communication User Manual Instructions for connection of TD/OP to the PLC		
• German		**6AV3 991-1BC05-1AA0**
• English		**6AV3 991-1BC05-1AB0**
• French		**6AV3 991-1BC05-1AC0**
• Italian		**6AV3 991-1BC05-1AD0**
• Spanish		**6AV3 991-1BC05-1AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Service pack for TD17 [1], OP7 and OP17 Consisting of: • 1 x TD17 gasket • 1 x OP7 gasket • 1 x OP17 gasket • 5 x clamping blocks • 2-pin plug-in terminal strip		**6AV3 678-1CC10**
Backup battery Lithium battery, DC 3.6 V; 1.7 Ah for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B, MP 370		**W79084-E1001-B2**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/160
Connecting cables		See page 2/180

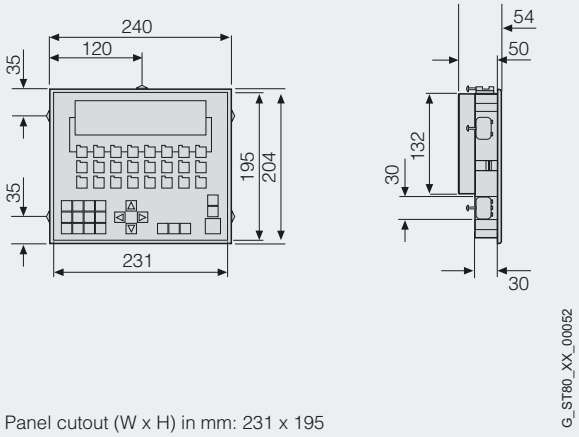
1) Included in scope of delivery

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

SIMATIC OP17

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 231 x 195

More information

For further information, visit our website at

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.

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
  - 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

SIMATIC OP 73

Function (continued)

Configuring

Configuration is carried out using the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/SIMATIC WinCC flexible engineering software), version 2004 SP1 and higher. An HSP (Hardware Support Package) is required for this version. The device is integrated as standard in WinCC flexible 2005 and higher and **no HSP** is required.

The HSP for WinCC flexible 2004 SP1 can be downloaded free of charge via the following link:

http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

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

	SIMATIC OP 73
Display	
• Display type	STN liquid crystal display (LCD)
• Size	3"
• Resolution (W x H in pixels)	160 x 48
• Colors	2 black/white
• MTBF of background lighting (at 25 °C)	approx. 100,000 hours
Operating mode	
• Operating options	Key
• Function keys, programmable	4 function keys
• Membrane keyboard	Yes
• System keys	8
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	ARM
Memory	
• Type	Flash/RAM
• Usable memory for project data	256 KB user memory/without additional memory for options
Interfaces	1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Backup battery	No
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, UL, CSA, cULus, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	154 x 84
• Mounting cutout/depth W x H x D (mm)	138 x 68/28.5 mm depth of unit
• Weight	0.25 kg
Ambient conditions	
• Max. relative humidity (in %)	95%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 90°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclin.)	0 to +40 °C
- Transportation and storage	-20 to +60 °C

	SIMATIC OP 73
Configuring	
• Configuration tool	WinCC flexible
Functionality (with WinCC flexible)	
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC
Signaling system	
• Number of messages	500
• Discrete alarms	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Process images	500
Picture elements	
• Text objects	1000 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
Text lists	150
• Libraries	Yes
Variables	1000
Security	
• Number of user groups	50
• Number of access rights	32
• Exportable passwords	Yes
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	WinCC flexible standard, ideographic languages
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial

Ordering data		Order No.
SIMATIC OP 73 Operator Panel with 3" display, monochrome, including mounting accessories	B	**6AV6 641-0AA11-0AX0**
OP 73 starter package 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 (5 m) (for download and test purposes) • PC/PPI Multimaster cable • Voucher for Software Update Service for 1 year	B	**6AV6 651-1AA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 4
Documentation (to be ordered separately)		
Operating Instructions for OP 73, OP 77A, OP 77B		
• German		**6AV6 691-1DA01-0AA1**
• English		**6AV6 691-1DA01-0AB1**
• French		**6AV6 691-1DA01-0AC1**
• Italian		**6AV6 691-1DA01-0AD1**
• Spanish		**6AV6 691-1DA01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**

		Order No.
Documentation (to be ordered separately) (continued)		
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Service pack for OP 73, OP 77A, OP 77B Consisting of: • Installation sealing • 5 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 671-1XA00-0AX0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
PC/PPI Multimaster cable for image update and image upload on OP 73	A	**6ES7 901 3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

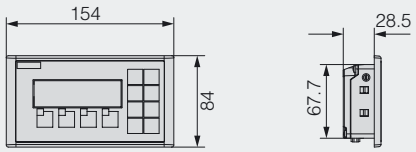
B) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

SIMATIC OP 73

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 138 +1 x 68 + 0.7

More information

For further information, visit our website at

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.

SIMATIC OP 77A

Overview

- Compact operator panel for operating and monitoring machines and plants
- Together with the OP 77B, it is the successor to the successful OP7
- A new dimension in graphics: small and clever
- 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

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

The OP 77A 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 mounting 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 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

- 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 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

SIMATIC OP 77A

Function (continued)

- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Scheduler for cyclic function execution
- 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

Configuring

SIMATIC WinCC flexible Compact, Standard or Advanced configuration software Version 2004 SP1 and higher is used for configuration. An HSP (Hardware Support Package) is required for this version.
The device is integrated as standard in WinCC flexible 2005 and higher and **no Hardware Support Package** is required in this case.

Link to free download of the HSP, if required:
http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

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

	SIMATIC OP 77A
Display	
• Display type	STN liquid crystal display (LCD)
• Size	4.5"
• Resolution (W x H in pixels)	160 x 64
• Colors	2 black/white
• MTBF of background lighting (at 25 °C)	approx. 100,000 hours
Operating mode	
• Control elements	Membrane keyboard
• Operating options	Key
• Function keys, programmable	8 function keys, 4 with LEDs
• Membrane keyboard	Yes
• System keys	23
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	
• Processor	Not specified, 40 MHz
Memory	
• Type	Flash/RAM
• Usable memory for project data	256 KB user memory/without additional memory for options
Interfaces	1 x RS422, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Rated current	0.2 A
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	150 x 186
• Mounting cutout/depth W x H x D (mm)	134 x 170/38.5 mm depth of unit
• Weight	0.5 kg
Ambient conditions	
• Max. relative humidity (in %)	95%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 90°
• **Temperature**	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	WinCC flexible

	SIMATIC OP 77A
Functionality (with WinCC flexible)	
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Process images/number	
• Process images	500
Picture elements	
• Text objects	1000 text elements
• Fields per screen	30
• Variables/screen	30
• Graphics objects	Bitmaps, icons, icon (filling the screen)
Text lists	300
• Libraries	Yes
Variables	1000
Security	
• Number of user groups	50
• Number of access rights	32
• Exportable passwords	Yes
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	WinCC flexible standard, ideographic languages
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)

SIMATIC OP 77A

Ordering data		Order No.
SIMATIC OP 77A Operator Panel with 4.5" display, monochrome, including mounting accessories	B	**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 • PC/PPI Multimaster cable • MPI cable (5 m) (for download and test purposes only) • Voucher for Software Update Service for 1 year	B	**6AV6 651-1BA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 4
Documentation (to be ordered separately)		
Operating Instructions OP 73, OP 77A, OP 77B [1]		
• German		**6AV6 691-1DA01-0AA1**
• English		**6AV6 691-1DA01-0AB1**
• French		**6AV6 691-1DA01-0AC1**
• Italian		**6AV6 691-1DA01-0AD1**
• Spanish		**6AV6 691-1DA01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**

		Order No.
Documentation (to be ordered separately) (continued)		
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Service pack for OP 73, OP 77A, OP 77B Consisting of: • Installation sealing • 5 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 671-1XA00-0AX0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
PC/PPI Multimaster cable	A	**6ES7 901 3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

1) French/Italian/Spanish available soon

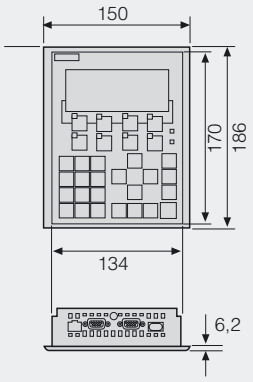
A) Subject to export regulations AL: N and ECCN: EAR99H

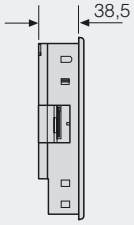
B) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

Dimension drawings

Dimensions in mm





G_ST80_DE_00087

Panel cutout (W x H) in mm: 135 x 171

More information

For further information, visit our website at

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.

SIMATIC OP 77B

Overview

- Compact operator panel for operating and monitoring machines and plants
- Together with the OP 77A it is the successor to the successful OP7
- A new dimension in graphics: small and clever
- 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
- Non-Siemens PLCs can be connected via easy-to-use drivers

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

- Input/output fields
  for displaying and changing process parameters
- Function keys
  for direct initiation of 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 graphics in the display.
  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 editor (such as PaintShop, Designer or CorelDraw).
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays for the graphical display of dynamic values
- Display selection from the PLC
  supports operator prompting from the PLC
- Language switchover during runtime
  - 5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
  - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups

Function (continued)

- Message system
  - Analog messages
  - Bit messages as well as Alarm S signaling procedure with 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)
  - Online/offline editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard Excel and Access tools
- Help texts
  for process diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Task planner (interval timer) for cyclic function processing
- Print;
  hardcopy, messages and freely-configurable reports
- Template concept;
  display elements configured in the template appear in each display
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on the optional multi media card (MMC)
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading the configuration 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

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

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:
For further information, see "System interfaces"

SIMATIC OP 77B

Technical specifications

	SIMATIC OP 77B
Display	
• Display type	STN liquid crystal display (LCD)
• Size	4.5"
• Resolution (W x H in pixels)	160 x 64
• Colors	2 black/white
• MTBF of background lighting (at 25 °C)	approx. 100,000 hours
Operating mode	
• Control elements	Membrane keyboard
• Operating options	Key
• Function keys, programmable	8 function keys, 4 with LEDs
• Membrane keyboard	Yes
• System keys	23
• Numeric/alphanumeric input	Yes/No
Processor/HW	RISC 32 bits, 200 MHz
Operating system	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	1000 KB user memory/without additional memory for options
Interfaces (some only as options)	
• Interfaces	1 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• USB (universal serial bus)	1 x USB
• SD/MMC SLOT	1 x MMC slot
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Rated current	0.2 A
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	150 x 186
• Mounting cutout/depth W x H x D (mm)	134 x 170/38.5 mm depth of unit
Ambient conditions	
• Max. relative humidity (in %)	95%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 90°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	Up to +°C
Peripherals	Printer
Configuring	
• Configuration tool	WinCC flexible

	SIMATIC OP 77B
Functionality (with WinCC flexible)	
• Scheduler	Yes
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505, Win AC, Allen Bradley (DF1), Mitsubishi (FX), Modicon (Modbus), other non-Siemens drivers
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Analog messages	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries/data record	200
• Recipe memory	32 KB integrated Flash, expandable
Process images	500
Picture elements	
• Text objects	2500 text elements
• Fields per screen	30
• Variables/screen	30
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs, slides, analog displays, hidden buttons
• Number of bar graphs per project	2500
• Alphanumeric fields	1000
• Numeric fields	1000
Text lists	300
Libraries	Yes
Variables	1000
Security	
• Number of user groups	1000
• Number of access rights	32
• Exportable passwords	Yes
Logging/printer driver	
• Printing/logging	Messages, report/log, hard copy
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable
Data carrier support (may only be an option)	
• MMC card	Yes
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial, USB, using external memory medium (automatic transfer recognition)

2

Ordering data		Order No.
SIMATIC OP 77B Operator Panel with 4.5" display, monochrome, including mounting accessories	B	**6AV6 641-0CA01-0AX0**
OP 77B starter package Consisting of: • Operator Panel OP 77B • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable (5 m) • Voucher for Software Update Service for 1 year	B	**6AV6 651-1CA01-0AA0**
Configuring		
with SIMATIC WinCC flexible		See Section 4
Configuration set • SIMATIC WinCC flexible Compact engineering software • SIMATIC HMI Manual Collection, 5 languages (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • PC/PPI Multimaster cable • MPI cable (5 m)	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions for OP 73, OP 77A, OP 77B		
• German		**6AV6 691-1DA01-0AA1**
• English		**6AV6 691-1DA01-0AB1**
• French		**6AV6 691-1DA01-0AC1**
• Italian		**6AV6 691-1DA01-0AD1**
• Spanish		**6AV6 691-1DA01-0AE1**
Operating Instructions (compact) OP 77B		
• German		**6AV6 691-1EA01-0AA0**
• English		**6AV6 691-1EA01-0AB0**

		Order No.
Documentation (to be ordered separately) (continued)		
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories		
Memory cards		
MMC card 64 MB	A	**6AV6 671-1CB00-0AX0**
Accessories for supplementary ordering		
Service package for OP 73, OP 73micro, OP 77A, OP 77B Consisting of: • Installation sealing • 5 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 671-1XA00-0AX0**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

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

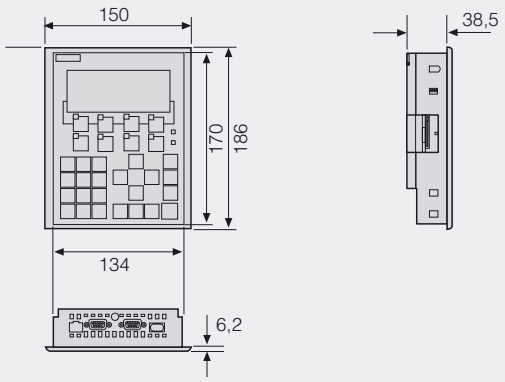
C) Subject to export regulations AL: N and ECCN: EAR99S

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

SIMATIC OP 77B

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 135 x 171

G_ST80_DE_00087

More information

For further information, visit our website at

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.

Overview

- Touch Panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the Touch Panel class with graphical capability complete with all the basic functions required for simple tasks
- Pixel-graphics STN display (blue mode) with touch screen (analog/resistive)
- All interfaces (e.g., MPI, PROFIBUS DP) are on-board
- Non-Siemens PLCs can be connected using easy-to-use drivers
- The TP 170A Touch Panel is soon to be replaced by its innovative successor, the SIMATIC TP 177A.

Benefits

- 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) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlit display
- Graphics library available with off-the-shelf picture objects
- Can be used all over the world:
  - 21 languages can be configured incl. Asian and Cyrillic character sets
  - When configuring with WinCC flexible: 32 languages can be configured incl. Asian and Cyrillic character sets and up to 5 languages can be selected online
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The TP 170A Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

With its quick response times, the TP 170A is also ideally suited to jog mode.

Design

- STN, CCFL[1)] backlit display, Bluemode
- Resistive analog Touch
- Numeric "on-screen" system keyboard for decimal, binary and hexadecimal numeric formats
- On-screen alphanumeric keyboard
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option for achieving the NEMA 4 degree of protection and as additional protection against fouling and scratching
- Plug-type terminals for connection of a power supply
- Interfaces for plugging the connecting cables into the PLC or configuration computer are integrated.

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 ICON 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 editor (such as PaintShop, Designer or CorelDraw).
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays
  for the graphical display of dynamic values
- Configuration languages; incl. Asian and Cyrillic fonts
- Password protection
- Message system;
  administration of status and system messages
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Configuration can be downloaded over the process interface
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer

SIMATIC TP 170A

Function (continued)

Additional functions when configuring with WinCC flexible

- Message system
  - Bit messages
  - Freely-definable message classes (e.g. status/fault messages) for definition of acknowledgment response and display of message events
  - Message history
- Language selection
  - Online languages can be selected on the device
  - Language-dependent texts and graphics
- Permanent window expanded by template concept
  - Generation of screen templates

Configuration

Configuring is performed using the configuring software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Compact, Standard or Advanced (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible. With WinCC flexible, the user has in some cases access to more functions with identical hardware.

Integration

The TP 170A can be connected to Siemens SIMATIC CPUs and to non-Siemens CPUs. Projects for the TP 170A can be created both as "stand alone" and "integrated" in STEP 7.

Additional when configuring with WinCC flexible

When configuring with WinCC flexible, the TP 170A can be connected to up to 4 SIMATIC S7 PLCs.

Note:
For further information, see "System interfaces"

Technical specifications

	SIMATIC TP 170A
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	320 KB user memory/without additional memory for options
Interfaces	TTY optional, 1 x RS232, 1 x RS422, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 V to +30 V DC
• Rated current	0.24 A
• Output	6 W

	SIMATIC TP 170A
Clock/type	
• Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA, cULus
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.7 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	ProTool
• Configuration tool	WinCC flexible

Technical specifications (continued)

	SIMATIC TP 170A
Functionality (with WinCC flexible)	
Protocols	
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 128 entries each
Process images	250
Picture elements	
• Text objects	1000 text elements
• Fields per screen	20
• Variables/screen	20
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
- Libraries	Yes
Variables	500
Security	
• Number of user groups	1
• Exportable passwords	Yes
Fonts	
• Keyboard fonts	US English
Languages	
• Online languages	5
• Project 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, ideographic languages, all freely scalable
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)

	SIMATIC TP 170A
Functionality (under ProTool)	
• Password protection (number of levels)	2
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Status messages	1000
• System messages	Yes
• Message length (lines x characters)	1 x 70
• Number of process values in messages	8
Process images	50
Picture elements	
• Text objects	1000 text elements
• Number	1000
• Fields per screen	20
• Variables per screen	20
• Graphics objects	Bit maps, icons, background pictures
• Dynamic objects	Bar graphs
- Number per project	250
- Number of bar graphs/project	250
- Libraries	Yes
Variables	500
Fonts	
• Language (keyboard fonts)	US English
Languages	
• Online languages	1
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable
Transfer of the configuration	MPI/PROFIBUS DP (if available), serial (automatic transfer recognition)

SIMATIC TP 170A

2

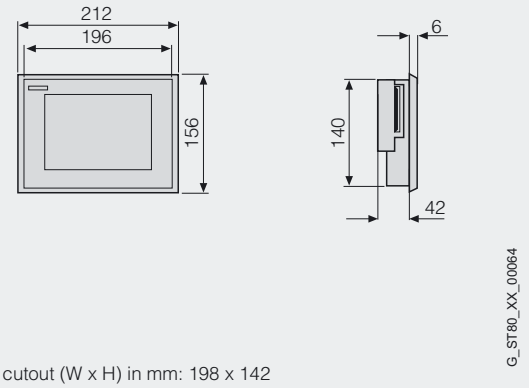
Ordering data		Order No.
SIMATIC TP 170A Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 545-0BA15-2AX0**
Configuring		
• with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
• with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**

		Order No.
Documentation (to be ordered separately) (continued)		
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

Dimension drawings

Dimensions in mm



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

More information

For further information, visit our website at

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.

SIMATIC TP 170B

Overview

- Touch panel for operating and monitoring machines and plants
- Universal unit for first-time users in the category of touch panels with graphics capability with extensive functionality
- Pixel graphics STN display Bluemode/color with touch screen (analog/resistive)
- Interfaces for communication with Siemens SIMATIC S7 PLCs (e.g. MPI, PROFIBUS DP) are on board
- S5 PLCs and non-Siemens PLCs can be connected through easy-to-use drivers or converters

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a CompactFlash card
  - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlighting
- Can be used all over the world:
  - 32 offline 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 hardware and software interfaces for increasing flexibility:
  - CompactFlash card, used for recipe data records and for backup of configuration/system data
- Integrated printer port
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The TP 170B Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Design

- STN, CCFL[1)]-backlit display, Bluemode or color
- Resistive analog Touch
- Numeric "on-screen" system keyboard for decimal, binary and hexadecimal numeric formats
- On-screen alpha keyboard (English font)
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option for achieving the NEMA 4 degree of protection and as additional protection against fouling and scratching
- Plug-type terminals for connection of a power supply
- Interfaces for plugging the connecting cables into the PLC, printer or configuration computer are integrated.
- Slot for standard Compact Flash Card

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 (e.g., lines, circles and rectangles) can be created direct in the configuring tool
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection;
  online languages can be selected directly on the device
- Password protection
- Signaling system;
  administration of status, fault and system messages.
- Recipe management
  - With additional data storage (on CF 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

Function (continued)

- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Timer
  for cyclic function processing
- Print;
  hard copy and messages (see "Recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window;
  Fixed area of screen for outputting non-screen-specific information (e.g., important process values, date and time)
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on the optional CompactFlash card
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload possible via process interface
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer
- Signaling system; discrete alarms with message history (not battery-backed)

Additional functions when configuring with WinCC flexible

- Signaling system
  - 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
- Permanent window enhanced with template concept;
  - Creation of a screen template
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Under some circumstances larger volume/function limits are possible with the same hardware than under ProTool

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/engineering software SIMATIC WinCC flexible).

Projects created with ProTool can be transferred to WinCC flexible. Under some circumstances WinCC flexible can provide the user with access to more functions without the need for additional or modified hardware.

Integration

The TP 170B can be connected to SIMATIC CPUs from Siemens and to non-Siemens CPUs.

Projects for a TP 170B can be created "stand-alone“ as well as "integrated" in STEP7.

Additionally when configuring with WinCC flexible

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

Note:
For further information, see "System interfaces"

SIMATIC TP 170B

Technical specifications

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	16 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Touch	Touch
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	768 KB user memory/without additional memory for options	768 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot	1 x CF card slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.25 A	0.25 A
• Output	6 W	7 W

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Clock	Software clock, without battery backup	Software clock, without battery backup
Degree of protection		
• Front	IP65, NEMA 4; (when mounted)	IP65, NEMA 4; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions		
• Front panel W x H (mm)	212 x 156	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/ 45 mm depth of unit	198 x 142/ 45 mm depth of unit
• Weight	0.7 kg	0.7 kg
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Peripherals/applications/options		
• I/O	Printer	Printer
• Applications/options (with ProTool)	ThinClient	None
Configuring		
• Configuration tool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible

Technical specifications (continued)

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
Protocols		
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Ring buffer, 128 entries each	Ring buffer, 128 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen)	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (with WinCC flexible) (continued)		
Text lists	300	300
Graphics lists	100	100
Libraries	Yes	Yes
Variables	1000	1000
Security		
• Number of user groups	10	10
• Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project 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, ideographic languages, all freely scalable	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• CF card	Yes	Yes
• Applications/options (with WinCC flexible)	ProAgent, Internet Explorer	ProAgent, Internet Explorer, ThinClient
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)	MPI/PROFIBUS DP, serial (automatic transfer recognition)

SIMATIC TP 170B

Technical specifications (continued)

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (under ProTool)		
• Timer	Yes	Yes
• Password protection (number of levels)	9	9
• Help system	Yes	Yes
Protocols		
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Status messages	1000	1000
• Alarm messages	1000	1000
• System messages	Yes	Yes
• Message length (lines x characters)	1 x 70	1 x 70
• Number of process values in messages	8	8
• Message buffer	Ring buffer, 128 entries each	Ring buffer, 128 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Number		
• Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Number	2000	2000
• Fields per screen	0	0
• Variables per screen	50	50
• Graphics objects	Bitmaps, icons, background pictures, vector graphics	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number per project	500	500
- Number of bar graphs/project	500	500

	SIMATIC TP 170B Bluemode (4 levels)	SIMATIC TP 170B Color (16 colors)
Functionality (under ProTool) (continued)		
Lists		
• Text lists/project	300	300
• Graphics lists/project	100	100
• Libraries	Yes	Yes
• Variables	1000	1000
Logging/printer driver		
• Print functions	Messages, color print, hard copy	Messages, color print, hard copy
• Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Language (keyboard fonts)	US English	US English
Languages		
• Online languages	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be available as an option with ProTool)		
• PC card	No	No
• CF card	Yes	Yes
• MMC card	No	No

Ordering data		Order No.
SIMATIC TP 170B		
Touch Panel with 5.7" STN display		
• Blue mode (4 levels)	B	**6AV6 545-0BB15-2AX0**
• Color (16 colors)	B	**6AV6 545-0BC15-2AX0**
incl. mounting accessories		
Configuring		
• with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
• with SIMATIC WinCC flexible		See Section 4
Configuration set		
Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**

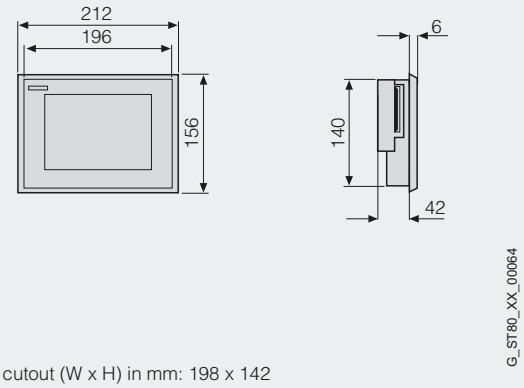
		Order No.
Documentation (to be ordered separately) (continued)		
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories		
CF cards		
CF card, 128 MB [D]	A	**6AV6 574-2AC00-2AA0**
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
TTY-RS 232 converter for connection with S5 CPUs, length 3.2 m; Canon 15-pin – 25-pin		**6ES5 734-1BD20**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter, 9-pin for RS422/485		**6AV6 671-8XD00-0AX0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

A) Subject to export regulations AL: N and ECCN: EAR99H
B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

SIMATIC TP 170B

Dimension drawings

Dimensions in mm



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

More information

For further information, visit our website at

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.

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter device in the touch panel class with graphical capability complete with 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 redesigned TP 170A Touch Panel

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 levels)
- Resistive analog Touch
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- On-screen alphanumeric keyboard
- 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
- RS 485 interface for process connections (MPI, PROFIBUS DP to 1.5 Mbit/s) and for configuration download

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 direct in the configuring tool
- Predefined
  for labeling function keys, process images and process values in different font sizes
- Bars
  for the graphical display of dynamic values
- 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
  - Freely-definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of message events
  - Message history

SIMATIC TP 177A

Function (continued)

- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Scheduler for global 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

Configuring

Configuration is carried out using the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/SIMATIC WinCC flexible engineering software), version 2004 SP1 and higher. An HSP (Hardware Support Package) is required for this version.
The device is integrated as standard in WinCC flexible 2005 and higher and **no HSP** is required in this case.

The HSP for WinCC flexible 2004 SP1 can be downloaded free of charge via the following link:
http://www4.ad.siemens.de/WW/view/de/19241467

or alternatively via the following shortcut:

http://www.siemens.de/wincc-flexible-hsp

Projects created with ProTool can be transferred to WinCC flexible.

Integration

The TP 177A can be connected to:

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

Note:
For further information, see "System interfaces"

Technical specifications

	SIMATIC TP 177A
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Touch
• Touch screen	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	N/A
Memory	
• Type	Flash/RAM
• Usable memory for project data	512 KB user memory/without additional memory for options
Interfaces	1 x RS422, 1 x RS485 max. 1.5 Mbit/s
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+20.4 to +28.8 V DC
• Output	6 W
Clock	Software clock, without battery backup
Degree of protection	
• Front	IP65, NEMA 4, NEMA 12; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, hazardous zone 2/22, C-TICK
Mechanical components/ dimensions	
• Front panel W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142/45 mm depth of unit
• Weight	0.75 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Configuring	
• Configuration tool	WinCC flexible

	SIMATIC TP 177A
Functionality (with WinCC flexible)	
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC
Signaling system	
• Number of messages	1000
• Discrete alarms	Yes
• Analog messages	No
• Message length (in characters)	80
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Process images	250
Picture elements	
• Text objects	1000 text elements
• Fields per screen	30
• Variables/screen	30
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Bar graphs
Text lists	300
Graphics lists	0
Libraries	Yes
Variables	250
Security	
• Number of user groups	50
• Number of access rights	32
• Exportable passwords	Yes
Languages	
• Online languages	5
• Project 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 under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)

SIMATIC TP 177A

Ordering data		Order No.
SIMATIC TP 177A Touch Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 642-0AA11-0AX0**
TP 177A starter kit Consisting of: • Touch Panel TP 177A • 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) • PC/PPI Multimaster cable • Software Update Service for 1 year	B	**6AV6 651-2AA01-0AA0**
Configuring		
• with SIMATIC WinCC flexible		See Section 4
Documentation (to be ordered separately)		
Operating Instructions for 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 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

		Order No.
Accessories for supplementary ordering		
Cover foil (pack of 10)		**6AV6 671-2XC00-0AX0**
Protective cover		**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • Mounting clamps • Plug-in terminal block (twin block)		**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
90° angle adapter **1 x 90° angle adapter, 9-pin for RS485/422 interface**	A	**6AV6 671-8XD00-0AX0**
PC/PPI Multimaster cable For connecting the S7-200 to the serial PC/OP interface, and for image booting of the panel	A	**6ES7 901-3CB30-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

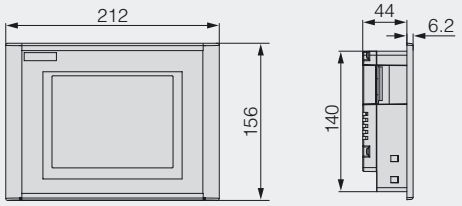
A) Subject to export regulations AL: N and ECCN: EAR99H

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

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

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 197+1 x 141+1

More information

For further information, visit our website at

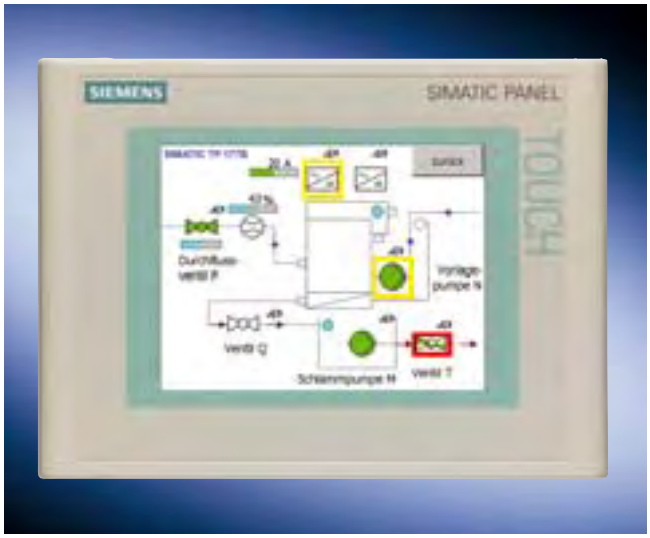
http://www.siemens.com/panels

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.

SIMATIC TP 177B

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
- 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/restore via a process interface or optionally via a Multi Media Card.
  - Image and configuration download via all device interfaces
  - Maintenance-free design 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 project 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 with comprehensive documentation on the SIMATIC HMI Manual Collection CD
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

Thanks to their practical functions and large user memory, TP 177B Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation. The TP 177B 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 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
- Numeric and alphanumeric on-screen keyboard
- High performance thanks to Risk 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
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Compact 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 5 languages
- 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
- SINUMERIK, Sm@rt Access and Sm@rt Service 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

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
- 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 messages. 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 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 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". 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.

SIMATIC TP 177B

Technical specifications

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Touch	Touch
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/bar-code reader	USB/USB/-	USB/USB/-
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2000 KB user memory/without additional memory for options	2000 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• USB (universal serial bus)	1 x USB	1 x USB
• Ethernet	No	1 x Ethernet (RJ45)
• SD/MMC SLOT	1 x SD/MMC slot	1 x SD/MMC slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	-15% to +20%	-15% to +20%
Clock	Software clock, without battery backup	Software clock, without battery backup

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, Gost-R, C-TICK	CE, GL, ABS, BV, DNV, LRS, PRS, FM Class I Div. 2, UL, CSA, cULus, EX zone 2/22, Gost-R, C-TICK
Mechanical components/dimensions		
• Front panel W x H (mm)	212 x 156	212 x 156
• Mounting cutout/depth W x H x D (mm)	189 x 142/45 mm depth of unit	189 x 142/45 mm depth of unit
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct keys (buttons as input peripherals)	S1...S164 byte or coded	4 bytes or coded
Peripherals/applications/options		
• I/O	Printer	Printer
Configuring		
• Configuration tool	WinCC flexible 2005, Compact, Standard, Advanced	WinCC flexible 2005 Advanced

Technical specifications (continued)

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S7	with SIMATIC S7
Protocols		
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen), vector graphics	Bitmaps, icons, icon (filling the screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC TP 177B Bluemode (4 levels)	SIMATIC TP 177B Color (256 colors)
Functionality (with WinCC flexible) (continued)		
Text lists	300	300
Graphics lists	100	100
Libraries	Yes	Yes
Variables	1000	1000
Filters		
• Security		
- Number of user groups	50	50
- Number of access rights	32	32
- Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• MMC card	Yes	Yes
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP (automatic transfer recognition)	MPI/PROFIBUS DP, Ethernet (automatic transfer recognition)

SIMATIC TP 177B

Ordering data		Order No.
SIMATIC TP 177B Touch Panel with 5.7" STN display		
• Blue mode (4 levels)	B	**6AV6 642-0BC01-1AX0**
• Color (256 colors) incl. mounting accessories	B	**6AV6 642-0BA01-1AX0**
TP 177B starter kit Consisting of: • TP 177B with STN display, blue mode • SIMATIC WinCC flexible Compact configuring software • SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish) • MPI cable (5 m) • Software update service for 1 year	B	**6AV6 551-2EA01-1AA0**
Configuring		
• with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), MPI cable (5 m)		
• with SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
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 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

	Order No.
Accessories	
Accessories for supplementary ordering	
Cover foil (pack of 10)	**6AV6 671-2XC00-0AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
IE FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet; for ET 200S; 1 pack = 1 unit	**6GK1 901-1BB20-2AA0**
IE FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface; 1 pack = 1 unit	**6GK1 901-1BB10-2AA0**
90° angle adapter, 9-pin for RS422/485	**6AV6 671-8XD00-0AX0**
RS422-to-RS232 (V.24) converter Between TD/TP/OP and non-Siemens PLC with RS232 interface	**6AV6 671-8XJ00-0AX0**
Standard Multi Media Card	**6AV6 671-1CB00-0AX0**
System interfaces	See page 2/169
Connecting cables	See page 2/180

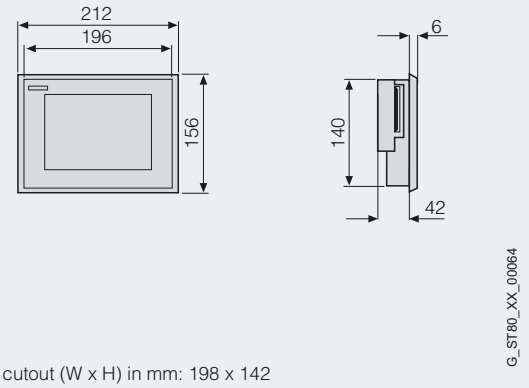
B) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

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

Dimension drawings

Dimensions in mm



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

More information

For further information, visit our website at

http://www.siemens.de/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.

SIMATIC OP 170B

Overview

- Operator panel for operator control and monitoring of machines and plants
- Universal unit for first-time users in the category of panels with graphics capability with extensive functionality
- Pixel-graphics 5.7" STN display, Bluemode (4 levels)
- Membrane keyboard with system keys, freely configurable and freely inscribable function keys (some with LED)
- Interfaces for communication with Siemens SIMATIC S7 PLCs (e.g. MPI, PROFIBUS DP) are on board
- S5 PLCs and non-Siemens PLCs can be connected through easy-to-use drivers or converters

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction of service and commissioning costs through:
  - Backup/restoration via a process interface or optionally via a CompactFlash card
  - Remote downloading of the configuration with automatic transfer recognition even via WAN (Wide Area Network) using TeleService adapter
  - Maintenance-free design (no battery) and long service life of the backlighting
- Can be used all over the world:
  - 32 offline 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 hardware and software interfaces for increasing flexibility:
  - CompactFlash card, used for recipe data records and for backup of configuration/system data
- Integrated printer port
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The OP 170B Operator Panel 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.

Design

- STN, CCFL[1)] backlit display, Bluemode
- System keys, freely-configurable and freely-inscribable function keys (some with LED)
- Numeric and alphanumeric membrane keyboard
- 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 power supply
- Interfaces for plugging the connecting cables into the PLC, printer or configuration computer are integrated.
- Slot for standard Compact Flash Card

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

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.
  The function keys can be used directly as PROFIBUS DP input peripherals.
- 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 (e.g., lines, circles and rectangles) can be created direct in the configuring tool
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection;
  online languages can be selected directly on the device
- Password protection
- Signaling system;
  administration of status, fault and system messages.
- Recipe management
  - With additional data storage (on CF 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
- Timer
  for cyclic function processing
- Print;
  hard copy and messages (see "Recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window;
  Fixed area of screen for outputting non-screen-specific information (e.g., important process values, date and time)
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on the optional CF (CompactFlash) card
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload possible via process interface
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
- Signaling system; discrete alarms with message history (not battery-backed)

Additional functions when configuring with WinCC flexible

- Signaling system
  - 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
- Permanent window enhanced with template concept
  - Creation of a template (screen template)
- User administration (password protection)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Under some circumstances larger volume/function limits are possible with the same hardware than under ProTool

Configuring

Configuration is performed using the SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Compact, Standard or Advanced engineering software (see HMI software/engineering software SIMATIC WinCC flexible).

Projects created with ProTool can be transferred to WinCC flexible. Under some circumstances WinCC flexible can provide the user with access to larger volume limits and more functions without the need for additional or modified hardware.

Integration

The OP 170B can be connected to SIMATIC CPUs from Siemens and to non-Siemens CPUs.

Projects for an OP 170B can be created "stand-alone“ as well as "integrated" in STEP7.

Additionally when configuring with WinCC flexible

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

Note:
For further information, see "System interfaces"

SIMATIC OP 170B

Technical specifications

	SIMATIC OP 170B
Display	
• Display type	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (W x H in pixels)	320 x 240
• Colors	4 shades of blue
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours
Operating mode	
• Operating options	Key
• Function keys, programmable	24 function keys, 18 with LEDs
• Membrane keyboard	Yes
• System keys	35
• Touch screen	No
• Numeric/alphanumeric input	Yes/Yes
Processor/HW	RISC 32 bits, 66 MHz
Operating systems	Windows CE
Memory	
• Type	Flash/RAM
• Usable memory for project data	768 KB user memory/without additional memory for options
Interfaces (some only as options)	
• Interfaces	TTY optional, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot
Supply voltage	
• Supply voltage	24 V DC
• Permissible range	+18 to +30 V DC
• Rated current	0.25 A
• Output	6 W
Clock	Software clock, without battery backup

	SIMATIC OP 170B
Degree of protection	
• Front	IP65, NEMA 4; (when mounted)
• Rear	IP20
Certification (some only as options)	CE, FM Class I Div. 2, UL, CSA
Mechanical components/ dimensions	
• Front panel W x H (mm)	240 x 252
• Mounting cutout/depth W x H x D (mm)	229 x 241/45 mm depth of unit
• Weight	0.9 kg
Ambient conditions	
• Max. relative humidity (in %)	85%
• Mounting position	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°
• Temperatur e	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C
- Transportation and storage	-20 to +60 °C
Expansions for operator-process communication (may only be an option)	
• DP direct LEDs (LEDs as S7 output I/O)	F1...F8, K1...K10
• DP direct keys (buttons as input peripherals)	F1...F14, K1...K10
Peripherals/applications/options	
• I/O	Printer
• Applications/options (with ProTool)	ThinClient
Configuring	
• Configuration tool	ProTool
• Configuration tool	WinCC flexible

Technical specifications (continued)

	SIMATIC OP 170B
Functionality (with WinCC flexible)	
• Scheduler	Yes
• Help system	Yes
Protocols	
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system	
• Number of messages	2000
• Discrete alarms	Yes
• Analog messages	Yes
• Message length (in characters)	80
• Number of process values per message	8
• Acknowledgement groups	99
• Message buffer	Ring buffer, 128 entries each
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries/data record	200
• Recipe memory	32 KB integrated Flash, expandable
Process images	100
Picture elements	
• Text objects	2000 text elements
• Fields per screen	0
• Variables/screen	50
• Graphics objects	Bitmaps, icons, icon (filling the screen)
• Dynamic objects	Diagrams, bar graphs, hidden buttons
Text lists	300
Graphics lists	100
Libraries	Yes
Variables	1000
Security	
• Number of user groups	10
• Exportable passwords	Yes
Logging/printer driver	
• Printing/logging	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6
Fonts	
• Keyboard fonts	US English
Languages	
• Online languages	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, ideographic languages, all freely scalable
Data carrier support (may only be an option)	
• CF card	Yes
• Applications/options (with WinCC flexible)	ProAgent, Internet Explorer, ThinClient

	SIMATIC OP 170B
Transfer under ProTool (upload/download)	
• Transfer of the configuration	MPI/PROFIBUS DP, serial (automatic transfer recognition)
Functionality (under ProTool)	
• Timer	Yes
• Password protection (number of levels)	9
• Help system	Yes
Protocols	
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) nd other non-Siemens drivers
Signaling system	
• Status messages	1000
• Alarm messages	1000
• System messages	Yes
• Message length (lines x characters)	1 x 70
• Number of process values in messages	8
• Message buffer	Ring buffer, 128 entries each
Recipes	
• Recipes	100
• Data records per recipe	200
• Entries/data record	200
• Recipe memory	32 KB integrated Flash, expandable
Process images	100
Picture elements	
• Text objects	2000 text elements
• Number	2000
• Graphics objects	Bitmaps, icons, background pictures, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons
Text lists/project	300
Graphics lists/project	100
Libraries	Ja
Variables	1.000
Logging/printer driver	
• Print functions	Messages, color print, hard copy
• Drivers	ESC/P2, PCL3/PCL6
Fonts	
• Language (keyboard fonts)	US English
Languages	
• Online languages	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, ideographic languages, all freely scalable
Expansion capability/openness	
• Transfer of the configuration	MPI/PROFIBUS DP (if available), serial (automatic transfer recognition)

SIMATIC OP 170B

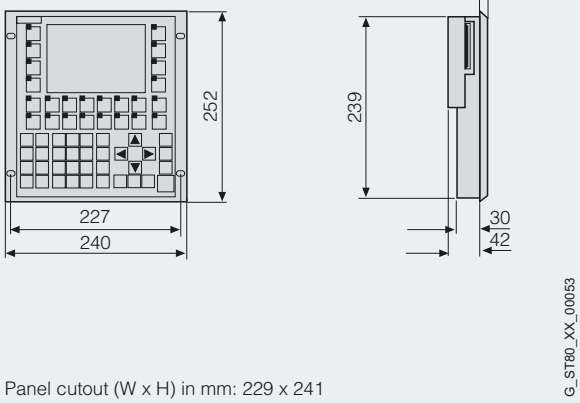
Ordering data		Order No.
SIMATIC OP 170B Operator Panel with 5.7" STN display, blue mode (4 levels), incl. mounting accessories	B	**6AV6 542-0BB15-2AX0**
Configuring		
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro		See Section 4
with SIMATIC WinCC flexible		See Section 4
Configuration set Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), RS 232 cable (5 m), MPI cable (5 m)		
• With SIMATIC ProTool/Lite configuration software		**6AV6 573-1FA06-0DX0**
• With SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 170micro/TP 170A/TP 170B/ OP 170B (WinCC flexible)		
• German		**6AV6 691-1DB01-0AA0**
• English		**6AV6 691-1DB01-0AB0**
• French		**6AV6 691-1DB01-0AC0**
• Italian		**6AV6 691-1DB01-0AD0**
• Spanish		**6AV6 691-1DB01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP 170/OP 170B Manual (ProTool)		
• German		**6AV6 591-1DC11-2AA0**
• English		**6AV6 591-1DC11-2AB0**
• French		**6AV6 591-1DC11-2AC0**
• Italian		**6AV6 591-1DC11-2AD0**
• Spanish		**6AV6 591-1DC11-2AE0**

		Order No.
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
Communication User Manual for Windows-based systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories		
Accessories for supplementary ordering		
CF cards CF card, 128 MB	A	**6AV6 574-2AC00-2AA0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T For terminal connection, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m		**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
System interfaces		See page 2/169
Connecting cables		See page 2/180

A) Subject to export regulations AL: N and ECCN: EAR99H
B) Subject to export regulations AL: N and ECCN: 5D002ENC3
C) Subject to export regulations AL: N and ECCN: EAR99S
D) Subject to export regulations AL: N and ECCN: 5D992B1

Dimension drawings

Dimensions in mm



Panel cutout (W x H) in mm: 229 x 241

More information

For further information, visit our website at

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.

SIMATIC OP 177B

Overview

- Touch/Key panel with comprehensive functions for operator control and monitoring of machines and plants
- Contents of message buffer are retained even when panel is disconnected, without batteries
- Pixel graphics STN display Bluemode/Color with touch screen and additional 32 function keys
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on board
- Ethernet is on board in the color version
- Drivers are also available for non-Siemens PLCs
- Mounting 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 offline 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 MMC, used for recipe data records and for backup of configuration/system data
- Integrated USB interface for connecting, for example, standard printers
- Mounting is compatible with OP17
- Simple engineering supported with comprehensive documentation on the SIMATIC HMI Manual Collection CD
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

Equipped with practical functions and a large user memory, the 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 Bluemode display or a 256-color STN display. The color variant complete with an integral Ethernet interface can be implemented with even greater flexibility. A USB interface is standard for both model types. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without batteries.

Design

- 256 colors with color display or 4 bluemodes with 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 with Risk processor and 2 MB user memory, plus additional integrated recipe memory
- The data in the message buffer are retained when panel is disconnected from the supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) are on board
- Ethernet (Profinet IO capability) with the color version
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Compact and later
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g. Cyrillic, traditional Chinese, simplified Chinese) and Online switching between up to 5 languages
- Multi Media Card slot, can be used for standard MMCs (for backing up recipe data sets, the parameter settings as well as the system data)
- Remote downloading of the configuration through all interfaces with automatic transfer recognition
- SINUMERIK, Sm@rt Access and Sm@rt Service options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting

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

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 each can be used to directly trigger functions and actions
- Indicator light
  for machine and plant status indication
- Predefined texts
  for labeling function keys, process diagrams and process values in any character size
- Help texts
  for process diagrams, 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 editor (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars
  are used for graphical display of dynamic values
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Arithmetic functions, limit value monitoring
  for reliable process control of inputs and outputs
- Online language switching between 5 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
- Message system;
  Freely-definable message classes (response to acknowledgement and presentation can be configured), management of operation, fault and system messages. Historical messages are also retained when the unit is disconnected from the power supply.
  Analog messages (limit messages) are possible in addition to bit messages.
- Recipe management
  - With additional data storage (on ext. storage medium)
  - Online/offline processing at 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/restore or for transporting recipe data sets
- Simple maintenance and configuration through:
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading of the configuration is possible over all device interfaces (with automatic transfer detection)
  - Individual contrast setting and calibration
  - Configuration simulation directly on the configuration computer

Configuration

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 (Compact and above). SIMATIC WinCC flexible represents a consistent further development of the well-proven ProTool family. Projects generated using ProTool can easily migrate to WinCC. When OP17 projects are converted, as a result of the new display technology, the project engineer must make certain changes following conversion. Support is however provided by WinCC flexible. Conversion of OP 170B projects is easy because all system commands can be entered using the on-screen keyboard. If WinCC flexible can be started directly from SIMATIC Manager, the data can be accessed directly in STEP 7 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". The "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; For further information, see Catalog NC 60.
- Sm@rt Service
  Remote operation and monitoring of SIMATIC HMI systems over TCP/IP networks
- Sm@rt Access
  Communication between HMI systems over TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system and a great deal more

SIMATIC OP 177B

Technical specifications

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	5.7"
• Resolution (W x H in pixels)	320 x 240	320 x 240
• Colors	4 shades of blue	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours
Operating mode		
• Operating options	Key and Touch	Key and Touch
• Function keys, programmable	32 function keys, 26 with LEDs	32 function keys, 26 with LEDs
• Membrane keyboard	Yes	Yes
• System keys	configurable	configurable
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/ barcode reader	USB/USB/-	USB/USB/-
Processor/HW	RISC 32 bits, 66 MHz	RISC 32 bits, 66 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2000 KB user memory/without additional memory for options	2000 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s	RS232 optional, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• USB (universal serial bus)	1 x USB	1 x USB
• Ethernet	No	1 x Ethernet (RJ45)
• SD/MMC SLOT	1 x SD/MMC slot	1 x SD/MMC slot
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 to +30 V DC	+18 to +30 V DC

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Clock	Software clock, without battery backup	Software clock, without battery backup
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL Class NK, ABS, BV, DNV, LRS, RINA, FM Class I Div. 2, UL, cULus, EX-Zone 2/22, Gost-R, C-TICK	CE, GL, ABS, BV, DNV, LRS, RINA, FM Class I Div. 2, UL, cULus, EX-Zone 2/22, Gost-R, C-TICK
Mechanical components/ dimensions		
• Front panel W x H (mm)	240 x 208.5	240 x 208.5
• Mounting cutout/depth W x H x D (mm)	228 x 195/ 45 mm depth of unit	228 x 195/ 45 mm depth of unit
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct LEDs (LEDs as S7 output I/O)	F1...F26	F1...F26
• DP direct keys (buttons as input peripherals)	F1...F32, K1...K10	F1...F32, K1...K10
Peripherals/applications/options		
• I/O	Printer	Printer
Configuring		
• Configuration tool	WinCC flexible	WinCC flexible

Technical specifications (continued)

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S7	with SIMATIC S7
Protocols		
• Interface to control (may only be an option)	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers	S7-200, S7-300/400Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	2000	2000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	80	80
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Battery-backed ring buffer, 256 entries each	Battery-backed ring buffer, 256 entries each
Recipes		
• Recipes	100	100
• Data records per recipe	200	200
• Entries/data record	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Process images	100	100
Picture elements		
• Text objects	2000 text elements	2000 text elements
• Graphics objects	Bitmaps, icons, icon (filling the screen), vector graphics	Bitmaps, icons, icon (filling the screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
- Number of bar graphs per project	500	500
- Number of curve diagrams per project	50	50

	SIMATIC OP 177B Bluemode (4 levels)	SIMATIC OP 177B Color (256 colors)
Lists		
• Text lists	300	300
• Graphics lists	100	100
• Libraries	Yes	Yes
• Variables	1000	1000
Security		
• Number of user groups	50	50
• Number of access rights	32	32
• Exportable passwords	Yes	Yes
Logging/printer driver		
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable	Tahoma, WinCC flexible standard, ideographic languages, all freely scalable
Data carrier support (may only be an option)		
• MMC card	Yes	Yes
Expansion capability/openness		
• OPP	Yes	Yes
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP (automatic transfer recognition)	MPI/PROFIBUS DP, Ethernet (automatic transfer recognition)

SIMATIC OP 177B

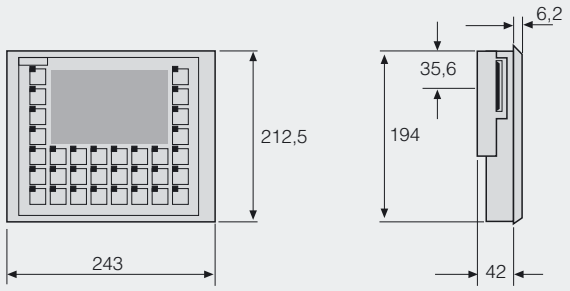
Ordering data		Order No.
SIMATIC OP 177B		
Operator panel with 5.7" STN display,		
• Blue mode (4 levels)	B	**6AV6 642-0DC01-1AX0**
• Color (256 colors)	B	**6AV6 642-0DA01-1AX0**
incl. mounting accessories		
OP 177B starter kit	B	**6AV6 551-2HA01-1AA0**
Consisting of:		
• OP 177B with STN display, color		
• SIMATIC WinCC flexible 2005 Compact configuring software		
• SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish)		
• MPI cable (5 m), PC/PPI cable		
• Software update service for 1 year		
Configuring		
• with SIMATIC WinCC flexible 2005 Compact		**6AV6 611-0AA01-1AA0**
Configuration set		
Consisting of: Configuration or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian and Spanish), PC/PPI cable, MPI cable (5 m)		
• with SIMATIC WinCC flexible Compact engineering software	D	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)		
Operating Instructions TP 177micro/TP 177A/TP 177B/ OP 177B (WinCC flexible)		
• German		**6AV6 691-1DG01-0AA1**
• English		**6AV6 691-1DG01-0AB1**
• French		**6AV6 691-1DG01-0AC1**
• Italian		**6AV6 691-1DG01-0AD1**
• Spanish		**6AV6 691-1DG01-0AE1**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		

	Order No.
Accessories	
Accessories for supplementary ordering	
Cover foil (pack of 10)	**6AV6 671-2XC00-0AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service pack Consisting of: • Installation sealing • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-2XA00-0AX0**
PROFIBUS connecting cable 830-1T For connection of data terminal, preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	**6XV1 830-1CH30**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
IE FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet; for ET 200S; 1 pack = 1 unit	**6GK1 901-1BB20-2AA0**
IE FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface; 1 pack = 1 unit	**6GK1 901-1BB10-2AA0**
90° angle adapter, 9-pin for RS422/485	**6AV6 671-8XD00-0AX0**
RS422-to-RS232 (V.24) converter Between TD/TP/OP and non-Siemens PLC with RS232 interface	**6AV6 671-8XJ00-0AX0**
Standard Multi Media Card	**6AV6 671-1CB00-0AX0**
System interfaces	See page 2/169
Connecting cables	See page 2/180

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

Dimension drawings

Dimensions in mm



More information

For further information, visit our website at

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.

SIMATIC TP 270

Overview

- Touch panel with extensive functional scope for demanding machine visualization applications
- Pixel graphics 5.7" or 10.4" STN Touch Screen (analog/resistive),
  color (256 colors)
- All interfaces on board, e.g. MPI, PROFIBUS DP, USB; Ethernet optional
- The SIMATIC TP 270 Touch Panels are innovative successors to the SIMATIC TP27 Touch Panels

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:
  - WinCC flexible /Sm@rtAccess for communication between various SIMATIC HMI systems
  - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines/plants via the Internet/intranet
- Reduces the service and start-up costs due to:
  - Backup/restore via USB, MPI, PROFIBUS DP, RS 232 (serial) and optionally via Ethernet (TCP/IP) or compact flash card (CF card)
  - Remote downloading/uploading of the configuration and firmware
  - Specific drivers can be downloaded
  - 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
- Standard hardware and software interfaces to increase flexibility:
  - CF card, used for recipe data sets and for backing up the configuration and system data
  - Integrated USB interface for "Hot plug-in/out" of I/O devices (printer, keyboard, mouse, barcode reader)
  - Standard Windows storage format (CSV) for archives and recipes for further processing using standard tools (e.g. MS Excel)
  - Optional Ethernet (TCP/IP) for centralized data management and project management;
    connection of PLC to SIMATIC S7 when configuring with WinCC flexible

Application

The SIMATIC TP 270 Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

Their operation without a hard disk or fan, real-time capability as well as short start-up times make demanding machine visualization tasks possible even under harsh industrial conditions.

Design

- 5.7" (TP 270 6") or 10.4" (TP 270 10") STN color display, 256 colors
- Resistive analog Touch
- Compact design with small installation depth
- Rugged plastic (TP 270 6") or aluminum die-cast housing (TP 270 10") with IP65/NEMA 4/NEMA 12 (front) or IP20 (rear of unit) degree of protection
- The front is resistant to various oils, greases and standard detergents
- High electromagnetic compatibility (EMC) and extreme vibration resistance
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - Serial RS 232 interface and RS 485/422 for process connections and for downloading the configuration (MPI and PROFIBUS DP up to 12 Mbit/s)
  - Serial RS 232 interface (printer, download/upload)
  - USB for mouse, keyboard, printer and downloading/uploading configurations
  - Optional Ethernet (TCP/IP) using network card for exchanging data with a higher-level PC, connecting a network printer and downloading/uploading configurations;
    connection of PLC to SIMATIC S7 when configuring with WinCC flexible
- Slot for compact flash card

Function

- Displaying and modifying process parameters
- Process display:
  - *TP 270 6":*
    QVGA resolution (320 x 240 pixels),
    TP 270 10":
    VGA resolution (640 x 480 pixels)
    with 256 colors for display elements
  - Vector graphics (various line-drawn and solid objects)
  - Dynamic positioning and dynamic showing/hiding of objects
  - Pixel graphics displays, curves and bar displays
  - Presentation of up to 8 curves in a curve field;
    curve graphics with scroll and zoom functions for accessing historical values and for flexible selection of the displayed time frame;
    cross-hair for reading off current values and display in a table
  - Comprehensive image libraries (SIMATIC HMI Symbol Library)
  - Graphics objects: Slider, gauge, clock
  - Cyclic function processing using timers
- Multiplex function for variables
- Message system
  - administration of status, fault and system messages
  - Status and fault messages with message history
  - Preconfigured message display, message window and message line
- Archiving of messages and process values (on CF Card, optionally over Ethernet)
  - Different archive types: short-term archive and sequence archive
  - Storage of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives through curves
  - External evaluation using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on CF Card)
  - Online/offline processing at the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools MS Excel and MS Access is possible
- PG functions STATUS/CONTROL VAR in combination with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Visual Basic Script, flexibility through the implementation of new functions including linking to ProTool variables (comparison operations, loops, etc.)
- Help texts
  for process diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Permanent window;
  permanent display area for the output of information that is not specific to the particular display (e.g. important process variables, date and time)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on the optional CF Card (Compact Flash Card) or optionally over Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload over USB/MPI/PROFIBUS DP/RS 232/Ethernet (optional)/modem and CF Card (optional)
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
- Import/export of all texts including messages in CSV format for translation using standard word processing programs

Additional functions when configuring with WinCC flexible

- Project-specific picture blocks that can be modified centrally
- Message 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
- Permanent window expanded by template concept;
  - generation of screen templates
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups
- Visual Basic Runtime object model
- Service functions
  (optionally with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation 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 of other SIMATIC HMI systems
  - Plant-wide scanning of information and archiving of process data

SIMATIC TP 270

Function (continued)

Configuration

Configuring is performed using the configuring software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Standard or Advanced (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

Applications/options

When configuring with ProTool

- SIMATIC ProAgent/MP;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)

When configuring with WinCC flexible

- WinCC flexible /ProAgent;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote control and monitoring as well as communication between different SIMATIC HMI systems (see WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote monitoring and servicing of machines/plants over the Internet/intranet (see WinCC flexible RT options)

Integration

The TP 270 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique [1)]
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - Omron
- Over Ethernet (TCP/IP) to higher-level PC and network printer (optionally over NE2000-compatible network card)

Additionally when configuring with WinCC flexible

- Ethernet communication with SIMATIC S7 (optionally over NE2000-compatible network card)
- Multi-protocol capability
- HTTP communication to other SIMATIC HMI systems (optionally with the "WinCC flexible /Sm@rtAccess" option)
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

1) Cannot be connected in conjunction with WinCC flexible

Note:
For further information, see "System interfaces".

Technical specifications

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	10.4"
• Resolution (W x H in pixels)	320 x 240	640 x 480
• Colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 40,000 hours	approx. 60,000 hours
Operating mode		
• Control elements	Touch screen	Touch screen
• Operating options	Touch	Touch
• Touch screen	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/ barcode reader	USB/USB/USB	USB/USB/USB
Processor/HW	RISC 32 bits, 180 MHz	RISC 32 bits, 180 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2028 KB user memory/without additional memory for options	2028 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot	1 x CF card slot
• USB (universal serial bus)	1 x USB	1 x USB
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 to +30 V DC	+18 to +30 V DC
• Rated current	0.6 A	0.6 A
• Output	15 W	15 W
• UPS can be connected (serial)	Yes	Yes
• Backup battery	Optional 3.6 V	Optional 3.6 V
Clock	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, UL, cULus, EX zone 2/22, C-TICK	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, UL, cULus, EX zone 2/22, C-TICK

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Mechanical components/ dimensions		
• Front panel W x H (mm)	212 x 156	335 x 275
• Mounting cutout/depth W x H x D (mm)	198 x 142/ 59 mm depth of unit	310 x 248/ 59 mm depth of unit
• Weight	1 kg	4.5 kg
Ambient conditions		
• Max. relative humidity (in %)	85%	85%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct keys (buttons as input peripherals)	4 bytes or coded	5 bytes or coded
Peripherals/applications/options		
• I/O	Printer, bar-code reader	Printer, bar-code reader
• Applications/options (with ProTool)	ProAgent	ProAgent
Configuring		
• Configuration tool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols		
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers

SIMATIC TP 270

Technical specifications (continued)

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Functionality (with WinCC flexible) (continued)		
Signaling system		
• Number of messages	4000	4000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	70	70
• Number of process values per message	8	8
• Acknowledgement groups	99	99
• Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes		
• Recipes	300	300
• Data records per recipe	500	500
• Entries/data record	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images	300	300
Picture elements		
• Text objects	10,000 text elements	10,000 text elements
• Fields per screen	200	200
• Variables/screen	200	200
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, hidden buttons	Diagrams, hidden buttons
Variables	2048	2048
Archiving		
• Number of archives per project	20	20
• Number of process tags per archive	0	0
• Number of entries per archive	10,000	10,000
• Archive types	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive
• Memory location	CF card, Ethernet	CF card, 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	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

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Functionality (with WinCC flexible) (continued)		
Security		
• Number of user groups	10	10
• Exportable passwords	Yes	Yes
Visual Basic Script	not possible	not possible
Logging/printer driver		
• Printing/logging	Messages, report/log, color print	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support (may only be an option)		
• CF card	Yes	Yes
• Applications/options (with WinCC flexible)	ProAgent	ProAgent
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP, serial, USB, Ethernet (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet (automatic transfer recognition)

Technical specifications (continued)

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Functionality (under ProTool)		
• Timer	Yes	Yes
• Password protection (number of levels)	9	9
• Help system	Yes	Yes
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7
• PG function (status/control)	Yes	Yes
Protocols		
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Status messages	2000	2000
• Alarm messages	2000	2000
• System messages	Yes	Yes
• Message length (lines x characters)	1 x 70	1 x 70
• Number of process values in messages	8	8
• Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes		
• Recipes	300	300
• Data records per recipe	500	500
• Entries/data record	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images	300	300
Picture elements		
• Text objects	10,000 text elements	10,000 text elements
• Fields per screen	200	200
• Variables per screen	200	200
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
Variables	2048	2048

	SIMATIC TP 270 5,7" Color STN Display	SIMATIC TP 270 10,4" Color STN Display
Functionality (under ProTool) (continued)		
Archiving		
• Number of archives per project	20	20
• Number of process tags per archive	20	20
• Number of entries per archive	500,000	500,000
• Archive types	Short-term archive, sequence archive, message archive, process-value archive	Short-term archive, sequence archive, message archive, process-value archive
• Memory location	Number of entries per archive, sequence archive	Number of entries per archive, sequence archive
• 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	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
Visual Basic script	Number = 50/number of lines per script = 20	Number = 50/number of lines per script = 20
Logging/printer driver		
• Print functions	Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy
• Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Language (keyboard fonts)	US English	US English
Languages		
• Online languages	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support		
• CF card	Yes	Yes

SIMATIC TP 270

Ordering data		Order No.
SIMATIC TP 270		
Touch Panel with		
• 5.7" color STN display	B	**6AV6 545-0CA10-0AX0**
• 10.4" color STN display	B	**6AV6 545-0CC10-0AX0**
incl. mounting accessories		
Configuring		
with SIMATIC ProTool and ProTool/Pro		See Section 4
with SIMATIC WinCC flexible		See Section 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• WinCC flexible Standard engineering software		
• SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish)		
• Configuration cable USB master-master between PG/PC and panel		
• MPI cable, 5 m		
Applications/options		
When configuring with ProTool		
• SIMATIC ProAgent/MP		See Section 4
When configuring with WinCC flexible		
• WinCC flexible /ProAgent		See Section 4
• WinCC flexible /Sm@rtAccess		See Section 4
• WinCC flexible/Sm@rtService		See Section 4

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

	Order No.
Documentation (to be ordered separately)	
Operating Instructions TP 270/OP 270 and MP 270B (WinCC flexible)	
• German	**6AV6 691-1DD01-0AA0**
• English	**6AV6 691-1DD01-0AB0**
• French	**6AV6 691-1DD01-0AC0**
• Italian	**6AV6 691-1DD01-0AD0**
• Spanish	**6AV6 691-1DD01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-0AA0**
• English	**6AV6 691-1AB01-0AB0**
• French	**6AV6 691-1AB01-0AC0**
• Italian	**6AV6 691-1AB01-0AD0**
• Spanish	**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-0AA0**
• English	**6AV6 691-1CA01-0AB0**
TP/OP 270 and MP 270B (ProTool) Manual	
• German	**6AV6 591-1DC20-0AA0**
• English	**6AV6 591-1DC20-0AB0**
• French	**6AV6 591-1DC20-0AC0**
• Italian	**6AV6 591-1DC20-0AD0**
• Spanish	**6AV6 591-1DC20-0AE0**
ProTool User Manual for configuring Windows-based systems	
• German	**6AV6 594-1MA06-1AA0**
• English	**6AV6 594-1MA06-1AB0**
• French	**6AV6 594-1MA06-1AC0**
• Italian	**6AV6 594-1MA06-1AD0**
• Spanish	**6AV6 594-1MA06-1AE0**

Ordering data

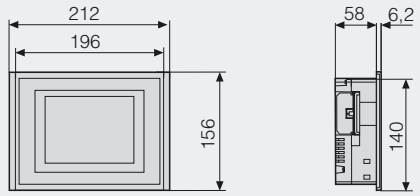
		Order No.
Documentation (to be ordered separately) (continued)		
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories		
CF cards		
CF card, 128 MB	A	**6AV6 574-2AC00-2AA0**
Backup battery Lithium battery, DC 3.6 V; 1.7 Ah for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B, MP 370		**W79084-E1001-B2**
Accessories for supplementary ordering		
Cover foil to protect the touch front against fouling/scratching (set of 10)		
• for TP 270 6"		**6AV6 574-1AD00-4DX0**
• for TP 270 10"		**6AV6 574-1AD00-4CX0**
Service pack for TP 270 6" Consisting of: • Installation sealing • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal block (twin block)		**6AV6 574-1AA00-4AX0**
Service pack for TP 270 10" • Installation sealing • 2 sets of labeling strips (for OPs) • 10 tensioning clamps • Plug-in terminal block (twin block) • Machinist's wrench		**6AV6 574-1AA00-2CX0**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
TTY-RS 232 converter for connection with S5 CPUs, length 3.2 m; Canon 15-pin – 25-pin		**6ES5 734-1BD20**
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

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

Dimension drawings

Dimensions in mm

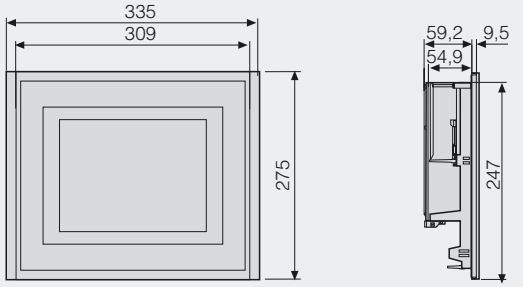


G_ST80_XX_00044

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

TP 270 6"

Dimensions in mm



G_ST80_XX_00043

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

TP 270 10"

More information

For further information, visit our website at

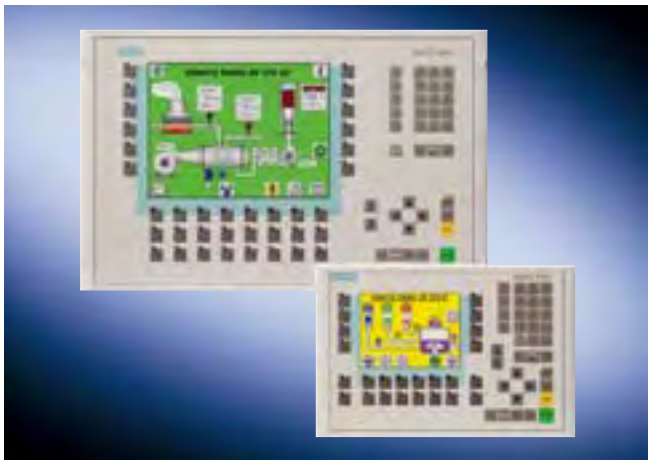
http://www.siemens.com/panels

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.

SIMATIC OP 270

Overview



- Operator panel with comprehensive functions for demanding machine visualization tasks
- Pixel graphics 5.7" or 10.4" STN display, color (256 colors)
- *OP 270 6":*
  36 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
  OP 270 10":
  38 system keys, 36 freely-configurable and freely-inscribable function keys (28 with LEDs)
- All interfaces on board, e.g. MPI, PROFIBUS DP, USB; Ethernet optional
- SIMATIC OP 270 Operator Panels are the innovative successors of the SIMATIC OP27 Operator Panels

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:
  - WinCC flexible /Sm@rtAccess for communication between various SIMATIC HMI systems
  - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines/plants via the Internet/intranet
- Reduces the service and start-up costs due to:
  - Backup/restore via USB, MPI, PROFIBUS DP, RS 232 (serial) and optionally via Ethernet (TCP/IP) or compact flash card (CF card)
  - Remote downloading/uploading of the configuration and firmware
  - Specific drivers can be downloaded
  - Long service life of the backlighting
- Graphics library 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
- Standard hardware and software interfaces to increase flexibility:
  - CF card, used for recipe data sets and for backing up the configuration and system data
  - Integrated USB interface for "Hot plug-in/out" of I/O devices (printer, keyboard, mouse, barcode reader)
  - Standard Windows storage format (CSV) for archives and recipes for further processing using standard tools (e.g. MS Excel)
  - Optional Ethernet (TCP/IP) for centralized data management and project management;
    connection of PLC to SIMATIC S7 when configuring with WinCC flexible

Application

The OP 270 Operator Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building services automation. They are in use in an extensive range of sectors and applications.

Their operation without a hard disk or fan, real-time capability as well as short start-up times satisfy demanding machine visualization tasks even under harsh industrial conditions.

Design

- 5.7" (OP 270 6") or 10.4" (OP 270 10") STN color display, 256 colors
- Membrane keyboard:
  - *OP 270 6":*
    36 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
    OP 270 10":
    38 system keys, 36 freely-configurable and freely-inscribable function keys (28 with LEDs)
- Compact design with small installation depth
- Rugged plastic (OP 270 6") or aluminum die-cast housing (OP 270 10") with IP65/NEMA 4/NEMA 12 (front) or IP20 (rear of unit) degree of protection
- The front is resistant to various oils, greases and standard detergents
- High electromagnetic compatibility (EMC) and extreme vibration resistance
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - Serial RS 232 interface and RS 485/422 for process connections and for downloading the configuration (MPI and PROFIBUS DP up to 12 Mbit/s)
  - Serial RS 232 interface (printer, download/upload)
  - USB for mouse, keyboard, printer and downloading/uploading configurations
  - Optional Ethernet (TCP/IP) using network card for exchanging data with a higher-level PC, connecting a network printer and downloading/uploading configurations;
    connection of PLC to SIMATIC S7 when configuring with WinCC flexible
- Slot for compact flash card

Function

- Displaying and modifying 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.
- Process display:
  - *OP 270 6":*
    QVGA resolution (320 x 240 pixels),
    OP 270 10":
    VGA resolution (640 x 480 pixels)
    with 256 colors for display elements
  - Vector graphics (various line-drawn and solid objects)
  - Dynamic positioning and dynamic showing/hiding of objects
  - Pixel graphics displays, curves and bar displays
  - Presentation of up to 8 curves in a curve field;
    Curve display with scroll and zoom functions for access to the history and for flexible selection of the period for presentation; read-off line for determining the actual values and display in a table
  - Comprehensive image libraries (SIMATIC HMI Symbol Library)
  - Graphics objects: Slider, gauge, clock
  - Cyclic function processing using timers
- Multiplex function for variables
- Message system
  - administration of status, fault and system messages
  - Status and fault messages with message history
  - Preconfigured message display, message window and message line
- Archiving of messages and process values
  (on CF Card, optionally over Ethernet)
  - Different archive types: short-term archive and sequence archive
  - Storage of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives through curves
  - External evaluation using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on CF Card)
  - Online/offline processing at the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools MS Excel and MS Access is possible
- PG functions STATUS/CONTROL VAR in combination with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Visual Basic Script, flexibility through the implementation of new functions including linking to ProTool variables (comparison operations, loops, etc.)
- Help texts
  for process diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Permanent window
  permanent display area for the output of information that is not specific to the particular display (e.g. important process variables, date and time)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on the optional CF Card (Compact Flash Card) or optionally over Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload over USB/MPI/PROFIBUS DP/RS 232/Ethernet (optional)/modem and CF Card (optional)
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
- Import/export of all texts including messages in CSV format for translation using standard word processing programs

Additional functions when configuring with WinCC flexible

- Project-specific picture blocks that can be modified centrally
- Message 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
- Permanent window expanded by template concept;
  - generation of screen templates
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups
- Visual Basic Runtime object model
- Service functions
  (optionally with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation 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 of other SIMATIC HMI systems
  - Plant-wide scanning of information and archiving of process data

SIMATIC OP 270

Function (continued)

Configuration

Configuring is performed using the configuring software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Standard or Advanced (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

Applications/options

When configuring with ProTool

- SIMATIC ProAgent/MP;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)

When configuring with WinCC flexible

- WinCC flexible /ProAgent;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote control and monitoring as well as communication between different SIMATIC HMI systems (see WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote monitoring and service of machines/plants over the Internet/Intranet (see WinCC flexible RT options)

Integration

The SIMATIC OP 270 Operator Panels 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 [1)]
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - Omron
- Over Ethernet (TCP/IP) to higher-level PC and network printer (optionally over NE2000-compatible network card)

Additionally when configuring with WinCC flexible

- Ethernet communication with SIMATIC S7 (optionally over NE2000-compatible network card)
- Multi-protocol capability
- HTTP communication to other SIMATIC HMI systems (optionally with the "WinCC flexible /Sm@rtAccess" option)
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

1) Cannot be connected in conjunction with WinCC flexible

Note:
For further information, see "System interfaces".

Technical specifications

	SIMATIC OP 270 5,7“ Color STN Display	SIMATIC OP 270 10,4“ Color STN Display
Display		
• Display type	STN liquid crystal display (LCD)	STN liquid crystal display (LCD)
• Size	5.7"	10.4"
• Resolution (W x H in pixels)	320 x 240	640 x 480
• Colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 40,000 hours	approx. 60,000 hours
Operating mode		
• Control elements	Membrane keyboard	Membrane keyboard
• Operating options	Key	Key
• Function keys, programmable	24 function keys, 18 with LEDs	36 function keys, 28 with LEDs
• Membrane keyboard	Yes	Yes
• System keys	36	38
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes
• External mouse/keyboard/bar-code reader	USB/USB/USB	USB/USB/USB
Processor/HW	RISC 32 bits, 180 MHz	RISC 32 bits, 180 MHz
Operating systems	Windows CE	Windows CE
Memory		
• Type	Flash/RAM	Flash/RAM
• Usable memory for project data	2028 KB user memory/without additional memory for options	2028 KB user memory/without additional memory for options
Interfaces (some only as options)		
• Interfaces	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot	1 x CF card slot
• USB (universal serial bus)	1 x USB	1 x USB
Supply voltage		
• Supply voltage	24 V DC	24 V DC
• Permissible range	+18 to +30 V DC	+18 to +30 V DC
• Rated current	0.6 A	0.6 A
• Output	15 W	15 W
• UPS can be connected (serial)	Yes	Yes
• Backup battery	Optional 3.6 V	Optional 3.6 V
Clock	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized

	SIMATIC OP 270 5,7“ Color STN Display	SIMATIC OP 270 10,4“ Color STN Display
Degree of protection		
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20
Certification (some only as options)	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, UL, cULus, EX zone 2/22, C-TICK	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, UL, cULus, EX zone 2/22, C-TICK
Mechanical components/ dimensions		
• Front panel W x H (mm)	308 x 204	483 x 310
• Mounting cutout/depth W x H x D (mm)	282 x 178/ 59 mm depth of unit	436 x 295/ 55 mm depth of unit
• Weight	1 kg	6 kg
Ambient conditions		
• Max. relative humidity (in %)	90%	90%
• Mounting position	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°
• Temperature		
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +35 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)		
• DP direct LEDs (LEDs as S7 output I/O)	F1...F8, K1...K10	F1...F12, K1...K16
• DP direct keys (buttons as input peripherals)	F1...F14, K1...K104 byte or coded	F1...F20, K1...K165 byte or coded
Peripherals/applications/options		
• I/O	Printer, bar-code reader	Printer, bar-code reader
• Applications/options (with ProTool)	ProAgent	ProAgent
Configuring		
• Configuration tool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible

SIMATIC OP 270

Technical specifications (continued)

	SIMATIC OP 270 5,7" Color STN Display	SIMATIC OP 270 10,4" Color STN Display
Functionality (with WinCC flexible)		
• Scheduler	Yes	Yes
• Help system	Yes	Yes
• Status/Control	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols		
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multi-link), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Number of messages	4000	4000
• Discrete alarms	Yes	Yes
• Analog messages	Yes	Yes
• Message length (in characters)	70	70
• Number of process values per message	8	8
• Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes		
• Recipes	300	300
• Data records per recipe	500	500
• Entries/data record	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images	300	300
Picture elements		
• Text objects	10,000 text elements	10,000 text elements
• Fields per screen	200	200
• Variables/screen	200	200
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, bar graphs, hidden buttons	Diagrams, bar graphs, hidden buttons
Variables	2048	2048

	SIMATIC OP 270 5,7" Color STN Display	SIMATIC OP 270 10,4" Color STN Display
Archiving		
• Number of archives per project	20	20
• Number of process tags per archive	0	0
• Number of entries per archive	10,000	10,000
• Archive types	Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive
• Memory location	CF card, Ethernet	CF card, 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	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
Security		
• Number of user groups	10	10
• Exportable passwords	Yes	Yes
Visual Basic script	Not possible	Not possible
Logging/printer driver		
• Printing/logging	Messages, report/log, color print	Messages, report/log, color print
• Printer driver	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Keyboard fonts	US English	US English
Languages		
• Online languages	5	5
• Project languages:	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character sets	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support (may only be an option)		
• CF card	Yes	Yes
• Applications/options (with WinCC flexible)	ProAgent	ProAgent

Technical specifications (continued)

	SIMATIC OP 270 5,7" Color STN Display	SIMATIC OP 270 10,4" Color STN Display
Transfer under ProTool (upload/download)		
• Transfer of the configuration	MPI/PROFIBUS DP, serial, USB, Ethernet (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet (automatic transfer recognition)
Functionality (under ProTool)		
• Timer	Yes	Yes
• Password protection (number of levels)	9	9
• Help system	Yes	Yes
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7
• PG function (status/control)	Yes	Yes
Protocols		
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system		
• Status messages	2000	2000
• Alarm messages	2000	2000
• System messages	Yes	Yes
• Message length (lines x characters)	1 x 70	1 x 70
• Number of process values in messages	8	8
• Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes		
• Recipes	300	300
• Data records per recipe	500	500
• Entries/data record	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images	300	300
Picture elements		
• Text objects	10,000 text elements	10,000 text elements
• Fields per screen	200	200
• Variables per screen	200	200
• Graphics objects	Bitmaps,icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons

	SIMATIC OP 270 5,7" Color STN Display	SIMATIC OP 270 10,4" Color STN Display
Variables	2048	2048
Archiving		
• Number of archives per project	20	20
• Number of process tags per archive	20	20
• Number of entries per archive	500,000	500,000
• Archive types	Short-term archive, sequence archive, message archive, process-value archive	Short-term archive, sequence archive, message archive, process-value archive
• Memory location	Number of entries per archive, sequence archive	Number of entries per archive, sequence archive
• 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive	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
Visual Basic Script	Anzahl = 50 / Anzahl Zeilen pro Script = 20	Anzahl = 50 / Anzahl Zeilen pro Script = 20
Logging/printer driver		
• Print functions	Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy
• Drivers	ESC/P2, PCL3/PCL6	ESC/P2, PCL3/PCL6
Fonts		
• Language (keyboard fonts)	US English	US English
Languages		
• Online languages	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support		
• CF card	Yes	Yes

SIMATIC OP 270

Ordering data		Order No.
SIMATIC OP 270		
Operator Panel with		
• 5.7" color STN display	B	**6AV6 542-0CA10-0AX0**
• 10.4" color STN display	B	**6AV6 542-0CC10-0AX0**
incl. mounting accessories		
Configuring		
with SIMATIC ProTool or ProTool/Pro		See Section 4
with SIMATIC WinCC flexible		See Section 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• WinCC flexible Standard engineering software		
• SIMATIC HMI Manual Collection (CD), 5 languages (English, French, German, Italian, Spanish)		
• Configuration cable USB master-master between PG/PC and panel		
• MPI cable, 5 m		
Applications/options		
When configuring with ProTool		
• SIMATIC ProAgent/MP		See Section 4
When configuring with WinCC flexible		
• WinCC flexible /ProAgent		See Section 4
• WinCC flexible /Sm@rtAccess		See Section 4
• WinCC flexible/Sm@rtService		See Section 4
Documentation (to be ordered separately)		
Operating Instructions TP 270/OP 270 and MP 270B (WinCC flexible)		
• German		**6AV6 691-1DD01-0AA0**
• English		**6AV6 691-1DD01-0AB0**
• French		**6AV6 691-1DD01-0AC0**
• Italian		**6AV6 691-1DD01-0AD0**
• Spanish		**6AV6 691-1DD01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP/OP 270 and MP 270B (ProTool) Manual		
• German		**6AV6 591-1DC20-0AA0**
• English		**6AV6 591-1DC20-0AB0**
• French		**6AV6 591-1DC20-0AC0**
• Italian		**6AV6 591-1DC20-0AD0**
• Spanish		**6AV6 591-1DC20-0AE0**

		Order No.
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
Communication User Manual for Windows-based systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM		
5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
Accessories		
CF cards		
CF card, 128 MB	A	**6AV6 574-2AC00-2AA0**
Backup battery		**W79084-E1001-B2**
Lithium battery, DC 3.6 V; 1.7 Ah for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B, MP 370		
Accessories for supplementary ordering		
Service package for OP 270 6“		**6AV6 574-1AA00-4AX0**
Consisting of:		
• Installation sealing		
• 2 sets of labeling strips		
• 7 tensioning clamps		
• Plug-in terminal block (twin block)		
Service package for OP 270 10“		**6AV6 574-1AA00-2DX0**
Consisting of:		
• Installation sealing		
• 2 sets of labeling strips		
• 10 tensioning clamps		
• Plug-in terminal block (twin block)		
• Socket wrench		
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
TTY-RS 232 converter		**6ES5 734-1BD20**
for connection with S5 CPUs, length 3.2 m; Canon 15-pin – 25-pin		
RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
System interfaces		See page 2/169
Connecting cables		See page 2/180

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

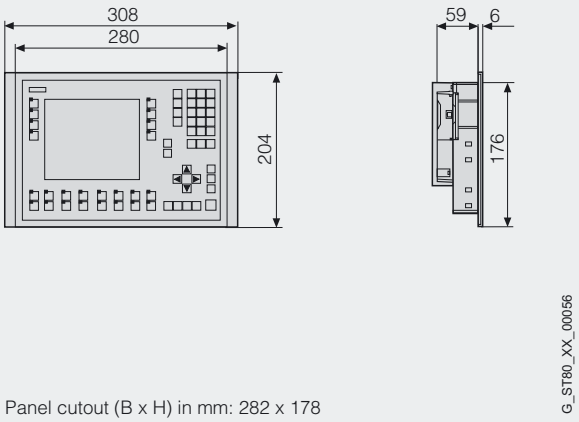
B) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

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

Dimension drawings

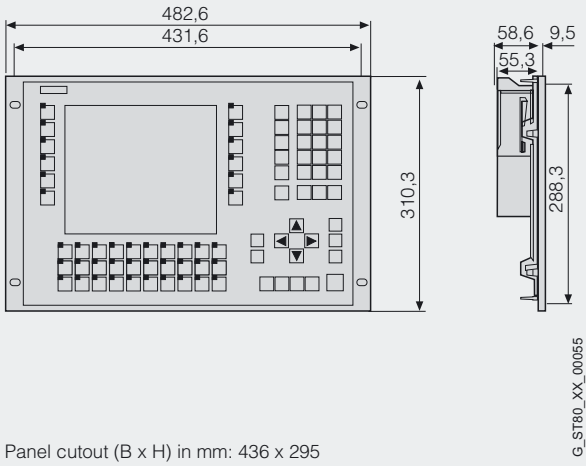
Dimensions in mm



Panel cutout (B x H) in mm: 282 x 178

OP 270 6“

Dimensions in mm



Panel cutout (B x H) in mm: 436 x 295

OP 270 10“

More information

For further information, visit our website at

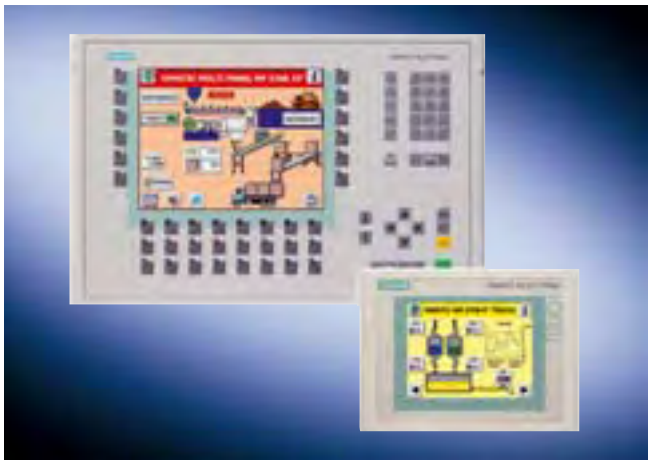
http://www.siemens.com/panels

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.

SIMATIC MP 270B

Overview



- Like operator panels, Multi Panels (MP) are used for on-site machine operation and monitoring
- Their functionality can be expanded by installing additional Windows CE applications (Multi Panel and Panel options)
- The SIMATIC MP 270B units based on Windows CE combine the ruggedness of operator panels with the flexibility of PCs
- Pixel-graphics 5.7" or 10.4" TFT display, color (256 colors)
- *MP 270B 10" Key:*
  38 system keys, 36 freely configurable and freely inscribable function keys (28 with LED)
  MP 270B 6" and 10" Touch:
  Touch screen (analog/resistive)
- All interfaces on board, e.g. MPI, PROFIBUS DP, USB, Ethernet, serial

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:
  - ThinClient/MP for use as terminal client on a Windows terminal server (only MP 270B 10" Touch)
  - WinCC flexible /Sm@rtAccess for communication between various SIMATIC HMI systems
  - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines/plants via the Internet/intranet
  - WinCC flexible /OPC server for communication with applications from various vendors
  - MS Pocket Internet Explorer (included in scope of supply)
- Reduces the service and start-up costs due to:
  - Backup/restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP, RS 232 (serial) or optionally via PC/CF card
  - Remote downloading/uploading of the configuration and firmware
  - Specific drivers can be downloaded
  - 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
- Standard hardware and software interfaces to increase flexibility:
  - PC/CF card slot for memory expansions, backup/restore or additional interfaces
  - Ethernet (TCP/IP) for centralized data management and project management;
    connection of PLC to SIMATIC S7 possible when configuring with WinCC flexible
  - Standard Windows storage format (CSV) for archives and recipes enables further processing using standard tools (e.g. MS Excel)

Application

The SIMATIC MP 270B Multi Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site – whether in production automation, process automation or building service automation. They are used in a variety of sectors and applications and their field of applications can be expanded using the multi panel options, e.g. by displaying HTML documents via the MS Pocket Internet Explorer.

Windows CE provides the fundamentals for use in harsh industrial environments. The lack of a hard disk and fan means that it can also be used in applications in which high levels of vibration or dust place restrictions on the operation of a PC. Short power-up times mean that the multi panels are quickly ready for use.

Design

- 5.7" or 10.4" TFT color display, 256 colors
- *MP 270B Keys:*
  - Membrane keyboard, 38 system keys, 36 freely-configurable and freely-inscribable function keys (28 with LEDs)
- *MP 270 B Touch*:
  - Touch screen (analog/resistive)
- Compact construction with a mounting depth of only 55 mm (MP 270B Touch) or 59 mm (MP 270B Keys)
- 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:
  - 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 down-loading/uploading configurations
  - Ethernet interface (TCP/IP) for data transmission to a higher-level PC and for connecting a network printer
- Slot for Compact Flash card (CF card)
- Slot for PC card

Function

- Displaying and modifying process parameters
- Function keys (only for MP 270B 10“ Key)
  are used 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 270B 6“ Touch: QVGA resolution (320 x 240 pixels)
    MP 270B 10“: VGA resolution (640 x 480 pixels)
    with 256 colors for display elements
  - Vector graphics (various line-drawn and solid objects)
  - Dynamic positioning and dynamic showing/hiding of objects
  - Pixel graphics displays, curves and bar displays
  - Presentation of up to 8 curves in a curve field;
    curve graphics with scroll and zoom functions for accessing historical values and for flexible selection of the displayed time frame;
    cross-hair for reading off current values and display in a table Comprehensive image libraries (SIMATIC HMI Symbol Library)
  - Graphics objects: Slider, gauge, clock
  - Cyclic function processing using timers
- Multiplex function for variables
- Message system
  - administration of status, fault and system messages
  - Status and fault messages with message history
  - Preconfigured message display, message window and message line
- Archiving of messages and process values (on PC/CF Card or network drives over Ethernet)
  - Different archive types: short-term archive and sequence archive
  - Storage of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives through curves
  - External evaluation using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on PC/CF Card)
  - Online/offline processing at the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools MS Excel and MS Access is possible
- PG functions STATUS/CONTROL VAR in combination with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Display of HTML documents with MS Pocket Internet Explorer
- Visual Basic Script, flexibility through the implementation of new functions including linking to ProTool variables (comparison operations, loops, etc.)
- Help texts
  for process diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Permanent window;
  permanent display area for the output of information that is not specific to the particular display (e.g. important process variables, date and time)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on a PC/CF card (optional) or over Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC
  - Download and upload of configuration via Ethernet/USB/MPI/PROFIBUS DP/RS232/modem and CF card (optional)
  - Automatic transfer identification
  - Configuration simulation directly on the configuration computer
- Import/export of all texts including messages in CSV format for translation using standard word processing programs

Additional functions when configuring with WinCC flexible

- Project-specific picture blocks that can be modified centrally
- Message 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
- Permanent window expanded by template concept;
  - generation of screen templates
- Password system
  - User-oriented access protection according to requirements of specific sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups
- Visual Basic Runtime object model
- Service functions
  (optionally with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation 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 of other SIMATIC HMI systems
  - Plant-wide scanning of information and archiving of process data

Configuration

Configuring is performed using the configuring software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (not MP 270B 6" Touch; see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Standard or Advanced (see HMI software/ SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

SIMATIC MP 270B

Function (continued)

Applications/options

When configuring with ProTool

- SIMATIC ProAgent/MP;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- SIMATIC ThinClient/MP (MP 270B 10“ Touch only);
  use of the Multi Panel Touch variant as MS Windows terminal client for utilizing the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)

When configuring with WinCC flexible

- SIMATIC ThinClient/MP (MP 270B10" Touch only)
  Use of the Multi Panel Touch variant as MS Windows terminal client for utilizing the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)
- WinCC flexible /ProAgent;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- 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 and plant over the Internet/Intranet (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
- WinCC flexible /OPC server
  Communication with applications (e.g. MES, ERP, or applications in the office environment) from various manufacturers (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)

Integration

The MP 270B can be connected to:

- SIMATIC S7:S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique [1)]
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - Omron
- Over Ethernet (TCP/IP) to higher-level PC, network printer

Additionally when configuring with WinCC flexible

- Ethernet communication with SIMATIC S7
- Multi-protocol capability
- OPC XML server (optionally with "WinCC flexible /OPC Server")
- HTTP communication to other SIMATIC HMI systems (optionally with the "WinCC flexible /Sm@rtAccess" option)
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

1) Cannot be connected in conjunction with WinCC flexible

Note:
For further information, see "System interfaces".

Technical specifications

	SIMATIC MP 270B 6“ Color-TFT-Display, Touch	SIMATIC MP 270B 10“ Color-TFT-Display, Keyboard	SIMATIC MP 270B 10“ Color-TFT-Display, Touch
Display			
• Display type	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)
• Size	5.7"	10.4"	10.4"
• Resolution (W x H in pixels)	320 x 240	640 x 480	640 x 480
• Colors	256 colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours	approx. 50,000 hours
Operating mode			
• Control elements	Touch screen	Membrane keyboard	Touch screen
• Operating options	Touch	Key	Touch
• Function keys, programmable	none	36 function keys, 28 with LEDs	none
• Membrane keyboard	No	Yes	No
• System keys	0	38	0
• Touch screen	Analog, resistive	No	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes	Yes/Yes
• External mouse/keyboard/ barcode reader	USB/USB/USB	USB/USB/USB	USB/USB/USB
Processor/HW	RISC 64 bits, 180 MHz	RISC 64 bits, 180 MHz	RISC 64 bits, 180 MHz
Operating systems	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Usable memory for project data	4096 KB user memory/without additional memory for options	4096 KB user memory/without additional memory for options	4096 KB user memory/without additional memory for options
Interfaces (some only as options)			
• Interfaces	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	2 x RS232, 1 x RS422, 1 x RS485 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 (universal serial bus)	1 x USB	1 x USB	1 x USB
• Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Supply voltage			
• Supply voltage	24 V DC	24 V DC	24 V DC
• Permissible range	+18 V to +30 V DC	+18 V to +30 V DC	+18 V to +30 V DC
• Rated current	0.75 A	0.9 A	0.9 A
• Output	18 W	22 W	22 W
• UPS can be connected (serial)	Yes	Yes	Yes
• Backup battery	Optional 3.6 V	Optional 3.6 V	Optional 3.6 V
Clock	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized
Degree of protection			
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20	IP20
Certification (some only as options)	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, cULus, EX zone 2/22, C-TICK	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, cULus, EX zone 2/22, C-TICK	CE, GL, ABS, DNV, LRS, FM Class I Div. 2, cULus, EX zone 2/22, C-TICK
Mechanical components/ dimensions			
• Front panel W x H (mm)	212 x 156	483 x 310	335 x 275
• Mounting cutout/depth W x H x D (mm)	198 x 142/59 mm depth of unit	436 x 295/55 mm depth of unit	310 x 248/59 mm depth of unit
• Weight	1 kg	6 kg	4.5 kg

SIMATIC MP 270B

Technical specifications (continued)

	SIMATIC MP 270B 6“ Color-TFT-Display, Touch	SIMATIC MP 270B 10“ Color-TFT-Display, Keyboard	SIMATIC MP 270B 10“ Color-TFT-Display, Touch
Ambient conditions			
• Max. relative humidity (in %)	90%	90%	90%
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°	+/- 35°
• Temperature			
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +40 °C	0 to +40 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)			
• DP direct LEDs (LEDs as S7 output I/O)		F1...F12, K1...K16	
• DP direct keys (buttons as input peripherals)	5 bytes or coded	F1...F20, K1...K16	5 bytes or coded
Peripherals/applications/options			
• I/O	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
• Applications/options (with ProTool)	ProAgent, Internet Explorer	ProAgent, Internet Explorer	ProAgent, Internet Explorer, ThinClient
Configuring			
• Configuration tool	-	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible	WinCC flexible
Functionality (with WinCC flexible)			
• Scheduler	Yes	Yes	Yes
• Help system	Yes	Yes	Yes
• Status/Control	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols			
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system			
• Number of messages	4000	4000	4000
• Discrete alarms	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message length (in characters)	80	80	80
• Number of process values per message	8	8	8
• Acknowledgement groups	99	99	99
• Message buffer	Ring buffer, 512 entries each	Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes			
• Recipes	300	300	300
• Data records per recipe	500	500	500
• Entries/data record	1000	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images	500	500	500

Technical specifications (continued)

	SIMATIC MP 270B 6“ Color-TFT-Display, Touch	SIMATIC MP 270B 10“ Color-TFT-Display, Keyboard	SIMATIC MP 270B 10“ Color-TFT-Display, Touch
Picture elements			
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements
• Fields per screen	200	200	200
• Variables/screen	200	200	200
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
Variables	2048	2048	2048
Archiving			
• Number of archives per project	20	20	20
• Number of process tags per archive	20	20	20
• Number of entries per archive	10,000	10,000	10,000
• Archive 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
• Memory location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• 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
• Online evaluation	Using trend curves	Using trend curves	Using trend curves
Filters			
• Security			
- Number of user groups	10	10	10
- Number of access rights	32	32	32
- Exportable passwords	Yes	Yes	Yes
- Visual Basic script	Number = 50	Number = 50	Number = 50
Logging/printer driver			
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2	ESC/P2	ESC/P2
Fonts			
• Keyboard fonts	US English	US English	US English
Languages			
• Online languages	5	5	5
• Project 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, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support (may only be an option)			
• PC card	Yes	Yes	Yes
• CF card	Yes	Yes	Yes
• Applications/options (with WinCC flexible)	ProAgent, Internet Explorer, ThinClient	ProAgent, Internet Explorer	ProAgent, Internet Explorer, ThinClient
Transfer under ProTool (upload/download)			
• Transfer of the configuration	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)

SIMATIC MP 270B

Technical specifications (continued)

	SIMATIC MP 270B 6“ Color-TFT-Display, Touch	SIMATIC MP 270B 10“ Color-TFT-Display, Keyboard	SIMATIC MP 270B 10“ Color-TFT-Display, Touch
Functionality (under ProTool)			
• Timer		Yes	Yes
• Password protection (number of levels)		10	10
• Help system	No	Yes	Yes
• PG functions (STATUS/CONTROL)	Not possible	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols			
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system			
• Status messages		2000	2000
• Alarm messages		2000	2000
• System messages		Yes	Yes
• Message length (lines x characters)		1 x 70	1 x 70
• Number of process values in messages		8	8
• Message buffer		Ring buffer, 512 entries each	Ring buffer, 512 entries each
Recipes			
• Recipes		300	300
• Data records per recipe		500	500
• Entries/data record		1000	1000
• Recipe memory		64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Process images		300	300
Picture elements			
• Text objects		10,000 text elements	10,000 text elements
• Fields per screen	108	108	108
• Variables per screen		200	200
• Graphics objects		Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects		Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
Variables		2048	2048
Archiving			
• Number of archives per project		20	20
• Number of process tags per archive		20	20
• Number of entries per archive		500,000	500,000
• Archive types		Sequence archive, short-term archive, alarm log, process value archive	Sequence archive, short-term archive, alarm log, process value archive
• Memory location		PC card, CF card, Ethernet	PC card, CF card, 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
• External evaluation		Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• Size of archive		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

Technical specifications (continued)

	SIMATIC MP 270B 6“ Color-TFT-Display, Touch	SIMATIC MP 270B 10“ Color-TFT-Display, Keyboard	SIMATIC MP 270B 10“ Color-TFT-Display, Touch
Visual Basic script		Number = 50/ number of lines per script = 20	Number = 50/ number of lines per script = 20
Logging/printer driver			
• Print functions		Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy
• Drivers		ESC/P2	ESC/P2
Fonts			
• Language (keyboard fonts)	US English	US English	US English
Languages			
• Online languages	5	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 2 further character sets can be loaded, all freely scalable
Data carrier support (may only be available as an option with ProTool)			
• PC card	Yes	Yes	Yes
• CF card	Yes	Yes	Yes
Expansion capability/openness			
• Transfer of the configuration	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)

Ordering data

		Order No.
SIMATIC MP 270B		
Multi Panel with		
• 6" color TFT display, Touch	B	**6AV6 545-0AH10-0AX0**
• 10" color TFT display, Touch	B	**6AV6 545-0AG10-0AX0**
• 10" color TFT display, Key	B	**6AV6 542-0AG10-0AX0**
incl. mounting accessories		
Configuring		
with SIMATIC ProTool and ProTool/Pro (MP 270B 10" Touch and Key)		See Section 4
with SIMATIC WinCC flexible		See Section 4
Configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• WinCC flexible Standard engineering software		
• Documentation CD 5 languages (English, French, German, Italian, Spanish)		
• RS 232 cable, 5 m		
• MPI cable, 5 m		

	Order No.
Applications/options	
When configuring with ProTool	
• SIMATIC ProAgent/MP	See Section 4
• SIMATIC ThinClient/MP	See page 2/149
When configuring with WinCC flexible	
• WinCC flexible /ProAgent	See Section 4
• SIMATIC ThinClient/MP	See page 2/149
• WinCC flexible /Sm@rtAccess	See Section 4
• WinCC flexible/Sm@rtService	See Section 4
• WinCC flexible/OPC Server	See Section 4

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

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

SIMATIC MP 270B

Ordering data		Order No.
Documentation (to be ordered separately)		
Operating Instructions TP 270/OP 270 and MP 270B (WinCC flexible)		
• German		**6AV6 691-1DD01-0AA0**
• English		**6AV6 691-1DD01-0AB0**
• French		**6AV6 691-1DD01-0AC0**
• Italian		**6AV6 691-1DD01-0AD0**
• Spanish		**6AV6 691-1DD01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
TP/OP 270 and MP 270B (ProTool) Manual		
• German		**6AV6 591-1DC20-0AA0**
• English		**6AV6 591-1DC20-0AB0**
• French		**6AV6 591-1DC20-0AC0**
• Italian		**6AV6 591-1DC20-0AD0**
• Spanish		**6AV6 591-1DC20-0AE0**
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
System interfaces		See page 2/169
Connecting cables		See page 2/180
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

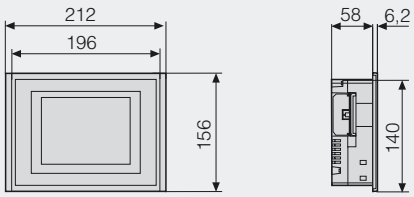
		Order No.
Accessories		
Memory cards		
• CF card, 128 MB	A	**6AV6 574-2AC00-2AA0**
• PC card (ATA Flash), 64 MB	A	**6AV6 574-2AC00-2AF0**
Backup battery Lithium battery, DC 2.6; 1,7 Ah, for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B and MP 370		**W79084-E1001-B2**
Accessories for supplementary ordering		
Cover foil to protect the Touch front against fouling/scratching (set of 10)		
• for MP 270B 10" Touch		**6AV6 574-1AD00-4CX0**
• for MP 270B 6" Touch		**6AV6 574-1AD00-4DX0**
Service pack for MP 270B 6" Touch Consisting of: • Mounting seal • 2 sets of labeling strips (for OPs) • 7 tensioning clamps • Plug-in terminal strip (twin block)		**6AV6 574-1AA00-4AX0**
Service pack for MP 270B 10" Touch Consisting of: • Mounting seal • 10 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench		**6AV6 574-1AA00-2CX0**
Service pack for MP 270B 10" Key Consisting of: • Mounting seal • 2 sets of labeling strips • 10 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench		**6AV6 574-1AA00-2DX0**
Bus connector RS 485 with axial cable outlet (180°)		**6GK1 500-0EA02**
Configuration cable between PG/PC and MP, RS 232 cable (5 m)		**6ES7 901-1BF00-0XA0**
TTY-RS 232 converter for connection with S5 CPUs, length 3.2 m; Canon 15-pin – 25-pin		**6ES5 734-1BD20**

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

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

Dimension drawings

Dimensions in mm

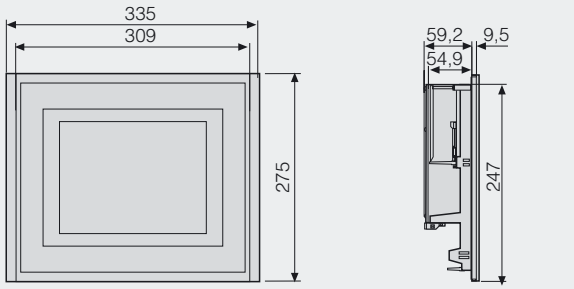


G_ST80_XX_00044

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

MP 270B 6“ Touch

Dimensions in mm

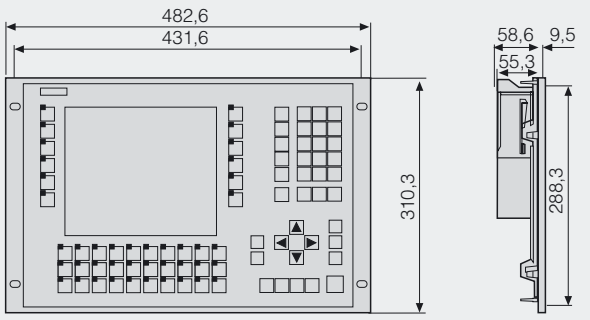


G_ST80_XX_00043

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

MP 270B 10“ Touch

Dimensions in mm



G_ST80_XX_00055

Panel cutout (B x H) in mm: 436 x 295

MP 270B 10“ Key

More information

For further information, visit our website at

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.

SIMATIC MP 370

Overview

- Multi panels (MPs) can be used just like the operator panels for operating and monitoring machines on site.
- Their functional scope can be expanded by installing additional Windows CE applications (multi panel options)
- The SIMATIC MP 370 units based on 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)
- *MP 370 12" Keys:*
  38 system keys, 36 freely-configurable and freely-inscribable function keys (36 with LEDs)
  MP 370 12" and 15" Touch:
  Touch screen (analog/resistive)
- All interfaces on board, e.g MPI, PROFIBUS DP, USB, Ethernet, serial

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
  - ThinClient/MP for use as terminal client on a Windows terminal server
  - WinCC flexible /Sm@rtAccess for communication between various SIMATIC HMI systems
  - WinCC flexible /Sm@rtService for remote maintenance and servicing of machines/plants via the Internet/intranet
  - WinCC flexible /OPC server for communication with applications from various vendors
  - MS Pocket Internet Explorer (included in scope of supply)
- Reduces the service and start-up costs due to:
  - Backup/restore via Ethernet (TCP/IP), USB, MPI, PROFIBUS DP, RS 232 (serial) or optionally via PC/CF card
  - Remote downloading/uploading of the configuration and firmware
  - Specific drivers can be downloaded
  - Long service life of the backlighting
- Graphics library 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
- Standard hardware and software interfaces to increase flexibility:
  - PC/CF card slot for memory expansions, Backup/Restore or additional interfaces
  - Ethernet (TCP/IP) for centralized data management and project management;
    connection of PLC to SIMATIC S7 when configuring with WinCC flexible
  - Standard Windows storage format (CSV) for archives and recipes enables further processing using standard tools (e.g. MS Excel)

Application

The SIMATIC MP 370 Multi Panels can be used in all applications in which operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building service automation. They are used in a variety of sectors and applications and their field of applications can be expanded using the multi panel options, e.g. by displaying HTML documents via the MS Pocket Internet Explorer.

Windows CE provides the fundamentals for use in harsh industrial environments. The lack of a hard disk and fan means that it can also be used in applications in which high levels of vibration or dust place restrictions on the operation of a PC. Short power-up times mean that the multi panels are quickly ready for use.

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

- Displaying and modifying process parameters
- Function keys (only for MP 370B 12“ Key)
  are used 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-drawn and solid objects)
  - Dynamic positioning and dynamic showing/hiding of objects
  - Pixel graphics displays, curves and bar displays
  - Presentation of up to 8 curves in a curve field;
    curve graphics with scroll and zoom functions for accessing historical values and for flexible selection of the displayed time frame;
    cross-hair for reading off current values and display in a table
  - Comprehensive image libraries (SIMATIC HMI Symbol Library)
  - Graphics objects: Slider, gauge, clock
  - Cyclic function processing using timers
- Multiplex function for variables
- Message system
  - Administration of status, fault and system messages
  - Status and fault messages with message history
  - Preconfigured message display, message window and message line
- Archiving of messages and process values (on PC/CF Card or network drives over Ethernet)
  - Different archive types: short-term archive and sequence archive
  - Storage of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives through curves
  - External evaluation using standard tools (MS Excel and MS Access) is possible
- Message log and shift log
- Print functions (see "recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on PC/CF Card)
  - Online/offline processing at the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools MS Excel and MS Access is possible
- PG functions STATUS/CONTROL VAR in combination with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Display of HTML documents with MS Pocket Internet Explorer
- Visual Basic Script, flexibility through the implementation of new functions including linking to ProTool variables (comparison operations, loops, etc.)
- Help texts
  for process diagrams, messages and variables
- Mathematical functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Permanent window;
  permanent display area for the output of information that is not specific to the particular display (e.g. important process variables, date and time)
- User-friendly maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on a PC/CF card or over Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC
  - Download and upload of configuration via Ethernet/USB/MPI/PROFIBUS DP/RS232/modem and CF card
  - Automatic transfer identification
  - Configuration simulation directly on the configuration computer
- Import/export of all texts including messages in CSV format for translation using standard word processing programs

Additional functions when configuring with WinCC flexible

- Project-specific picture blocks that can be modified centrally
- Message 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
- Permanent window expanded by template concept;
  - generation of screen templates
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups
- Visual Basic Runtime object model
- Service functions
  (optionally with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation 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 of other SIMATIC HMI systems
  - Plant-wide scanning of information and archiving of process data

Configuration

Configuring is performed using the configuring software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the engineering software SIMATIC WinCC flexible Standard or Advanced (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

SIMATIC MP 370

Function (continued)

Applications/options

When configuring with ProTool

- SIMATIC ProAgent/MP;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- SIMATIC ThinClient/MP;
  use of the Multi Panel Touch variant as MS Windows terminal client for utilizing the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)
- SIMATIC WinAC MP
  Software PLC under Windows CE, executable on the multi-functional SIMATIC MP 370 platform (see multi panel options/ SIMATIC WinAC MP)

When configuring with WinCC flexible

- SIMATIC ThinClient/MP
  Use of the Multi Panel Touch variant as MS Windows terminal client for utilizing the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)
- WinCC flexible /ProAgent;
  fast, localized fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- 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 and plant over the Internet/intranet (see HMI software/Runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
- WinCC flexible /OPC server
  Communication with applications (e.g. MES, ERP, or applications in the office environment) from various manufacturers (see HMI software/Runtime software SIMATIC WinCC flexible/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
- Over Ethernet (TCP/IP) to higher-level PC, network printer

Additionally when configuring with WinCC flexible

- Ethernet communication with SIMATIC S7
- Multi-protocol capability
- OPC XML server (optionally with "WinCC flexible /OPC Server")
- HTTP communication to other SIMATIC HMI systems (optionally with "WinCC flexible /Sm@rtAccess")
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; the "SINUMERIK HMI engineering package WinCC flexible" is additionally necessary for configuration; for further information, see Catalog NC 60)

Note:
For further information, see "System interfaces".

Technical specifications

	SIMATIC MP 370 12“ Color-TFT-Display, Keyboard	SIMATIC MP 370 12“ Color-TFT-Display, Touch	SIMATIC MP 370 15“ Color-TFT-Display, Touch
Display			
• Display type	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)
• Size	12.1" (248 mm x 187 mm)	12.1" (246 mm x 184 mm)	15.1" (308 mm x 232 mm)
• Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768
• Colors	256 colors	256 colors	256 colors
• MTBF of background lighting (at 25 °C)	approx. 50,000 hours	approx. 50,000 hours	approx. 50,000 hours
Operating mode			
• Function keys, programmable	36 function keys, 36 with LEDs	None	None
• Membrane keyboard	Yes	No	No
• System keys	38	0	0
• Touch screen	No	Analog, resistive	Analog, resistive
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes	Yes/Yes
• External mouse/keyboard/ barcode reader	USB/USB/USB	USB/USB/USB	USB/USB/USB
Processor/HW	RISC 64 bits, 300 MHz	RISC 64 bits, 300 MHz	RISC 64 bits, 300 MHz
Operating systems	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash/RAM	Flash/RAM	Flash/RAM
• Usable memory for project data	7168 KB user memory/5689 KB memory for options	7168 KB user memory/5689 KB memory for options	7168 KB user memory/5689 KB memory for options
Interfaces (some only as options)			
• Interfaces	1 x TTY, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	1 x TTY, 2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	1 x TTY, 2 x RS232, 1 x RS422, 1 x RS485 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 (universal serial bus)	1 x USB	1 x USB	1 x USB
• Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Supply voltage			
• Supply voltage	24 V DC	24 V DC	24 V DC
• Permissible range	+20.4 V to +28.8 V DC	+20.4 V to +28.8 V DC	+20.4 V to +28.8 V DC
• Rated current	1.15 A	1.15 A	1.8 A
• Output	28 W	28 W	41 W
• UPS can be connected (serial)	Yes	Yes	Yes
• Backup battery	Optional 3.6 V	Optional 3.6 V	Optional 3.6 V
Clock	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized	Hardware clock, battery-backed and synchronized
Degree of protection			
• Front	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)	IP65, NEMA 4, NEMA 4x, NEMA 12; (when mounted)
• Rear	IP20	IP20	IP20
Certification (some only as options)	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
Mechanical components/ dimensions			
• Front panel W x H (mm)	483 x 310	335 x 275	400 x 310
• Mounting cutout/depth W x H x D (mm)	450 x 290/65 mm depth of unit	310 x 248/59 mm depth of unit	368 x 290/69 mm depth of unit
• Weight	5.1 kg	4.5 kg	5.7 kg

SIMATIC MP 370

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Technical specifications (continued)

	SIMATIC MP 370 12“ Color-TFT-Display, Keyboard	SIMATIC MP 370 12“ Color-TFT-Display, Touch	SIMATIC MP 370 15“ Color-TFT-Display, Touch
Ambient conditions			
• Max. relative humidity (in %)	85%	85%	85%
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without external fan	+/- 35°	+/- 35°	+/- 35°
• Temperature			
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +35 °C	0 to +35 °C
- Transportation and storage	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
Expansions for operator-process communication (may only be an option)			
• DP direct LEDs (LEDs as S7 output I/O)	S1...S16, F1...F20		
• DP direct keys (buttons as input peripherals)	S1...S16, F1...F20	5 bytes or coded	5 bytes or coded
Peripherals/applications/options			
• I/O	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
• Applications/options (with ProTool)	ProAgent, Internet Explorer, Soft PLC	ProAgent, Internet Explorer, ThinClient, Soft PLC	ProAgent, Internet Explorer, ThinClient, Soft PLC
Configuring			
• Configuration tool	ProTool	ProTool	ProTool
• Configuration tool	WinCC flexible	WinCC flexible	WinCC flexible
Functionality (with WinCC flexible)			
• Scheduler	Yes	Yes	Yes
• Help system	Yes	Yes	Yes
• Status/Control	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols			
• Interface to control (may only be an option)	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system			
• Number of messages	4000	4000	4000
• Discrete alarms	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message length (in characters)	80	80	80
• Number of process values per message	8	8	8
• Message buffer	Ring buffer, 1024 entries each	Ring buffer, 1024 entries each	Ring buffer, 1024 entries each
Recipes			
• Recipes	500	500	500
• Data records per recipe	1000	1000	1000
• Entries/data record	1000	1000	1000
• Recipe memory	128 KB integrated Flash, expandable	128 KB integrated Flash, expandable	128 KB integrated Flash, expandable

Technical specifications (continued)

	SIMATIC MP 370 12“ Color-TFT-Display, Keyboard	SIMATIC MP 370 12“ Color-TFT-Display, Touch	SIMATIC MP 370 15“ Color-TFT-Display, Touch
Process images	500	500	500
Picture elements			
• Text objects	30,000 text elements	30,000 text elements	30,000 text elements
• Fields per screen	400	400	400
• Variables/screen	400	400	400
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics
• Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
Variables	2048	2048	2048
Archiving			
• Number of archives per project	50	50	50
• Number of process tags per archive	50	50	50
• Number of entries per archive	10,000	10,000	10,000
• Archive 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
• Memory location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• 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
• Online evaluation	Using trend curves	Using trend curves	Using trend curves
Security			
• Number of user groups	10	10	10
• Number of access rights	32	32	32
• Exportable passwords	Yes	Yes	Yes
• Visual Basic script	Number = 100	Number = 100	Number = 100
Logging/printer driver			
• Printing/logging	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy	Messages, report/log, color print, hardcopy
• Printer driver	ESC/P2	ESC/P2	ESC/P2
Fonts			
• Keyboard fonts	US English	US English	US English
Languages			
• Online languages	5	5	5
• Project 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 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 4 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 4 further character sets can be loaded, all freely scalable
Data carrier support (may only be an option)			
• PC card	Yes	Yes	Yes
• CF card	Yes	Yes	Yes
Transfer under ProTool (upload/download)			
• Transfer of the configuration	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP, serial, USB, Ethernet, using external memory medium (automatic transfer recognition)

SIMATIC MP 370

Technical specifications (continued)

	SIMATIC MP 370 12" Color-TFT-Display, Keyboard	SIMATIC MP 370 12" Color-TFT-Display, Touch	SIMATIC MP 370 15" Color-TFT-Display, Touch
Functionality (under ProTool)			
• Timer	Yes	Yes	Yes
• Password protection (number of levels)	10	10	10
• Help system	Yes	Yes	Yes
• PG functions (STATUS/CONTROL)	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
Protocols			
• Interface to PLC (may only be an option)	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers	S5, S7-200, S7-300/400, 505, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK/Multilink), Modicon (Modbus) and other non-Siemens drivers
Signaling system			
• Status messages	2000	2000	2000
• Alarm messages	2000	2000	2000
• System messages	Yes	Yes	Yes
• Message length (lines x characters)	1 x 70	1 x 70	1 x 70
• Number of process values in messages	8	8	8
• Message buffer	Ring buffer, 1024 entries each	Ring buffer, 1024 entries each	Ring buffer, 1024 entries each
Recipes			
• Recipes	500	500	500
• Data records per recipe	1000	1000	1000
• Entries/data record	1000	1000	1000
• Recipe memory	128 KB integrated Flash, expandable	128 KB integrated Flash, expandable	128 KB integrated Flash, expandable
Process images	300	300	300
Picture elements			
• Text objects	30,000 text elements	30,000 text elements	30,000 text elements
• Fields per screen	115	115	115
• Variables per screen	400	400	400
• Graphics objects	Bitmaps, icons, vector graphics	Bitmaps, icons, vector graphics	Bitmaps, icons, icon (filling the screen), vector graphics
• Dynamic objects	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons	Diagrams, bar graphs, slides, analog displays, hidden buttons
Variables	2048	2048	2048
Archiving			
• Number of archives per project	50	50	50
• Number of process tags per archive	50	50	50
• Number of entries per archive	500,000	500,000	500,000
• Archive 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
• Memory location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, 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
• External evaluation	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.	Can be read, e.g., in MS Excel, MS Access, etc.
• 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
• Online evaluation	Using trend curves	Using trend curves	Using trend curves
Visual Basic script	Number = 50/ number of lines per script = 100	Number = 50/ number of lines per script = 100	Number = 50/ number of lines per script = 100

Technical specifications (continued)

	SIMATIC MP 370 12“ Color-TFT-Display, Keyboard	SIMATIC MP 370 12“ Color-TFT-Display, Touch	SIMATIC MP 370 15“ Color-TFT-Display, Touch
Logging/printer driver			
• Print functions	Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy	Messages, shift log, color print, hardcopy
• Drivers	ESC/P2	ESC/P2	ESC/P2
Fonts			
• Language (keyboard fonts)	US English	US English	US English
Languages			
• Online languages	5	5	5
• Project languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP/ROK, NL, N, PL, P, RUS, S, CZ/SK, TR, H
• Character set	Tahoma, Arial, Courier New, ideographic languages, 4 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 4 further character sets can be loaded, all freely scalable	Tahoma, Arial, Courier New, ideographic languages, 4 further character sets can be loaded, all freely scalable
Data carrier support (may only be available as an option with ProTool)			
• PC card	Yes	Yes	Yes
• CF card	Yes	Yes	Yes
Expansion capability/openness			
• ActiveX controls	Yes	Yes	Yes
• Transfer of the configuration	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)	MPI/PROFIBUS DP (if available), serial, USB, Ethernet, using external memory medium (automatic transfer recognition)

Ordering data

		Order No.
SIMATIC MP 370		
Multi Panel with		
• 12" color TFT display, Touch	B	**6AV6 545-0DA10-0AX0**
• 12" color TFT display, Key	B	**6AV6 542-0DA10-0AX0**
• 15" color TFT display, Touch	B	**6AV6 545-0DB10-0AX0**
incl. mounting accessories		
Configuring		
with SIMATIC ProTool and ProTool/Pro		See Section 4
with SIMATIC WinCC flexible		See Section 4
MP 370 configuration set	D	**6AV6 622-0BA01-0AA0**
Consisting of:		
• WinCC flexible Standard engineering software		
• Documentation CD, 5 languages (English, French, German, Italian, Spanish)		
• RS 232 cable (5 m)		
• MPI cable, 5 m		
Applications/options		
When configuring with ProTool		
• SIMATIC ProAgent/MP		See Section 4
• SIMATIC WinAC MP		See page 2/146
• SIMATIC ThinClient/MP		See page 2/149
When configuring with WinCC flexible		
• SIMATIC ThinClient/MP		See page 2/149
• WinCC flexible /ProAgent		See Section 4
• WinCC flexible /Sm@rtAccess		See Section 4
• WinCC flexible/Sm@rtService		See Section 4
• WinCC flexible/OPC Server		See Section 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 691-1AB01-0AA0**
• English	**6AV6 691-1AB01-0AB0**
• French	**6AV6 691-1AB01-0AC0**
• Italian	**6AV6 691-1AB01-0AD0**
• Spanish	**6AV6 691-1AB01-0AE0**
User Manual WinCC flexible Communication	
• German	**6AV6 691-1CA01-0AA0**
• English	**6AV6 691-1CA01-0AB0**
MP 370 Manual (ProTool)	
• German	**6AV6 591-1DB10-2AA0**
• English	**6AV6 591-1DB10-2AB0**
• French	**6AV6 591-1DB10-2AC0**
• Italian	**6AV6 591-1DB10-2AD0**

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

SIMATIC MP 370

Ordering data		Order No.
Documentation (to be ordered separately) (continued)		
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
User Manual Communication for Windows-Based Systems (ProTool)		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**
Accessories		
Memory cards		
• CF cards, 128 MB	A	**6AV6 574-2AC00-2AA0**
• PC card (ATA flash), 64 MB	A	**6AV6 574-2AC00-2AF0**
Backup battery Lithium battery, DC 2.6; 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**

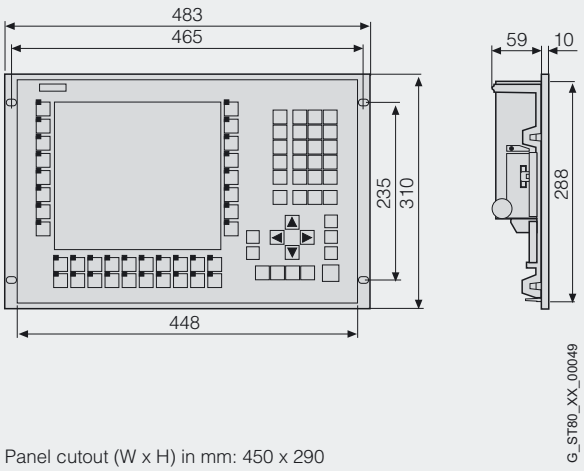
A) Subject to export regulations AL: N and ECCN: EAR99H

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

	Order No.
Accessories for supplementary ordering	
Key labeling strips for MP 370 Key for function keys, without labeling, 2 sets each (plastic)	**6AV6 574-1AB00-2BA0**
Cover foil to protect the Touch front against fouling/scratching (set of 10)	
• for MP 370 12" Touch	**6AV6 574-1AD00-4CX0**
• for MP 370 15" Touch	**6AV6 574-1AD00-4EX0**
Service pack for MP 370 Touch Consisting of: • Mounting seal • 10 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench	**6AV6 574-1AA00-2CX0**
Service pack for MP 370 Key Consisting of: • 2 sets of labeling strips • 6 tensioning clamps • Plug-in terminal strip (twin block) • Socket wrench	**6AV6 574-1AA00-2BX0**
Configuration cable between PG/PC and MP, RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
Bus connector RS 485 with axial cable outlet (180°)	**6GK1 500-0EA02**
System interfaces	See page 2/169
Connecting cables	See page 2/180

Dimension drawings

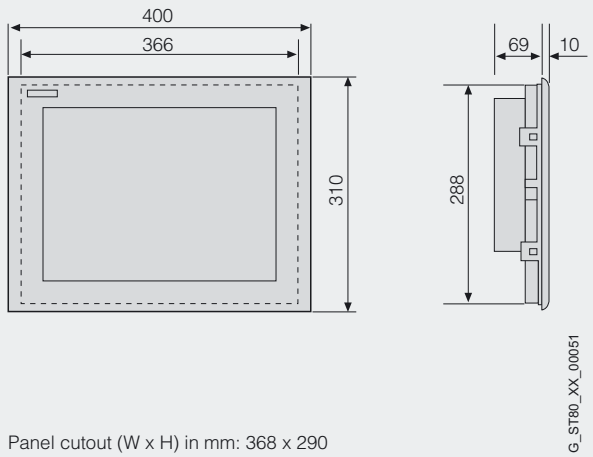
Dimensions in mm



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

MP 370 12“ Keys

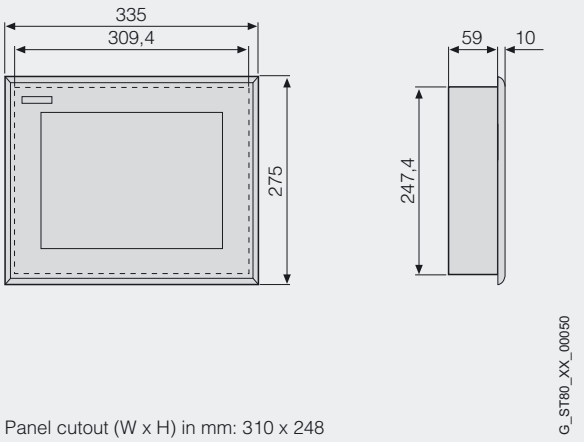
Dimensions in mm



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

MP 370 15“ Touch

Dimensions in mm



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

MP 370 12“ Touch

More information

For further information, visit our website at

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.

SIMATIC WinAC MP

Overview

- The software PLC which runs under Windows CE and can be installed on the multifunctional platform MP 370 12" and MP 370 15“
- The cost-optimized solution for deterministic processes in conjunction with a rugged hardware platform. At the same time it is ideal for applications in which large amounts of data are processed.
- Ideal for tasks directly at the machine when a user-friendly user interface is extremely important or the control task demand large programs and extensive data memory.

Application

Processing large volumes of data

WinAC MP has a large user memory for the PLC user program and user data.

The limits for the user memory can be adapted to suit the application depending on whether the emphasis is on large volumes of data in the PLC or demanding visualization.

Installation directly at the machine

WinAC MP is suitable for use directly at the machine in hostile environments or as a cell controller in a system network. SIMATIC MP 370 also constitutes a rugged hardware platform without a fan and without rotating mass storage.

SIMATIC WinAC MP, ProTool and MP 370 are perfectly matched to each another. This increases the operational reliability in every situation over the service life.

The underlying operating system Windows CE V3.0 ensures deterministic operation for WinAC MP. The excellent computing capacity of the MP 370 allows fast execution speeds for PLC user programs combined with fast update speeds and short display building times for visualization.

Design

SIMATIC WinAC MP comprises the following components:

- Windows logic controller
- Driver for PROFIBUS DP
- Electronic manuals
- Control functions for ProTool

An MP 370 is also needed in order to operate WinAC MP. This has the following key feature:

- Compact design:
  All the components needed for an automation task – control and visualization – are contained in a compact, easy-to-install housing. This saves space in the plant and reduces the wiring outlay considerably. Due to the integrated unit and screen, the equipment is easy to install on a girder or in the machine panel.

For a detailed description and order information for the MP 370 and accessories, see "PC-based Automation/Industrial PC/Embedded Platform/SIMATIC MP 370" or " SIMATIC HMI Control and Monitoring Systems/Control and Monitoring Systems/MultiPanel/370 Series".

Function

STEP 7 can be used to program and parameterize the configuration, properties and behavior of WinAC MP:

Configurable attributes

- Communication:
  Determining and defining device addresses
- Start-up/cycle behavior:
  Setting maximum cycle time and load and self-test functions
- Oscillator flag:
  Setting addresses
- Protection level:
  Defining access rights to programs and data
- System diagnostics:
  Setting handling and scope of diagnostic messages
- Timed interrupts:
  Setting periodicity
- Schedulers:
  Setting start date, start time and periodicity

Reporting functions

- Test functions:
  The PG can display signal states as the program is running, modify process variables independently of the user program, and output stack contents.
- Information functions:
  The PG can provide the user with information about memory capacity and CPU operating mode, the current capacity utilization of main memory and load memory, and current cycle times and diagnostic buffer contents in plain text.

System functions

The CPU offers a wide range of system functions for diagnosis, parameterization, synchronization, alarm signaling, time measurement, etc.

Function (continued)

Visualization and operation with ProTool

Visualization on the MP 370 takes place with SIMATIC ProTool. WinAC MP and ProTool are automatically interconnected on installation without any special configuration work. Thus complete TIA functionality exists between ProTool and WinAC MP.
This ranges from visualization of the process data to creating and loading recipes through to handling signals and alarms.

The user interface for WinAC MP has been implemented in ProTool. It contains the RUN/STOP switch, the status indicators and additional operator controls and displays. Special ProTool screens are included in the ProTool project for use by operators and service personnel. WinAC MP can then be operated without the need to close ProTool. The integrated user administration function in ProTool can be used to restrict access to these functions to authorized personnel.

Due to flexible integration of the operator controls and displays of WinAC MP into ProTool, it is possible to adapt the user interface of WinAC MP to the requirements of the maintenance staff and the application easily and with flexibility.

Easy configuration and start-up

With WinAC MP and the MP 370, everything is "on board", no additional hardware or software components are needed.
The MP 370 comes with integrated interfaces. When WinAC MP is installed, these interfaces are automatically configured, so start-up is possible immediately. Simply download the STEP 7 project and the ProTool project and start! ProTool is preinstalled in MP 370.

Loading user programs and ProTool projects

The integrated Ethernet interface on the MP 370 is generally used for loading user programs and ProTool projects. All communication functions are available with this interface, e.g. the ProTool project can also be loaded via the same interface.

The user program can also be downloaded for WinAC MP via the integrated PROFIBUS interface.

Communications and I/O connection

The MP 370 has an integrated PROFIBUS interface, an Ethernet interface and RS 232 and USB interfaces.

Distributed I/O devices are connected via the integrated PROFIBUS interface on the MP 370. WinAC MP configures this interface automatically when it is loaded onto the MP 370 and then started. All settings and configurations for the I/O connection are implemented exclusively by means of the associated STEP 7 project.

WinAC MP can also communicate with other SIMATIC controllers via the Ethernet or PROFIBUS interface.

Mode of operation

Windows logic controller (WinLC)

The Windows logic controller takes care of the actual control task and the execution of the control program. It coordinates the necessary input and output of process values via the lower-level PROFIBUS fieldbus system and provides the process values for visualization and data processing tasks.

Several processing levels are available for optimum process control:

- Cyclical program execution
- Alarm processing
- Time and date-controlled execution

STEP 7 can be used to program and parameterize the configuration, properties and behavior of WinAC MP.

Programming

Programming WinAC MP

Programming and configuration of WinAC MP is performed using STEP 7 and the SIMATIC Engineering Tools for manufacturing systems. All SIMATIC programming languages are therefore also available for WinAC MP.

The SIMATIC programming languages comply with the DIN EN 6.1131-3 standard. This reduces the time required for learning and training.

Program modules that were programmed for SIMATIC S7 controls can be reused in WinAC without modification provided that they were not suited to specific features of a SIMATIC S7 CPU.

Processing ProTool projects

ProTool projects for the MP 370 are processed with ProTool CS. ProTool CS and STEP 7 work closely together and have a shared database, ensuring optimum integration when creating your application.

SIMATIC WinAC MP

Technical specifications

	SIMATIC WinAC MP V3.1
User memory	
• Flash memory (integrated)	5 MB
• RAM (integrated)	1 MB
• Load memory (integrated)	1 MB
• Bit memories	2 KB
• Counters	512
• Timers	512
• Retentive data	Yes with UPS
Number of blocks	
• FB/FC/OB/DB/SDB	max. 2500
I/O	
• I/O address space	each 16 KB I/O
• Number of inputs/outputs	each 1 KB I/O
• Connection of the I/O	PROFIBUS DP up to 12 Mbit/s (MP 370 on board)
• Number of PROFIBUS DP slaves	32
Execution times	
• Bit operations (typ.)	0.2 µs
• Mathematical operations, typ.	0.15 µs
Technology	
• SIMATIC FMs	FM 350, FM 351, FM 352
• Easy Motion Control	Yes
System requirements	
• Hardware	SIMATIC MP 370 12" Touch, MP 370 12" Key or MP 370 15" Touch
• Operating system	Windows CE 3.0 (included on MP 370)
• PLC programming software	STEP 7, Version 5.2 or higher
• Visualization configuration software	ProTool, Version 6.0, SP2 or higher
• Communication software for Industrial Ethernet (only required on the programming device)	SOFTNET PG for IE
Communication functions	
Connections, total	24
• Ethernet, max.	22
• PROFIBUS, max.	4
• Reserved OS connections	1
• Reserved PG connection	1
PG/OP communication	Yes
Global data communication	No
S7 basic communication	No
S7 communication	
• As server	Yes
• As client	Yes

Ordering data

		Order No.
SIMATIC WinAC MP V3.1	C	**6ES7 671-0EC02-0YA0**
Software-based PC-based control system under Windows CE; CD-ROM with electronic documentation (G, E, F)		
Single license		

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

Overview

- Multi panel option upgradeable
- SIMATIC ThinClient/MP expands the Multi Panels MP 270B 10" Touch and MP 370 Touch with the functional scope of a Windows-based terminal (Terminal Client)
- This means that the multi panels can be implemented as a Thin Client for a Windows 2000 Terminal Server
- SIMATIC ThinClient/MP supports operation of the multi panels either simply as a Thin Client or with parallel operation as a Thin Client and platform for visualization with ProTool or WinCC flexible

Benefits

- PC functionality on rugged, compact and cost-optimized Windows CE platform
- Implementation of pure Thin Client solutions or Thin Client functionality parallel to visualization with ProTool or WinCC flexible
- Low administration and maintenance costs since these only occur once for the central terminal server and not for every terminal client
- Simple operation
- Avoidance of maloperations by automatic establishment of connection to terminal server when starting the multi panel (autostart)
- Uncomplicated establishment of connection to terminal server using preconfigured buttons
- Increased safety through individual approval of possible applications for the user at the server end

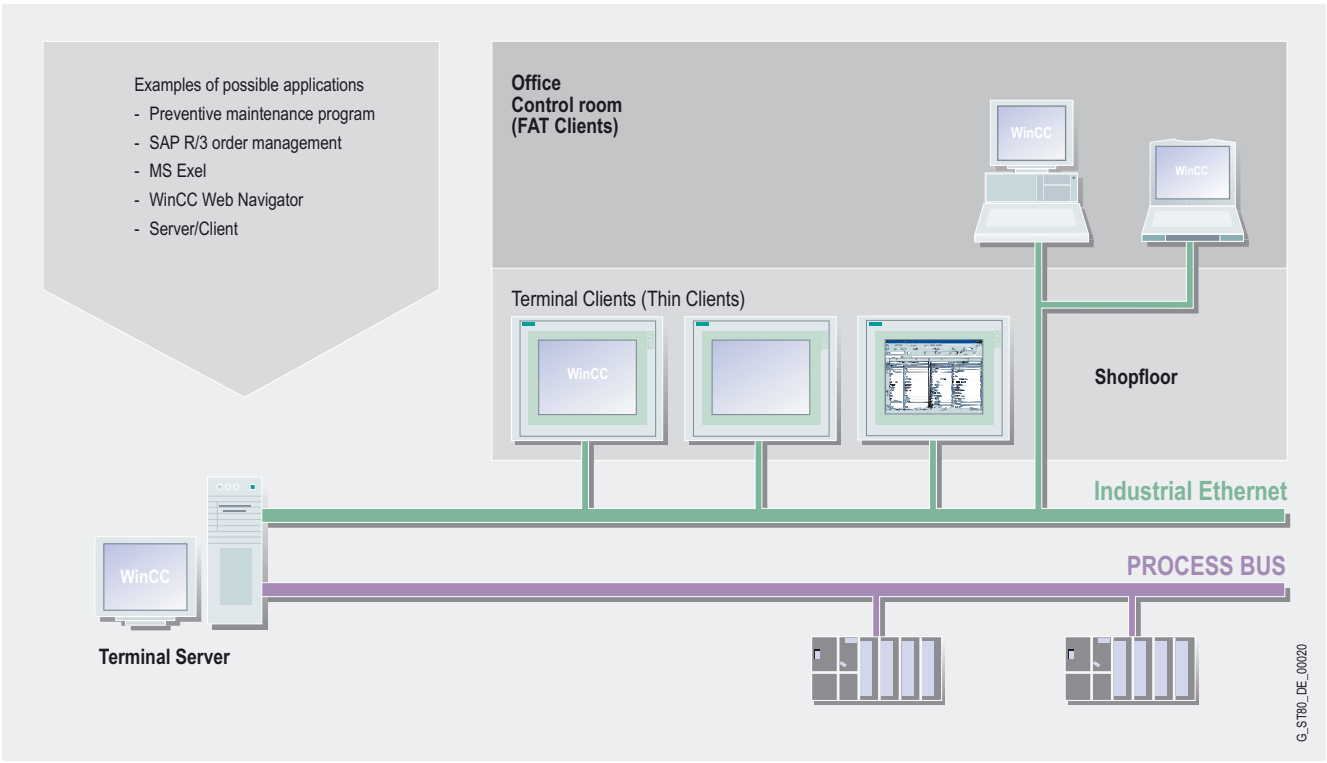
SIMATIC ThinClient/MP

Application

- SIMATIC ThinClient/MP supports operation of the multi panels either simply as a Thin Client or with parallel operation as a Thin Client and platform for local process visualization with ProTool or WinCC flexible.

Multi panel simply as a Thin Client

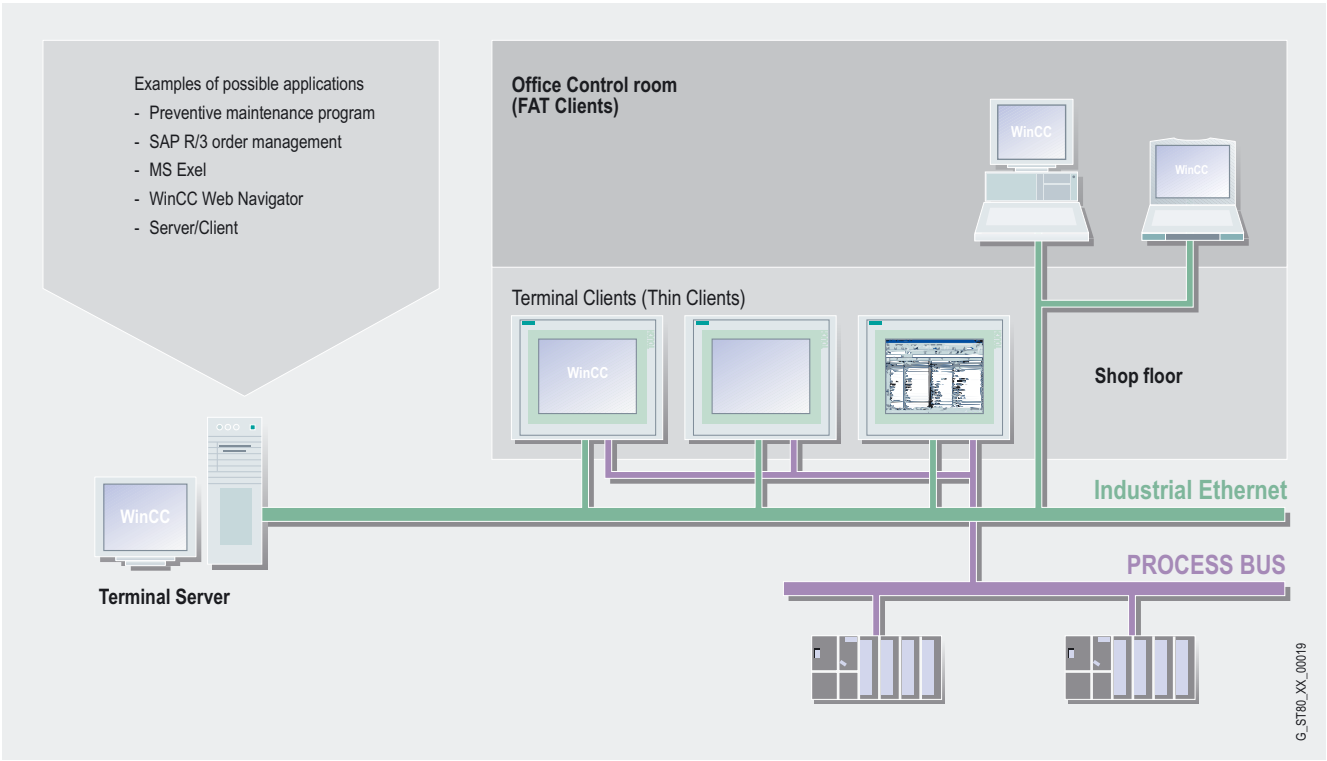
When the multi panel is used simply as a Thin Client, it is only implemented as an input and output terminal for the terminal server. Operator control and monitoring at machine level using ProTool or WinCC flexible as well as a direct link to the PLC are omitted. All applications – visualization, maintenance management, quality assurance or office applications – are implemented on the terminal server which can also connect to the process.



Application (continued)

Visualization and Thin Client in parallel

When the multi panel is used in parallel operation, in addition to local process visualization with ProTool or WinCC flexible and direct connection to the PLC, Thin Client functionality is also used. This means that, when the visualization is running, a terminal session on the terminal server can be opened simultaneously. For example, a higher-level SCADA system such as SIMATIC WinCC can be called via the WinCC Web Navigator for the purpose of changing from the local machine overview to the plant or factory overview. From here, plant-wide information such as alarms or trend curves can be displayed. Other possibilities involve calling a maintenance program for the specific machine or plant or an order processing program in order to establish the current status of the order. It is also possible to call batch logs for a machine that have been stored on a terminal server.



Function

The principle of terminal services computing is based on the basic physical separation of data, applications and screen outputs. The terminal services of Windows 2000 servers permit thin clients (terminal clients) to execute applications in the working memory of a central Windows 2000 terminal server instead of in their own.The thin clients are then used as terminals which only serve to visualize and input data which are subsequently sent to the terminal server.

With the SIMATIC ThinClient/MP, the platforms MP 370 Touch and MP 270B 10" Touch can control PC applications which are executed on a Windows 2000 terminal server.These can be SCADA (e.g. SIMATIC WinCC + Web Navigator) or MS Office applications.

Additional functions

- The autostart function automatically establishes a connection to a pre-defined terminal server after the multifunctional platform is switched on. No further operator actions are therefore required on startup.
- Configuration of extensive user permissions such as starting and accessing only a single application on the terminal server.
- The configuration of connection settings ensures fast and secure connection buildup.

The ThinClient/MP is executable on:

- SIMATIC MP 270B 10" Touch
- SIMATIC MP 370 12" Touch
- SIMATIC MP 370 15" Touch

Installation

With the supplied ProSave panel service tool, the SIMATIC ThinClient/MP can be easily and quickly installed and authorized on the multifunctional platforms.

System requirements for the terminal server:

Operating system:

- Windows 2000 Server with SP2 or higher incl. installed terminal services

Licenses

- CAL (Client Access License) [1)]
- TS CAL (Terminal Services Client Access License) [1)]

1) A Microsoft license is required for each multi panel which is operated as a thin client on the terminal server.

SIMATIC ThinClient/MP

Integration

Communication with the terminal server is via the Ethernet interface integrated in the multi panel by means of Microsoft RDP (Remote Desktop Protocol). Thus complex installation of additional interface cards is unnecessary.

The option is provided with 3 licenses. These permit installation of the option on up to three MP 370 Touch or MP 270B Touch.

The licenses required for the Microsoft terminal server are not part of this package.

Technical specifications

Type	ThinClient/MP V1.0
Platform [1]	MP 270B 10" Touch, MP 370 12" Touch, MP 370 15" Touch
System requirements (terminal server)	
• Operating system	Windows 2000 server with SP2 or higher, including installed terminal services
• Licenses (Microsoft)	• CAL (Client Access License)[2] • TS CAL (Terminal Services Client Access License)[2]
• Hardware [3] (recommended)	
- CPU	≥ Pentium III 700 MHz
- RAM	≥ 256 MB + 50 MB per terminal session
- Hard disk	≥ 3 GB
- Network card	10/100 Mbit/s
- CD-ROM	Yes

1) Is not part of the option and must be ordered separately
2) One license from Microsoft is required for each multifunctional platform that is operated as a Thin Client on the terminal server
3) The specified values are average values and depend on the application used on the terminal server

Ordering data

		Order No.
SIMATIC ThinClient/MP V1.0 3 licenses for installation on 3 devices, SW and documentation on CD, license key on FD, SW and documentation in English, executable under Windows CE 3.0 on SIMATIC MP 270B 10" Touch and MP 370 Touch	B	**6AV3 681-2AA00-0AX0**

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

More information

For further information, visit our website at

http://www.siemens.com/mp

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/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)

MOBIC T8

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 IP65 degree of protection.
- 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 is 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.

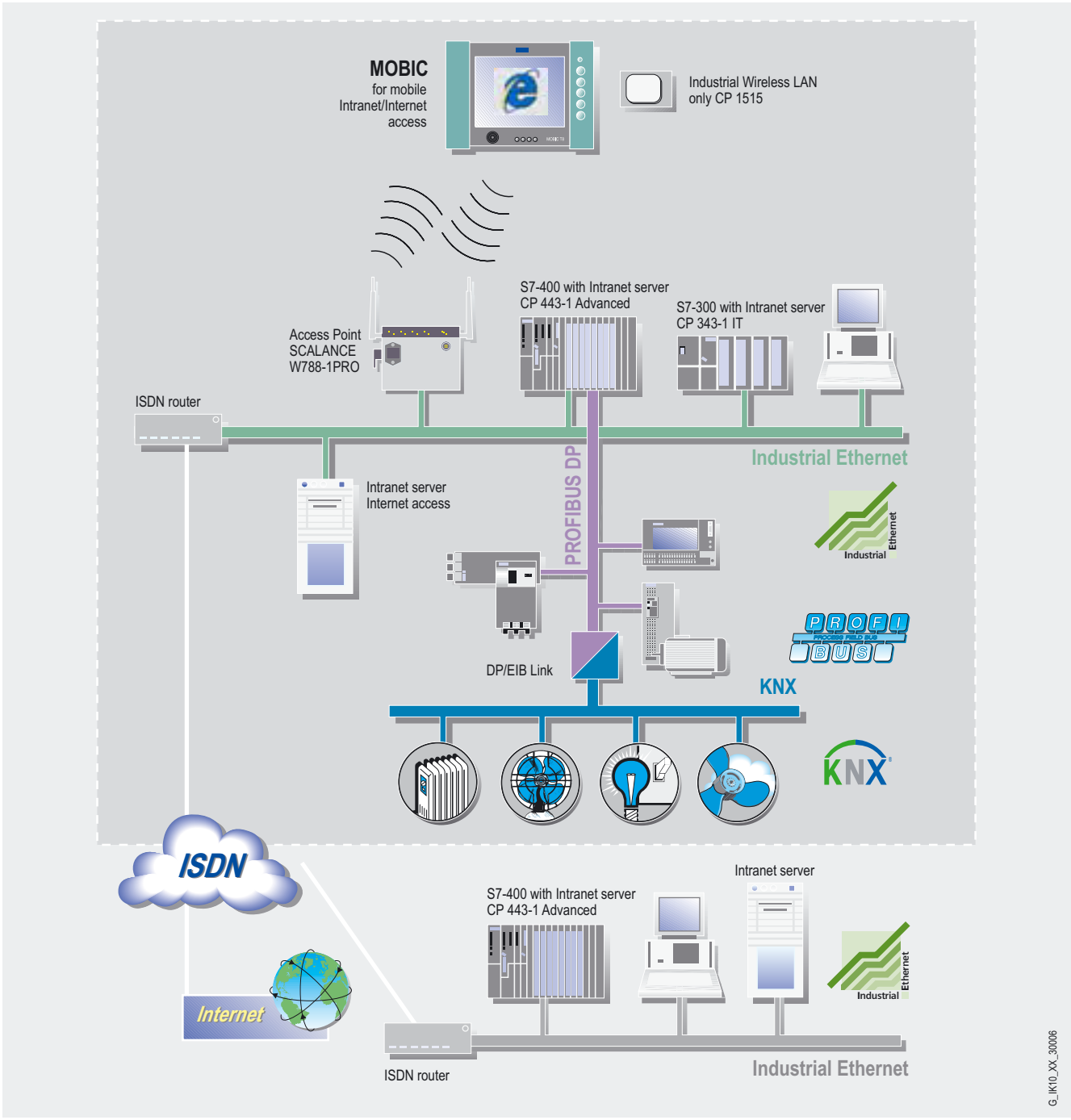
Application (continued)

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

MOBIC T8

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.

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
• 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
Display elements	
• Battery status display	1 LED (red)
• Windows CE message display	1 LED (green)
• Indicator LEDs	2 LEDs (yellow), user-defined function

	MOBIC T8
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
• With spare rechargeable battery	Typically 6.5 hours for one charge
• Spare rechargeable battery (accessory)	Lithiumion rechargeable battery, replaceable, typical service life 6.5 hours (dependent on the peripherals connected and the application that is executing)
Charging power supply (accessory) for spare battery	100–240 V AC, 50/60 Hz, 11 VA; 7.4 V DC, 950 mA, 7 VA
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

MOBIC T8

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)
	• 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	Silicon-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 ° to 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

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	B	**6GK1 611-0TA01-1DX0**
• Chinese system language with EU power supply connection	B	**6GK1 611-0TA01-1DV0**
Accessories for solution providers		
MOBIC Toolkit	D	**6GK1 906-1AC00**
MS-Embedded Visual Tool, MOBIC Programming Guide, 1 day training course, 8 hours support		
Accessories		
CP 1515	B	**6GK1 151-5AA00**
Wireless LAN PCMCIA card (16-bit) for connecting mobile stations (e.g. MOBIC T8) incl. drivers and parameterization software on CD-ROM, engineering software, single license for several installations, Class B, under MS-Windows (32-bit) 98, Me, NT 4.0 WS/Server, 2000 Professional/Server, English		
MOBIC rechargeable battery		**6GK1 906-1BA00**
For MOBIC T8, Lithium-ion battery, 4800 mAh/7.4 V		
Spare MOBIC battery		**6GK1 906-1BB00**
For MOBIC T8, Lithium-ion rechargeable battery		
MOBIC charging unit		**6GK1 906-1CC00**
For MOBIC T8 spare battery 7.4 V DC, 100 V - 240 V AC, 50/60 Hz		
MOBIC power supply (external)		**6GK1 906-1CB00**
For MOBIC T8, 16 V DC; 2.18 A, 100 V - 240 V, without line supply cable		
MOBIC line supply cable		
For MOBIC T8 power supply, 1.8 m		
• EU		**6GK1 906-1CA00**
• US		**6GK1 906-1CA01**
• UK		**6GK1 906-1CA02**

		Order No.
Accessories (continued)		
MOBIC carrying case		**6GK1 906-1DA00**
For MOBIC T8		
MOBIC carrying belt		**6GK1 906-1EA00**
For MOBIC T8, hand loops and shoulder strap		
MOBIC display cover foil		**6GK1 906-1FA00**
For MOBIC T8, 10 units		
MOBIC pen	A	**6GK1 906-1GA00**
For MOBIC T8, 10 units		
MOBIC protective flap		**6GK1 906-1HA00**
For MOBIC T8, for covering the connections		
MOBIC headset adapter		**6GK1 901-5JB00**
Adapter for connecting a commercially available stereo headset to the headset socket of MOBIC T8		
MOBIC charging base		**6GK1 906-1JA00**
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		
MOBIC charging station		**6GK1 906-1JB00**
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		
MOBIC charging station with lock		**6GK1 906-1JB01**
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		
MOBIC power supply (external)		**6GK1 906-1CB00**
For MOBIC T8, 16 V DC; 2.18 mA, 100 V – 240 V, without line supply cable		

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

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

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

More information

For further information, visit our website at

http://www.siemens.com/mobic

Overview

Overview

The SIMATIC Text Displays (TD) TD17 and Operator Panels (OP) [1] OP3, OP7, OP17, provide HMI functionality in conjunction with

- SIMATIC S5
- SIMATIC S7
- SIMATIC 505
- SINUMERIK [2]
- Non-Siemens PLCs
  - Allen Bradley SLC 500/00, 01, 02, 03, 04, 05 and MicroLogix (DH485 protocol)
  - Allen Bradley SLC 500/03, 04, 05 (DF1 protocol)
  - Allen Bradley PLC5/-11, 20, 30, 40, 60, 80 (DF1 protocol)
  - GE Fanuc 90-30 + 90-70 (SNP/SNPX protocol)
  - Mitsubishi FX (FX protocol)
  - Modicon 984-120,130, 131,141,145, 380, 381, 385, 480, 485, 680, 685, 780, 785 (MODBUS protocol)
  - Modicon TSX Quantum CPU113,213,424,434,534 (MODBUS protocol)
  - Omron SYSMAC C, SYSMAC α, SYSMAC CV (LINK protocol)
  - Telemecanique TSX 17 + TSX 47/67/87/107 (ADJUST + UNI-TELWAY protocols)
  - Telemecanique TSX 37 + TSX 57///(ADJUST + UNI-TELWAY protocols)

You can find more detailed information in the ProTool User's Guide, in the Communications Manual and in the online Help.

1) In the following text, the abbreviation "OP" is used to include TDs and OPs. This does not represent a restriction to a specific group of devices; if certain devices do not provide particular functions, this is explicitly referred to in the text.

2) For further information, see Catalog NC 60.

Overview

The following types of interface are used between SIMATIC OP and SIMATIC S7:

- PPI interface:
  For linking the SIMATIC OP to S7-200 via PPI.
- MPI interface:
  For linking the SIMATIC OP to S7 via PG/OP communication (with the communication services implemented in the SIMATIC S7 operating system); a standard FB as used with SIMATIC S5 is not necessary.
- PROFIBUS interface:
  For linking the SIMATIC OP to S7 via the integrated PROFIBUS interface of the CPU or alternatively via the PROFIBUS interface of a separate interface module and the backplane bus to the SIMATIC S7 CPU.

The functions of the PROFIBUS and MPI interfaces are identical (SIMATIC OPs are "active stations" and not "DP/slaves" as is the case for the PROFIBUS interface of the SIMATIC S5).

The maximum possible number of S7 connections of a CPU depends on its performance (see Catalog ST 70); from the viewpoint of the SIMATIC OP, the following limitations apply:

- OP3: max. 2 connections
- TD17, OP7/17: max. 4 connections

PPI interface:

PPI interfaces are basically point-to-point connections between one OP (PPI master) or one PG (PPI master) and one S7-200 (PPI slave).

Possible alternatives:

- Linking an OP to several S7-200
  (logical point-to-point relationship from the viewpoint of each S7-200).
- Linking several OPs and/or PGs with a S7-200
  (sequential logical point-to-point relationship i.e. from the viewpoint of each S7-200 only one connection is active at any one time).

MPI interface/PROFIBUS interface (limitations for OP3)

The MPI or PROFIBUS interface uses the multipoint-capable communication interfaces of SIMATIC OP and SIMATIC S7 via "PG/OP communication". Possible are:

- Linking an OP (MPI master)
  with one or several S7-300/ 400 (MPI master)
- Linking several OPs (MPI masters)
  with one or several S7-300/ 400 (MPI master)
- Linking one OP (MPI master)
  with one or several S7-200 (MPI slave).[1)]
- Linking several OPs (MPI master)
  with one or several S7-200 (MPI slave).[1)]

In contrast to the PPI connections, the MPI connections are static and are set up during startup and then monitored.

Along with the original master-master relationship, there is now also a master-slave relationship that enables integration of the S7-200 (except CPU 212) into MPI or PROFIBUS networks.[1)]

The type of information exchange used between the SIMATIC OP and SIMATIC S7 generally does not depend upon the network, MPI or PROFIBUS.

The SIMATIC OPs are S7 clients and the SIMATIC S7 CPUs are S7 servers.

The OP3 is only enabled for connection to SIMATIC S7-300/400 via MPI (master/master), i.e. communication with FM 353, FM 354 and FM 453 etc. is not possible.

1) For baud rate limitations for the S7-200, see Catalog ST 70.

System interfaces: Text panels

SIMATIC S7

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 With variants /PP	/DP	/DP-12	Connected via
SIMATIC S7 (PPI/MPI)						
S7-200 via *PPI*, **S7-300/400** via *MPI* **(PG/OP communication)** (9-pin socket/RS 485)	–	•	–	–	–	**6ES7 705-0AA00-7BA0** [1] (2.5 m)
PPI network via **connecting cable** **6ES7 705-0AA00-7BA0** (bus connector with PG interface) to max. 2 x **S7-200**	–	•	–	–	–	**PPI network** (see Catalog ST 70)
MPI network via **connecting cable** **6ES7 705-0AA00-7BA0** (bus connector with PG interface) to max. 2 x **S7-300/400**	–	•	–	–	–	**MPI network** (see Catalog ST 70)
S7-200 via *PPI* **S7-200** via *MPI* **(PG/OP communication),** **S7-300/400** via *MPI* **(PG/OP communication)** **S7-300/400** via *PROFIBUS* **(PG/OP communication)** (9-pin socket/RS 485)	•	–	–	•	•	**6ES7-901-0BF00-0AA0** [2] (5 m)
via *PPI network* to max. 2 x **S7-200**	•	–	–	•	•	**PPI network** [3] (see Catalog ST 70)
via *MPI network* **(PG/OP communication)** to max. 4 x **S7-200, S7-300, -400, WinAC**	•	–	–	•	•	**MPI network** [3] (see Catalog ST 70)
via *PROFIBUS network* **(PG/OP communication)** to max. 4 x **S7-300, -400, WinAC**	•	–	–	•	•	**PROFIBUS** [3] [4] (see Catalog ST 70/IK PI)

• System coupling is possible
– System coupling not possible

1) Included in the scope of supply of the OP3
2) Included in the scope of supply of the PG
3) Bus connector for OP: **6GK1 500-0EA02**
4) Max. 12 Mbit/s; OP7/DP and OP17/DP max. 1.5 Mbit/

Overview

Different interfaces can be used for linking SIMATIC OP (not OP3) to SIMATIC S5 (not S5-150U) which differ in terms of type and performance.

From the viewpoint of the connected OP, all of them are logical point-to-point connections i.e. an OP is always permanently assigned to a specific PLC. The PLC requires a standard function block which must be called for each connected OP (the standard function block must be ordered separately).

AS511 interface *(not OP3)*

S5-90 to 135U (except CPU 945 and CPU 922 < Version 9, except CPU 928 [6ES5 928-3UA11])

The AS511 interface uses the PG interface of the SIMATIC S5 and utilizes the corresponding CPU resources i.e. the performance of the OP depends upon the performance of the SIMATIC CPU used.

FAP interface *(not OP3)*

S5-115, -135U over second CPU interface
(CPU 943B, CPU 944A/B, CPU 945, CPU 928B)
S5-95U, -100U over CP 521 (except CPU 100 and CPU 102)
S5-115U, -135U, -155U over CP 523 (except CPU 945 and CPU 922 < Version 9, except CPU 928 [6ES5 928-3UA11])

The FAP interface either uses the free ASCII interface of a corresponding SIMATIC CPU or the interface modules
CP 521/CP 523. The OP must not be connected over the CP 521 in the ET 200!

Communication between the OP and SIMATIC S5 is based on a special FAP protocol which is processed by the standard function block of the PLC.
Several OPs can be connected to a PLC. The performance depends on the cycle time of the SIMATIC.

PROFIBUS DP interface *(not OP3)*

S5-115U, -135U, -155U over 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)

A PROFIBUS DP interface allows

- up to 2 OPs to be connected as SLAVES to a SIMATIC S5-95U with an integrated PROFIBUS DP/master interface [6ES5 095-8ME01] over a PROFIBUS network.
- up to 30 OPs to be connected as SLAVES to a SIMATIC S5 with a separate PROFIBUS DP/master interface IM 308C, or CP 5431 FMS/DP.

The communication between the OP (DP/slave) and SIMATIC S5 (DP/master) is implemented with the help of PROFIBUS DP messages acc. to EN 50170 with a higher-level FAP protocol, which is processed by the corresponding standard function block in the PLC.

System interfaces: Text panels

SIMATIC S5

PLC Target hardware (PROTOCOL) (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 With variants /PP	/DP	/DP-12	Connected via
SIMATIC S5 (AS511)						
S5-90U to 135U *(1st/2nd PG interface)* except CPU 945, except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11) (15-pin socket/TTY)	•	-	•	-	•	**6XV1 440-2A...** (max. 1000 m)
SIMATIC S5 (FAP)						
S5-115U/CPU 943B, CPU 944A/B *(2nd interface)* (15-pin socket/TTY)	•	–	•	–	•	**6XV1 440-2A...** (max. 1000 m)
S5-115U/CPU 945B, -135U/CPU 928B *(2nd interface)* (25-pin socket/TTY)	•	–	•	–	•	**6XV1 440-2J...** (max. 1000 m)
S5-115U/CPU 945B, -135U/CPU 928B *(2nd interface)* (25-pin socket/RS 232)	•	–	•	–	•	**6XV1 440-2J...** (max. 16 m)
S5-95U, -100U/CPU 103 with *CP 521SI* (25-pin socket/TTY)	•	–	•	–	•	**6XV1 440-2G...** (max. 1000 m)
S5-95U, -100U/CPU 103 with *CP 521SI* (25-pin socket/RS 232)	•	–	•	–	•	**6XV1 418-0C...** (max. 16 m) + **6XV1 440-2DE32** (max. 0.32 m)
S5-115U, -135U, -155U with *CP 523* except CPU 945, except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11) (25-pin socket/TTY)	•	–	•	–	•	**6XV1 440-2F...** (max. 1000 m)
SIMATIC S5 (PROFIBUS DP + FAP)						
Over *PROFIBUS DP* to **S5-95U/L2-DP/master** (6ES5 928-3UA11)	•	–	–	•	•	**PROFIBUS** [1) 2)] (see Catalog ST 50/IK PI)
Over *PROFIBUS DP* with *IM 308B/IM 308C* to **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)	•	–	–	•	•	**PROFIBUS** [1) 2)] (see Catalog ST 50/IK PI)
Over *PROFIBUS DP* with *CP 5430/CP 5431* to **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)	•	–	–	•	•	**PROFIBUS** [1) 2)] (see Catalog ST 50/IK PI)

• System coupling is possible
– System coupling not possible

1) Max. 12 Mbit/s; OP/DP and OP17/DP max. 1.5 Mbit/s
2) Bus connector for OP: **6GK1 500-0EA02**

Overview

Communication between SIMATIC OP (not OP3) and SIMATIC 505 is based on the NITP protocol. The direct connection of an OP to the programming device interface of a SIMATIC 505 (logical point-to-point relationship) has been tested and approved.

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 With variants /PP	/DP	/DP-12	Connected via
SIMATIC 505 (NITP)						
PLC 525, 535, 565T (25-pin female/RS 232)	•	–	•	–	•	**6XV1 440-2L...** (max. 15 m)
PLC 545, 555 (9-pin male/RS 232)	•	–	•	–	•	**6XV1 440-2K...** (max. 15 m)
PLC 535, 545/CPU 1101, 565T (9-pin female/RS 422)	•	–	•	–	•	**6XV1 440-2M...** (max. 300 m)
PLC 545/CPU 1102, 555 (9-pin female/RS 422)	•	–	•	–	•	**6XV1 440-1M...** (max. 300 m)

• System coupling is possible
– System coupling not possible

Third-party PLCs

Overview

Allen Bradley (not OP3)

Two communications protocols are available for interfacing between SIMATIC and Allen Bradley.

DF1 interface

This communication between SIMATIC OP and Allen Bradley executes on the basis of the DF1 protocol (logical point-to-point relationship). The following have been tested and approved:

- Direct connection of an OP to the PG interface of an Allen Bradley PLC5
- Direct connection of an OP to the DF1 interface of an Allen Bradley SLC500.

Integration of SIMATIC OP over a "Communications adapter“ from Allen Bradley in their DH+ or DH485 networks has not been approved (communications adapter = gateway)!

DH485 interface

This communication between SIMATIC OP and Allen Bradley is based on the DH485 protocol. The following have been tested and approved:

- Direct connection of an OP to the PG interface of an Allen Bradley SLC500 or MicroLogix (point-to-point relationship)
- Integration of OP in an Allen Bradley DH485 network and communication between the OP and one or more SLC 500s or MicroLogix in the network (multi-point link from the viewpoint of the OP).
  With regard to the maximum number of connections from the viewpoint of the OP, the same values apply as for SIMATIC S7.

GE-Fanuc (not OP3)

Communication between SIMATIC OP and GE-Fanuc runs on the basis of the SNP/SNPX protocols. The following have been tested and approved:

- Direct connection of an OP to the PG interface of a GE-Fanuc 90-30 or 90-70 (logical point-to-point relationship)
- Integration of the OP in a GE-Fanuc network and communication between the OP (SNP/master) and one or more GE-Fanuc 90-30 or 90-70 (SNP/slaves) in the network (multipoint link from the viewpoint of the OP).
  With regard to the maximum number of connections from the viewpoint of the OP, the same values apply as for SIMATIC S7.

Mitsubishi (not OP3)

Communication between SIMATIC OP and Mitsubishi executes on the basis of the FX protocol. Direct connection of an OP to the PG interface of a Mitsubishi FX or FX0 (logical point-to-point relationship) has been tested and approved.

Modicon (not OP3)

Communication between SIMATIC OP and Modicon runs on the basis of the MODBUS protocol. The following have been tested and approved:

- Direct connection of an OP to the MODBUS interface of a Modicon 984 or a TSX Quantum (logical point-to-point relationship)
- Connection of an OP (MODBUS/Master) to a Modicon 984 or TSX Quantum (MODBUS/slave) over MODBUS using Modicon MODBUS J878 modems at both ends at distances of up to 4000 m (logical point-to-point relationship)
- Integration of an OP using a Modicon MODBUS PLUS Bridge BM85-000 into a MODBUS PLUS network and communication between the OP (MODBUS/master) and a Modicon 984 or TSX Quantum (MODBUS/slave) in the network (logical point-to-point relationship)
- Integration of an OP using the Bridge function of a Modicon 984-145 or TSX Quantum in a MODBUS PLUS network and communication between the OP (MODBUS/master) and a Modicon 984 or TSX Quantum (MODBUS/slave) in the network (logical point-to-point relationship)

Omron (not OP3)

Communication between SIMATIC OP and Omron runs on the basis of the LINK protocol. Direct connection of an OP to the PG interface of an Omron SYSMAC C (except CQM1 CPU11), Omron SYSMAC α or Omron SYSMAC CV has been tested and approved (logical point-to-point relationship).

Telemecanique (not OP3)

Two communications protocols are available for interfacing between SIMATIC OP and Telemecanique:

ADJUST interface

This communication between SIMATIC OP and Telemecanique is based on the ADJUST protocol. Direct connection of an OP to the PG interface of a Telemecanique TSX 17 or TSX 47/67/87/107 has been tested and approved (logical point-to-point link).

UNI-TELWAY interface

This communication between SIMATIC OP and Telemecanique is based on the UNI-TELWAY protocol. The following have been tested and approved:

- Connection of an OP (UNI-T/slave) through a Telemecanique TSX SCA62 socket outlet to a Telemecanique TSX 17 or TSX 47/67/87/107 (UNI-T/ master) (logical point-to-point relationship)
- Connection of an OP (UNI-T/Slave) through a Telemecanique TSX SCA62 + ACC01 socket outlet to a Telemecanique TSX 37 or TSX 57 (UNI-T/master) (logical point-to-point relationship)
- Integration of an OP through a Telemecanique TSX SCA62 socket outlet into a UNI-TELWAY network and communication between the OP (UNI-T/slave) and a TSX 17, TSX 37, TSX 57 or TSX 47/67/87/107 (UNI-T/master or slave) in the network (logical point-to-point relationship).

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 With variants /PP	/DP	/DP-12	Connected via
Allen Bradley (DF1)						
SLC 500/03,04,05 (9-pin male/RS 232)	•	–	•	–	•	**6XV1 440-2K...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (25-pin female/RS 232)	•	–	•	–	•	**6XV1 440-2L...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (25-pin female/RS 422)	•	–	•	–	•	**6XV1 440-2V...** (max. 60 m)
Allen Bradley (DH485)						
SLC 500/03,04,05 or **MicroLogix** (9-pin male/RS 232)	•	–	•	–	•	**6XV1 440-2K...** (max. 15 m)
Via *DH485 network* to max. 4 x **SLC 500/00,01,02,03,04** or **MicroLogix**	•	–	•	–	•	**DH485 network** (see online help)
Mitsubishi (FX)						
Via **Mitsubishi PG cable SC-07** to **FX0** (9-pin female/RS 232)	•	–	•	–	•	**6XV1 440-2UE32** (0,32 m)
Via **Mitsubishi PG cable SC-08** to **FX** (9-pin female/RS 232)	•	–	•	–	•	**6XV1 440-2UE32** (0,32 m)
FX0 (mini DIN 8-pin female/RS 422)	•	–	•	–	•	**6XV1 440-2P...** (max. 500 m)
FX (mini DIN 8-pin female/RS 422)	•	–	•	–	•	**6XV1 440-2R...** (max. 500 m)
GE Fanuc (SNP/SNPX)						
Via *SNP network* to max. 4 x **GEF 90-30, 70**	•	–	•	–	•	**SNP network** (see online help)
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** (9-pin female/RS 232)	•	–	•	–	•	**6XV1 440-1K...** (max. 15 m)
Via **modem J878/***MODBUS* to **984-120, ...** or **TSX Quantum – CPU 113, ...** (25-pin female/RS 232)	•	–	•	–	•	**6XV1 440-2L...** (max. 15 m)
Via **Bridge BM85-000** or PLC with bridge functionality / *MODBUS PLUS network* to **984-120, ...** or **TSX Quantum – CPU 113, ...** (9-pin female/RS 232)	•	–	•	–	•	**6XV1 440-1K...** (max. 15 m)
Omron (LINK)						
• SYSMAC C (except CPU CQM1 – CPU 11/21) • SYSMAC α • SYSMAC CV (9-pin female/RS 232)	•	–	•	–	•	**6XV1 440-1X...** (max. 15 m)

• System coupling is possible
– System coupling not possible

System interfaces: Text panels

Third-party PLCs

PLC Target hardware (PROTOCOL) (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 With variants /PP	/DP	/DP-12	Connected via
Telemecanique (ADJUST)						
TSX 17 (15-pin female/RS 485)	•	–	•	–	•	**6XV1 440-1E...** (max. 20 m)
TSX 47/67/87/107 (9-pin female/TTY)	•	–	•	–	•	**6XV1 440-1F...** (max. 1000 m)
Telemecanique (UNI-TELWAY)						
Via connection socket TSX SCA62 to TSX 17 or TSX 47/67/87/107 (15-pin female/RS 485)	•	–	•	–	•	**6XV1 440-1E...** (max. 20 m)
Via TSX SCA62 + ACC01 connection sockets to TSX 37/57 (15-pin female/RS 485)	•	–	•	–	•	**6XV1 440-1E...** (max. 20 m)
Via TSX SCA62 connection socket and *UNI-TELWAY network* **to 1 x TSX 17 or TSX 37/57 or TSX 47/67/87/107** (15-pin female/RS 485)	•	–	•	–	•	**6XV1 440-1E...** (max. 20 m)

• System coupling is possible
– System coupling not possible

Overview

SIMATIC Touch Panels (TP), Operator Panels (OP), Mobile Panels, Multifunctional Platforms (MP)[1] and SIMATIC HMI software packages for PC ProTool/Pro Runtime and 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)
  - 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)
  - 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 MP 270B, MP 370 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 270B/MP 370, 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 variable transfer between SIMATIC HMI systems
(only for Mobile Panel 177 PN, TP/OP 177B DP/PN, TP/OP 270, MP 270B, MP 370, 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

System interfaces: Panels and runtime software

Overview

Communication standard Version	SIMATIC HMI Mobile Panel 177 PN TP 177B DP/PN OP 177B DP/PN	 TP 270 OP 270 MP 270B	 MP 370	 ProTool/Pro Runtime / 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)	● 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 coupling is possible
– System coupling not possible

1) WinCC flexible Runtime: SIMATIC WinCC flexible/OPC Server for WinCC flexible Runtime required
2) DCOM/XML gateway included in the scope of delivery of WinCC flexible supports access to MP 270B and MP 370 OPC XML servers
3) Only MP 270B; MP 370 with WinCC flexible; WinCC flexible/OPC Server option required for SIMATIC Multi Panel
4) Only in combination with WinCC flexible: SIMATIC WinCC flexible/Sm@rtAccess option required for SIMATIC Panel
5) Only for WinCC flexible Runtime: WinCC flexible/Sm@rtAccess for WinCC flexible Runtime required

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:

- TP 070, TP 170micro, OP 73micro, TP 177micro : 1 connection
- OP 73: max. 2 connections
- OP 77A, TP 177A, OP 77B, TP 170A, TP 170B, TP177B, OP 170B, OP 177B, Mobile Panel 177: max. 4 connections
- TP 270, OP 270, MP 270B, MP 370: max. 6 connections
- PC with ProTool/Pro Runtime or WinCC flexible Runtime: max. 8 connections

PPI interface (not for TP 070, OP73micro, TP 177micro, OP 73, OP 77A, TP 177A)

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, PI, 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.

SIMATIC S7

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI TD 200	TP 070	TP 170micro	OP73 micro TP 177micro	OP 73 OP 77A TP 177A	Connection via
SIMATIC S7 (PPI/MPI)						
via *PPI* with **S7-200 (PPI)**	● 1)	–	● 4)	–	–	**MPI cable** 8)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-200**	–	● 2) 3)	● 3) 4)	● 5)	● 6) 7)	**MPI cable** 8)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-300, -400**	–	–	–	–	● 6) 7)	**MPI cable** 8)
via *PPI* network **(PPI)** with max. 1 x **S7-200**	● 1)	–	● 4)	–	–	**PPI network** 9) (see Catalogs ST 70 and IK PI)
via *PPI* network **(PG/OP communication)** with max. 4 x **S7-200**	● 1)	–	–	● 5)	● 6) 7)	**PPI network** 9) (see Catalogs ST 70 and IK PI)
via *MPI* or *PROFIBUS* network (**PG/OP communication**) with max. 4 x **S7-200**	–	–	● 3) 4)	● 5)	● 6) 7)	**MPI or PROFIBUS network** 9) (see Catalogs ST 70 and IK PI)
via *MPI* or *PROFIBUS* network (**PG/OP communication**) with max. 4 x **S7-300, -400, WinAC**	–	–	–	–	● 6) 7)	**MPI or PROFIBUS network** 9) (see Catalogs ST 70 and IK PI)
via *Industrial Ethernet (TCP/IP)* (**PG/OP communication**) with max. 4 x **S7-200, -300, -400, WinAC**	–	–	–	–	–	**Industrial Ethernet** (see Catalog IK PI)

● System coupling is possible
– System coupling 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; Transmission rate max. 187.5 kbit/s; cable included in scope of delivery
2) TP 070 can only be connected to S7-200 via MPI point-to-point (MPI); no network operation (parallel PG, etc.) possible; Transmission rate max. 19.2 kbit/s
3) Only with passive S7-200
4) TP 170micro can only be interfaced with max. 1 x S7-200 (PPI/MPI); network operation (parallel PG, etc.) possible; Transmission rate max. 187.5 kbit/s
5) OP 73micro, TP 177 micro can only be interfaced with max. 1 x S7-200 (MPI); network operation (parallel PG, etc.) possible; Transmission rate max. 187.5 kbit/s
6) OP 73 can only be interfaced with max. 2 x SIMATIC S7 (MPI); network operation (parallel PG, etc.) possible;
7) Transmission rate max. 1.5 Mbit/s
8) MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 kbit/s) included in PG scope of delivery
9) Bus connector 6GK1 500-0EA02

Controller **Target hardware (PROTOCOL)** (physics)	SIMATIC HMI **TP 170A**	**OP 77B TP 170B OP 170B Mobile Panel 177 DP TP 177B DP OP 177B DP TP 177B DP/PN OP 177B DP/PN**	**Mobile Panel 177**	**TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/ Pro Runtime WinCC flexible Runtime**	**Connection via**
SIMATIC S7 (PPI/MPI)							
via *PPI* on **S7-200 (PPI)**	● 1)	● 1) 4)	–	● 1)	● 1)	● 1) 5)	**MPI cable** 10)
via *MPI* or *PROFIBUS* (**PG/OP communication**) on **S7-200**	● 2) 3)	● 3) 4)	–	● 3)	● 3)	● 3) 5)	**MPI cable** 10)
via *MPI* or *PROFIBUS* (**PG/OP communication**) with **S7-300, -400**	● 2)	● 4)	–	–	–	● 5)	**MPI cable** 10)
via *PPI* network **(PPI)** with max. 1 x **S7-200**	● 1)	● 1) 4)	–	● 1)	● 1)	● 1) 5)	**PPI network** 11) (see Catalogs ST 70 and IK PI)
via *PPI* network **(PG/OP communication)** with max. 4 x **S7-200**	–	–	–	–	–	● 6)	**PPI network** 11) (see Catalogs ST 70 and IK PI)
via *MPI* or *PROFIBUS* network (**PG/OP communication**) with max. 4 x **S7-200**	● 2) 3)	● 3) 4)	–	● 3) 6)	● 3) 6)	● 3) 5) 6)	**MPI or PROFIBUS network** 11) (see Catalogs ST 70 and IK PI)
via *MPI* or *PROFIBUS* network (**PG/OP communication**) with max. 4 x **S7-300, -400, WinAC**	● 2)	● 4)	–	● 6)	● 6)	● 5) 6)	**MPI or PROFIBUS network** 11) (see Catalogs ST 70 and IK PI)
via *Industrial Ethernet (TCP/IP)* (**PG/OP communication**) with max. 4 x **S7-200, -300, -400, WinAC**	–	● 7)	● 4)	● 6) 8)	● 6) 8)	● 6) 9)	**Industrial Ethernet** (see Catalog IK PI)

● System coupling is possible
– System coupling not possible

1) Can only be interfaced with max. 1 x S7-200 via PPI (PPI); network operation (parallel PG, etc.) possible
2) TP 170A under ProTool can only be interfaced with 1 x SIMATIC S7 (PPI/MPI); network operation (parallel PG, etc.) possible; Transmission rate max. 1.5 Mbit/s
TP 170A under WinCC flexible can be interfaced with max. 4 x SIMATIC S7 (PPI/MPI); transfer rate max. 1.5 Mbit/s
3) Only with passive S7-200
4) Mobile Panel connection via special connecting cable and junction box (see Mobile Panel section for MLFBs); see Manual for cables used.
5) Connection via integrated MPI/PROFIBUS interface, use the CP 5611 with a standard PC.
6) Depending on the scope of the configuration (communication), up to 8 S7 connections are possible
7) TP 177B DP/PN and OP 177B DP/PN only
8) Not available under ProTool, only when configuring with WinCC flexible:
for MP 270B, MP 370 via integrated Industrial Ethernet interface;
for TP 270, OP 270 a commercially available Ethernet CF card is required.
9) Connection via integrated Industrial Ethernet interface; use the CP 1512, CP 1612 or CP 1613 with a standard PC
If you are using an integrated Industrial Ethernet interface or the CP 1512 or CP 1612, you will also need the SIMATIC NET driver software Industrial Ethernet SOFTNET S7-Lean 2005 (6GK1 704-1LW63-3AA0) or Industrial Ethernet SOFTNET-S7 V6.1 (6GK1704-1CW61-3AA0)
(Industrial Ethernet SOFTNET-S7 Lean 2005 is included in the scope of delivery of WinCC flexible 2005 Runtime)
If you are using the CP 1613, you will also need the SIMATIC NET driver software S7-1613/Windows 2005 (6GK1 716-1CB63-3AA0).
10) MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 kbit/s) included in PG scope of delivery
11) Bus connector 6GK1 500-0EA02

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
(not for Mobile Panel 177 PN, TP 177B, OP 177B)

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 TP 170A, Mobile Panel 177 PN)

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

The PROFIBUS DP interface supports the connection of:

- Up to 2 SIMATIC TP/OP/MP 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/MP 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 included in ProTool scope of delivery).

Controller	**SIMATIC HMI**					
Target hardware (PROTOCOL) (physics)	**TP 170A**	**OP 77B TP 170B OP 170B Mobile Panel 177 DP TP 177B DP OP 177B DP TP 177B DP/PN OP 177B DP/PN**	**TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime 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)	•	• 1)	•	•	•	**6ES5 734-1BD20** 2) (3.2 m) **6XV1 440-2A...** (max. 1000 m)
SIMATIC S5 (PROFIBUS DP + HMI)						
via *PROFIBUS DP* with 1 x **S5-95U/L2-DP/master [6ES5 095-8ME02]**	—	• 3)	•	•	• 4)	**PROFIBUS** 5) (see Catalog ST 50/IK PI)
via *PROFIBUS DP* with *IM 308C* to **S5-115U, -135U, -155U** except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11), except CPU 946/947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < Version 5)	—	• 3)	•	•	• 4)	**PROFIBUS** 5) (see Catalog ST 50/IK PI)
via *PROFIBUS DP* with *CP 5431 FMS/DP* to **S5-115U, -135U, -155U** except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11), except CPU 946/947 (6ES5 94.-3UA11, 6ES5 94.-3UA21, 6ES5 94.-3UA22 < Version 5)	—	• 3)	•	•	• 4)	**PROFIBUS** 5) (see Catalog ST 50/IK PI)

• System coupling is possible
— System coupling not possible

1) Not TP 177B, OP 177B
2) PC cable with integrated level converter (RS 232/TTY); a standard adapter (9-/25-pin male) is required on the PLC
3) Mobile Panel 177 DP connection via special connecting cable and junction box (see Mobile Panel section for MLFBs); see manual for cables used
4) Connection via integrated MPI/PROFIBUS interface, use the CP 5611 with a standard PC
5) Bus connector 6GK1 500-0EA02

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 Mobile Panel 177 PN)*

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 TP 170A, not for Mobile Panel 177 PN)

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 using 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 for application ladder included in ProTool scope of delivery)

Controller	**SIMATIC HMI**					
Target hardware (PROTOCOL) (physics)	**TP 170A**	**OP 77B Mobile Panel 177 DP TP 170B OP 170B TP 177B DP OP 177B DP TP 177B DP/PN OP 177B DP/PN**	**TP 270 OP 270 MP 370**	**MP 370**	**ProTool/Pro Runtime WinCC flexible Runtime**	**Connection via**
SIMATIC 505 (NITP)						
PLC 525, 535, 565T (RS 232)	●	● 1) 2)	●	— ●	●	**PPX: 2601 094-8001** 3) **6XV1 440-2L...** (max. 15 m)
PLC 545, 555 (RS 232)	—	● 1) 2)	●	— ●	●	**PPX: 2601 094-8001** 3) **6XV1 440-2K...** (max. 15 m)
PLC 535, 545/CPU 1101, 565T (RS 422)	—	● 1)	●	●	● 4)	**6XV1 440-2M...** (max. 300 m)
PLC 545/CPU 1102, 555 (RS 422)	—	● 1)	●	●	● 4)	**6XV1 440-1M...** (max. 300 m)
SIMATIC 505 (PROFIBUS DP + HMI						
via *PROFIBUS DP* to 1 x **PLC 545, 555** with **CP 5434**	—	● 1)	●	●	● 5)	**PROFIBUS** 6) (see Catalog ST 50/IK PI)

● System coupling is possible
— System coupling not possible

1) Mobile Panel 177 DP connection via special connecting cable and junction box (see Mobile Panel section for MLFB); see Manual for cables used.
2) For TP 177B, OP 177B the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
3) A standard adapter (9-/25-pin male) is required on the PLC
4) A commercially available level shifter (RS 232/RS 422) is required on the PC
5) Connection via integrated MPI/PROFIBUS interface, use the CP 5611 with a standard PC
6) Bus connector 6GK1 500-0EA02

Third-party PLCs

Overview

Allen Bradley *(not for Mobile Panel 177 PN)*

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

DF1 interface

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

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 ProTool/Pro Runtime or 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)

GE-Fanuc *(not for Mobile Panel 177 PN)*

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 for Mobile Panel 177 PN)*

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 Mobile Panel 177 PN)*

Two communication profiles 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)

Modicon *(not for Mobile Panel 177 PN)*

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).

Overview (continued)

Omron (not for Mobile Panel 177 PN)

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 Mobile Panel 177 PN)

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 available under WinCC flexible

Controller **Target hardware (PROTOCOL)** (physics)	**SIMATIC HMI** **TP 170A**	**OP 77B** **TP 170B** **OP 170B** **Mobile Panel 177 DP** **TP 177B DP** **OP 177B DP** **TP 177B DP/PN** **OP 177B DP/PN**	**TP 270** **OP 270** **MP 270B**	**MP 370**	**ProTool/Pro Runtime** **WinCC flexible Runtime**	**Connection via**
Allen Bradley (DF1)						
SLC 500/03,04,05 or MicroLogix (RS 232)	●	● 1) 2)	●	— ●	●	**1747 CP3** 4) **6XV1 440-2K...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 232)	●	● 1) 2)	●	— ●	●	**1784 CP10** 4) **6XV1 440-2L...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 422)	●	● 1)	●	●	●	**6XV1 440-2V...** (max. 60 m)
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)	● 3)	● 1) 2)	●	— ●	●	**1784 CP10** 4)5) **6XV1 440-2L...** 5) (max. 15 m)
via **KF3 gateway** and *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 232)	● 3)	● 1) 2)	●	— ●	●	**1784 CP10** 4)5) **6XV1 440-2L...** 5) (max. 15 m)
Allen Bradley (DH485)						
SLC 500/03,04,05 or **MicroLogix** (RS 232)	●	● 1) 2)	●	●	●	See online help 6)
via **AIC adapter** and *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 232)	● 3)	● 1) 2)	●	●	●	See online help 6)
via *DH485 network* with up to 4 x **SLC 500** or **MicroLogix** (RS 485)	● 3)	● 1)	●	●	—	See online help 6)

● System coupling is possible
— System coupling not possible

1) Mobile Panel 177 DP connection via special connecting cable and junction box (see Mobile Panel section for MLFBs); see Manual for cables used.
2) For TP 177B, OP 177B the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
3) TP 170A can only be connected to one control unit
4) Allen Bradley PC cable
5) Cable for connection to KF2/KF3 gateway; a gander changer (25-pin bush/25-pin bush) is required on the gateway side
6) Detailed information (cables used) can be found in the online help for ProTool or WinCC flexible and in the Communication User Manual for Windows-based systems

Third-party PLCs

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI TP 170A	OP 77B TP 170B OP 170B Mobile Panel 177 DP TP 177B DP OP 177B DP TP 177B DP/PN OP 177B DP/PN	TP 270 OP 270 MP 270B	MP 370	ProTool/Pro Runtime WinCC flexible Runtime	Connection via
GE-Fanuc (SNP)						
GEF 90-Micro, 90-30, 90-70 (RS 232)	●	● 1) 2)	●	●	●	See online help 7)
via **adapter** with up to 4 x **GEF 90-Micro, 90-30, 90-70** (RS 232)	● 3)	● 1) 2)	●	●	●	See online help 7)
with up to 4 x **GEF 90-Micro, 90-30, 90-70** (RS 422)	● 3)	● 1)	●	●	–	See online help 7)
LG GLOFA (Dedicated)						
GLOFA-GM with Cnet module (RS 232)	●	● 1) 2)	●	●	●	See online help 7)
with up to 4 x **GLOFA-GM with Cnet module** (RS 422)	● 3)	● 1)	●	●	–	See online help 7)
Mitsubishi (FX)						
FX0 (RS 422)	●	● 1) 4) ● 1)	● ●	● 5) ●	● –	**SC-071** 6) **6XV1 440-2P...** (max. 20 m)
FX (RS 422)	●	● 1) 4) ● 1)	● ●	● 5) ●	● –	**SC-081** 6) **6XV1 440-2P...** (max. 20 m)
Mitsubishi (MP4)						
• **Series FX** with comm. module • **Series A** (AnN, AnA, AnU, AnS) with interface module • **Series Q** (QnA, QnAS) with interface module (RS 232)	●	● 1) 2)	●	●	●	See online help 7)
via **FX-48SC-IF converter** with up to 4 PLCs • **Series FX** with comm. module • **Series A** (AnN, AnA, AnU, AnS) with interface module • **Series Q** (QnA, QnAS) with interface module (RS 232)	● 3)	● 1) 2)	●	●	●	See online help 7)
with up to 4 PLCs • **Series FX** with comm. module • **Series A** (AnN, AnA, AnU, AnS) with interface module • **Series Q** (QnA, QnAS) with interface module (RS 422)	● 3)	● 1)	●	●	–	See online help 7)
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)	●	●	●	See online help 7)
via **BM85-000 bridge** or **PLC with bridge function**/ *MODBUS PLUS –network* with up to 4 x **984-120, ...** or **TSX Quantum – CPU 113, ...** (RS 232)	● 3)	● 1) 2)	●	●	●	See online help 7)
TSX Compact (RS 232)	●	● 1) 2)	●	●	●	See online help 7)

● System coupling is possible
– System coupling not possible

1) Mobile Panel 177 DP connection via special connecting cable and junction box (see Mobile Panel section for MLFBs); see Manual for cables used.
2) For TP 177B, OP 177B the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
3) TP 170A can only be connected to one control unit
4) Not TP 177B, OP 177B
5) A 15-pin male/9-pin male adapter 6XV1 440-2UE32 is required for a connection using Mitsubishi PC cable
6) Mitsubishi PC cable with integrated level shifter RS 232/RS422
7) Detailed information (cables used) can be found in the online help for ProTool or WinCC flexible and in the Communication User Manual for Windows-based systems

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI TP 170A	OP 77B TP 170B OP 170B Mobile Panel 177 DP TP 177B DP OP 177B DP TP 177B DP/PN OP 177B DP/PN	TP 270 OP 270 MP 370	MP 370	ProTool/Pro Runtime WinCC flexible Runtime	Connection via
Omron (Link/Multi Link)						
• **SYSMAC C** (außer CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	●	● 1) 2)	●	●	●	See online help 5)
via **NT-AL001 converter** with up to 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	● 3)	● 1) 2)	●	●	●	See online help 5)
with up to 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 422)	● 3)	● 1)	●	●	–	See online help 5)
Telemecanique (UNI-TELWAY) 6)						
via **TSX SCA62 outlet** with **TSX 17** or **TSX 47/67/87/107** (RS 485)	●	● 1)	●	●	● 4)	**6XV1 440-1E...** (max. 20 m)
via **TSX SCA62 + ACC01 outlets** with **TSX 37/57** (RS 485)	●	● 1)	●	●	● 4)	**6XV1 440-1E...** (max. 20 m)
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)	● 3)	● 1)	●	●	● 4)	**6XV1 440-1E...** (max. 20 m)

● System coupling is possible
– System coupling not possible

1) Mobile Panel 177 DP connection via special connecting cable and junction box (see Mobile Panel section for MLFBs); see Manual for cables used.
2) For TP 177B, OP 177B the RS 422/RS 232 adapter 6GK1 901-1BB10-2AA0 is required
3) TP 170A can only be connected to one control unit
4) An RS 485 interface card and a suitable cable are required on the PC. Detailed information (board tested, cables used) can be found in the online help for ProTool and in the Communication User Manual for windows-based systems
5) Detailed information (cables used) can be found in the online help for ProTool or WinCC flexible and in the Communication User Manual for Windows-based systems
6) Not available with WinCC flexible

Connecting cables

Overview

You can find order numbers for the connecting cables required to link SIMATIC Panels under selection and ordering data.

2

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 length	
• Max. 200.0 m	**6ES5 731-1 ■■■0**
Connecting cables 6ES5 731-6....	
for SIMATIC S5, interface adapter for PC 16-20 required for the connection between PG and connecting cable	**6ES5 731-6AG00**
Connecting cables 6ES5 734-1....	
for SIMATIC S5, connecting cable between PLC 15-pin and PC 25-pin	
Standard length	
• 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 length	
• 10.0 m	**6ES5 734-2CB00**
Custom length	
• Max. 1000.0 m	**6ES5 734-2 ■■■0**
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**
Connecting cables 6ES7 901-...	
for SIMATIC S7 MPI cable between SIMATIC S7 and PG via MPI	
Standard length	
• 5.0 m [2]	**6ES7 901-0BF00-0AA0**
Connecting cables 6XV1 418-0C...	
Connecting cable between TD/TP/OP and CP521 via RS232/V.24	
Standard lengths	
• 3.2 m	**6XV1 418-0CH32**
• 10.0 m	**6XV1 418-0CN10**
Custom lengths	
• Max. 16.0 m	**6XV1 418-0C ■■■**
Connecting cables 6XV1 440-1E...	
Connecting cable between TD/TP/OP and TELEMECANIQUE TSX17 via TTY/9-pin socket and TELEMECANIQUE SCA62/ UNI-TELWAY via RS485/15-pin socket	
• Max. 20.0 m	**6XV1 440-1E ■■■**
Length codes see Appendix	

	Order No.
Connecting cables 6XV1 440-1F...	
Connecting cable between TD/TP/OP (TTY/15-pin socket) and TELEMECANIQUE TSX47/67/87/107 (TTY/9-pin socket)	
• Max. 1000.0 m	**6XV1 440-1F ■■■**
Connecting cables 6XV1 440-1K...	
Connecting cable between TD/TP/OP (RS232/15-pin socket) and AEG-MODICON 984 O TSX QUANTUM (RS232/9-pin socket)	
• Max. 15.0 m	**6XV1 440-1K ■■■**
Connecting cables 6XV1 440-1L...	
Connecting cable between TD/TP/OP (RS232/15-pin socket) and AEG MODICON J878/ MODBUS (RS232/25-pin socket)	
• Max. 16.0 m	**6XV1 440-1L ■■■**
Connecting cables 6XV1 440-1M...	
Connecting cable between TD/TP/OP (RS422/9-pin socket) and SIMATIC 505 PLC 545/ CPU1102,555 (RS422/9-pin socket)	
• Max. 300.0 m	**6XV1 440-1M ■■■**
Connecting cables 6XV1 440-2A...	
Connecting cable between TD/TP/OP and AG S5-90U to -155U	
Standard lengths	
• 3.2 m	**6XV1 440-2AH32**
• 5.0 m	**6XV1 440-2AH50**
• 10.0 m	**6XV1 440-2AN10**
Custom lengths	
Max. 1000.0 m	**6XV1 440-2A ■■■**
Connecting cables 6XV1 440-2B...	
Connecting cable between TD/OP and PT8./DR via TTY/20MA	
Standard lengths	
• 3.2 m	**6XV1 440-2BH32**
• 10.0 m	**6XV1 440-2BN10**
Custom lengths	
Max. 1000.0 m	**6XV1 440-2B ■■■0**
Connecting cables 6XV1 440-2C...	
Connecting cable between TD/OP and PT8./DR via V.24	
Standard lengths	
• 3.2 m	**6XV1 440-2CH32**
• 10.0 m	**6XV1 440-2CN10**
Custom lengths	
Max. 16.0 m	**6XV1 440-2C ■■■0**
Connecting cables 6XV1 440-2F...	
Connecting cable between TD/TP/OP and CP523 via TTY	
Custom lengths	
• Max. 1000.0 m	**6XV1 440-2F ■■■**
Length codes see Appendix	

2

Ordering data	Order No.
Connecting cables 6XV1 440-2G...	
Connecting cable between TD/TP/OP and CP521 via TTY	
Custom lengths	
• Max. 1000.0 m	**6XV1 440-2G■■■**
Connecting cables 6XV1 440-2J...	
Connecting cable between TD/TP/OP and CPU928 B, CPU945 interface module via TTY/V.24	
• Max. 1000.0 m	**6XV1 440-2J■■■**
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**
Custom lengths	
• Max. 16.0 m	**6XV1 440-2K■■■**
Connecting cables 6XV1 440-2L...	
Connecting cable between TD/TP/OP [3] and SIMATIC 505 PLC 525,535,565T; ALLEN BRADLEY PLC5/11,20 via RS232/15-pin socket and PC via RS232/25-pin socket	
• Max. 16.0 m	**6XV1 440-2L**
Connecting cables 6XV1 440-2M...	
Connecting cable between TD/TP/OP (RS422/9-pin socket) and SIMATIC 505 PLC 535,545/ CPU1101 565T (RS422/9-pin socket)	
• Max. 16.0 m	**6XV1 440-2M■■■**
Connecting cables 6XV1 440-2P...	
Connecting cable between TD/TP/OP (RS422/9-pin socket) and MITSUBISHI FX0 (RS422/MINI DIN 8-pin socket)	
• Max. 500 m	**6XV1 440-2P■■■**
Connecting cables 6XV1 440-2R...	
Connecting cable between TD/TP/OP (RS422/9-pin socket) and MITSUBISHI FX (RS422/MINI DIN 25-pin socket)	
• Max. 500.0 m	**6XV1 440-2R■■■**
Connecting cables 6XV1 440-2V...	
Connecting cable between TD/TP/OP (RS422/9-pin socket) and ALLEN BRADLEY PLC5/11,20 (RS422/25-pin socket)	
• Max. 60.0 m	**6XV1 440-2V■■■**
Length codes see Appendix	

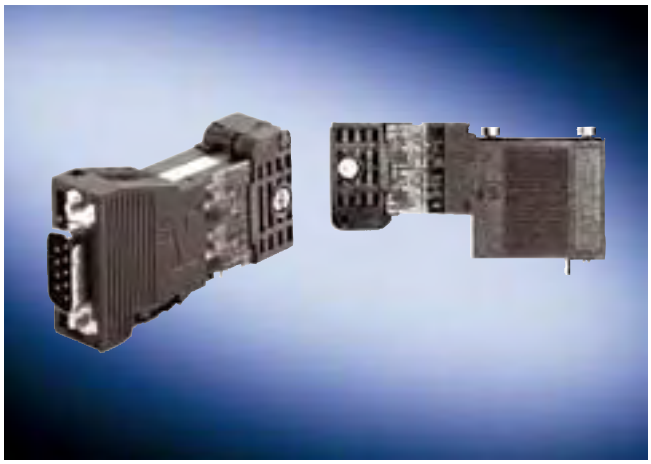
	Order No.
Configuration cable	
for connecting PC/PG/OP/TD to SIMATIC S7-200/300/400 via 9-pin male/RS232 (serial)	
• between PG 702/OP3 [1] and S7-200/300/400 via PPI/MPI	**6ES7 705-0AA00-7BA0**
• between OP7/OP17/OP27 [2]/TD17 and S7-200/300/400 via MPI	**6ES7 901-0BF00-0AA0**
for connecting PG 7xx 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■■■00**
Length codes see Appendix	
Connecting cable	
between HMI adapter and PC/TS adapter (RS232/null MODEM cable)	
• 5.0 m	**6ES7 901-1BF00-0XA0**
PROFIBUS connecting cable 830-1T	
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends	
• 1,5 m	**6XV1 830-1CH15**
• 3.0 m	**6XV1 830-1CH30**

Note:
Length codes for connecting cables see Appendix

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

RS 485 bus connectors

Overview



- 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

Ordering data	Order No.
PROFIBUS FastConnect bus connector RS 485 with 90° cable outlet With insulation-piercing terminals, max. transmission rate 12 Mbit/s	
• Without PG interface	**6ES7 972-0BA50-0XA0**
• with PG interface	**6ES7 972-0BB50-0XA0**
PROFIBUS FastConnect bus connector RS 485 Plug 180 With insulation-piercing terminals and 180° cable outlet for the industrial PC, SIMATIC HMI OP, OLM; max transmission rate 12 Mbit/s	**6GK1 500-0FC00**

IE FC RJ45 Plug

Overview

- Implementation of direct device connections over distances of up to 100 m with Industrial Ethernet FC installation cable 2 x 2 without patching
- Easy connection (insulation displacement contacts) for 4-core Twisted Pair installation cables (100 Mbit/s) without the need for special tools
- Error-preventing connection technique thanks to visible connection area as well as colored blade terminals
- Industry-compatible design (rugged metal housing, no easily lost small parts)
- Excellent EMC shielding and deflection (metal housing)
- Integrated strain-relief for installation cables
- Compatible to the EN 50173 (RJ45) / ISO IEC 11801 standard
- Additional strain and bending relief of plug connector possible through latching of plug on device housing, e.g. with SCALANCE X, SCALANCE S, ET 200S.

Ordering data

	Order No.
IE FC RJ45 Plug 180	
RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface	
• 1 pack = 1 unit	**6GK1 901-1BB10-2AA0**
IE FC RJ45 Plug 90	
RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 90° cable outlet; for ET 200S	
• 1 pack = 1 unit	**6GK1 901-1BB20-2AA0**

Junction boxes

Overview

Junction box DP and PN

Ordering data

		Order No.
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**

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

Overview

The following **memory cards** are available:

- CF card, 32 MB
- PC card, 64 MB
- MM card, 64 MB

Ordering data		Order No.
CF card, 32 MB	A	**6AV6 574-2AC00-2AA0**
PC card, 64 MB	A	**6AV6 574-2AC00-2AF0**
MM card, 64 MB	A	**6AV6 671-1CB00-0AX0**

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

Overview

The following **converters/adapters** are available:

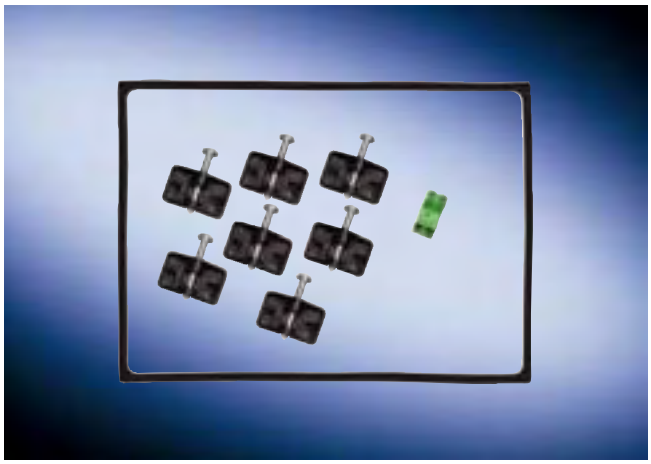
- RS232 to TTY converter
- RS422 to RS232 converter
- Adapter between TD/OP and connecting cable 6ES5 735-...
- 90° angle adapter, 9-pin for RS422/485
- Y cable (adapter for OP5)
- Adapter cable between TD/OP and PC cable

Ordering data		Order No.
Converter		
RS232 to TTY converter, 20 mA, between TD/TP/OP and S5-90U to S5-155U		**6ES5 743-1BD20**
RS422 to RS232 converter, V.24 between TD/TP/OP and non-Siemens PLC with RS232 interface	A	**6AV6 671-8XJ00-0AX0**
Adapter		
between TD/OP and connecting cable 6ES5 735-...		
0.32 m		**6XV1 440-2DE32**
Adapter cable		
between TD/OP (RS 232/15-pin socket) and non-Siemens PC cable (RS 232/9-pin socket)		
• 0.3 m		**6XV1 440-2UE32**
90° angle adapter, 9-pin for RS422/485	A	**6AV6 671-8XD00-0AX0**
Y cable (adapter for OP5)		
• 0.20 m		**6XV1 440-2HE20**

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

Service packages

Overview



The following **Service packages** are available:

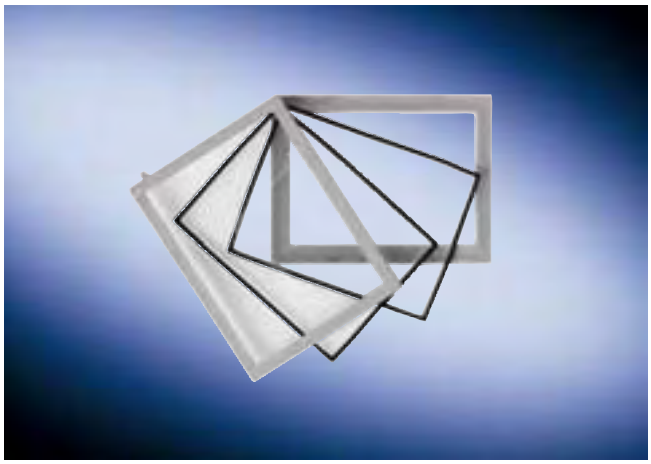
- PP7/17
- TD 17, OP 7/17
- OP 73, OP 77A/B, OP 73micro
- TP 170A/B, TP 170micro, TP 070
- TP 177micro, TP 177A, TP/OP 177B
- TP 270 6", OP 270 6", MP 270 6" Touch/Key
- TP 270 10", OP 270 10", MP 270 10" Touch/Key
- MP 370 Key
- MP 370 Touch

Ordering data

	Order No.
Service packs 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 packs for TD17, OP7/17 Consisting of: • 1 TD17 gasket • 1 OP7 gasket • 1 OP17 gasket • 5 tensioning clamps • Plug-in terminal block (twin block)	**6AV3 678-1CC10**
Service packs for OP 73, OP 77A/B, OP 73micro Consisting of: • Installation sealings • 5 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-1XA00-0AX0**
Service packs for TP 170A/B, TP 170micro, TP070, OP 170 Consisting of: • Installation sealings • 2 sets of labeling strips for OPs • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 574-1AA00-4AX0**
Service packs for TP 177micro, TP 177A, TP/OP 177B Consisting of: • Installation sealings • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 671-2XA00-0AX0**

	Order No.
Service packs for TP 270 6", OP 270 6", MP 270B 6" Touch/Key Consisting of: • Installation sealings • 2 sets of labeling strips for OPs • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 574-1AA00-4AX0**
Service packs for OP 270 10", MP 270 10" Key • Consisting of: • Installation sealings • 7 tensioning clamps • Plug-in terminal block (twin block)	**6AV6 574-1AA00-2DX0**
Service packs for MP 370 Key Consisting of: • Installation sealings • 2 sets of labeling strips for OPs • 7 tensioning clamps • Plug-in terminal block (twin block) • Socket wrench	**6AV6 574-1AA00-2BX0**
Service packs for MP 270B Key, MP 370 Touch, TP 270 10", C7 636 Touch Consisting of: • Installation sealings • 10 tensioning clamps • Plug-in terminal block (twin block) • Socket wrench	**6AV6 574-1AA00-2CX0**

Overview



Protective covers for:

- TP 070
- TP 177micro
- TP 170A/B
- TP 177A/B
- T P 270 6“
- MP 270 6“ Touch

Ordering data	Order No.
Protective covers for TP 070, TP 177micro, TP 170A/B, TP 177A/B, TP 270 6“, MP 270 6“ Touch (2 sets) Consisting of: • 2 cover frames • 2 base frames • 2 contoured cover foils (for TP 070, TP 170A/B) • 2 flat cover foils (for TP 177micro, TP 177A/B, TP 270 6“, MP 270 6“ Touch)	**6AV6 574-1AE00-4AX0**

Overview

Cover foils for:

- TP 070, TP 170A/B
- TP 177micro, TP 177A/B, TP 270 6“, MP 270 6“ Touch
- TP 270 10”, MP 270 10”, MP 370 12” Touch
- MP 370 15” Touch

Ordering data	Order No.
Cover foil for TP 070, TP 170 (pack of 10)	**6AV6 574-1AD00-4AX0**
Cover foil for TP 270 6“, MP 270B 6“ Touch (pack of 10)	**6AV6 574-1AD00-4DX0**
Cover foil for TP 177micro, TP 177A/B (pack of 10)	**6AV6 574-2XC0-0AX0**
Cover foil for TP 270 10“, MP 270 10“, MP 370 12“ Touch (pack of 10)	**6AV6 574-1AD00-4CX0**
Cover foil for MP 370 15” Touch (pack of 10)	**6AV6 574-1AD00-4EX0**

Backup battery

Ordering data	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**

Overview

Print functions

	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
OP7	●	—	●	●	●	—	●	●	●	●
OP17	●	—	●	●	●	—	●	●	●	●
OP 77B	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
OP/TP 170B	●	—	●	—	—	—	—	—	—	—
OP/TP 177B	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
OP/TP 270	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
MP 270B	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)
MP 370	●	●	●	● 2)	● 2)	● 2)	● 2)	● 2)	—	● 2)

● Functionality possible
— Functionality not possible

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

Note:
TD17, OP3, OP 73micro, OP 73, OP 77A, TP 070, TP 170micro, TP 177micro, TP 170A, TP 177A do not have a printer interface

Released printers

	Siemens/Tally	EPSON		OKI	GMW	HP	Brother
	T2024 T2150 T2240	**LQ300+ LQ580**	**TM-T88II TM-T88III**	**ML 3390**	**IPP 144-40 GE IPP 144-40 GS**	**Deskjet 6840**	**HL1250 HL 5140**
OP7	Serial	Serial	Serial	-	Serial	-	-
OP17	Serial	Serial	Serial	-	Serial	-	-
OP 77B	-	-	-	USB	-	USB	USB
OP/TP 170B	Serial	Serial	Serial	-	Serial	-	-
OP/TP 177B	-	-	-	USB	-	USB or Ethernet	USB
OP/TP 270	Serial	Serial	Serial	USB	Serial	USB or Ethernet	USB
MP 270B	Serial	Serial	Serial	USB	Serial	USB or Ethernet	USB
MP 370	Serial	Serial	Serial	USB	Serial	USB or Ethernet	USB

Supply sources

Manufacturer	Printer name	Printer type	Physics	Applications	Ordering address
Brother	**HL1250** 3)	Laser B/W	Parallel / USB	Workstation	www.brother.de
	HL 5140 3)	Laser B/W	Parallel / USB	Workstation	
EPSON	**LQ300+**	24 dot matrix B/W	Serial / parallel	Workstation	www.epson.de
	LQ580	24 dot matrix B/W	Serial 1) / parallel	Workstation	
	TM T88II/III 2)	Thermal B/W	Serial	Mounting	
GMW	**IPP 144-40 GE** 2)	Thermal B/W	Serial	Mounting	www.g-mw.de
	IPP 144-40 GS 2)	Thermal B/W	Serial	Mounting	
HP	**Deskjet 6840** 3)	Color inkjet	USB / Ethernet	Workstation	www.hp.com
OKI	**ML 3390**	24 dot matrix B/W	Parallel / USB	Workstation	www.oki.de
Siemens/Tally	**T 2024/9; T 2024/24**	9 or 24 dot matrix B/W	Serial / parallel	Workstation	www.tallygenicom.de or mall.ad.siemens.de
	T2150/24	9 or 24 dot matrix B/W	Serial / parallel	Workstation	
	T 2240/9; T 2240/24	9 or 24 dot matrix B/W	Serial 1) / parallel	Workstation	

1) For serial printing, a module is available as an option.
2) "Hard copy" and "Print log" not possible
3) Line-by-line message printout not possible

Recommended printers for Panels and Multi Panels

More information

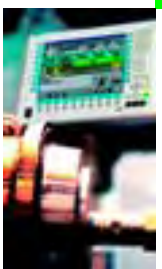
Printers and printer settings

For further information, visit our website at

http://www4.ad.siemens.com/news/csi/de/11376409

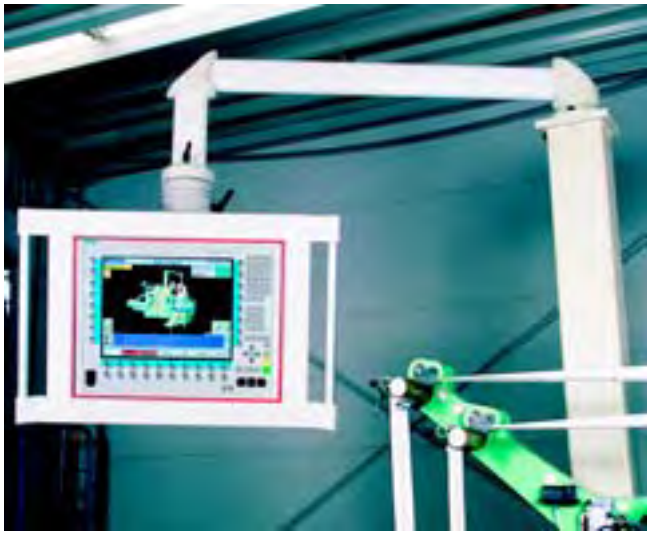
SIMATIC Panel PC

3



Introduction

Overview



SIMATIC Panel PCs are suitable for use in standard control cabinets, consoles and control panels.
Typical areas of application can be found in both production and process automation.

- SIMATIC Panel PC 577, 677 and 877 are able to meet a variety of requirements.

Shared industrial functionality

- IP65 degree of protection, NEMA 4
- High EMC: CE mark for industrial applications
- Designed for 24-hour continuous operation
- MTBF backlighting 60,000 h
- Onboard Ethernet, PC 577: 1Gbit/s (10/100/1000 Mbit)
- Ambient operating temperature up to 45 °C (max. configuration)

SIMATIC Panel PC 577

Industrial compatibility

- Vibration resistance during operation: 0.25 g
- Shock resistance during operation: 1.0 g

Investment protection

- Spare parts availability guaranteed for at least 3 years following the end of active marketing
- The latest PC technology
- Attractive price

High system availability

- SIMATIC PC/PG Image&Partition Creator –
  Software tool for backing up hard disk data (option)

SIMATIC Panel PC 677 and 877

High degree of industrial capability

- Vibration resistance during operation: 1.0 g
- Shock resistance during operation: 5.0 g

High investment protection

- Spare parts availability guaranteed for 5 years following the end of active marketing
- High level of continuity of components
- Equipment configuration is very service-friendly

High degree of industrial functionality

- Built-in PROFIBUS DP/MPI interface
- Low mounting depth (Panel PC 677)
- PCI slots
- ISA slots (Panel PC 877)
- Maximum expansion capability (Panel PC 877)
- Distributed configuration (operator control unit and computer unit can be up to 20 m apart) [1)]
- Direct control key module (optional)

High system availability

- SIMATIC PC/PG Image&Partition Creator –
  Software tool for backing up hard disk data (expansion components)
- SIMATIC PC DiagMonitor –
  PC diagnostics/alarm software (expansion components)
- Second hard disk
- RAID1 (on-board on Panel PC 677, optional on Panel PC 877)

1) Available as an accessory for the Panel PC 677/877

Overview SIMATIC Panel PC

	SIMATIC Panel PC 577 [1]	SIMATIC Panel PC 677	SIMATIC Panel PC 877
Design			
• Centralized configuration	●	●	●
• Distributed configuration via remote kit	–	● 2)	● 2)
Display			
• Size	12.1"/15.1"/19.1" TFT	12.1"/15.1"/19.1" TFT	12.1"/15.1"/19.1" TFT
• Resolution	800 x 600/ 1024 x 768/ 1280 x 1024	800 x 600/ 1024 x 768/ 1280 x 1024	800 x 600 / 1024 x 768 / 1280 x 1024
Control elements			
• Membrane keyboard	● 3)	● 3)	● 3)
• Touch screen	●	●	● 4)
General features			
• Processor	Intel Celeron 2.0 GHz or Intel Pentium 4 2.4 GHz	Intel Celeron M 370 1.5 GHz or Intel Pentium M 730 1.6 GHz or Intel Pentium M 760 2.0 GHz	Intel Celeron 2.0 GHz or Intel Pentium 4 2.8 GHz or Intel Pentium 4 mobile 2.2 GHz
• RAM	256 MB, 512 MB, 1 GB, expandable to 3 GB	256 MByte, 512 MByte, 1 GByte, 2 GByte	256 MByte, 512 MByte, 1 GByte, 2 GByte
• Free expansion slots	3 x PCI (all slots with card retainer and one slot specially prepared for WinAC Slot module)	2 x PCI (all slots with card retainer), 1 x slot for CompactFlash Card	2 x PCI, 2 x PCI/ISA shared, 1 x ISA (all slots with card retainer)
• Operating system	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
Separate PC structure for operator control and computer units	–	With remote kit up to 30 m	With remote kit up to 30 m
Interfaces			
• PROFIBUS / MPI	● (using plug-in card)	●	●
• Ethernet	●	●	●
• USB	●	●	●
• Serial interface	●	●	●
• Parallel interface	●	–	●
• Multimedia interface	●	–	–
• Graphics interface	●	●	●
Ambient conditions			
• Vibration load during operation	0.25 g	1 g	1 g
• Shock loading during operation	1 g	5 g	5 g

● Available

– Not available

1) The mounting dimensions of the Panel PC 577 front are identical to those of the Panel PC 677/877
2) Available as accessories
3) Touch screen devices are only available with 15"/19" displays
4) Membrane keyboard devices are only available with 12"/15" displays

Introduction

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 security thanks to long product life (at least 2.5 years) and long-term availability of spare parts (at least 5 years)
	High system availability thanks 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	Beschreibung
	High resistance against vibration/shock and high ambient temperatures
	Space-saving system concept thanks to minimum outside dimensions
	Remote PC display concept possible
	Centralized PC display concept

Benefits

SIMATIC Panel PC 577

Industrial compatibility in combination with high performance at an attractive price

The SIMATIC Panel PC 577 is the first choice for applications which require industrial compatibility in conjunction with high-performance IPC platforms.

Integrated interfaces

The integrated Ethernet interface can be used for communication in the office world or at management level. The integral USB 2.0 interfaces at the front and rear mean that connection of peripheral devices from the PC world is child's play.
Once an application is running, devices such as an external mouse, keyboard, CD-ROM drive or ZIP drive, printer, chip card reader, barcode reader and many others can be installed and operated with ease. The PCI slots provide leeway for installing PC expansion cards, e.g., communication cards for interfacing with the process.

The price

The Panel PC 577 offers industrial compatibility at an attractive price.

SIMATIC Panel PC 677 und 877

Compact, rugged and powerful

677 and 877 Panel PCs are Panel PCs with full industrial capability. With display sizes of 12", 15" and 19" and operation via a membrane keyboard or touch screen, they are able to meet a whole variety of requirements in terms of operating concepts.

Rugged design

The overall design aims to achieve maximum safety for vibration and shock loads. For example, a special vibration-absorbing suspension of the hard disk ensures operational reliability, even at high mechanical loads.

Continuity

Through continuity in the availability of identical components, such as motherboards designed and produced by Siemens, the SIMATIC Panel PC 677 and 877 offer very high investment security.

Service-friendly device design

When designing the Panel PCs 677 and 877, particular attention was paid to outstanding service friendliness. For example, the PC box and front panel can simply be folded out for speedy component replacement. The inside of the device, where the processor and slots are located, can be accessed easily for subsequent expansions.

Integrated interfaces

The SIMATIC Panel PCs 677 and 877 are supplied with the PROFIBUS DP/MPI interface already integrated on the motherboard – at no extra cost. The Ethernet interface for connecting to the management level or the Internet is also supplied as standard.

Modern service/startup interface

The standard USB (Universal Serial Bus) PC I/O interface makes connecting components easy, both on the rear and front panels.

Compact dimensions

With a maximum mounting depth of 100 mm/130 mm, the SIMATIC Panel PC 677 can be used even in the smallest of spaces.

Extendibility

With its 5 free PC slots, the SIMATIC Panel PC 877 offers considerable leeway for expansions.

Options

The SIMATIC Panel PCs 677 and 877 offer specific industrial capability beyond that of standard PC features. For example, the so-called distributed configuration via remote kit enables the PC and control unit to be located separately.
An additional block for operational reliability is the optional direct control key module. It can be used to run the process independently of the operating system and without delay directly on PROFIBUS DP/MPI.

Overview

- Industrial 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;
- Diskette drive: 1.44 MB, 3.5"
- Interfaces:
  - 1 x GB Ethernet on-board
  - 4 x USB port (USB 2.0)
  - 1 x USB port on front (USB 2.0)
- Free slots for expansion:
  - 3 x PCI (slots with card retainer + 1 slot specially prepared for WinAC Slot module),
- Power supply: 110/230 V AC (wide range), 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

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

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. 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).

Use 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

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
- High investment protection

Note:
Further information can be found under "Expansion components"

Technical specifications

Type	Panel PC 577
General features	
• Processor	Intel Pentium 4 technology; Intel Celeron 2.0 GHz, Intel Pentium 4 2.4 GHz
• RAM	256 MB, 512 MB or 1 GB, maximum expansion to 3 GB
• Free expansion slots	3 x PCI, (slots with card retainer)
• Operating system	Windows 2000 Prof. (Multi Language[1]), Windows XP Prof. (Multilanguage[1]), opt. without OS
• Power supply	110 V/230 V AC (wide range) 50/60 Hz
• MTBF backlighting	Typically 50.000 h (at 24 h continuous operation, depending on temperature)
Laufwerke	
• Festplatte	2.5" hard disk drive ≥ 40 GB
• DVD-ROM	Optional on rear, operated from the side
• Diskettenlaufwerk	1.44 MB, 3.5", optional via USB, can be ordered as accessory
Interfaces	
• PROFIBUS/MPI	Using plug-in card
• Ethernet	On-board, 10/100/1000 Mbit/s, RJ45, no plug-in card required
• USB (universal serial bus)	4 x on rear side (USB 2.0), 1 x on the front (USB 2.0)
• Serial interface	COM1: 1x V.24 (RS232)
• Parallel interface	LPT1 (EPP/ECP)
• Keyboard, mouse	PS/2 (external keyboard), PS/2 (external mouse)
• Multi-media	Audio In/Out, microphone In
• Graphics interface	Can be used for additional display unit

	Panel PC 577
Monitoring functions	
• Temperature and watchdog	on-board
Ambient conditions	
• Degree of protection	IP65 (front) acc. to EN60529, NEMA 4
• Vibration load during operation	Tested to DIN IEC 68-2-6: 20 to 58 Hz: 0.0185 mm, 58 to 200 Hz: 2.5 m/s2 (0.25 g)
• Shock load during operation	Tested to DIN IEC 68-2-29: 10 m/s2 (1g), 30 ms, 100 shocks
• EMC	CE, EN 55011, EN 55022, EN 50081-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 [2]
• Ambient temperature during operation	+5 to +45 °C for maximum configuration
• Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5% to 80% at 25 °C (no condensation)
Approval	CE, C-Tick, C-UL US LISTED
Packages	Optional with SIMATIC WinCC flexible, SIMATIC WinCC

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/ CHIN simplified/Korean/Japanese

2) 61000-6-2 replaces 50082-2, 61000-6-3 replaces 50081-1, 61000-6-4 replaces 50081-2

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

Technical specifications (continued)

Front panels	12" Touch	12" Key	15" Touch	15" Key	19" Touch
Display					
• Size	12.1"	12.1"	15.1"	15.1"	19.1"
• Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768	1024 x 768	1280 x 1024
Control elements					
• Keyboard	No	Yes	No	Yes	No
• Function keys	No	36	No	36	No
• Touch screen	Yes	No	Yes	No	Yes
• Mouse on the front	No	Yes	No	Yes	No
• Numeric/alphanumeric input	Yes/Yes [1]	Yes/Yes	Yes/Yes [1]	Yes/Yes	Yes/Yes [1]
Dimensions					
• Operator control unit (W x H) in mm	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 355 (19", 8 HU)	483 x 400 (19", 9 HU)
• Mounting dimensions of centralized model (W x H x D, without DVD-ROM) in mm	368 x 290 x 152	450 x 290 x 137	450 x 290 x 155	450 x 321 x 162	450 x 380 x 150
• Additional mounting depth (versions with DVD-ROM)	+27 mm	+27 mm	+27 mm	+27 mm	+27 mm
Weights					
• Panel PCs in centralized configuration	Approx. 11 kg	Approx. 12 kg	Approx. 13 kg	Approx. 13 kg	Approx. 15 kg
Expansion components	SIMATIC NET communication modules, 3.5" USB diskette drive, SIMATIC PC/PG Image & Partition Creator				
Accessories	Touch cover foils	Keyboard labeling strips	Touch cover foils	Keyboard labeling strips	Touch cover foils

1) Input possible using virtual keyboard

SIMATIC Panel PC 577

Ordering data

		Order No.
Panel PC configuration		
SIMATIC Panel PC 577	D	**6AV7 82■-0A■■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
RAM		
• 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

		Order No.
Accessories		
Cover foil Panel PC 577/677/877		
To protect the touch front against fouling/scratching		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Keyboard labeling strips for Panel PC 577/677/877		
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)		**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**
• U.S.A.		**6ES7 900-1DA00-0XA0**
• Italy		**6ES7 900-1EA00-0XA0**
Expansion components		
SIMATIC PC/PG Image & Partition Creator	A	**6ES7 648-6AA02-0YX0**
Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Eng/Ger/Fr/Sp/It)		
3.5" disk drive, USB	A	**6FC5 235-0AA05-1AA2**
with 1 m connecting lead		
SIMATIC PC USB-FlashDrive	A	**6ES7 648-0DC20-0AA0**
Communication components		
CP 1613 A2	A	**6GK1 161-3AA01**
PCI card (32-bit) for connection of a programming device or PC to Industrial Ethernet		
CP 5611 A2	A	**6GK1 561-1AA01**
PCI card (32-bit) for connection of a programming device or PC to PROFIBUS		
CP 5613 A2	D	**6GK1 561-3AA01**
PCI card (32-bit) for connection of a PC to PROFIBUS		

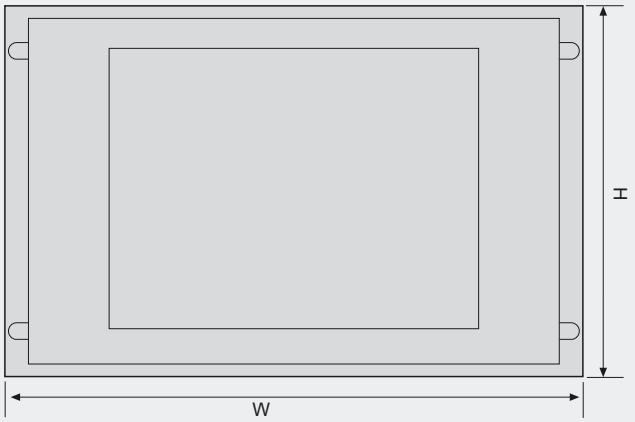
1) Not recommended for applications with WinCC/WinCC flexible

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

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

Dimension drawings

Dimensions in mm



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

More information

Additional information can be found in the Internet under:

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.

SIMATIC Panel PC 677

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 investment protection
- Fast integration capability
- Front panel versions:
  - 12”, 15” and 19” TFT Touch
  - 12” and 15” TFT Key

Benefits

- High degree of industrial compatibility thanks to its rugged design, even when subjected to extreme vibration and shock
- High degree of investment security thanks to the guaranteed availability of spare parts for the components (5 years beyond the end of active marketing)
- High degree of continuity of components for long-term machine concepts without additional engineering costs
- Savings in time and costs thanks to maintenance-friendly equipment design:
  - The computer unit and operator control unit are simply hinged open for fast replacement of components or future expansions
  - Front and rear USB 2.0 ports for connecting additional hardware components easily and quickly
- High industrial functionality thanks to the integral PROFIBUS DP/MPI and Ethernet interfaces
- Operational reliability:
  - With the optional direct control key module, the process can be operated without delay over PROFIBUS DP, independently of the operating system
- Minimization of standstill times thanks to high system availability
  - Efficient self-diagnostics (SIMATIC PC DiagMonitor)
  - solutions for data backup (preventive data backup)
- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Application

The SIMATIC Panel PC 677 is designed for implementation directly at the machine. The shallow mounting depth of only 104/130 mm allows it to be installed in extremely confined spaces.

The PC is used both in manufacturing automation and in process automation, installed in control cabinets and desks, 19” cabinets/racks and swing arms (girders).

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 the complete building block set of automation components that are perfectly matched to one another.

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 677 comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal casing, 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, standard 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 Ethernet on-board
  - PROFIBUS DP/MPI on-board, electrically isolated
  - 4 x USB 2.0 connection
- Free slots for expansion:
  - 2 x PCI (slots for card retainers)
  - 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 or 1 GB
- 512 MB to 1 GB, expandable to 2 GB
- SATA hard disk ≥ 80 GB
- DVD-ROM drive
- CD-RW/DVD drive
- Direct control key module
- 2 x ≥ 60 GB hard disk system (RAID1 controller function is integrated into the chip set and can be connected to implement a mirror disk system over BIOS; no PCI card required)

Components of the operator control unit:

The operator control units are available in the following versions:

12" Key

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Resistive analog touch screen

15" Key

- 15,1" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

15" Touch

- 15,1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen

19" Touch

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

The operator control units feature a USB 2.0 port on the front for connecting an external peripheral device, 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

Design (continued)

Expansion components

SIMATIC PC DiagMonitor

- PC diagnostics/signaling software for early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integral recording function, comprehensive text messages, online help (German/English)
- 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 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 disk drive complies with the USB 1.1 standard. 3.5” high density diskettes can be used (1.44 MB).

Use of the USB disk 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

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

Note:
Further information can be found under “Expansion components”

Technical specifications

Type	SIMATIC Panel PC 677
General features	
• Processor	Mobile Intel 915GM Express Chipset Intel Celeron M 370/1.5 GHz, 400 MHz FSB, 1 MB SLC Intel Pentium M 730/1.6 GHz, 533 MHz FSB, 2 MB SLC Intel Pentium M 760/2.0 GHz, 533 MHz FSB, 2 MB SLC
• RAM	256 MB, 512 MB, 1 GB, expandable to 2 GB
• Free expansion slots for expansions	2 x PCI (all slots with card retainers) 1 x slot for Compact Flash Card
• Operating system	Windows 2000 Prof. (Multi Language[1]), Windows XP Prof. (Multilanguage[1]), opt. without OS
• Power supply	110 V/230 V AC (autorange) 50/60 Hz or 24 V DC
• MTBF backlighting	Typically 60,000 h (at 24 h continuous operation, depending on temperature)
Drives	
• Hard disk	3.5" SATA hard disk drive ≥ 40 GB, vibration-damped Optional: 2 x 2.5" SATA hard disk module (≥ 60 GB), vibration-damped
• DVD-ROM	Optional
• DVD/CD-R/W	Optional
Interfaces	
• PROFIBUS/MPI	On-board, isolated, max. 12 Mbit/s, no plug-in card required
• Ethernet	2 x on-board, 10/100 Mbit/s, RJ45, no plug-in card required
• USB (universal serial bus)	1 x on front, 4 x on rear
• Serial interface	COM1: 1 x V.24 (9-pin)
• Graphics interface	Integral graphics, resolution in each case as on integral display

Type	SIMATIC Panel PC 677
Monitoring functions	
• Temperature and watchdog	Onboard
• Status LEDs	Power, temperature (on front)
Ambient conditions	
• Degree of protection	IP65 (front) acc. to EN60529, NEMA 4
• Vibration load during 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 load during operation	Tested to DIN IEC 68-2-29: 50 m/s2 (5 g), 30 ms, 100 shocks
• EMC	CE, EN 55011, EN 61000-6-2, EN61000-6-4 [2]
• Ambient temperature during operation	+5 to +45 °C (maximum configuration)
• Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5% to 80% at 25 °C (no condensation)
Approval	CE, cULus
Packages	Optional with SIMATIC WinCC flexible, SIMATIC WinCC

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/ CHIN simplified/Korean/Japanese

2) 61000-6-2 replaces 50082-2, 61000-6-4 replaces 50081-2

Note regarding SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

SIMATIC Panel PC 677

Technical specifications (continued)

Front panels	12” Touch	15” Touch	19” Touch	12” Key	15” Key
Display					
• Size	12.1”	15.1”	19.1”	12.1”	15.1”
• Resolution (pixels)	800 x 600	1024 x 768	1280 x 1024	800 x 600	1024 x 768
Control elements					
• Keyboard	no	no	yes [1)]	yes	yes
• Function keys	no	no	no	36 with LEDs	36 with LEDs
• Touch screen	yes	yes	yes	no	no
• Mouse on the front	no	no	no	yes	yes
• Numeric/alphanumeric input	yes / yes[1)]	yes / yes[1)]	yes / yes[1)]	yes / yes	yes / yes
Remote Kit	yes	yes	yes	yes	yes
Dimensions					
• Operator control unit (W x H) in mm	400 x 310 (7 HE)	483 x 310 (19”, 7 HE)	483 x 400	483 x 310 (19”, 7 HE)	483 x 355 (19”, 8 HE)
• Mounting dimensions (W x H x D, without DVD-ROM) in mm	368 x 290 x122	450 x 290 x 120	450 x 380 x 129	450 x 290 x 104	450 x 321 x 123
• Additional mounting depth (versions with DVD-ROM)	+20 mm	+20 mm	+20 mm	+20 mm	+20 mm
Weights					
• Panel PC	Approx. 11 kg	Approx. 13 kg	Approx. 18 kg	Approx. 12 kg	Approx. 13 kg
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET communication boards, 3.5” USB diskette drive, SIMATIC PC/PG Image & Partition Creator, SIMATIC PC DiagMonitor, PC USB FlashDrive				
Accessories	Touch cover foils	Touch cover foils	Touch-Touch cover foils	Keyboard labeling foil, direct key module	Keyboard labeling foil, direct key module

1) Using software keyboard

Ordering data

Order No.

Panel PC configurator (contract-based production and delivery)

SIMATIC Panel PC 677	D	**6AV7 80■-■■■■■■-■A■0**
Front panels		
• 12” TFT Touch		**0**
• 12” TFT Key		**1**
• 15” TFT Touch		**2**
• 15” TFT Key		**3**
• 19” TFT Touch		**4**
Options for the front:		
• 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**
Processor		
• Intel Celeron M 370/1.5 GHz, 400 MHz FSB, 1 MB SLC		**A**
• Intel Pentium M 730/1.6 GHz, 533 MHz FSB, 2 MB SLC		**B**
• Intel Pentium M 760/2.0 GHz, 533 MHz FSB, 2 MB SLC		**C**
RAM expansion		
• 256 MB DDR2		**0**
• 512 MB DDR2		**1**
• 1 GB DDR2		**2**
• 2 GB DDR2		**3**
Mass storage		
• ≥40 GB SATA hard disk		**0**
• ≥80 GB SATA hard disk		**1**
• Double hard disk module 2 x ≥ 60 GB SATA for RAID		**2**
Optical drives		
• Without		**0**
• DVD-ROM		**1**
• CD-RW/DVD combined drive		**2**
Operating system		
• Without operating system	E	**A**
• Windows 2000 Professional Multilanguage		**B**
• Windows XP Professional Multilanguage		**C**

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/ CHIN simplified/Korean/Japanese

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

E) Subject to export regulations: AL: N and ECCN: 4A994

Delivery variants (from stock)

		Order No.
12” TFT Touch 110/230 V AC power supply Intel Pentium M 730, 1.6 GHz 512 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	E	**6AV7 800-0BB10-1AA0**
12” TFT Key 110/230 V AC power supply Intel Pentium M 730, 1.6 GHz 512 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	E	**6AV7 801-0BB10-1AA0**
15” TFT Touch 110/230 V AC power supply Intel Pentium M 730, 1.6 GHz 512 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	E	**6AV7 802-0BB10-1AA0**
15” TFT Key 110/230 V AC power supply Intel Pentium M 730, 1.6 GHz 512 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	E	**6AV7 803-0BB10-1AA0**
19” TFT Touch 110/230 V AC power supply Intel Pentium M 730, 1.6 GHz 512 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	E	**6AV7 804-0BB10-1AA0**
12” TFT Key CD 24 V power supply Intel Pentium M 370, 1.5 GHz 256 MB RAM ≥ 40 GB hard drive DVD-ROM drive without OS	D	**6AV7 801-0AA00-1AC0**

3

SIMATIC Panel PC 677

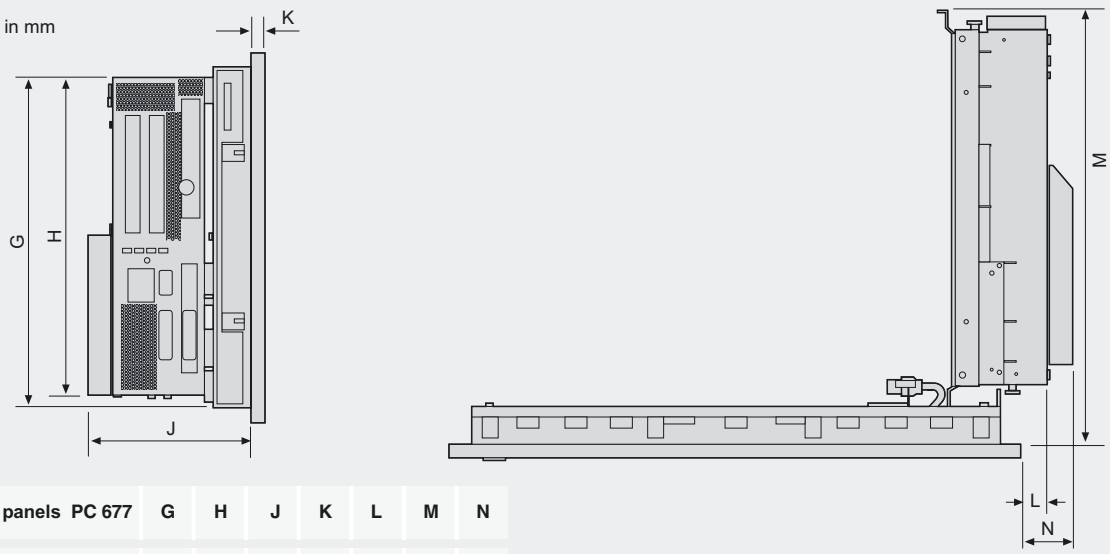
Ordering data		Order No.
Accessories		
Cover foil Panel PC 577/677/877		
To protect the touch front against fouling/scratching (10 Stück im Paket)		
• for 12" Touch		**6AV7 671-2BA00-0AA0**
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Keyboard labeling strips for Panel PC 577/677/877		
for labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
Memory expansion		
• 128 MB DDR2 533 SODIMM	A	**6ES7 648-2AG10-0GA0**
• 256 MB DDR2 533 SODIMM	A	**6ES7 648-2AG20-0GA0**
• 512 MB DDR2 533 SODIMM	A	**6ES7 648-2AG30-0GA0**
Direct control key module for Panel PC 677/877	A	**6AV7 671-7DA00-0AA0**
Option package for direct control key module		**6ES7 648-0AA00-0XA0**
Transfer module for interface connection to 16 I/Os		
Non-heating apparatus cable for SIMATIC Box and Panel PC		
SIMATIC PC power supply cable, 230 V AC, flexible, 3 m, for:		
• Germany		**6ES7 900-1AA00-0XA0**
• United Kingdom		**6ES7 900-1BA00-0XA0**
• Switzerland		**6ES7 900-1CA00-0XA0**
• U.S.A.		**6ES7 900-1DA00-0XA0**
• Italy		**6ES7 900-1EA00-0XA0**

		Order No.
Expansion components		
SIMATIC PC/PG DiagMonitor V2.2	C	**6ES7 648-6CA02-2YX0**
Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)		
SIMATIC PC/PG Image & Partition Creator	A	**6ES7 648-6AA02-0YX0**
Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, on CD-ROM (Eng/Ger/Fr/Sp/It)		
3.5" disk drive, USB		**6FC5 235-0AA05-1AA2**
with 1 m connecting lead		
SIMATIC PC USB-FlashDrive	A	**6ES7 648-0DC20-0AA0**
512 MB, USB 2.0, metal enclosure, boot capability		
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, 20 m	A	**6AV7 671-1EA02-0AA1**
• 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, 20 m	A	**6AV7 671-1EA12-0AA1**
Uninterruptible power supplies		
SITOP power, 15 A DC UPS module with RS 232 interface		**6EP1 931-2EC41**
with charger unit for 24 V lead battery, input 24 V/16 A DC, output 24 V/15 A DC		
SITOP power, battery module 24 V/3.2 Ah		**6EP1 935-6MD11**
for DC UPS module 15 A		
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
C) Subject to export regulations: AL: N and ECCN: EAR99S

Dimension drawings

Dimensions in mm



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

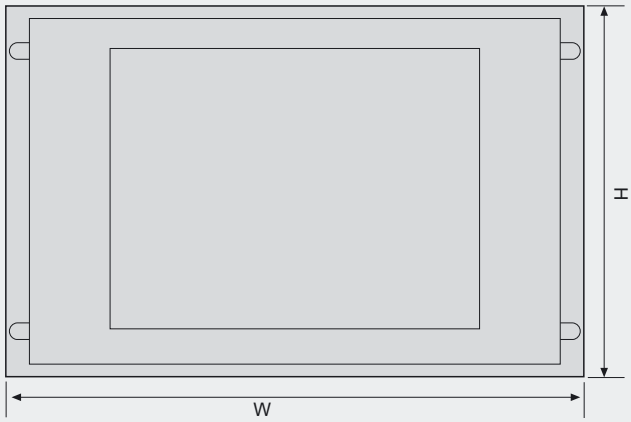
G_ST80_XX_00208

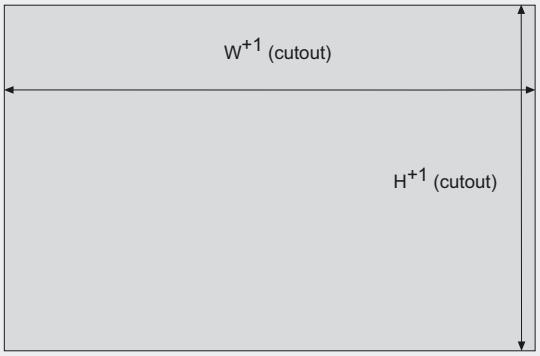
Operator control unit and complete unit

SIMATIC Panel PC 677

Dimension drawings (continued)

Dimensions in mm





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

More information

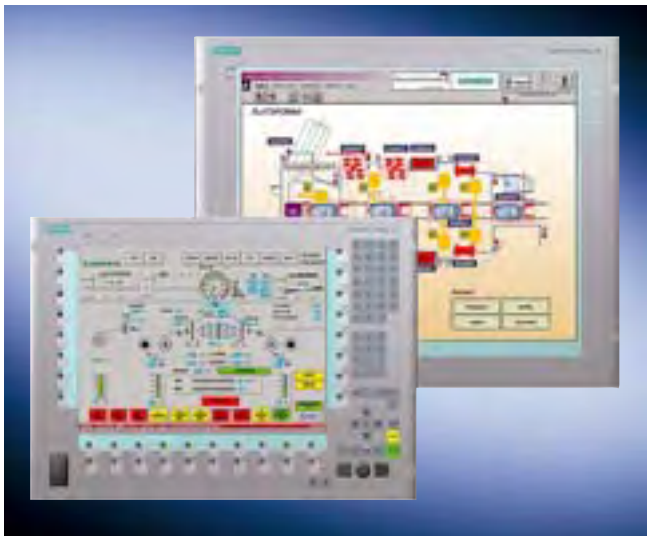
Additional information can be found in the Internet under:

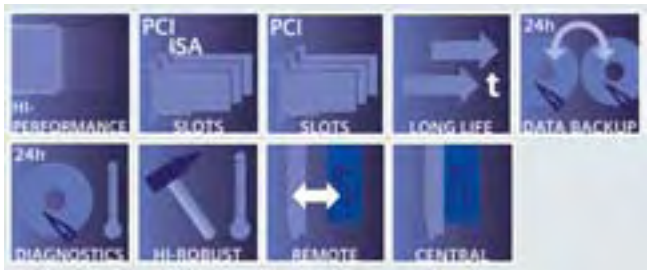
http://www.siemens.com/panel-pc

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.

SIMATIC Panel PC 877

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
- Flexible expansion capability
- High investment protection
- Fast integration capability
- Front panel versions:
  - 15" and 19" TFT Touch
  - 12" and 15" TFT Key

Benefits

- High degree of industrial compatibility thanks to rugged construction, even in the case of extreme vibration and impact
- High degree of investment security thanks to assured availability of spare parts (5 years after the end of active marketing)
- Continuity of components for long-term machine concepts without the need for further engineering outlay
- Savings in time and costs due to service-friendly equipment construction:
  - Operator unit and computer unit can be simply hinged apart for fast replacement of components and for future expansions
  - Front and rear USB 2.0 interfaces for the quick and easy connection of additional hardware components
- Wide scope of industrial functionality thanks to PROFIBUS DP/MPI and Ethernet interfaces
- Reliability of operation:
  - With the optional direct key input module, the process can be operated without delay over PROFIBUS DP, independently of the operating system
- Minimization of standstill times due to high system availability
  - Efficient self-diagnostics (SIMATIC PC DiagMonitor)
  - Solutions for data security (preventative data security)
- Integral component of Totally Integrated Automation (TIA):
  Increased productivity, minimized engineering outlay, reduced lifecycle costs

Application

The SIMATIC Panel PC 877 is designed for use on site at the machine.

The PC is used both in production automation and in process automation, built into control cabinets and 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
- 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 harmoniously designed automation components.

The SIMATIC Panel PCs can be ordered in combination with WinCC flexible or WinCC as SIMATIC HMI Packages at an advantageous price (see SIMATIC HMI complete systems).

Design

The Panel PC 877 comprises a computer unit and an operator control unit.

Components of the computer unit:

- Rugged metal casing, resistant to vibrations and shocks, with high electromagnetic compatibility.
- Processor:
  - Intel Celeron 2.0 GHz or
  - Intel Pentium 4 2.8 GHz
  - Intel Pentium 4 mobile 2.2 GHz
- Main memory, standard configuration:
  256 MB
- EIDE hard disk: ≥ 40 GB;
  the special vibration-absorbing hard-disk holder ensures reliable operation even in case of extremely high mechanical loading
- Diskette drive: 1.44 MB, 3.5"
- Graphics on-board
- Interfaces:
  - Ethernet on-board
  - PROFIBUS DP/MPI on-board, electrically isolated
  - 2 x USB 2.0 connection
- Free slots for expansion:
  - 2 x PCI, 2 x ISA/PCI shared, 1 x ISA (slots for card retainer)
- Power supply: 110 V / 230 V AC (autorange) 50/60 Hz or 24 V DC

SIMATIC Panel PC 877

Design (continued)

Optional additional components:

- Main memory expansion to 512 MB, 1 GB or 2 GB
- EIDE hard disk ≥ 80 GB
- DVD-ROM drive
- CD-RW/DVD drive
- Direct control key module
- Double hard disk (2 x ≥ 40 GB)
- RAID system (PCI plug-in card)

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

15" Key

- 15,1" TFT color display, 1024 x 768 pixels (XGA)
- Membrane keyboard with international PC character set and 36 additional function keys with LED and an integrated mouse

15" Touch

- 15,1" TFT color display, 1024 x 768 pixels (XGA)
- Resistive analog touch screen

19" Touch

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

The operator control units feature a USB 2.0 port on the front for connecting an external peripheral device, such as a mouse or keyboard. They fulfill the requirements of IP65 degree of protection and NEMA 4.

The computer unit is connected via a connecting cable attached at the rear of the operator control unit.

Side view of the Panel PC 877

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

SIMATIC PC DiagMonitor

- PC diagnostics/signaling software for early detection and diagnostics of PC problems
- Comprehensive monitoring of temperature, fans, hard disks (SMART), watchdog
- Operating hours counter for preventive maintenance
- Integral recording function, comprehensive text messages, online help (German/English)
- Network-wide monitoring via SNMP and OPC interface possible

3.5" disk drive, USB

The USB disk drive is provided for fast exchange of user data, e.g. recipes, or of files. The drive must not be used as a cyclic archiving drive. The front-panel installation and degree of protection IP54 permit data exchange from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power is also supplied over the USB interface. The scope of delivery includes a 1 m long USB cable. The disk drive complies with the USB 1.1 standard. 3.5" high density diskettes can be used (1.44 MB).

Use of the USB disk 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

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

Note:
Further information can be found under "Expansion components"

Technical specifications

Type	SIMATIC Panel PC 877
General features	
• Processor	Intel Pentium 4 technology Intel Celeron 2.0 GHz Intel Pentium 4 2.8 GHz Intel Pentium 4 mobile 2.2 GHz
• RAM	256 MB, 512 MB, 1 GB, 2 GB
• Free expansion slots	2 x PCI, 2 x PCI/ISA shared, 1 x ISA (all slots with card retainer)
• Operating system	Windows 2000 Prof. (Multilanguage[1]), Windows XP Prof. (Multilanguage[1]), opt. without OS
• Power supply	110 V/230 V AC (autorange) 50/60 Hz; or 24 V DC (only in conjunction with Pentium 4 mobile processor)
• MTBF backlighting	Typically 50,000 h (at 24 h continuous operation, depending on temperature)
Drives	
• Hard disk	3.5" EIDE hard disk drive ≥ 40 GB, vibration-damped Optional: 2 x 2.5" EIDE hard disk module (> 40 GB), vibration-damped Optional: RAID 1 with 2 x 2.5" SATA hard disk module
• DVD-ROM	Optional in computer unit
• DVD-ROM/CD-R/W	Optional in computer unit
Interfaces	
• PROFIBUS/MPI	On-board, isolated, max. 12 Mbit/s, no plug-in card required, compatible with CP5611
• Ethernet	On-board, 10/100 Mbit/s, RJ45, no plug-in card required
• USB (universal serial bus)	1 x on front, 2 x on rear
• Serial interface	COM1: 1 x V.24 (RS232), COM2: 1 x V.24 (RS232C)
• Parallel interface	LPT1 (EPP/ECP)
• Graphics interface	Integral graphics, respective resolution as for integral display, 16-bit color depth, up to 32 MB graphics memory

Type	SIMATIC Panel PC 877
Monitoring functions	
• Temperature and watchdog	on board
• Status LEDs	Power, temperature (on front)
Ambient conditions	
• Degree of protection	IP65 (front) acc. to EN60529, NEMA 4
• Vibration load during operation	Tested to DIN IEC 68-2-6: •10 to 58 Hz: 0.075mm •58 to 200 Hz: 9.8 m/s2 (1 g)
• Shock load during operation	Tested to DIN IEC 68-2-29: 50 m/s2 (5 g), 30 ms, 100 shocks
• EMC	CE, EN 55011, EN 61000-6-2, EN61000-6-4 2)
• Ambient temperature during operation	+5 to +45 °C for maximum configuration
• Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5% to 80% at 25 °C (no condensation)
Approval	CE, cULus
Packages	Optional with SIMATIC WinCC flexible, SIMATIC WinCC

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/ CHIN simplified/Korean/Japanese

2) 61000-6-2 replaces 50082-2, 61000-6-4 replaces 50081-2

Note for SIMATIC PC operating system licenses:

The accompanying operating system license is only valid for installation on the supplied SIMATIC PC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

SIMATIC Panel PC 877

Technical specifications (continued)

Front panels	12” Key	15” Touch
Display		
• Size	12,1” TFT	15,1” TFT Touch
• Resolution (pixels)	800 x 600	1024 x 768
Control elements		
• Keyboard	Yes	No
• Function keys	36 with LEDs	No
• Touch screen	No	Yes
• Mouse on the front	Yes	No
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes [1]
Use of Remote Kit	Yes	Yes
Dimensions		
• Operator control unit (W x H) in mm	483 x 310 (19”, 7 HU)	483 x 310 (19”, 7 HU)
• Mounting dimensions (W x H x D, without DVD-ROM) in mm	450 x 290 x 191	450 x 290 x 208
• Additional mounting depth (versions with DVD-ROM)	+20 mm	+20 mm
Weights		
• Panel PC	Approx. 16 kg	Approx. 17 kg
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET-communication boards, 3.5” USB diskette drive, SIMATIC PC/PG Image & Partition Creator, SIMATIC PC DiagMonitor	
Accessories	Keyboard labeling foil, direct key module	Touch cover foils

1) Using software keyboard

Front panels	15” Key	19” Touch
Display		
• Size	15.1” TFT	19.1” TFT Touch
• Resolution (pixels)	1024 x 768	1280 x 1024
Control elements		
• Keyboard	Yes	No
• Function keys	36 with LEDs	No
• Touch screen	No	Yes
• Mouse on the front	Yes	No
• Numeric/alphanumeric input	Yes/Yes	Yes/Yes [1]
Use of Remote Kit	Yes	Yes
Dimensions		
• Operator control unit (W x H) in mm	483 x 355 (19”, 8 HU)	483 x 400 (19”, 9 HU)
• Mounting dimensions (W x H x D, without DVD-ROM) in mm	450 x 321 x 210	450 x 380 x 217
• Additional mounting depth (versions with DVD-ROM)	+20 mm	+20 mm
Weights		
• Panel PC	Approx. 17 kg	Approx. 19 kg
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET communication boards, 3.5” USB diskette drive, SIMATIC PC/PG Image & Partition Creator, SIMATIC PC DiagMonitor, SIMATIC PC USB FlashDrive	
Accessories	Keyboard labeling foil, direct key module	Touch cover foils

1) Using software keyboard

Ordering data

Order No.

Panel PC configurator (contract-based production and delivery)

		Order No.
SIMATIC Panel PC 877	D	**6AV7 81■-■■■■■-■A■0**
Front panels		
• 12” TFT Key		1
• 15” TFT Touch		2
• 15” TFT Key		3
• 19” TFT Touch		4
Options for the front:		
• 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
Processor		
• Intel Celeron 2.0 GHz, 400 MHz FSB, 128 KB SLC		A
• Intel Pentium 4 2.8 GHz, 533 MHz FSB, 512 KB SLC		B
• Intel Pentium 4 Mobile 2.2 GHz, 400 MHz FSB, 512 KB SLC		C
RAM expansion		
• 256 MB SDRAM		0
• 512 MB SDRAM		1
• 1 GB SDRAM		2
• 2 GB SDRAM		3
Mass storage		
• ≥ 40 GB EIDE hard disk		0
• ≥ 80 GB EIDE hard disk		1
• Double hard-disk module 2 x ≥ 40 GB EIDE		2
• RAID1, 2 x ≥ 40 GB SATA (2.5”), (1 PCI less)		3
Optical drives		
• Without		0
• DVD-ROM		1
• CD-RW/DVD combined drive		2
Operating system		
• Without operating system	E	A
• Windows 2000 Professional Multilanguage		B
• Windows XP Professional Multilanguage		C

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/ CHIN simplified/Korean/Japanese

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

E) Subject to export regulations: AL: N and ECCN: 4A994

Delivery variants (from stock)

		Order No.
12” TFT Key (standard) 110 V/230 V AC power supply Intel Pentium 4 2.8 GHz 512 MB SDRAM ≥ 80 GB EIDE hard disk DVD-ROM drive Windows XP Professional Multilanguage	D	**6AV7 811-0BB11-1AC0**
15” TFT Touch (standard) 110 V/230 V AC power supply Intel Pentium 4 2.8 GHz 512 MB SDRAM ≥ 80 GB EIDE hard disk DVD-ROM drive Windows XP Professional Multilanguage	D	**6AV7 812-0BB11-1AC0**
15” TFT Key (standard) 110 V/230 V AC power supply Intel Pentium 4 2.8 GHz 512 MB SDRAM ≥ 80 GB EIDE hard disk DVD-ROM drive Windows XP Professional Multilanguage	D	**6AV7 813-0BB11-1AC0**
15” TFT Touch (standard) 110 V/230 V AC power supply Intel Pentium 4 2.8 GHz 512 MB SDRAM ≥ 80 GB EIDE hard disk CD-RW/DVD combined drive Windows XP Professional Multilanguage	D	**6AV7 812-0BB11-2AC0**

SIMATIC Panel PC 877

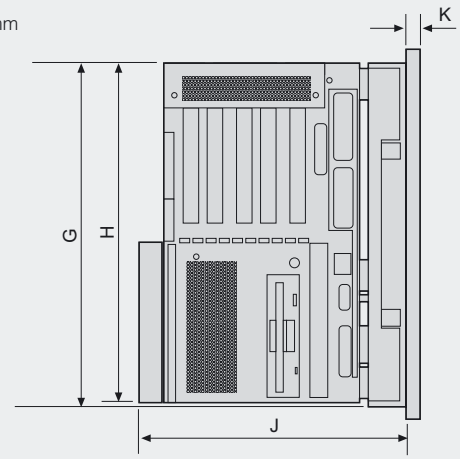
Ordering data		Order No.
Accessories		
Cover foil for Panel PC 577/677/877 To protect the touch front against contamination/scratching (set of 10)		
• for 15" Touch		**6AV7 671-4BA00-0AA0**
• for 19" Touch		**6AV7 672-1CE00-0AA0**
Keyboard labeling strips for Panel PC 577/677/877 for labeling softkeys and function keys, blank, supplied in sets of 10		**6AV7 672-0DA00-0AA0**
Memory expansion		
• 128 MB SDRAM	A	**6ES7 648-2AD10-0EA0**
• 256 MB SDRAM	A	**6ES7 648-2AD20-0EA0**
• 512 MB SDRAM	A	**6ES7 648-2AD30-0EA0**
• 1 GB SDRAM		**6ES7 648-2AD40-0EA0**
Direct control key module for Panel PC 677/877	A	**6AV7 671-7DA00-0AA0**
Option package 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**
• U.S.A.		**6ES7 900-1DA00-0XA0**
• Italy		**6ES7 900-1EA00-0XA0**

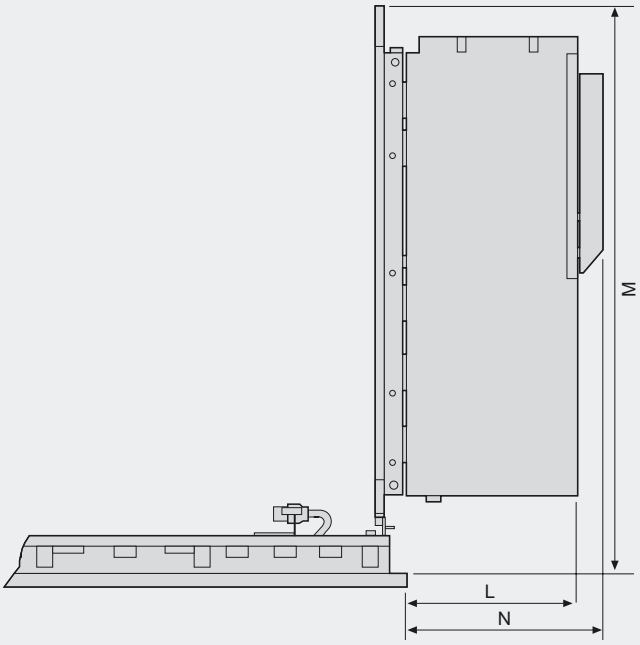
		Order No.
Expansion components		
SIMATIC PC/PG DiagMonitor V2.1 Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)	C	**6ES7 648-6CA02-1YX0**
SIMATIC PC/PG Image & Partition Creator Software tool for data backup and hard-disk partitioning for SIMATIC PCs, incl. manual, onCD-ROM (Eng/Ger/Fr/Sp/It)	A	**6ES7 648-6AA02-0YX0**
3.5" disk drive, USB with 1m connecting lead		**6FC5 235-0AA05-1AA2**
SIMATIC PC USB FlashDrive 512 MB, USB 2.0, metal enclosure, boot capability	A	**6ES7 648-0DC20-0AA0**
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, 20 m	A	**6AV7 671-1EA02-0AA1**
• 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, 20 m	A	**6AV7 671-1EA12-0AA1**
Uninterruptible power supplies		
SITOP power, 15 A DC UPS module with RS 232 interface 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**
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 5613 A2 PCI card (32-bit) for connection of a PC to PROFIBUS	D	**6GK1 561-3AA01**

A) Subject to export regulations: AL: N and ECCN: EAR99H
C) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1

Dimension drawings

Dimensions in mm





Operator panels PC 877	G	H	J	K	L	M	N
Touch panels							
15"	289	285	226	11	146	477	163
19"	378	285	234	11	140	486	157
Key panels							
12"	289	285	209	11	146	461	163
15"	324	285	328	11	147	480	164

All dimensions without screw protrusions

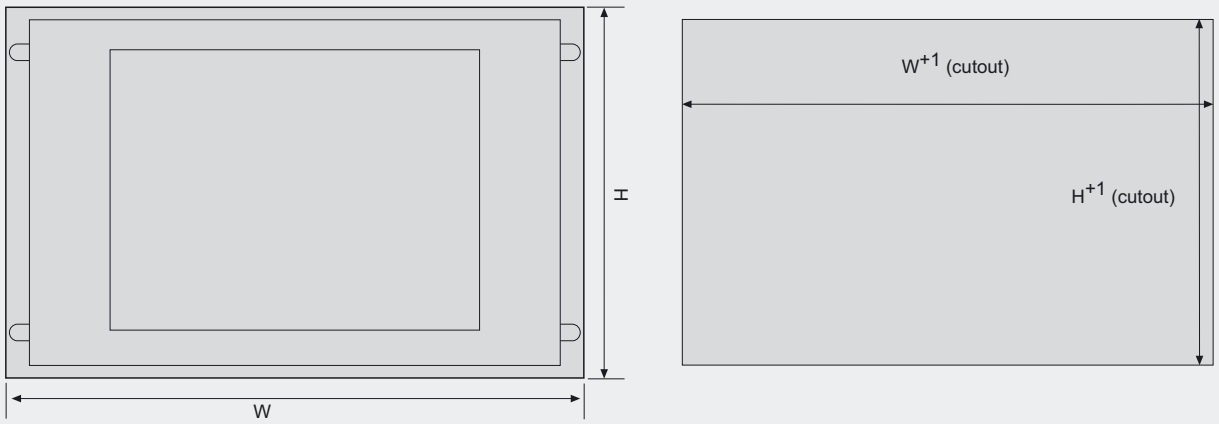
G_ST80_EN_00206

Operator control unit and complete unit

SIMATIC Panel PC 877

Dimension drawings (continued)

Dimensions in mm



Front dimensions

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

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

Installation cutouts

Touch panels	W^{+1}	H^{+1}
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_00240

Mounting cutout

More information

Additional information can be found in the Internet under:

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.

Overview

Measuring the internal enclosure temperature at various measuring points

The SIMATIC PC DiagMonitor software for monitoring and remote signaling detects possible hardware and software faults at an early stage.

It is used with SIMATIC Box PC 620/627/840, Rack PC 840/IL 40 S V2, Panel PC 670/677/870/877 and can be ordered directly via the PC configurator or as an individual product.

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” and “heartbeat”
- the function of the hard disk or RAID 1

It signals

- the number of operating hours for activating maintenance periods
- every alarm and logs them in lists
- overshoot/undershoot of permissible operating temperature
- program interruption following a watchdog timeout
- hard disk problems through evaluation of the diagnostic bytes

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

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 NT WS,
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)	C	**6ES7 648-6CA02-1YX0**

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

SIMATIC PC/PG Image Creator, Image & Partition Creator

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
- Extremely easy handling over user menus
- "Virtual manual" (start under Windows operating system!) explains the main user actions with multimedia (picture and sound)
- Menu-driven creation of alternative start media is possible (bootable USB stick, boot diskettes) if an optical drive (CD/DVD) is not available on the device to be processed

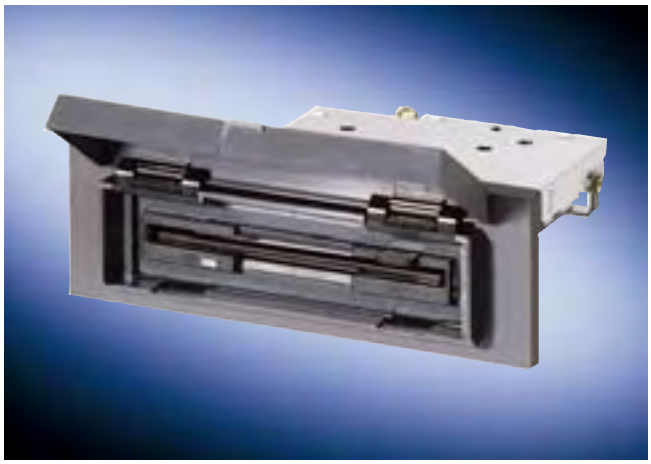
Ordering data

		Order No.
SIMATIC PC/PG Image Creator V1.1 Software tool for preventative data back-up for SIMATIC PCs, incl. manual on CD-ROM (German, English, French, Spanish, Italian)		Can be ordered via the SIMATIC PC configurator
SIMATIC PC/PG Image & Partition Creator V1.1 Software tools for data back-up and hard disk partitioning for SIMATIC PCs/programming devices, incl. manual on CD-ROM (German, English, French, Spanish, Italian)	A	**6ES7 648-6AA02-0YX0**

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

3.5" disk drive, USB 1.1

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” 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 577/677/877 with Windows 2000/XP

Technical specifications

Product name	SINUMERIK 3.5” disk drive, USB
Power consumptionmax.	2.5 W
Degree of protection to EN 60529 (IEC 60529)	
- Front	IP54
- Rear	IP00
Humidity rating in accordance with EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C.
Relative humidity	
- Storage	5 ... 90% at -22 ... +60 °C
- Transport	5 ... 95% at -40 ... +65 °C
- Operation	20 ... 80% at 5 ... 50 °C
Ambient temperature	
- Storage	-20 … +60 °C
- Transport	-20 … +60 °C
Max. distance to PC	5 m
Weight approx.	0.32 kg
Dimension	
- Width	145 mm
- Hight	50 mm
- Depth	161 mm

Ordering data

		Order No.
SINUMERIK 3.5” disk drive, USB 1.1 incl. connecting cable Length: 1 m (3.28 ft)	A	**6FC5 235-0AA05-1AA2**
Accessories		
Cover for disk drive 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.

SIMATIC PC USB FlashDrive

Overview

The SIMATIC PC USB FlashDrive is the ideal mobile storage medium for SIMATIC PC /PG. Thanks to the rugged and ultra-compact construction in a metal enclosure, fast data transfer (USB 2.0) and the high memory capacity of 512 MB, the USB FlashDrive offers optimal values for use in industrial applications. It can be used to replace diskettes or CD-ROMs as data storage and it is supplied with boot capability.

Benefits

Ultra-compact and rugged

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

High investment protection

- Faultless operation (system test) with SIMATIC PC/PG (hardware and software)
- Automation License Manager V2.0 can be installed

Application

The SIMATIC PC USB FlashDrive is the fastest and simplest method for saving your data (e.g. recipes, configuration data) and transporting it from one place to another, or it can be used as boot medium, e.g. for SIMATIC PC BIOS Manager or SIMATIC PC Image Creator.

Typical users are development and servicing engineers as well as application and technical consultants.

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 transmission - USB 2.0 (high-speed)
- Large memory capacity of 512 MB (replaces approx. 355 diskettes)
- Simple installation – “Plug & Play”, no driver necessary (except for Windows 98SE)
- High degree of data security thanks to write protection switch
- Status LED for data transmission and operating state
- SIMATIC BIOS Manager, a software tool for SIMATIC PCs for testing and duplication of Bios Setup settings (CMOS data) included in scope of supply
- No external power supply necessary

Recommended operating systems:

- Windows 2000 / XP

Technical specifications

SIMATIC PC USB FlashDrive	
Supported operating systems	Windows 98SE/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 512 MB, USB 2.0, metal enclosure, boot capability	A	**6ES7 648-0DC20-0AA0**

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

Overview

The Remote Kit makes it possible to separate the Panel PC 677/877 operator control unit from the computer unit and install them up to 20 m apart.

Benefits

- Maintaining the full 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 20 m)
  - Dimmable backlighting
  - 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 877
- 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 20 m away from the computer unit
- Competitive price

Application

The Panel PC Remote Kit is designed for use exclusively with a Panel PC 677 or Panel PC 877. 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.

Aufbau

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 677/877 operator control unit
Supported operator control units	All Panel PC 677/877 operator control units: • 12” Touch/Key • 15” Touch/Key • 19” Touch
Cable sets	• 5 m • 10 m • 20 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	With the addition of a USB port 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 delivery	• Remote module • Cable set • Mounting accessories for the PC677/877 computer unit • European power supply cable (with the AC option)

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, 20 m	A	**6AV7 671-1EA02-0AA1**
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, 20 m	A	**6AV7 671-1EA12-0AA1**

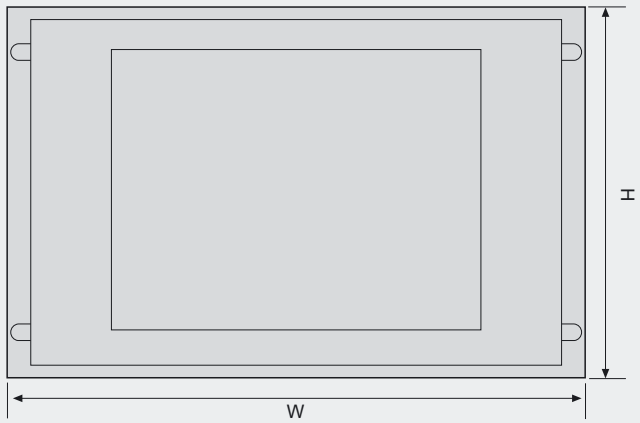
1) A European power supply cable is included in the scope of delivery of the AC (110-240 V) version of the Remote Kit.

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

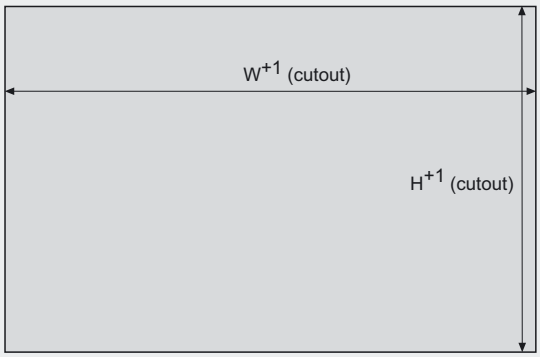
		Order No.
Accessories		
Power supply cable		
Europe: D/F/NL/E/B/A/S/FIN [1]		**6ES7 900-1AA00-0XA0**
United Kingdom		**6ES7 900-1BA00-0XA0**
Switzerland		**6ES7 900-1CA00-0XA0**
U.S.A.		**6ES7 900-1DA00-0XA0**
Italy		**6ES7 900-1EA00-0XA0**
Components of the Remote Kit		
(only available individually as spare parts)		
24 V DC remote module with fixing accessories	A	**6AV7 671-1EX01-0AA0**
110-240 V AC remote module with fixing accessories	A	**6AV7 671-1EX01-0BA0**
USB amplifier/CAT6 converter	A	**6AV7 671-1EX02-0AA0**
5 m cable set (DVI, USB standard cable)		**6AV7 671-1EX10-5AA0**
10 m cable set (DVI, Cat 6 cable)		**6AV7 671-1EX11-0AA0**
20 m cable set (DVI, Cat 6 cable)		**6AV7 671-1EX12-0AA0**

Dimension drawings

Dimensions in mm



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_00238

HMI Software

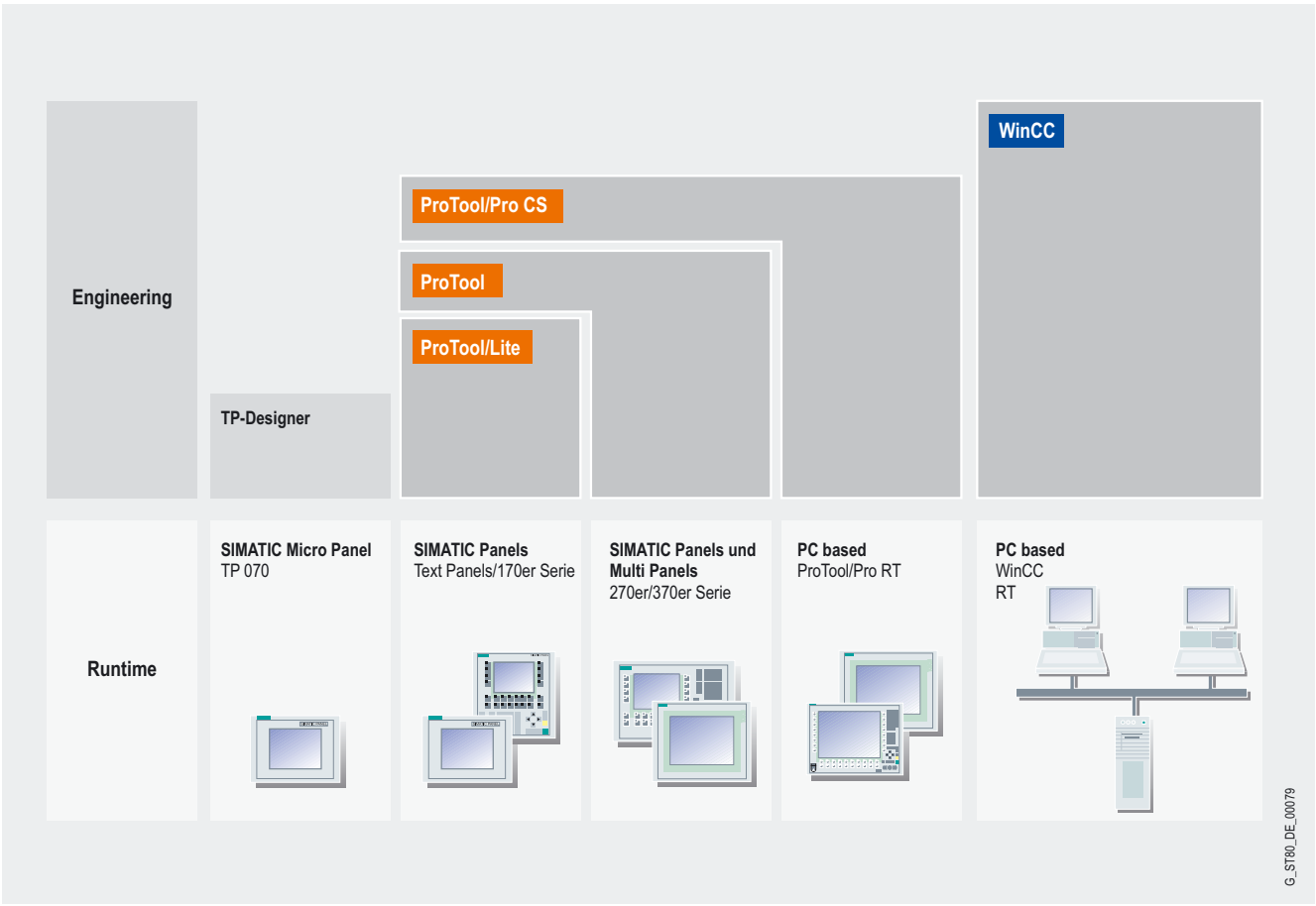
4

Introduction

Overview

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

- SIMATIC ProTool
  covers **applications directly at the machine ranging from** PC-based HMI solutions for single-user systems based on ProTool/Pro through to the SIMATIC HMI operator panels. For the configuration of the ProTool/Pro runtime for PCs as well as SIMATIC HMI operator panels, the ProTool family offers the uniform and scalable configuration tools ProTool/Lite, ProTool and ProTool/Pro CS.
- 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).

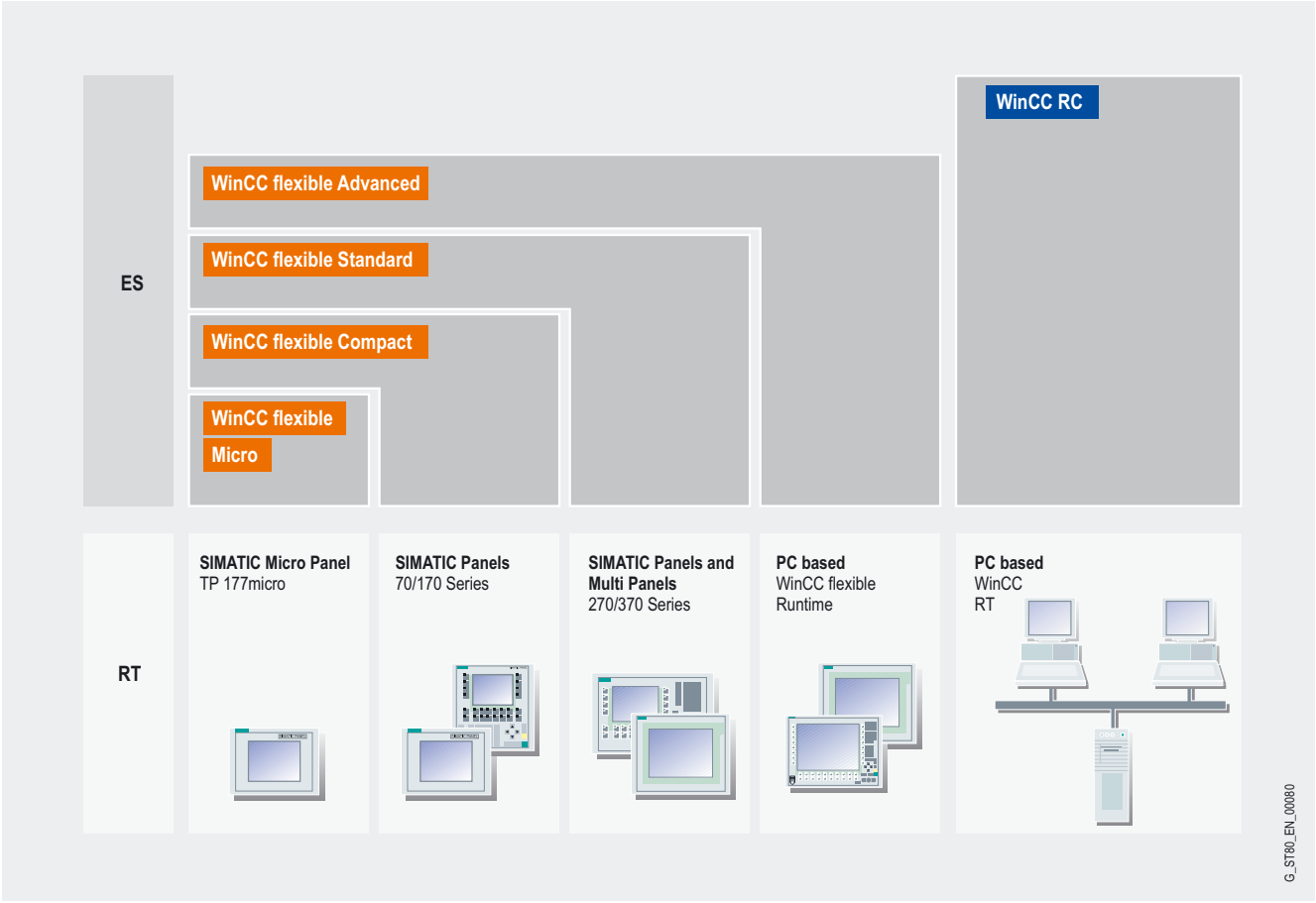


Overview (continued)

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 2005 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



Changing from the ProTool family to WinCC flexible is possible by simply using the same or converting the old configuration data. The ProTool family, however, will be available alongside WinCC flexible for the foreseeable future.

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.

Introduction

Overview (continued)

SIMATIC ProTool configuration software

- The integrated family of configuration systems (ProTool/Lite, ProTool, ProTool/Pro CS) for SIMATIC operator panels, the HMI part of the SIMATIC C7 as well as the PC-based visualization software ProTool/Pro RT:
  - SIMATIC TD17 Text Panels, OP3/OP7/OP17 as well as C7-621/626/633/634
  - SIMATIC Panels of the 170/270 series as well as C7-635 and C7-636 (Key)
  - SIMATIC Multi Panels of the 270/370 series (not MP270B 6")
  - SIMATIC ProTool/Pro RT
- Executable under Windows 98 SE/ME and Windows NT 4.0/2000/XP
- Integral component of Totally Integrated Automation (TIA): STEP 7, SIMOTION, Component Based Automation (CBA)

SIMATIC ProTool/Pro RT visualization software

- PC-based HMI solution for single-user systems directly at the machine
- Executable under Windows 98 SE/ME and Windows NT4.0/2000/XP
- Complete system with functions for visualizing, signaling, logging, recipes and archiving
- Specific applications can be added with VB scripts and customized ActiveX controls

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 Panel 177
  - SIMATIC Panels of the 70/170/270 series as well as C7-635 and C7-636 (Key)
  - 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

SIMATIC WinCC process visualization system

- PC-based operator control and monitoring system for visualizing and controlling processes, production flows, machines and plant in all sectors - from simple single-user stations 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

Overview (continued)

	SIMATIC ProTool/Pro RT	SIMATIC WinCC flexible RT	SIMATIC WinCC
Area of application	HMI software designed primarily for use in in-process applications in (series) machine production	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	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 ProTool/Pro Runtime	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	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 scope of available functions tailored to machine applications Standard functions can be expanded quickly and easily using VB scripts Jog mode is possible	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	Customized solutions based on ActiveX controls are possible	Customized 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

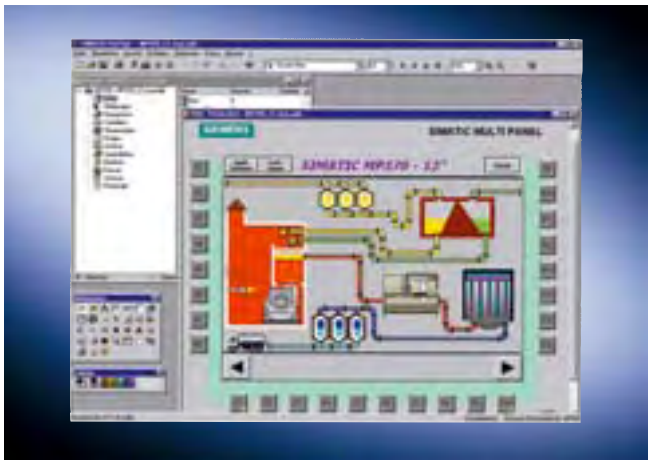
SIMATIC ProAgent process diagnostics software

- Process diagnosis 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

SIMATIC ProTool configuration software

SIMATIC ProTool/Lite and SIMATIC ProTool

Overview



- Uniform **configuring software** for SIMATIC Operator Panels as well as for the HMI part of SIMATIC C7
- Executable under Windows 98 SE/ME and Windows NT 4.0/2000/XP Professional
- Current versions:
  - SIMATIC ProTool/Lite V6.0 + SP3
  - SIMATIC ProTool V6.0 + SP3

Benefits

- Integral component of Totally Integrated Automation (TIA): Enhanced productivity, reduction of engineering outlay, reduction of lifecycle costs thanks to integration in STEP 7; i.e. management of HMI projects using SIMATIC Manager within STEP 7 projects and sharing of STEP 7 data such as symbol tables, communications parameters and signaling systems
- Once configurations have been created, they can be easily reused within the system family.
  Projects can be ported to different HMI platforms. This means reduced maintenance and service costs and investment security.
- Shorter familiarization time and efficient configuration;
  e.g. through the standard operating mechanisms of Windows, validity checks, integral online Help with direct assistance and the copying of project data from one project to another
- Straight-forward configuration that is easy to change thanks to object-oriented symbolic data management and cross-reference lists with direct access at the click of the mouse button.
- Display editor with comprehensive possibilities for fast and efficient configuring of displays
- Graphics libraries with a large selection of graphics objects that are ready to use
- Library management for structured storage of reusable graphics objects
- Complete simulation of the project including variable simulation at the configuration PC – even without the PLC and the panel.
- Export/import of all texts of a project for easy translation.
- Can be used worldwide thanks to extensive language support, also for Asian ideographic languages

Application

SIMATIC ProTool can be used to configure SIMATIC Operator Panels from the Text Panel up to the Multi Panel. SIMATIC ProTool/Lite is a low-cost subset of SIMATIC ProTool and as such is limited to configuring the text-based devices (text panels), the smaller graphical devices (panels of the 170 series) and the Mobile Panels 170 as well as the HMI part of SIMATIC C7.

Function

The functions described below are determined by the device used.

- Efficient configuration with short familiarization time
- Process visualization via Windows-compliant user interface with predefined screen objects
- Alarms and messages
- Archiving of alarms and process values
- Logging with log editor for time-driven and event-driven project documentation
- Recipes
- Flexibility thanks to Visual Basic Script and OLE-Automation
- Function block library for predefined/user-defined picture elements
- DP direct keys
- Functional enhancements for multifunctional platforms (MP 270B 10"/MP 370)
- Integration of ProTool in STEP 7
- Complete simulation of ProTool configuration (Windows CE-based systems);
  a complete configuration can be simulated quickly and efficiently on the configuration PC: The entire HMI target system is displayed on the configuration PC. The device's softkeys/function keys, for example, can be activated via the mouse.
  In addition to the ProTool simulator, the SIMATIC S7 PLCSIM engineering tool can also be used for the simulation of control hardware and the animation of variables.
- Interfacing of ProTool with STEP 7 Lite
- Integration of ProTool in SIMOTION SCOUT engineering tool
- Import/export of all project texts (static texts, text lists, messages, info texts, etc.) for easy translation of HMI projects with standard text editors
- Conversion of projects with different resolutions
  Converting a project for a different HMI system can be implemented in a few steps, even if the display resolution is higher or lower (e.g., OP37 10" to MP 370 12"). All screen content is automatically "zoomed" to the new resolution. The function covers all graphics-based devices that can be configured in ProTool.
- Conversion of OP27/37, TP27/37 projects for Windows CE-based devices;
  the "Configuration Guide for Beginners" is available to assist with the conversion process.
- Project download to SIMATIC Operator Panels (in accordance with available device interface)

Function (continued)

System requirements

Operating system	
• Minimum	Windows 98 SE, Windows ME
• Recommended	Windows NT 4.0 SP 6a, Windows 2000 SP3, Windows XP Professional, for multilingual configurations Windows 2000 SP3 MUI, Windows XP Professional MUI
Processor	
• Minimum	Pentium II, 233 MHz
• Recommended	≥ Pentium III, 500 MHz
Graphics	
• Minimum	SVGA
• Recommended	SVGA with hardware acceleration
Resolution	
• Minimum	800 x 600 1)
• Recommended	800 x 600
RAM 2)	
• Minimum	64 MB
• Recommended	≥ 128 MB
Hard disk (free memory space)	≥ 300 MB for ProTool + 40 MB for each additional language
CD-ROM	for software installation

1) ProTool/Lite also 640 x 480

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

Options

SIMATIC 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 Diagnostics Software".

Integration

The following can be configured using

SIMATIC ProTool/Lite:

- Text panels
  - TD17 Text Display
  - OP3, OP7, OP17 Operator Panels
- Panels of the 170 series
  - TP 170A, TP 170B Touch Panels
  - OP 170B Operator Panels
  - 170 Mobile Panels
- HMI components of the SIMATIC C7 control system
  - C7-621, C7-623, C7-624, C7-633, C7-634, C7-635

SIMATIC ProTool:

- Text panels
  - TD17 Text Display
  - OP3, OP7, OP17 Operator Panels
- Panels of the 170 series
  - TP 170A, TP 170B Touch Panels
  - OP 170B Operator Panels
  - 170 Mobile Panels
- Panels of the 270 series
  - OP27 Operator Panels
  - TP27 Touch Panels
  - OP 270 Operator Panels
  - TP 270 Touch Panels
- Multi Panels of the 270 and 370 series
  - MP 270B (10"), MP 370
- HMI components of the SIMATIC C7 control system
  - C7-621, C7-623, C7-624, C7-626, C7-633, C7-634, C7-635, C7-636 Key

Note:
For further information on communication, see "Operator control and monitoring devices/system interfaces"

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SIMATIC ProTool/Lite and SIMATIC ProTool

Ordering data		Order No.
SIMATIC ProTool V6.0 + SP3 configuring software including ProAgent V6.0 + SP3 [1] (ProAgent for OP; ProAgent/MP), language versions: DE/EN/FR/IT/ES, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in English, French, German, Italian, Spanish on CD-ROM	D	**6AV6 581-3BX06-0DX0**
SIMATIC ProTool/Lite V6.0 + SP3 configuring software Language versions: DE/EN/FR/IT/ES, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in English, French, German, Italian, Spanish on CD-ROM	D	**6AV6 580-3BX06-0DX0**
Power Pack		
• ProTool/Lite to ProTool V6.0 + SP3	D	**6AV6 571-3AB06-0DX0**
Upgrade		
• ProTool/Lite to ProTool/Lite V6.0 + SP3	D	**6AV6 580-3BX06-0DX4**
• ProTool to ProTool V6.0 + SP3	D	**6AV6 581-3BX06-0DX4**

1) The runtime licenses for ProAgent must be purchased separately.

2) For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs per installed ProTool and/or ProTool/Lite package. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiration.

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

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

		Order No.
Documentation		
ProTool User Manual for configuring line-oriented displays		
• German		**6AV6 594-1AA06-0AA0**
• English		**6AV6 594-1AA06-0AB0**
• French		**6AV6 594-1AA06-0AC0**
• Italian		**6AV6 594-1AA06-0AD0**
• Spanish		**6AV6 594-1AA06-0AE0**
ProTool User Manual for configuring graphics devices		
• German		**6AV6 594-1BA06-0AA0**
• English		**6AV6 594-1BA06-0AB0**
• French		**6AV6 594-1BA06-0AC0**
• Italian		**6AV6 594-1BA06-0AD0**
• Spanish		**6AV6 594-1BA06-0AE0**
ProTool User Manual for configuring Windows-based systems		
• German		**6AV6 594-1MA06-1AA0**
• English		**6AV6 594-1MA06-1AB0**
• French		**6AV6 594-1MA06-1AC0**
• Italian		**6AV6 594-1MA06-1AD0**
• Spanish		**6AV6 594-1MA06-1AE0**
Communication User Manual Instructions for connecting TD/OP/TP to the controller		
• German		**6AV3 991-1BC05-1AA0**
• English		**6AV3 991-1BC05-1AB0**
• French		**6AV3 991-1BC05-1AC0**
• Italian		**6AV3 991-1BC05-1AD0**
• Spanish		**6AV3 991-1BC05-1AE0**
Communication User Manual Instructions for connecting Windows-based systems to the controller		
• German		**6AV6 596-1MA06-0AA0**
• English		**6AV6 596-1MA06-0AB0**
• French		**6AV6 596-1MA06-0AC0**
• Italian		**6AV6 596-1MA06-0AD0**
• Spanish		**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

More information

Notes for creating Asian configurations

ProTool offers extensive language support, also for Asian characters (simplified Chinese, traditional Chinese, Korean and Japanese). The prerequisite for configuring Asian characters using ProTool V6.0+SP2 is an appropriate Asian version of Windows (98SE/NT4-SP6/2000/XP) or a multi-language Win2000/XP version with Asian language support installed and an Asian language as the system language. The configuration interface remains with 5 languages (English, French, German, Italian or Spanish)

If configuration is to be performed in ProTool under an Asian user interface, if for example, the menus, dialogs and online Help are in Chinese, you will need the ProTool/Pro Configuration V6.0+SP2 ASIA visualization software. This package supports the English, Chinese (simplified), Chinese (traditional), Korean and Japanese configuration interfaces (see visualization software)

Notes on configuration support:

For the TP170A, TP170B, OP170B, Mobile Panel 170, OP27/37, TP27/37, TP/OP 270, MP 270B 10“ and MP 370, texts with Chinese (simplified/traditional) or Korean characters can be configured.

It is also possible to configure Japanese texts for the TP170A, TP170B, OP170B, Mobile Panel 170, TP/OP 270, MP 270B 10“, MP 370. The OP27/37 and TP27/37 do not support Japanese characters.

All other panels (TD17, OP3, OP7, OP17 , OP25, OP35 and C7 units) can only be configured with Latin characters.

Additional information can be found in the Internet under:

http://www.siemens.com/protool

SIMATIC ProTool/Pro visualization software

SIMATIC ProTool/Pro

Overview

- **PC-based HMI solution for single-user systems** directly at the machine
- SIMATIC ProTool/Pro comprises:
  - SIMATIC ProTool/Pro RT runtime software for PC-based systems
  - SIMATIC ProTool/Pro Configuration (CS) configuration software for configuring PC-based systems and for configuring all SIMATIC operator panels
- Executable under Windows 98 SE/ME and Windows NT4.0/2000/XP Professional
- **Current version:**
  - SIMATIC ProTool/Pro Configuration V6.0 + SP3
  - SIMATIC ProTool/Pro Runtime V6.0 + SP3

Benefits

- Integral component of Totally Integrated Automation (TIA):
  The full integration of ProTool/Pro in the SIMATIC S7 environment provides conformity in communications, in data management and in configuration and programming
- Openness:
  Consistent support of the Windows standards such as OLE-Automation and OPC (OLE for Process Control)
- Flexibility:
  Individual function expansions can be implemented with Visual Basic scripts
  Archiving of process data and alarms, e.g. in an ODBC (Open Data Base Connectivity) database
- Convenient process visualization:
  Ranging from archiving through print functions, graphics libraries, trend displays, messaging system, logging system, recipe management through to comprehensive controller drivers
- Language selection:
  Reduction in handling and configuration costs by management of up to 32 languages in the project and online switching of up to 5 languages on the device

Application

SIMATIC ProTool/Pro is up-to-date visualization software for simple visualization tasks at the machine level. It can be used as a single-user solution for all automation applications in production automation, process automation and building services automation.

ProTool/Pro includes the functions of ProTool for configuring SIMATIC Operator Panels, but also enables implementation of machine visualization tasks with PC-based systems.

Design

SIMATIC ProTool/Pro consists of:

- Configuring software SIMATIC ProTool/Pro Configuration (CS) for configuring PC-based systems as well as SIMATIC Operator Panels
- SIMATIC ProTool/Pro RT runtime software for PC-based systems

The SIMATIC ProTool/Pro RT runtime software is available as a software package with 128, 256, 512 or 2048 PowerTags. The term PowerTags is applied only to process variables that have a process connection to the PLC. Variables without process integration, constant variable and message limits (up to 2000 fault messages and 2000 operating messages) are available as additional system features.

Function

- Efficient configuration with short familiarization time
- Process visualization via Windows-compliant user interface with predefined screen objects
- Alarms and messages
- Archiving of alarms and process values
- Logging with log editor for time- and event-driven project documentation with user-definable layout
- Recipes
- Flexibility thanks to Visual Basic Script and OLE-Automation
- Function block library for predefined/user-defined picture elements
- Online connection via Teleservice (analog/ISDN, ProTool/Pro RT)
- OPC (client/server)
- Integration of ProTool/Pro configuration in STEP 7
- Complete simulation of ProTool/Pro configuration (Windows CE-based systems)
- Interfacing of ProTool/Pro configuration with STEP 7 Lite
- Integration of ProTool/Pro configuration in SIMOTION SCOUT engineering tool
- Import/export of all project texts (static texts, text lists, messages, info texts, etc.) for easy translation of HMI projects with standard text editors
- Conversion of OP27/37, TP27/37 projects for Windows CE-based devices;
  the "Configuration Guide for Beginners" is available to assist with the conversion process.
- Project download to SIMATIC operator panels and PC systems running ProTool/Pro Runtime (depending on the device interface available)

Function (continued)

System requirements for	ProTool/Pro runtime software	ProTool configuration software
Operating system		
• Minimum	Windows 98 SE, Windows ME (ME not for ASIA version)	
• Recommended	Windows NT 4.0 SP 6a, Windows 2000 SP3, Windows XP Professional, for multilingual configurations Windows 2000 SP3 MUI, Windows XP Professional MUI	
Processor		
• Minimum	Pentium II, 233 MHz	
• Recommended	≥ Pentium III, 500 MHz	
Graphics		
• Minimum	VGA	SVGA
• Recommended	SVGA with hardware acceleration	SVGA with hardware acceleration
Resolution		
• Minimum	640 x 480	800 x 600
• Recommended	800 x 600	
RAM [1]		
• Minimum	64 MB	
• Recommended	≥ 128 MB	
Hard disk (free memory space) [2]	≥ 100 MB	≥ 300 MB for ProTool + 40 MB for each additional language
Diskette drive [3]	3.5"/1.44 MB	-
CD-ROM	for software installation	

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

2) Without taking archives into account.
In addition to the space needed by ProTool, 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

3) For the authorization of the runtime software

Options

SIMATIC WinBDE machine data management

With the SIMATIC WinBDE machine data management system, the operator panel becomes the central human-machine interface, permitting comprehensive analyses to be carried out directly at the machine.

The result is transparency, quick countermeasures in the event of faults, an increase in machine runtimes and proof of the availability of production facilities and production units.

Note:
For further information, refer to "SIMATIC ProTool/Pro Options".

SIMATIC 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 Diagnostics Software".

SIMATIC ProTool/Pro

Integration

SIMATIC ProTool/Pro Configuration (CS) can be used to configure:

- Text Panels
  - Text Display TD17
  - OP3, OP7, OP17 Operator Panels
- 170 Series Panels
  - TP 170A, TP 170B Touch Panels
  - OP 170B Operator Panels
  - 170 Mobile Panels
- 270 Series Panels
  - OP27 Operator Panels
  - TP27 Touch Panels
  - OP 270 Operator Panels
  - TP 270 Touch Panels
- 270 and 370 Series Multi Panels
  - MP 270B (10"), MP 370
- HMI components of the SIMATIC C7 control systems
  - C7-621, -623, -624, -626, -633, -634, -635, -636 Key
- SIMATIC Panel PC 670/870/IL 70 and other PC-based systems (Touch/Key)

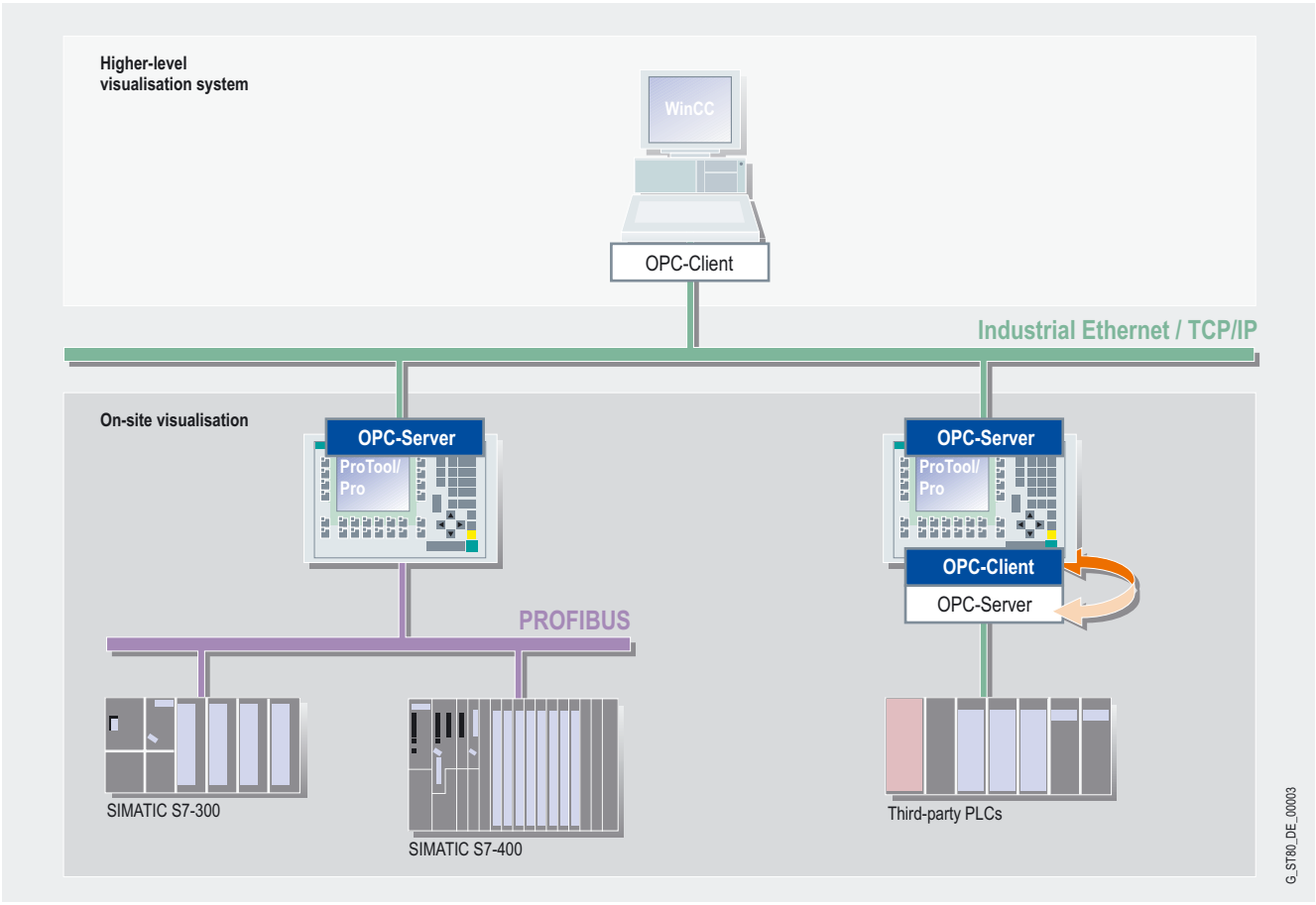
SIMATIC ProTool/Pro Runtime supports linking to:

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
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 5511 [2] CP 5512 [2] CP 5611 [2]
SIMATIC S7 via PPI	
S7-200	CP 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613 A2 [2] CP 5614 [2] 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 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613 A2 [2] CP 5614 [2] PC/MPI adapter [7] 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 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613-A2 [2] CP 5614 [2]
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 1512 [8][9] CP 1612 [8][9] CP 1613 [10] CP 1613 A2 [10]
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 5511 [2] CP 5512 [2] CP 5611 [2]
SIMOTION [11]	
SINUMERIK [12]	
PLCs from other manufacturers	
Allen Bradley (DF1/DH485) [13]	COM1/COM2
GE Fanuc (SNP/SNPX)	COM1/COM2
LG GLOFA GM	COM1/COM2
Mitsubishi (FX/MP4)	COM1/COM2
Modicon (Modbus)	COM1/COM2
OMRON (Link/Multilink) [14]	COM1/COM2
Telemecanique (Uni-Telway)	RS 485 interface board [6]
OPC (client + server)	
Data Access V2.0 + V1.1	CP 1512 [8] CP 1612 [8]

1) ProTool/Pro RT is passive (DP slave); the function block required for the link is included in the scope of delivery of ProTool/Pro.
2) For Panel PC 670/870 via internal MPI interface
3) Only point-to-point to S7-200; no configuration download, operating systems: Windows 98/ME/2000/XP;
Order No.: 6ES7 901-3CB30-0AX0
4) Constraint with regard to baud rate for S7-200; see Catalog ST 70
5) ProTool/Pro RT is active (master); communication with S7 functions
6) See ProTool online help
7) Only point-to-point to S7-300/-400;
no configuration download, operating systems: Windows 98/ME/2000/XP;
Order No.: 6ES7 972-0CA23-0XA0
8) For Panel PC 670/870 via internal Ethernet interface
9) Also required: SOFTNET-S7 Lean V6.2 for Industrial Ethernet (6GK1 704-1LW62-3AA0) or SOFTNET-S7 V6.2 for Industrial Ethernet (6GK1 704-1CW62-3AA0)
10) Also required: S7-1613/Windows V6.2 (6GK1 716-1CB62-3AA0)
11) For further information, see Catalog PM 10
12) "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60
13) DH485 interface only for Windows NT4.0/2000/XP operating systems
14) OMRON interface only for Windows NT4.0/2000/XP operating systems

Note:
For further information, see "Operator control and monitoring units/System interfaces"

Integration (continued)



SIMATIC ProTool/Pro application example

SIMATIC ProTool/Pro

Technical specifications

Type	SIMATIC ProTool/Pro Runtime
	The specifications are maximum values
Operating system	MS Windows 98 SE/ME (ME not for ASIA version), MS Windows NT 4.0/2000/XP Professional
Messages	4000
• Message text (number of characters)	70
• Size of message buffer	1024
• Pending message events	500
Archive (number)	100
• Archivable data	Process values (max. 100), messages
• Max. number of entries per archive (incl. sequence archive)	500,000
• Archive types	Short-term archive, sequence archive (max. 40 per archive)
• Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interface to ODBC database (database not included in scope of delivery)
Recipes	1000
• Entries per recipe	2000 3)
• Data records	5000 2)
Images	300
• Fields per screen	400
• Variables per screen	400
• Static text	30,000
• Graphics objects	2000
• Complex objects per display (e.g., bars)	40
• Trends	800

Type	SIMATIC ProTool/Pro Runtime
Images (continued)	
• Graphics lists 1)	500
• Text lists 1)	500
• Number of entries in symbol tables	3500
Variables	2048 3)
Password protection	
• Password levels	10 (0 ... 9)
• Number of passwords	50
Visual Basic scripts	50
• Number of lines	100
Online languages, max.	5
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 ProTool/Pro, up to 8 connections are possible
SIMATIC S7 PPI interface	
• Number of connectable stations, max.	1 from the point of view of ProTool/Pro
SIMATIC S5 loop-through operation	No
SIMATIC S5 PROFIBUS DP interface	
• Number of connectable stations, max.	1 from the point of view of ProTool/Pro

1) Together only 500 text and graphics lists
2) Dependent on memory medium used
3) Dependent on number of licensed PowerTags

Ordering data

		Order No.
SIMATIC ProTool/Pro Configuration V6.0 + SP3 incl. ProAgent V6.0 + SP3 3)	D	**6AV6 582-2BX06-0DX0**
Language versions: DE/EN/FR/IT/ES on CD-ROM, containing:		
• ProTool/Pro Configuration (CS) V6.0 + SP3		
• Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B 10", MP 370 and ProTool/Pro Runtime		
• Native drivers		
• Electronic documentation (.pdf/.chm) in English, French, German, Spanish, Italian		
SIMATIC ProTool/Pro Runtime V6.0 + SP3 for PC systems incl. ProAgent V6.0 + SP3 3)		
on CD-ROM with license (single license) for		
• 128 PowerTags (RT 128)	D	**6AV6 584-1AB06-0DX0**
• 256 PowerTags (RT 256)	D	**6AV6 584-1AC06-0DX0**
• 512 PowerTags (RT 512)	D	**6AV6 584-1AD06-0DX0**
• 2048 PowerTags (RT 2048)	D	**6AV6 584-1AF06-0DX0**

		Order No.
Upgrade		
• ProTool/Pro to ProTool/Pro V6.0 + SP3 1)	D	**6AV6 582-2BX06-0DX4**
• ProTool/Pro RT to ProTool/Pro RT V6.0 + SP3	D	**6AV6 584-3AX06-0DX4**
PowerPacks		
SIMATIC ProTool/Pro RT PowerTags from		
• 128 to 256 PowerTags	D	**6AV6 570-1BC00-0AX0**
• 128 to 512 PowerTags	D	**6AV6 570-1BD00-0AX0**
• 128 to 2048 PowerTags	D	**6AV6 570-1BF00-0AX0**
• 256 to 512 PowerTags	D	**6AV6 570-1CD00-0AX0**
• 256 to 2048 PowerTags	D	**6AV6 570-1CF00-0AX0**
• 512 to 2048 PowerTags	D	**6AV6 570-1DF00-0AX0**
• SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP3	D	**6AV6 571-2AC06-0DX0**
• SIMATIC ProTool to ProTool/Pro V6.0 + SP3	D	**6AV6 571-2BC06-0DX0**

1) Upgrade for configuration station (CS) as well as runtime (RT) station
2) The runtime licenses for ProAgent/PC must be purchased separately for each target system.
D) Subject to export regulations: AL: N and ECCN: 5D992B1

Ordering data		Order No.
Versions for China/Taiwan/Korea/Japan		
SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA Language/script versions: English/simplified and traditional Chinese/Korean/Japanese; containing: • ProTool/Pro Configuration (CS) V6.0 + SP2 ASIA • Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B 10", MP 370 and ProTool/Pro Runtime • Electronic documentation (.pdf/.chm) in: Chinese (traditional and simplified), English, Japanese and Korean	D	**6AV6 582-2BX06-0CV0**
SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems on CD-ROM with license (single license) for		
• 128 PowerTags (RT 128)	D	**6AV6 584-1AB06-0CV0**
• 256 PowerTags (RT 256)	D	**6AV6 584-1AC06-0CV0**
• 512 PowerTags (RT 512)	D	**6AV6 584-1AD06-0CV0**
• 2048 PowerTags (RT 2048)	D	**6AV6 584-1AF06-0CV0**

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

		Order No.
Communication via Industrial Ethernet		
CP 1613 A2 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	A	**6GK1 161-3AA01**
S7-1613 Edition 2005 Software for S7 and S5 communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, Single License for one installation, Runtime software, software and electronic manualon 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		**6GK1 716-1CB63-3AA0**
CP 1612 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately).	A	**6GK1 161-2AA00**
Softnet-S7 Edition 2005 Software for S7 and S5 compatible communication, incl. PG/OP communication, OPC server and NCM PC; up to 64 connections, Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1512 and CP 1612 German/English		**6GK1 704-1CW63-3AA0**
Softnet-S7 Lean Edition 2005 Software for S7 and S5 compatible communication, incl. PG/OP communication, OPC server and NCM PC; up to 8 connections, Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1512 and CP 1612 German/English		**6GK1 704-1LW63-3AA0**

SIMATIC ProTool/Pro

Ordering data		Order No.
Communication via PROFIBUS		
CP 5613 A2 PCI card (32-bits) for connecting a PC to PROFIBUS (communications software must be ordered separately).	D	**6GK1 561-3AA01**
CP 5614 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	D	**6GK1 561-4AA01**
S7-5613 Edition 2005 Software for S7 and S5 communication, incl. PG and FDL protocol, OPC server and NCM PC; Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English		**6GK1 713-5CB63-3AA0**
CP 5512 PCMCIA card (CARDBUS 32-bit) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in ProTool/Pro)		**6GK1 551-2AA00**
CP 5611 A2 PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in ProTool/Pro)		**6GK1 561-1AA01**
CP 5611 MPI Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m		**6GK1 561-1AM01**
PC/PPI adapter RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 kbit/s	A	**6ES7 901-3CB30-0XA0**
PC adapter USB For Windows 2000/XP		**6ES7 972-0CB20-0XA0**

	Order No.
Documentation (must be ordered separately)	
ProTool/Pro Runtime User Manual	
• German	**6AV6 594-1CA06-0AA0**
• English	**6AV6 594-1CA06-0AB0**
• French	**6AV6 594-1CA06-0AC0**
• Italian	**6AV6 594-1CA06-0AD0**
• Spanish	**6AV6 594-1CA06-0AE0**
ProTool User Manual for configuring Windows-based systems	
• German	**6AV6 594-1MA06-1AA0**
• English	**6AV6 594-1MA06-1AB0**
• French	**6AV6 594-1MA06-1AC0**
• Italian	**6AV6 594-1MA06-1AD0**
• Spanish	**6AV6 594-1MA06-1AE0**
ProTool User Manual for configuring line-oriented displays	
• German	**6AV6 594-1AA06-0AA0**
• English	**6AV6 594-1AA06-0AB0**
• French	**6AV6 594-1AA06-0AC0**
• Italian	**6AV6 594-1AA06-0AD0**
• Spanish	**6AV6 594-1AA06-0AE0**
ProTool User Manual for configuring graphics devices	
• German	**6AV6 594-1BA06-0AA0**
• English	**6AV6 594-1BA06-0AB0**
• French	**6AV6 594-1BA06-0AC0**
• Italian	**6AV6 594-1BA06-0AD0**
• Spanish	**6AV6 594-1BA06-0AE0**
Communication User Manual for Windows-based systems	
• German	**6AV6 596-1MA06-0AA0**
• English	**6AV6 596-1MA06-0AB0**
• French	**6AV6 596-1MA06-0AC0**
• Italian	**6AV6 596-1MA06-0AD0**
• Spanish	**6AV6 596-1MA06-0AE0**
SIMATIC HMI Manual Collection C Electronic documentation, on CD-ROM 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**

A) Subject to export regulations: AL: N and ECCN: EAR99H
C) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1

More information

Asian language version of ProTool/Pro V6.0 + SP2

ProTool/Pro V6.0 + SP2 is also available in simplified Chinese, traditional Chinese, Japanese, Korean and English specifically for the Asian market. To run this version of ProTool/Pro, you need a Chinese (simplified or traditional), Korean or Japanese version of Windows 98 SE or Windows NT 4.0/2000/XP. ProTool/Pro V6.0 + SP2 ASIA features a language-specific configuration interface.

Texts featuring Chinese (simplified/traditional) or Korean character sets can be configured for TP170A, TP170B, OP170B, Mobile Panel 170, OP27/37, TP27/37, TP/OP 270, MP 270B 10", MP 370 as well as for ProTool/Pro Runtime for PC. For these systems, the online help is also available in simplified Chinese, traditional Chinese, Korean and English.

Furthermore, texts featuring Japanese character sets can be configured for TTP170A, TP170B, OP170B, Mobile Panel, TP/OP 270, MP 270B 10", MP 370 as well as for ProTool/Pro Runtime for PC. For these systems, the online help is also available in Japanese.

Support of Japanese character sets is not offered for OP27/37, TP27/37.
These devices can only be configured using the Japanese configuration interface with Latin character sets.

All other panels (TD17, OP3, OP7, OP17 , OP25, OP35 and C7 devices) can only be configured using the Chinese, Korean, Japanese or English configuration interface with Latin character sets.

The required operating system packages can be ordered from the relevant Siemens representative. For indirect export to China, Taiwan, Korea or Japan, a special configuration of Windows 2000/XP can be used to facilitate the configuring process.

The ProTool/Pro Configuration V6.0 + SP2 ASIA configuration software and the ProTool/Pro Runtime V6.0 + SP2 ASIA runtime software are supplied as separate products (CD-ROM) containing, in addition to the English version, the simplified and traditional Chinese versions as well as the Korean and Japanese versions.

The runtime licenses are not language-specific. The English handling program (AuthorsW) can run on the Chinese, Korean and Japanese versions of Windows listed above.

Documentation in Chinese, Korean and Japanese can be ordered from the Siemens regional companies in China, Korea, Taiwan or Japan.

Contact:

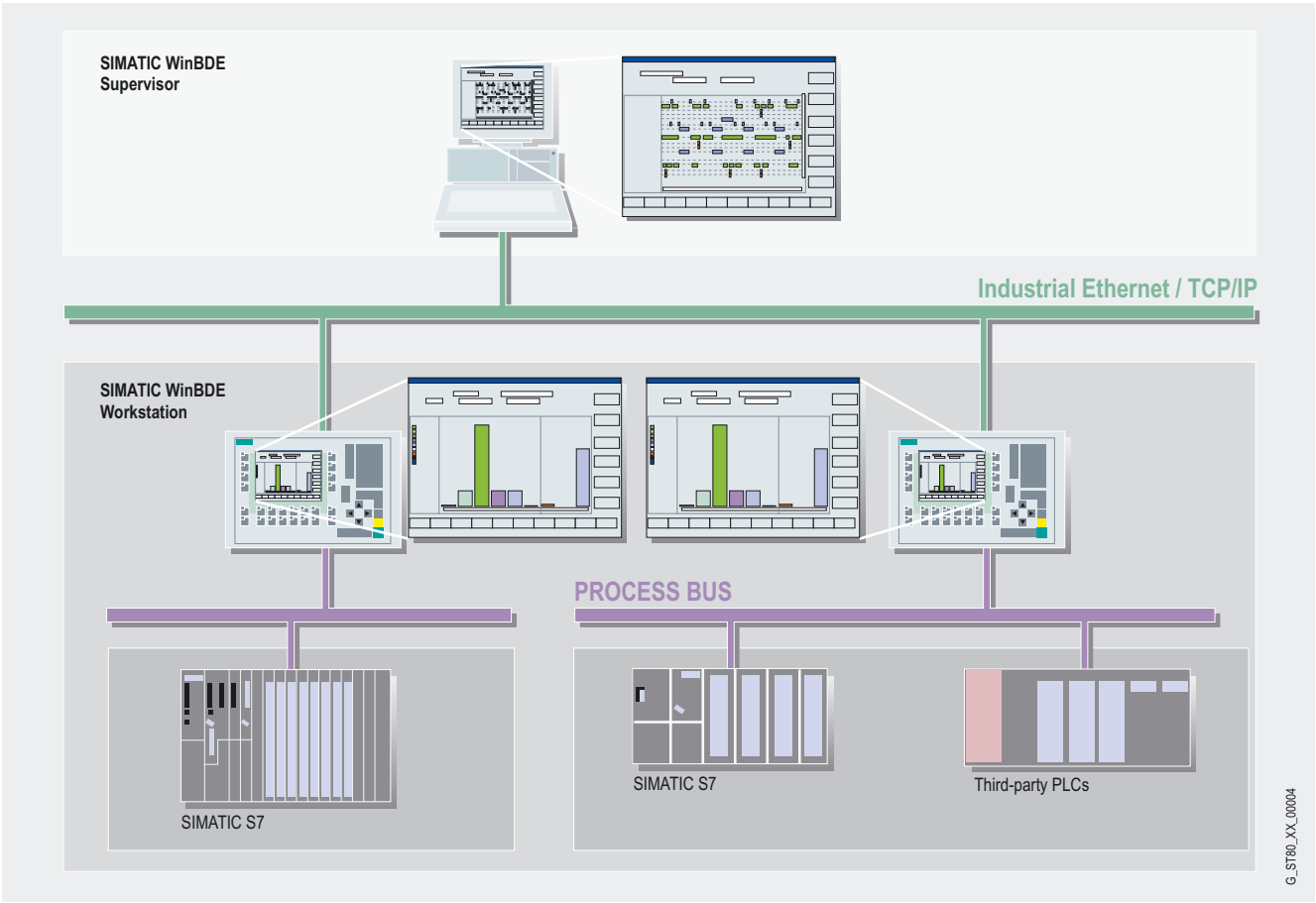
- **Simplified Chinese**
  Siemens Ltd. China
  A&D Group
  7, Wangjing Zhonghuan Nanlu
  Chaoyang District
  P.O.Box 8543
  Beijing 100102, P.R.China
- **Traditional Chinese**
  Siemens Ltd. Taiwan
  A&D Group
  Tun-Hua S. Road Sec. 2
  Taipei
  Taiwan, R.O.C.
  P.O.Box 26-755 Taipei
- **Korean**
  Siemens Ltd. Seoul
  A&D Group
  726 Asia Building 10th floor
  Yeoksam-dong,
  Kangnam-Gu
  Seoul 138-080 Po-Box 3001
  Korea
- **Japanese**
  Siemens K.K.
  AS Sect. A&D Dept.
  Gotanda GE Edison Building 4F
  25-11 Higashi-Gotanda1-Chome,
  Shinagawa-ku,
  Tokyo 141-0022,
  Japan

Additional information can be found in the Internet under:

http://www.siemens.de/protoolpro

SIMATIC ProTool/Pro options

Overview



- SIMATIC WinBDE is the machine data management software program for the acquisition, evaluation and analysis of machine data.
- The operator panel becomes the central acquisition and control terminal for machine data, either directly at the machine (workstation) or plant-wide (supervisor).
- **Current version:**
  - SIMATIC WinBDE Workstation V7.2 + SP2
  - SIMATIC WinBDE Supervisor V7.2 + SP2

Benefits

- Vivid representation of machine sequences enables:
  - Support for fast counter-measures in the event of a fault
  - Increased machine runtimes
  - Detection of bottlenecks in the process
  - Assessment of the efficiency of the machines used through the calculated KPI/OEE indicators (availability, performance, quality, OEE)
- Automatic data acquisition and processing support the generation of objective availability verification for production equipment and manufacturing units
- WinBDE can be used for everything from individual machines right up to complete production plants

More information

Note:
For further details on SIMATIC WinBDE, see "SCADA system SIMATIC WinCC / WinCC options"

Overview

- Integrated family of **engineering tools** for configuring SIMATIC HMI operator units, the operator control part of SIMATIC C7 systems, 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 2005 Advanced
  - SIMATIC WinCC flexible 2005 Standard
  - SIMATIC WinCC flexible 2005 Compact
  - SIMATIC WinCC flexible 2005 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 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), C7-635 (Key)
- **WinCC flexible Standard**
  - Micro Panels: OP 73micro, TP 170micro, TP 177micro
  - Mobile Panels: 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,
  - 270 Series Panels: TP 270, OP 270
  - 270 Series Multi Panels: MP 270B
  - 370 Series Multi Panels: MP 370
  - C7 devices: C7-635 (Touch), C7-635 (Key), C7-636 (Key)
- **WinCC flexible Advanced**
  - Micro Panels: OP 73micro, TP 170micro, TP 177micro
  - Mobile Panels: 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,
  - 270 Series Panels: TP 270, OP 270
  - 270 Series Multi Panels: MP 270B
  - 370 Series Multi Panels: MP 370
  - C7 devices: C7-635 (Touch), C7-635 (Key) , C7-636 (Key)
  - Standard PC
  - SIMATIC Panel PCs: Panel PC 577, Panel PC 677, Panel PC 877
  - SIMOTION Panel PCs: P012K, P015K, P012T, P015T, PCR, PCR-Touch
  - SINUMERIK Panel PCs: OP010, OP012, OP015, TP012, 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.de/ww/view/de/19241467

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.

SIMATIC WinCC flexible ES

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
- Integration into Component Based Automation (CBA) with SIMATIC iMap (released separately)
  - Management of CBA components with runtime and HMI components in SIMATIC iMap
  - Connection of CBA components with/without HMI components in SIMATIC iMap
  - Generation of HMI basic data in SIMATIC iMap for WinCC flexible Advanced, e.g. tag list and connected HMI modules

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

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 (.pdf, 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

Function (continued)

Graphics-based configuration of operator prompting

- Simple operator prompting concept based on hierarchical menu tree

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 or ProTool

Scheduler for the definition of all global tasks

- Configuration of global system functions or time-driven events

ChangeControl (option)

- Management of project versions, with rollback and compare function
- 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 2004/2005 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: Generation of configuration data for older versions of WinCC flexible engineering tools (can be used with versions > 2004)

System requirements for	WinCC flexible ES
Operating system	Windows 2000 SP4, Windows XP Professional SP1 and SP2 For multilingual configurations: Windows 2000 SP4 MUI, Windows XP Professional SP1 and SP2 MUI
Processor	
• Minimum	Pentium 4
• Recommended	≥ Pentium 4, 2.0 GHz
Resolution	
• Minimum	1024 x 768
• Recommended	≥ 1280 x 1024
RAM	
• Minimum	512 MB
• Recommended	≥ 1 GB, ≥ 512 MB with WinCC flexible Micro;
Hard disk (free memory space) [1]	≥ 1 GB
Diskette drive [2]	3.5"/1.44 MB
CD-ROM	for software installation

1) In addition to the space needed by WinCC flexible, Windows also requires space on the hard disk; e.g., for the swap file. The following formula has proven itself in the past: The size of the swap file = 3 x the size of the RAM. For further information, refer to your Windows documentation

2) For license key transfer

Options

SIMATIC WinCC flexible/ChangeControl

WinCC flexible/ChangeControl enables continuous 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. Comparisons between configuration data permit recognition of differences between project versions.

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

SIMATIC WinCC flexible ES

Ordering data		Order No.
WinCC flexible 2005 Advanced	D	**6AV6 613-0AA01-1CA5**
Floating license, on CD-ROM incl. license key, includes: • Engineering software for configuring WinCC flexible Runtime as well as 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for WinCC flexible Runtime as well as 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • Native drivers • Electronic documentation (.pdf) in English, French, German, Italian, Spanish		
WinCC flexible 2005 Standard	D	**6AV6 612-0AA01-1CA5**
Floating license, on CD-ROM incl. license key, includes: • Engineering software for configuring 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • Native drivers • Electronic documentation (.pdf) in English, French, German, Italian, Spanish		
WinCC flexible 2005 Compact	D	**6AV6 611-0AA01-1CA5**
Floating license, on CD-ROM incl. license key, includes: • Engineering software for configuring 70/170 Series Micro Panels and Panels incl. C7-635/636 • SW for WinCC flexible/ChangeControl engineering option [1] • Simulation software for 70/170 Series Micro Panels and Panels incl. C7-635/636 • Native drivers • Electronic documentation (.pdf) in English, French, German, Italian, Spanish		
WinCC flexible 2005 Micro		**6AV6 610-0AA01-1CA5**
Single license, on CD-ROM w/o license key, includes: • Engineering software for configuring Micro Panels • Electronic documentation (.pdf) in English, French, German, Italian, Spanish		

		Order No.
Power Packs		
SIMATIC WinCC flexible Power Packs		
Floating license, license key only		
• WinCC flexible Standard to WinCC flexible 2005 Advanced	D	**6AV6 613-2CD01-1AD5**
• WinCC flexible Compact to WinCC flexible 2005 Advanced	D	**6AV6 613-2BD01-1AD5**
• WinCC flexible Compact to WinCC flexible 2005 Standard	D	**6AV6 612-2BC01-1AD5**
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 2005		
• ProTool/Lite to WinCC flexible 2005 Compact	D	**6AV6 611-3AA01-1CE5**
• ProTool to WinCC flexible 2005 Standard	D	**6AV6 612-3AA01-1CE5**
• ProTool to WinCC flexible 2005 Advanced	D	**6AV6 613-3AA01-1CE5**
SIMATIC WinCC flexible 2004 to SIMATIC WinCC flexible 2005		
• WinCC flexible 2004 Compact to WinCC flexible 2005 Compact	D	**6AV6 611-0AA01-1CE5**
• WinCC flexible 2004 Standard to WinCC flexible 2005 Standard	D	**6AV6 612-0AA01-1CE5**
• WinCC flexible 2004 Advanced to WinCC flexible 2005 Advanced	D	**6AV6 613-0AA01-1CE5**

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.

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

Ordering data

		Order No.
Versions for China/Taiwan/Korea/Japan		
WinCC flexible 2005 ASIA Advanced Floating license, on CD-ROM incl. license key, includes: • Engineering software for configuring WinCC flexible Runtime as well as 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • SW for WinCC flexible/ ChangeControl engineering option [1] • Simulation software for WinCC flexible Runtime as well as 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • Native drivers • Electronic documentation (.pdf) in English, Japanese, Korean, simplified Chinese, traditional Chinese	D	**6AV6 613-0AA11-1CA5**
WinCC flexible 2005 ASIA Standard Floating license, on CD-ROM incl. license key, includes: • Engineering software for configuring 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • Simulation software for 70/170/270/370 Series Micro Panels and Panels incl. C7-635/636 • Native drivers • Electronic documentation (.pdf) in English, Japanese, Korean, simplified Chinese, traditional Chinese	D	**6AV6 612-0AA11-1CA5**

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

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

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

		Order No.
Documentation (must be ordered separately)		
User Manual WinCC flexible Compact/ Standard/Advanced		
• German		**6AV6 691-1AB01-0AA0**
• English		**6AV6 691-1AB01-0AB0**
• French		**6AV6 691-1AB01-0AC0**
• Italian		**6AV6 691-1AB01-0AD0**
• Spanish		**6AV6 691-1AB01-0AE0**
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**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection 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	C	**6AV6 691-1SA01-0AX0**

More information

Additional information can be found in the Internet under:

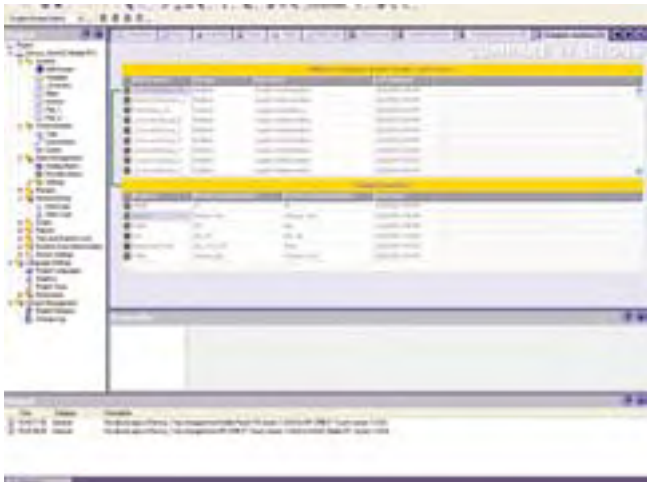
http://www.siemens.de/wincc-flexible

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.

SIMATIC 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 saving of configuration data
  - Delivered versions, approved reference states or development states 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.
  - Comparisons between configuration data permit recognition of differences between project versions.
- Tracking of modifications in configuration
  - The history of changes can be proven 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

Ordering data	Order No.
WinCC flexible/ChangeControl for WinCC flexible 2005 Compact/Standard/Advanced [1]	**6AV6 613-6AA01-1AB5**
Floating license, option, license key only	

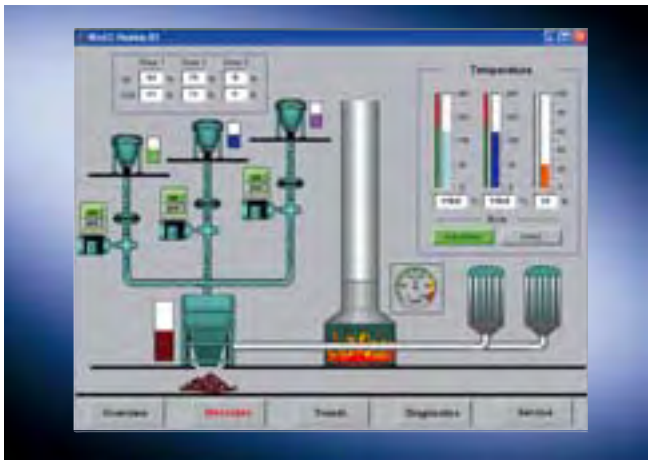
1) The ChangeControl option has not been released for integrated operation with STEP 7.

More information

Note

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

Overview



- **PC-based visualization software** for single-user systems at the machine
- Executable under Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2005 Runtime with 128, 512 or 2048 PowerTags1)

Benefits

- Optimum price/performance ratio thanks to individually scalable system functionality
- Functions for all visualization tasks:
  Operator functions, graphical and plot representations, 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
  - Panel PC 577
  - Panel PC 677
  - Panel PC 877
- SIMOTION Panel PCs
  - P012K, P015K, P012T, P015T
  - 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.

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 of 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

- Recording of operator actions in Audit Trail [1)]
- 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

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 Panels 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

Functional enhancements in comparison with ProTool/Pro Runtime V6

- Expansion of graphic system with addition of variable blocks and language-specific graphics
- Expansion of the signaling system through addition of analog message frame procedure and freely-definable message classes
- Improved access protection according to requirements of regulated sectors
- Access via scripts to runtime screen objects, xP270 and PC and higher
- Expanded communication options for operation, service and diagnostics
  - Multiprotocol support
  - Remote control, diagnostics and administration
  - Event-driven sending of e-mails
  - Device-specific HTML pages
  - HTTP communication between SIMATIC operator panels

Changes in comparison with ProTool/Pro Runtime V6

- Archiving, messages, OPC server available as optional function at reduced basic price

Function (continued)

System requirements for	WinCC flexible Runtime
Operating system	Windows 2000 SP4, Windows XP Professional SP1 and SP2 For multilingual configurations: Windows 2000 SP4 MUI, Windows XP Professional SP1 and SP2 MUI
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 [1]	
• Minimum	128 MB
• Recommended	≥ 256 MB
Hard disk (free memory space) [2]	≥ 100 MB
Diskette drive [3]	3.5"/1.44 MB
CD-ROM	for software installation

1) RAM requirements are determined primarily by the size of the graphics used.
2) 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
3) For the authorization of the runtime software
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 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".

SIMATIC WinBDE

- With the SIMATIC WinBDE machine data management system, the operator panel becomes the central acquisition and control unit for machine data, permitting comprehensive analyses to be carried out directly at the machine.
- The result is transparency, quick countermeasures in the event of faults, an increase in machine runtimes and proof of the availability of production facilities and production units.

Note:
For further information, refer to "SCADA system SIMATIC WinCC/WinCC options"

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
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 5511 [2] CP 5512 [2] CP 5611 [2]
SIMATIC S7 via PPI	
S7-200	CP 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613-A2 [2] CP 5614 [2] 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 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613-A2 [2] CP 5614 [2] 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 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5613-A2 [2] CP 5614 [2]
SIMATIC S7 via Ethernet (TCP/IP) [14]	
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 1512 [7] CP 1612 [7] CP 1613 [8] CP 1613 A2 [9]
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 5511 [2] CP 5512 [2] CP 5611 [2]

Protocol	PC interfaces
SIMOTION [9]	
SINUMERIK [10]	
PLCs from other manufacturers	
Allen Bradley (DF1/DH485) [11]	COM1/COM2
GE Fanuc (SNP/SNPX)	COM1/COM2
LG GLOFA GM	COM1/COM2
Mitsubishi (FX/MP4)	COM1/COM2
Modicon (Modbus)	COM1/COM2
OMRON (Link/Multilink)	COM1/COM2
OPC (client + server) [11] [13]	
Data Access V2.0 + V1.1 (COM) / V1.0 (XML) client only	CP 1512 [7] CP 1612 [7]
HTTP communication for data exchange between SIMATIC HMI (client + server) [12] [13]	CP 1512 [7] 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 677/877 and IL 77 via internal MPI interface
3) Only point-to-point to S7-200; no configuration download, operating systems: Windows 2000/XP; Order No.: 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 No.: 6ES7 972-0CA23-0XA0 (COM) or 6ES7 972-0CB20-0XA0 (USB)
7) For Panel PC 677/877 and IL 77 via external Ethernet interface
8) Also required: S7-1613 2005 (6GK1 716-1CB63-3AA0)
9) For further information, see Catalog PM 10
10) "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60
11) OPC Client included in scope of delivery, "WinCC flexible/OPC Server for WinCC flexible Runtime" required for OPC Server
12) "WinCC flexible/Sm@rtAccess for WinCC flexible Runtime" options required
13) OPC and HTTP communication are additive, i.e., can be used in conjunction with the PLC links listed above
14) A Softnet Lean License is supplied with every WinCC flexible 2004 Runtime package. This means that an Ethernet link to SIMATIC S7 (max. 8 connections) is included in the basic package.

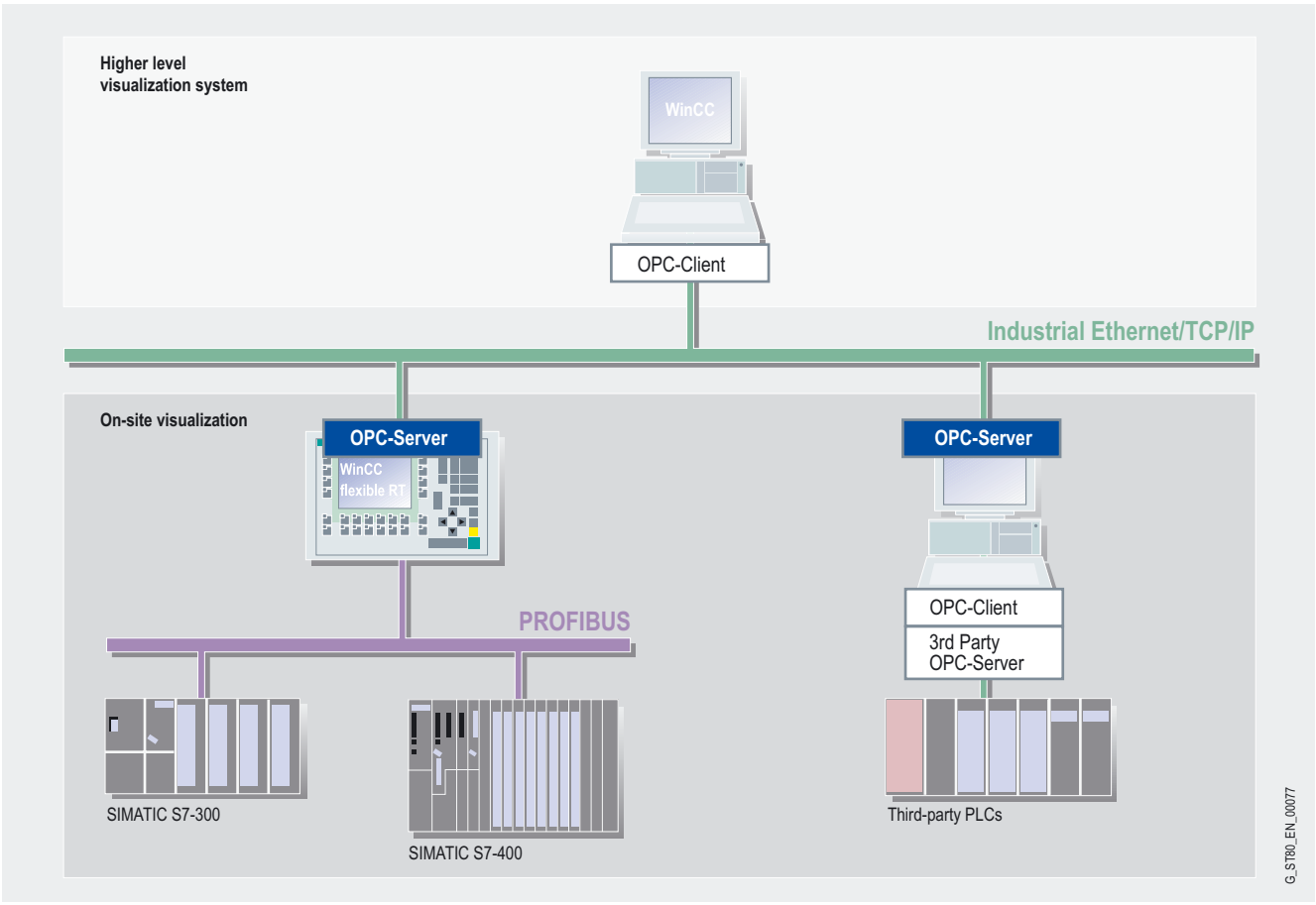
For information about SIMATIC Panels that support OPC/http communication, see the overview under "System interfaces".

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"

Integration (continued)



SIMATIC WinCC flexible Runtime application example

SIMATIC WinCC flexible RT

Technical specifications

Type	SIMATIC WinCC flexible Runtime
	The specifications are maximum values
Operating system	MS Windows 2000 / XP Professional
Diagrams	500
• Fields per diagram	400
• Variables per diagram	400
• Static text	30000
• Graphics objects	2000
• Complex objects per picture (e.g. bars)	40
• Trend curves	800
• Graphics lists [1]	500
• Text lists [1]	500
• Number of entries in symbol lists	3500
Variables	2048 [3]
Messages bit-triggered/analog	4000 / 500
• Message text (number of characters)	80
• Number of process values per message	8
• Message buffer size	1024
• Pending message events	500
Archive [4]	100
• Archivable data	Process values (max. 100) , messages
• Max. number of entries per archive (incl. sequential archive)	500000
• Archive types	Short-term archives, sequential archives (max. 400 per archive)
• Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interfacing to ODBC database (database not included in scope of supply)

Type	SIMATIC WinCC flexible Runtime
Recipes [4]	1000
• Elements per recipe	2000 [3]
• Records per recipe	5000 [2]
Password protection	
• User privileges	32
• No. of user groups	10
Visual Basic scripts	200
Online languages, max.	16
Communication	
SIMATIC S7 MPI interface/ PROFIBUS DP interface	
• Number of connectable partners, max.	WinCC flexible Runtime permits up to 8 connections, depending on the scope of configuration (communication)
SIMATIC S7 PPI interface	
• Number of connectable partners, max.	1 for WinCC flexible Runtime
SIMATIC S5 PROFIBUS DP interface,	
• Number of connectable partners, max.	1 for WinCC flexible Runtime
Multi-protocol operation	Yes; OPC client or SIMATIC HMI HTTP protocol are additive, that is, they can be used in combination with other controller connections

1) Only 500 text and graphics lists in total
2) Depends on the storage medium used
3) Depends on the number of licensed PowerTags
4) Option for SIMATIC WinCC flexible Runtime

Ordering data		Order No.
SIMATIC WinCC flexible 2005 Runtime		
for PC systems; incl. SW for options for PC systems [1]		
Single license, on CD-ROM incl. authorization, for:		
• 128 PowerTags (RT 128)	D	**6AV6 613-1BA01-1CA0**
• 512 PowerTags (RT 512)	D	**6AV6 613-1DA01-1CA0**
• 2048 PowerTags (RT 2048)	D	**6AV6 613-1FA01-1CA0**
Power Packs		
SIMATIC WinCC flexible 2005 Runtime		
Single license, only authorization for PowerTags, from		
• 128 to 512 PowerTags	D	**6AV6 613-4BD01-1AD0**
• 128 to 2048 PowerTags	D	**6AV6 613-4BF01-1AD0**
• 512 to 2048 PowerTags	D	**6AV6 613-4DF01-1AD0**
Upgrade		
• ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2005 Runtime 128 PowerTags	D	**6AV6 613-3BB01-1CE0**
• ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags	D	**6AV6 613-3CD01-1CE0**
• ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags	D	**6AV6 613-3DD01-1CE0**
• ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2005 Runtime 2048 PowerTags	D	**6AV6 613-3FF01-1CE0**
• SIMATIC WinCC flexible RT 2004 to WinCC flexible RT 2005 128 PowerTags incl. runtime options for: WinCC flexible/Sm@rtAccess Sm@rtService OPC Server Archives Recipes ProAgent	D	**6AV6 613-1XA01-1CE0**
• Panel options: SIMATIC WinCC flexible 2004 to WinCC flexible 2005 SIMATIC Panel Options for WinCC flexible 2005: 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 Panel	D	**6AV6 618-7XX01-1AF0**

		Order No.
Versions for China/Taiwan/Korea/Japan		
SIMATIC WinCC flexible 2005 ASIA Runtime		
for PC systems; incl. SW for options for PC systems [1]		
Single license, on CD-ROM incl. authorization, for:		
• 128 PowerTags (RT 128)	D	**6AV6 613-1BA11-1CA0**
• 512 PowerTags (RT 512)	D	**6AV6 613-1DA11-1CA0**
• 2048 PowerTags (RT 2048)	D	**6AV6 613-1FA11-1CA0**
Documentation (must be ordered separately)		
User Manual WinCC flexible Runtime		
• German		**6AV6 691-1BA01-0AA0**
• English		**6AV6 691-1BA01-0AB0**
• French		**6AV6 691-1BA01-0AC0**
• Italian		**6AV6 691-1BA01-0AD0**
• Spanish		**6AV6 691-1BA01-0AE0**
User Manual WinCC flexible Communication		
• German		**6AV6 691-1CA01-0AA0**
• English		**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection	C	**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		

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

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

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

4

SIMATIC WinCC flexible RT

Ordering data

		Order No.
Communication via Industrial Ethernet		
CP 1613 A2 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	A	**6GK1 161-3AA01**
S7-1613 Edition 2005 Software for S7 and S5 communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, Single License for one installation, Runtime software, software and electronic manualon 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		**6GK1 716-1CB63-3AA0**
CP 1612 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately).	A	**6GK1 161-2AA00**
Communication via PROFIBUS		
CP 5613 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	D	**6GK1 561-3AA01**
CP 5614 A2 PCI card (32-bit) for connecting a PC to PROFIBUS (communications software must be ordered separately).	D	**6GK1 561-4AA01**
S7-5613 Edition 2005 Software for S7 and S5 communication, incl. PG and FDL protocol, OPC server and NCM PC; Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English		**6GK1 713-5CB63-3AA0**

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

	Order No.
Communication via PROFIBUS (continued)	
CP 5512 PCMCIA card (32-bit CARDBUS) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in WinCC flexible).	**6GK1 551-2AA00**
CP 5611 A2 PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in WinCC flexible basic package)	**6GK1 561-1AA01**
CP 5611 MPI Comprising CP 5611 (32-bit) and MPI cable, 5 m	**6GK1 561-1AM01**
PC/PPI adapter RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 kbit/s	**6ES7 901-3CB30-0XA0**
PC/MPI adapter RS 232, 9-pin; male with RS 232/MPI converter	**6ES7 972-0CA23-0XA0**
PC adapter USB For Windows 2000/XP	**6ES7 972-0CB20-0XA0**

More information

Additional information can be found 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.

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

WinCC flexible /Archives

Technical specifications

Type	WinCC flexible /Archives The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Operating system	MS Windows 2000 Professional / XP Professional
Archive	100
• Archivable data	Process values (max. 100), messages
• Cyclic trigger for archiving process values (variables)	1 sec.
• Max. number of entries per archive (incl. sequential archive)	500,000 1)
• Archive types	• Short-term archives • Sequential archives (max. 400 per archive)
• Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interfacing to ODBC database (database not included in scope of supply)

1) Depends on the storage medium used

Ordering data

		Order No.
WinCC flexible /Archives for WinCC flexible 2005 Runtime 1) Single license, license key only	D	**6AV6 618-7ED01-1AB0**
WinCC flexible/ Archives+Recipes for WinCC flexible 2005 Runtime 1) Single license for each option, License Key only	D	**6AV6 618-7GD01-1AB0**

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

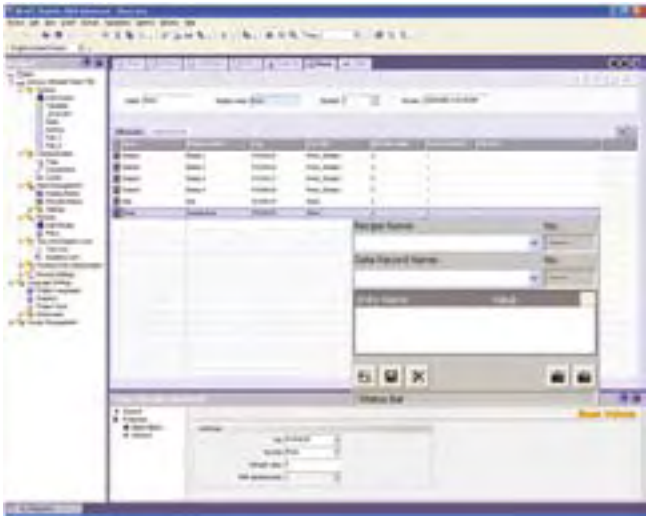
D) Subject to export regulations: AL: N and ECCN: 5D992B1

More information

Note

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

Overview



- Option for SIMATIC WinCC flexible Runtime 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.

WinCC flexible /Recipes

Technical specifications

Type	WinCC flexible /Recipes The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
Operating system	MS Windows 2000 Professional / XP Professional
Recipes	1000
• Entries per recipe	2000 1)
• Records per recipe	5000 2)
• Useful data length in bytes per data record	8000 KB 2)

1) Depends on the number of licensed PowerTags.
2) Depends on the storage medium used.

Ordering data

		Order No.
WinCC flexible /Recipes for WinCC flexible 2005 Runtime 1) Single license, license key only	D	**6AV6 618-7FD01-1AB0**
WinCC flexible/ Archives+Recipes for WinCC flexible 2005 Runtime 1) Single license for each option, license key only	D	**6AV6 618-7GD01-1AB0**

1) One license is required for each operator station.
A license is not required for the engineering system for configuring the runtime option.
D) Subject to export regulations: AL: N and ECCN: 5D992B1

More information

Note

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

Overview

- Option for SIMATIC WinCC flexible Runtime as well as SIMATIC Panels for recording operations in an audit trail, and electronic signature
- An easy-to-use configuration included as standard in WinCC flexible 2005 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: OP270, TP270, MP270B, MP370, WinCC flexible Runtime
- A runtime license is required for every operator control unit (Panel/PC)
- The WinCC flexible Sm@rtAccess and Sm@rtService options are not released for use with Audit in production plants that have special quality requirements.

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 • on the higher-level PC (storage 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	OP 270, TP 270
• SIMATIC Multi Panels	MP 270B, MP 370
• SIMATIC PC	SIMATIC WinCC flexible Runtime
Operating system	Windows 2000 Professional/ XP Professional/Windows CE

Ordering data

		Order No.
WinCC flexible/Audit for SIMATIC Panel Single license, license key only	D	**6AV6 618-7HB01-1AB0**
WinCC flexible/Audit for WinCC flexible RT 2005 Single license, license key only	D	**6AV6 618-7HD01-1AB0**

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

More information

Note

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

WinCC flexible /Sm@rtAccess

Overview

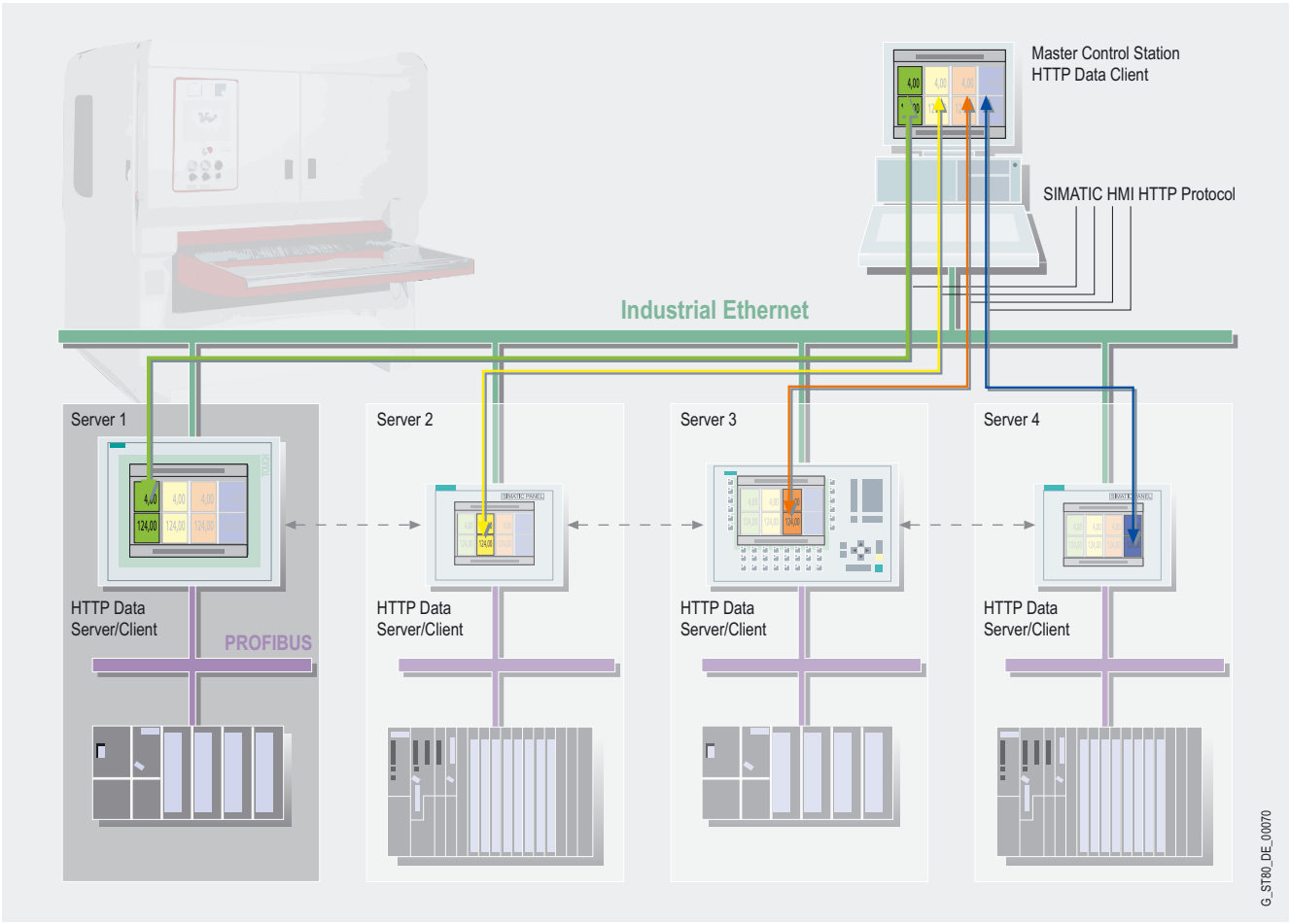
- Option for SIMATIC WinCC flexible Runtime plus SIMATIC Panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - Mobile Panel 177 PN
  - TP 177B PN/DP, OP 177B PN/DP
  - OP 270, TP 270
  - MP 270B, MP 370
  - WinCC flexible Runtime
- Communication 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 Panels 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

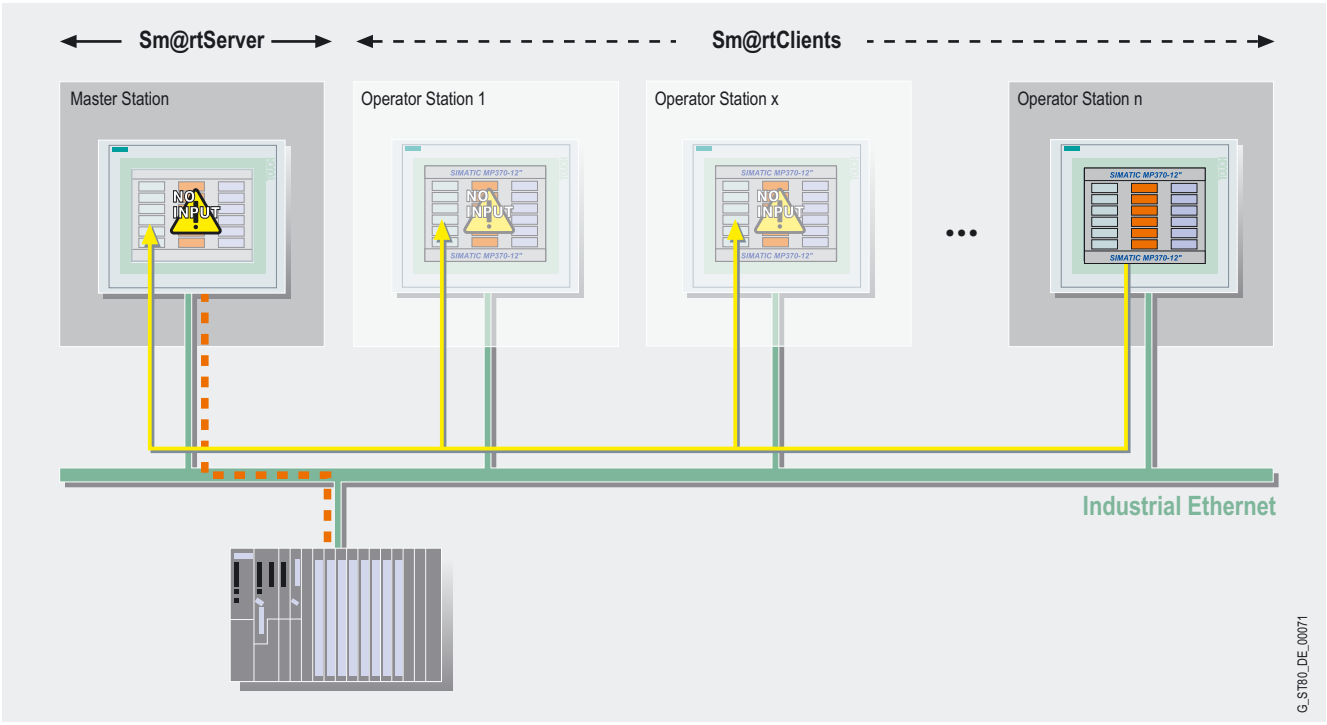
Application

- 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)

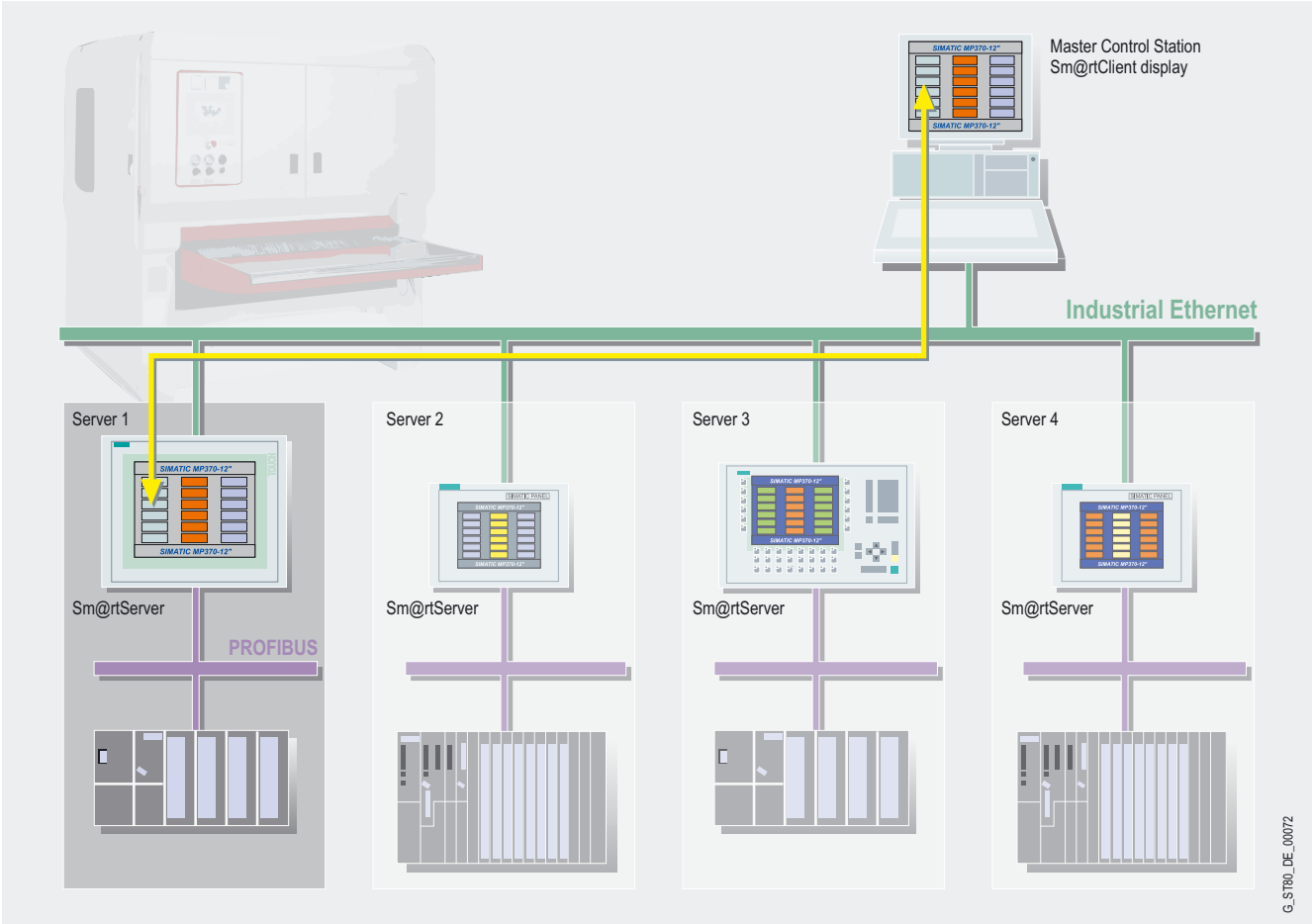


Communication between HMI systems using Industrial Ethernet:
use of HMI systems at machine level as data servers for higher-level automation components

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

WinCC flexible /Sm@rtAccess

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@rt-Access

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 , OP 270, TP 270, OP 177 PN /DP
• SIMATIC Multi Panels	MP 270B, MP 370
• SIMATIC PC	WinCC flexible Runtime
Operating system	
• for Panels/Multi Panels	Windows CE V3.0
• for WinCC flexible Runtime	MS Windows 2000 Professional/ XP Professional
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, OP 177B PN/DP, TP 177B PN/DP, OP 270/TP 270/MP 270B as Sm@rtServer	3 for 6” devices 2 for 10” devices
• MP 370 as Sm@rtServer	3 for 12” devices 2 for 15” 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.

Ordering data

	Order No.
WinCC flexible /Sm@rtAccess for SIMATIC Panel [1)]	
Single license, only authorization D	**6AV6 618-7AB01-1AB0**
WinCC flexible /Sm@rtAccess for WinCC flexible 2005 Runtime [1)]	
Single license, only authorization D	**6AV6 618-7AD01-1AB0**

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

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

More information

Note

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

WinCC flexible /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:
  - OP 177B PN/DP, TP 177B PN/DP, Mobile Panel 177 PN, OP 270, TP 270
  - MP 270B, MP 370
  - WinCC flexible Runtime
- One license is required for each operator station but not for the Remote Service PC.

Benefits

- Fast elimination of faults and downtimes, thus increase in productivity through global access to machines/plants by the servicing and maintenance personnel
- Avoidance of costly visits by personnel

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)

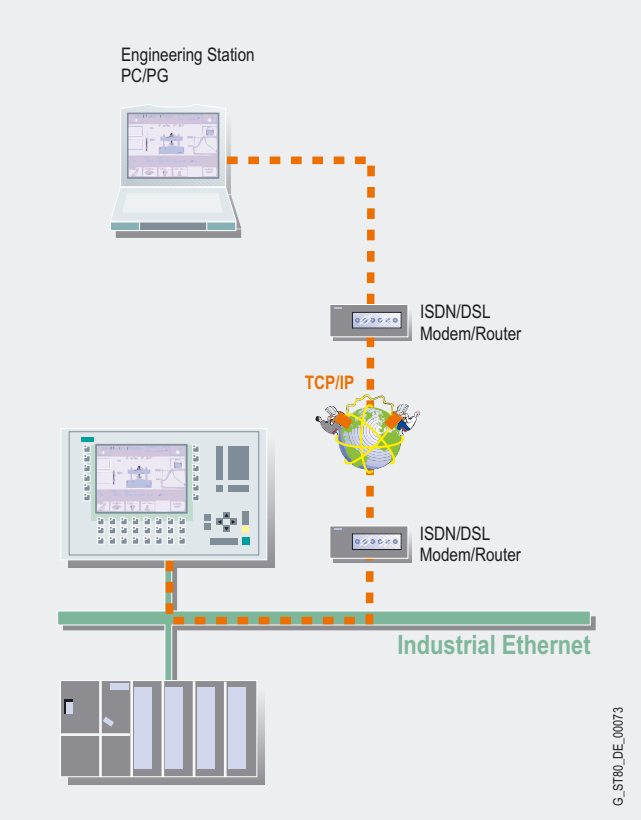
- Events that trigger sending of an e-mail:
  - Message of a message class
  - Configurable standard functions: changes in value of a variable, operation of a function key, scripts, etc.
- Possible contents of an e-mail
  - Title
  - Message text with process variables
  - date/time
- Optional implementation 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.

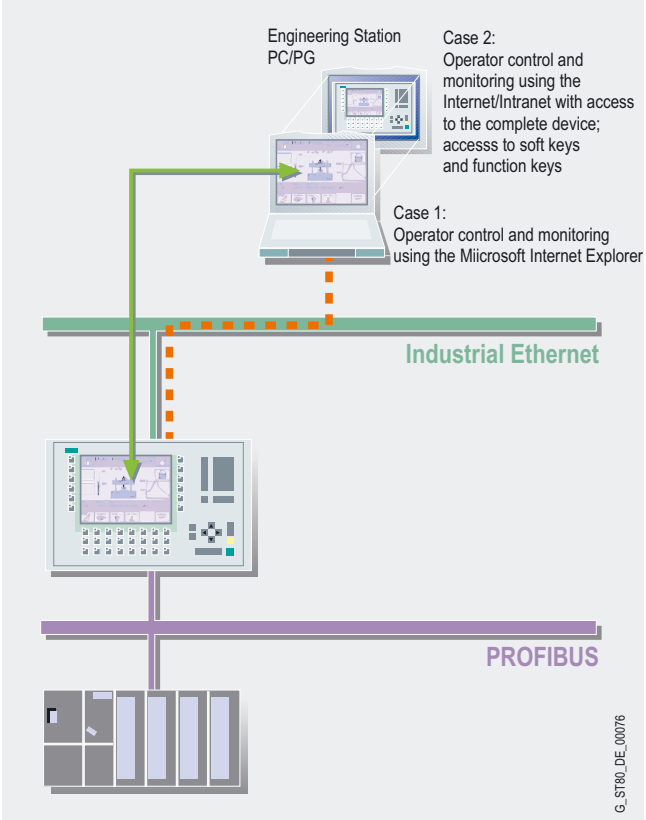
Password protection can be activated for access to the HMI system as an option. Different passwords can be configured for different functions.

WinCC flexible /Sm@rtService

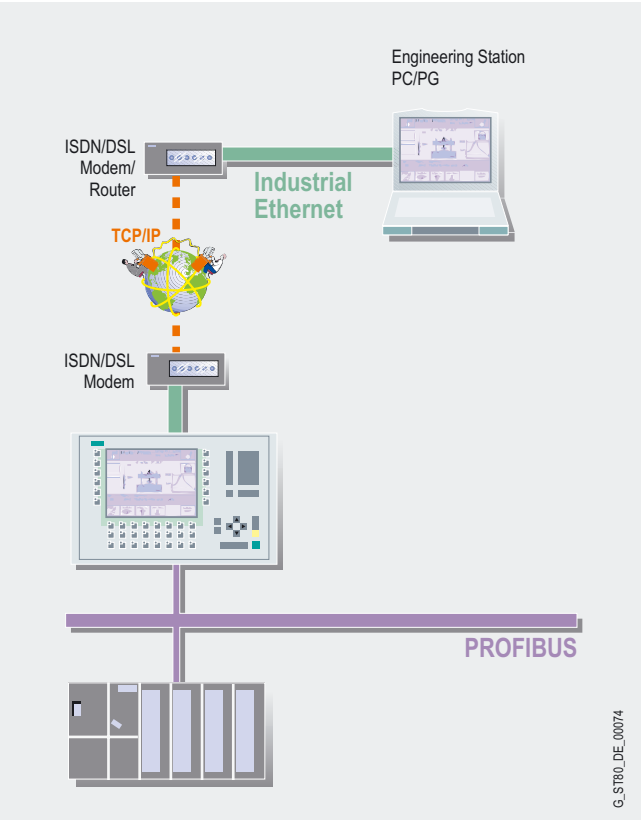
Function (continued)



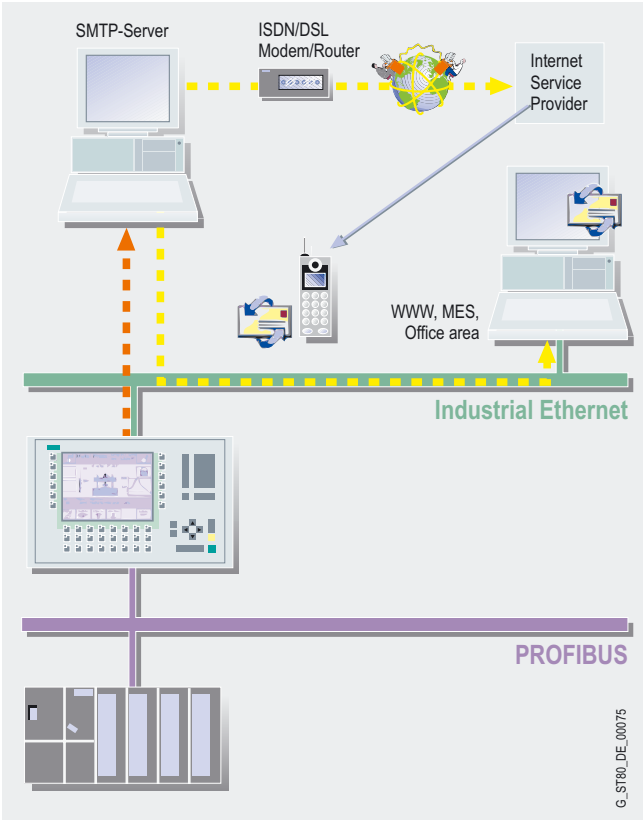
Remote operation and monitoring of SIMATIC HMI systems over Industrial Ethernet or over intranet/Internet



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)

Technical specifications

Type	WinCC flexible/Sm@rtService
Execution platform	
• SIMATIC Panels	OP 177B PN/DP, TP 177B PN/DP, Mobile Panel 177 PN, OP 270, TP 270
• SIMATIC Multi Panels	MP 270B, MP 370
• SIMATIC PC	SIMATIC WinCC flexible Runtime
Operating system	
• for Panels/Multi Panels	Windows CE V3.0
• for WinCC flexible Runtime	MS Windows 2000 Professional/XP Professional
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 /Pro Agent option cannot be used simultaneously on OP/TP/MP 270/370.

Ordering data

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

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.

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

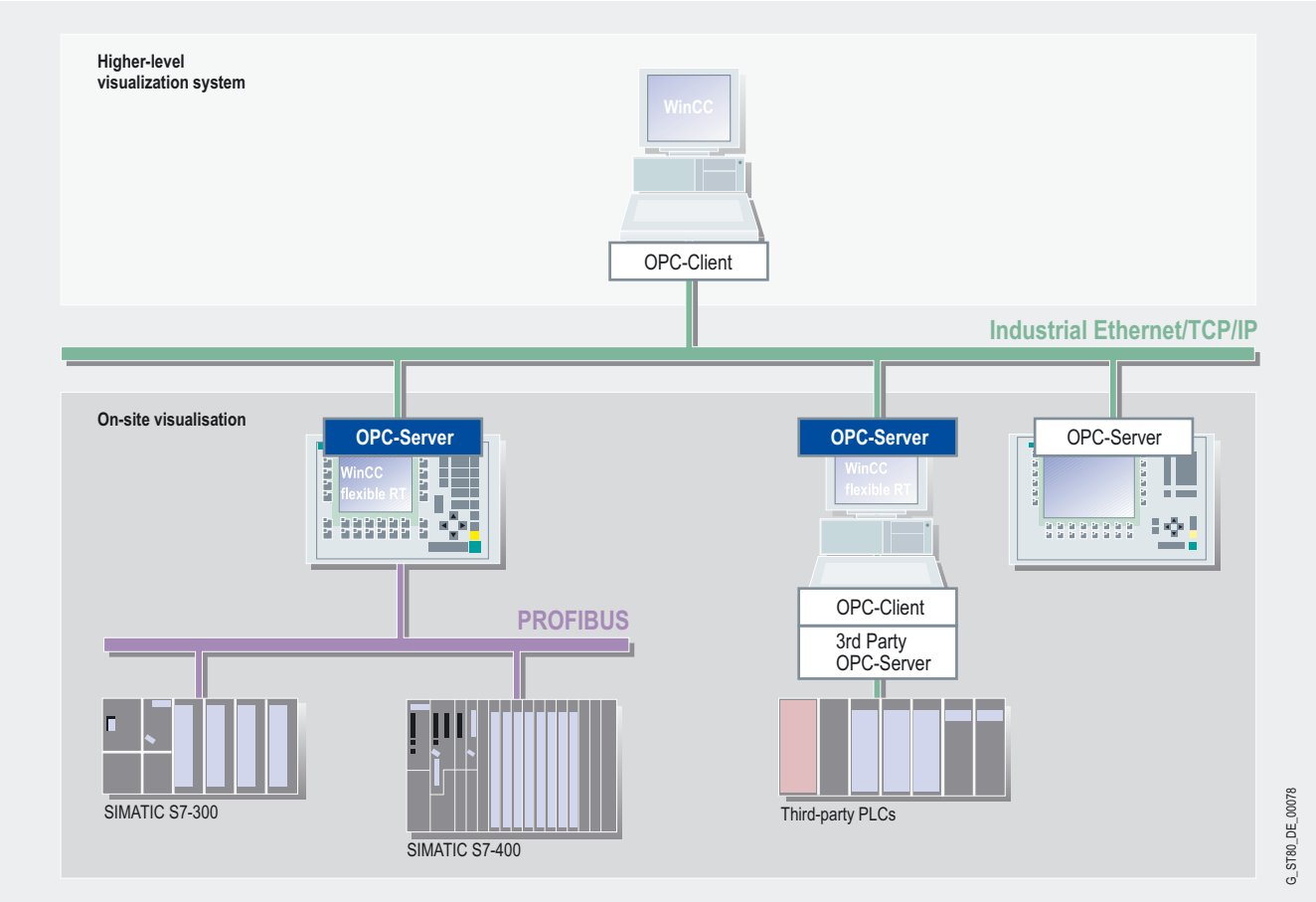
More information

Note

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

WinCC flexible /OPC Server

Overview



- Option for SIMATIC WinCC flexible Runtime as well as multi panels for communication with applications (e.g. MES, ERP, or applications in the office sector) from different vendors
- Available for the following SIMATIC HMI systems:
  - MP 270B, MP 370 (use of OPC based on XML)
  - WinCC flexible Runtime (use of OPC based on DCOM)
- One license is necessary for each operator station

Benefits

- Incorporation of automation components from different vendors into an automation concept
- Saving of development costs through communication between automation systems based on a homogeneous, uniform protocol
- Reduction in load on fieldbuses:
  WinCC flexible Runtime as well as SIMATIC Panels permit a control system, for example, to access the process data.
  The sensitive field level is not loaded by the control level as far as the communications requirements are concerned. The requirements are processed by WinCC flexible Runtime and the SIMATIC Panels.

Application

OPC (OLE for Process Control) is a standardized, open, uniform and multi-vendor software interface. OPC is based on the Windows technology of COM (Component Object Model), DCOM (Distributed COM) or on XML.

Windows-based systems such as SIMATIC Panel PC or SIMATIC Multi Panels are used for tasks at the machine and process levels, and can communicate with all OPC-compatible applications via Ethernet using TCP/IP and OPC. WinCC flexible Runtime or the SIMATIC Multi Panel (OPC server) provide data for one or more OPC clients. As a result, local visualization and data processing are possible to the same extent as plant-wide calling of information or archiving of process data. Uniform flows of information guarantee an overview of the status of all processes.

Communication with OPC-compatible applications from different vendors (e.g. MES, ERP, or applications in the office sector) is possible.

OPC Foundation

Additional information can be found 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 370
• SIMATIC Standard PC	SIMATIC WinCC flexible Runtime
Operating system	
• for Multi Panels	Windows CE V3.0
• for WinCC flexible Runtime	MS Windows 2000 Professional/ XP Professional
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 included in the scope of supply of the "WinCC flexible/OPC server option for SIMATIC Multi Panels".

Ordering data

		Order No.
WinCC flexible/OPC Server for SIMATIC Multi Panels [1]		
Single license, license key only	D	**6AV6 618-7CC01-1AB0**
WinCC flexible/OPC Server for WinCC flexible Runtime [1]		
Single license, license key only	D	**6AV6 618-7CD01-1AB0**

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

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

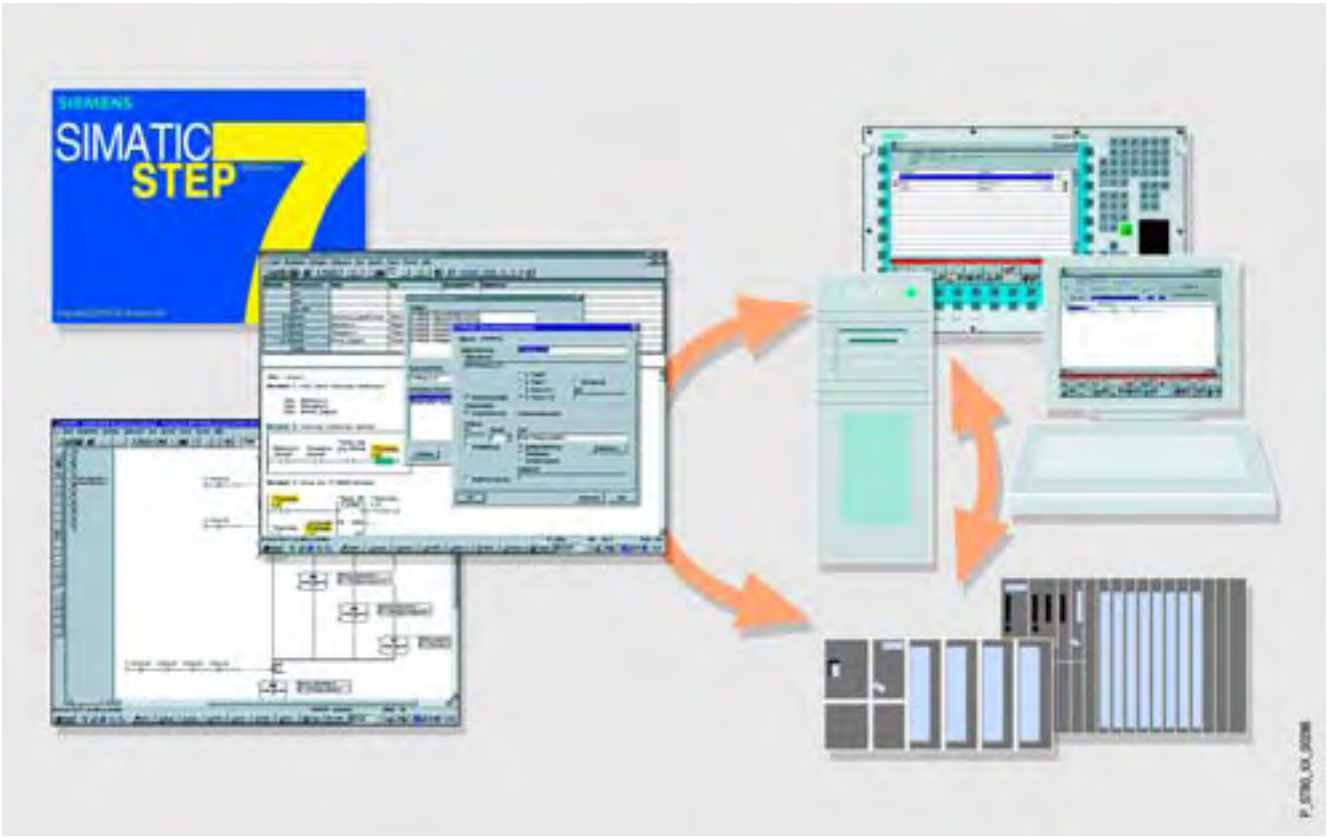
More information

Note

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

WinCC flexible /ProAgent

Overview



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

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

Ordering data

		Order No.
WinCC flexible /ProAgent		
Software option package for process diagnostics based on S7-PDIAG V5.1 and higher, S7-HighGraph V5.3 and higher; S7-GRAPH V5.2 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, MP 270B and MP 370	D	**6AV6618-7DB01-1AB0**
• **WinCC flexible/ProAgent for WinCC flexible Runtime** [1] Runtime license (single license)	D	**6AV6618-7DD01-1AB0**
Documentation (must be ordered separately)		
SIMATIC HMI Manual Collection	C	**6AV6 691-1SA01-0AX0**
Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		

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

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

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

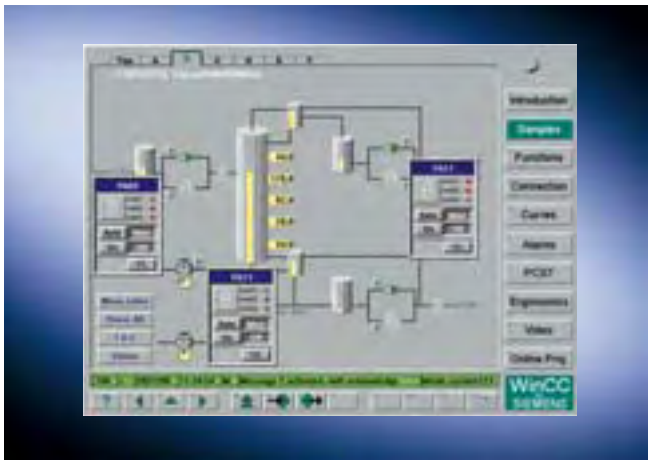
More information

Note

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

SIMATIC 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 V6.0 SP3:**
    Runs under Windows XP Professional/Windows 2003 Server and Windows 2000
  - **SIMATIC WinCC V5.1 SP2:**
    Runs under Windows NT 4.0/2000

Benefits

- Suitable for universal use
  Multilingual solutions for all industries for use all over the world, can be integrated into any automation solution
- All HMI functions are on-board
  User management, operator control and monitoring, reporting, acknowledgement and archiving of events, acquisition, compression and archiving of measured values (incl. backup), logging and documenting of process and configuration data
- Quick and easy to configure
  Configuration wizards create scope for essential tasks thanks to cross-reference list and screen properties display, configuration of multilingual applications, configuration tool for configuring mass data
- Integrated scalability
  Can be expanded from single-user to client-server configurations, increased availability thanks to redundant server, process visualization via the Web with the WinCC WebNavigator
- Open standards make integration easy
  - MS SQL Server 2000
  - powerful real-time database, ActiveX-Controls
  - open for application modules, Visual Basic for Applications
  - for individual enhancements, OLE for Process Control
  - for cross-vendor communication
- Process visualization with Plant Intelligence
  Integrated powerful Historian based on Microsoft SQL Server 2000, integrated evaluation function for online analysis (statistical process control), production optimization with the assistance of various options
- Can be expanded using options and add-ons
  Options for scalable configurations, options for increased availability, options for IT & Business integration, options for SCADA enhancements, options for validation acc. to FDA 21 CFR Part 11
- Part of Totally Integrated Automation
  Direct access to SIMATIC PLC variable and message configuration, integrated diagnostics functions for increased 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).

Design

SIMATIC WinCC is available as a complete package and as a runtime package with 128, 256, 1024 and 64K PowerTags (for WinCC V6 additionally: 8K PowerTags). Only data points which have a connection to PLCs or other data sources via a WinCC channel are referred to as PowerTags. Up to 32 signals can be derived from one data point. Furthermore, internal variables without a coupling are available as additional system performance. WinCC V6 additionally contains 512 archive variables. The archive variables can be upgraded using Archive Powerpacks.

Licenses for a multi-user configuration

The system software must be installed on the server with the required number of PowerTags as well as the WinCC/Server option. In the basic configuration, an RT128 license is adequate for the clients. An RC128 license is, however, required for configuration on the 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 error diagnosis and maintenance. All SIMATIC engineering tools work together when functions are configured.

SIMATIC WinCC offers a complete base 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 application.

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)

Compatibility

WinCC version	Windows NT4.0 SP6a	Windows 2000 Professional; Server; Advanced Server; with SP2, SP3, SP4	Windows XP Professional	Windows XP Professional SP2	Windows server 2003	Internet Explorer
V5.1 SP2 [1]	•	•	–	–	–	IE V5.5 ; IE V6.0, IE V6.0 SP1
V6.0 SP3 [1]	–	•	•	•	•	IE V6.0 SP1
V5.1 ASIA [2]	•	• [3]	–	–	–	IE V6.0
V6.0 SP3 ASIA [2]	–	•	•	•	•	IE V6.0 SP1

1) Released for Microsoft operating systems with English, French, German, Italian, Spanish, MUI language options
2) Released for Microsoft operating systems with English, Japanese, Korean, MUI, simplified Chinese, traditional Chinese language options
3) Only released for SP2

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.

For the first time, the WinCC V6 basic system features an integrated powerful and scalable Historian function based on the Microsoft SQL Server 2000. 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 Historian Server. Versatile clients and tools for evaluation, open interfaces, special options (Connectivity Pack , IndustrialDataBridge, Client Access licenses) provide the basis for effective IT and Business Integration.

Integration in automation solutions (valid for WinCC V6.0 and higher)

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. Corresponding SIMATIC NET updates are available for upgrading older versions and releases (these are supplied with the WinCC basic package/upgrade).

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 5511 or 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 third-party PLCs:

OPC (OLE for Process Control) is recommended for the connection of third-party 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 1.1
- OPC Data Access 2.0
- OPC Data Access 3.0
- OPC XML Data Access (Connectivity Pack)
- OPC HDA V1.0 (Connectivity Pack)
- OPC A&E V1.02 (Connectivity Pack)

Additional information can be found in the Internet under:

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

Integration (continued)

Overview of interfaces (WinCC V6.0 and higher)

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.

Integration (continued)

Components for communication between PG/PC and SIMATIC (WinCC V6.0 and higher)

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	•						Included in the basic package
SIMATIC S5 Ethernet Layer 4 Channel DLL for S5-Layer 4 communication + TCP/IP		•	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions				•			Included in the basic package
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication					•		Included in the basic package
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication						•	Included in the basic package
Communication components for OS/OP expansion							
CP 1612 PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)			•	•		•	**6GK1 161-2AA00**
CP 1512 PCI card (Cardbus 32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)			•	•		•	**6GK1 151-2AA00**
SOFTNET-S7 2005 Communications software for S7 functions (max. 64 connections) • for Windows 2000/XP/2003 Server			•	•			**6GK1 704-1CW63-3AA0**
SOFTNET-S7 Lean 2005 Communications software for S7 functions (max. 8 connections) • for Windows 2000/XP/2003 Server			•	•			**6GK1 704-1LW63-3AA0**
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 for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	•	•	•	•	•	•	**6GK1 161-3AA01**
S7-1613 2005 Communications software for S7 functions and S5/505 Layer 4 communication with TCP/IP • for Windows 2000/XP/2003 Server		•	•	•	•		**6GK1 716-1CB63-3AA0**
TF-1613 2005 Communications software for TF functions and S5/505 Layer 4 communication with TCP/IP • for Windows 2000/XP	•	•	•		•		**6GK1 716-1TB63-3AA0**

• System interface possible

1) Via any interface board with NDIS 3.0 interface; no separate communications software required

Additional information can be found in the Internet under:

http://www4.ad.siemens.de/view/cs/de/14627901

Integration (continued)

Components for communication between PG/PC and SIMATIC (WinCC V6.0 and higher)

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	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		•			Included in the basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			•		Included in the basic package
PROFIBUS FMS Channel DLL for PROFIBUS FMS				•	Included in the basic package
Communication components for OS/OP expansion					
CP 5611 PC card for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		•			**6GK1 561-1AA00**
CP 5511 PCMCIA card (16-bit) for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		•			**6GK1 551-1AA00**
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 PCI card for connecting a PG/PC to PROFIBUS (communications software must be ordered separately)	•	•	•	•	**6GK1 561-3AA00**
CP 5613 A2 PCI card for connecting a PC to PROFIBUS (communications software must be ordered separately)	•	•	•	•	**6GK1 561-3AA01**
S7-5613 2005 Communications software for S7 functions + FDL • for Windows 2000/XP/2003 Server	•	•			**6GK1 713-5CB63-3AA0**
DP-5613 2005 Communications software for DP master + FDL • for Windows 2000/XP/2003 Server	•		•		**6GK1 713-5DB63-3AA0**
FMS-5613 2005 Communications software for PROFIBUS-FMS + FDL • for Windows 2000/XP/2003 Server	•			•	**6GK1 713-5FB63-3AA0**

• System interface possible

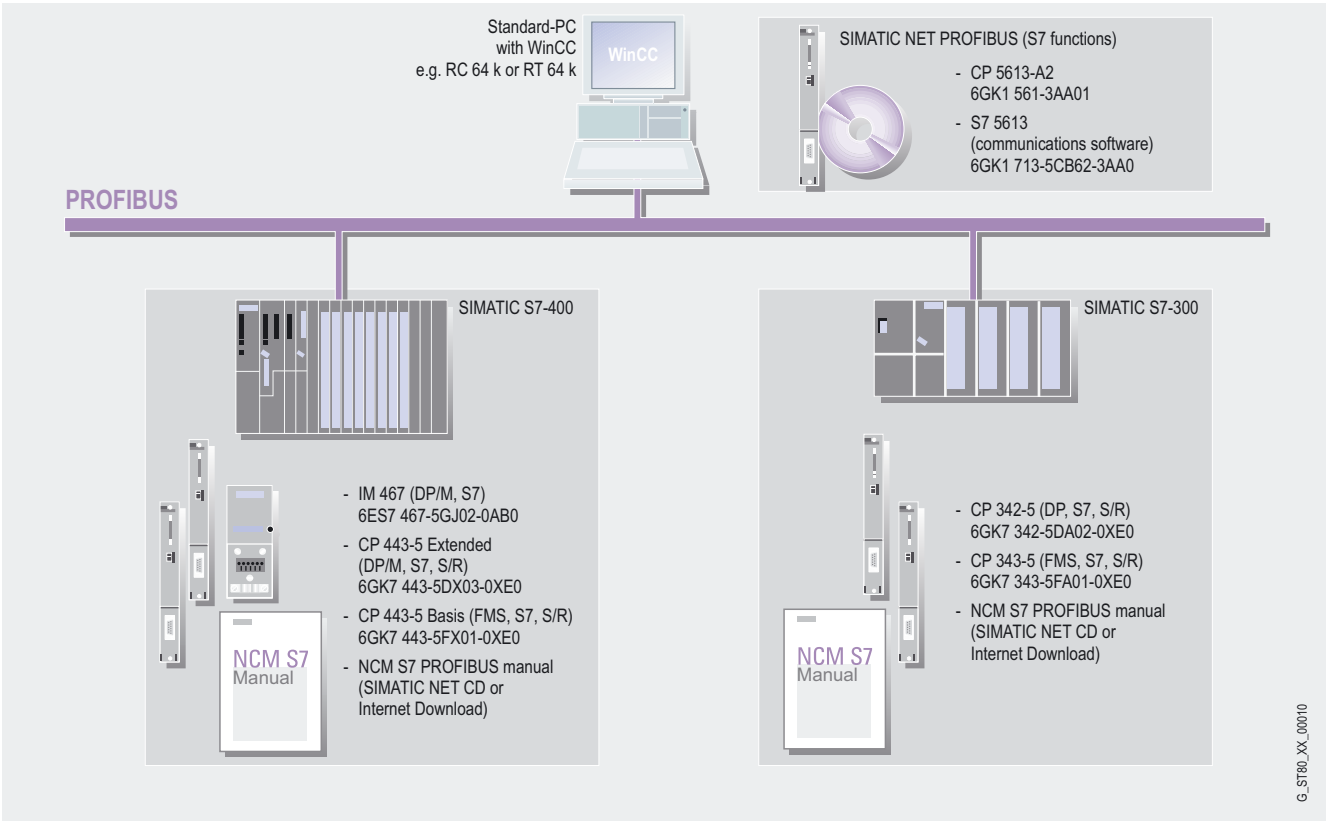
Additional information can be found in the Internet under:

http://www4.ad.siemens.de/view/cs/de/14628484

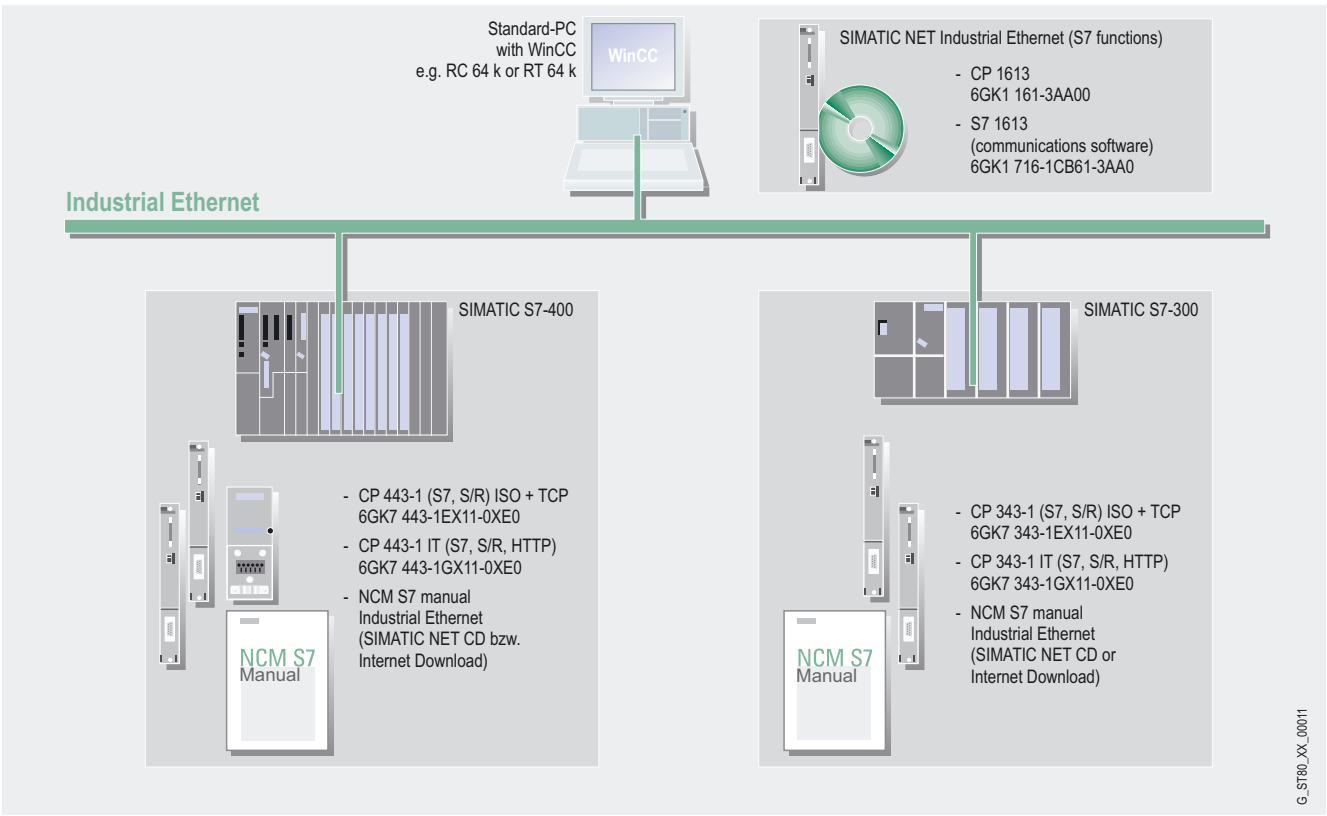
4

Integration (continued)

Communication examples

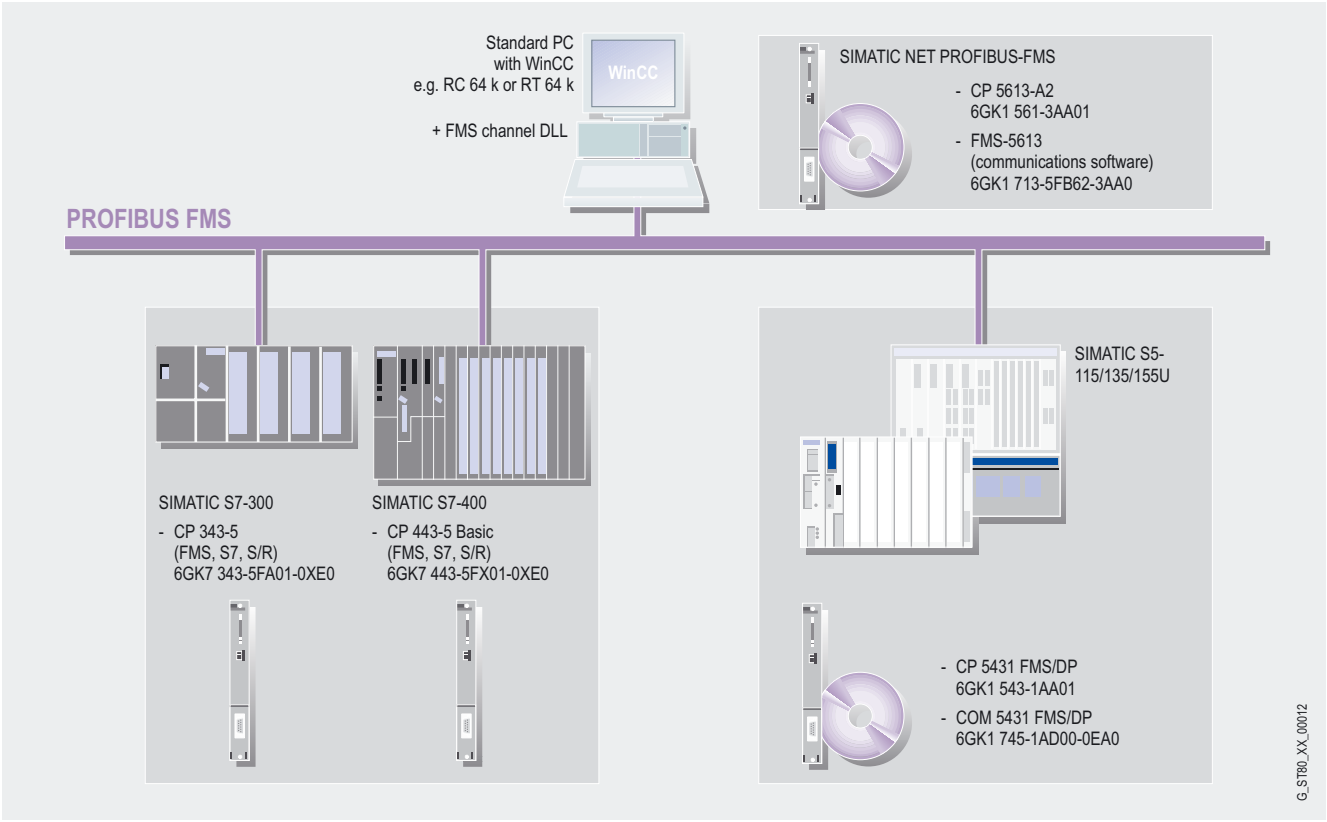


WinCC single-user system: PROFIBUS with S7 communication

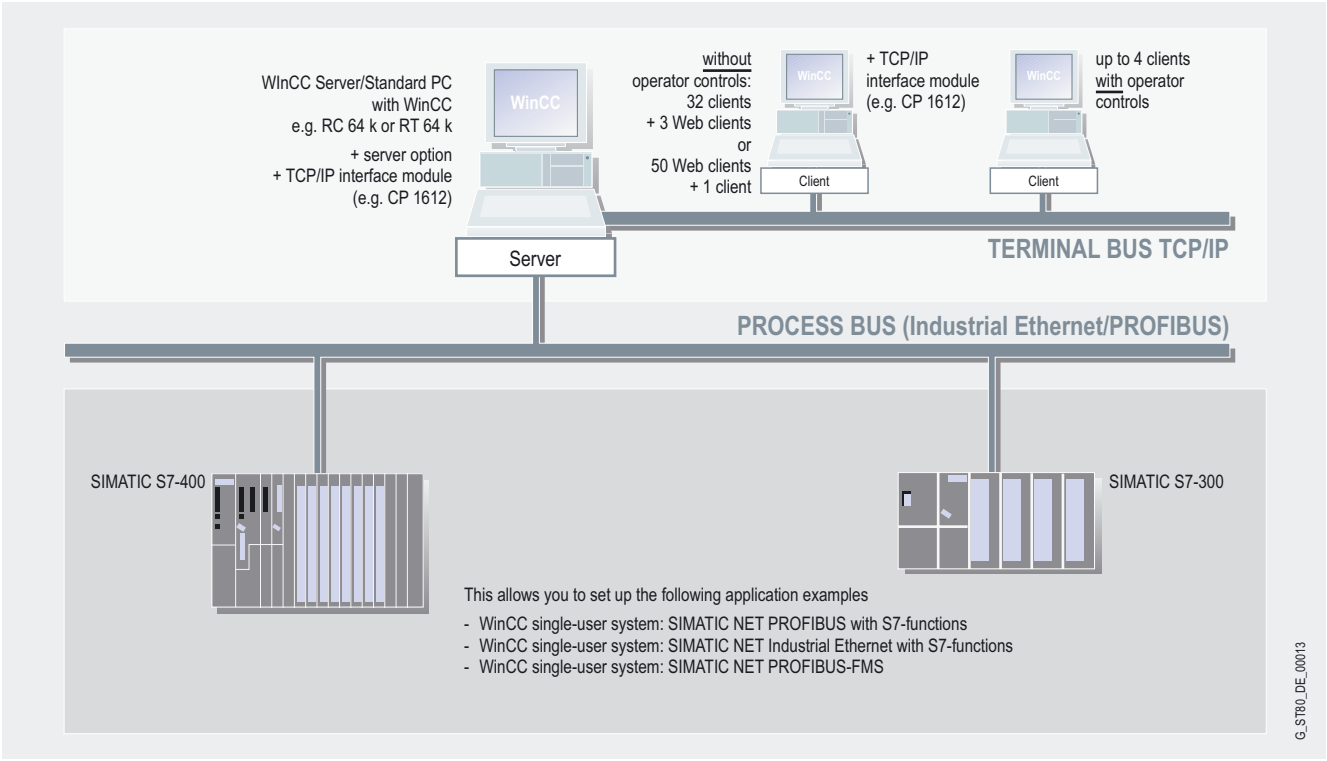


WinCC single-user system: Industrial Ethernet with S7 communication

Integration (continued)

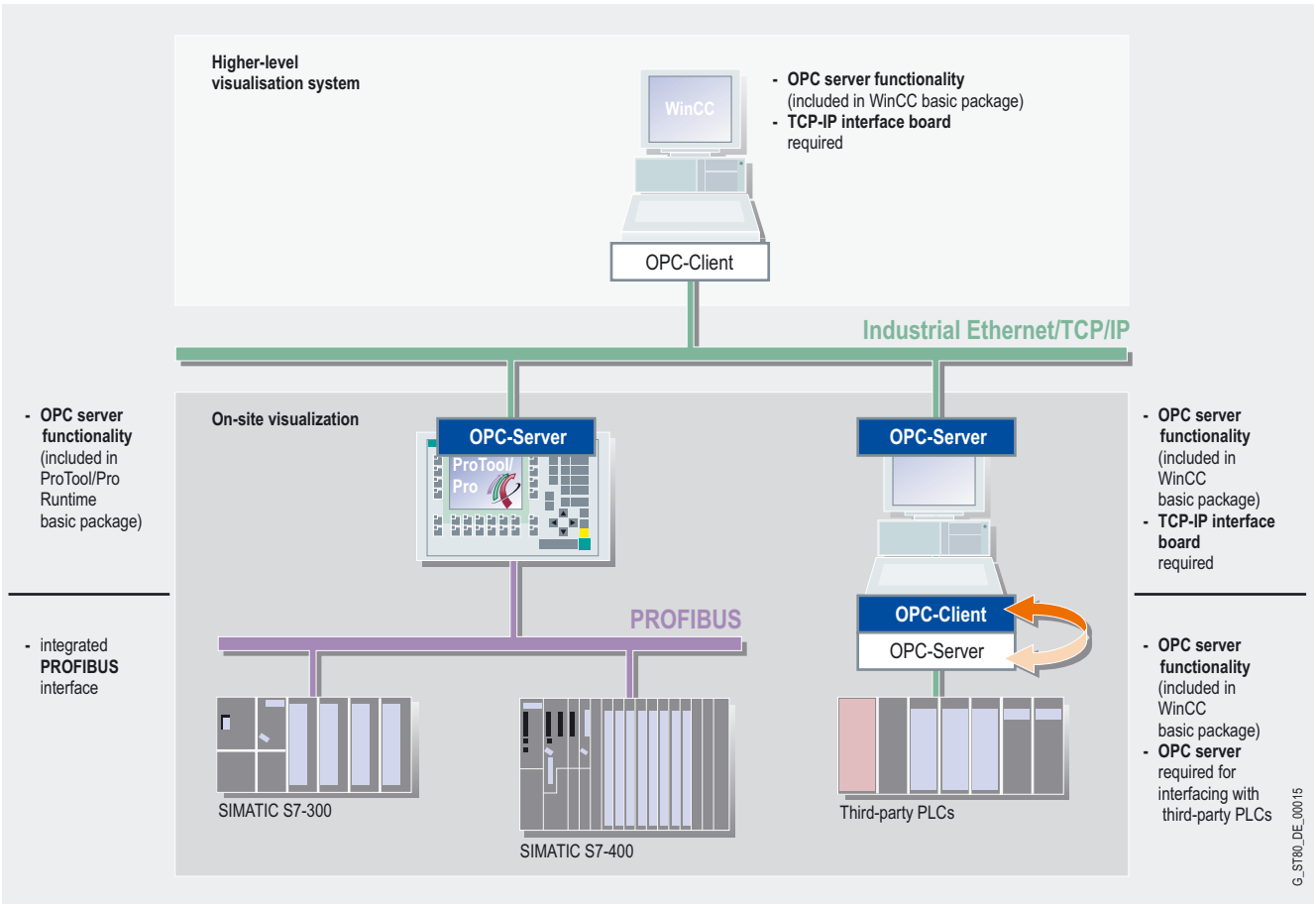


WinCC single-user system: PROFIBUS FMS



WinCC multi-user system with operator-controllable server (for WinCC V6)

Integration (continued)



OPC link

Technical specifications

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
Operating system	Windows NT4.0/ Windows 2000 Additional WebClient: Windows 98, Windows ME, Windows 2000 terminal services	Windows XP Professional/ Windows 2000 Professional, Windows 2000 Server and Windows 2003 Server Additional WebClient/Dat@Monitor Client: Windows NT4.0/ Windows XP Home, Windows 2000 terminal services
PC hardware requirements		
Processor type [1]		
• Minimum	Pentium II, 400 MHz	Single-user station/server: Pentium III, 800 MHz Central archive server: Pentium IV, 2 GHz Client: Pentium III, 300 MHz WebClient/Dat@Monitor Client: Pentium III, 300 MHz
• Recommended	Pentium III, 400 MHz	Single-user station/server: Pentium IV, 1400 MHz Central archive server: Pentium IV, 2.5 GHz Client: Pentium III, 800 MHz WebClient/Dat@Monitor Client: Pentium III, 800 MHz
Main memory RAM		
• Minimum	≥ 128/256 MB (single-user station/server), ≥ 128 MB (client) [2]	Single-user station/server: 512 MB Central archive server: 1 GB Client: 256 MB WebClient/Dat@Monitor Client: 128 MB
• Recommended	≥ 256 MB (single-user station/server), ≥ 256 MB (client) [2]	Single-user station/server: 1 GB Central archive server: ≥ 1 GB Client: 512 MB WebClient/Dat@Monitor Client: 256 MB
Graphics card		
• Minimum	SVGA (4 MB), 800 x 600	SVGA (16 MB), 800 x 600
• Recommended	XGA (8 MB), 1024 x 768	SXGA (32 MB), 1280 x 1024
Hard disk		
• Minimum	> 3 GB	Single-user station/server: 20 GB Client: 5 GB WebClient/Dat@Monitor Client: 5 GB
• Recommended	> 3 GB	Single-user station/server: 80 GB Client: 20 GB WebClient/Dat@Monitor Client: 10 GB
• Hard disk (free memory space for installation)		
- Minimum	650 MB	Server: 1 GB Client: 700 MB
- Recommended	≥ 650 MB	Server: > 10 GB Client: > 1.5 GB
CD-ROM/DVD-ROM/diskette drive	for software installation	for software installation

1) An AMD system with comparable performance can also be used
2) Online configuration requires at least another 32 MB.

Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
Functionality/Quantity framework		
Messages (number)	50.000	50.000
• Message text (number of characters)	10 x 256	10 x 256
• Alarm log	> 500,000 messages [1]	> 500,000 messages [1]
• Process values per message	10	10
• Continuous load messages, max.	2 /s	Central archive server: 100/s Server/single-user station: 10 /s
• Burst of messages, max.	2000 in 10 minutes	Central archive server. 15,000/10 sec. every 5 min Server/single-user station: 2000/10 sec. every 5 min
Archives		
• Archive-data points	Max. 30,000 per server	Max. 80,000 per server [2]
• Archive types	Short-term, sequence archives	Short-term archive with and without long-term archiving
• Data storage format	Sybase SQL 7 or Dbase III [3]	Microsoft SQL Server 2000
• Measured values per second, max.	Server/single-user station: 360/s (500/s dBase III)	Central archive server: 10,000 /s Server/single-user station: 5,000 /s
User archive		
• Archives (recipes)	500	System-limited [1]
• Data records per user archive	65,536 [4]	65,536 [4]
• Fields per user archive	500 [4]	500 [4]
Graphics system		
• Number of screens	System-limited [1]	System-limited [1]
• Number of objects per screen	System-limited [1]	System-limited [1]
• Number of controllable fields per screen	System-limited [1]	System-limited [1]
Process variables	64 K [5]	64 K [5]
Trends		
• Curve windows per image	8	25
• Curves per curve window	15	80
User administration		
• User groups	28	128
• Number of users	128	128
• Authorization groups	999	999
Runtime languages	> 9 per project	> 9 per project
Configuration languages	5 European (eng, fre, ger, ita, spa), 4 Asian (simpl.+trad. chi/kor/jpn)	5 European (eng, fre, ger, ita, spa), 4 Asian (simpl.+trad. chi/kor/jpn)
Reports		
• Message sequence reports (concurrent)	1 per server/single-user station	1 per server/single-user station
• Message archive reports (concurrent)	1	3
• Application reports	System-limited [1]	System-limited [1]
• Report lines per group	66	66
• Variables per report	300 [6]	300 [6]
Multi-user station		
• Server	6	12
• Clients for server with operator station	3	4
• Clients for server without operator station	16	32 clients + 3 WebClients or 50 WebClients + 1 client

1) Dependent on available memory space
2) Dependent on number of licensed archive variables
3) Dbase III only with TagLogging short-term archives
4) The product of the number of fields and number of data sets must not exceed a value of 320,000
5) Dependent on number of licensed PowerTags
6) The number of variables per report is dependent on process communication performance

Ordering data	Order No.
SIMATIC WinCC system software V5.1 SP2	
Runtime packages on CD-ROM	
Language versions: DE/EN/FR/IT/ES; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC05-1CX0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD05-1CX0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE05-1CX0**
• 64K PowerTags (RT Max)	**6AV6 381-1BF05-1CX0**
Complete packages on CD-ROM	
Language versions: DE/EN/FR/IT/ES; with license for	
• 128 PowerTags (RC 128)	**6AV6 381-1BM05-1CX0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN05-1CX0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP05-1CX0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ05-1CX0**
SIMATIC WinCC system software V5.1 ASIA	
Runtime packages on CD-ROM	
Language/script versions: English/simplified and traditional Chinese/Korean/Japanese; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC05-1AV0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD05-1AV0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE05-1AV0**
• 64 K PowerTags (RT Max)	**6AV6 381-1BF05-1AV0**
Complete packages on CD-ROM	
Language/script versions: English/simplified and traditional Chinese/Korean/Japanese; with license for	
• 128 PowerTags (RC 128)	**6AV6 381-1BM05-1AV0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN05-1AV0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP05-1AV0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ05-1AV0**
SIMATIC WinCC V5.1 Power Packs	
For upgrading from:	
Runtime packages	
• 128 to 256 PowerTags	**6AV6 371-1BD05-0AX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE05-0AX0**
• 128 to 64 K PowerTags	**6AV6 371-1BF05-0AX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG05-0AX0**
• 256 to 64 K PowerTags	**6AV6 371-1BH05-0AX0**
• 1024 to 64 K PowerTags	**6AV6 371-1BJ05-0AX0**
Complete packages	
• 128 to 256 PowerTags	**6AV6 371-1BD15-0AX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE15-0AX0**
• 128 to 64 K PowerTags	**6AV6 371-1BF15-0AX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG15-0AX0**
• 256 to 64 K PowerTags	**6AV6 371-1BH15-0AX0**
• 1024 to 64 K PowerTags	**6AV6 371-1BJ15-0AX0**

	Order No.
SIMATIC WinCC system software V6.0 SP3	
Runtime packages on CD-ROM	
Language/script versions: DE/EN/FR/IT/ES; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC06-0DX0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD06-0DX0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE06-0DX0**
• 8 K PowerTags (RT 8K)	**6AV6 381-1BH06-0DX0**
• 64 K PowerTags (RT Max)	**6AV6 381-1BF06-0DX0**
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 381-1BM06-0DX0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN06-0DX0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP06-0DX0**
• 8 K PowerTags (RC 8K)	**6AV6 381-1BS06-0DX0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ06-0DX0**
Incl. 512 archive tags each	
SIMATIC WinCC system software V6.0 SP3 ASIA	
Runtime packages on CD-ROM	
Language versions: English/simplified and traditional Chinese/Korean/Taiwanese/Japanese; with license for	
• 128 PowerTags (RT 128)	**6AV6 381-1BC06-0DV0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD06-0DV0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE06-0DV0**
• 8 K PowerTags (RT 8K)	**6AV6 381-1BH06-0DV0**
• 64 K PowerTags (RT Max)	**6AV6 381-1BF06-0DV0**
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 381-1BM06-0DV0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN06-0DV0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP06-0DV0**
• 8 K PowerTags (RC 8K)	**6AV6 381-1BS06-0DV0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ06-0DV0**
Incl. 512 archive tags each	

SIMATIC WinCC

Ordering data	Order No.
SIMATIC WinCC V6.0 SP3 PowerPacks	
For upgrading from:	
Runtime packages	
• 128 to 256 PowerTags	**6AV6 371-1BD06-0DX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE06-0DX0**
• 128 to 8 K PowerTags	**6AV6 371-1BK06-0DX0**
• 128 to 64 K PowerTags	**6AV6 371-1BF06-0DX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG06-0DX0**
• 256 to 8 K PowerTags	**6AV6 371-1BL06-0DX0**
• 256 to 64 K PowerTags	**6AV6 371-1BH06-0DX0**
• 1024 to 8 K PowerTags	**6AV6 371-1BM06-0DX0**
• 1024 to 64 K PowerTags	**6AV6 371-1BJ06-0DX0**
• 8 K to 64 K PowerTags	**6AV6 371-1BN06-0DX0**
Complete packages	
• 128 to 256 PowerTags	**6AV6 371-1BD16-0DX0**
• 128 to 1024 PowerTags	**6AV6 371-1BE16-0DX0**
• 128 to 8 K PowerTags	**6AV6 371-1BK16-0DX0**
• 128 to 64 K PowerTags	**6AV6 371-1BF16-0DX0**
• 256 to 1024 PowerTags	**6AV6 371-1BG16-0DX0**
• 256 to 8 K PowerTags	**6AV6 371-1BL16-0DX0**
• 256 to 64 K PowerTags	**6AV6 371-1BH16-0DX0**
• 1024 to 8 K PowerTags	**6AV6 371-1BM16-0DX0**
• 1024 to 64 K PowerTags	**6AV6 371-1BJ16-0DX0**
• 8 K to 64 K PowerTags	**6AV6 371-1BN16-0DX0**
SIMATIC WinCC V6.0 SP3 Archive PowerPacks	
For upgrading archiving from:	
• 512 to 1500 archive tags	**6AV6 371-1DQ06-0AX3**
• 512 to 5000 archive tags	**6AV6 371-1DQ06-0BX3**
• 512 to 30,000 archive tags	**6AV6 371-1DQ06-0EX3**
• 512 to 80,000 archive tags	**6AV6 371-1DQ06-0GX3**
• 1500 to 5000 archive tags	**6AV6 371-1DQ06-0AB3**
• 1500 to 30,000 archive tags	**6AV6 371-1DQ06-0AE3**
• 1500 to 80,000 archive tags	**6AV6 371-1DQ06-0AG3**
• 5000 to 30,000 archive tags	**6AV6 371-1DQ06-0BE3**
• 5000 to 80,000 archive tags	**6AV6 371-1DQ06-0BG3**
• 30,000 to 80,000 archive tags	**6AV6 371-1DQ06-0EG3**

1) In accordance with license stipulations, 1 upgrade package must be ordered for each WinCC station.

	Order No.
SIMATIC WinCC Upgrade/Comprehensive Support	
WinCC V5 Upgrade [1]	
For upgrading RT and RC software packages and stations to the latest version	
• V4.x to V5.1 SP2	**6AV6 381-1AA05-1CX4**
• V5.x to V5.1 SP2	**6AV6 381-1AA05-1CX3**
• V4.x/V5.x ASIA to V5.1 ASIA	**6AV6 381-1AA05-1AV3**
WinCC V6 Upgrade [1]	
For upgrading the RT version:	
• from V5.x to V6.0 SP3	**6AV6 381-1AA06-0DX4**
• from V5.x ASIA to V6.0 SP3 ASIA	**6AV6 381-1AA06-0DV4**
For upgrading the RC version:	
• from V5.x to V6.0 SP3	**6AV6 381-1AB06-0DX4**
• from V5.x ASIA to V6.0 SP3 ASIA	**6AV6 381-1AB06-0DV4**
WinCC Comprehensive Support [2]	
Contains current updates/ upgrades for WinCC basic software and options and the WinCC Knowledge Base CD	
• 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 V5 basic documentation in a slipcase	
Includes the WinCC Manual and software protection description	
• German	**6AV6 392-1XA05-0AA0**
• English	**6AV6 392-1XA05-0AB0**
• French	**6AV6 392-1XA05-0AC0**
SIMATIC WinCC V5 Configuration & Communication Manual	
comprising: Configuration Manual + CD with examples, Communication Manual, Getting Started	
• German	**6AV6 392-1CA05-0AA0**
• English	**6AV6 392-1CA05-0AB0**
• French	**6AV6 392-1CA05-0AC0**
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**
Basic documentation SIMATIC WinCC V6	
Includes the WinCC Manual and software protection description	
• German	**6AV6 392-1XA06-0AA0**
• English	**6AV6 392-1XA06-0AB0**
• French	**6AV6 392-1XA06-0AC0**
• Italian	**6AV6 392-1XA06-0AD0**
• Spanish	**6AV6 392-1XA06-0AE0**

2) Comprehensive support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiration. In accordance with license stipulations, 1 comprehensive support package must be ordered for each WinCC station.

Ordering data

SIMATIC WinCC communication

Communication through Industrial Ethernet

		Order No.
CP 1612 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately).	A	**6GK1 161-2AA00**
SOFTNET-S7 Edition 2005 Software for S7 and S5 compatible communication, incl. PG/OP communication, OPC server and NCM PC; up to 64 connections, Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1512 and CP 1612 German/English	D	**6GK1 704-1CW63-3AA0**
SOFTNET-S7 Lean Edition 2005 Software for S7 and S5 compatible communication, incl. PG/OP communication, OPC server and NCM PC; up to 8 connections, Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1512 and CP 1612 German/English	D	**6GK1 704-1LW63-3AA0**
CP 1613 A2 PCI card (32-bit) for connecting to Industrial Ethernet (10/100 Mbit/s), with ITP and RJ45 connection over S7-1613 and S7-Redconnect incl. driver for Windows (32-bit), 2000 Pro/Server, XP Pro, 2003 Server (communications software must be ordered separately)	A	**6GK1 161-3AA01**

Communication through Industrial Ethernet (continued)

		Order No.
S7-1613 Edition 2005 Software for S7 and S5 communication, incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, Single License for one installation, Runtime software, software and electronic manualon 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	D	**6GK1 716-1CB63-3AA0**
TF-1613 2005 Software for TF protocol, S5-compatible communication incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000	D	**6GK1 716-1TB63-3AA0**
Channel DLL SIMATIC S5 PMC Ethernet Layer 4 (only for WinCC V5.1) Additional software packages required for S5-PMC • PMC/LS-B message functions • PMC/LS-B Status, standard displays from V4.3 upwards • Parameterization software PMC Pro from V2.2 upwards, German • Parameterization software PMC Pro from V2.2 upwards, English		**6AV6 371-1CD05-0PX0**

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

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Ordering data

		Order No.
Communication through PROFIBUS		
CP 5611 A2 PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communications software included in the WinCC basic package)		**6GK1 561-1AA01**
CP 5611 MPI Comprising CP 5611 (32-bit) and MPI cable, 5 m		**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).	D	**6GK1 561-3AA01**
S7-5613 Edition 2005 Software for S7 and S5 communication, incl. PG and FDL protocol, OPC server and NCM PC; Single License for one installation, Runtime software, software and electronic manualon CD-ROM, license key on diskette, Class A, for 32 bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English		**6GK1 713-5CB63-3AA0**

		Order No.
Communication through PROFIBUS (continued)		
DP-5613 Edition 2005 Software for DP protocole incl. PG/OP Communication, FDL, DP-OPC-Server, for 32 bit Windows XP Professional, 2003 Server, 2000 Professional/Server; German/English	D	**6GK1 713-5DB63-3AA0**
FMS-5613 Edition 2005 Software for FMS protocole incl. PG/OP Communication, FDL, FMS-OPC-Server, for 32 bit Windows XP Professional, 2003 Server, 2000 Professional/Server; German/English	D	**6GK1 713-5FB63-3AA0**
Channel DLL SIMATIC S5 PMC PROFIBUS (only for WinCC V5.1) Additional software packages required for S5-PMC • PMC/LS-B message functions • PMC/LS-B Status, standard displays from V4.3 upwards • Parameterization software PMC Pro from V2.2 upwards, German • Parameterization software PMC Pro from V2.2 upwards, English		**6AV6 371-1CD05-0NX0**

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

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.

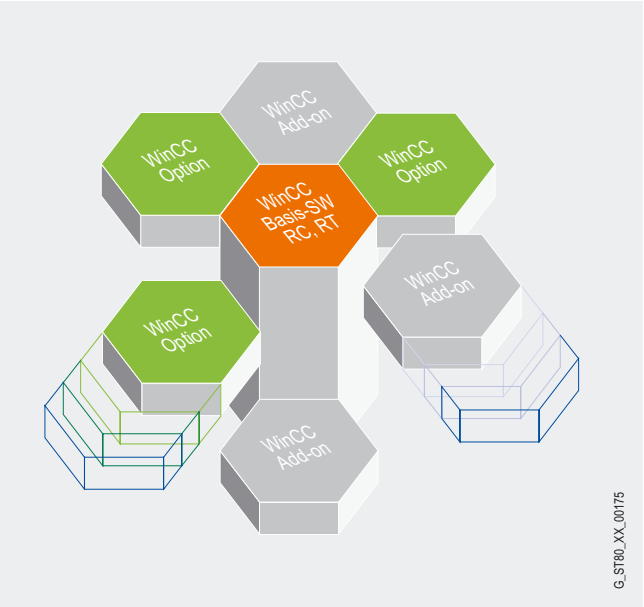
WinCC ASIA is supplied on a separate CD-ROM containing all the language versions listed above. The associated documentation can be ordered from the Siemens subsidiaries in China, Korea, Taiwan or Japan.

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 can be found in the Internet under:

http://www.siemens.com/wincc

Overview



- The WinCC basic software, which is suitable for industrial use, is at the heart of modular enhancements. These functional enhancements can be obtained in the form of WinCC options and as WinCC add-ons.
- WinCC options are created under the responsibility of WinCC Development and are Siemens Automation & Drives products. They are supported by specialist support and the central hotline.

Options for scalable plant configurations

- WinCC/Server
  - To build a powerful client/server system
- WinCC/Web Navigator
  - To control and monitor plant via the Internet, in-house intranet or LAN

Options to increase availability

- WinCC/redundancy;
  - For increased system availability through redundancy
- WinCC/ProAgent
  - For reliable process error diagnosis
- WinCC/Messenger (for WinCC V5.1 only)
  - For the automatic or manual sending of text, voice and image data via e-mail directly from within WinCC
- WinCC/Guardian (for WinCC V5.1 only)
  - For the integration of live camera images into WinCC images, video monitoring and storage of video sequences in a database

Options for IT and Business Integration

- WinCC/Dat@Monitor (for WinCC V6.0 only)
  - For display and analysis of current process states and historical data on office PCs with standard tools
- WinCC/Connectivity Pack (for WinCC V6.0 only)
  - Access to WinCC archive via OPC HDA, OPC A&E, OPC XML Server and WinCC OLE-DB/OLE-DB
- WinCC/IndustrialDataBridge
  - Configurable link to databases and IT systems
- WinCC/Client Access license (for WinCC V6.0 only)
  - Access from (Office) PCs to WinCC archive data
- SIMATIC WinBDE
  - Machine data acquisition and evaluation

Options for SCADA expansions

- WinCC/User Archives
  - To manage data sets in user archives
- WinCC/Storage (for WinCC V5.1 only; WinCC V6.0 features a comparable functionality in the basic system)
  - For the long-term acquisition of process data, messages and protocols

Options for process control

- WinCC/Basic Process Control (for WinCC V5.1 only; standard feature in WinCC V6.0 basic system)
  - With functional expansions for instrumentation and control

Options for industry-specific expansions (FDA-compliant)

- WinCC/Advanced User Administrator (for WinCC V5.1)
  - Central management of WinCC users, plant-wide (to CFR 21 Part 11)
- SIMATIC Logon Service (for WinCC V6.0)
  - Central management of WinCC users, plant-wide (to CFR 21 Part 11)
- WinCC/Audit (for WinCC V6.0) change management
  - Generation of audit trails for engineering and runtime

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
  - Comprehensive support package; contains current updates/upgrades for WinCC basic software and options and the WinCC Knowledge Base CD

More information

WinCC options

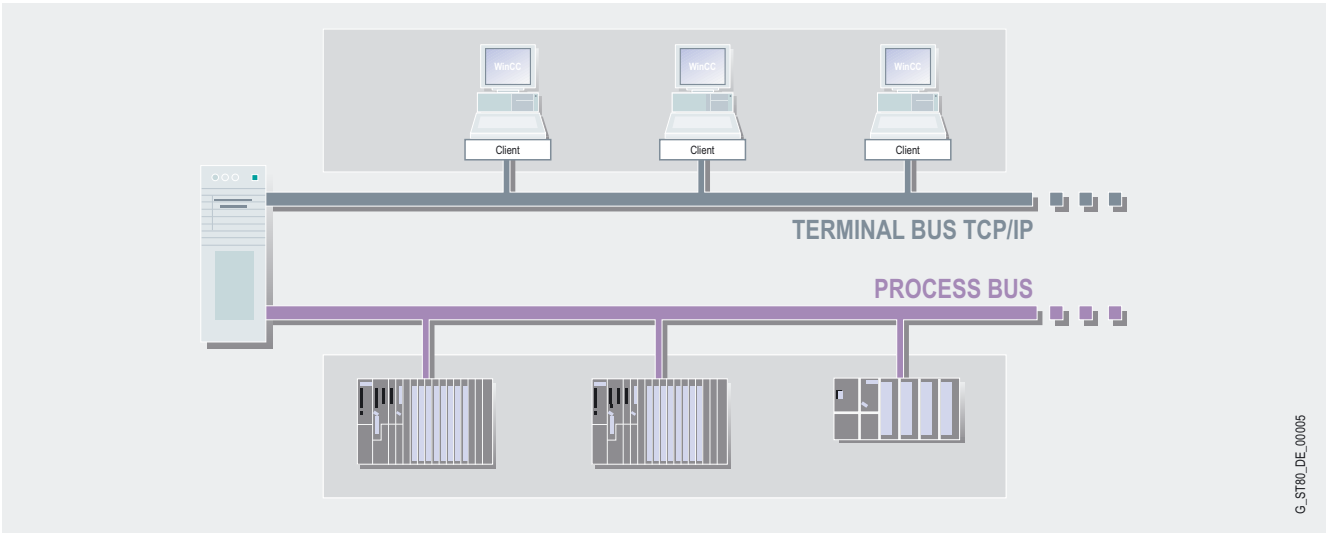
Additional information can be found in the Internet under:

http://www.siemens.com/wincc/options

4

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 2000 Server, Windows 2000 Advanced Server or Windows Server 2003 (for V6 only)
- 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.

Note for V5.1

WinCC V5.1 supports up to 16 clients and up to 6 servers. WinCC clients cannot be configured as Web servers but need a WinCC server (or single-user system).

1) One of the following operating systems is installed on a WinCC server: Windows 2000 Server, Windows 2000 Advanced Server or Windows Server 2003

Benefits

- Plant-wide scalability from the single-user system to the client/server solution
- Significantly higher quantity framework, relieving the individual servers and better performance due to distributing the complete application or tasks over several servers
- Low-cost configuration on the client is possible (the minimum RC license is sufficient)

Application

In a complex plant, WinCC can also be configured as a distributed system according to requirements:

- functional distribution (e.g. message servers, archive servers, etc.) or
- distribution according to the physical plant structure (e.g. body-in-white, paintshop, etc.)

Function

Each client can access several servers simultaneously. Clients can also be used for configuration on the server.

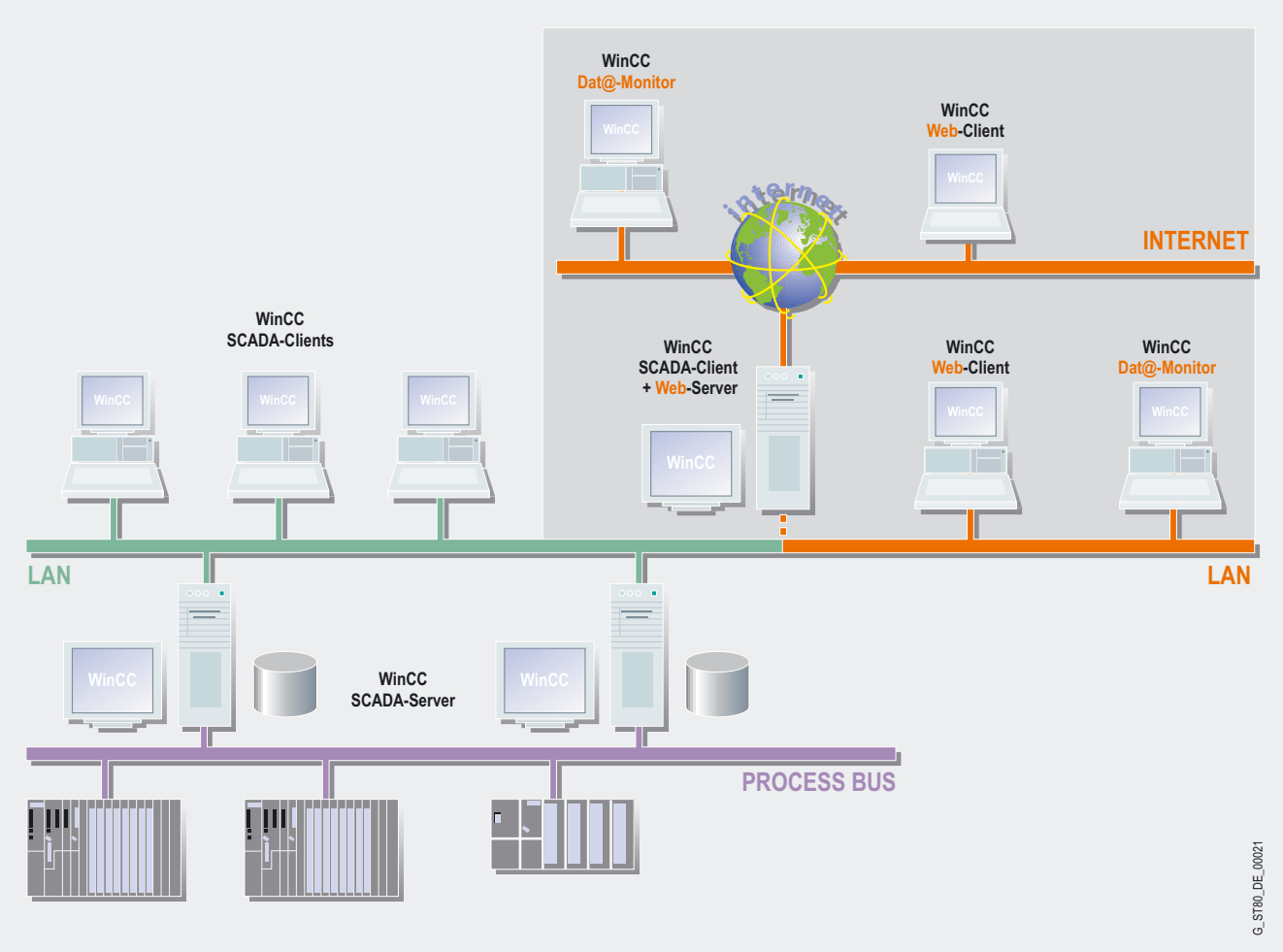
The configuration of WinCC clients as central Web servers – if required, as a distributed system – with a view of all server projects in the plant is also possible.

For the clients, you need only the smallest runtime license, RT128. If you also want to use the client for configuring your system, you will need the smallest full license, RC128. This makes it possible to configure low-cost operating and configuration stations in a network. The configuration can be performed online without any detrimental affect on the functions of the server and operating stations.

Ordering data	Order No.
WinCC/Server	
• for WinCC V5.1	**6AV6 371-1CA05-0AX0**
• For WinCC V6.0 SP3	**6AV6 371-1CA06-0DX0**
Documentation (to be ordered separately)	
WinCC Options V5 Manual comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA05-0AA0**
• English	**6AV6 392-1DA05-0AB0**
• French	**6AV6 392-1DA05-0AC0**
WinCC Options V6 Manual comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA06-0AA0**
• English	**6AV6 392-1DA06-0AB0**
• French	**6AV6 392-1DA06-0AC0**
• Italian	**6AV6 392-1DA06-0AD0**
• Spanish	**6AV6 392-1DA06-0AE0**

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.

New features in WinCC V6 and higher:

- Installation of the Web Server - in distributed systems - also on a WinCC Client;
  - Access to up to 12 subordinate WinCC stations (servers) possible
  - Web Clients offer common views of data on various WinCC Servers
  - If you are using WinCC/Redundancy, the Web Clients will also transfer via the subordinate WinCC Servers (requires WinCC Client running as Web Server).
  - Separating the Web functionality from the WinCC data servers makes the overall system safer and more scalable in respect of load.
- Integrated user management with WinCC V6:
  The configured WinCC operator authorizations are taken into account on the Web Client.
- Access to user archives
- VB scripts are supported in the same way as the new objects and RT functions in WinCC V6
- User-friendly services and tools for distributing customized objects (controls, files) to Web Clients can be supplied for use as an integration platform. These components can then also be integrated into cross-Web/Server navigation.
- Distribution of load across a number of Web Servers in order to run several hundred Web Clients in a single system;
  Web Clients are distributed across Web Servers automatically.

Benefits

- Operator control and monitoring 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 2000/2003 terminal services. A Windows 2000/2003 Server (or higher) operating system is required. This makes it possible, for example, to connect even Windows CE-based visualization systems such as SIMATIC MP 370 with the ThinClient MP or MOBIC T8 option, to WinCC.

For this purpose, the Windows terminal services must be installed on the PC on which the Web Client is installed. A Windows 2000 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 Dat@Monitor Clients can be mixed in a single system.

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 V6.0 or higher) is all that is required to display WinCC process screens on the Web Client.

The operator on the Web Client is integrated into the central WinCC user management and his configured access rights to the system will determine whether he can simply observe or also intervene in the process (WinCC V5 only). On the Web Navigator Client, WinCC V6 works with the operator authorizations of WinCC. 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

Ordering data	Order No.
WinCC/Web Navigator	
V1.2 SP2; for WinCC V5.1 SP2	
• Base Pack (3 client licenses)	**6AV6 371-1DH05-1AX8**
• 10 client licenses	**6AV6 371-1DH05-1BX8**
• 25 client licenses	**6AV6 371-1DH05-1CX8**
• 50 client licenses	**6AV6 371-1DH05-1DX8**
V6.1; for WinCC V6.0 SP3 [2]	
• Base Pack (3 client licenses)	**6AV6 371-1DH06-1AX0**
• 10 client licenses	**6AV6 371-1DH06-1BX0**
• 25 client licenses	**6AV6 371-1DH06-1CX0**
• 50 client licenses	**6AV6 371-1DH06-1DX0**
V6.1 ASIA; for WinCC V6.0 SP3 ASIA	
• Base Pack (3 client licenses)	**6AV6 371-1DH06-1AV0**
• 10 client licenses	**6AV6 371-1DH06-1BV0**
• 25 client licenses	**6AV6 371-1DH06-1CV0**
• 50 client licenses	**6AV6 371-1DH06-1DV0**
WinCC/Web Navigator China/Taiwan	
V1.2; for WinCC V5.1 [1]	
• Base Pack (3 client licenses)	**6AV6 371-1DH05-1AV0**
• 10 client licenses	**6AV6 371-1DH05-1BV0**
• 25 client licenses	**6AV6 371-1DH05-1CV0**
• 50 client licenses	**6AV6 371-1DH05-1DV0**
WinCC/Web Navigator PowerPacks	
V1.x	
• 3 to 10 clients	**6AV6 371-1DH05-0AB0**
• 3 to 25 clients	**6AV6 371-1DH05-0AC0**
• 3 to 50 clients	**6AV6 371-1DH05-0AD0**
• 10 to 25 clients	**6AV6 371-1DH05-0BC0**
• 10 to 50 clients	**6AV6 371-1DH05-0BD0**
• 25 to 50 clients	**6AV6 371-1DH05-0CD0**
WinCC/Web Navigator PowerPacks V6.1 and higher also for ASIA versions	
• 3 to 10 clients	**6AV6 371-1DH06-1AB0**
• 3 to 25 clients	**6AV6 371-1DH06-1AC0**
• 3 to 50 clients	**6AV6 371-1DH06-1AD0**
• 10 to 25 clients	**6AV6 371-1DH06-1BC0**
• 10 to 50 clients	**6AV6 371-1DH06-1BD0**
• 25 to 50 clients	**6AV6 371-1DH06-1CD0**

	Order No.
WinCC/Web Navigator Diagnostics Client	
• for WinCC V5.1 SP2	**6AV6 371-1DH05-1EX8**
• for WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1EV0**
• for WinCC V6.0 SP3	**6AV6 371-1DH06-1EX0**
• for WinCC V6.0 SP3 ASIA	**6AV6 371-1DH06-1EV0**
WinCC/Web Navigator Diagnostics Server	
• for WinCC V5.1 SP2	**6AV6 371-1DH05-1FX8**
• for WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1FV0**
• for WinCC V6.0 SP3	**6AV6 371-1DH06-1FX0**
• for WinCC V6.0 SP3 ASIA	**6AV6 371-1DH06-1FV0**
WinCC/Web Navigator Upgrade	
V1.x to V6.1	
• For 3 clients	**6AV6 371-1DH06-1AX4**
• For 10 clients	**6AV6 371-1DH06-1BX4**
• For 25 clients	**6AV6 371-1DH06-1CX4**
• For 50 clients	**6AV6 371-1DH06-1DX4**
WinCC/Web Navigator Upgrade	
V1.x ASIA to V6.1 ASIA	
• For 3 clients	**6AV6 371-1DH06-1AV4**
• For 10 clients	**6AV6 371-1DH06-1BV4**
• For 25 clients	**6AV6 371-1DH06-1CV4**
• For 50 clients	**6AV6 371-1DH06-1DV4**
WinCC/Web Load Balancing V6.1	
• Load Balancing	**6AV6 371-1DH06-1JX0**
• Load Balancing StepUp	**6AV6 371-1DH06-1FJ0**
Documentation (to be ordered separately)	
Manual WinCC/Web Navigator V1.2	
• German	**6AV6 392-1DC01-1AA0**
• English	**6AV6 392-1DC01-1AB0**
• French	**6AV6 392-1DC01-1AC0**

1) Requires WinCC V5.1 China/Taiwan/Korea/Japan
2) V6.0 and higher in English, French, German, Italian and Spanish

More information

System requirements - Web server

For WinCC/Web Navigator V6.1

- Operating system:
  - Windows 2000 Professional with SP3 or SP4, with up to 3 Web clients
  - Windows 2000 Server with SP3 or SP4, for up to 50 Web clients
  - Windows XP Professional with and without SP1, for up to 3 Web clients
  - Windows Server 2003 for up to 50 Web clients
- Internet Information Server (IIS)
  The IIS is supplied on the CD with Windows 2000/XP. It is installed automatically with the Windows 2000 Server. If you are using Windows 2000 Professional, you will have to install the IIS separately.
- Internet Explorer V6.0 SP1 or higher
- SIMATIC WinCC V6.0 SP3
- SIMATIC WinCC option Web Navigator Server installation

For WinCC/Web Navigator V1.2 SP2

- Operating system:
  - Windows 2000 Professional with SP3 or SP4 with up to 3 Web clients
  - Windows 2000 Server with SP3 or SP4, for up to 50 Web clients
  - Windows NT 4.0 workstation with SP6a, with up to 3 Web clients;
    Windows NT 4.0 server with SP6a with up to 50 Web clients;
    in both cases the Windows NT 4.0 OptionPack is required (included in the scope of delivery)
- Internet Information Server (IIS)
  The IIS is supplied on the CD with Windows 2000. It is installed automatically with the Windows 2000 Server. If you are using Windows 2000 Professional, you will have to install the IIS separately. In Windows NT 4.0, it can be installed via the OptionPack supplied.
- Internet Explorer V5.01 or higher
- SIMATIC WinCC V5.1 SP2
- SIMATIC WinCC/Web Navigator Server installation

System requirements - Web client

For WinCC/Web Navigator V6.1

- Windows XP Professional with service pack 1 or service pack 2
- Windows 2000 Professional service pack 3 or service pack 4
- Windows 2000 Server service pack 3 or service pack 4
- Windows XP Home with service pack 1 or service pack 2
- Windows NT SP6a or higher
- Windows 2000 Server terminal services
- Windows Server 2003 terminal services
- Internet Explorer V6.0 SP1 or higher

For WinCC/Web Navigator V1.2 SP2

- Windows XP Professional with service pack 1
- Windows XP Home
- Windows 2000 Professional service pack 2, 3 or service pack 4
- Windows NT SP6a
- Windows ME
- Windows 98
- Windows 2000 Server terminal services (Win9x, WinCE, Win3.x..)
- Internet Explorer V5.01 or higher

WinCC Web Navigator V1.2 China/Taiwan

(requires SIMATIC WinCC V5.1 China/Taiwan/Korea/Japan)

The functions included in this version differ from the standard version of WinCC/Web Navigator V1.2 as follows:

- Executability of the server and client on Windows 2000 MUI (Multilingual User Interface) and the relevant local language versions simplified Chinese and traditional Chinese.
- Executability of the client on Windows ME simplified Chinese and traditional Chinese
- Operation under Microsoft terminal services
- This version does not allow a Chinese Web Navigator client to access a non-Chinese server and vice versa.

WinCC Web Navigator V6.1 ASIA

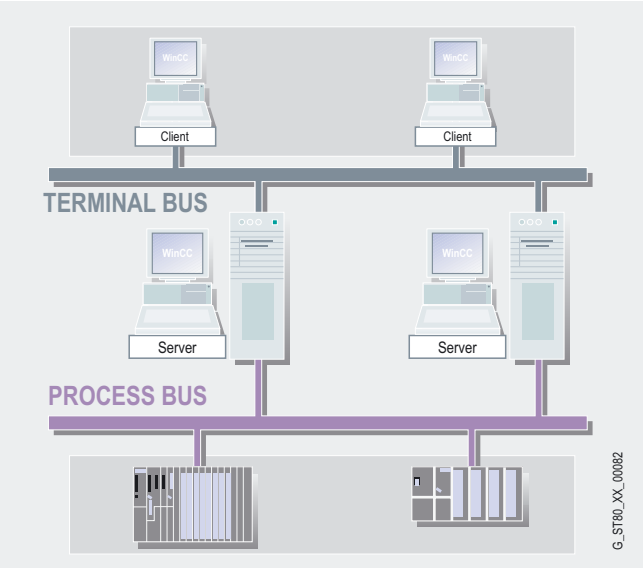
(requires SIMATIC WinCC V6.0 SP3 ASIA)

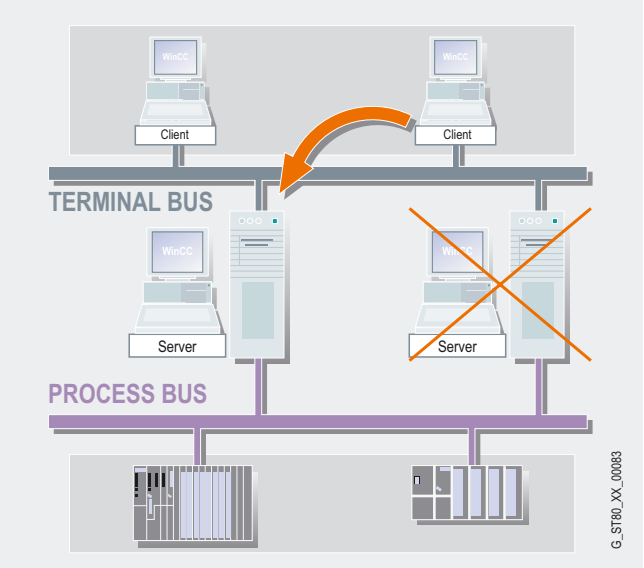
The functions included in this version differ from the standard version of WinCC/Web Navigator V6.1 as follows:

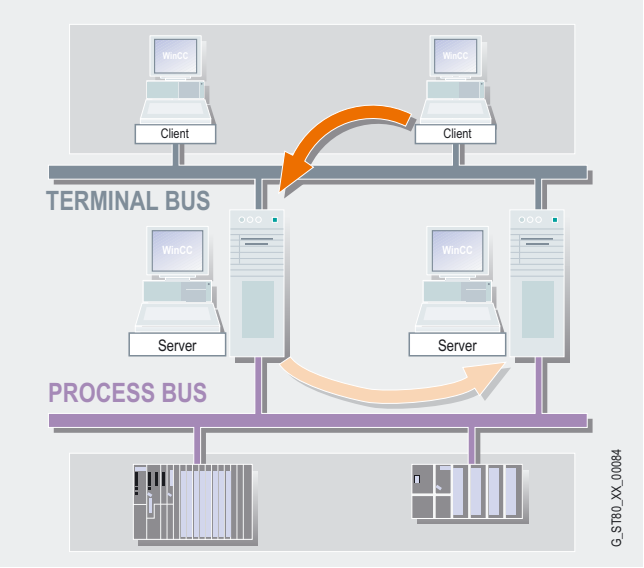
- This version does not allow an Asian Web Navigator client to access a non-Asian server and vice versa.

WinCC/Redundancy

Overview







- Option for SIMATIC WinCC, supporting the parallel operation of two interfaced WinCC single-user systems or process data servers for mutual monitoring
- If one of the two server PCs or one of the two WinCC stations fails, the second 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.

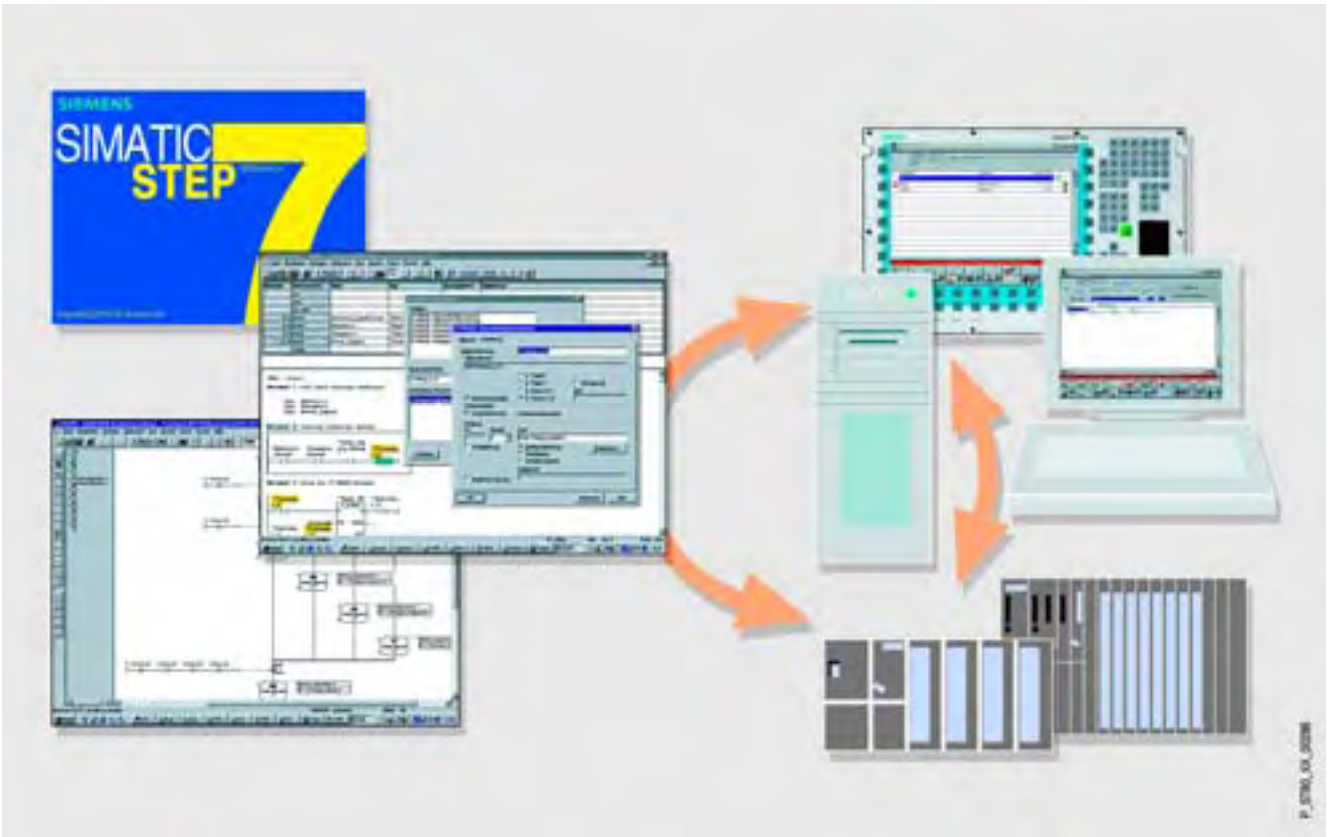
When the failed partner resumes operation, all process values, messages and data archived during the fail period are automatically matched with the partner. This process runs in the background and does not affect plant continuity. Once this is complete, two equivalent servers/stations will be available 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 V5.1	**6AV6 371-1CF05-0AX0**
• For WinCC V6.0 SP3	**6AV6 371-1CF06-0DX0**
Documentation (to be ordered separately)	
WinCC Options V5 Manual comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA05-0AA0**
• English	**6AV6 392-1DA05-0AB0**
• French	**6AV6 392-1DA05-0AC0**
WinCC Options V6 Manual comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA06-0AA0**
• English	**6AV6 392-1DA06-0AB0**
• French	**6AV6 392-1DA06-0AC0**
• Italian	**6AV6 392-1DA06-0AD0**
• Spanish	**6AV6 392-1DA06-0AE0**

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 options package for process diagnostics based on S7-GRAPH from V5 and S7-PDIAG from V5, functional expansion for SIMATIC WinCC; electronic documentation in English, French, German; functions and standard screens for use on an FI45, PC (1024 x 768 pixels resolution) and Panel PC 670/870 15" (1024 x 768 pixels resolution) in English, French and German, runtime license (single license), for WinCC Version:	
• V5.1 (ProAgent V5.6)	**6AV6 371-1DG05-6AX0**
• V6.0 SP3 (ProAgent V6.0 SP2)	**6AV6 371-1DG06-0CX0**

		Order No.
Upgrade		
• to SIMATIC WinCC/ProAgent V5.6		**6AV6 371-1DG05-6AX4**
• to SIMATIC WinCC/ProAgent V6.0 SP2		**6AV6 371-1DG06-0CX4**
Documentation (must be ordered separately)		
SIMATIC HMI Document Collection Electronic documentation, on CD-ROM 5 languages (English, German, French, Italian, Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	C	**6AV6 691-1SA01-0AX0**

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

Overview

- WinCC/Messenger supports both operator-controlled and automatic transmission of messages from WinCC with important information on the process. These messages can be received by any computer with e-mail access
- WinCC/Messenger comprises:
  - a multimedia e-mail system
  - a freely distributable, license-free Messenger Viewer for receiving and viewing e-mail messages on any computer
- Option only for WinCC V5.1
- Each operator station must be licensed for sending e-mail; receiving e-mails does not require a license

Benefits

- Fast diagnostics due to the automatic sending of fault messages
- Interactive fault rectification by e-mail through multimedia information exchange between operating and service personnel
- Minimum requirements for diagnostics computer: an e-mail connection is sufficient
- Good service availability by redirecting e-mails to SMS messages and pager services

Function

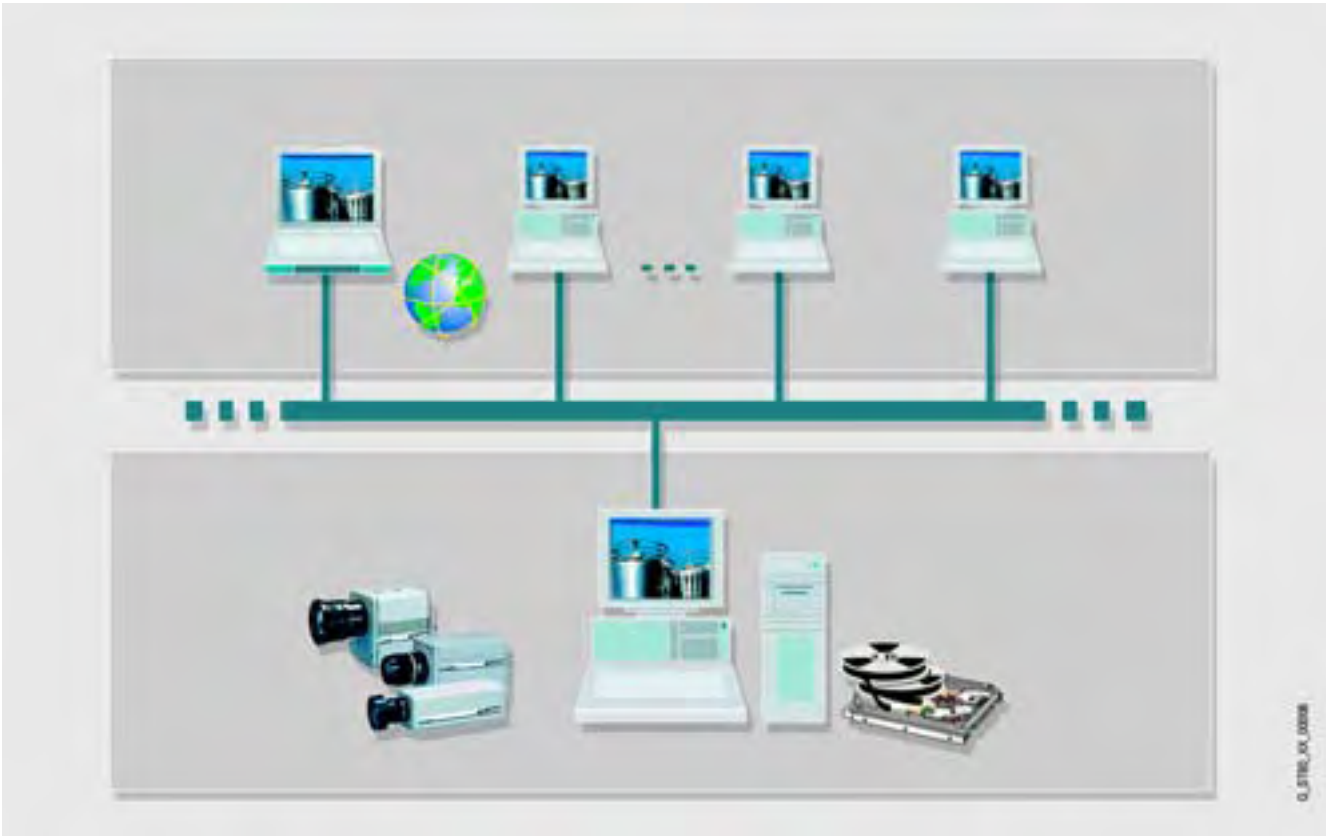
The Messenger functionality is implemented with ActiveX controls. These can be easily integrated into the process displays of SIMATIC WinCC and can be freely connected with the WinCC process signals. In accordance with the situation, for example, as the result of an alarm status, e-mails can be sent during process operation that can contain text and to which language and graphical information can be added (such as comments for clarification purposes or freely drawn lines for highlighting purposes). If required, these e-mails can be converted to SMS messages and pagers.

Ordering data

Ordering data	Order No.
WinCC/Messenger V2.0 + SP1 Option for WinCC V5.1 only	**6AV6 371-1EJ05-0DX0**

WinCC/Guardian

Overview



- WinCC/Guardian enables
  - Integration of live camera images in WinCC pictures
  - Video monitoring
  - Storage of video sequences in a database
- WinCC/Guardian is available in the following variants:
  - *Guardian Single User Edition*
    Video data management system with built-in monitoring functions. Integration of this functionality in WinCC pictures is achieved using the supplied ActiveX controls
  - *Guardian Network Edition*
    Also supports video data streaming to up to 15 further stations in the network. The video images can be viewed on the destination client (i.e. a WinCC station or a Web Navigator client) with a freely distributable, license-free camera viewer
- Option only for WinCC V5.1
- Only servers (or single-user systems) require individual licenses

Benefits

- Always in the picture worldwide thanks to event-driven embedding of live camera pictures
- Video-supported automation of process operations
- Cost savings due to the integration of separate monitoring screens in the WinCC process visualization
- Subsequent process diagnostics and process evaluation due to the storage of video sequences in the database

Function

In addition to live images from multiple cameras, which are either installed locally or on other computers, WinCC/Guardian features an event-controlled video monitoring functionality with an integrated database. Video images can be viewed within process diagrams and responses to specific events (for example motion or color inversions) defined. When a defined event occurs, WinCC is notified and can generate messages or trigger actions. Processes can also be recorded automatically in a database. The archived video sequences can then be retrieved for analysis at any time.

To use a local camera, you need only a video card that is compatible with Video for Windows; to stream videos to other stations, we currently recommend the following two video cards[1]:

Osprey 100:
http://www.osprey.com

Winnov Videum AV:
http://www.winnov.com

As streaming transmits both video and audio signals, we recommend using the Winnov Videum AV card as a sound card which is already built into the video board.

1) Video cards are not included in the delivery.

Ordering data

Ordering data	Order No.
WinCC/Guardian V2.0 + SP1	
Option for WinCC V5.1 only	
• Single User Edition	**6AV6 371-1EJ05-0EX0**
• Network Edition	**6AV6 371-1EJ05-0FX0**

Overview

- WinCC/Dat@Monitor is used for displaying and evaluating current process statuses and historic data on Office PCs with standard tools such as Microsoft Internet Explorer or Microsoft Excel. It is supplied with current and historic process data and alarms by a Web server.
- The Dat@Monitor Web Edition is a suite of tools with Internet compatibility:
  - Dat@Symphony - tool for monitoring and navigating only via WinCC pictures using Internet Explorer (view only)
  - Dat@View - Internet Explorer-based display tool (tables and curves) for WinCC archives and for swapped data
  - Dat@Workbook - logging tool that integrates WinCC archives and online values into MS Excel and also supports online analysis
- Option only for WinCC V6.0
- Dat@Monitor Web Edition does not require manual client installation. Instead, it loads the required components from the Web server. Thus no additional administration is required.
- Licenses for simultaneous access from 3, 10, 25 or 50 Dat@Monitor clients. Dat@Monitor and Web Navigator licenses can be mixed in any combination in one application.

Benefits

- Display and evaluation of current process states and historical data on office PCs with standard tools such as the Microsoft Internet Explorer or Excel.
- No additional configuring work thanks to direct use of displays from the WinCC project
- Evaluation via preconfigured templates for special analyses of the corporate processes (e.g. reports, statistics)
- Historical data can be assembled online as required.

Function

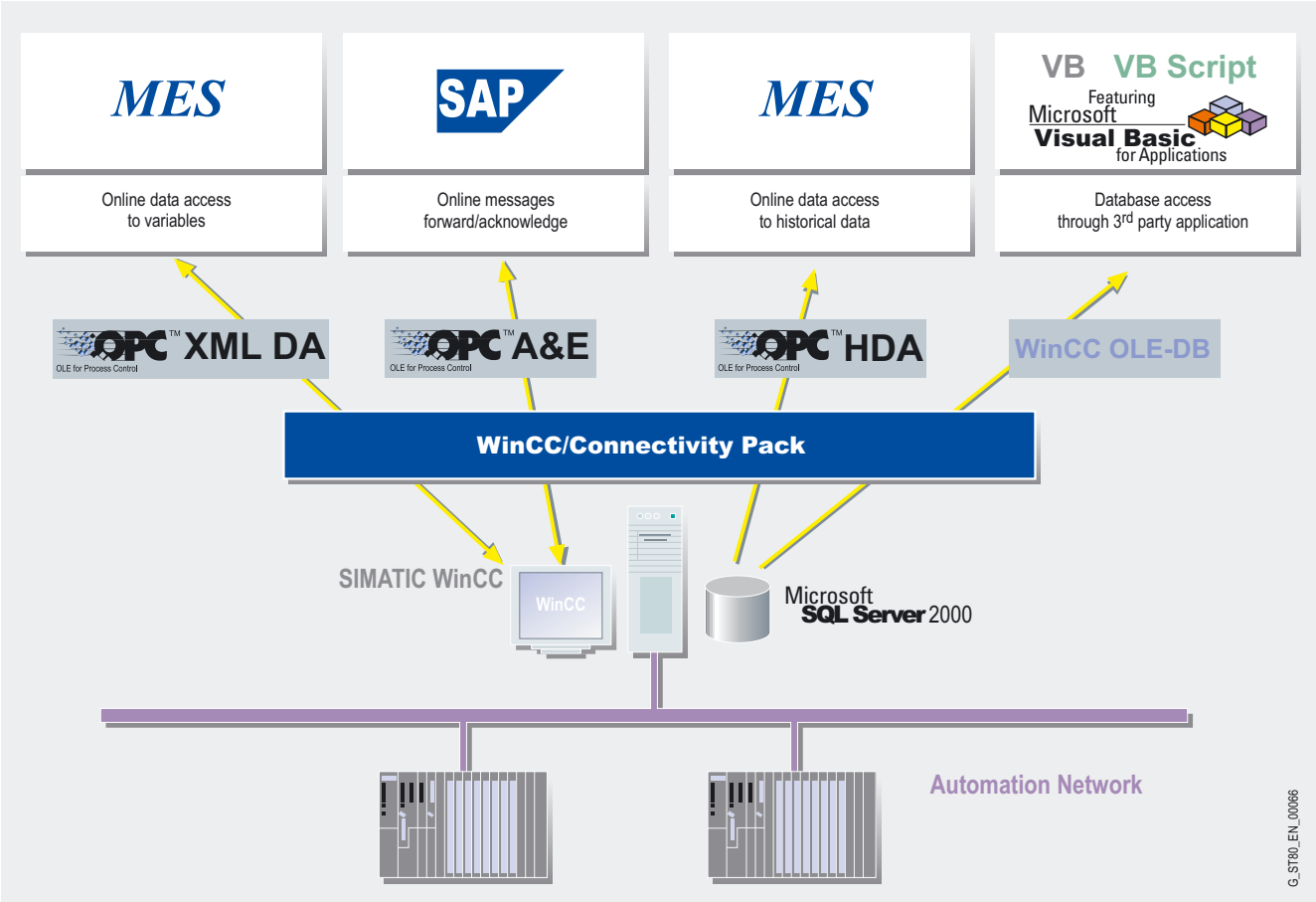
- All tools are fully Internet-compatible and, therefore, support access via any type of connection (LAN, GSM, radio, modem, Internet, etc.).
- All popular security mechanisms such as login/password, firewalls, encryption, etc. are supported.
- Users can combine the available tools at will. Licensing 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/Dat@Monitor supports a display function only (local access to the process sequence is not possible).
- Evaluation options:
  Enterprise-wide Excel reports containing 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.
- Higher-level navigation provides the various tools in the Suite with a common framework (all Web servers) and also enables additional components to be integrated.

Ordering data

Ordering data	Order No.
WinCC/Dat@Monitor WebEdition V6.1; for WinCC V6.0 SP3	
• 3 client licenses	**6AV6 371-1DN06-1AX0**
• 10 client licenses	**6AV6 371-1DN06-1BX0**
• 25 client licenses	**6AV6 371-1DN06-1CX0**
• 50 client licenses	**6AV6 371-1DN06-1DX0**
WinCC/Dat@Monitor WebEdition V6.1 ASIA ; for WinCC V6.0 SP3 ASIA	
• 3 client licenses	**6AV6 371-1DN06-1AV0**
• 10 client licenses	**6AV6 371-1DN06-1BV0**
• 25 client licenses	**6AV6 371-1DN06-1CV0**
• 50 client licenses	**6AV6 371-1DN06-1DV0**
WinCC/Dat@Monitor WebEdition Powerpack (also for ASIA variants)	
• From 3 to 10 clients	**6AV6 371-1DN06-1AB0**
• From 3 to 25 clients	**6AV6 371-1DN06-1AC0**
• From 3 to 50 clients	**6AV6 371-1DN06-1AD0**
• From 10 to 25 clients	**6AV6 371-1DN06-1BC0**
• From 10 to 50 clients	**6AV6 371-1DN06-1BD0**
• From 25 to 50 clients	**6AV6 371-1DN06-1CD0**

WinCC/Connectivity Pack

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 include OPC XML DA, OPC HDA 1.0 (Historical Data Access), OPC A&E 1.02 (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.
- 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 requires a WinCC/Client Access license on the client side. (See WinCC/Client Access License for more information.)
- Option only for WinCC V6.0

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 third-party systems.

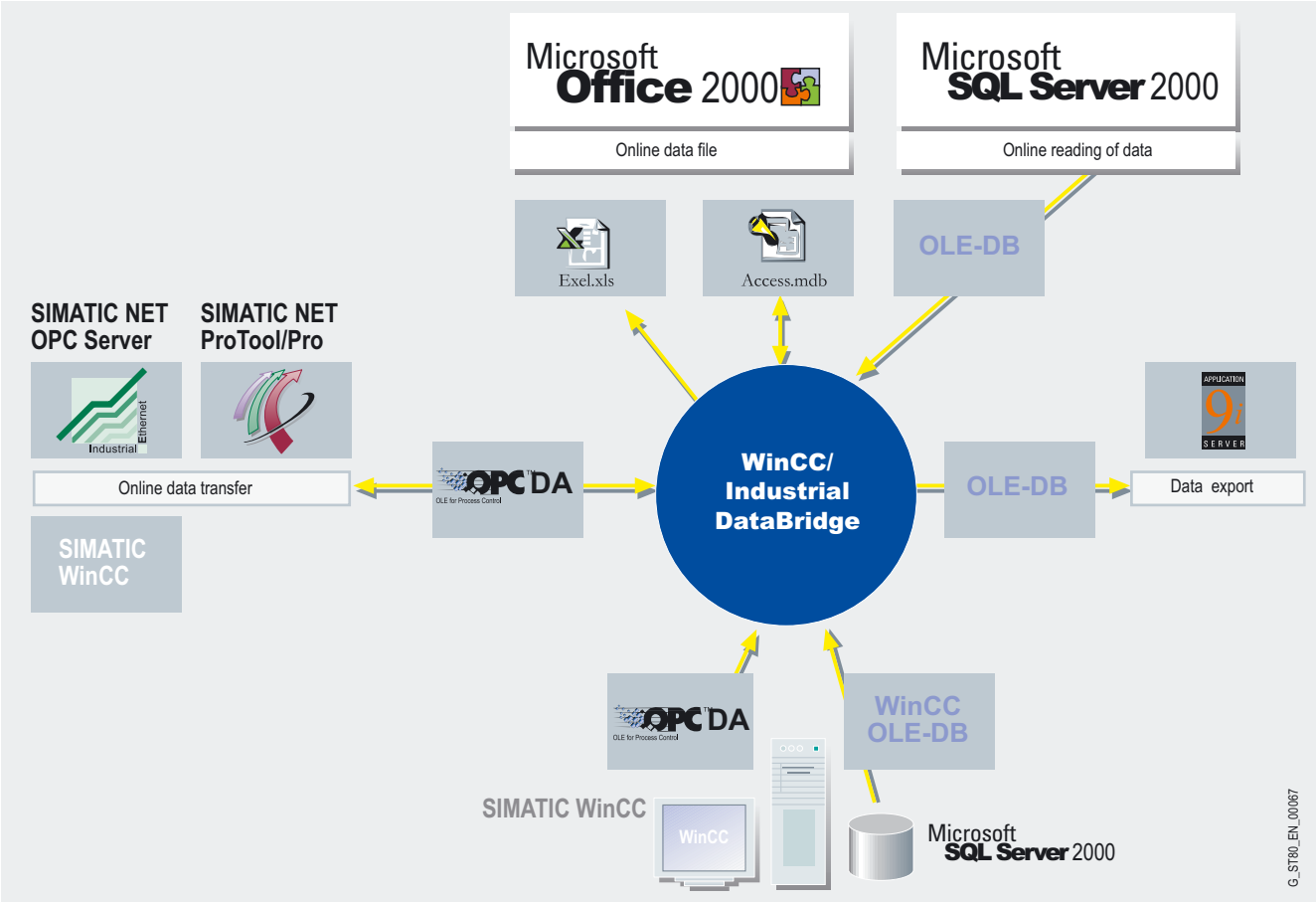
WinCC OLE-DB makes standardized and user-friendly access to WinCC archive data possible (MS SQL Server 2000). In exactly the same way as access via the OPC HDA and OPC A&E interfaces, access via the WinCC OLE DB provider makes all WinCC archive data available along with the associated process values and message/user texts. The WinCC OLE-DB provider also supports analysis functions such as minimum, maximum, message hit list, etc.

Ordering data

	Order No.
WinCC/Connectivity Pack V6. 1	**6AV6 371-1DR06-1AX0**

WinCC/IndustrialDataBridge

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 ProTool/Pro, WinCC V5.1, SIMATIC NET and SIMATIC WinAC.
- Option only for WinCC V6.0
- 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

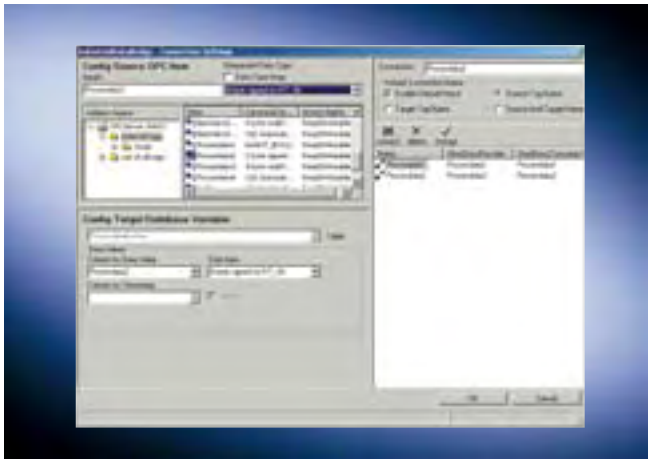
- Connecting the automation level with the IT world
- Integration of systems from different manufacturers via a host of standard interfaces (including OPC, OLE-DB, Office formats)
- Simple configuration with standard software without programming and thus at low cost
- High-performance data transfer between 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.

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
- SQL/OLE DB/ODBC databases (MS Access, MS SQL 2000 and 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)
- SQL/OLE DB/ODBC databases (MS Access, MS SQL 2000 and Oracle)
- Microsoft Excel (97/2000)
- Send/Receive with TCP native, UDP, ISO on TCP
- WinAC ODK

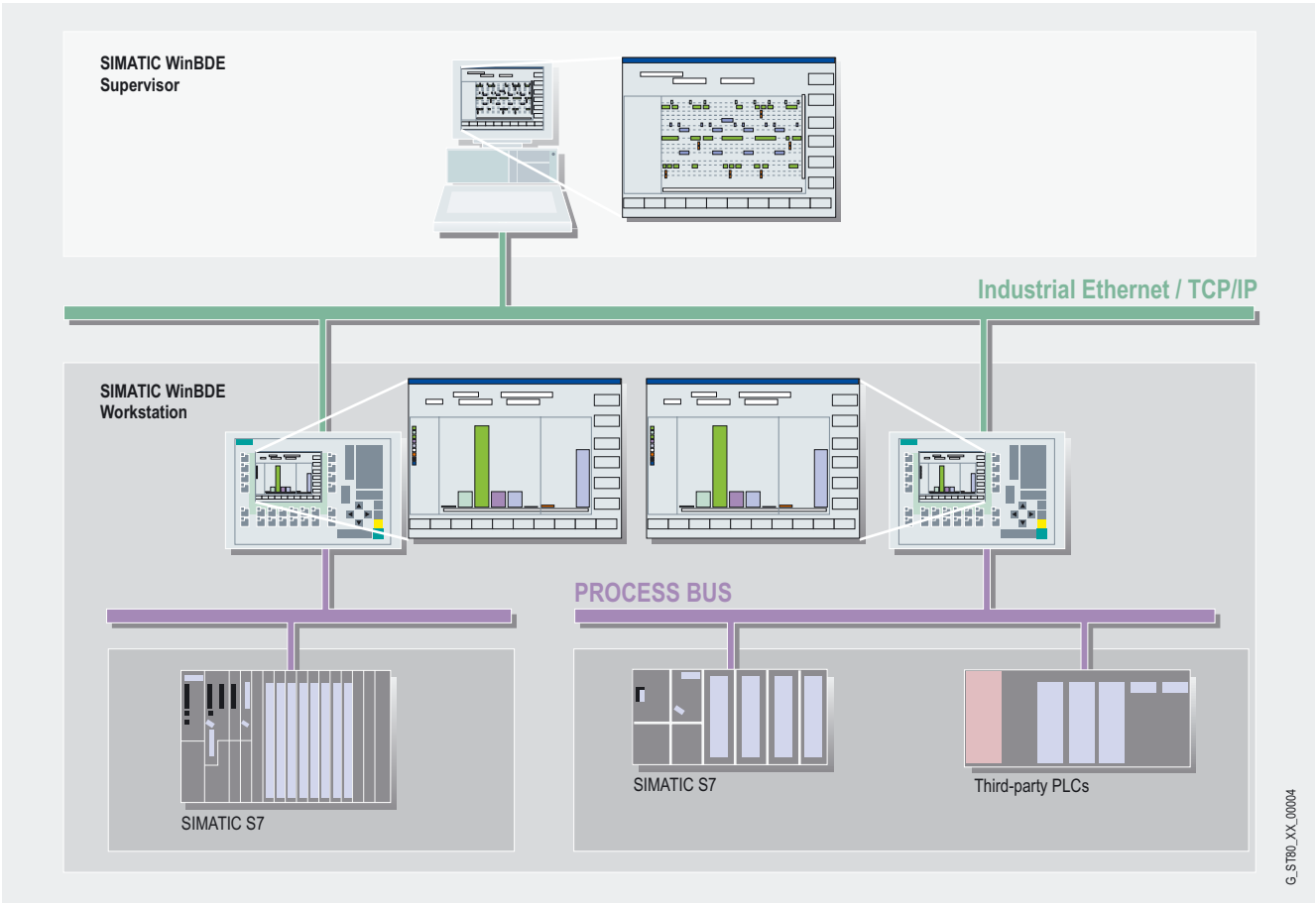
Note:
Access to the WinCC database is released separately.

Ordering data

Ordering data	Order No.
WinCC/IndustrialDataBridge	
V6.1 option for WinCC V6.0 SP3 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**

SIMATIC WinBDE

Overview



- SIMATIC WinBDE is the machine data management software for the acquisition, evaluation and analysis of machine data.
- The WinCC operator station becomes the central acquisition and control terminal for machine data, either directly at the machine (workstation) or plant-wide (supervisor).
- **Current version:**
  - SIMATIC WinBDE Workstation V7.2 + SP2
  - SIMATIC WinBDE Supervisor V7.2 + SP2

Benefits

- Machine sequence displays permit:
  - Fast response to faults
  - Increased machine running times
  - Detection of bottlenecks in the process
  - Evaluation of the efficiency of the machines used thanks to calculated KPI/OEE key figures (availability, performance, quality, OEE)
- Automatic data acquisition and processing supports the creation of objective availability reports for production facilities and manufacturing equipment.
- WinBDE can be used for individual machines through to complete production plant.

Design

SIMATIC WinBDE Workstation

- Direct acquisition and evaluation of machine data on SIMATIC panel PC or standard PC
- Comparison of the machines detected by the workstation
- Scalability for connecting one to 32 machines/units

SIMATIC WinBDE Supervisor

- On SIMATIC panel PC or standard PC
- Central evaluations and comparison of individual machines
- Central customizing for the WinBDE application
- License for connection of up to 128 machines/units through lower-level WinBDE Workstation

SIMATIC WinBDE terminal server clients

- WinBDE Workstation and WinBDE Supervisor, with the corresponding license, can execute under the terminal services of Windows 2000 server
- Up to 10 terminal server clients can then access the WinBDE evaluations

Function

Data acquisition

- Automatic acquisition via WinCC or ProTool/Pro
- Manual acquisition of machine states via screen dialogs
- Creation of parts type master data via screen dialogs

Machine data evaluation

- Fault analysis and diagnostics with duration and frequencies
- Status analysis with time sequence
- Machine performance through objective determination of availability
- Quantity evaluations through machine counters
- Calculation of KPI/OEE values (availability, performance, quality, OEE)
- Calculation of mean time between failures (MTBF)
- Calculation of the mean time to repair (MTTR)
- Evaluations on the basis of work shifts, days, weeks, etc.
- Detailed logbook/protocol
- Exporting and printing evaluation data

Production data evaluation

- Quantity evaluations based on part types
- Machine-specific quantity evaluations
- Calculation of KPI/OEE values (performance, quality, OEE)

Integration

Workstation connection

- Up to 32 machines/units via ProTool/Pro or WinCC (note the max. possible number of ProTool/Pro connections)

Supervisor connection:

- Up to 128 machines/units via subordinate SIMATIC WinBDE workstations

Requirements

SIMATIC WinBDE workstation:

- At least the resources recommended for the HMI software used
- PC (min. Pentium II, 400 MHz)
- Min. 128 MB RAM
- Ethernet connection (for operation with WinBDE Supervisor)
- Runtime VGA, recommended XGA, customizing at least XGA
- Windows NT 4.0,Windows 2000, Windows XP
- ProTool/Pro V5.2 + SP3 or V6.0, WinCC V5.1 or V6.0; WinCC flexible 2005 for PC (+WinCC flexible/OPC Server)[2)]

SIMATIC WinBDE Supervisor:

- PC (min. Pentium II, 400 MHz)
- 256 MB RAM
- Runtime VGA, recommended XGA, customizing at least XGA
- Ethernet connection
- Windows NT 4.0, Windows 2000, Windows XP

Terminal server:

- Windows 2000 Server with SP4 or higher incl. installed terminal services
- Min. 512 MB RAM

Licenses:

- CAL (Client Access License) [1)]
- TS CAL (Terminal Services Client Access License) [1)]
- WinBDE Workstation or Supervisor
- Associated WinBDE Terminal Server license

1) One Microsoft license is required for each device running as a client on the Terminal Server.
2) See documentation for number of PowerTags required.

Ordering data

	Order No.
SIMATIC WinBDE V7.2 + SP2	
Complete packages (runtime incl. configuration software) on CD-ROM	
Machine data management workstation	
License for the connection of:	
• 1 machine/unit of equipment	**6AV6 371-1EW06-0AX0**
• 8 machines/units of equipment	**6AV6 371-1EW06-0CX0**
• 32 machines/units of equipment	**6AV6 371-1EW06-0EX0**
Machine data management supervisor	
License for the connection of:	
• 64 machines/units of equipment	**6AV6 371-1EW06-0GX0**
• 128 machines/units of equipment	**6AV6 371-1EW06-0HX0**
WinBDE Terminal Server licenses	
• for workstation	**6AV6 371-1EW06-0LX0**
• for supervisor	**6AV6 371-1EW06-0MX0**

WinCC/Client Access License (CAL)

Overview

- In the case of a system on which a WinCC (WinCC basic system or WinCC option) is not installed, the WinCC data can be accessed via the interfaces of the WinCC/Connectivity Pack or WinCC/IndustrialDataBridge options.
- One WinCC/Client Access License (CAL) per processor can be used to access WinCC data for any number of systems (multi-processor systems) without WinCC (WinCC basic system or WinCC option) via the interfaces of the WinCC/Connectivity Pack or WinCC/IndustrialDataBridge options. A CAL must be purchased for each processor of the WinCC system.
- Option only for WinCC V6.0

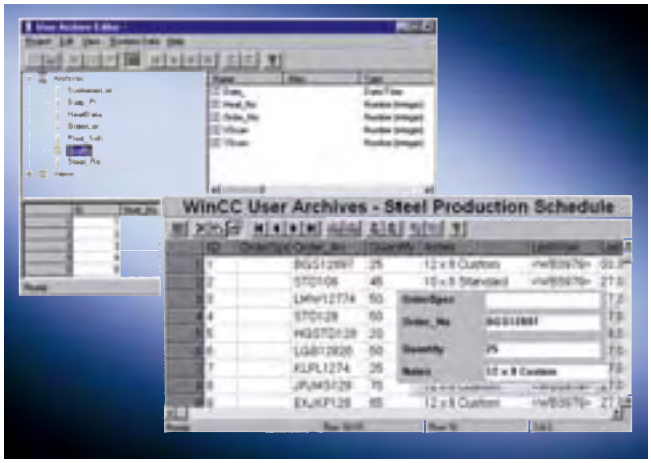
Function

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**

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

Ordering data	Order No.
WinCC/User Archives	
• for WinCC V5.1	**6AV6 371-1CB05-0AX0**
• for WinCC V6.0 SP3	**6AV6 371-1CB06-0DX0**
Documentation (to be ordered separately)	
WinCC Options V5 Manual	
Comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA05-0AA0**
• English	**6AV6 392-1DA05-0AB0**
• French	**6AV6 392-1DA05-0AC0**
WinCC Options V6 Manual	
Comprising: WinCC/User Archives, WinCC/Server and WinCC/Redundancy	
• German	**6AV6 392-1DA06-0AA0**
• English	**6AV6 392-1DA06-0AB0**
• French	**6AV6 392-1DA06-0AC0**
• Italian	**6AV6 392-1DA06-0AD0**
• Spanish	**6AV6 392-1DA06-0AE0**

WinCC/Storage

Overview

- Option for SIMATIC WinCC for long-term archiving of process data, messages and logs
- Only for WinCC V5.1; for WinCC V6.0, functions for backing up archive data are already included in the basic system
- A WinCC/Storage license is only required for the single-user system or the server. Clients can access the data managed by Storage without a license.

Benefits

- Manual or time-driven swapping of process values, messages and reports to the long-term archiving
- Reading swapped data for subsequent analysis with WinCC
- Export in CSV format for further processing with external tools (e.g. MS Excel)

Function

- Swapping of process values, messages and reports to external archiving media supported by Windows
- Reading swapped data and selectively analyzing it with WinCC tools (e.g. message or trend windows)
- Management of swapped data by log book

Ordering data	Order No.
WinCC/Storage V5.2 Option for WinCC V5.1	**6ES7 652-0XX05-2YC0**

Overview

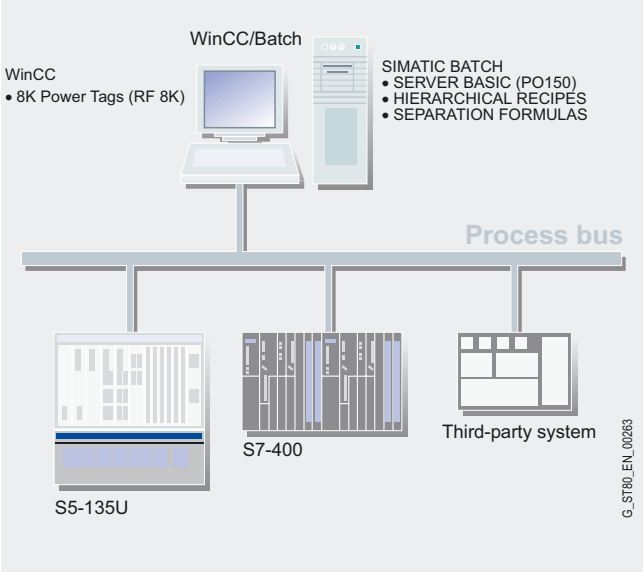
- WinCC in connection with the SIMATIC Batch product range offers a solution for the implementation of batch processes
- WinCC/Batch is offered as a package as WinCC/Batch Collection PO150[1)] and PO300 for small and medium-sized plant.
- WinCC/Batch can be used either as a single-user-station solution or as a client/server system.
- For PO, WinCC/Batch can be extended using SIMATIC BATCH Power Packs for (300, 600, 1800 and > 1800 PO) as well as WinCC Power Packs.

1) PO: Process Objects – instances of plant sections and technical equipment

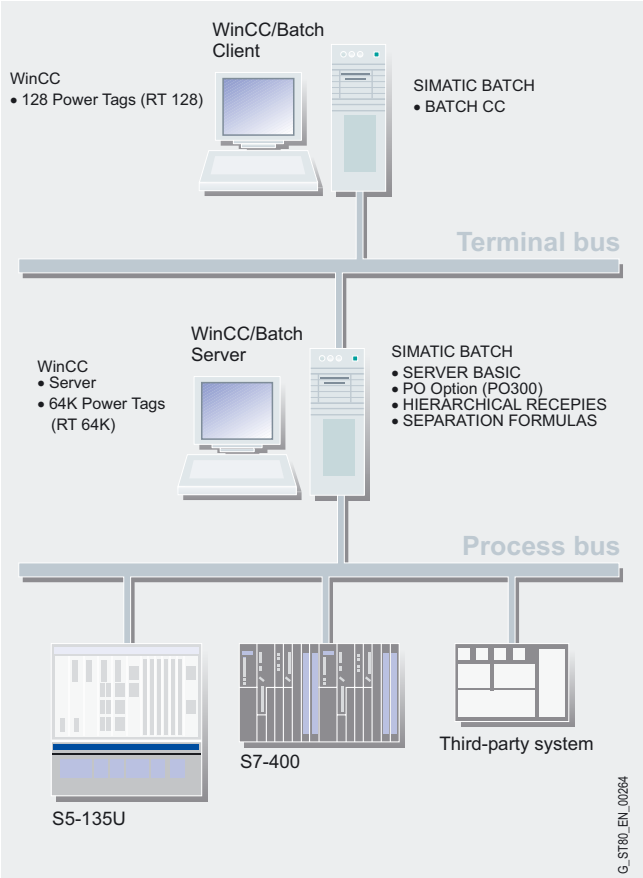
Current versions:

- WinCC/Batch Collection V6.0 SP3:
  - WinCC V6.0 SP3
  - SIMATIC Batch V6.1 SP1

Configuration



WinCC/Batch Collection PO 150



WinCC/Batch Collection PO 300

WinCC/Batch

Benefits

- WinCC/Batch supports the user in the implementation of batch processes
- Modular architecture with flexible scalability and optimum customization according to plant size and individual requirements
- High availability via redundant system configurations provides protection against loss of batch data
- Cross-subsystem recipes with significant simplification of recipe management and validation procedures
- Hierarchical recipes in accordance with ISA S88.01 for the creation of recipes oriented toward process engineering
- Storage, archiving and extensive logging of batch data in XML format
- Validation support in accordance with 21 CFR Part 11 via audit trail (change log), versioning of recipes, recipe operations and formulas, electronic signature and access protection
- Formula support

Application

WinCC/Batch has been designed for

- Batch processes in the WinCC environment
- Users of S7-300, S7-400, S5 or third-party controllers
- Users of STEP 5/STEP 7

Design

WinCC/Batch is available in two packages depending on plant size:

WinCC/Batch Collection PO150:

- WinCC 8 K PowerTags (RT 8K) runtime package
- SIMATIC BATCH SERVER BASIC with 150 POs (process objects), BatchCC und recipe system
- SIMATIC BATCH hierarchical recipes
- SIMATIC BATCH separation, procedures, formulas

WinCC/Batch Collection PO300:

- WinCC 64 K PowerTags (RT 64K) runtime package
- WinCC 128 PowerTags (RT 128) runtime package
- WinCC/Server
- SIMATIC BATCH SERVER BASIC with 150 POs (process objects), BatchCC und recipe system
- SIMATIC BATCH hierarchical recipes
- SIMATIC BATCH separation, procedures, formulas
- SIMATIC BATCH BATCHCC
- SIMATIC BATCH PO option (PO300)

For plant using WinCC/Batch it is assumed that the relevant WinCC Engineering or RC licenses are available as standard and for this reason, only RT licenses are included the package.

Furthermore, each package, either WinCC/Batch Collection PO150 or PO300, includes an interface description with application examples for the integration of SIMATIC BATCH and WinCC.

All components of SIMATIC BATCH can be utilized to expand or configure a plant. Individual components of SIMATIC Batch are, as a rule, only supplied as licenses without software. A WinCC/Batch basic package is therefore a mandatory requirement (see PCS 7 Product Catalog).

Function

Only the functions of SIMATIC Batch bundle components are listed below (the components of WinCC are not repeated, as information about these is available in the catalog).

The **SIMATIC Batch Server Basic Package** contains:

- Batch Server Software for 150 Batch POs
- A SIMATIC Batch BatchCC (Batch Control Center)
- A SIMATIC Batch Recipe System (recipe editor)

It can be used to run a small SIMATIC Batch project on a single-user station or a client/server combination (Batch Client and Batch Server).

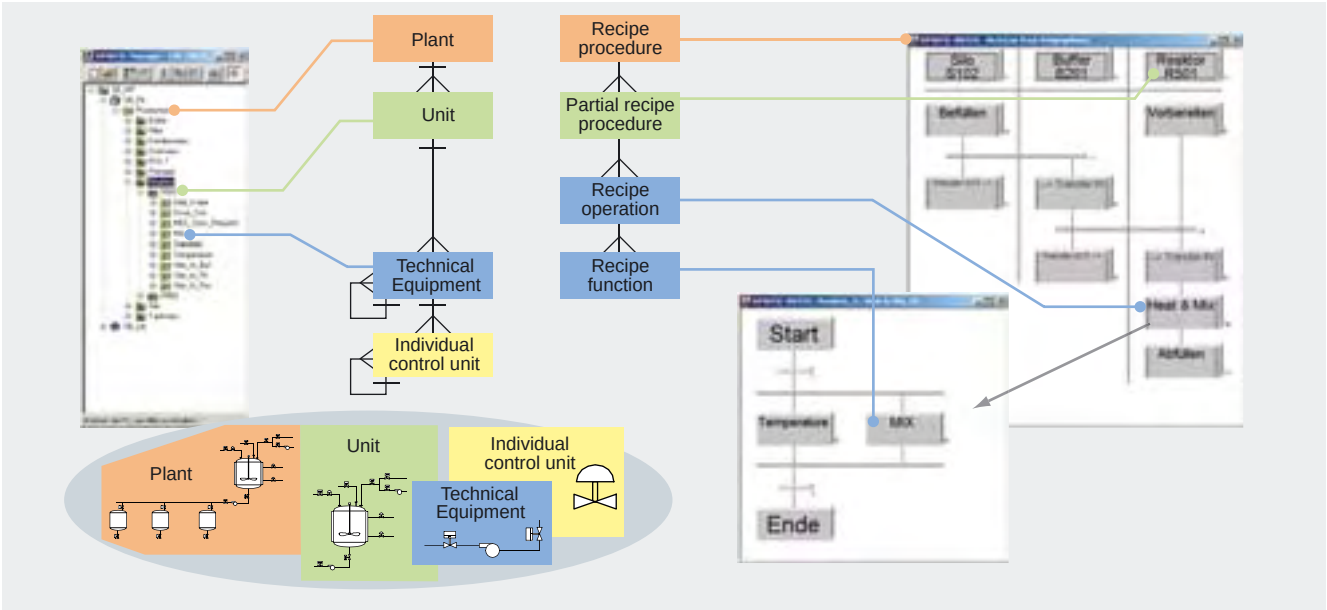
The capacity of the Server Basic Package can be extended by means of SIMATIC Batch PO-options and Power Packs to Batch PO 300, 600, 1800 or unlimited.

BatchCC offers powerful functions for the following tasks:

- Reading in and updating the plant data of the basic automation
- Definition of user privileges for all SIMATIC Batch functions, for clients or for plant sections
- Definition of material names and codes
- Management of master recipes, and starting the recipe editor in order to enter the recipe structure
- Management of libraries with recipe elements (library operations)
- Editing of formula categories and management of associated formulas (parameter sets)
- Creation of batches with master recipes
- Starting of batch processing and controlling of batches
- Monitoring and diagnostics of batch processing
- Recording and archiving of recipes and batch data

SIMATIC Batch hierarchical recipes are hierarchical recipes in accordance with ISA-88.01.

Function (continued)

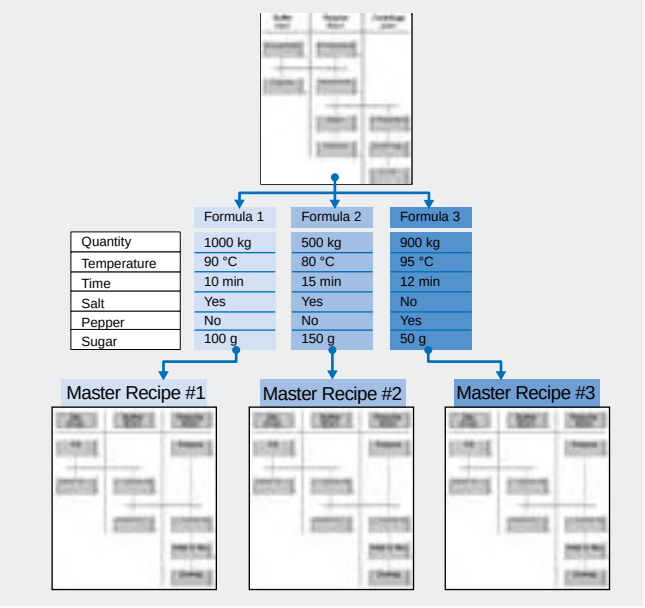


SIMATIC Batch and SIMATIC PCS 7 form a functional unit that fully covers the models described in the ISA-88.01 standard.

The hierarchical recipe structure is mapped on the plant module as follows:

- Recipe procedure for controlling the process or the production in a plant
- Partial recipe procedure for controlling a process step in a plant unit
- Recipe operation/function to implement the process engineering task/function in a technical facility

Batch separation, procedures and formula offers powerful functions for the following tasks:



The flexibility achieved by recipes which are independent of plant units can be increased even further if the procedure and parameter sets (formulas) are separated from one another. Various master recipes can be created by linking several formulas using a recipe procedure. This enables central modification of procedures. The formula structure is determined by the formula category defined by the user.

Compatibility

In respect of compatibility, please note that only the WinCC and SIMATIC Batch versions included in the product package are compatible with each other. Earlier versions of SIMATIC Batch and WinCC cannot be used.

WinCC/Batch

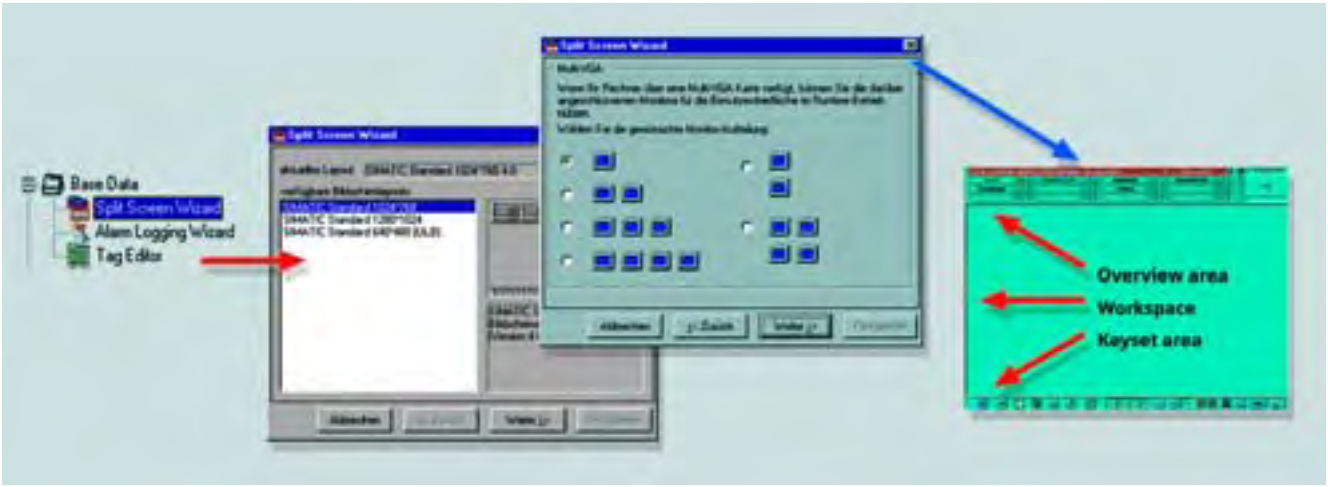
Integration

A detailed description of how to integrate SIMATIC Batch in WinCC appears in the interface description "Batch V6.1 SP1 Configuration Guide". The examples on the product CD based on Excel make it easy for the user to configure the interface between WinCC and SIMATIC Batch.

Ordering data

	Order No.
SIMATIC WinCC/ Batch Collection PO150 Software bundle for the creation of recipes and control of batch processes based on SIMATIC BATCH. • WinCC 8 K PowerTags (RT 8K) • SIMATIC BATCH: - Server Basic - Hierarchical recipes - Separation, procedures, formulas • V6.0 SP3 (Collection)	**6AV6 371-1FA06-0DX0**
SIMATIC WinCC/ Batch Collection PO300 Software bundle for the creation of recipes and control of batch processes based on SIMATIC Batch. • WinCC 64 K PowerTags (RT 64K) • WinCC 128 PowerTags (RT 128) • WinCC/Server • SIMATIC BATCH: - SERVER BASIC - PO option (PO 300) - BatchCC - Hierarchical recipes - Separation, procedures, formulas • V6.0 SP3 (Collection)	**6AV6 371-1FA16-0DX0**

Overview



- WinCC/Basic Process Control is an option which has additional objects and configuration tools for the easy implementation of typical instrumentation and control requirements
- Only for WinCC V5.1; in WinCC V6 the functionality is included in the basic system (hardware options must be ordered separately in both cases)
- The licenses for WinCC/Basic Process Control must be installed on all operator stations and servers

Benefits

- Expansion of a WinCC station for I&C tasks with minimal engineering outlay

Function

Basic Process Control features the following additional configuration options:

- Basic data
  for efficient screen layout (overview, working and key areas)
- Split Screen Wizard
  for setting screen resolution and multi-channel mode
- Picture Tree Manager
  for the graphics-based configuration of a process image hierarchy
- Alarm-Logging-Wizard
  for an easy-to-parameterize message window with pages for new, old and sent messages, operator input, I&C and history lists and for connection of an audible signal device
- 3D bar graphs and group displays as additional Smart objects

Powerful functions are available in runtime mode:

- Scroll in screen hierarchy
- Store/call user-specific screen composition
- Select process images by name
- Group display for operator prompting in screen hierarchy
- Sign-of-life monitoring for process links with plant configuration screen and automatic I&C messages
- Triggering of external signal transmitters
- Time synchronization
  (setting of PC clock via DCF77 or GPS; distribution on PROFIBUS or Industrial Ethernet)

The Basic Process Control functionality cannot be mapped in WinCC/Web Navigator V1.2.

Ordering data

		Order No.
WinCC/Basic Process Control		
• V5.2; for WinCC V5.1		**6ES7 652-0XX05-2YA0**
Hardware for I&C functions		
DCF-77 receiver		
For time-of-day synchronization		
• DCF77 (Europe)		**2XV9 450-1AR14**
• GPS (worldwide)	F	**2XV9 450-1AR13**
Multi-VGA		
• 2 screens		**6ES7 652-0XX02-1XE0**
• 4 screens		**6ES7 652-0XX02-1XE1**
Chip card reader		**6ES7 652-0XX01-1XC0**
Chip card for chip card reader		**6ES7 652-0XX05-1XD1**
(10 items in pack)		

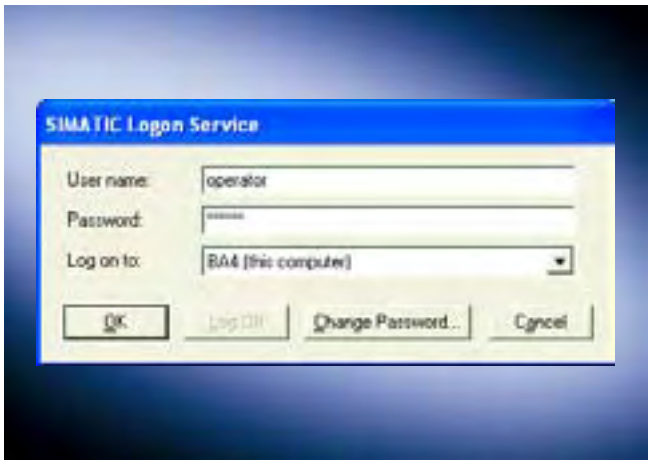
F) Subject to export regulations: AL: N and ECCN: 7A994

Note:
For further information on I&C options, see Catalog ST PCS7

4

FDA Options

Overview



- SIMATIC Logon Service for WinCC V6.x and WinCC/Advanced User Administrator for WinCC V5.x are software option packages supporting the central administration of all WinCC users on a plant-wide basis.
  - Central user administration with SIMATIC Logon Service uses Windows mechanisms. SIMATIC Logon Service must be installed on all WinCC machines involved.
- WinCC Audit is used in the context of change management/to record all operations and monitor changes in engineering in a falsification-proof long-time audit trail database.
  The WinCC Audit RC package is required for configuring change monitoring. One package is required for each configuring station. It also contains an RT license.
  One WinCC Audit RT license is required for each additional station to be monitored for changes.
- The FDA options WinCC Audit and SIMATIC Logon 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.
- For WinCC V6.x: SIMATIC Logon Service and WinCC/Audit
  For WinCC V5.x: WinCC/Advanced User Administrator

Benefits

- Central, plant-wide user management
- High security thanks to precautions on administrator and user side
- Quick and easy monitoring of all operator interventions
- Quick and easy monitoring of configuration changes
- Simple and effective organization of separate audit trail
- Full support for single-user and multi-user systems, single-project and multi-project solutions, client/server architectures and redundancy systems in respect of audit trail
- Document management and versioning of PDL, script and other files/documents
- Minimization of plant downtimes thanks to traceable and fast analysis of changes made
- Reduction of 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

In the SIMATIC WinCC environment, the Advanced User Administrator and SIMATIC Logon Service can run on a whole variety of structures, from single-user stations to client/server architectures.

The SIMATIC Logon Service can be used for the coordination 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.

WinCC Audit comprises three components. The configuration tool for configuring change control and the management of PDL files, script files and other documents such as plant documentation.

The audit trail, which tracks all changes in respect of both engineering and plant operation in a separate SQL database. It can be set up as a central audit trail for a number of projects or even just for a single project. The audit trail supports both single-user and multi-user systems, client/server architectures and even the WinCC redundancy system.

The Viewer is used to visualize the audit trail and supports export to an Excel file.

Function

SIMATIC Logon Service and WinCC/Advanced User Administrator

The options feature numerous security mechanisms, both for administrators and users. Users receive a unique user ID, user name and password. This information is encoded and stored at a central location (in the case of AUA, in its own database, and with the SIMATIC Logon Service, in the Windows user management). Functions such as limited validity of the password, automatic log-off after a pre-defined time, and blocking following repeated entry of an incorrect password guarantee the highest level of operational security.

In the case of the SIMATIC Logon Service, 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.

In addition, Advanced User Administrator and SIMATIC Logon Service allow the administrator to set up new users online, plant-wide and across applications, or to block existing users. SIMATIC Logon Service also supports electronic signature.

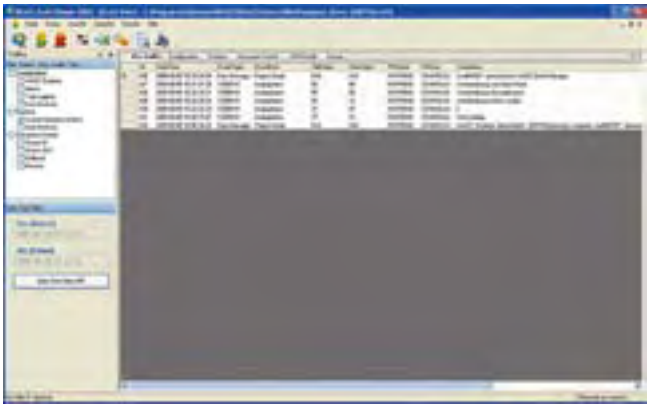
WinCC/Audit

WinCC Audit is used for monitoring changes both of operator actions in the RT area and during the engineering phase for recording changes to the configuration. All change data are recorded in a falsification-proof database called the audit trail. The user visualizes the audit trail using the Audit Viewer. WinCC Audit's functions support plant and mechanical equipment manufacturers and help operators to meet the requirements of FDA 21 CFR Part 11.

An RC license is required for monitoring the audit trail. One RT license is required for each station (client/server) to be monitored. One RC license always includes one RT license.

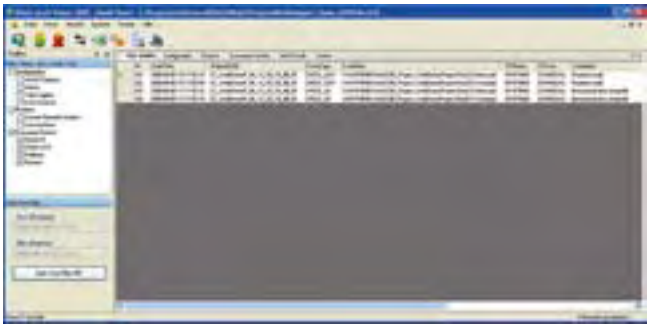
Monitoring RT operation

In addition to recording operator activities, the audit trail also records the starting and modifying of recipes (customized tables). At specific objects or events, such as function buttons or sliders, the plant operator can also record activities of an individual nature (e.g., pressing a button) in the audit trail using a function known as Audit Entry.



Monitoring configuration changes

WinCC Audit differentiates here between configuration changes that modify the WinCC database orchanges carried out via the WinCC Explorer, such as changes to variables or the creation of a user group, and those that are limited to the modification of files, referred to as document check. The document check covers plant views, scripts, and log layouts, and customer-specific documents. This means that all these documents or files can be monitored for changes by WinCC Audit, intermediate versions can be created or restored using a Rollback function. Overall, monitoring can be configured extremely easily and in a user-friendly and integrated way.



The plant engineering company and the plant operator can use this to discover easily and conveniently, for example, during plant downtimes, which modifications have been implemented in the plant. This provides support in plant analysis and reduces plant downtimes.

FDA Options

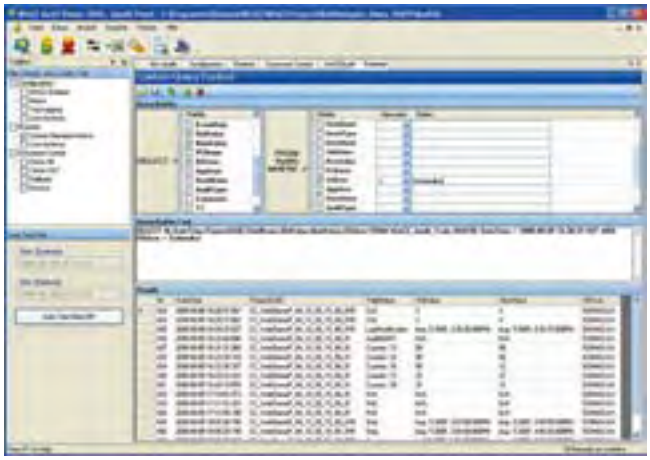
Function (continued)

Audit Trail database and Audit Viewer

All modification data such as operator actions, configuration changes and document changes are stored in the Audit Trail database. The most important data fields in audit trail data are:

- Date and time of the modification
- Object name
- Old value and new value
- User name
- Event/function
- Comment (reason for change)

Audit trail data are visualized using the Audit Viewer. Users select the desired view of the audit trail data via filters and they can export the data to an Excel file. Audit trail data are falsification-proof and can thus not be modified or deleted. WinCC Audit therefore also satisfies the FDA requirements to 21CFR Part 11 in this respect.



Ordering data

		Order No.
WinCC/Advanced User Administrator		
Extended user administration for WinCC V5.1		
• Engineering license for 1 project including 1 runtime license for an operator station, electrical documentation (Eng./Ger.) on CD-ROM		**6DL5 401-8AX22-0XX0**
• Runtime license for an operator station		**6DL5 401-8AX22-0XX1**
Central user management for WinCC V6.0, runtime license for an operator station		
SIMATIC Logon Service		**6ES7 658-7BX11-2YA0**
WinCC/Audit for WinCC V6.0 SP3		
• WinCC/Audit RT V6.0 SP2 – Creation of audit trails in RT	C	**6AV6 371-1DV06-0AX2**
• WinCC/Audit RC V6.0 SP2 – Configuration of audit trails with RT license	C	**6AV6 371-1DV16-0AX2**

C) 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 can be found in the Internet under:

http://www.ad.siemens.com/hmi/html_76/products/software/wincc/fda01.htm

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

Ordering data	Order No.
WinCC/IndustrialX	
• V1.1	**6AV6 371-1EL15-0AX0**

4

WinCC/ODK and WinCC/Comprehensive Support

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
- DBExport: Exports the database table

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	
• V5 SP1; for WinCC V5.1	**6AV6 371-1CC05-0BX0**
• V6; for WinCC V6.0	**6AV6 371-1CC06-0AX0**
WinCC/ODK upgrade	**6AV6 371-1CC06-0AX4**
To V6	
WinCC/CDK	
• for WinCC V5.1	**6AV6 371-1EE05-0AX0**
• for WinCC V6.0	On request

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

- Efficient support reduces configuration times and answers any questions that arise quickly and cost-effectively
- The automatic supply of current updates 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.

Overview

WinCC Add-ons – solutions for all sectors and technologies

The basic system has been designed to be technology- and sector-neutral, modular and flexibly expandable. It enables simple single-user systems in mechanical equipment manufacture, as well as complex multi-user solutions or even distributed systems with several servers and clients in systems engineering. WinCC Add-ons have been created by competent partners within sector and technology solutions, and they represent interesting expansions to WinCC.

Two categories of WinCC Add-on are distinguished:

- WinCC Premium Add-ons
- WinCC 3rd Party Add-ons

WinCC Premium Add-ons are checked for their compatibility with the WinCC basic system in the Siemens Test Center and supported in the first instance by the central Hotline. In addition, the suppliers of the WinCC Premium Add-ons must observe certain marginal conditions. As important application- and sector-specific add-ons to SIMATIC WinCC, they are marketed jointly by Siemens and the relevant Premium Add-on supplier. You can find the WinCC Premium Add-on products on the Internet and in the "Online WinCC Premium Add-on Catalog".

Premium Add-ons for connectivity:

- PM OPEN Hosts
  connectivity tool for connecting SAP/R3
- PM OPEN Export
  for exporting WinCC data to local memory media or memory media enabled on the network
- PM OPEN TCP/IP
  enables bidirectional exchange of WinCC data (variables, messages) with one or more computers communicating via the TCP/IP protocol
- PM OPEN PI
  enables a flexible and quickly configured connection of WinCC to the software product PI (Plant Information System from OSI Inc.)

Premium Add-ons for process management:

- PM MAINT
  is a production plant maintenance tool
- PM CONTROL
  is a recipe system for user-friendly creation and modification of recipes
- PM QUALITY
  is an archive system for managing order-related and batch-related production and process data

Premium Add-ons for SCADA expansions:

- PM ANALYZE
  for analyzing fault and status messages, as well as process values
- FunkServerPro
  for transferring fault messages via different communications channels such as GSM, LAN, e-mail

Premium Add-on for diagnostics:

- System diagnostics process control system
  for reading out the status of the process control system

WinCC 3rd Party Add-ons do not comply with any special quality requirements checked by Siemens and are marketed and supported exclusively by the relevant Add-on manufacturer in each case. Nevertheless, they also represent interesting expansions to SIMATIC WinCC.

WinCC Add-ons and partner management

Overview (continued)

Competent partners

With SIMATIC WinCC, not only do you get excellent products for your requirements, but we also support you in selecting a partner for your automation solution. In our global network of Siemens Automation Solution Providers, you can find competent partners in your area at any time. In addition, the Siemens-internal WinCC Competence Centers and the WinCC Professionals implement and support external system integrators on the basis of WinCC customer-specific and sector-specific, low-cost solutions.

WinCC Competence Centers

Within the SIMATIC WinCC environment, authorized WinCC Competence Centers offer

- Consulting
- Engineering
- Development
- System integration
- Configuration
- Customer-/project-specific training

as well as WinCC add-on products.

Our experience in the fields of automation and industry and knowledge of the WinCC system ensure efficient and professional solutions.

WinCC Competence Centers

- Mannheim, key area process management
  - Cross-sector solutions and products for production, environmental, maintenance and diagnostics applications
  - Connectivity tools, system integration, connection to SAP R/3
  - Support with FDA validation and WinCC ODK
  - Support of advanced users when using ODK and VBA
- Stuttgart, key area production engineering
  - Solutions for maintenance management
  - Web-based solutions with WinCC
- Erlangen, key area process automation
  - MES Connectivity
  - Plant information, maintenance, batch and quality management
  - Web-based solutions with WinCC
  - Customized database links
- Barcelona, key areas production automation and logistics
  - Solutions for integrating WinCC into MES and ERP
  - Development of WinCC add-ons
- Nice
  - Solutions in the areas of food and beverages, pharmaceuticals, and I&C
  - Batch processes
  - Migration from Simatic TI, Teleperm M and PCS systems to WinCC
  - Customized expansions
  - FDA support
  - Migration from TI systems

WinCC Professionals

WinCC Professionals are external system integrators who have established themselves in the field of process visualization and thanks to numerous projects implemented with WinCC have built up a corresponding pool of expertise. They often also market their software solutions as add-ons for WinCC.

Siemens Automation Solution Provider

The partner program of A&D sets standards with regard to the special expertise of the participating firms and the worldwide network of partners. Thanks to careful selection and continuous training of our Solution Providers, you will always find competent contacts in your area who are always up to date with the latest technology.

More information

WinCC Premium Add-on

Additional information can be found in the Internet under:

http://www.siemens.com/winCC/addons

WinCC Competence Centers

Additional information can be found in the Internet under:

http://www.siemens.com/competencecenter

WinCC Professionals

Additional information can be found in the Internet under:

http://www.siemens.com/professional

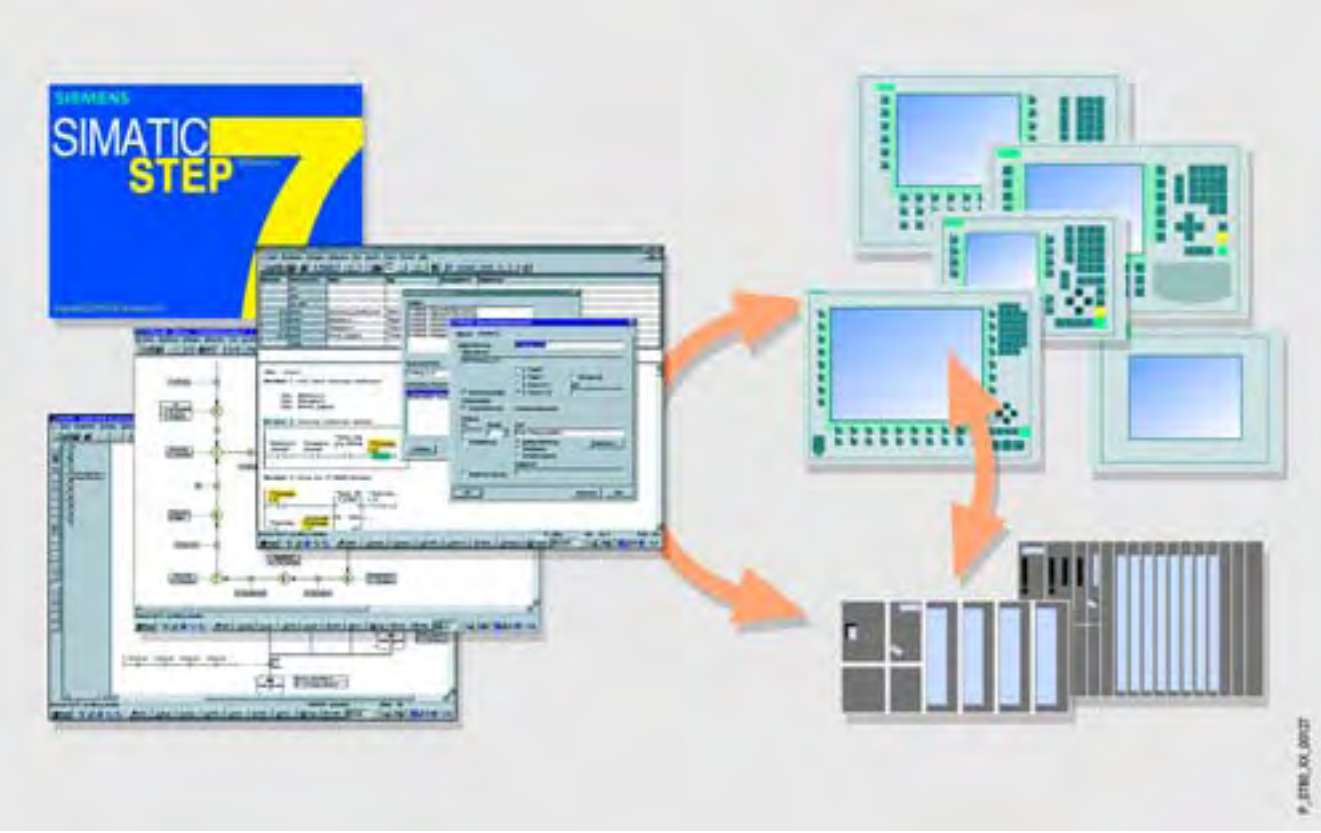
Siemens Automation Solution Provider

Additional information can be found in the Internet under:

http://www.siemens.com/solution-provider

Overview

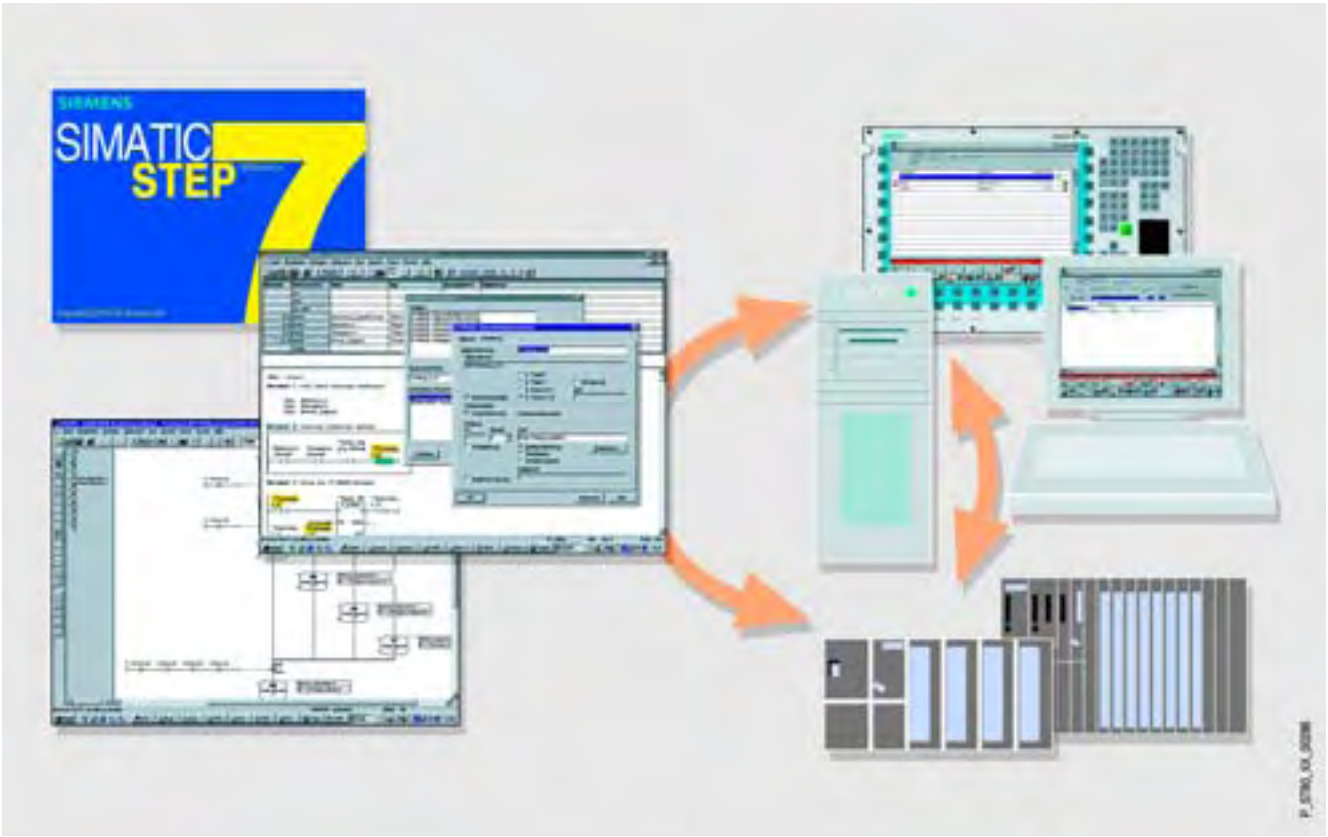
- Process diagnostics software for quick, selective fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:
  Optimum interaction between STEP 7 engineering tools and SIMATIC HMI
- Standard user interface



Process fault diagnostics with ProAgent for ProTool and WinCC flexible/ProAgent as well as the STEP 7 engineering tools

SIMATIC ProAgent

Overview (continued)



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 TP 270/OP 270, MP 270/MP 370, ProTool/Pro RT and ProTool/ProAgent, as well as with WinCC flexible/ProAgent.

Function

- Context-sensitive activation of diagnostics based on a process error message
- Output of operands with symbols and comments
- Ability to switch between LAD, STL and a signal list
- Support for fault rectification by means of direct process access using the motion view
- Output of the faulty operands directly in the message complete with address, symbol and comment[1)]
- Consistency check in RT:
  Icons are used to identify inconsistent diagnostic units. Rapid localization of faults with regard to the configured data is possible in the start-up phase.
- Direct, unit-oriented jump to the diagnostics view from user displays by means of ProAgent functions
- Unit-oriented or message-driven activation of STEP 7 (LAD/STL/FDB editor, S7-GRAPH, HW-CONFIG (with system error messages)), fully automated support[2)]
- S7-GRAPH OCX for graphical presentation of sequences (overview representation)[3)]

1) In combination with TP 270/OP 270, MP 270/MP 370, ProTool/Pro RT, WinCC/ProAgent V6.0 and higher and WinCC flexible /ProAgent
2) WinCC/ProAgent V5.5 and higher only
3) WinCC/ProAgent V5.6 and higher in combination with S7-GRAPH V5.1 and higher (OCX is delivered with S7-GRAPH 5.1 and higher)

Standardized user interface with standard views

- Message view
- Unit overview diagram
- Diagnostics detail view
- Motion view
- Sequencer operating view

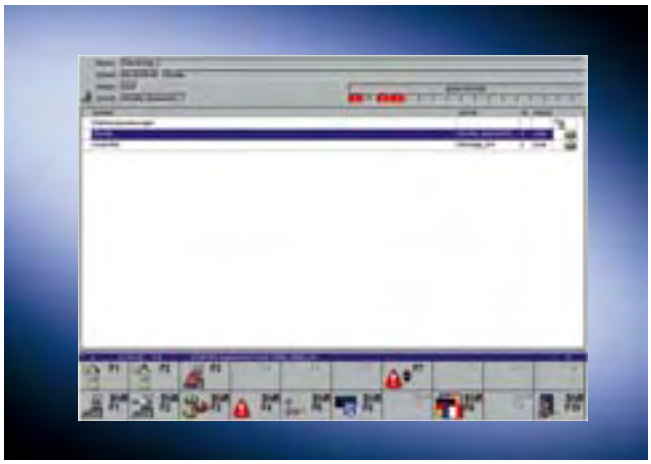
The display contents shown refers to the previously selected units or messages. This means that starting from a message or a selected technology unit, the right context-sensitive diagnostics display can be called up.

Message view

All active process messages are displayed in the message view. On the basis of a selected message, it is possible to branch to other diagnostic views context sensitively. The operating personnel can also read the faulty operands directly from the message and respond immediately without the need to perform further operations on the HMI device. ProTool supports this function on the Windows CE-based panels TP 270/OP 270, MP 270B/MP 370 as well as on the PC-based system ProTool/Pro RT. The function is available for WinCC/ProAgent Version 6.0 and higher. WinCC flexible /ProAgent also supports this function.

SIMATIC ProAgent

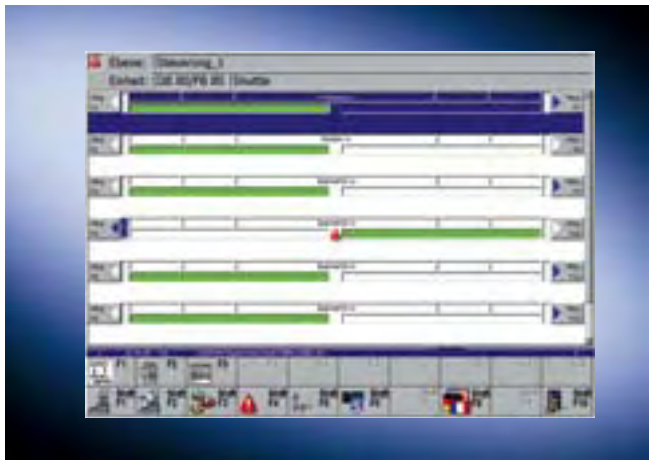
Overview



Unit overview diagram

All technology units and their subunits (subsystems/machine components) are presented in tabular form in the unit overview. The user can see in this view, for example, in which operating mode or state the specific unit is in. The operating mode can be changed by the operator if necessary.

Faulty units are marked using attributes.



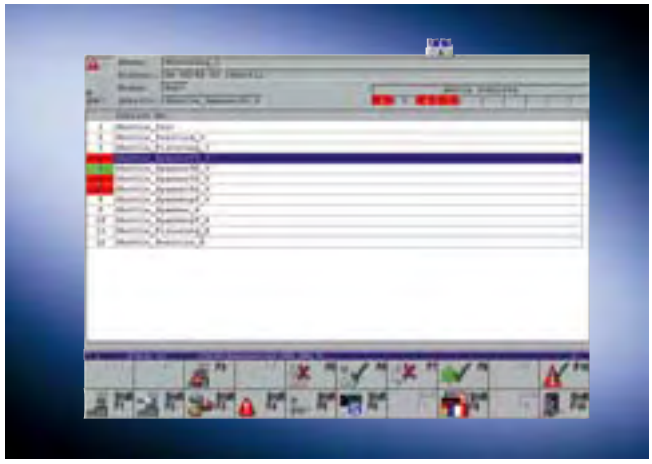
Motion view

The motion view is used to support debugging. Each motion line contains a comment line that describes the motion (e.g. x-axis), two actions for performing the motion, acknowledgement for activation of a motion and information concerning the limits reached (max. 16 limits).

The motion itself is controlled in the case of the SIMATIC Panels and Multi Panels using the softkeys on the side. Time-critical motions can be directly activated via the PLC inputs (if supported by the target hardware: 24 V direct keys, DP direct keys over PROFIBUS).

Diagnostics detail view

The diagnostics detail view shows the faulty operands and time of occurrence of a process fault. Up-to-date status information can also be displayed as an option. The diagnostic results are either presented in the ladder diagram (LAD), in the statement list (STL), or in a clearly comrehendible signal list. The operands are output for each presentation format with symbols and comments from the S7 symbol table. Only those operands are displayed and marked with a highlighting attribute which caused the error. It is also possible to switch to a view in which the current statuses of all operands in the PLC are scanned.



Sequencer operating view

The sequencer operating view offers support with the control of sequences. In a similar manner to the Status/Control functions in S7-GRAPH, functions such as sequence initialization and acknowledgement, single-step activation/deactivation and setting the operating mode are possible. The steps are output in a list complete with step number/name. Attributes for identifying an active/faulty step provide the operating personnel with an overview of the current status of the sequence.

Technical specifications

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible / ProAgent [1]
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, Industrial Ethernet, TCP/IP
Display units					
Standard images for:					Standard displays for easy embedding in user displays; example project for OP 270
• 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 (German/English/ French/Spanish/ Italian)	5 (German/English/ French/Spanish/ Italian)	5 (German/English/ French/Spanish/ Italian)	3 (German/English/ French)	5 (German/English/ French/Spanish/ Italian)
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

1) WinCC flexible/ProAgent is only available with WinCC flexible 2004 Service Pack 1 or higher.

SIMATIC ProAgent

Technical specifications

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible / ProAgent [1]
Documentation					
In electronic format	German/English/ French/Spanish/ Italian; included in delivery	German/English/ French/Spanish/ Italian; included in scope of delivery	German/English/ French/Spanish/ Italian; included in scope of delivery	German/English/ French; included in scope of delivery	German/English/ French/Spanish/ Italian; included in scope of delivery
Requirements					
HMI software	ProTool V6.0	ProTool V6.0	ProTool/Pro V6.0	WinCC V5.1 (ProAgent V5.6)/ WinCC V6.0 + SP3 (ProAgent V6.0 + SP2)	WinCC flexible 2005
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 V5.6:* Windows NT + SP6a, Windows 2000 + SP2; *WinCC/ProAgent V6.0:* Windows 2000 + SP3, Windows XP	Windows 2000 + SP3, Windows XP + SP1,
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 V5.6:* Windows NT + SP6a, Windows 2000 + SP2 *WinCC/ProAgent V6.0:* Windows 2000 + SP3, Windows XP	*WinCC flexible/ ProAgent for SIMATIC Panels:* Windows CE 3.0 *WinCC flexible/ ProAgent for WinCC flexible Runtime:* Windows 2000 + SP3 Windows XP + SP1
STEP 7	V5.0 and higher	V5.0 and higher	V5.0 and higher	*WinCC/ProAgent V5.6*: V5.1 + SP2 and higher *WinCC/ProAgent V6.0 + SP1:* 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	*WinCC/ProAgent V5.6:* V5.0 and higher *WinCC/ProAgent V6.0:* V5.1 and higher	V5.1 and higher
• S7-HiGraph	No	V5.0 and higher	V5.0 and higher	No	V5.3 or higher
Type of delivery (one license is required for each target hardware)	License key	Runtime license	Runtime license	CD-ROM/ Runtime license	Runtime license

1) WinCC flexible/ProAgent is only available with WinCC flexible 2004 Service Pack 1 or higher.

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)	C	**6AV3 681-1AB06-0AX0**
• **SIMATIC ProAgent/MP** Functions and standard screens for use on an OP 270/TP 270 and MP 270/MP 370 (Key) in English, French, German, Italian and Spanish, runtime license (single license)	C	**6AV3 681-1CB06-0AX0**
• **SIMATIC ProAgent/PC** Functions and standard screens for use on a Panel PC 670/870 10", 12" and 15" Key, FI45, PC (resolutions 640 x 480, 800 x 600 and 1024 x 768 pixels) in English, French, German, Italian and Spanish, runtime license (single license)	C	**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 an FI45, PC (resolution 1024 x 768 pixels) and Panel PC 670/870 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**
• V6.0 (ProAgent V6.0 SP2)		**6AV6 371-1DG06-0CX0**
Upgrade		
• to V5.6		**6AV6 371-1DG05-6AX4**
• to V6.0 (SP2)		**6AV6 371-1DG06-0CX4**
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 TP/OP 270, MP 270B and MP 370	D	**6AV6 618-7DB01-1AB0**
• **WinCC flexible /ProAgent for WinCC flexible Runtime** Runtime license (single license)	D	**6AV6 618-7DD01-1AB0**
Documentation (must be ordered separately)		
SIMATIC HMI Manual Collection	C	**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		

1) Only in combination with ProAgent/MP and ProAgent/PC
2) Configuring software included on ProTool CD V6
C) Subject to export regulations: AL: N and ECCN: EAR99S
D) Subject to export regulations: AL: N and ECCN: 5D992B1

HMI complete systems

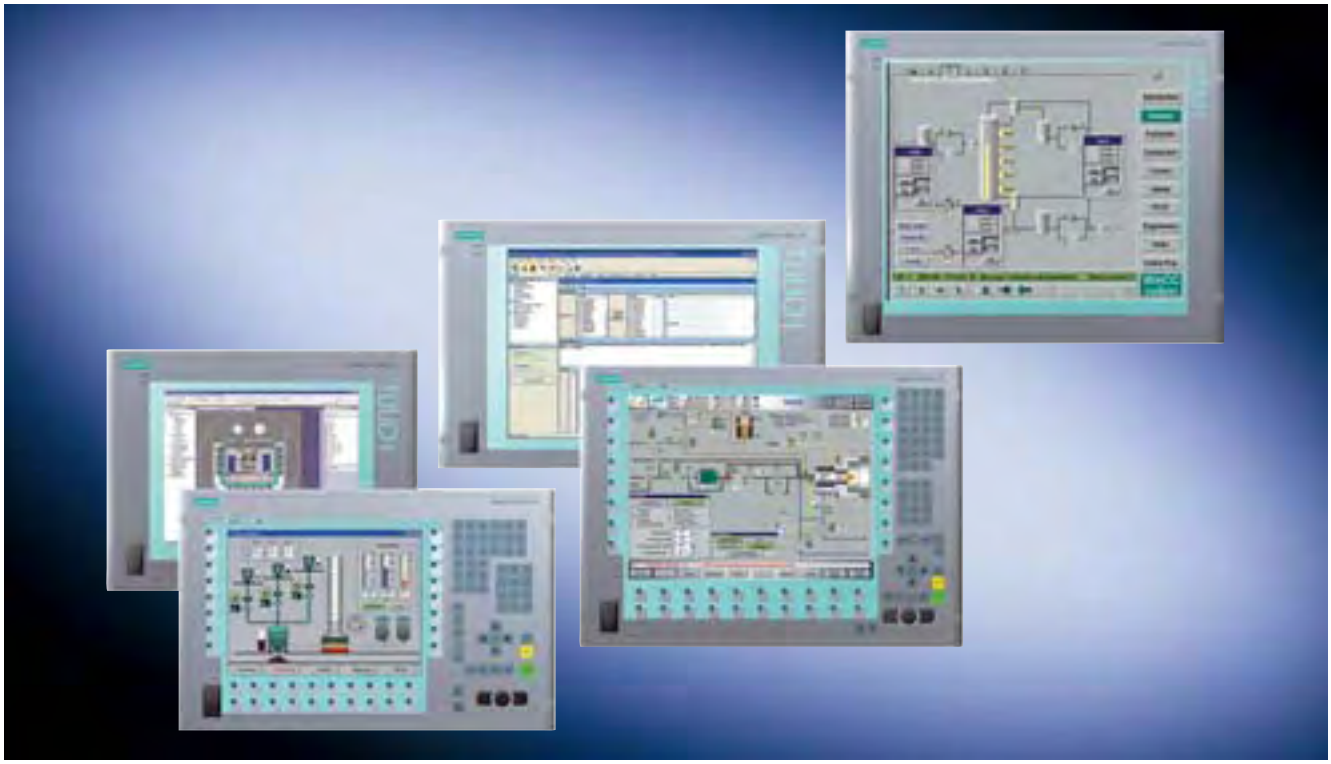
5

HMI Packages with ProTool/Pro, WinCC flexible and WinCC

Overview

Overview

HMI complete systems



SIMATIC Panel PC with SIMATIC ProTool/Pro

- SIMATIC Panel PC packages with ProTool/Pro 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 ProTool/Pro Runtime software. It is unfortunately not possible to place subsequent orders.

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 is unfortunately not possible to place subsequent orders.

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 is unfortunately not possible to place subsequent orders.

Benefits

- Simple to order
- Cost savings compared to individual components
- Optimally matched hardware for the SIMATIC HMI software
- System-tested solution

Design

SIMATIC Panel PC with SIMATIC ProTool/Pro

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 ProTool/Pro Runtime software and the communication hardware and software themselves. The corresponding runtime software is supplied with the devices.

Runtime licenses are required for ProTool/Pro Runtime. You can choose from the following types of license:

- License for 128 PowerTags
- License for 256 PowerTags
- License for 512 PowerTags
- License for 2048 PowerTags

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.

Design (continued)

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 PowerTags
- License for 512 PowerTags
- License for 2048 PowerTags

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. Only the minimum requirements of WinCC in terms of basic hardware need to be taken into account.

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 multilingual or
  Windows XP Professional multilingual

For process communication, you can choose between the onboard, CP5611-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 PowerTags
- License for 512 PowerTags
- License for 1024 PowerTags
- License for 8K PowerTags (with WinCC V6.0)
- License for 64K PowerTags

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.

HMI Packages with ProTool/Pro, WinCC flexible and WinCC

Overview

Ordering data		Order No.
SIMATIC ProTool/Pro Package [1) 2)]	D	**6AV6 584-4A■00-0AX0**
Includes runtime license		
• 128 Power Tags		**B**
• 256 Power Tags		**C**
• 512 Power Tags		**D**
• 2048 Power Tags		**F**
SIMATIC WinCC flexible Package [1) 2)]	D	**6AV6 623-2■A00-0AA0**
Includes runtime license		
• 128 Power Tags		**B**
• 512 Power Tags		**D**
• 2048 Power Tags		**F**
SIMATIC WinCC Package (Archives and Recipes) [1)]		**6AV6 382-1■■00-0AX0**
WinCC V5.1 Runtime		
• 128 PowerTags		**C**
• 256 PowerTags		**D**
• 1024 PowerTags		**E**
• 64k PowerTags		**F**
Communication board		
• Without/via onboard interfaces		**A**
• Industrial Ethernet (with CP 1613)		**B**
• PROFIBUS (with CP 5613)		**C**

	Order No.
SIMATIC WinCC Package[1)]	**6AV6 382-1■■06-0AX0**
WinCC V6.0 Runtime	
• 128 PowerTags	**C**
• 256 PowerTags	**D**
• 1024 PowerTags	**E**
• 8k PowerTags	**H**
• 64k PowerTags	**F**
Communication board	
• Without/via onboard interfaces	**A**
• Industrial Ethernet (with CP 1613)	**B**
• PROFIBUS (with CP 5613)	**C**
SIMATIC WinCC Package[1)]	**6AV6 382-2■■06-0AX0**
WinCC V6.0 Runtime [2) 3)]	
• 128 Power Tags	**C**
• 256 Power Tags	**D**
• 1024 Power Tags	**E**
• 8k Power Tags	**H**
• 64k Power Tags	**F**
Communication board	
• Without/via onboard interfaces	**A**
• Industrial Ethernet (with CP 1613)	**B**
• PROFIBUS (with CP 5613)	**C**
Communication software for CP 1613/CP 5613	see chapter 4

1) Only if ordered with a Panel PC

2) The current version will always be delivered

3) Via license, not via authorisation

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

Note:
For ordering data for Panel PCs and accessories, see configurators in “SIMATIC Panel PCs”

More information

Additional information is available in the Internet under:

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

Customized Products

6

Product modifications

Overview

Sector-specific products

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
- Food, beverages and tobacco industries
- Chemical and pharmaceuticals industries

Customized design products

Customized design SIMATIC HMI products are entirely compatible with standard products in respect of technology and function.

The similar technology enables the use of 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.

Integrated in the SIMATIC world, they are configured with SIMATIC ProTool or WinCC. They differ from standard products only in respect of their design, i.e.,:

- Different logo and type designation
- Different keyboard colors, key labels and key symbols
- Different housing color (front frame)

Overview

OEM products

OEM (Original Equipment Manufacturer) products for OEM 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.

Customized products are individual solutions based on 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 keyboard layout, key size/design and key layout SIMATIC HMI devices with modified layout are virtually identical to standard devices in respect of technology and function. They differ from standard products only in respect of keyboard configuration.

As panels with customized layout are compatible with standard devices in respect of mechanics and function, in the event of unit failure, standard devices can replace customized ones. However, the keyboard/user interface will of course change.

- Customer-defined front dimensions and device mechanics, housing for desktop or support arm versions
- Different processors and memory media
- Different display technologies, sizes and resolutions
- Distributed configuration up to 500 m
- Additional modules or interfaces, e.g., direct control key module
- Freely-selectable Windows versions as operating system, preinstalled SIMATIC HMI software packages

It is frequently the case, however, that new OEM products can be based on existing OEM products efficiently and cost-effectively. 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 panels (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.

Open Platform Program

Open Platform Program software tools for the creation of software enhancements for ProTool and ProTool/Pro or customer applications based on SIMATIC HMI/WinCE platforms and Panel PC products.

The Open Platform Program supports the implementation of optimized customized hardware and software solutions. HMI platforms for other CE software can also be used in accordance with requirements. Customers can write their own software or add their own specific functions to ProTool. Any Windows CE-based SIMATIC Panel (TP 170B and higher) (standard device or OEM configuration) can be used as a hardware platform. We can provide you with the necessary development package, including support services.

Software Development Kits (SDKs) contain the necessary software tools for the implementation of the following software solutions:

- Customer-defined applications
- Expansions of HMI ProTool software using own ActiveX controls
- Project functions or tasks that interact with ProTool

HMI operator stations for the automotive industry

Overview

Operator PC unit operator panel + PLC, HMI operator control unit, operator terminal (OT)

The fully-populated 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 PC477 OEM and the Panel PC677, the Panel PC877 and Flat Panels are also suitable for use as operator PCs for the automotive industry.

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" figure on top right)
  - Modular aluminum control housing system for the combination of a number of HMI Panels (see "Overview" figure on bottom right)
  - Modular aluminum control housing system for the combination of a number of HMI Panels, Panel PCs and Simatic S7 PLCs (see "Overview" figure on left)
- Can be accessed via hinged front frame or hinged backpanel
- Integrated support arm elements at the top and bottom for the direct attachment of support arm couplings
- Integrated handle attachments facilitate handling and underline the design image

Certifications/Approvals

- IP65
- NEMA 4/EEMAC Type 12
- UL-/CSA

Technical specifications

Examples from the automotive industry

Type	HMI operator control unit	Operator PC unit operator panel + PLC	Operator terminals (OTs)
Components			
Computer unit	Panel PC 677 • Pentium M 1.6 GHz, 512 MB RAM • 40 GB HD, DVD/CD-RW • MPI/Profibus + Ethernet interface 10/100 Mbit • Europe default 230 V	PC Box V3 based on Panel PC677 • Pentium M 2 GHz, 1 GB RAM • 40 GB HD • MPI/Profibus + 2 x Ethernet interface 10/100 Mbit • Europe default 230 V	• PP17-I PROFISAFE • PP17-II • TP 170B
Front panel	PC 677 15“ Touch, 15“ XGA 1024 x 768 resolution	Customized front with 2 x 6 B control keys, 15“ XGA 1024 x 768 resolution	
Additional components		• PP17-I PROFISAFE • PP17-II • S7-400 configuration	
Additional components			
Operator panel housing	CC-4000	• VIP 6000 (upper part) • IW 6900 (lower part)	VIP 6000
Dimensions	578 x 764 x183 mm	630 x1870 x 636 mm	622 x 585.5 x 210 mm
Operator panel	with slide-in label	–	
Keyboard	Cherry keyboard (optional)	Sasse stainless steel keyboard	
Mouse	Trackball (optional)	Optical mouse	
Elements	16 x 3SB3 elements, 1 x EMERGENCY STOP	2 x 4 add-on controls, 1 x EMERGENCY STOP	• 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	• E1 lock for keyboard drawer and housing lock • E7 key-operated switch	Customized housing lock	Customized housing lock
Mounting	Installation in operator panel housing with electrical wiring	Installation in operator panel housing with electrical wiring	Installation in operator panel housing with electrical wiring
Ventilation	24 V fan without integrated power supply unit	–	
Terminals	Use of 3-wire terminals	Use of Wago terminals	
Core identification	Yes	Yes	Yes
Base profile	• 2 x machining M32 (1 x Murr, 1 x blanking plug) • RJ45 Ethernet port • HAN 25, HAN 7	• Icotec • RJ45 Ethernet port	
Software:	• Win XP SP 1, Prof. Multilanguage • Win CC SP3 • SIMATIC Step 7 Prof ED 2004 • Norton Antivirus 2005 • Norton Ghost V 9.0	• 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	

OEM PP17 PROFIsafe for the automotive industry

Overview

PP17-I PROFIsafe: Front and rear views

Pushbutton panel with 16 illuminated short-stroke keys and free digital inputs and outputs, supplemented by four fail-safe input channels (F-DI) for simple emergency stop applications.

Benefits

The control unit offers a wide range of features that can be used without the need for programming:

- Short-stroke keys with two-color flat surface LEDs
- Additional 24 V digital inputs and outputs (maximum of 14 can be used in standard mode)
- All short-stroke keys and digital inputs can also be individually configured as switches
- Integrated lamp test
- Integrated flash rate
- LED colors: red, green, yellow
- Configurable pulse stretching
- Pre-perforated cut-outs for 22.5 mm standard add-on components such as key switches and emergency stop
- SIMATIC control unit design, can be mounted side-by-side without gaps
- Fail-safe operation of 1 to a maximum of 4 emergency stop buttons by means of PROFIsafe communication
- Simultaneous standard mode and fail-safe mode
- Non-interchangeable coded plug-type terminals

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 LEDs. You should install the operator panel in an installation cutout and connect it to a controller of type SIMATIC S7-416F-2 via PROFIBUS. 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 SIMATIC S7-416F-2 fail-safe mode for simple emergency stop applications. Up to four two-channel emergency stop buttons can be connected. Concerning safety-relevant signals, at least SIL2/Category 3 can be achieved. For applications requiring the higher SIL 3/Category 4, an additional fail-safe F-FB must be integrated into your STEP 7 safety program.

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.

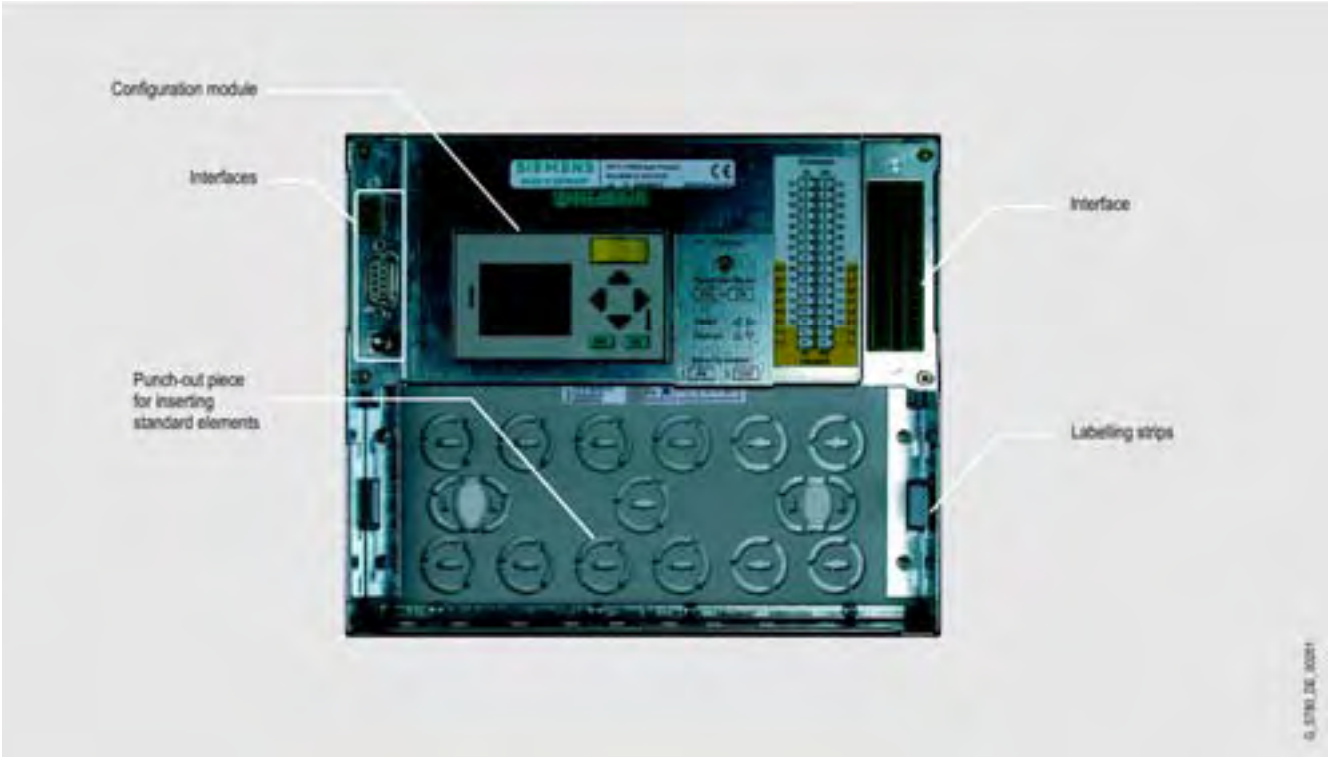
The diagnostic function passes the following diagnostics information to the CPU:

- Communication error
  Communication between the operator panel as DP slave and the CPU as DP master has been interrupted (e.g., due to an incorrect PROFIBUS address or PROFIsafe address).
- Hardware error
  External wiring or internal hardware error, data corruption or procedural error.
- Parameterization error
  Error in the PROFIsafe configuration

OEM PP17 PROFIsafe for the automotive industry

Design

External dimensions and mounting cutout are the same as those for the standard product PP17-I.



OEM PP17 PROFIsafe for the automotive industry

Technical specifications

Only technical specifications that differ from the data of PP17-I appear in the following list:

Type	PP17-I PROFIsafe
• Number of F-channels for emergency stop	1 up to 4 Two digital inputs and two digital outputs are required for each F-channel
• Additional digital inputs	Max. 14 (depending on the number of emergency stops)
• Additional digital outputs	Max. 14 (depending on the number of emergency stops)
• Output aggregate current	Max. 300 mA
• Connection to controller	S7-416F-2 No MPI communication
• Requirements	SIMATIC S7 - Distributed Safety V5.3 and higher

Other technical specifications correspond to the specifications of the standard PP17-I.

Ordering data

	Order No.
SIMATIC PP17-I PROFIsafe A Pushbutton panel with PROFIsafe communication and max. 4 F-DI for emergency stop applications, incl. mounting accessories and 1 sheet of slide-in labels	**6AV3 688-4CX02-0AA0**
Delivery time	can be delivered from stock
Minimum order quantity	none
Repairs	over spare parts service
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	
• German	**6AV3 991-1XB01-0AA0**
• English	**6AV3 991-1XB01-0AB0**
PP17-I PROFIsafe Short Operating Instructions	
• German	**6AV3 678-8LA00-0AA0**
• English	**6AV3 678-8LA00-0AB0**
Accessories for supplementary ordering	
Slide-in label set containing 2 sheets	**6AV3 671-8CB00**

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

More information

Additional information can be found in the Internet under:

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

Panel PC 477 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, OEM devices can be used. The SIMATIC Panel PC 477 OEM 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 Compact Flash 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 Pentium III, 933 MHz
- RAM expandable up to 512 MB
- Compact Flash memory from 256 MB for maximum availability
- Option second Flash card or a combination of Flash card and hard disk for temporary data.
- Ethernet and PROFIBUS (optional) on-board
- Battery-backed hard disk add-on for memory-intensive applications
- Long-term availability of PC components from the Intel embedded range

Benefits

- Increased protection against tampering
- Increased system availability (faster booting, write-protected system partition)
- Increased data security thanks to Compact Flash memory
- Full industrial compatibility
- Full scalability
- Without fans
- 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

The Windows XP embedded and Windows XP Professional operating systems combine the openness of a PC with the security of an embedded system. The innovative WinCC flexible visualization software and automation software based on WinAC are ideal for configuration. The SIMATIC Panel PC 477 OEM product specification is tailored to customer requirements. Individual hardware, software and design modifications and expansions are available on request.

Application examples

- Printing machines
- Pick-and-place systems
- Brake test stands
- Paint mixing plants
- Wind power plants
- Injection molding machines
- Information terminals
- Building management
- Warehouse systems

Panel PC 477 OEM

Technical specifications

Display	
Size/resolution (pixels)	12“ TFT / 800 x 600 15“ TFT / 1024 x 768 Alternative: Touch or Keys
General features	
Processor	Intel Celeron 400 MHz or 650 MHz Intel Pentium III 933 MHz (depending on version supplied)
RAM	128 MB, 256 MB or 512 MB
Operating system	Microsoft Windows XP Professional or Microsoft Windows XP embedded
Power supply	24 V DC or 120/230 V AC
MTBF for backlighting	Typically 60,000 hours (24 hours continuous duty, temperature-dependent)
Drives	
Compact Flash memory	256 MB, 512 MB or 1 GB optional
Hard disk	40 GB
Floppy/CD-ROM drive	Can be connected via USB port (not included in scope of supply)

Interfaces	
PROFIBUS/MPI	12 Mbit/s (isolated, compatible with CP 5611, RS 485), optional
Ethernet	2 x 10/100 Mbit/s
USB (universal serial bus)	3 x rear side (USB V2.0) 1 x front side (USB V2.0)
Serial interface	COM1 (RS232)
Graphics interface	VGA via DVI-I connector
Ambient conditions	
Degree of protection	IP 65 (front), IP 20 (rear)
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/2 (1 g)
Shock loading during operation	Tested in accordance with DIN IEC 68-2-29: 50 m/s2 (5 g), 30 ms, 100 shocks
Ambient temperature during operation	+5 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)
Approval	CE
Dimensions	
Front panel (W x H in mm)	483 x 310
Mounting cutout (W x H in mm)	450 x 290 Mounting depth 70 mm

Depending on configuration, Panel PC 477 OEM is available as of 11/2005.

Ordering data

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: 20), which is agreed with the customer for the project.

Customized products can only be ordered in conjunction with a product agreement.

Options for the PC477 OEM

Bulk storage

- Hard disk
- 256 MB Compact Flash memory
- 512 MB Compact Flash memory
- 1024 MB 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 2005 128 PowerTags (RT)
- SIMATIC WinCC flexible 2005 512 PowerTags (RT)
- SIMATIC WinCC flexible 2005 2048 PowerTags (RT)

Soft PLC software

- WinAC RTX 2005

Type of communication

- Via integrated interfaces
- Industrial communication modules

Preinstalled software

- Software supplied with the product
- Customer-defined SW image installed prior to delivery [1) 2) 3)]
- Siemens-specific SW image installed prior to delivery [1) 2) 3)]
- The WinAC 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 customized image for Windows XPe, if applicable with WinCC flexible 2005 + WinAC RTX 2005
- Creating a customized image for Windows XPe with customer applications

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

A customer-specific order number is allocated during the product agreement process.

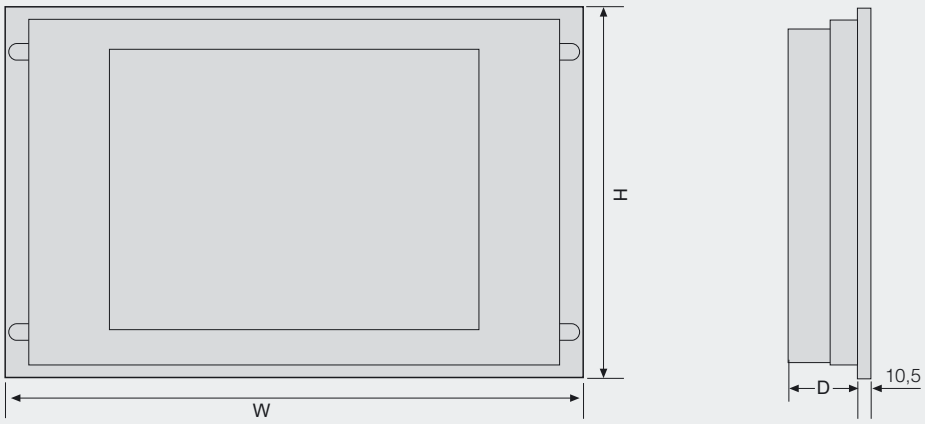
Example configurations with 15" Touch display

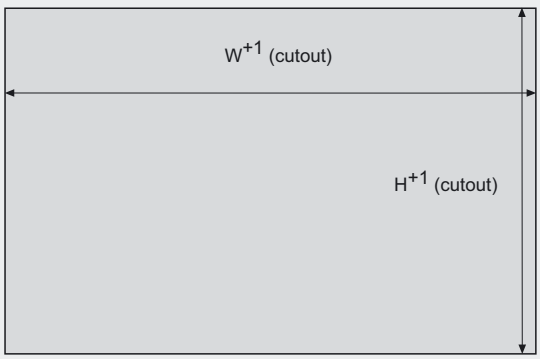
	Configuration 1	Configuration 2	Configuration 3
Processor	Intel Celeron 400 MHz	Intel Celeron 650 MHz	Intel Pentium III 933 MHz
RAM	128 MB RAM	256 MB RAM	512 MB RAM
PROFIBUS	–	On-board	On-board
Mass storage	256 MB CF card	Hard disk	Hard disk
Operating system	Windows XP embedded	Windows XP Professional	Windows XP Professional
Power supply	120/230 AC	120/230 AC	120/230 AC

Panel PC 477 OEM

Dimension drawings

Dimensions in mm





Front dimensions	W	H
Touch panels 15"	483	310

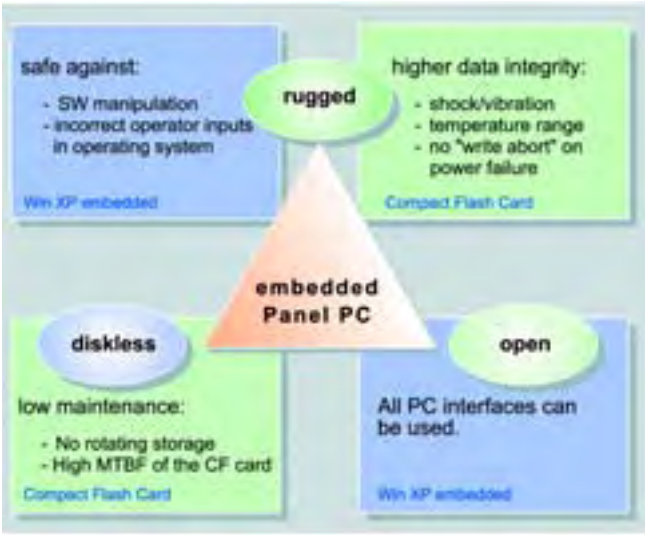
Installation cutout	W+1	H+1	D
Touch panels 15"	450	290	75

G_ST80_XX_00238

6

Overview

SIMATIC HMI embedded Panel PCs



Rugged and powerful systems are required in industrial applications. In this respect, SIMATIC Panel PCs offer a very high standard, featuring special resilience for industrial applications in addition to high performance capability.

Due to popularity and ease of use, these PC systems are usually supplied with Windows 2000 or Windows XP. Although highly reliable, these operating systems need a hard disk as boot and working drive due to their performance range and wide application scope.

However, due to considerations in respect of durability, susceptibility to error or low heat dissipation, hard disk drives are not always the ideal basis for every application. Flash memory systems are often a better solution.

If you wish to use Flash memory, the standard operating systems (Windows 2000 or Windows XP) are not an option. However, if you need their flexibility or require applications only available for these operating systems, **Windows XP embedded** can provide the ideal solution.

Unlike XP Professional, the embedded version is not installed on the target system. Instead an operating-system image is generated using the Microsoft Target Designer. We can provide components tailored precisely for SIMATIC Panel PC systems for this tool and offer our customers the option of either generating the operating system themselves or having us generate it in absolute accordance with their requirements.

Customized project-based configurations

Hardware basis: Panel PC 477 OEM/677

Operator control units:

- Compact, remote
- Touch 12“, 15“, 19“
- Key 10”, 12“, 15“

Bulk storage:

- Compact Flash 256 MB – 1 GB hard disk
- Larger storage capacity on request
- Alternative:
  - Hard disk instead of Compact Flash with Windows XP embedded
  - 2. Compact Flash card
  - Compact Flash + hard disk

Operating system:

- Windows XP embedded

TIA integration:

- WinCC flexible 2005 as HMI software
- WinAC RTX 2005 as Soft PLC
- TIA software products are tested with standard images of the operating system and are released on a customer-specific basis. If the operating system constellation (generation) changes, the functionality of the TIA software has to be confirmed by means of a system test.

Software:

- Preinstalled, predefined Windows XP embedded
- Generation of a customized Windows XP embedded image on request
- SW installed prior to delivery (ready to run incl. customer applications)
- Provision of HW components for Microsoft development tools for easy creation of own operating system image

Operator stations:

- The devices can be offered as optimum operator stations (see "Operator stations").

Embedded Panel PC for the mechanical engineering

Benefits

- Increased protection against tampering
- Increased system availability (faster booting, write-protected system partition)
- Increased data security thanks to Compact Flash memory
- Full industrial compatibility
- Full scalability
- Without fans (Micro Panel PC)
- Retentive memory (Micro Panel PC)
- 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

The use of Windows XP embedded in conjunction with SIMATIC Panel PCs provides an outstanding platform in respect of security, ruggedness and flexibility. It enables the flexibility of the PC world, combined with the security of an embedded system, to be used in industrial applications. The Windows XP embedded support package provides the basis for the effective and fast generation of a platform tailored to meet requirements.
We gladly work together with you to generate and deliver the customized SIMATIC hardware and software combined to meet the requirements of your particular application. This can save you both time and money during the installation process, leaving you free to deal with more important issues.

Application

Embedded systems provide additional options wherever hard disks have reached the limit of their specification and potential weak points can be identified.

Example:

- **Directly at the machine in the production industry, in the mechanical engineering industry, for packaging machines, in sheet metal working, process engineering, or building systems**
  In such applications, MTBF can be affected significantly by machine vibrations and ambient temperatures.Flash memory can be used for higher temperatures and can withstand an increase of up to 10 times in respect of vibration.
- **On support-arm systems/cabinet doors**
  This is a very popular operator system configuration. If, however, the swing range of the support arm or cabinet door is not limited by soft end stops, harsh impact can generate shock loads which can damage the hard disk in the long term. Flash memories do not have bearings or moving reader heads which can damage magnetic memory media. The shock resistance of Compact Flash memory is more than 100 times that of hard disks.
- **As information terminals in public places**
  The modular structure of Windows XP embedded enables specific functions to be masked out. This reduces system resource usage and increases operational reliability by excluding the possibility of operator errors and tampering.
- **A space-saving, high-performance, single-platform solution for control and visualization tasks**
  Smaller systems have the option of implementing the visualization and control tasks compactly in a single device, without an additional control cabinet.

Design

- HW base as Panel PC 477 OEM / 677
- Optional:
  - Combined hard disk and Compact Flash memory
  - Compact or distributed design
  - Installation in operator stations

Technical specifications

All the technical features of the PC 677 and Micro Panel PC have been retained for the embedded versions and further information can be obtained by referring to the corresponding product information.

Deviations:

- When using Windows XP embedded:
  Depending on the generation of the image, functionality may be restricted in comparison with Windows XPpro.
- When using a Compact Flash card:
  Write- and read-data transfer rates are slower than with a hard disk

Versions

Microsoft Windows XP embedded is the standard operating system when using a SIMATIC Panel PC 677 embedded. Hardware-only product solutions without operating systems are possible and support customer flexibility in enabling other embedded operating systems to be used.
The hardware-description components for the Microsoft Target Designer are supplied with the product to facilitate image generation.
The operating-system image can be generated by the customer or by Siemens. Once generated, the image can be installed prior to delivery of every hardware order placed.
The WinCC flexible and WinAC software packages complete the embedded spectrum for the PC 677.Both software products are customized during Siemens generation in order to minimize storage capacity usage on Flash cards.

Ordering data

Selection guide/Quotation preparation

SIMATIC Embedded Panel PCs are modified on the basis of the PC 477 OEM/677 hardware, or possible modifications are outlined below.

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: 20), which is agreed with the customer for the project.

Customized products can only be ordered in conjunction with a product agreement.

Optionen für OEM embedded Panel PC

Bulk storage

- Hard disk
- 256 MB CF module (without optical drive)
- 512 MB CF module (without optical drive)
- 1024 MB CF module (without optical drive)
- Combined hard disk and Flash memory

Operating system

- Without operating system
- Windows XP embedded

HMI software

- SIMATIC WinCC flexible 2004 128 Power Tags (RT)
- SIMATIC WinCC flexible 2004 512 Power Tags (RT)
- SIMATIC WinCC flexible 2004 1024 Power Tags (RT)

Soft PLC software

- WinAC RTX 2005

Type of communication

- Via integrated interfaces
- Industrial communication modules

Preinstalled software

- Software supplied with the product
- Customer-defined SW image installed prior to delivery [1) 2) 3)]
- Siemens-specific SW image installed prior to delivery [1) 2) 3)]

Non-recurring costs

- Customer training for Windows XPe and 5 h hotline support
- Creating a customized image for Windows XPe, if applicable with WinCC flexible 2005 + WinAC RTX 2005
- Creating a customized image for Windows XPe with customer applications

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

A customer-specific order number is allocated during the product agreement process.

More information

Additional information can be found in the Internet under:

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

Contact:

Please contact your local/national Siemens HMI representative.

Panels and Panel PC for the food, beverages and tobacco industries

Overview

Panels and Panel PCs with stainless steel front for the food, beverages and tobacco industry

Panels and Panel PCs with touch screen and stainless steel front have been designed for use in the food, beverages and tobacco industry for operating and monitoring machinery in that sector. They have been developed on the basis of EN 1672-2 "Food Processing Machinery – Safety and Hygiene Requirements".

- Easy cleaning and disinfection:
  - Stainless steel surface with 240 grit
  - Foil over the display cutout tested for resistance to chemicals
  - Minimized slots and gaps
  - Optimized frame profile for liquid runoff
- Shatter-proof display
- Degree of protection IP66

Benefits

- Resistant and rugged stainless steel fronts with a smooth surface for ease of cleaning
- Optimized frame design with low projection from the control cabinet and for liquid runoff
- Minimized slots and gaps as well as increased resistance to detergents and disinfectants
- Non-migrating seal material suitable for use in the food and beverages industry (flat seal in accordance with FDA 21 CFR 177.2006) and shatter-proof display to prevent contamination of foodstuffs
- Device front developed on the basis of EN 1672-2
- Decoration foil tested against chemicals in accordance with DIN 42115, Part 2
- Field-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, beverages and tobacco industry for operation and monitoring at the food processing machinery.

Design

- External dimensions and installation cutout as on the corresponding standard product
- Optimized frame profile and low projection of the device over the control cabinet
- Degree of protection IP66 on front
- Surface with 240 grit
- Minimized slots and gaps
- Decoration foil chemically tested
- Shatter-proof display
- Sealing suitable for food and beverages industry
- Clamping frame on rear for even pressure on the seal

Technical specifications

	Touch Panel TP 170B	Touch Panel TP270	Multi Panel MP 370	Panel PC 677
Display	5,7" color STN Touch	10,4" color STN Touch	15,1" TFT Touch	15,1" TFT Touch
Resolution (pixels)	320 x 240	640 x 480	1024 x 768	1024 x 768
MTBF of background lighting (at 25 °C)	50,000 h	60,000 h	50,000 h	50,000 h
General features				
Processor	RISC 32 bits, 66 MHz	RISC CPU	RISC CPU	Intel Pentium M Technology Intel Celeron M370 1.5 GHz; Intel Pentium M730 1.6 GHz; Intel Pentium M760 2.0 GHz
Memory	768 KB RAM; 23 KB Flash	2048 KB Flash/RAM	12 MB Flash	256 MByte RAM to 2 GByte
Power supply	24 V DC	24 V DC	24 V DC	AC 110V / 230 (autorange) 50 / 60 Hz or DC 24 V
Operating system	Windows CE	Windows CE	Windows CE	Windows 2000 Prof. (Multi-Language), Windows XP Prof. (Multi-Language), opt. without op.sys.
Interfaces	2 x RS 232, 1 x RS 422, 1 x RS 485, 1 x CompactFlash card slot	2 x RS 232 1 x RS 422 1 x RS 485 1 x USB 1 x CompactFlash card slot	1 x TTY / RS 232, 1 x RS 232, 1 x RS 422 7 RS 485, 1 x PC Card Slot, 1 x CompactFlash card slot, 1 x USB, 1 x RJ45	1 x COM 1, V.24, 2 x RJ45 Fast Ethernet, 1 x PROFIBUS/MPI, 4 x USB on rear,, 2 free PCI slots
Special features	-	-	-	Without front USB port
Front				
Material	Stainless steel 1.4301, Polyester film	Stainless steel 1.4301, Polyester film	Stainless steel 1.4301, Polyester film	Stainless steel 1.4301, Polyester film
Surface	Ground to a particle , Size of 240	Ground to a particle , Size of 240	Ground to a particle , Size of 240	Ground to a particle , Size of 240
Seal	EPDM	EPDM	EPDM	EPDM
Special features	Optimized frame design, sloped surfaces	Optimized frame design, sloped surfaces	Optimized frame design, sloped surfaces	Optimized frame design, sloped surfaces
Ambient conditions				
Degree of protection	On the front: IP66, NEMA 4, 4 x and 12; On the rear: IP20	On the front: IP66, NEMA 4, 4 x and 12; On the rear: IP20	On the front: IP66, NEMA 4, 4 x and 12; On the rear: IP20	IP66 on the front, IP20 on the rear
Ambient temperature during operation	Vertical installation: 0 °C to +50 °C Max. angle of inclination +/- 35°: 0 to +40 °C	Vertical installation: 0 °C to +50 °C Max. angle of inclination +/- 35°: 0 to +40 °C	Vertical installation: 0 °C to +50 °C Max. angle of inclination +/- 35°: 0 to +35 °C	+5 to +45 °C for maximum configuration
Relative humidity	Max. 85% (no condensation)	Max. 85% (no condensation)	Max. 85% (no condensation)	5% to 80% at 25 °C (no condensation)
Transport/storage temperature	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
Approval	FM, UL, CSA, CE	FM, UL, cULus, CE, C-TICK	FM Class 1 Div 2, cULus, CE, C-TICK	CE, cULus, FM Class 1 Div 2
Dimensions				
Front panel W x H (in mm)	212 x 156	335 x 275	400 x 310	483 x 310
Mounting cutout W x H (in mm)	198 x 142	310 x 248	368 x 290	450 x 296
External dimensions of clamping frame W x H (in mm)	224 x 168	343 x 283	412 x 322	495 x 322
Weight	Approx. 1.5 kg	Approx. 3.4 kg	Approx. 7 kg	Approx. 15 kg
Special features	Clamping frame on the rear	Clamping frame on the rear	Clamping frame on the rear	Clamping frame on the rear
HMI engineering software	ProTool/Lite and higher, WinCC flexible Compact and higher	ProTool/Lite and higher, WinCC flexible Compact and higher	ProTool and higher, WinCC flexible Standard and higher	ProTool/Pro and higher, WinCC flexible Advanced and higher
HMI runtime software	-	-	-	ProTool/Pro RT and higher, WinCC flexible RT and higher

Panels and Panel PC for the food, beverages and tobacco industries

Ordering data		Order No.
TP 170B color with stainless steel front	B	**6AV6 545-8BC10-0AA0**
Otherwise as 6AV6 545-0BC15-2AX0		
Delivery time		Available ex stock
Minimum order quantity		None; can be ordered individually
Project quantities or ongoing supply		Orders as per customer forecast [1]
Spare parts and repairs		Handled by the Spare Parts Service
TP 270B 10" Touch with stainless steel front	B	**6AV6 545-8CC10-0AA0**
Otherwise as 6AV6 545-0CC10-0AX0		
Delivery time		Available ex stock
Minimum order quantity		None; can be ordered individually
Project quantities or ongoing supply		Orders as per customer forecast [1]
MP 370 15" Touch with stainless steel front	B	**6AV6 545-8DB10-0AA0**
Otherwise as 6AV6 545-0DB10-0AX0		
Delivery time		Available ex stock
Minimum order quantity		None; can be ordered individually
Project quantities or ongoing supply		Orders as per customer forecast [1]
Spare parts and repairs		Handled by the Spare Parts Service
Panel PC 677 15" with stainless steel front	D	**6AV7 802-2....-....**
Otherwise as Panel PC 677 Configurator		Defined preferred versions (MLFB) available soon, other configurations on request
Delivery time		Production and delivery as per order
Minimum order quantity		None; can be ordered individually
Project quantities or ongoing supply		Orders as per customer forecast [1]
Spare parts and repairs		Handled by regional Repair Center

1) For ongoing supply or the delivery of larger quantities to OEM customers, product planning and production are based on customer forecasts.

B) Subject to export regulations: AL: N und ECCN: 5D002ENC3

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

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

Additional information can be found in the Internet under:

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

Overview

- SIMATIC HMI products in customized design are standard devices without technical modifications that have been modified with regard to design. Devices in customized design are manufactured in the standard factory and are subject to the same quality requirements as standard devices.
- The following modifications are possible separately or in combination:
  Version A: Insertion of the company name instead of the Siemens logo, and modification of the type designation
  Version B: Modification of the keyboard colors, labeling of the key symbols, and background color
  Version C: Modification of frame color
- Within the scope of customized design, it is also possible to match different HMI products for color to facilitate a uniform corporate identity. Costs for this are calculated according to overhead.
- The HMI Design Center is responsible for creating the customized design.
  The Design Center offers:
  - Experience in the ergonomic design of human machine interfaces
  - Knowledge of handling graphics and design tools, color tables and character sets
  - Competence in the selection of suitable fonts and standardized symbols for machine operation
  - Short response times

Benefits

- Seamless adaptation to plant design and special operating philosophy of customer
- No reductions in ergonomics compared to the standard products
- The flexible manufacture of the SIMATIC HMI Panels means that even small ordering quantities can be efficiently produced with the customized design on the basis of the standard products.
- Can be replaced with standard devices and are fully compatible with the standard devices in:
  - Functions and interfaces
  - Configuration
  - Housing and mounting dimensions
  - Logistics and services

Customized design

Selection and Ordering data

Micro Panels

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Operator Panel OP 73micro	**6AV6 640-0BA01-0AX0**	A	**6AV6 640-5BA00-XXXX**	50	1 (from LZN)
		B	**6AV6 640-5BA10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 640-5BA20-XXXX**	100	1 (from LZN)
Touch Panel TP 070	**6AV6 545-0AA15-2AX0**	A	**6AV6 545-5AA00-XXXX**	50	1 (from LZN)
		C[4]	**6AV6 545-5AC00-XXXX**	150	1 (from LZN)
Touch Panel TP 170micro	**6AV6 640-0CA01-0AX0**	A	**6AV6 640-5CA00-XXXX**	50	1 (from LZN)
		C[4]	**6AV6 640-5CA20-XXXX**	150	1 (from LZN)
Touch Panel TP 177micro	**6AV6 640-0DA01-0AX0**	A	**6AV6 640-5DA00-XXXX**	50	1 (from LZN)
		B	**6AV6 640-5DA10-XXXX**	50	1 (from LZN)
		C[4]	**6AV6 640-5DA20-XXXX**	150	1 (from LZN)

Mobile Panels

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Mobile Panel 177 DP [3]	**6AV6 645-0AA01-0AX0**	A	**6AV6 645-5AA00-XXXX**	50	25
		B	**6AV6 645-5AA10-XXXX**	50	25
Mobile Panel 177 DP [3] with stop pushbutton	**6AV6 645-0AB01-0AX0**	A	**6AV6 645-5AB00-XXXX**	50	25
		B	**6AV6 645-5AB10-XXXX**	50	25
Mobile Panel 177 DP [3] with stop pushbutton	**6AV6 645-0AC01-0AX0**	A	**6AV6 645-5AC00-XXXX**	50	25
		B	**6AV6 645-5AC10-XXXX**	50	25
Mobile Panel 177 PN [3]	**6AV6 645-0BA01-0AX0**	A	**6AV6 645-5BA00-XXXX**	50	25
		B	**6AV6 645-5BA10-XXXX**	50	25
Mobile Panel 177 PN [3] with stop pushbutton	**6AV6 645-0BB01-0AX0**	A	**6AV6 645-5BB00-XXXX**	50	25
		B	**6AV6 645-5BB10-XXXX**	50	25
Mobile Panel 177 PN [3] with stop pushbutton	**6AV6 645-0BC01-0AX0**	A	**6AV6 645-5BC00-XXXX**	50	25
		B	**6AV6 645-5BC10-XXXX**	50	25

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Selection and Ordering data (continued)

Panels

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Text Display TD17	**6AV3 017-1NE30-0AX0**	A	**6AV3 017-5AA00-XXXX**	25	1 (ab LZN)
		B	**6AV3 017-5AB00-XXXX**	25	1 (from LZN)
		C[4]	**6AV3 017-5AC00-XXXX**	25	1 (from LZN)
Operator Panel OP3	**6AV3 503-1DB10**	A	**6AV3 503-5DB00-XXXX**	100	1 (from LZN)
		B	**6AV3 503-5DB10-XXXX**	100	1 (from LZN)
		C[4]	**6AV3 503-5DB20-XXXX**	200	1 (from LZN)
Operator Panel OP7/DP	**6AV3 607-1JC00-0AX1**	A	**6AV3 607-5AA00-XXXX**	50	1 (from LZN)
		B	**6AV3 607-5AB00-XXXX**	50	1 (from LZN)
		C[4]	**6AV3 607-5AC00-XXXX**	250	1 (from LZN)
Operator Panel OP7/DP	**6AV3 607-1JC20-0AX1**	A	**6AV3 607-5BA00-XXXX**	50	1 (from LZN)
		B	**6AV3 607-5BB00-XXXX**	50	1 (from LZN)
		C[4]	**6AV3 607-5BC00-XXXX**	250	1 (from LZN)
Operator Panel OP7/DP12	**6AV3 607-1JC30-0AX1**	A	**6AV3 607-5CA00-XXXX**	50	1 (from LZN)
		B	**6AV3 607-5CB00-XXXX**	50	1 (from LZN)
		C[4]	**6AV3 607-5CC00-XXXX**	250	1 (from LZN)
Operator Panel OP17/DP	**6AV3 617-1JC00-0AX0**	A	**6AV3 617-5AA00-XXXX**	25	1 (from LZN)
		B	**6AV3 617-5AB00-XXXX**	25	1 (from LZN)
		C[4]	**6AV3 617-5AC00-XXXX**	100	1 (from LZN)
Operator Panel OP17/DP	**6AV3 617-1JC20-0AX0**	A	**6AV3 617-5BA00-XXXX**	25	1 (from LZN)
		B	**6AV3 617-5BB00-XXXX**	25	1 (from LZN)
		C[4]	**6AV3 617-5BC00-XXXX**	100	1 (from LZN)
Operator Panel OP17/DP12	**6AV3 617-1JC30-0AX1**	A	**6AV3 617-5CA00-XXXX**	25	1 (from LZN)
		B	**6AV3 617-5CB00-XXXX**	25	1 (from LZN)
		C[4]	**6AV3 617-5CC00-XXXX**	100	1 (from LZN)
Operator Panel OP 73	**6AV6 641-0AA01-0AX0**	A	**6AV6 641-5AA00-XXXX**	50	1 (from LZN)
		B	**6AV6 641-5AA10-XXXX**	50	1 (from LZN)
		C[4]	**6AV6 641-5AA20-XXXX**	100	1 (from LZN)
Operator Panel OP 77A	**6AV6 641-0BA01-0AX0**	A	**6AV6 641-5BA00-XXXX**	50	1 (from LZN)
		B	**6AV6 641-5BA10-XXXX**	50	1 (from LZN)
		C[4]	**6AV6 641-5BA20-XXXX**	250	1 (from LZN)
Operator Panel OP 77B	**6AV6 641-0CA01-0AX0**	A	**6AV6 641-5CA00-XXXX**	50	1 (from LZN)
		B	**6AV6 641-5CA10-XXXX**	50	1 (from LZN)
		C	**6AV6 641-5CA20-XXXX**	250	1 (from LZN)

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Customized design

Selection and Ordering data (continued)

Panels (continued)

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Touch Panel TP 170A	**6AV6 545-0BA15-2AX0**	A	**6AV6 545-5BA00-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 545-5BC00-XXXX**	150	1 (from LZN)
Touch Panel TP 170B mono	**6AV6 545-0BB15-2AX0**	A	**6AV6 545-5CA00-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 545-5CC00-XXXX**	150	1 (from LZN)
Touch Panel TP 170B color	**6AV6 545-0BC15-2AX0**	A	**6AV6 545-5DA00-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 545-5DC00-XXXX**	150	1 (from LZN)
Touch Panel TP 177A	**6AV6 642-0AA11-0AX0**	A	**6AV6 642-5AA00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5AA10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5AA20-XXXX**	150	1 (from LZN)
Touch Panel TP 177B color [3]	**6AV6 642-0BA01-1AX0**	A	**6AV6 642-5BA00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5BA10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5BA20-XXXX**	150	1 (from LZN)
Touch Panel TP 177B PN blue mode [3]	**6AV6 642-0BB01-1AX0**	A	**6AV6 642-5BB00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5BB10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5BB20-XXXX**	150	1 (from LZN)
Touch Panel TP 177B DP blue mode [3]	**6AV6 642-0BC01-1AX0**	A	**6AV6 642-5BC00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5BC10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5BC20-XXXX**	150	1 (from LZN)
Operator Panel OP 170B	**6AV6 542-0BB15-2AX0**	A	**6AV6 542-5BB00-XXXX**	50	1 (from LZN)
		B	**6AV6 542-5BB10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 542-5BB20-XXXX**	100	1 (from LZN)
Operator Panel OP 177B color [3]	**6AV6 642-0DA01-1AX0**	A	**6AV6 642-5DA00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5DA10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5DA20-XXXX**	100	1 (from LZN)
Operator Panel OP 177B PN blue mode [3]	**6AV6 642-0DB01-1AX0**	A	**6AV6 642-5DB00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5DB10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5DB20-XXXX**	100	1 (from LZN)
Operator Panel OP 177B DP blue mode [3]	**6AV6 642-0DC01-1AX0**	A	**6AV6 642-5DC00-XXXX**	50	1 (from LZN)
		B	**6AV6 642-5DC10-XXXX**	50	1 (from LZN)
		C [4]	**6AV6 642-5DC20-XXXX**	100	1 (from LZN)
Touch Panel TP 270 6“	**6AV6 545-0CA10-0AX0**	A	**6AV6 545-5FA00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-5FA10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-5FA20-XXXX**	48 [2]	1 (from LZN)
Touch Panel TP 270 10“	**6AV6 545-0CC10-0AX0**	A	**6AV6 545-5FB00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-5FB10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-5FB20-XXXX**	48 [2]	1 (from LZN)
Operator Panel OP 270 6“	**6AV6 542-0CA10-0AX0**	A	**6AV6 542-5FA00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 542-5FA10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 542-5FA20-XXXX**	48 [2]	1 (from LZN)
Operator Panel OP 270 10“	**6AV6 542-0CC10-0AX0**	A	**6AV6 542-5FB00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 542-5FB10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 542-5FB20-XXXX**	48 [2]	1 (from LZN)

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Selection and Ordering data (continued)

Multi Panels

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Multi Panel MP 270B 6" Touch	**6AV6 545-0AH10-0AX0**	A	**6AV6 545-5FD00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-5FD10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-5FD20-XXXX**	48 [2]	1 (from LZN)
Multi Panel MP 270B 10“ Touch	**6AV6 545-0AG10-0AX0**	A	**6AV6 545-5FC10-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-5FC10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-5FC20-XXXX**	48 [2]	1 (from LZN)
Multi Panel MP 270B 10“ Key	**6AV6 542-0AG10-0AX0**	A	**6AV6 542-5FC10-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 542-5FC10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 542-5FC20-XXXX**	48 [2]	1 (from LZN)
Multi Panel MP 370 Touch	**6AV6 545-0DA10-0AX0**	A	**6AV6 545-5EA00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-5EA10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-5EA20-XXXX**	48 [2]	1 (from LZN)
Multi Panel MP 370 Key	**6AV6 542-0DA10-0AX0**	A	**6AV6 542-5EA00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 542-5EA10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 542-5EA20-XXXX**	48 [2]	1 (from LZN)
Multi Panel MP 370 15“ Touch	**6AV6 545-0DB10-0AX0**	A	**6AV6 545-0EB00-XXXX**	24 [2]	1 (from LZN)
		B	**6AV6 545-0EB10-XXXX**	24 [2]	1 (from LZN)
		C [4]	**6AV6 545-0EB20-XXXX**	48 [2]	1 (from LZN)

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Customized design

Selection and Ordering data (continued)

C7

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
C7-613	**6ES7 613-1CA00-0AE3**	A	**6ES7 613-1SA00-XXXX**	25	1 (from LZN)
		B	**6ES7 613-1SB00-XXXX**	25	1 (from LZN)
		C [4]	**6ES7 613-1SC00-XXXX**	50	1 (from LZN)
C7-633 DP	**6ES7 633-2BF02-0AE3**	A	**6ES7 633-1SA02-XXXX**	50	1 (from LZN)
		B	**6ES7 633-1SB02-XXXX**	50	1 (from LZN)
		C [4]	**6ES7 633-1SC02-XXXX**	50	1 (from LZN)
C7-633 /P	**6ES7 633-1DF02-0AE3**	A	**6ES7 633-1SA02-XXXX**	50	1 (from LZN)
		B	**6ES7 633-1SB02-XXXX**	50	1 (from LZN)
		C [4]	**6ES7 633-1SC02-XXXX**	50	1 (from LZN)
C7-635 Key	**6ES7 635-2EC00-0AE3**	A	**6ES7 633-2SA01-XXXX**	25	1 (from LZN)
		B	**6ES7 633-2SB01-XXXX**	25	1 (from LZN)
		C [4]	**6ES7 633-2SC01-XXXX**	50	1 (from LZN)
C7-635 Touch	**6ES7 635-2EB01-0AE3**	A	**6ES7 635-3SA01-XXXX**	25	1 (from LZN)
		B	**6ES7 635-3SB01-XXXX**	25	1 (from LZN)
		C [4]	**6ES7 635-3SC01-XXXX**	50	1 (from LZN)
C7-636 Key	**6ES7 636-2EC00-0AE3**	A	**6ES7 636-2SA00-XXXX**	25	1 (from LZN)
		B	**6ES7 636-2SB00-XXXX**	25	1 (from LZN)
		C [4]	**6ES7 636-2SC00-XXXX**	50	1 (from LZN)
C7-636 Touch	**6ES7 636-2EB00-0AE3**	A	**6ES7 636-3SA00-XXXX**	25	1 (from LZN)
		B	**6ES7 636-3SB00-XXXX**	25	1 (from LZN)
		C [4]	**6ES7 636-3SC00-XXXX**	50	1 (from LZN)

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Selection and Ordering data (continued)

Panel PC

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Panel PC 477 12“ Key, 15” Key, 12“ Touch 15“ Touch, 19” Touch [3]	**depending on the configuration**	A	**6AV745X-4AA00-XXXX**	25	5
		B	**6AV745X-4AB00-XXXX**	25	5
		C[4]	**6AV745X-4AB00-XXXX**	50	10
Panel PC 577 12“ Key, 15” Key, 12“ Touch 15“ Touch, 19” Touch [3)3)]	**depending on the configuration**	A	**6AV745X-2AA00-XXXX**	25	5
		B	**6AV745X-2AB00-XXXX**	25	5
		C[4]	**6AV745X-2AB00-XXXX**	50	10
Panel PC 677 12“ Key, 15” Key, 12“ Touch 15“ Touch, 19” Touch	**depending on the configuration**	A	**6AV745X-0AA00-XXXX**	25	5
		B	**6AV745X-0AB00-XXXX**	25	5
		C[4]	**6AV745X-0AB00-XXXX**	50	10
Panel PC 877 12“ Key, 15” Key, 12“ Touch 15“ Touch, 19” Touch	**depending on the configuration**	A	**6AV745X-1AA00-XXXX**	25	5
		B	**6AV745X-1AB00-XXXX**	25	5
		C[4]	**6AV745X-1AB00-XXXX**	50	10

Flat Panels

Device type	Order No. of associated standard device	Design version	Order No. of associated design device [1]	Minimum order quantity	
				per year	per order
Flat Panel 12“	**depending on the configuration**	A	**6AV7450-6AA00-XXXX**	25	5
		B	**6AV7450-6AB00-XXXX**	25	5
		C[4]	**6AV7450-6AB00-XXXX**	50	10
Flat Panel 15“	**depending on the configuration**	A	**6AV7452-6AA00-XXXX**	25	5
		B	**6AV7452-6AB00-XXXX**	25	5
		C[4]	**6AV7452-6AB00-XXXX**	50	10
Flat Panel 19“ [3]	**depending on the configuration**	A	**6AV7454-6AA00-XXXX**	25	5
		B	**6AV7454-6AB00-XXXX**	25	5
		C[4]	**6AV7454-6AB00-XXXX**	50	10

1) XXXX indicates customer code, assigned when order is placed
2) Products must always be ordered in multiples of "6" (e.g., 12, 18, 24 etc.)
3) Start of delivery 2 months after start of delivery of standard device
4) Possible color variants on request, if the plastic frame is being dyed, UL/CSA certification must be verified on a case-by-case basis

Customized design

More information

Costs/Discounts

Customized design devices are subject to a premium in addition to the standard device price.

One-off costs for design and implementation in the plant are added to the adapted unit price. The extent of these costs will vary depending on device and design.

Minimum quantities

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.

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.

Repairs/Stocking of spare parts

Only identified repairs are carried out.

On completion of delivery, the customized spare parts required (device fronts) must be stored and made available by the customer.

Contacts

Please contact your local/national Siemens HMI representative (visit our Internet site for more information).

Additional information can be found in the Internet under:

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

Overview

- 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.
- 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
  - Number, size and layout of keys
  - Display technologies, sizes and resolutions
  - Options such as direct key modules
  - Distributed configuration of Panel PCs: Up to 500 m
  - Housings for desktop 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 customer software packages - turnkey products

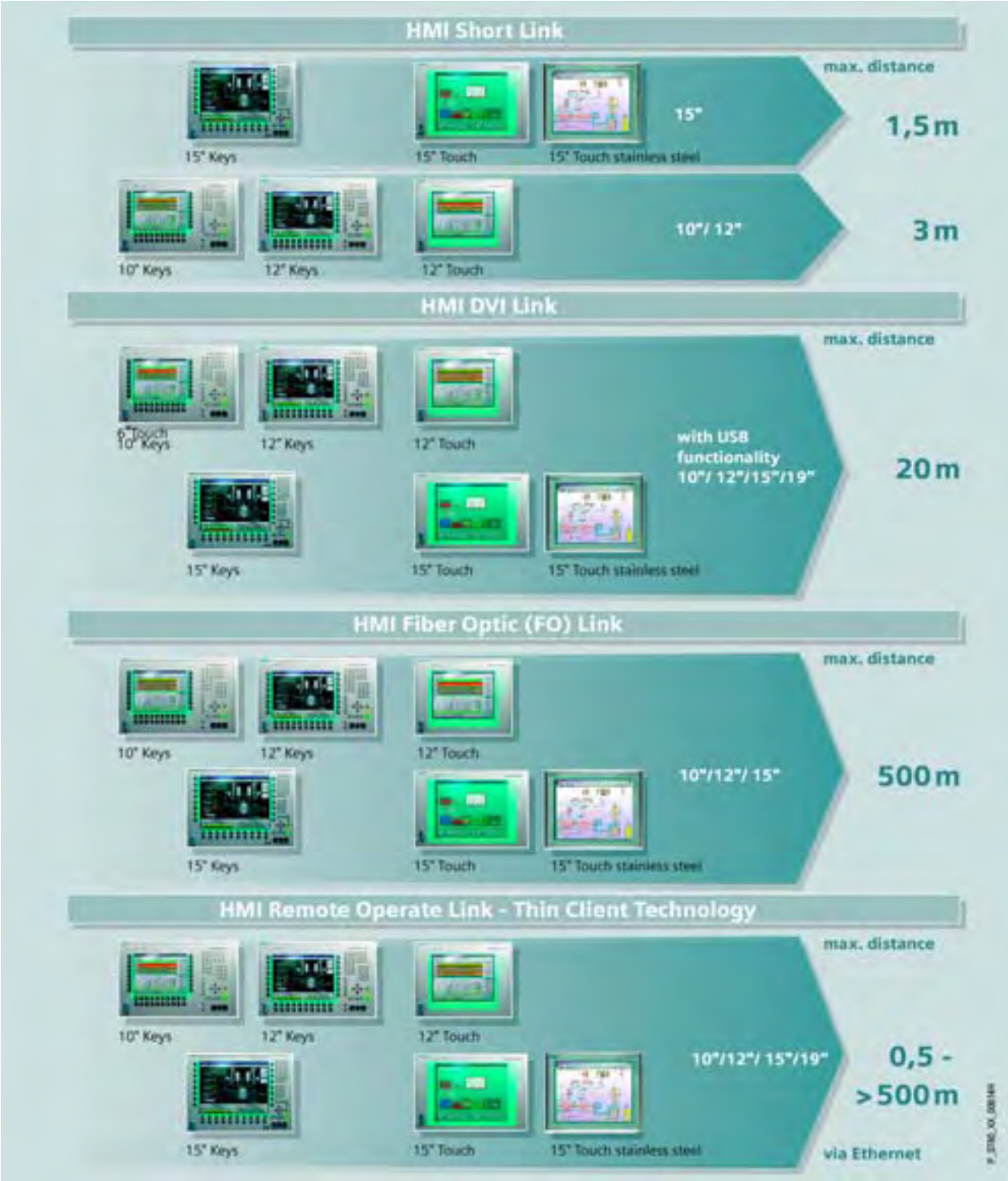
Benefits

- Solutions for OEM customers suitable for complex industrial automation tasks that cannot be implemented using standard products.
- 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.

OEM products

Application

Examples for OEM products - Possible applications for HMI Links

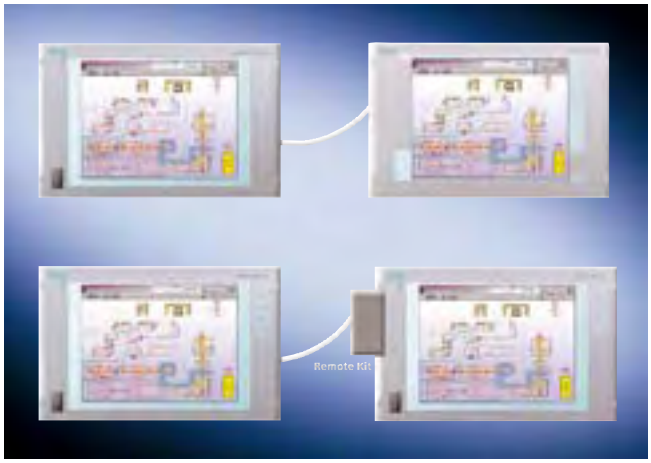


Application

Multi-user system with Panel PCs

Panel PC with second screen

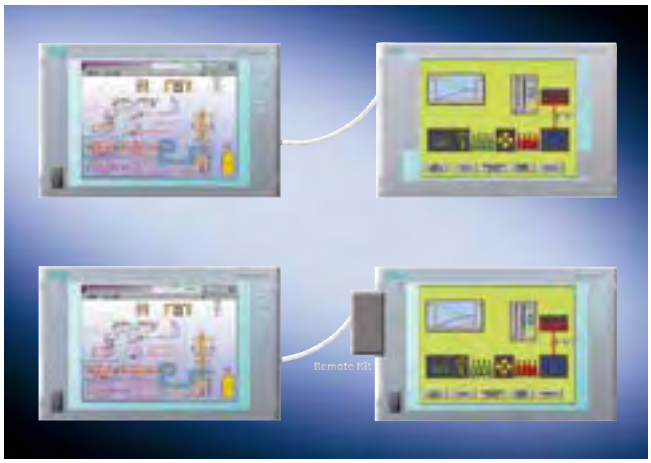
- Without operational locking mechanism
- Same screen content on Panel PC and Flat Panel / or second Panel PC front panel
- Same screen resolution
- Without server operating system



Panel PC connected to Flat Panel or second Panel PC

2-station system with Panel PC and Flat Panels or second Panel PC front panel

- Without operational locking mechanism
- In a WinCC application with different screen content
- Same screen resolution
- Without server operating system



Panel PC connected to Flat Panel or second Panel PC

Multi-user system with Panel PCs for up to 5 operator stations based on HMI FO Link

- With operational locking mechanism
- In a software application with identical screen content
- Same screen resolution
- Without server operating system

Multi-terminal operation with Panel PC

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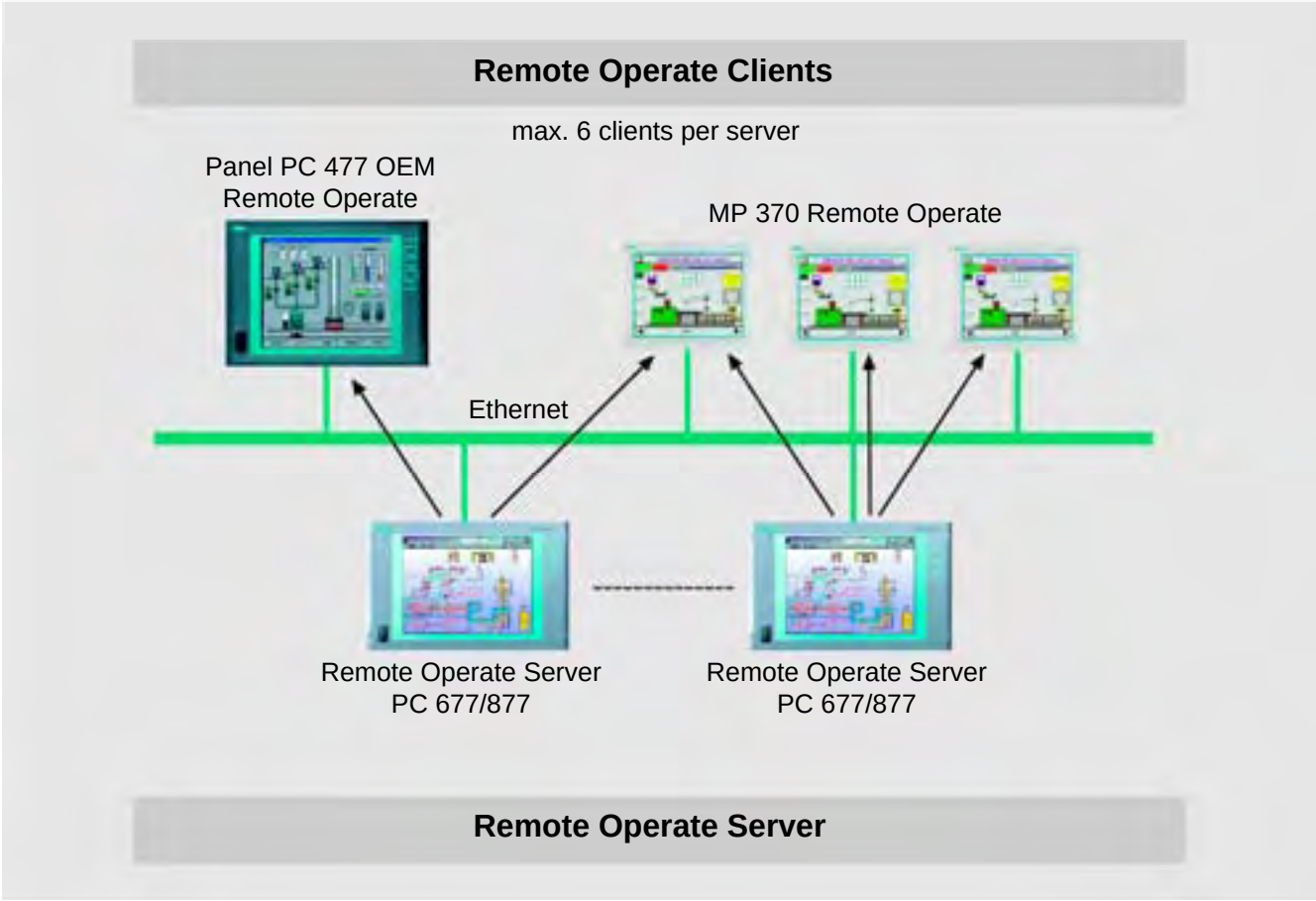
OEM products

Application (continued)

Multi-user system with Panel PCs for up to 6 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



Panel PC connected to Thin Clients

6

More information

Product specification/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)
- The following points are defined in the product agreement:
  - Delivery and pricing
  - Logistics - annual volume, purchase quantity, delivery volumes
  - Spare parts
  - Service

Note:
Customized products can only be ordered in conjunction with a product agreement.

Customized OEM products are developed and produced in various stages in accordance with quality standards. Prototypes are created to test products.

Once a prototype has been approved by the customer, it undergoes certification and production can get underway.

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.

Contacts

Please contact your local/national Siemens HMI representative

Additional information can be found in the Internet under:

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

Overview

SIMATIC HMI operator stations are prefabricated ready-to-operate solutions featuring SIMATIC Panels or Panel PCs and Flat Panels.

Operator stations for SIMATIC Panels and Multi Panels and Flat Panels

Configuration 1

Configuration 2

Configuration 3

Operator stations for SIMATIC Panel PC

Configuration 1

Configuration 2

Configuration 3

Configuration 4

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 versions for the food, beverages and tobacco industries

Design

The HMI operator station concept is based on a modular design where HMI devices can be installed function-oriented in selected housings.

- HMI device encapsulation for all-round protection (IP65)
- Can be mounted on a supporting foot, 500 mm support arm or 750 mm support arm
- Rotation possible using adjusting elements
- Possible connection of external keypad and mouse
- Installation options for specific hardware components

Operator stations for SIMATIC Panels

Versions for SIMATIC Multi Panel, Operator Panel, Touch Panel and Flat Panel:

- Compact design thanks to to low mounting depth
- Many installation options thanks to low weight
- Maximum housing depth of 99 mm
- **Version 1**:
  Pure enclosure
- **Version 2**:
  Enclosure with single-row operator panel
- **Version 3**:
  Enclosure with double-row operator panel

All versions are designed for ambient temperatures up to 40 °C.

Operator stations for SIMATIC Panel PCs

Versions for SIMATIC Panel PCs (PC477 OEM, PC677/877)

- Rugged, can be used in harsh industrial environments
- Maximum housing depth of 180 mm
- **Version 1**:
  Pure enclosure
- **Version 2**:
  Enclosure with single-row operator panel
- **Version 3**:
  Enclosure with double-row operator panel
- **Version 4**:
  Enclosure with double-row operator panel and keypad drawer

Ambient temperature of operator station

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 34 °C up to 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

Technical specifications

	SIMATIC Panels		
	Configuration 1	**Configuration 2**	**Configuration 3**
Housing data			
Housing dimensions (W x H x D in mm)			
• TP 270 10“ Touch	416 x 348 x 99	416 x 462 x 99	416 x 528 x 99
• OP 270 10” Key	564 x 383 x 99	564 x 497 x 99	564 x 563 x 99
• MP 270B 10” Key	564 x 383 x 99	564 x 497 x 99	564 x 563 x 99
• MP 270B 10” Touch	416 x 348 x 99	416 x 462 x 99	416 x 528 x 99
• MP 370 12” Key	564 x 383 x 99	564 x 497 x 99	564 x 563 x 99
• MP 370 12” Touch	416 x 348 x 99	416 x 462 x 99	416 x 528 x 99
• MP 370 15“ Touch	481 x 383 x 99	481 x 497 x 99	481 x 563 x 99
Weight in kg (min.-max.)	9 - 11	9 - 11	10 - 12
Material	Aluminum	Aluminum	Aluminum
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65
Approval	CE	CE	CE
Housing color	RAL 9023	RAL 9023	RAL 9023
Control elements	-	3SB, single-row	3SB, double-row
Housing ambient temperature	40 °C	40 °C	40 °C
Housing locking device	Double-bit key 3	Double-bit key 3	Double-bit key 3
24 V fan	Yes	Yes	Yes
Support arm mounting (optional)	Yes	Yes	Yes
Floor mounting (optional)	Yes	Yes	Yes

Technical specifications (continued)

	SIMATIC Flat Panel			
	Configuration 1	**Configuration 2**	**Configuration 3**	**Configuration 4**
Housing data				
Housing dimensions (W x H x D in mm)				
• FP 12" display unit without operator function	595 x 421 x 99	595 x 535 x 99	595 x 601 x 99	512 x 715 x 99
• FP 15" display unit without operator function	595 x 407 x 99	595 x 521 x 99	595 x 587 x 99	595 x 701 x 99
• FP 19" display unit without operator function	595 x 497 x 99	595 x 566 x 99	595 x 631 x 99	595 x 746 x 99
• FP 12“ - Touch	595 x 421 x 99	595 x 535 x 99	595 x 601 x 99	512 x 715 x 99
• FP 15“ - Touch	595 x 407 x 99	595 x 521 x 99	595 x 587 x 99	595 x 701 x 99
• FP 19“ - Touch	595 x 497 x 99	595 x 611 x 99	595 x 677 x 99	595 x 791 x 99
Weight in kg (min.-max.)	19,5	22	28	32
Material	Aluminum	Aluminum	Aluminum	Aluminum
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65	IP65
Approval	CE	CE	CE	CE
Housing color	RAL 9023	RAL 9023	RAL 9023	RAL 9023
Control elements	-	3SB, single-row	3SB, double-row	3SB, double-row
Keyboard	-	-	-	In keyboard drawer
Housing ambient temperature	40 °C	40 °C	40 °C	40 °C
Housing locking device	Double-bit key 3	Double-bit key 3	Double-bit key 3	Double-bit key 3
24 V fan	Yes	Yes	Yes	Yes
Support arm mounting (optional)	Yes	Yes	Yes	Yes
Floor mounting (optional)	Yes	Yes	Yes	Yes

Technical specifications (continued)

	SIMATIC Panel PC Configuration 1	Configuration 2	Configuration 3	Configuration 4
Housing data				
Housing dimensions (W x H x D in mm)				
• PC 670 10“ Key	595 x 407 x 180	595 x 521 x 180	595 x 587 x 180	595 x 701 x 180
• PC 670/677 12“ Key	595 x 407 x 180	595 x 521 x 180	595 x 587 x 180	595 x 701 x 180
• PC 670/677 15“ Key	595 x 451 x 180	595 x 565 x 180	595 x 631 x 180	595 x 745 x 180
• PC 670/677 12“ Touch	595 x 421 x 180	595 x 535 x 180	595 x 601 x 180	595 x 715 x 180
• PC 670/677 15“ Touch	595 x 407 x 180	595 x 521 x 180	595 x 587 x 180	595 x 701 x 180
• PC 677 19“ Touch	595 x 497 x 180	595 x 611 x 180	595 x 677 x 180	595 x 791 x 180
Weight in kg (min.-max.)	23 - 27	24 - 28	26 - 30	27 - 31
Material	Aluminum	Aluminum	Aluminum	Aluminum
Surface treatment	Natural anodizing	Natural anodizing	Natural anodizing	Natural anodizing
Degree of protection	IP65	IP65	IP65	IP65
Approval	CE	CE	CE	CE
Housing color	RAL 9023	RAL 9023	RAL 9023	RAL 9023
Operator controls	-	3SB, single-row	3SB, double-row	3SB, double-row
Keyboard	-	-	-	In keyboard drawer
Housing ambient temperature without supplementary boards PC670	38 °C	39 °C	39 °C	39 °C
Housing ambient temperature without supplementary boards PC677	40 °C	40 °C	40 °C	40 °C
Housing ambient temperature under partial load PC670	35 °C	36 °C	36 °C	37 °C
Housing ambient temperature under partial load PC677	38 °C	39 °C	39 °C	40 °C
Housing ambient temperature under full load PC670	33 °C	34 °C	34 °C	36 °C
Housing ambient temperature under full load PC677	36 °C	37 °C	37 °C	39 °C
Housing locking device	Double-bit key 3	Double-bit key 3	Double-bit key 3	Double-bit key 3
24 V fan	Yes	Yes	Yes	Yes
Support arm mounting (optional)	Yes	Yes	Yes	Yes
Floor mounting (optional)	Yes	Yes	Yes	Yes

Other Panels, Panel PCs and Panel PCs for the food industry on request

More information

Additional information can be found in the Internet under:

Link to the SIMATIC HMI selection guide – operator station concept:

http://intra1.nbgm.siemens.com/customizecenter/index.php3

Open Platform Program

Overview

- The Open Platform Program offers diverse methods for effective and low-cost development of flexible software solutions
- On the basis of the Windows CE products from TP 170B, customized software solutions can be developed, software products of other manufacturers can be used, or functions and objects can be added to ProTool or WinCC flexible. The flexibility and versatility of the PC environment is then opened up to panels and multi panels.
- A huge potential for implementing customized software solutions is released with SIMATIC ProTool or WinCC flexible, the standard configuring software, the open operating system Windows CE and a discretely graded range of hardware platforms.

Benefits

The Open Platform program provides customized software solutions based on a tried and tested building block principle:

- Low development outlay since based on standards
- Fast time-to-market with the resulting competitive advantages
- Use of tried and tested components with well-proven industrial functionality

Application

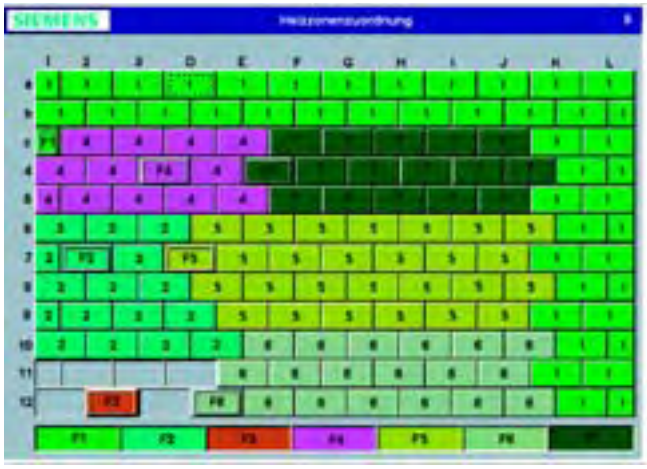
Use of the open operating system Windows CE opens up diverse possibilities for integrating functions such as:

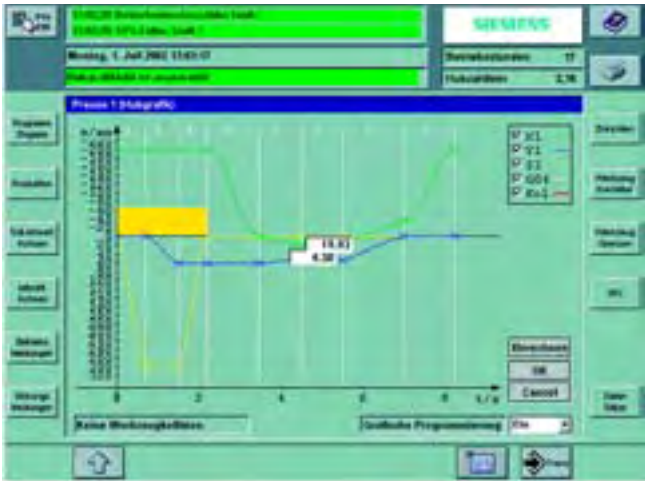
- Simple data exchange with other Windows-based systems
- Connection to central databases
- Multimedia supplements
- Access to central documents over the Internet/intranet.
- Communication with special I/O devices (e.g. barcode scanners)

All Windows CE-based SIMATIC Panels offer a low-cost platform for customized OEM software solutions on a reliable industrial hardware base.

Function

In order to meet specific requirements, non-Siemens products, user-specific applications or ProTool or WinCC flexible can be used.





SIMATIC ProTool or WinCC flexible, the standard configuring software for the SIMATIC HMI Panel family, support 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 ProTool or 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 ProTool/Pro or WinCC flexible for the development of customized software solutions for PC target platforms.

More information

Additional information can be found in the Internet under:

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

6

Industrial
LCD monitors

7

SIMATIC Flat Panels

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

Benefits

- Rugged industrial design:
  - Fail-safe and long life thanks to high vibration and impact strength as well as extremely high electromagnetic compatibility
  - Front of casing to IP65/NEMA4 degree of protection, resistant to dust and humidity
  - Scratch-proof, non-reflecting glass pane providing excellent mechanical protection against pressure and scratching
  - Complies with the "Industry" CE standard
- Wide range of versions
- No X-ray emission
- Low power consumption
- Less tiring to work with:
  - Wide reading angles of up to 170° horizontally and vertically
  - Clearly focused, high-contrast image display
  - No flicker, uniform brightness
  - Automatic picture adjustment (Auto Adjust)
- Configuration using On Screen Display (OSD)
- Low 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 the following sizes:
  - 12“ with 800 x 600 pixels
  - 15“ with 1024 x 768 pixels
  - 19“ with 1280 x 1024 pixels
- 256,000 to 16, 000, 000 colors
- Non-reflective, hardened glass pane
- Simple display or with Touch screen option
- 24 V DC power supply, optionally 110/230 V AC (50/60 Hz)
- Can be installed up to 5 m away from computer unit, as standard

Included in scope of supply:

- Power cable for variants with 230 V AC power supply
- Connecting cable, 1.8 m long
- Instruction manual in 2 languages (English and German)
- CD-ROM with hardware drivers and documentation

Points to note when changing over from CRT to LCD monitors

Resolution:
On selecting the appropriate LCD monitor, it must be ensured that the resolution of the LCD monitor matches the resolution of the visualization application.

Technical specifications

Type	12" Flat Panel	15" Flat Panel	19" Flat Panel
General features			
• Can be separate from the computer	1.8 to 5 m	1.8 to 5 m	1.8 to 5 m
• On-screen display (OSD) configuration	Yes	Yes	Yes
• Anti-reflex and hardened mineral glass screen	Yes	Yes	Yes
• Power switch	Rear	Rear	Rear
• DC power supply	24 V	24 V	24 V
• AC power supply (optional)	110/230 V AC	110/230 V AC	110/230 V AC
• Frequency/Power consumption	47 - 63 Hz/50 VA	47 - 63 Hz/50 VA	47 - 63 Hz/50 VA
• Degree of protection to EN 60 529	IP65/NEMA4	IP65/NEMA4	IP65/NEMA4
• Vibration load during operation	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)
• Shock load during operation	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)
• EMC	CE	CE	CE
• Ambient temperature during operation	0 to +45 °C	0 to +45 °C	0 to +45 °C
Certification	cULus, (UL508) CE	cULus, (UL508) CE	cULus, (UL508) CE
Display			
• Screen diagonal in inches	12" TFT	15" TFT	19" TFT
• Optimum resolution (pixels)	800 x 600	1024 x 768 (15")	1280 x 1024 (19")
• Brightness/Contrast (typical)	> 280 cd/m^2/400:1	> 280 cd/m^2/400:1	> 280 cd/m^2/400:1
• Viewing angle (H x V)	170° x 170°	170° x 170°	170° x 170°
• Number of colors	256 K - 16 mill.	256 K - 16 mill.	256 K - 16 mill.
• MTBF of background lighting (at 25 °C)	> 50,000 h	> 50,000 h	> 50,000 h
Control elements			
• Touch screen (analog resistive)	Optional	Optional	Optional
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
• Digital DVI-D interface	Yes	Yes	Yes
• USB interface for touch screen	Optional	Optional	Optional
Dimensions			
• External dimensions W x H (mm)	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 400
• Mounting cutout/depth W x H x D (mm)	368 x 290 x 49	450 x 290 x approx. 51	449 x 380 x approx. 53
Weight (kg)	4.5 kg	5 kg	6 kg

SIMATIC Flat Panels

Ordering data

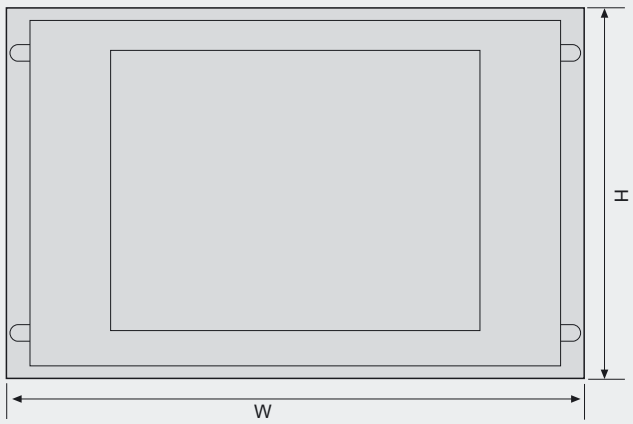
		Order No.
Standard configuration		
Flat Panel	A	**6AV7 861-■■■00-0AA0**
Display size		
• 12“ unit		**1**
• 15“ unit		**2**
• 19“ unit		**3**
Operator functionality:		
• Display devices without operator functionality		**A**
• Touch		**T**
Power supply		
• 24 V DC		**A**
• 120/240 V AC (50/60 Hz)		**B**

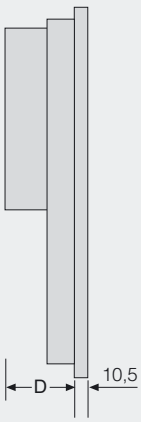
	Order No.
Accessories	
Connecting cables	
• Video (VGA)	
- 3.0 m	**6AV7 860-0AH30-0AA0**
- 5.0 m	**6AV7 860-0AH50-0AA0**
• Video (DVI-D)	
- 3.0 m	**6AV7 860-0BH30-0AA0**
- 5.0 m	**6AV7 860-0BH50-0AA0**
• USB for optional touch screen	
- 3.0 m	**6AV7 860-0CH30-0AA0**
- 5.0 m	**6AV7 860-0CH50-0AA0**

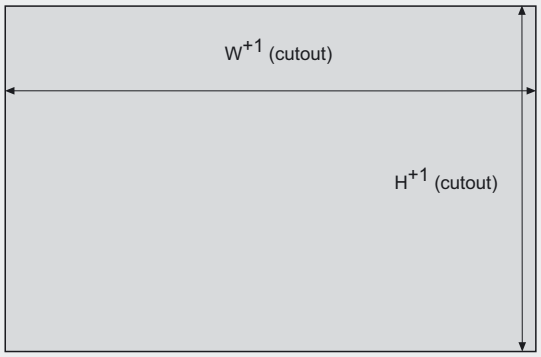
A) Subject to export regulations: AL: N and ECCN: EAR99H

Dimension drawings

Dimensions in mm







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

Installation cutout	W+1	H+1	D
Touch panels			
12"	368	290	50
15"	450	290	54
19"	450	380	56

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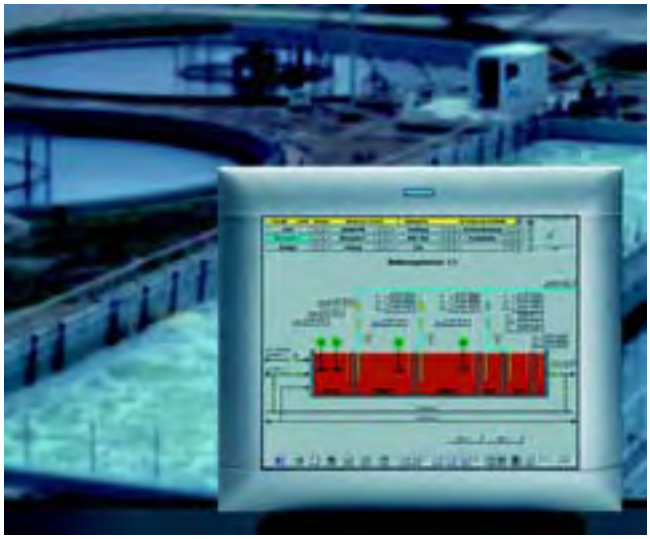
Overview



Industrial LCD monitors are used in applications in which the display panel has to be installed at a distance from the computer unit for technical or economical reasons.

The SCD 1297, SCD 1597, SCD 1897/1898 and SCD 19101-D monitors are LCD monitors in rugged, industrial design.

Installation types:

- Desktop models
- Rack-mounting units (for switchgear cabinets, control desks and gantries)
- 19" rack-mounting units (for 19" racks)

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

Failure safety, long service life, industry-compatible design are the demands placed on LCD monitors in industrial applications. All variants of the industrial LCD monitors satisfy these requirements, so they also comply with the CE standard for industry. The industrial LCD monitors can optionally also be supplied with 24 V DC in addition to the conventional 110 V AC or 230 V AC supply. Vibration up to 1 g and impact up to 5 g present no problems for the industrial LCD monitors. The extended temperature range of the devices is a further safety aspect. The industrial LCD monitors are fitted with a glass screen for a high degree of mechanical protection against pressure, longer service life thanks to protection against scratches and reading clarity. EMC disturbance and emitted interference are avoided thanks to the industrial TFT display.

Greater flexibility thanks to greater variety

The industrial LCD monitors are available with 12", 15", 18" and 19" screens as built-in, rack-mounted and desktop units. The monitors can even be installed up to 20 m away from the computer unit. There is a choice of touch-screen or keyboard operation.

Improvements in quality of work

The industrial LCD monitors have a completely static display, which means no flickering. The brightness and contrast ranges put every conventional CRT monitor in the shade. These monitors set new standards in uniform brightness, focus and lack of reflection. With reading angles of up to 170 ° horizontally and vertically, you will always have one eye on the process.

	SCD 1297	SCD 1597	SCD 1897 / SCD 1898	SCD 19101-D/-DT
Versions				
• Desktop models	–	•	•	•
• Rack-mounting units (for switchgear cabinets, control desks and gantries)	•	•	•	–
• 19" rack-mounting units (for 19" racks)	•	•	•	–
Display	12" TFT	15" TFT	18" TFT	19" TFT
• Resolution	800 x 600	1024 x 768	1280 x 1024	1280 x 1024
• Colors	256 K	16 million	16 million	16 million
• Viewing angle (H x V)	120° x 100°	130° x 110°	170° x 170°	170° x 170°
Operation (optional)				
Touch operation	•	•	•	•
Key/mouse operation	•	•	–	–
Ambient conditions				
• Degree of protection to EN 60 529	IP65 (rack-mounting unit), IP54 (19" rack-mounting unit)	IP20 (desktop unit), IP65 (rack-mounting unit), IP54 (19" rack-mounting unit)	IP20 (desktop unit), IP65 (rack-mounting unit), IP54 (19" rack-mounting unit)	IP20 (desktop unit)
• Vibration load during operation	1 g	1 g	1 g	1 g
• Shock loading during operation	5 g	5 g	5 g	5 g

• Possible
– Not possible

12" devices

Overview

- The SCD 1297 Monitors are rugged, industry standard LCD monitors
- They can be used in any applications in which picture tube monitors (CRT monitors) are used
- Built-in versions:
  - Built-in units (for control cabinets, consoles and booms)
  - 19" rack-mounted units
- Type of operator control:
  - Devices for display only
  - Devices for touch operation
  - Devices for keyboard/mouse operation (only 19" rack-mounted units)

Benefits

- Rugged industrial-type:
  - Fail-safe and long life thanks to high vibration and impact strength as well as extremely high electromagnetic compatibility
  - Casing to degree of protection IP65, resistant to dust and humidity
  - Glass pane providing excellent mechanical protection against pressure and scratching
  - Complies with the "Industry" CE standard
- Wide range of versions
- No X-ray emission
- Low power consumption
- Less tiring to work with:
  - Wide reading angles of up to 120° horizontally and 100° vertically
  - Clearly focussed, high-contrast image display
  - No flicker, uniform brightness
  - Automatic picture adjustment (Auto Adjust)
- Configuration using On Screen Display (OSD)
- Low space requirements and low weight
- High service life

Application

The SCD 1297 LCD monitors are used wherever the operator/display panel is separated from the computer for technical and economical reasons.

Design

- Rugged aluminium housing
- 12" TFT display
- Resolution 800 x 600 pixels, 256k colors
- Non-reflective, hardened mineral glass screen
- Only display, touch screen or membrane keyboard (with 36 function keys)
- Line frequency 30-80 kHz
- Image refresh frequency 50-72 Hz
- 110/230 V AC power supply, 24 V DC optional for built-in and rack-mounted units
- Can be positioned up to 20 m from the processor unit

Two rack-mounted versions of the SCD 1297 12" industrial LCD monitors are available:

- Built-in units
  (for control cabinets, consoles and booms)
  - SCD 1297-E – for display only
  - SCD 1297-ET with analog resistive touch screen
  - SCD 1297-K with keyboard and mouse functionality
- 19“ rack-mounted units
  (for 19“ racks)
  - SCD 1297-R – for display only
  - SCD 1297-RT with analog resistive touch screen

Included in the delivery are:

- Power cable for variants with 230 V AC power supply
- Connection cables 1.8 m, 5 m, 10 m or 20 m
- Instruction manual, 2 languages (German and English)
- CD-ROM with touch drivers

Special consideration when changing from CRT to LCD monitors

- Screen diagonals:
  For LCD monitors, the rule of thumb applies: "display size in inches plus 2" gives the comparable CRT monitor size (14" CRT corresponds to 12" LCD).
- Resolution:
  On selecting the corresponding LCD monitor, it is important to note that the resolution of the LCD monitor corresponds to the resolution of the visualization application.

Technical specifications

Type	SCD 1297-E / 1297-ET	SCD 1297- K	SCD 1297-R/1297-RT
General features			
• Can be separated from processor unit	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m
• On-screen display (OSD) configuration	Yes	Yes	Yes
• Anti-glare and hardened mineral glass sheet	Yes	Yes	Yes
• Presentation	Full screen	Full screen	Full screen
• Power switch	No	No	No
• Power supply	110/230 V AC, optionally 24 V DC	110/230 V AC, optionally 24 V DC	110/230 V AC, optionally 24 V DC
• Frequency/power input	47 – 63 Hz/30 VA	47 – 63 Hz/30 VA	47 – 63 Hz/30 VA
Ambient conditions			
• Degree of protection to EN 60 529	IP65	IP65	IP54
• Vibration resistance in operation	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)
• Shock resistance in operation	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)
• EMC	CE	CE	CE
• Ambient temperature in operation	0 to +40 °C	0 to +40 °C	0 to +40 °C
Certification	UL, CE	UL, CE	UL, CE
Display			
• Viewable area in inches	12" TFT	12" TFT	12" TFT
• Resolution (pixels) optimally	800 x 600	800 x 600	800 x 600
• Brightness/contrast (typ.)	300 cd/m^2 / 300:1	250 cd/m^2 / 300:1	300 cd/m^2 / 300:1
• Viewing angle (H x V)	120°x100°	120°x100°	120°x100°
• Shadow mask (H x V) (mm)	0.31 x 0.31	0.31 x 0.31	0.31 x 0.31
• Viewable area (H x V) (mm)	246 x 184	246 x 184	246 x 184
• No. of colors	256 k	256 k	256 k
• MTBF of background lighting (at 25°C)	50,000 h	50,000 h	50,000 h
• Image refresh rate	50 – 72 Hz	50 – 72 Hz	50 – 72 Hz
• Line frequency	30 – 80 kHz	30 – 80 kHz	30 – 80 kHz
Control elements			
• Membrane keyboard & Piezo mouse	No	Yes	No
• Function keys	No	36 with LEDs	No
• Alpha and numeric keypads	No	Yes	No
• Touch screen	Optional (1297-ET)	No	Optional (1297-RT)
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
• Serial interface for touch screen	Optional (1297-ET)	No	Optional (1297-RT)
• 2*PS/2 interfaces for keyboard & mouse	No	Yes	No
Dimensions			
• External dimensions W x H x D (mm)	364 x 284 x 76	483 x 310 x 98	483 x 266 x 80
• Mounting cutout/depth W x H x D (mm)	334.4 x 252 x 76	312 x 288 x 97	-
Weight (kg)	5	5	5

12" devices

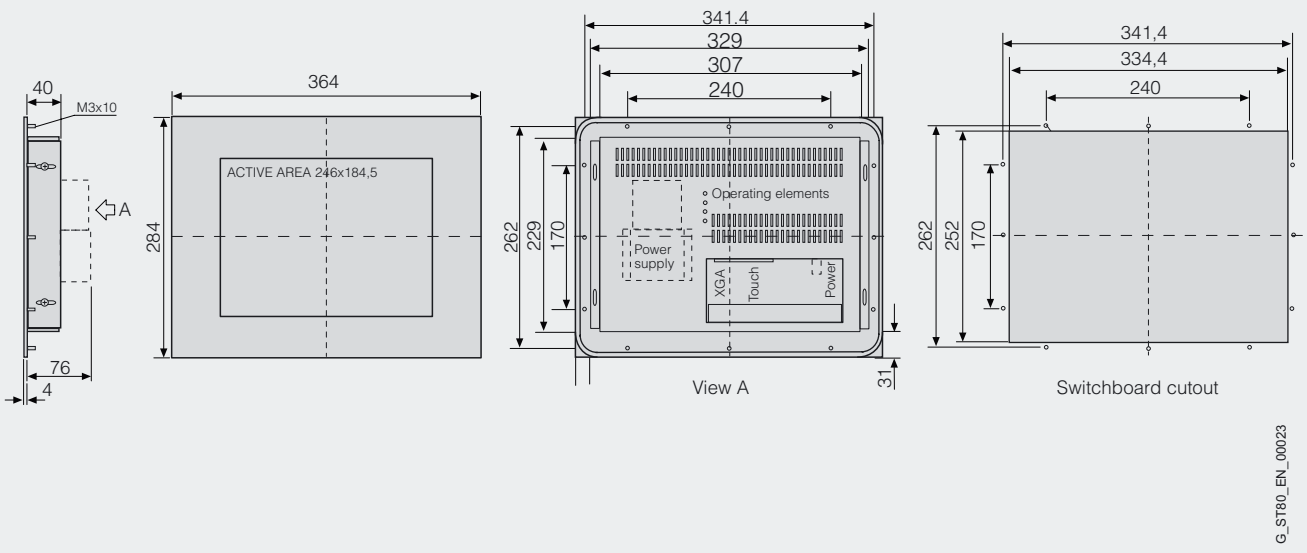
Ordering data

	Order No.
Standard configuration	
12" LCD monitor	**6AV8 101-0■■00-■■A1**
Installation type:	
• Rack-mounting unit	B
• 19“-rack unit	C
Type of operator control:	
• Display devices without operator control	A
• Touch	B
• Keyboard (only with rack-mounting unit installation type)	C
Power supplies:	
• 110/230 V AC	0
• 24 V DC	1
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 control versions)	
- 20.0 m	J
• Video + 2*PS/2 (only for Keyboard operator control versions)	
- 1.8 m	L
- 5.0 m	N
• Video + X27 (only for Keyboard operator control versions)	
- 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**
230 V AC power supply for SCD 1297 and SCD 1597 (with angle section and mains cable)	**6AV8 107-1AA00-0AA0**
24 V DC power supply For SCD 1297 and SCD 1597 (with screws)	**6AV8 107-1BA00-0AA0**
Insertable strip For SCD 1297-K	**6AV8 107-2AA00-0AA0**

Dimension drawings

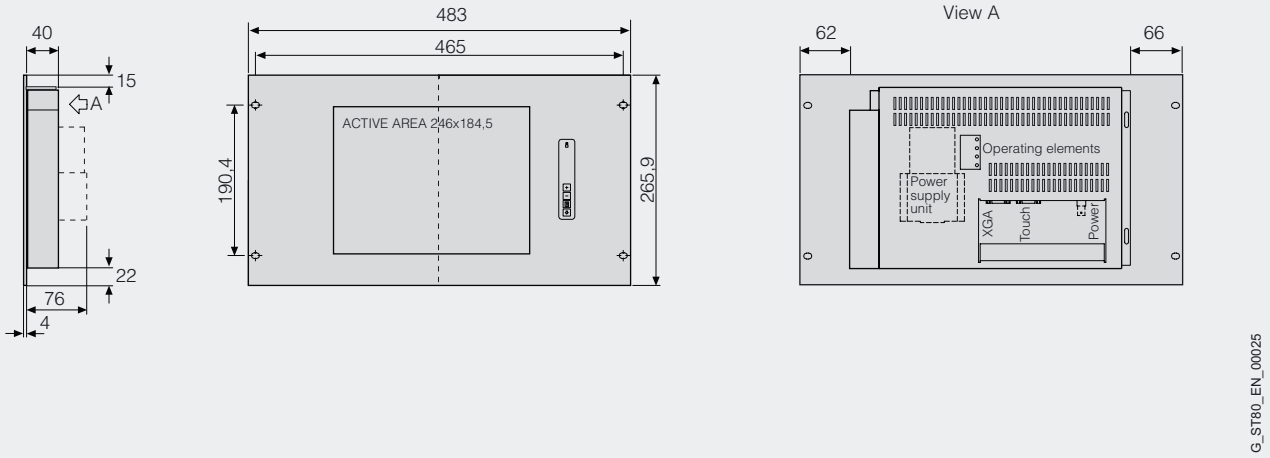
Dimensions in mm



SCD 1297-E, SCD 1297-ET

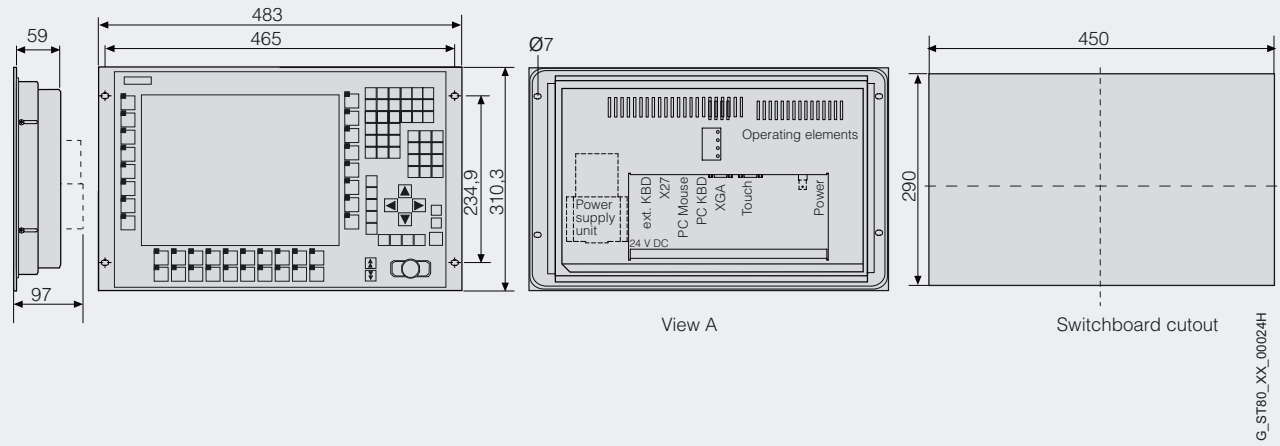
Dimension drawings (continued)

Dimensions in mm



SCD 1297-R, SCD 1297-RT

Dimensions in mm



SCD 1297-K

More information

More information can be found in the Internet under:

http://www.siemens.com/industrial-lcd

15" devices

Overview

- The SCD 1597 Monitors are rugged, industry standard LCD monitors
- They can be used in any applications in which picture tube monitors (CRT monitors) are used
- Built-in versions:
  - Desktop units
  - Built-in units (for control cabinets, consoles and booms)
  - 19" rack-mounted units
- Type of operator control:
  - Devices for display only
  - Devices for touch operation
  - Devices for keyboard/mouse operation (only 19" built-in units)

Benefits

- Rugged industrial-type:
  - Fail-safe and long life thanks to high vibration and impact strength as well as extremely high electromagnetic compatibility
  - Casing to degree of protection IP65 (IP20 for desktop unit), resistant to dust and humidity
  - Glass pane providing excellent mechanical protection against pressure and scratching
  - Complies with the "Industry" CE standard
- Wide range of versions
- No X-ray emission
- Low power consumption
- Less tiring to work with:
  - Wide reading angles of up to 130° horizontally and 110° vertically
  - Clearly focussed, high-contrast image display
  - No flicker, uniform brightness
  - Automatic picture adjustment (Auto Adjust)
- Configuration using On Screen Display (OSD)
- Low space requirements and low weight
- High service life

Application

The SCD 1597 LCD monitors are used wherever the operator/display panel is separated from the computer for technical and economical reasons.

Design

- Rugged aluminium housing
- 15" TFT display
- Resolution 1024 x 768 pixels, 16 million colors
- Non-reflective, hardened mineral glass screen
- Only display, touchscreen or membrane keyboard (with 36 function keys)
- Line frequency 30-80 kHz
- Image refresh frequency 50-72 Hz
- 110/230 V AC power supply, 24 V DC optional for built-in and rack-mounted units
- Can be positioned up to 20 m from the processor unit

Two versions of the SCD 1597 15" industrial LCD monitors are available:

- Built-in units
  (for control cabinets, consoles and booms)
  - SCD 1597-E – for display only
  - SCD 1597-ET with analog resistive touch screen
  - SCD 1597-K with keyboard and mouse functionality
- 19“-rack-mounted units
  - SCD 1597-R – for display only
  - SCD 1597-RT with analog resistive touch screen

Included in the delivery are:

- Power cable for variants with 230 V AC power supply
- Connection cables 1.8 m, 5 m, 10 m or 20 m
- Instruction manual, 2 languages (German and English)
- CD-ROM with touch drivers

Special consideration when changing from CRT to LCD monitors

- Screen diagonals:
  For LCD monitors, the rule of thumb applies: "display size in inches plus 2" corresponds to comparable CRT monitor size (17" CRT corresponds to 15" LCD).
- Resolution:
  On selecting the corresponding LCD monitor, it is important to note that the resolution of the LCD monitor corresponds to the resolution of the visualization application.

Technical specifications

Type	SCD 1597-E / 1597-ET	SCD 1597- K	SCD 1597-R/1597-RT
General features			
• Can be separated from processor unit	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m
• On-screen display (OSD) configuration	Yes	Yes	Yes
• Anti-glare and hardened mineral glass sheet	Yes	Yes	Yes
• Presentation	Full screen	Full screen	Full screen
• Power switch	No	No	No
• Power supply	110/230V AC, optionally 24 V DC	110/230V AC, optionally 24 V DC	110/230V AC, optionally 24 V DC
• Frequency/power input	47 – 63 Hz / 30 VA	47 – 63 Hz / 30 VA	47 – 63 Hz / 30 VA
Ambient conditions			
• Degree of protection to EN 60 529	IP65	IP65	IP54
• Vibration resistance in operation	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)
• Shock resistance in operation	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)
• EMC	CE	CE	CE
• Ambient temperature in operation	0 to +40 °C	0 to +40 °C	0 to +40 °C
Certification	UL, CE	UL, CE	UL, CE
Display			
• Viewable area in inches	15" TFT	15" TFT	15" TFT
• Resolution (pixels) optimally	1024 x 768	1024 x 768	1024 x 768
• Brightness/contrast (typ.)	250 cd/m^2 / 300:1	250 cd/m^2 / 300:1	250 cd/m^2 / 300:1
• Viewing angle (H x V)	130°x110°	130°x110°	130°x110°
• Shadow mask (H x V) (mm)	0.30 x 0.30	0.30 x 0.30	0.30 x 0.30
• Viewable area (H x V) (mm)	304 x 228	304 x 228	304 x 228
• No. of colors	16 million	16 million	16 million
• MTBF of background lighting (at 25 °C)	35,000 h	35,000 h	35,000 h
• Image refresh rate	50 – 72 Hz	50 – 72 Hz	50 – 72 Hz
• Line frequency	30 – 80 kHz	30 – 80 kHz	30 – 80 kHz
Control elements			
• Membrane keyboard & Piezo mouse	No	Yes	No
• Function keys	No	36 with LEDs	No
• Alpha and numeric keypads	Yes	Yes	No
• Touch screen	Optional	No	Optional
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
• Serial interface for touch screen	Optional	No	Optional
• 2*PS/2 interfaces for keyboard & mouse	No	Yes	No
Dimensions			
• External dimensions W x H x D (mm)	428 x 336 x 83	483 x 355 x 95	483 x 311 x 83
• Mounting cutout/depth W x H x D (mm)	394 x 306 x 83	448 x 333 x 95	-
Weight (kg)	5.5	5.5	5.5

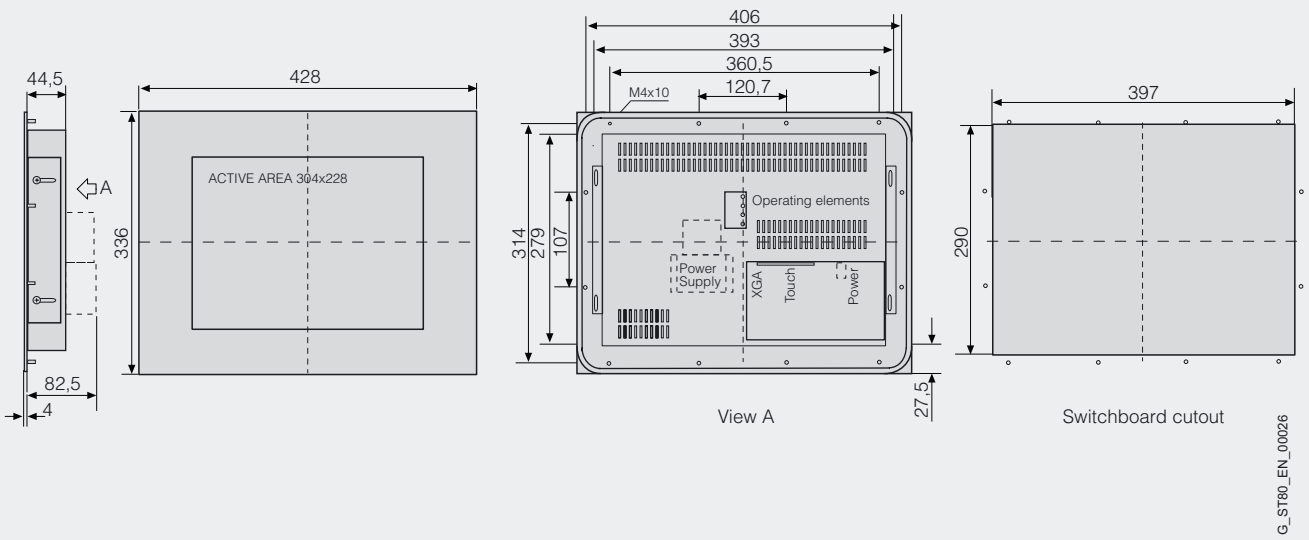
15" devices

Ordering data	Order No.
Standard configuration	
15" LCD monitor	**6AV8 101-1■■00-■■A1**
Installation type:	
• Built-in unit	**B**
• 19“-rack unit	**C**
Type of operator control:	
• Display devices without operator control	**A**
• Touch	**B**
• Keyboard (with built-in unit installation type only)	**C**
Power supplies:	
• 110/230 V AC	**0**
• 24 V DC (not with desktop unit installation type)	**1**
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 control versions)	
- 20.0 m	**J**
• Video + 2*PS/2 (for Keyboard operator control versions only)	
- 1.8 m	**L**
- 5.0 m	**N**
• Video + X27 (for Keyboard operator control versions 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**
230 V AC power supply for SCD 1297 and SCD 1597 (with angle section and mains cable)	**6AV8 107-1AA00-0AA0**
24 V DC power supply For SCD 1297 and SCD 1597 (with screws)	**6AV8 107-1BA00-0AA0**
Insertable strip For SCD 1597-K	**6AV8 107-2AB00-0AA0**

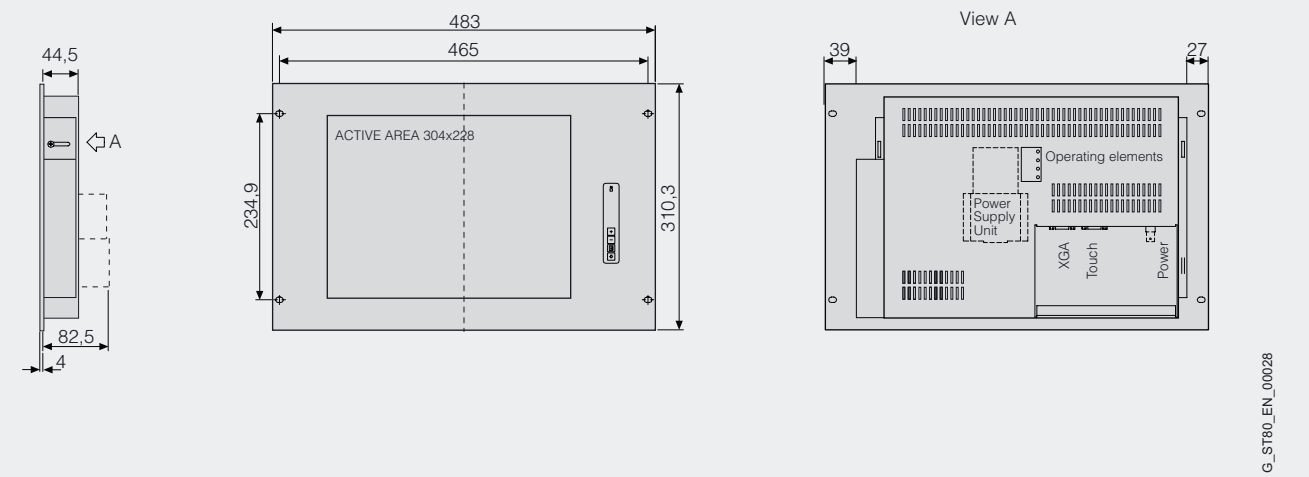
Dimension drawings

Dimensions in mm



SCD 1597-E, SCD 1597-ET

Dimensions in mm



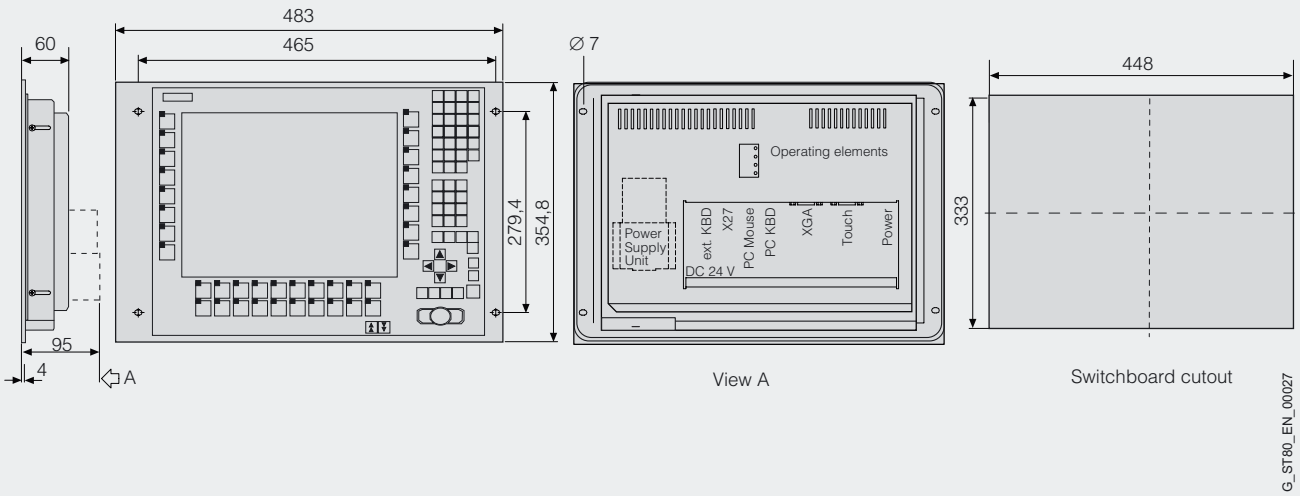
SCD 1597-R, SCD 1597-RT

7

15" devices

Dimension drawings

Dimensions in mm



SCD 1597-K

More information

Additional information can be found in the Internet under:

http://www.siemens.com/industrial-lcd

Overview

- The SCD 1897/1898 and SCD 19101-D monitors are LCD monitors in a rugged industrial design
- They can be used in any application for which CRT monitors are used
- Installation types:
  - Desktop models
  - Rack-mounting units (for switchgear cabinets, control desks and gantries)
  - 19"-rack panels
- Type of operator control:
  - Simple display devices
  - Panels with touch operator control

Benefits

- Rugged industrial-type:
  - Fail-safe and long life thanks to high vibration and impact strength as well as extremely high electromagnetic compatibility
  - Casing front to degree of protection IP65 (IP20 for desktop unit), resistant to dust and humidity
  - Glass pane providing excellent mechanical protection against pressure and scratching
  - Complies with the "Industry" CE standard
- Wide range of versions
- No X-ray emission
- Low power consumption
- Less tiring to work with:
  - Wide reading angles of up to 170° horizontally and vertically
  - Clearly focussed, high-contrast image display
  - No flicker, uniform brightness
  - Automatic picture adjustment (Auto Adjust)
- Configuration using On Screen Display (OSD)
- Low space requirements and low weight
- Long service life

Application

The SCD 1897/1898 and SCD 19101-D LCD monitors are used in applications in which the operation/display panel is installed at a distance from the computer for technical and economical reasons.

Design

- Rugged aluminum casing
- 18"/19“ TFT display
- Resolution 1280 x 1024 pixels, 16 million colors
- Non-reflective, hardened glass pane
- Simple display or touch screen
- Line frequency 30 - 100 kHz
- Image refresh frequency 50 - 97 Hz
- Power supply 110/230 V AC
- Can be installed up to 20 m from computer unit

Industrial LCD monitors are available in three variants:

- 19“ desktop units
  - SCD 19101-D – Display only
  - SCD 19101-DT with analog resistive touch screen USB
- Built-in panels
  (for switchgear cabinets, control desks and gantries)
  - SCD 1897 E – Display only
  - SCD 1897 ET with analog resistive touch screen
- 19"-rack units
  (for 19" racks)
  - SCD 1897 R – Display only
  - SCD 1897-RT with analog resistive touch screen

Included in scope of supply:

- Power cable for versions with 230 V AC power supply
- Connecting cables 1.8 m, 5 m, 10 m or 20 m in length
- Instruction manual in 2 languages (English and German)
- CD-ROM with touch drivers

Points to note when changing over from CRT to LCD monitors

- Screen diagonals:
  For LCD monitors, the rule of thumb is:
  "Display size in inches plus 2" corresponds to the comparable CRT monitor size (20" CRT corresponds to 18" LCD).
- Resolution:
  On selecting the appropriate LCD monitor, it must be ensured that the resolution of the LCD monitor matches the resolution of the visualization application.

18"/19" devices

Technical specifications

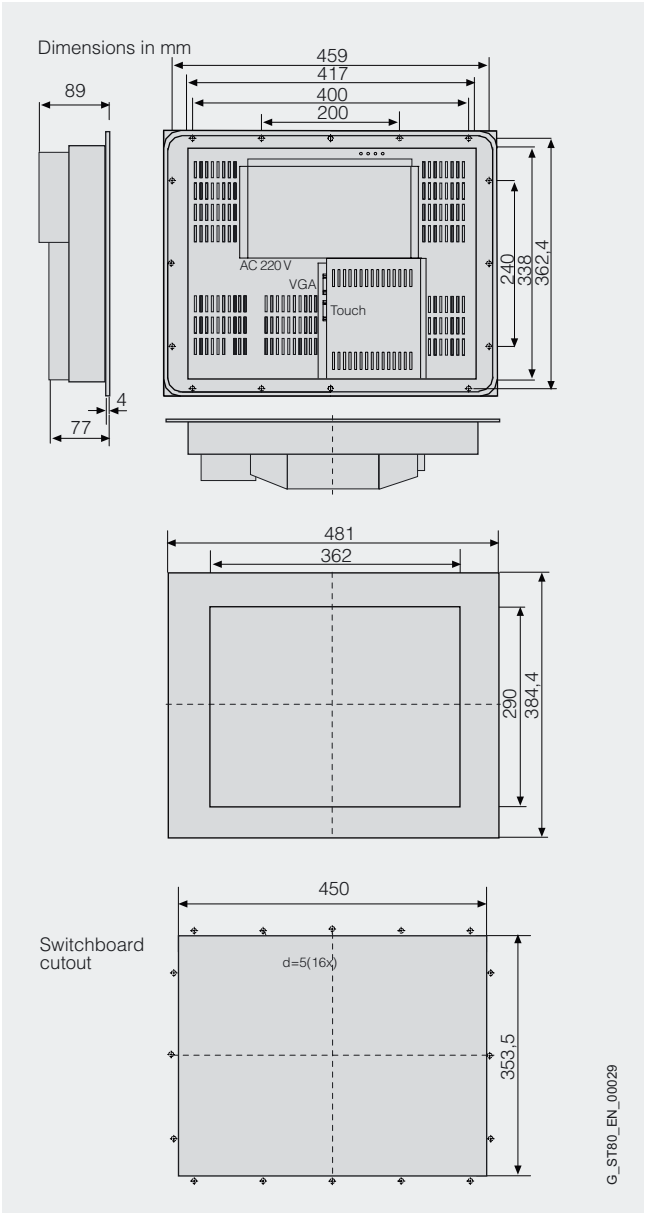
Type	SCD 1897-E/1897-ET	SCD 1897-R/1897-RT	SCD 19101-D/DT
General features			
• Can be separate from the computer	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m
• On-screen display (OSD) configuration	Yes	Yes	Yes
• Anti-reflex and hardened mineral glass screen	Yes	Yes	Yes
• Representation	1:1, full frame, zoom	1:1, full frame, zoom	1:1, full frame, zoom
• Power switch	Rear	Rear	Rear
• Power supply	110/230 V AC	110/230 V AC	110/230 V AC
• Frequency/Power consumption	47 - 63 Hz/60 VA	47 - 63 Hz/60 VA	47 - 63 Hz/60 VA
Ambient conditions			
• Degree of protection to EN 60 529	IP65	IP54	IP20
• Vibration load during operation	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)
• Shock load during operation	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)
• EMC	CE	CE	CE
• Ambient temperature during operation	0 to +40 °C	0 to +40 °C	0 to +40 °C
Certification	UL, CE	UL, CE	UL, CE
Display			
• Screen diagonal in inches	18" TFT	18" TFT	19" TFT
• Optimum resolution (pixels)	1280 x 1024	1280 x 1024	1280 x 1024
• Brightness/Contrast (typical)	270 cd/m^2/400:1	270 cd/m^2/400:1	270 cd/m^2/400:1
• Viewing angle (H x V)	170° x 170°	170° x 170°	170° x 170°
• Shadow mask (H x V) (mm)	0.28 x 0.28	0.28 x 0.28	0.28 x 0.28
• Visible area (H x V) (mm)	359 x 287	359 x 287	359 x 287
• Number of colors	16 million	16 million	16 million
• MTBF of background lighting (at 25 °C)	50,000 h	50,000 h	50,000 h
• Image refresh rate	30 - 100 Hz	30 - 100 Hz	30 - 100 Hz
• Line frequency	50 - 97 kHz	50 - 97 kHz	50 - 97 kHz
Control elements			
• Membrane keyboard & Piezo mouse	No	No	No
• Function keys	No	No	No
• Alpha and numeric block	No	No	No
• Touch screen	Optional	Optional	Optional
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
• Digital DVI-D interface	No	No	Yes
• Interface for touch screen	Optional/serial	Optional/serial	Optional/USB
• 2*PS/2 interfaces for keyboard and mouse	No	No	No
• External dimensions W x H x D (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 (mm)	450 x 353.4 x 89	-	465 x 444 x 91 (base depth 240)
Weight (kg)	10	10	7

Ordering data

		Order No.
Standard configuration		
18" LCD monitor		**6AV8 101-2■■00-0■A0**
Built-in version:		
• Built-in unit 1897		B
• 19" rack unit 1897		C
Operator functionality:		
• Display devices without operator functionality		A
• Touch		B
Connecting cable:		
• Video + Touch		
- 1.8 m		B
- 5.0 m		D
- 10.0 m		F
- 20.0 m		H
• Video (not for Touch operator functionality)		
- 20.0 m		J
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**
Desktop model		
19" LCD monitor		
SCD 19101-D, desktop unit (identical construction to SCD 1898-I)	A	**6GF6 220-1DA01**
19" Touch LCD monitor		
SCD 19101-DT, desktop unit (successor to SCD 1898-IT, identical construction, but with USB Touch)	A	**6GF6 220-1DB01**
Accessories		
Connecting cable		
• 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**

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

Dimension drawings



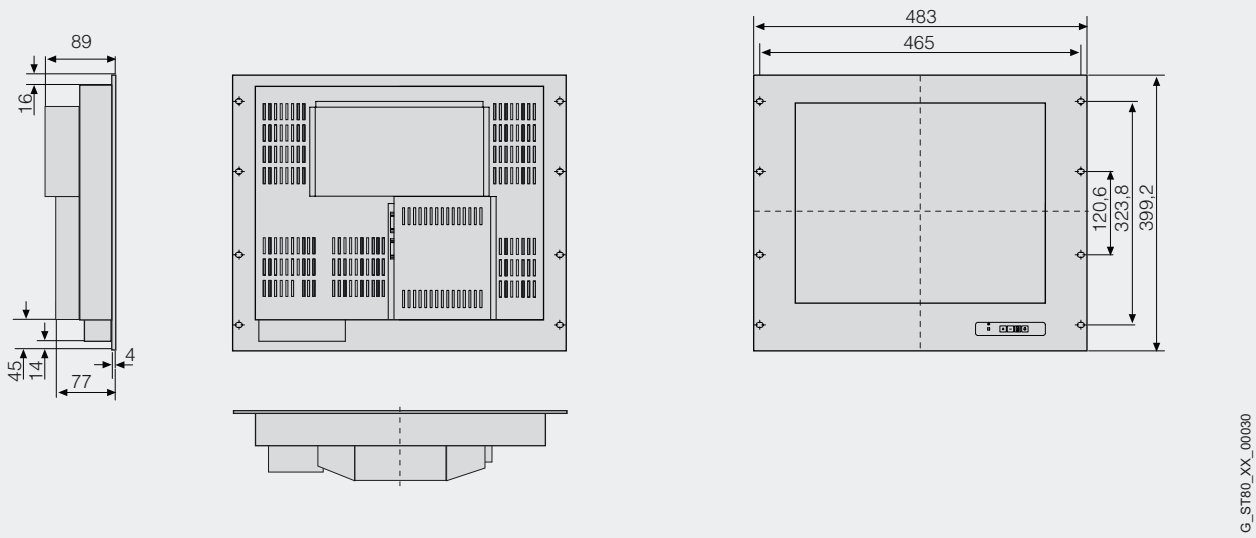
SCD 1897-E, SCD 1897-ET

7

18"/19" devices

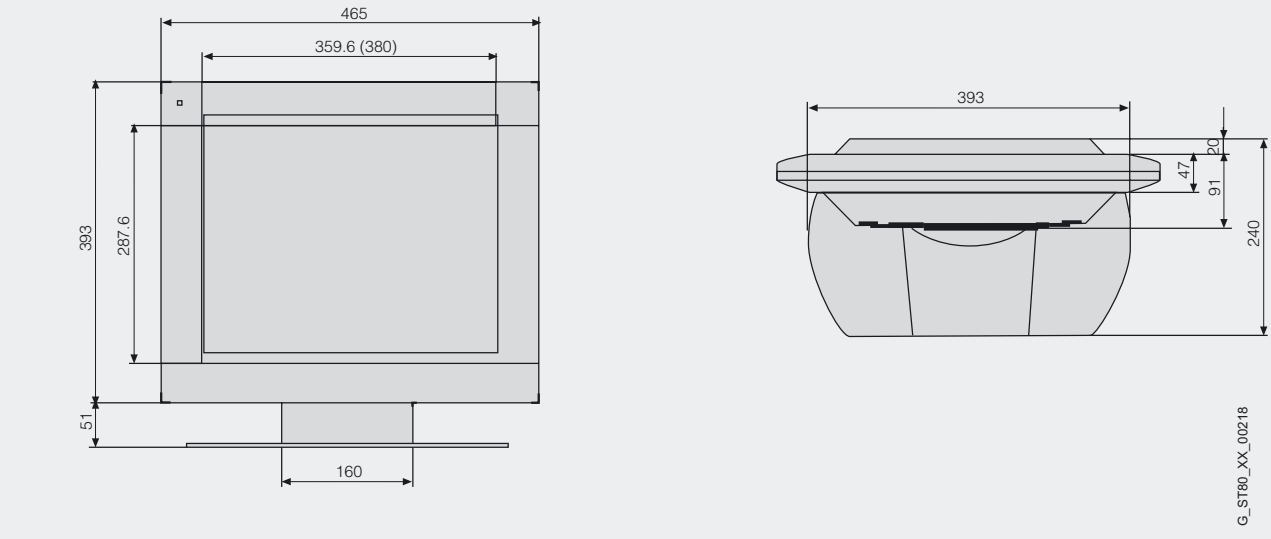
Dimension drawings

Dimensions in mm



SCD 1897-R, SCD 1897-RT

Dimensions in mm



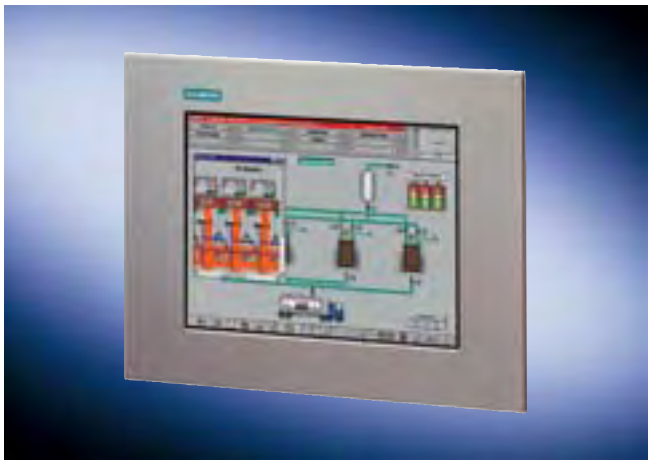
SCD 19101-D

More information

Additional information can be found in the Internet under:

http://www.siemens.com/industrial-lcd

Overview



The SCD 1215-E LCD monitor is a reliable 12" display with a line frequency of 15 kHz and higher. This LCD monitor is designed for cubicle mounting in the industrial sector. Its very good technical properties ensure excellent picture quality throughout a long service life.

The SCD 1215-E is the 15 kHz version of the SCD 1297-E and differs from it in respect of the following technical data:

- Line frequency 15 ... 97 kHz
- Ports 5 x BNC
- Looping through operation is possible (75 Ω, switched)

Benefits

- Distance from monitor to video source up to 25 m
- Line frequency 15 ... 97 kHz
- Small space requirement
- High shock and vibration resistance
- No X-ray emission
- High electromagnetic compatibility
- Designed for cubicle mounting

Application

The SCD 1215-E is a display unit without operator function. The keys for the on-screen display (OSD) are fitted at the rear. The SCD 1215-E has an auto adjust function and video timing parameterization through OSD (required for displays with a black background).

Notes

Good picture quality is only guaranteed with an interference-free standard video signal at the monitor input.

Information on the subject of "Special requirements for the operation of LCDs with 15 kHz and higher – possible measures for trouble-free operation" is available from the A&D Mall on the Internet at *www.siemens.de/automation/mall* under the headings for the respective LCD monitors.

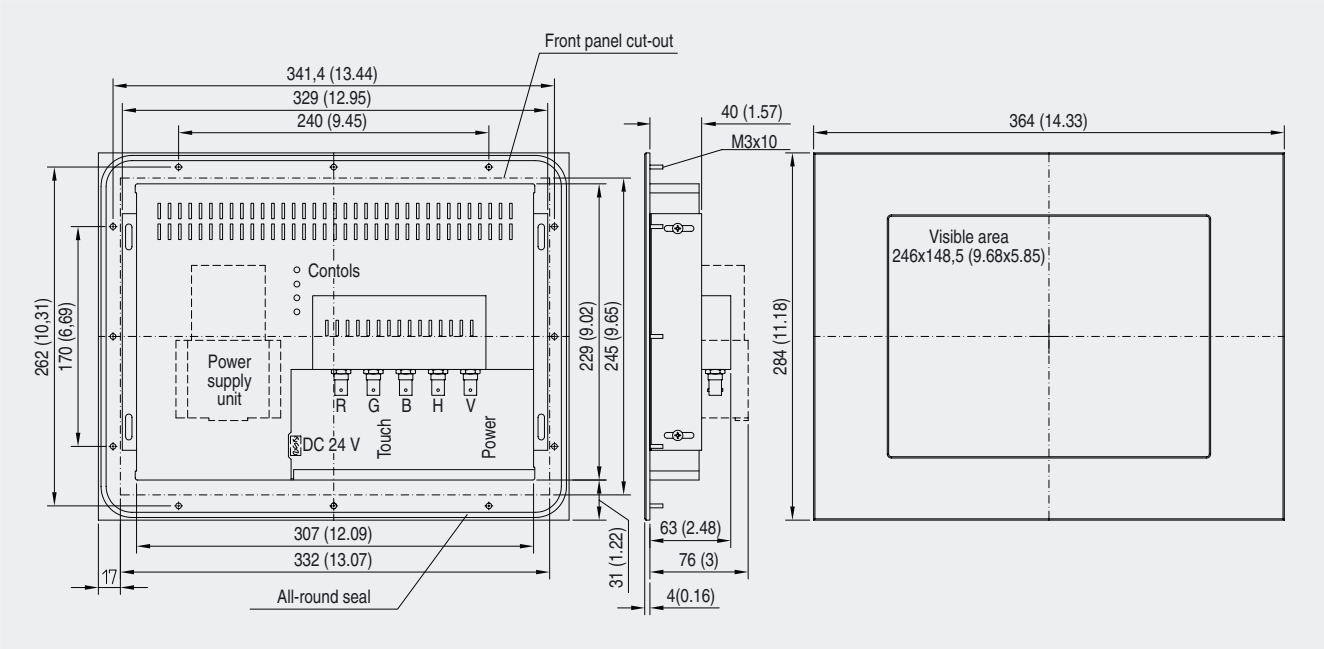
Screen diagonal

The rule of thumb for LCDs is: "display size in inch plus 2 equals the comparable size of a CRT monitor" (a 12" LCD is equivalent to a 14" CRT).

Ordering data	Order No.
Standard configuration	
SCD 1215-E LCD monitor Industrial LCD, 15 to 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation over OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 240-4MV**
Accessories	
DC/DC converter For connecting 12“ and 15“ LCD monitors with 12 V DC to a 24 V DC power supply. It converts the voltage to 12 V DC.	**6AV8 107-1BA00-0AA0**
High-quality video cable	
• 2 m long	**6GF6 902-0VK**
• 5 m long	**6GF6 905-0VK**

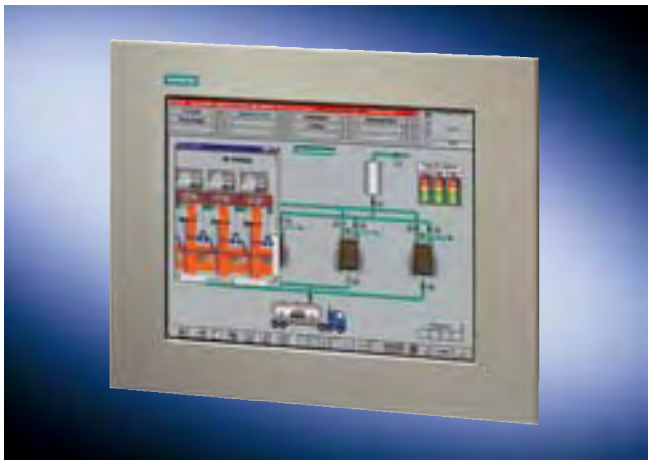
SCD 1215-E

Dimension drawings



SCD 1215-E, dimensioned drawing, dimensions in mm (inch)

Overview



The SCD 1515-E LCD monitor is a reliable 15" display with a line frequency of 15 kHz and higher. This LCD monitor is designed for cubicle mounting in the industrial sector. Its excellent technical properties guarantee excellent picture quality throughout a long service life.

The SCD 1515-E is the 15 kHz version of the SCD 1297-E and differs from it in respect of the following technical data:

- Line frequency 15 ... 97 kHz
- Inputs/Outputs 5 x BNC
- Looping through operation is possible (75 Ω, switched)

Benefits

- Distance from monitor to video source up to 25 m
- Line frequency 15 ... 97 kHz
- Small space requirement
- High shock and vibration resistance
- No X-ray emission
- High electromagnetic compatibility
- Designed for cubicle mounting

Application

The SCD 1515-E is a display unit without operator function. The keys for the on-screen display (OSD) are fitted at the rear. The SCD 1515 has an auto adjust function and video timing parameterization by OSD (required for displays with a black background).

Notes

Good picture quality is only guaranteed with an interference-free standard video signal at the monitor input.

Information on the subject of "Special requirements for the operation of LCDs with 15 kHz and higher – possible measures for trouble-free operation" is available from the A&D Mall on the Internet at *www.siemens.de/automation/mall* under the headings for the respective LCD monitors.

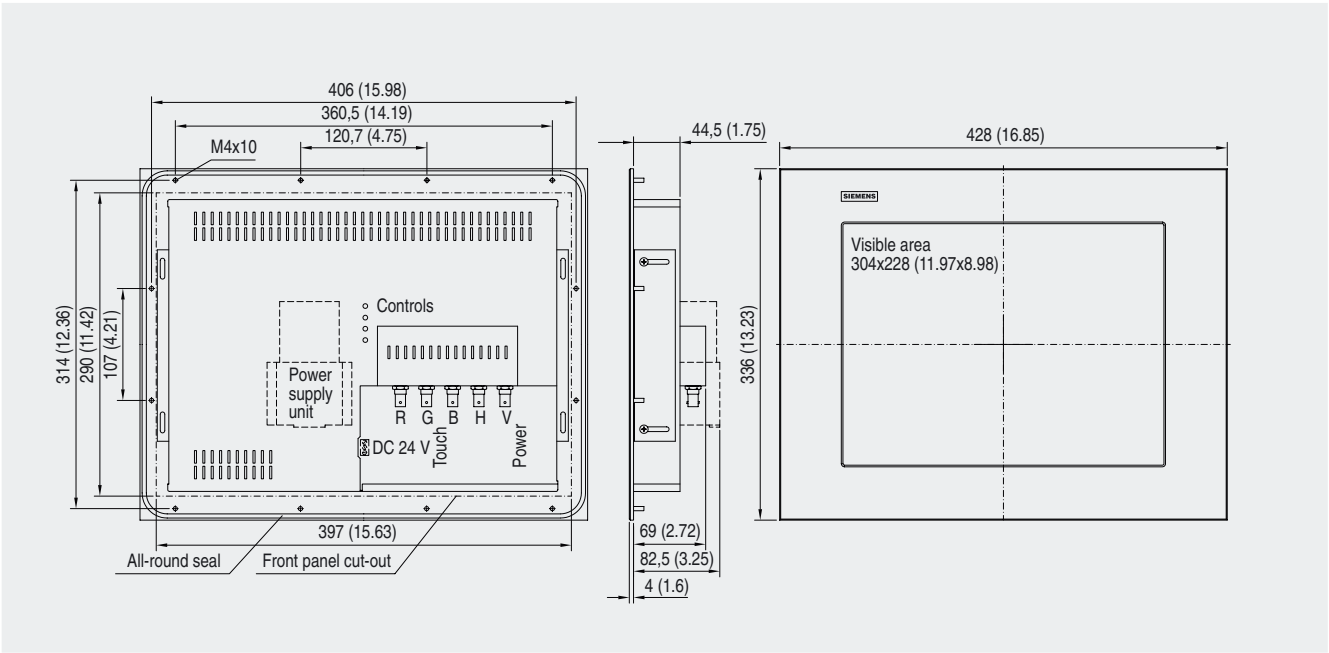
Screen diagonal

The rule of thumb for LCDs is: "display size in inch plus 2 equals the comparable size of a CRT monitor" (a 12" LCD is equivalent to a 14" CRT).

Ordering data	Order No.
Standard configuration	
SCD 1515-E LCD monitor Industrial LCD, 15 to 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation over OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 230-4MV**
Accessories	
DC/DC converter For connecting 12" and 15" LCD monitors with 12 V DC to a 24 V DC power supply. It converts the voltage to 12 V DC.	**6AV8 107-1BA00-0AA0**
High-quality video cable	
• 2 m long	**6GF6 902-0VK**
• 5 m long	**6GF6 905-0VK**

SCD 1515-E

Dimension drawings



SCD 1515-E, dimensioned drawing, dimensions in mm (inch)

Overview

The SCD 1815-I (desktop version) and SCD 1815-E (panel-mounting version) LCD monitors are reliable 18“ displays with a line frequency of 15 kHz and higher. The SCD 1815-E is designed for cubicle mounting in the industrial sector. Its excellent technical properties guarantee excellent picture quality throughout a long service life.

These 15 kHz displays differ in respect of the following technical data:

- Line frequency 15 ... 97 kHz
- Ports 5 x BNC
- Looping through operation is possible (75 Ω, switched)
- Galvanic isolation (SCD 1815-I only)

Benefits

- Distance from monitor to video source up to 25 m
- Line frequency 15 ... 97 kHz
- Small space requirement
- Long service life
- High shock and vibration resistance
- No X-ray emission
- High electromagnetic compatibility
- Large viewing angle

Application

The SCD 1815 units are displays without operator functions. On the SCD 1815-E the keys for the on-screen display (OSD) are at the rear, on the SCD 1815-I they are at the front. The SCD 1815-E is designed for mounting in cubicles, the SCD 1815-I is a desktop version. The SCD 1815 has an auto adjust function and video timing parameterization by OSD (required for displays with a black background).

Notes

Good picture quality is only guaranteed with an interference-free standard video signal at the monitor input.

Information on the subject of "Special requirements for the operation of LCDs with 15 kHz and higher – possible measures for trouble-free operation" is available from the A&D Mall on the Internet at *www.siemens.de/automation/mall* under the headings for the respective LCD monitors.

Screen diagonal

The rule of thumb for LCDs is: "display size in inch plus 2 equals the comparable size of a CRT monitor" (a 12" LCD is equivalent to a 14" CRT).

Light pen mode

Light pen mode is not possible with the SCD 1815-I. If light pen operation is required for your system, please get in direct touch with the TELEPERM Hotline, Tel.: +49 (180) 50 50 222.

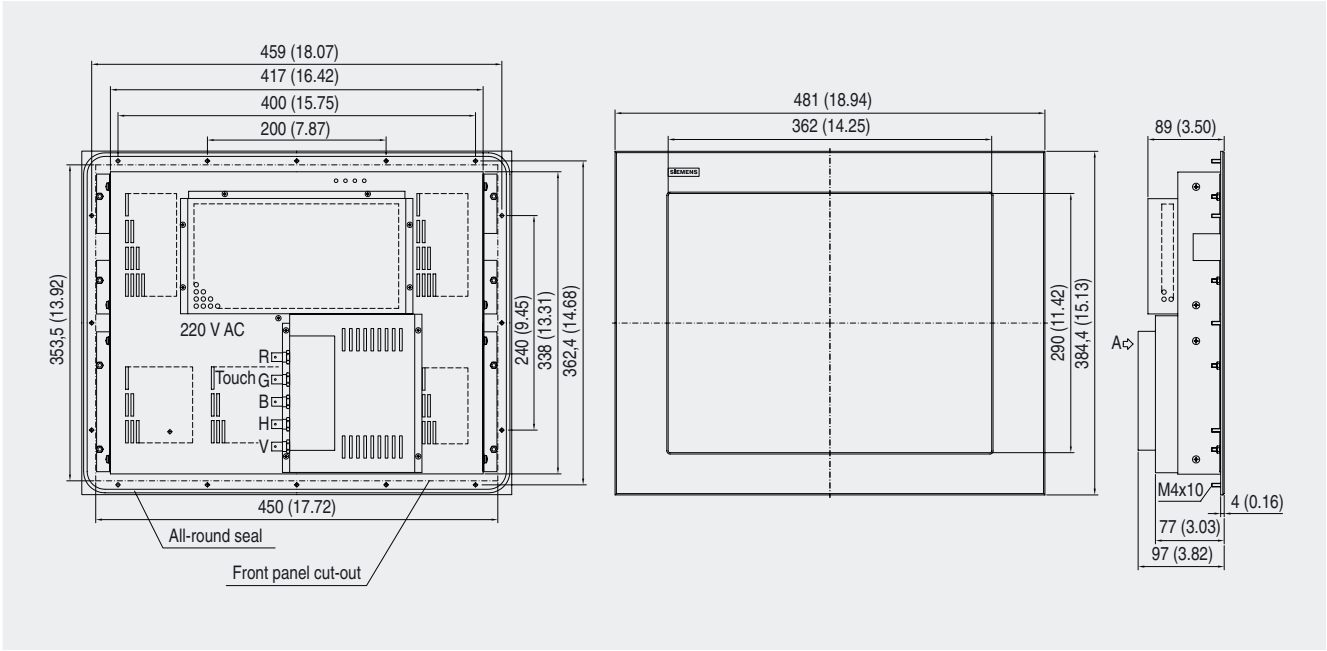
Ordering data

Ordering data	Order No.
Standard configuration	
SCD 1815-I LCD monitor Desktop version, technical specifications similar to 1815-E.	**6GF6 220-1MV**
SCD 1815-E LCD monitor 18“ (1280 x 1024 pixels), built-in version, industrial LCD, 15 to 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation over OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 220-4MV**
Accessories	
High-quality video cable	
• 2 m long	**6GF6 902-0VK**
• 5 m long	**6GF6 905-0VK**

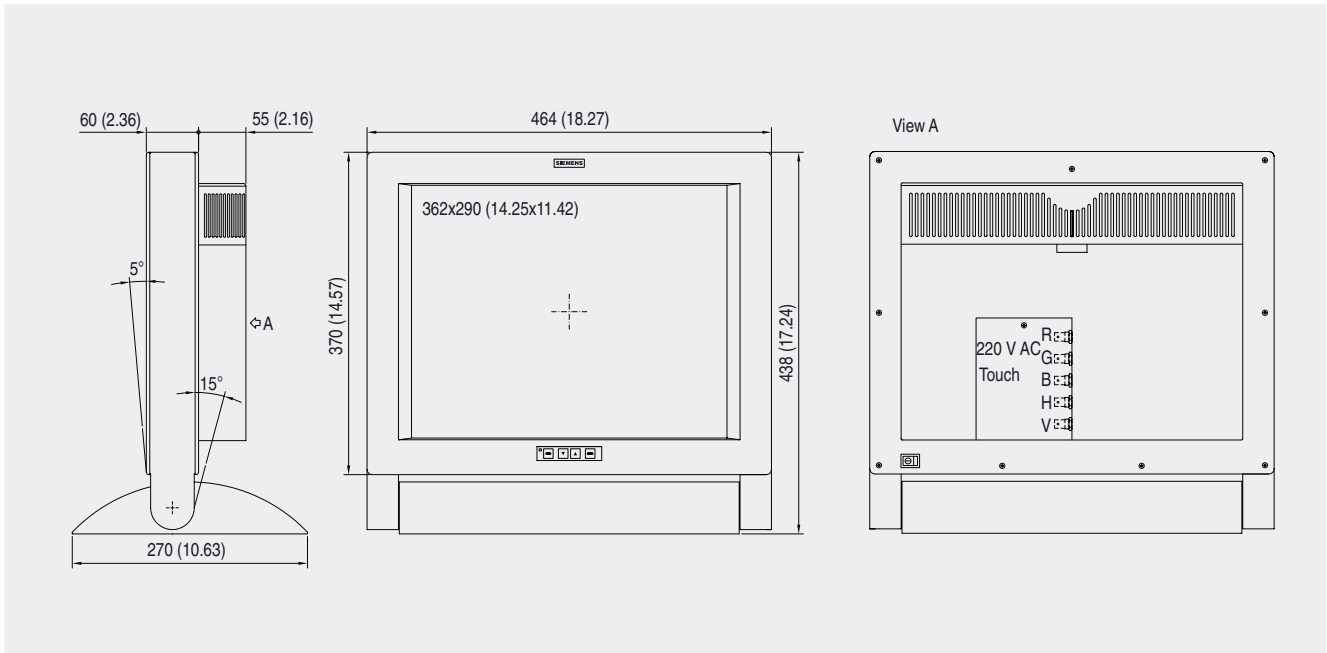
7

SCD 1815-E/1815-I

Dimension drawings



SCD 1815-E, dimension drawing, dimensions in mm (inch)



SCD 1815-I, dimension drawing, dimensions in mm (inch)

Appendix

Training

Training is decisive for your success

SITRAIN – the Siemens Training for Automation and Industrial Solutions – provides you with comprehensive support when solving your tasks.

Training by the market leader in automation, plant installation and support permits you to make your decisions with certainty and full command. Especially where the optimum and efficient use of products and plants are concerned. You can eliminate deficiencies in existing plants, and exclude expensive faulty planning right from the beginning.

All in all, this represents an enormous gain for your company: shortened startup times, optimized plant components, faster troubleshooting, reduced down times. In other words, increased profits and lower costs.

Top trainers

Our trainers know their topics in practice, and possess comprehensive didactic experience. Course developers have a direct wire to product development, and directly pass on their knowledge to the trainers.

Practical experience

The practical experience of our trainers makes it possible for them to pass on theoretical matter in a plausible manner.
But since it is known that all theory is drab, we attach great importance to practical exercises which can comprise up to half of the course time. You can therefore immediately implement your new knowledge in practice. We train you on state-of-the-art methodically/didactically designed training equipment.
You feel absolutely certain when trained in this manner.

Wide variety

With a total of approx. 300 local attendance courses, we train the complete range of A&D products and a large portion of the system solutions from I&S. Telecourses, teach-yourself software and seminars presented on the Web supplement our classical range of courses.

Close to our customers

The distance is short. You can find us at approx. 60 locations in Germany, and worldwide in 62 countries. You wish to have individual training instead of one of our 300 courses? No problem: 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 is understood to be the 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. Furthermore, SITRAIN utilizes supported online training for live instruction on the Internet at agreed times.

The right mixture is the solution. Therefore blended learning can convey complex topics well, and train networked thinking. Additional effect: reduced travelling costs and periods of absence through training sequences independent of location and time.

The international training portal

www.siemens.com/sitrain

All training facilities at a glance: search in the worldwide range of courses at leisure, call up all course dates online, utilize the daily updated display of vacant course spaces – and register directly.

Customer comments on Sitrain

" ... the good course documents, competence and flexibility convinced me."
[Manfred Riek from Festo Systemtechnik, responsible for planning basic and further training of project engineers]

" ... represents effective training, constructive dialogs, and solutions which provide great help."
[Günter Niedermaier, electrical design manager at AMT, Aalen]

Contact

Visit us in the Internet at:

www.siemens.com/sitrain

or let us advise you personally. You can request our latest training catalog from:

Course office, Infoline Germany:
Tel.: +49 (1805) 23 56 11 (0.12 €/Min)
Fax: +49 (1805) 23 56 12

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

Human Machine Interface Systems SIMATIC HMI

Target group:
- Manager, sales personnel
- Project manager, projekt staff member
- Programmer
- Engineers, programmers
- Service Personnel
- Operator, user
- Maintenance personnel

Title	Target group							Duration	Course code
SIMATIC WinCC									
SIMATIC WinCC V6, System course			✔	✔	✔	✔	✔	5 days	ST-BWINCCS
SIMATIC WinCC V6, Options, Networks, Databases			✔	✔				5 days	ST-BWINOND
SIMATIC WinCC flexible									
SIMATIC WinCC flexible, System course 1	✔	✔	✔	✔	✔	✔	✔	3 days	ST-WCCFSYS1
SIMATIC WinCC flexible	✔	✔	✔	✔	✔	✔	✔	WBT	WT-WCCFLEX
SIMATIC ProTool/Pro									
SIMATIC ProTool/Pro	✔	✔	✔	✔	✔	✔	✔	CD-ROM	SM-PROTOO
SIMATIC ProTool/Pro System course			✔	✔	✔	✔	✔	3 days	ST-BPROPRS
SIMATIC ProTool/Pro	✔	✔	✔	✔	✔	✔	✔	WBT	WT-PROTOO
SIMATIC ProTool									
Configure Operator Panels with Pro Tool			✔	✔	✔			3 days	ST-SSP705

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 declararion 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

Overview

At

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

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.

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.

You can find detailed information at:
www.siemens.com/competencecenter

WinCC Professional

WinCC Professionals are external system integrators, who have specialised in process visualization. In many realized projects with WinCC they have built up the know-how to meet even complex requirements.

WinCC Professionals use the openness and flexibility and provide customized and economical solutions based on WinCC system software.

You can find detailed information at:
www.siemens.com/competencecenter

Siemens Automation Solution Provider

Automation solutions are becoming increasingly complex, and demands are permanently growing. We can help you find competent partners for an excellent, reliable solution. Partners who have competence and experience in the required sector linked with comprehensive know-how for automation solutions.

Our partner programs set new standards with respect to the specific competence of the companies involved and the global network of partners. As a result of the careful selection and permanent training of our solution providers, you will always be able to find a competent partner close at hand who is always working with state-of-the-art technology.

The program

You are searching for automation solutions for a particular task?
Or you require professional consulting and support?
You wish to contact specialists in your sector?
You wish to secure market advantages?
Then our Siemens automation solution providers are the right partners for you!

Our partners implement integrated, economical automation solutions based on Totally Integrated Automation. They stand out through their product and system competence of SIMATIC components.

Your benefits

- Customized, economic and future-oriented solutions
- Significant advantages with respect to speed, efficiency and locality
- Solution provider has special knowledge of sector
- Guaranteed state-of-the-art technology and knowledge of latest developments

Certification

The solution providers are continuously being trained in order to remain completely up-to-date. They are subjected to a special certification program where they have to prove their high competence using Siemens' automation tools. We can therefore guarantee a special standard of quality which is successively achieved by training on new components and during special solution provider workshops.

You can find detailed information at:
www.siemens.com/automation/solution-provider

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 Interactive Catalog

Detailed information together with convenient interactive functions:
The interactive catalog 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 interactive catalog 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 on the Internet under:

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

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*

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

Length codes for 6XV ... and 6ES5 ... connecting cables

For connecting cables whose length can be selected according to the following list, complete the empty positions (■■■) of the Order No. according to the specified length code.

Note the different length codes! Other lengths on request.

Connecting cables 6XV. ...

Length of the connecting cable= multiplier x length digit		Order No. extension for the connecting cable
	►	6XV. ... -■■■
Multiplier:	0.01 m	E
	0.1 m	H
	1.0 m	N
	10.0 m	T
	100.0 m	U
Length digit:	10	1 0
	12	1 2
	15	1 5
	16	1 6
	20	2 0
	25	2 5
	32	3 2
	40	4 0
	50	5 0
	60	6 0
	63	6 3
	80	8 0

Connecting cables 6ES5 ...

Length of the connecting cable	Order No. extension for the connecting cable
►	6ES5... -■■■0
1.0 m	B B 0
1.6 m	B B 6
2.0 m	B C 0
2.5 m	B C 5
3.0 m	B D 0
3.2 m	B D 2
5.0 m	B F 0
8.0 m	B J 0
10.0 m	C B 0
12.0 m	C B 2
16.0 m	C B 6
20.0 m	C C 0
25.0 m	C C 5
32.0 m	C D 2
40.0 m	C E 0
50.0 m	C F 0
63.0 m	C G 3
80.0 m	C J 0
100.0 m	D B 0
120.0 m	D B 2
150.0 m	D B 5
160.0 m	D B 6
200.0 m	D C 0
250.0 m	D C 5
320.0 m	D D 2
400.0 m	D E 0
500.0 m	D F 0
600.0 m	D G 0
630.0 m	D G 3
800.0 m	D J 0
1000.0 m	E B 0

Standard, lower-priced lengths are available for many connecting cables. Standard lengths can be supplied from the central warehouse in Nuremberg, Germany, (LZN) within three days.

Special lengths can be supplied only from the factory concerned. Delivery may take up to 30 days.

Example for ordering

The 6XV1 404-0A■■■ connecting cable must be 16 m long. Multiplier 1 m (N) x length digit 16 (16) provides a length of 16 m. The Order No. extension is N16. This is entered in the free spaces of the Order No. The complete Order No. for the 16 m long connecting cable is

6XV1 404-0AN16

Software licenses

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

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.

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)

Subject Index

Subject Index

Subject Index

Order No. Index

Order No. Index

Suggestions for improving the catalog

Fax form

To

Siemens AG, A&D AS SM ID
ST 80 • 2005 / Ms. B. Beyer
Gleiwitzer Str. 555
90475 Nürnberg
Federal Republic of Germany

Fax. +49/911-895-2352

Your Address

Name

Capacity

Company/Dept.

Street address

Postal code/City

Tel./Fax

Your opinion is important to us!

We hope that our catalog will become an important and widely used source of reference and are constantly striving to improve it.

So please take just a few minutes of your time to fill out and fax it to us.

Please grade our catalog on a point system from 1 (= good) to 6 (= poor):

Do the contents of the catalog meet your requirements? ☐

Did you find it easy to find the information you needed? ☐

Did you find the texts easy to understand? ☐

Is there enough technical detail? ☐

What do you think of the quality of the graphics and tables? ☐

Did you find any printing errors?

Notes

Conditions of sale and delivery

Terms and Conditions of Sale and Delivery

By using this catalog you can acquire hardware and software products described therein from the Siemens AG subject to the following terms. Please note! The scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity.

For customers with a seat or registered office in the Federal Republic of Germany

The „General Terms of Payment“ as well as the „General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry“ shall apply.

For software products, the „General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany“ shall apply.

For customers with a seat or registered office outside of Germany

The „General Terms of Payment“ as well as the „General Conditions for Supplies of Siemens, Automation and Drives for Customers with a Seat or registered Office outside of Germany“ shall apply.

For software products, the „General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office outside of Germany“ shall apply.

General

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

In addition to the prices of products which include silver, plump, aluminum and/or copper, surcharges may be calculated if the respective limits of the notes are exceeded. The respective note (e.g. source: German newspaper „Handesblatt“ in category „deutsche Edelmetalle“ and „Metallverarbeiter“) for silver („verarbeitetes Silber“), plump („Blei in Kabeln“), aluminum („Aluminium in Kabeln“) and copper („Elektrolytkupfer“, „DEL-Notiz“) respectively, of the day the order or rather the on call order is received, is decisive for the calculation of the surcharges.

Surcharges of copper shall be calculated for Drives at a note („DEL-Notiz“) above EUR 225,00 / 100 Kg and for chokes / transformers above EUR 150,00 / 100 kg.

Surcharges shall be charged based on the quantities of the materials which are contained in the relevant products.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

The dimensions are in mm. Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages, - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

Comprehensive Terms and Conditions of Sale and Delivery are available free of charge from your local Siemens business office under the following Order Nos.:

- 6ZB5310-0KR30-0BA0
  (for customers based in the Federal Republic of Germany)
- 6ZB5310-0KS53-0BA0
  (for customers based outside of theFederal Republic of Germany)

or download them from the Internet:
http://www.siemens.com/automation/mall
(Germany: A&D Mall Online-Help System)

Export regulations

The products listed in this catalog / price list may be subject to European / German and/or US export regulations.

Therefore, any export requiring a license is subject to approval by the competent authorities.

According to current provisions, the following export regulations must be observed with respect to the products featured in this catalog / price list:

AL	Number of the German Export List. Products marked other than “N“ require an export license. In the case of software products, the export designations of the relevant data medium must also be generally adhered to. Goods labeled with an “AL not equal to N“ are subject to a European or German export authorization when being exported out of the EU.
ECCN	Export Control Classification Number. Products marked other than “N“ are subject to a reexport license to specific countries. In the case of software products, the export designations of the relevant data medium must also be generally adhered to. Goods labeled with an “ECCN not equal to N“ are subject to a US re-export authorization.

Even without a label or with an “AL: N“ or “ECCN: N“, authorization may be required due to the final destination and purpose for which the goods are to be used.

The deciding factors are the AL or ECCN export authorization indicated on order confirmations, delivery notes and invoices.

Errors excepted and subject to change without prior notice.

A&D/VuL/En 17.03.05

Catalogs of the Automation and Drives Group (A&D)

Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

Automation and Drives	*Catalog*
Interactive catalog on CD-ROM	
• The Offline Mall of Automation and Drives	CA 01

Automation Systems for Machine Tools	
SINUMERIK & SIMODRIVE	NC 60
SINUMERIK & SINAMICS	NC 61

Drive Systems	
Variable-Speed Drives	
SINAMICS G130 Drive Converter Chassis Units, SINAMICS G150 Drive Converter Cabinet Units	D 11
SINAMICS G110 Inverter Chassis Units	D 11.1
SINAMICS S120 Servo Control Drive System	D 21.2
SINAMICS S150 Drive Converter Cabinet Units	D 21.3
DC Motors	DA 12
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2
SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	DA 22
SIMOVERT PM Modular Converter Systems	DA 45
SIEMOSYN Motors	DA 48
MICROMASTER 410/420/430/440 Inverters	DA 51.2
MICROMASTER 411/COMBIMASTER 411	DA 51.3
SIMOVERT MV Medium-Voltage Drives	DA 63
SIMOVERT MASTERDRIVES Vector Control	DA 65.10
SIMOVERT MASTERDRIVES Motion Control	DA 65.11
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3
SIMODRIVE 611 universal and POSMO	DA 65.4
Low-Voltage Three-Phase-Motors	
Squirrel-Cage Motors, Totally Enclosed, Fan-Cooled	M 11
Automation Systems for Machine Tools SIMODRIVE	NC 60
• Main Spindle/Feed Motors	
• Converter Systems SIMODRIVE 611/POSMO	
Automation Systems for Machine Tools SINAMICS	NC 61
• Main Spindle/Feed Motors	
• Drive System SINAMICS S120	
Drive and Control Components for Hoisting Equipment	HE 1

Electrical Installation Technology	
ALPHA Small Distribution Boards and Distribution Boards	ET A1
PDF: ALPHA 8HP Molded-Plastic Distribution System	*ET A3*
ALPHA FIX Terminal Blocks	ET A5
BETA Modular Installation Devices	ET B1
DELTA Switches and Outlets	ET D1
GAMMA Building Management Systems	ET G1

SIMATIC Sensors	FS 10

Human Machine Interface Systems SIMATIC HMI	ST 80

Industrial Communication for Automation and Drives	*Catalog* IK PI

Low-Voltage Controls and Distribution	
Low-Voltage Switchgear – Controlgear for Industry	LV 10
Power Distribution – Products and Systems for Low-Voltage Power Distribution	LV 30
SIDAC reactors and filters	LV 60
SIVACON 8PS Busbar trunking systems CD, BD01, BD2 up to 1250 A	LV 70
Low-Voltage Controlgear, Switchgear and Systems	LV 90

Motion Control System SIMOTION	PM 10

Process Instrumentation and Analytics	
Field Instruments for Process Automation Measuring Instruments for Pressure, Differential Pressure, Flow, Level and Temperature, Positioners and Liquid Meters	FI 01
PDF: Indicators for panel mounting	*MP 12*
SIREC Recorders and Accessories	MP 20
SIPART, Controllers and Software	MP 31
SIWAREX Weighing Systems	WT 01
Continuous Weighing and Process Protection	WT 02
Gas Analysis Equipment for the Process Industry	PA 10
PDF: Process Analytics, Components for the System Integration	*PA 11*
SIPAN Liquid Analysis	PA 20

SIMATIC Industrial Automation Systems	
SIMATIC PCS Process Control System	ST 45
Products for Totally Integrated Automation and Micro Automation	ST 70
SIMATIC PCS 7 Process Control System	ST PCS 7
PDF: Add-ons for the SIMATIC PCS 7 Process Control System	*ST PCS 7.A*
pc-based Automation	ST PC
SIMATIC Control Systems	ST DA

SIPOS Electric Actuators	
Electric Rotary, Linear and Part-turn Actuators	MP 35
Electric Rotary Actuators for Nuclear Plants	MP 35.1/.2

Systems Engineering	
Power supplies SITOP power	KT 10.1
System cabling SIMATIC TOP connect	KT 10.2

System Solutions
Applications and Products for Industry are part of the interactive catalog CA 01

TELEPERM M Process Control System	
PDF: AS 488/TM automation systems	*PLT 112*

PDF: These catalogs are only available as pdf files.

Industrial Drives & Controls Ltd,
Drivetec House,
Aqueduct Business Park,
Marple,
Stockport,
Cheshire, SK6 5LD.

Tel: 0161 427 0022
Fax: 0161 427 0033
E-mail: sales@drives-and-controls.co.uk

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Siemens AG

Automation and Drives
Human Machine Interface
Postfach 4848
90327 NÜRNBERG
Germany

www.siemens.com/automation

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