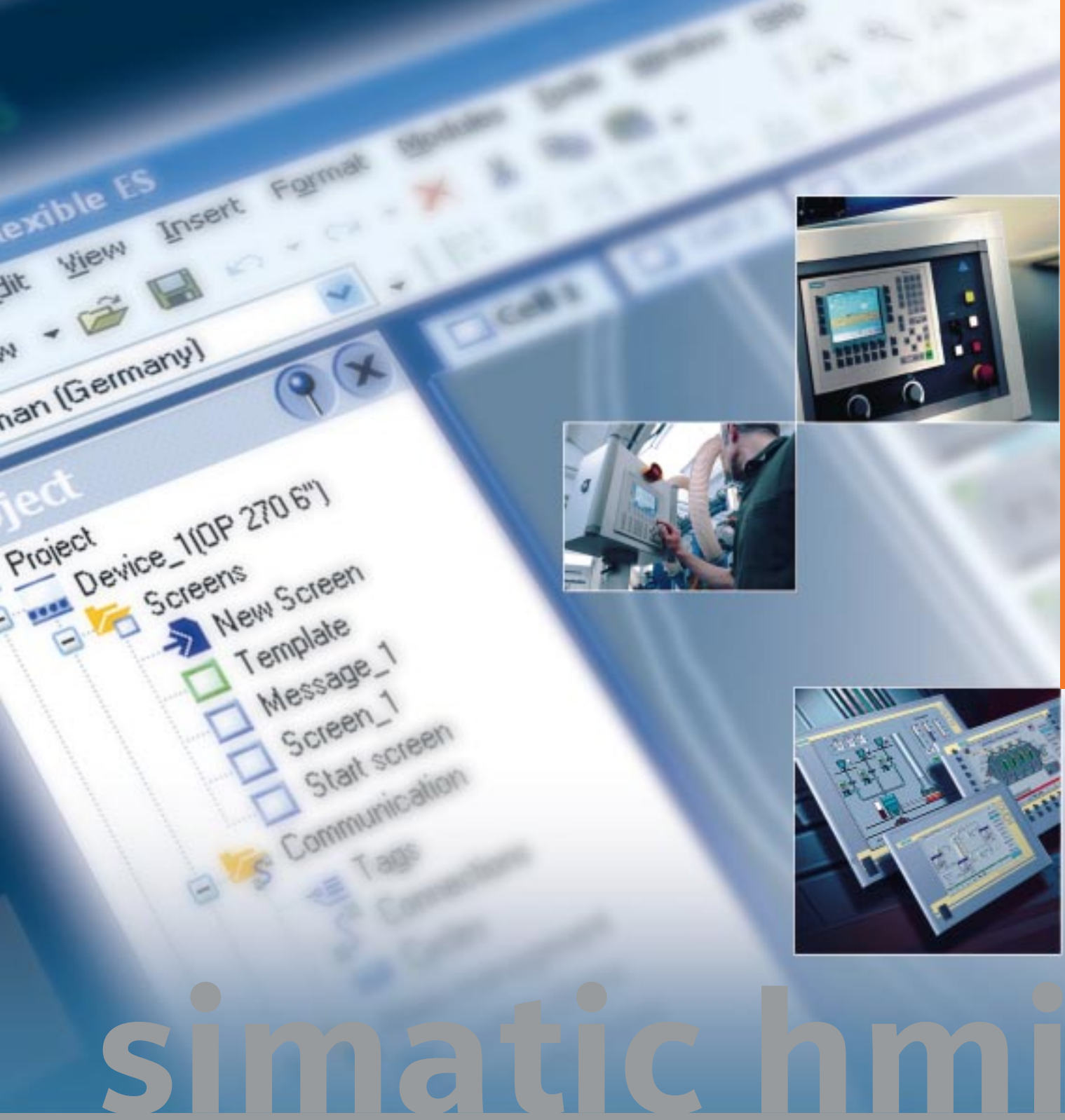
Catalog ST 80 · 2005



simatic hmi

Human Machine
Interface Systems

SIEMENS

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According to the German law on units in measuring technology, data in inches only apply to devices for export.

Human Machine Interface Systems

Catalog ST 80 · 2005

Supersedes:
Catalog ST 80 · 2004

The products contained in this catalog are also contained in the electronic Catalog CA 01
Order No.:
CD: E86060-D4001-A100-C3-7600

For additional information contact your nearest Siemens branch office.

The products and systems listed in this catalog are manufactured/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

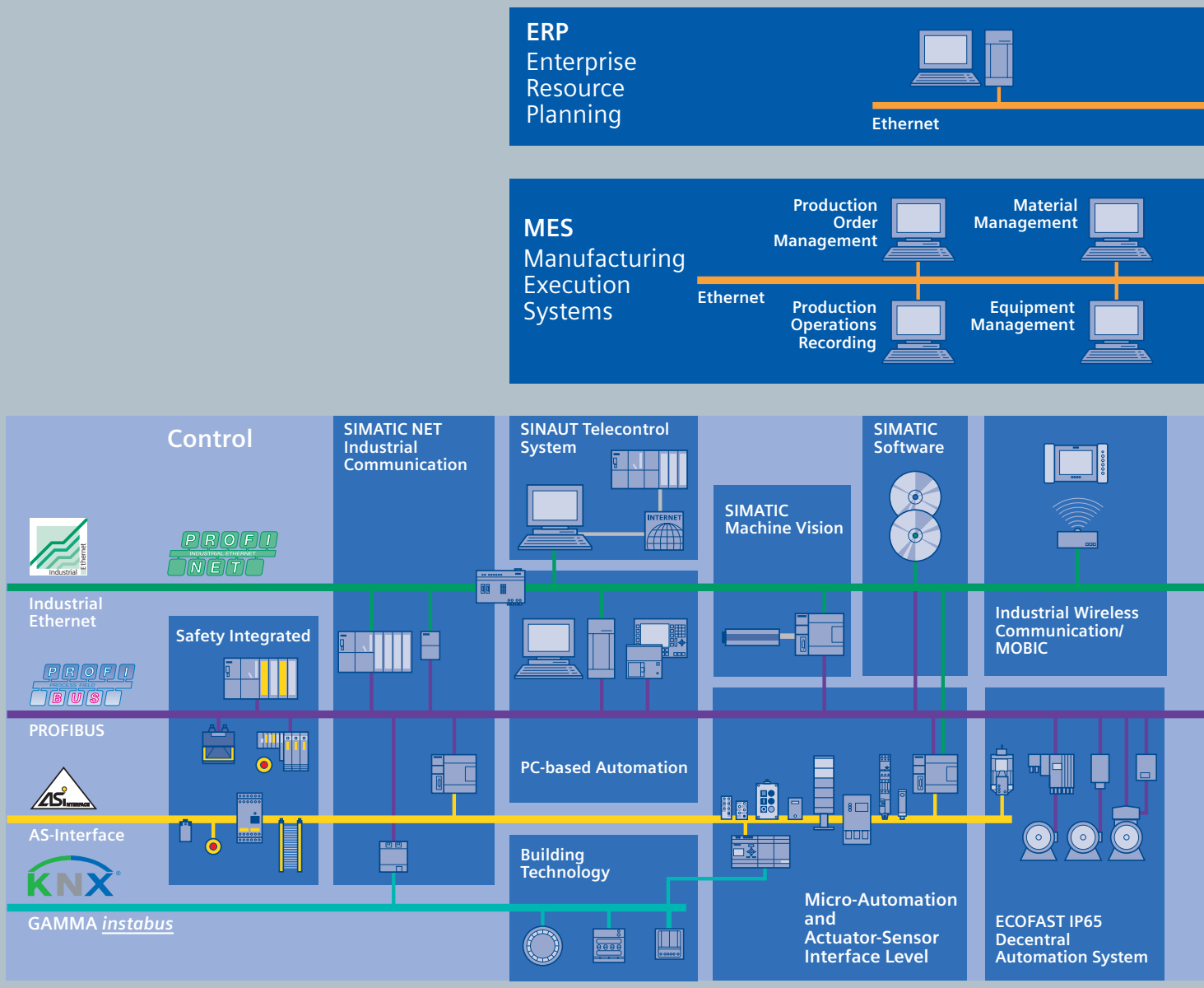
We would like to welcome you to Automation and Drives and our comprehensive range of products, systems, solutions and services for production and process automation and building technology worldwide.

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

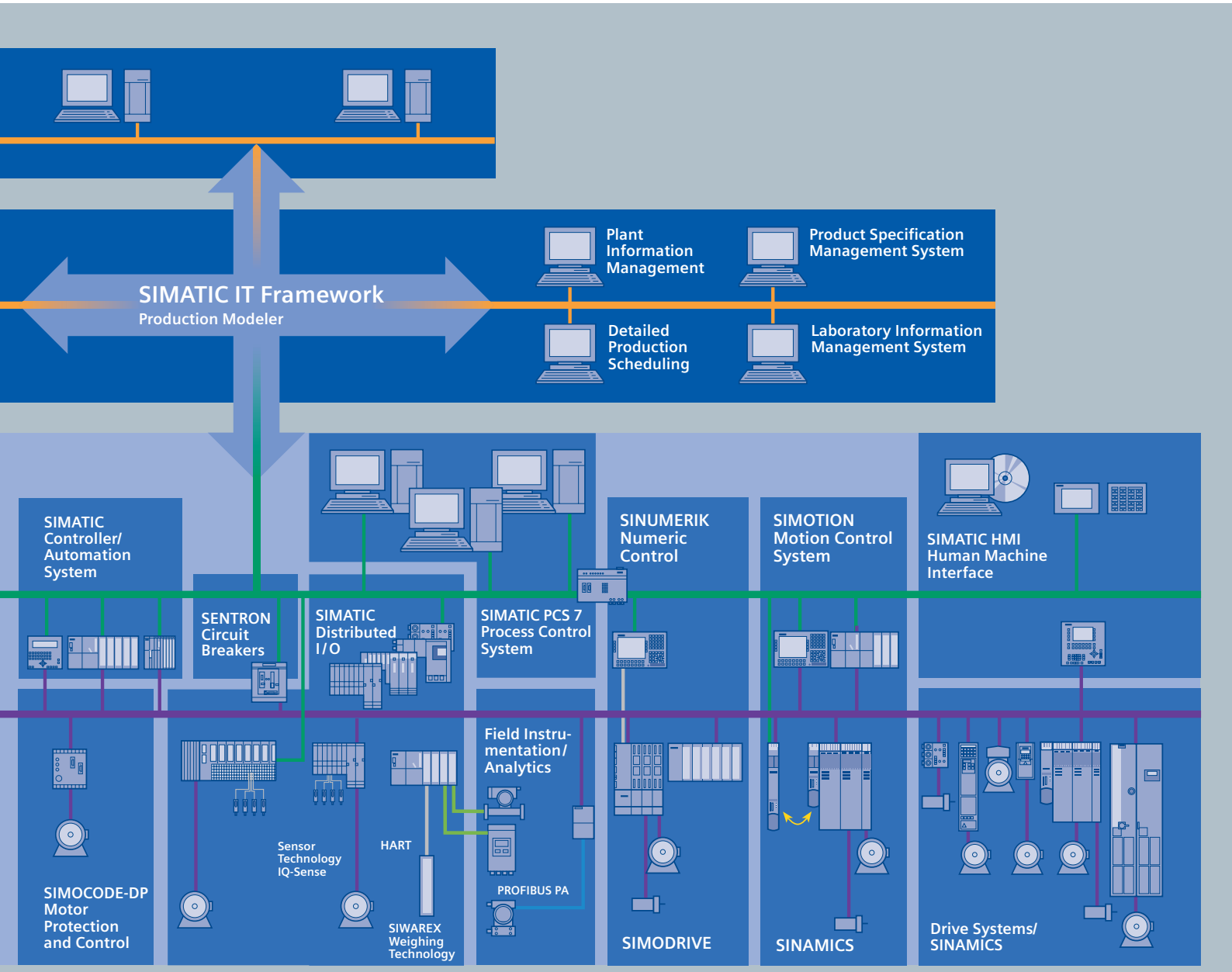
Discover the world of our technology now. If you need more detailed information, please contact one of your regional Siemens partners.
They will be glad to assist you.

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



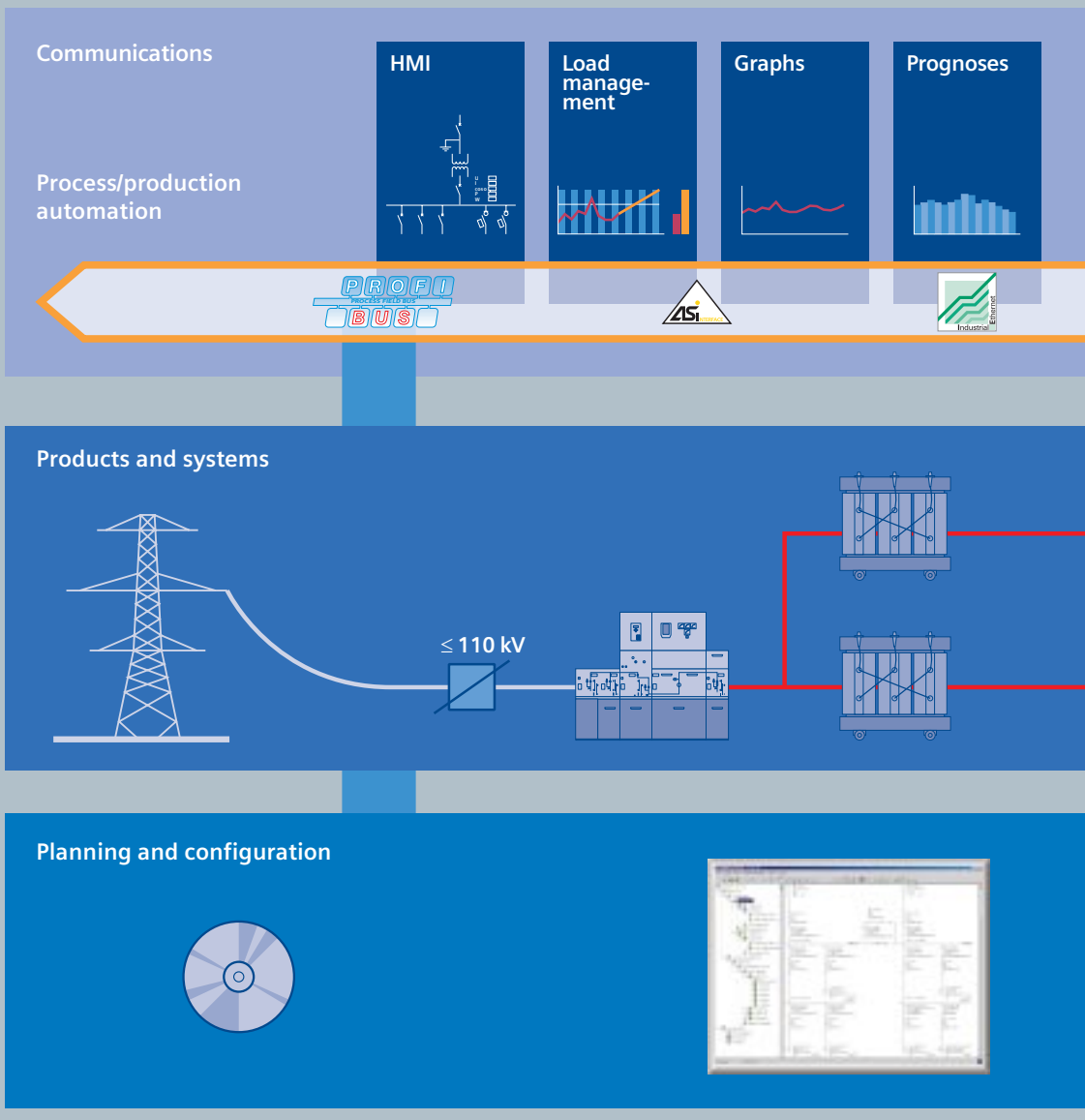
and production areas to shipping. Thanks to the system-oriented engineering environment, integrated, open communications as well as intelligent diagnostics options, your plant now benefits in every phase of the life cycle.
In fact, to this day we are the only company worldwide that can offer a control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

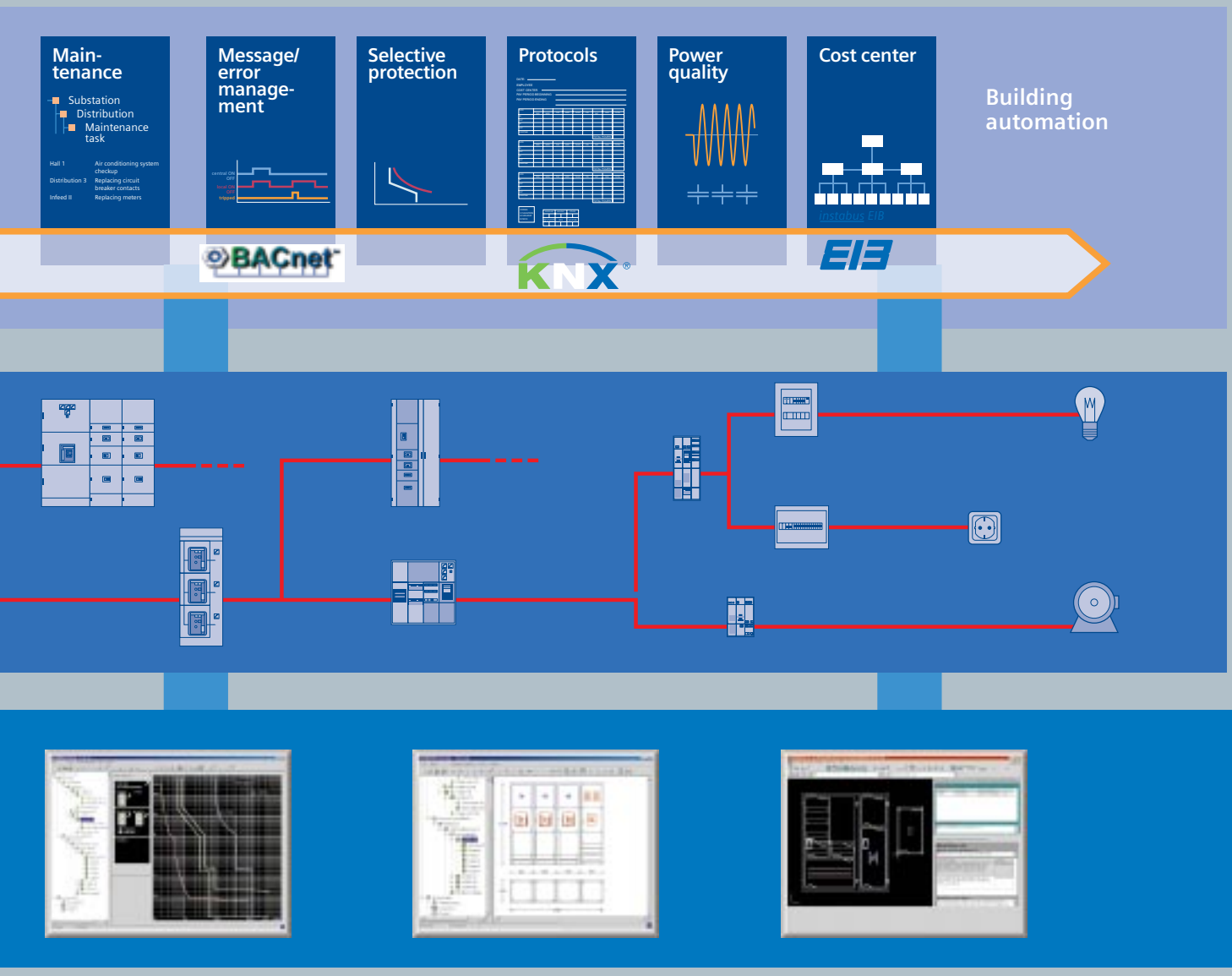


Totally Integrated Power – energy distribution and management from one source

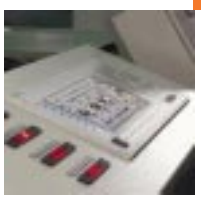
Totally Integrated Power™ by Siemens offers integrated solutions for energy distribution in functional and industrial buildings covering everything from medium-high voltage to power outlets.

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
BACnet
KNX
EIB

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

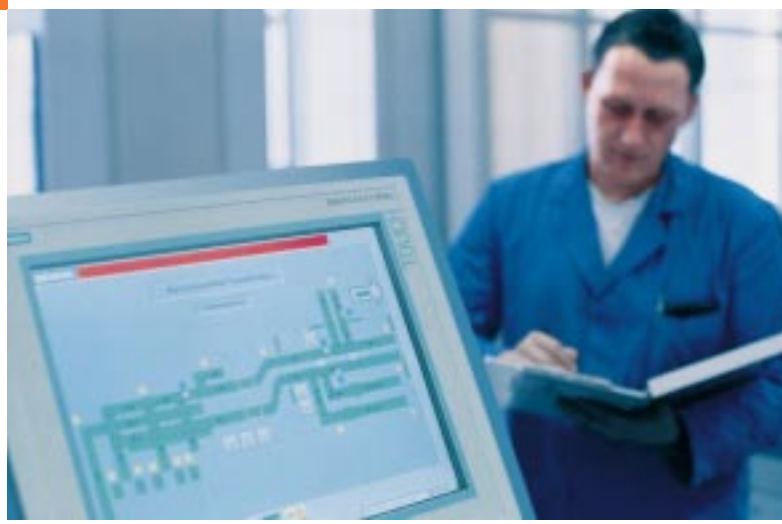
The multi panels under Windows CE encompass the advantages of two different worlds: On the one hand, the ruggedness of an operator panel, and on the other hand the flexibility typical of the PC. Siemens is the first manufacturer to implement this new class of multifunctional platforms. Apart from the 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.

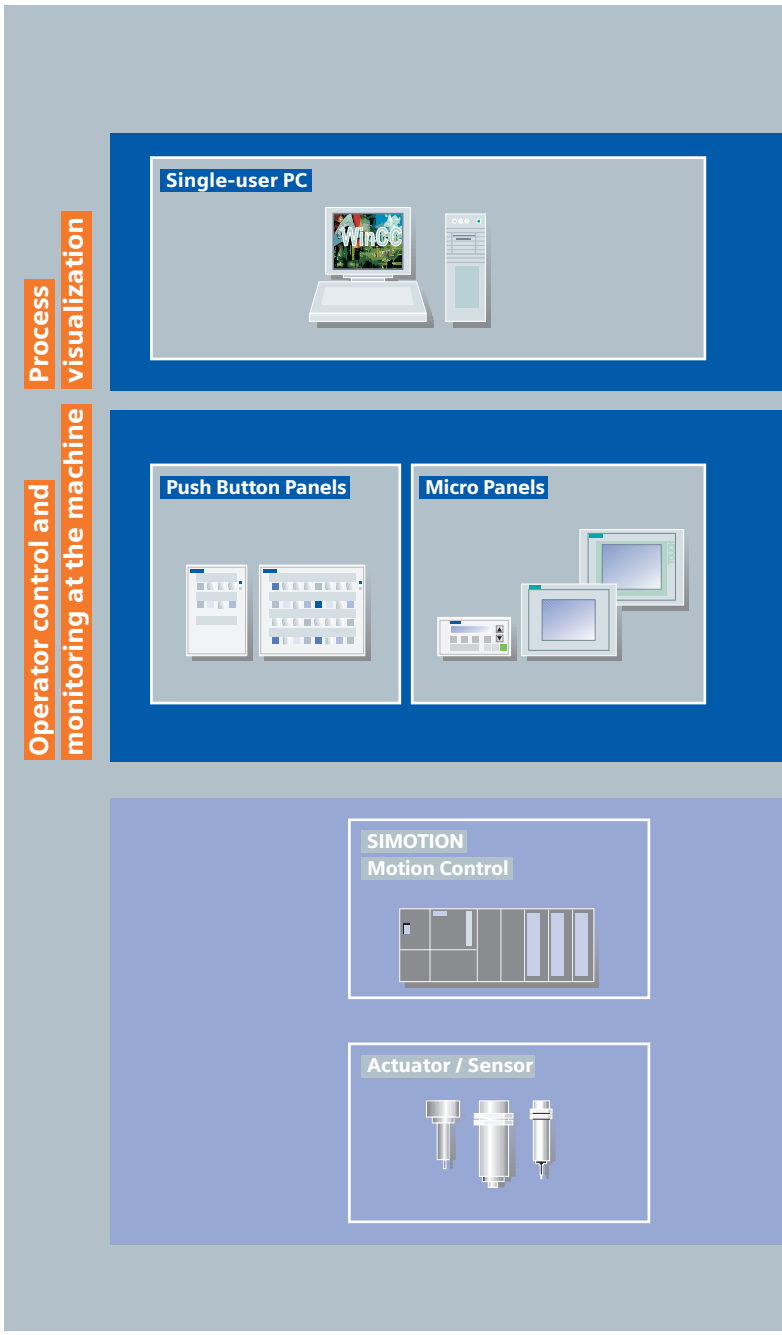
SIMATIC Multi Panels
Multifunctional platforms that, apart from visualization, also perform other automation tasks such as control functions.

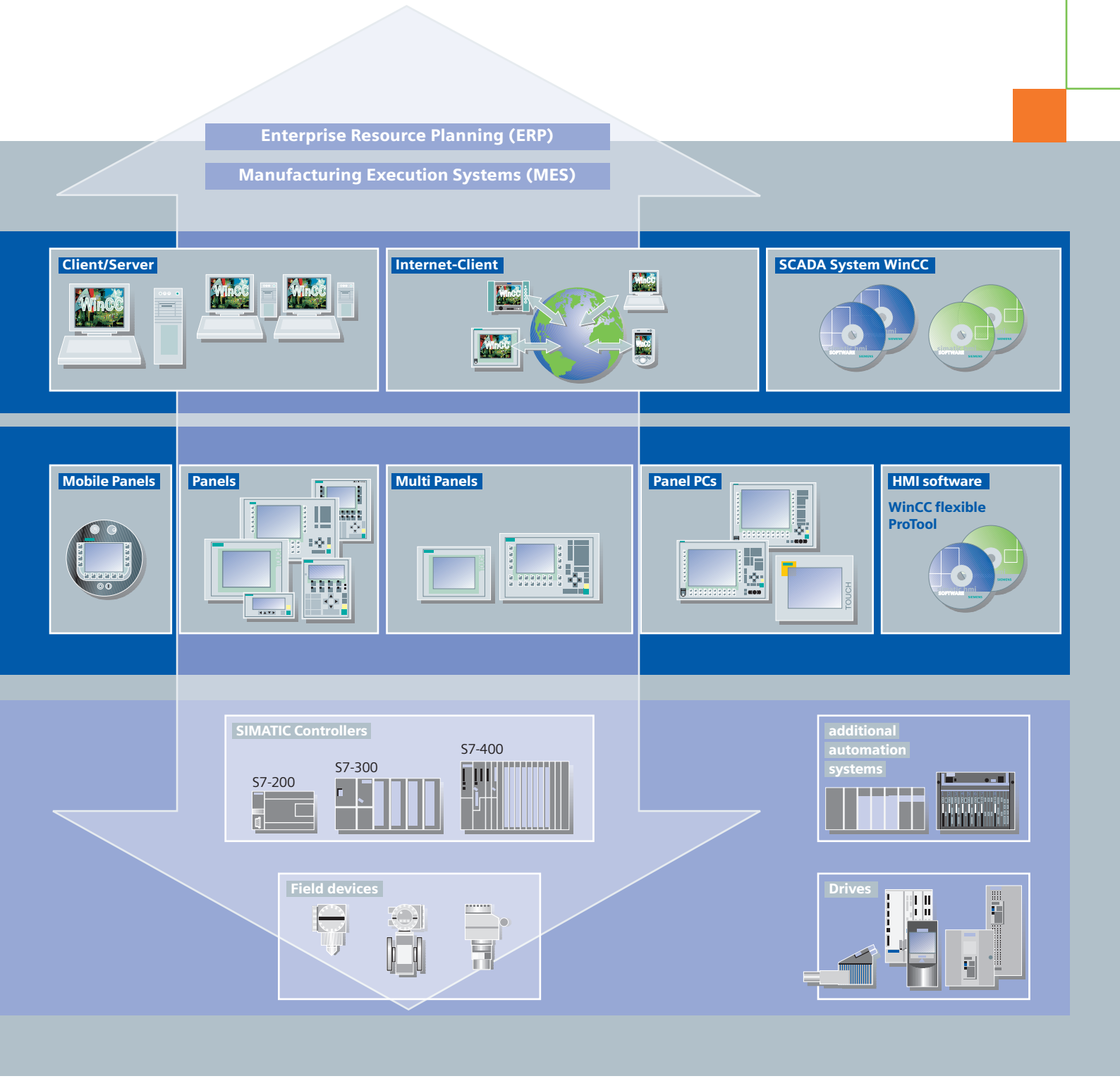
SIMATIC Panel PCs
Industrial platforms for PC visualization on site or for the many different automation tasks of PC-based Automation.

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.

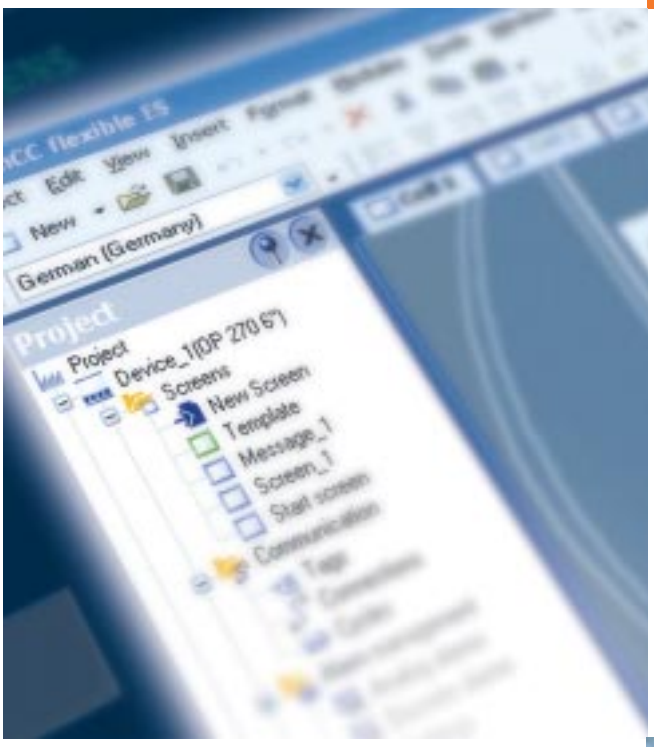
SIMATIC ProTool
Integrated, system-wide configuring software under Windows for all SIMATIC HMI operator panels.

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.



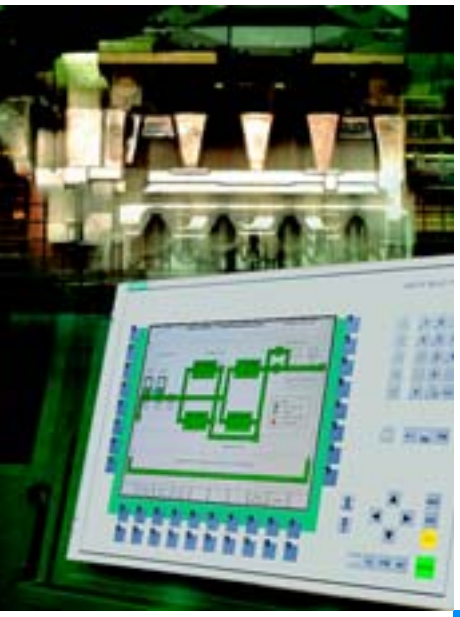

Enterprise Resource Planning (ERP)
Manufacturing Execution Systems (MES)
Client/Server
Internet-Client
SCADA System WinCC
Mobile Panels
Panels
Multi Panels
Panel PCs
HMI software
WinCC flexible
ProTool
SIMATIC Controllers
S7-200
S7-300
S7-400
additional
automation
systems
Field devices
Drives

SIMATIC HMI
The Human Machine Interface



Operator control and monitoring devices

2



Introduction

Overview

A finely graded range of HMI devices is available for operator control and monitoring at machine level: ranging from Push Button Panels, Micro Panels, Panels and Multi Panels to Mobile Panels.

Push Button Panels

Push Button panels (PP) are the innovative alternative to conventionally wired operator keypads. The bus-based input panels are preconfigured and ready for installation, and permit drastic time savings compared to conventional wiring.

Micro Panels

Tailored to applications with the Micro PLC SIMATIC S7-200, either with text-oriented display (TD) or with pixel-graphics display, either as operator panel (OP) with membrane keyboard or touch screen (TP).

Mobile Panels

The portable operator panels support operator control and monitoring at the exact location of the action with direct access and line-of-sight to the process. They can be easily and reliably connected during operation and can therefore be used with flexibility on a machine or in a system.

Panels

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

Graphics Panel 70/170/270 series
with pixel-graphics display for realistic representation of sequences (from 170B also in color), either as touch panels (TP) with touch-sensitive display or as operator panels (OP) with membrane keyboard.

Multi Panels

270/370 series
in variants with operation by means of a touch screen or membrane keyboard enable the panels to be used in the same manner as the panels for operator control and monitoring. In addition, multi panels (MP) allow the installation of additional applications and thus permit, for example, the integration of several automation tasks on a single platform using the PLC WinAC MP software.

Benefits

Rugged and compact for use at the machine level

With IP65/NEMA 4 degree of protection at the front, a high EMC, and extreme resistance to vibration, the SIMATIC Operator Panels are extremely suitable for use at the machine level in harsh industrial environments. Thanks to their compact design with shallow mounting depth, there is always sufficient space for the stationary panels, even where space for installation is at a premium.

The mobile panels are especially suitable for use in industry thanks to their extremely rugged and impact-resistant housing in degree of protection IP65. Their low weight and ergonomic design mean they are simple and easy to use.

One configuration software for everything

SIMATICProTool or SIMATIC WinCC flexible are tools for integrated configuring of all SIMATIC Panels as well as PC-based systems with the visualization software ProTool/Pro Runtime or WinCC flexible Runtime. Graded versions are available depending on the requirements. The software permits simple, efficient configuration. Programming knowledge is not required.

Once configurations have been generated, they can simply be used for the entire range.

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 parts of this world. This provides decisive advantages. Thanks to the uniformity in configuration/programming, data management and communication, the engineering costs of an automation solution are significantly reduced.

Open for many different 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 convenient drivers.

Innovative operator control and monitoring

Based on the Windows CE operating system, the Mobile Panels, Panels and Multi Panels of the 70,170, 270 and 370 series permit innovative operator control and monitoring combined with ruggedness, stability and simplicity. Increased flexibility and openness, together with access to the office environment, are provided by standard hardware and software interfaces, for example MMC/PC/CF card, USB, Ethernet, PROFIBUS DP, Visual Basic scripts and customized ActiveX controls.

Global use

The SIMATIC Panels are optimally designed for global use. Online language selectioni permits selection of up to 5 languages during operation simply by pressing a key. The wide variety of languages available includes Chinese, Taiwanese, Korean, Japanese or Russian. The configuration interface of ProTool or WinCC flexible, including online Help and the complete documentation, are also multi-language. Up to 32 languages can be used in a project. And all this is provided with global servicing and support from Siemens.

Summary of configuration

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

• Possible

1) Start of delivery approximately end of 4th quarter 2004

Introduction

Technological overview

	Micro Panels	Mobile Panels	Panels			
			Text Panels	70er Serie	170er Serie	270er Serie
	TD 200/TD 200C [1] *OP 73micro* [1] [6] *TP 070* [1] *TP 170micro TP 177micro* [6]	*Mobile Panel 170*	*TD17 OP3/OP7/OP17*	*OP 73* [6] *OP 77A* [6] */B*	*TP 170A TP/OP 170B TP 177A* [7]	*TP 270 OP 270*
Display	*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	*TD 200/ TD 200C/ OP 73micro:* Monochrome *TP 070/ TP 170micro/ TP 177micro:* 4 blue modes	16 colors	Monochrome	Monochrome	*TP 170A/ TP 177A OP 170B:* 4 blue modes *TP 170B:* 4 blue modes/ 16 colors	256 colors
Control elements						
•Membrane keyboard	• (TD 200/ TD 200C/ OP 73micro)	-	•	•	•	•
•Touch screen	• (TP 070/ TP 170micro/ TP 177micro)	-	-	-	•	•
•Membrane keyboard and Touch	-	•	-	-	-	-
Interfaces/protocols						
•Serial / MPI / PROFIBUS DP	• / • / -	• / • / •	• / • / • [2]	• [4] / • / •	• [5] / • / •	• / • / •
•USB / Ethernet	- / -	- / -	- / -	• [4] / -	- / -	• / optional
•MMC /CF / PC card slot	- / - / -	- / • / -	- / - / -	• [4] / - / -	- / • [3)5)] / -	- / • / -
Memory (available for user data)	*TD 200/ TD 200C/ TP 070 OP 73micro:* 128 KB *TP 170micro/ TP 177micro:* 256 KB	768 KB	*TD17/OP3/OP7:* 128 KB *OP17:* 256 KB	*OP 73/OP 77A:* 256 KB *OP 77B:* 1024 KB	*TP 170A:* 320 KB *TP 177A:* 512 KB *TP 170B/ OP 170B:* 768 KB	2 MB
Interface with PLC						
•SIMATIC S7 / WinAC	S7-200 only	• / •	• / •	• / •	• / •	• / •
•SIMATIC S5 / 505	- / -	• / •	• [2] / • [2]	• [4] / • [4]	• [5] / • [5]	• / •
•SINUMERIK / SIMOTION	- / -	• / •	• [2] / -	- / -	• [3)5)] / • [3)5)]	• / •
•Non-Siemens controllers	-	•	• [2]	• [4]	• [5]	•
Applications/options with ProTool						
•ProAgent	-	-	-	-	-	•
•ThinClient/MP	-	-	-	-	-	-
•MS Pocket Internet Explorer	-	-	-	-	-	-
•WinAC MP	-	-	-	-	-	-
Applications/options with WinCC flexible						
•ProAgent	-	-	-	-	-	•
•Sm@rtService	-	-	-	-	-	•
•Sm@rtAccess	-	-	-	-	-	•
•OPC server	-	-	-	-	-	-
•ThinClient/MP	-	-	-	-	-	-
•MS Pocket Internet Explorer	-	-	-	-	-	-
•WinAC MP	-	-	-	-	-	-

• available - not available

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
6) Start of delivery approximately end of 4th quarter 2004

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	●	●
•MS Pocket Internet Explorer	●	●
•WinAC MP	-	●
Applications/options with WinCC flexible		
•ProAgent	●	●
•Sm@rtService	●	●
•Sm@rtAccess	●	●
•OPC server	●	●
•ThinClient/MP	● (MP 270B 10″)	●
•MS Pocket Internet Explorer	●	●

● available
- not available

Introduction

Functionality (when configuring with ProTool)

	Micro panels	Mobile panels	Panels			Multi panels	
			Text panels	170 series	270 series	270 series	370 series
	TD 200/ TD 200C TP 070 [3]	*Mobile Panel 170*	*TD17 OP3/OP7/ OP17*	*TP 170A TP 170B OP 170B*	*TP 270 OP 270*	*MP 270B 10"*	*MP 370*
•Status signals/fault signals	*TD 200:* 80 / – *TP 070:* –/ –	1000 / 1000	*TD17:* 999 / – *OP3:* 499 / – *OP7:* 499 / 499 *OP17:* 999 / 999	*TP 170A:* 1000 / – *TP 170B/ OP 170B:* 1000 / 1000	2000 / 2000	2000 / 2000	2000 / 2000
•Message buffer (number of entries)	–	128	*OP3:* – *TD17/OP7/OP 17:* 256	*TP 170A:* [5] – *TP/OP 170B:* [5] 128	512	512	1024
•Recipes	–	100	*TD17/OP3:* – *OP7/OP17:* 99	*TP 170A:* – *TP/OP 170B:* 100	300	300	500
•Process diagrams	*TP 070:* 20	100	*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	1000	*TD17:* 1000 *OP3:* 1024 *OP7/OP17:* 2048	*TP 170A:* 500 *TP/OP 170B:* 1000	2048	2048	2048
•Archiving	-	-	-	-	•	•	•
•Visual Basic Scripts	-	-	-	-	•	•	•
•Online languages	1	5	3	5 [1]	5	5	5
•Password protection	• (TD 200 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[3] / *TP 170micro*/ *TP 177micro*[3]	*Mobile Panel 170*	*OP 73*[2][3] / *OP 77A*[2][3] / *OP 77B*	*TP 170A*/ *TP/OP 170B*/ *TP 177A*[3]	*TP 270* *OP 270*	*MP 270B*	*MP 370*
•No. of messages	*OP 73micro:* 250 *TP 170micro*/ *TP 177micro:* 500	2000	*OP 73:* 500 *OP 77A*/ *OP 77B:* 1000	*TP 170A*/ *TP 177A:* 1000 *TP/OP 170B:* 2000	4000	4000	4000
•Message buffer (number of entries)	128[4]	256	256[4]	*TP 170A:* 128[4] *TP/OP 170B*/ *TP 177A:* 256[4]	512	512	1024
•Recipes	-	100	100[2]	*TP 170A:* – *TP/OP 170B:* 100	300	300	500
•Process diagrams	250	500	500	*TP 170A:* 250 *TP/OP 170B:* 500	500	500	500
•Bar/curve diagrams (pixel graphics)	• / -	• / •	• / -	• / •[1]	• / •	• / •	• / •
•Variables	*OP 73micro:* 500 *TP 170micro*/ *TP 177micro:* 250	1000	1000	*TP 170A*/ *TP 177A:* 500 *TP/OP 170B:* 1000	2048	2048	2048
•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	-	-	-	-	•	•	•

• available
- not available

1) Except TP 170A/TP 177A
2) Only on OP 77B
3) Start of delivery approximately end of 4th quarter 2004
4) Non-retentive

Push Button Panels

SIMATIC PP7

Overview

SIMATIC push button panels are the innovative alternative to conventional control panels for easy, direct machine operation:

- Pre-assembled turnkey system; after they has been connected to the PLC, all keys and lamps are immediately ready to operate
- Connection to any PLC over a bus cable (PROFIBUS DP or MPI)
- Equipped with 8 short-stroke ke ys, 4 additional digital inputs and 5 slots for 22.5 mm standard elements.

Benefits

- Up to 90% time savings: no in dividual mounting and wiring of keys, switches and lamps
- Simplification of configuring and startup phase through the use of standard cables, for example
- No configuring tool required
- Service-friendly thanks to displa y on rear for showing operating statuses and messages in plain text without programming device
- Simple and user-friendly machine operation thanks to multi-colored indicator lamps
- User-friendly labeling of th e keys and lamps using slide-in labels

Application

The rugged push button panel PP7 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 construction:

- Preassembled with 8 short-stroke keys that can be labelled as required using slide-in labels
- Smooth, easily to clean front; the front is resistant to various oils, greases and standard detergent.
- Long-life multi-color wide-area LEDs in all short-stroke keys
- 4 additional digital 24 V inputs for flexible expansions
- 5 perforated cutouts for 22.5 mm additional standard elements (push buttons, lamps, EMERGENCY-STOP, key switches)
- Display on the rear with mini keypad for displaying operating status also in plain text and for changing the standard settings
- The PP7 is identical in design to the OP7 and can therefore be located contiguously with it
- Low-maintenance, as no battery is required
- All parameters are stored on an easily interchangeable memory card

Function

- Color modes for LEDs (e.g. red, green, orange, red flashing, green flashing, orange flashing)
- Integrated flashing frequency 0.5 Hz for LEDs
- Integrated diagnostics functions
- Integrated lamp and key test (als o for additional 24 V digital inputs)
- Menu-assisted parameterization using display on the rear with a mini keyboard
- Short-stroke keys and digital inputs can also be individually parameterized as switches
- Configurable extension of pulses for short-stroke keys and digital inputs (max. 1000 ms)
- PROFIBUS DP standard slave

Integration

The pushbutton 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 through PROFIBUS DP
- PROFIBUS DP standard master s from any manufacturer (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]	
via MPI interface to **S7-200/-300/-400/** **WinAC Software-PLC/Slot-PLC** (9-pin female/RS 485),[3][4]	**Bus connector,** **bus cable and MPI network** (see Catalog ST 70/IK PI)
SIMATIC S5/S7 (PROFIBUS DP as standard slave)	
via PROFIBUS to max. 1 x **S7-200** (CPU 215-DP) by means of MPI protocol **S7-300/-400** with integrated PROFIBUS-SS **S7-300** with CP 342-5 **S7-400** with CP 443-5	**PROFIBUS** [5] (see Catalog ST 70/IK PI)
via PROFIBUS DP to **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 PLCs (PROFIBUS DP master)	
via PROFIBUS DP	**PROFIBUS** [5] (see Catalog ST 70/IK PI)

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

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

Technical specifications

	PP7
Control elements	
•Number of keys	8 short-stroke keys
•LED color modes	3
Additional digital inputs	4
Additional digital outputs	-
Short-circuit protection	Yes
Service life	
•Short-stroke keys (in ON-OFF operations)	1,500,000
•LEDs (ON period)	100%
Power supply	24 V DC
•Permitted range	+18 V to +30 V DC
•Current input, typ.	0.2 A
Ports	1 x RS 485
Connection to PLC	S5, S7-200/-300/-400, WinAC, additional DP standard masters
Ambient conditions	
•Mounting position	+/- 35°
- Max. permissible angle of inclination without forced ventilation	35°
•Temperature	
- Operation (vertical installation)	0 °C to +55 °C
- Operation (max. angle of inclination)	0 °C to +55 °C
- Transport, storage	-20 °C to +70 °C
•Max. relative humidity	95%
Dimensions	
•Front plate W x H x D (mm)	144 x 204 x 53[1]
•Cutout W x H (mm)	130 x 190
Weight	0.72 kg
Functions	
•Short stroke keys / digital inputs as pushbutton or switch	Yes
•Integrated flashing rate for LEDs	0.5 Hz
•Pushbutton and lamp test	Yes
•Pulse extension for short-stroke keys and digital inputs, max.	1000 ms
•Enable input	No
•Mounting locations for 22.5 mm standard elements	5
Degree of protection	
•Front	IP65
•Rear	IP20
Certification	cULus 508, CSA, CE for EMC

1) Depth without connecting cables

SIMATIC PP7

2

Ordering data

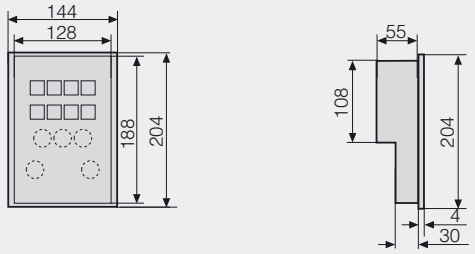
Ordering data	Order No.
SIMATIC PP7 A)	**6AV3 688-3AA03-0AX0**
Pushbutton panel incl. mounting accessories:	
•8 x short-stroke keys	
•8 x surface LEDs	
•4 x DI terminals (24 V)	
•Max. 5 x 22.5 mm pre-perforated cutouts for additional units	
Documentation (to be ordered separately)	
Manual for PP7/PP17 1)	
•German	**6AV3 991-1CA00-1AA0**
•English	**6AV3 991-1CA00-1AB0**
•French	**6AV3 991-1CA00-1AC0**
•Italian	**6AV3 991-1CA00-1AD0**
•Spanish	**6AV3 991-1CA00-1AE0**
Brief start-up instructions	
For PP7, PP17-I, PP17-II	
•German	**6AV3 991-1CA00-1BA0**
•English	**6AV3 991-1CA00-1BB0**
Accessories for supplementary ordering	
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two Sub-D connectors, 9-pin, 3 m	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
Service package for PP7, PP17-I, PP17-II	**6AV3 678-3XC30**
comprising:	
•1 x PP7 gasket	
•1 x PP17-I/PP17-II gasket	
•5 x clamps	
•PP7 clamp-type terminal strip	
•PP17-I/PP17-II clamp-type terminal strips	

Note:
Commercially available printing foils can be used as the keyboard inscription strips. Word templates are included on a diskette with the manual.

1) Incl. 3.5" diskette; diskette includes GSD files/TYP files and Word templates for inscription strips

Dimension drawings

Dimensions in mm



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

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More information

For further information, visit our website at

http://www.siemens.com/panels

Overview

SIMATIC push button panels are the innovative alternative to conventional control panels for easy and straight-forward machine operation:

- Pre-assembled turnkey system;
  after they have been connected to the PLC, all keys and lamps are immediately ready to operate
- Connection to any PLC over a bus cable (PROFIBUS DP or MPI)
- *PP17-I:*
  Equipped with 16 short-stroke keys, 16 additional digital inputs and 16 additional digital outputs and 12 slots for 22.5 mm standard elements
  PP17-II:
  Equipped with 32 short-stroke keys and 16 additional digital inputs and 16 additional digital outputs.

Benefits

- Up to 90% time savings: no in dividual mounting and wiring or keys, switches and lamps
- Simplification of configuring and startup phase, through the use of standard cables, for example
- No configuring tool required
- Service-friendly thanks to displa y on rear for showing operating statuses and messages in plain text without programming device
- Simple and user-friendly machine operation thanks to multi-colored indicator lamps
- User-friendly labeling of th e keys and lamps using slide-in labels

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:

- Pre-assembled with 16 (PP17-I) or 32 (PP17-II) short-stroke keys that can be inscribed as required using slide-in labels
- Smooth, easily to clean front;
  the front is resistant to various oils, greases and standard detergents
- Long-life multi-color wide-area LEDs in all short-stroke keys
- 16 additional 24 V digital inputs and outputs for flexible expansion
- 12 perforated cutouts for 22.5 mm standard elements (push buttons, lamps, etc.) for PP17-I
- Display on the rear with mini keypad for displaying operating status in plain text and for changing the standard settings
- Central enable input
- The PP17 is identical in design to the OP17 and can therefore be located contiguously with it
- Low-maintenance, as no battery is required.
- All parameters are stored on an easily interchangeable memory card

Function

- Color modes for LED (e.g. red, green, orange, red flashing, green flashing, orange flashing)
- Integrated flashing frequencies 0. 5 Hz and 2 Hz for digital outputs and LEDs
- Integrated diagnostics functions
- Integrated lamp and push button test (also for additional 24 V inputs and outputs)
- Menu-assisted parameterization using display on the rear with a mini keyboard
- Short-stroke keys and digital inputs can also be individually parameterized as switches
- Configurable extension of pulses 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 through PROFIBUS DP
- PROFIBUS DP standard master s from any manufacturer (e.g. Allen Bradley, ...)

System interfaces

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	**SIMATIC PP17** [1] **Connected via**
SIMATIC S7 / SIMATIC WinAC (MPI as master) [2]	
via MPI interface to **S7-200/-300/-400/** **WinAC Software-PLC/Slot-PLC** (9-pin female/RS 485),[3][4]	**Bus connector,** **bus cable and MPI network** (see Catalog ST 70/IK PI)
SIMATIC S5/S7 (PROFIBUS DP as standard slave)	
via PROFIBUS to max. 1 x **S7-200** (CPU 215-DP) by means of MPI protocol **S7-300/-400** with integrated PROFIBUS-SS **S7-300** with CP 342-5 **S7-400** with CP 443-5	**PROFIBUS** [5] (see Catalog ST 70/IK PI)
via PROFIBUS DP to **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 PLCs (PROFIBUS DP master)	
via PROFIBUS DP	**PROFIBUS** [5] (see Catalog ST 70/IK PI)

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

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

Technical specifications

	PP17-I	PP17-II
Control elements		
•No. of keys	16 short-stroke keys	32 short-stroke keys
•LED color modes	3	3
Additional digital inputs	16	16
Additional digital outputs	16	16
•In groups of	4	4
•Output current max. [1)]	100 mA	100 mA
•Aggregate current per group, max.	500 mA	500 mA
•Short-circuit protection	Yes	Yes
Service life		
•Short-stroke keys (ON-OFF operations)	1,500,000	1,500,000
•LEDs (ON period)	100%	100%
Power supply	24 V DC	24 V DC
•Permitted range	+18 to +30 V DC	+18 to +30 V DC
•Current input, typ.	0.2 A	0.4 A
Ports	1 x RS 485 (12 Mbits/s)	1 x RS 485 (12 Mbits/s)
Connection to PLC	S5, S7-200/-300/-400, WinAC, additional DP standard master	S5, S7-200/-300/-400, WinAC, additional DP standard master
Ambient conditions		
•Mounting position	+/- 35°	+/- 35°
- Max. permissible angle of inclination without forced ventilation	35°	35°
•Temperature		
- Operation (vertical installation)	0 °C to +55 °C	0 °C to +55 °C
- Operation (max. angle of inclination)	0 °C to +55 °C	0 °C to +55 °C
- Transport, storage	-20 °C to +70 °C	-20 °C to +70 °C
•Max. relative humidity	95%	95%
Dimensions		
•Front W x H (mm)	240 x 204	240 x 204
•Cutout W x H (mm)	226 x 190	226 x 190
Weight	Approx. 1.2 kg	Approx. 1.5 kg
Functions		
•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
•Pulse extension for short-stroke keys and digital inputs, max.	1000 ms	1000 ms
•Enable input	Yes	Yes
•Mounting locations for 22.5 mm standard elements	12	0
Degree of protection		
•Front	IP65	IP65
•Rear	IP20	IP20
Certification	cULus 508, CSA, CE for EMC	cULus 508, CSA, CE for EMC

1) Lamps up to 2 Watt per output

SIMATIC PP17

2

Ordering data	Order No.
SIMATIC PP17 A)	
Pushbutton panel incl. mounting accessories:	
PP17-I	**6AV3 688-3CD13-0AX0**
•16 x short-stroke keys	
•16 x surface LEDs	
•16 x DI terminals (24 V)	
•16 x DO terminals (24 V)	
•1 x release input	
•Max. 12 x 22.5 mm pre-perforated cutouts for additional units	
PP17-II	**6AV3 688-3ED13-0AX0**
•32 x short-stroke keys	
•32 x surface LEDs	
•16 x DI terminals (24 V)	
•16 x DO terminals (24 V)	
•1 x release input	
Documentation (to be ordered separately)	
Manual for PP7/PP17 1)	
•German	**6AV3 991-1CA00-1AA0**
•English	**6AV3 991-1CA00-1AB0**
•French	**6AV3 991-1CA00-1AC0**
•Italian	**6AV3 991-1CA00-1AD0**
•Spanish	**6AV3 991-1CA00-1AE0**
Brief start-up instructions	
For PP7, PP17-I, PP17-II	
•German	**6AV3 991-1CA00-1BA0**
•English	**6AV3 991-1CA00-1BB0**
Accessories for supplementary ordering	
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, 3 m	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
Service package for PP7, PP17-I, PP17-II	**6AV3 678-3XC30**
comprising:	
•1 x PP7 gasket	
•1 x PP17-I/PP17-II gasket	
•5 x clamps	
•PP7 clamp-type terminal strip	
•PP17-I/PP17-II clamp-type terminal strips	

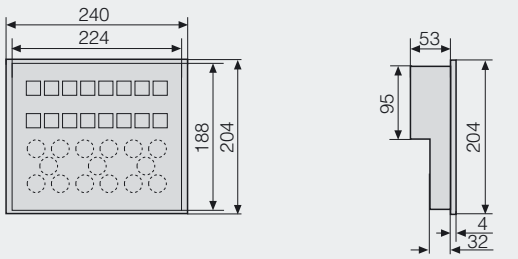
Note:
Commercially available printing foils can be used as the keyboard inscription strips. Word templates are included on a diskette with the Manual.

1) Incl. 3.5" diskette; diskette includes GSD files/TYP files and Word templates for inscription strips

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

Dimension drawings

Dimensions in mm



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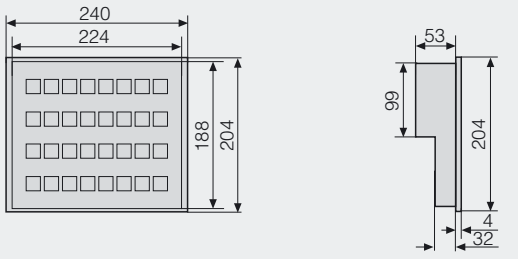
Panel cutout (B x H) in mm: 226 x 190

PP17-I

Dimensions in mm



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

PP17-II

More information

For further information, visit our website at

http://www.siemens.com/panels

Text Display TD 200

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 de gree 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 as requiring acknowledgment and additionally protected by a password. In addition, up to 64 static messages also 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 also be 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, for example, to control motors without having to install additional control elements in the system.
- Additional functions and features:
  For example, 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 integrated 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 shift the cursor to the variable.
- Setting a PLC bit only wi th an STD 200 key pressed:
  A PLC M-bit is set when pressing a function key, and deleted again when the key is released.
- New character set (Greek, Latin2, Turkish) to support additional foreign languages.

Programming

The configuration data of the TD 200 are saved in the S7-200's CPU. The message texts and configuration parameters are generated using the STEP 7-Micro/WIN programming software V4 and higher. Additional parameterization software is not required.

Special data areas are reserved in the S7-200's CPU for data exchange with the TD 200. The TD 200 directly accesses the respectively required functions of the CPU via these data areas. Parameters can be set easily using a separate TD 200 Wizard in STEP 7 Micro/WIN V4 and higher.

Text Display TD 200

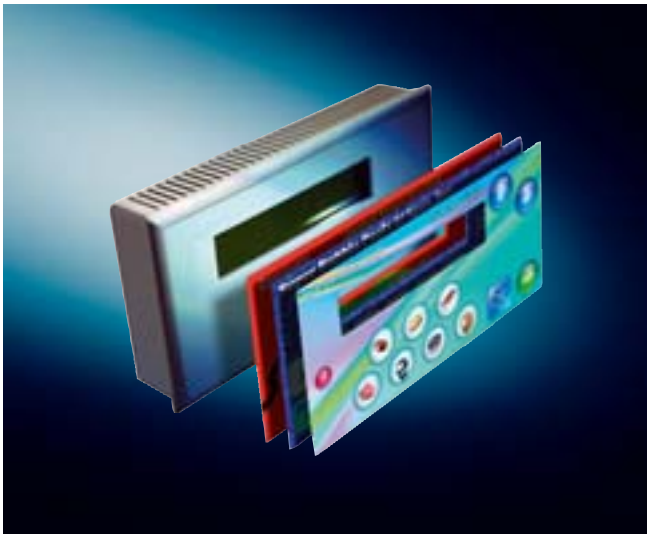
Technical specifications

TD 200	
Display	LCD backlit, 2-line, 20 characters/line (ASCII, Cyrillic), 10 characters/line (Chinese), 5 mm character height
Interfaces	1 PPI (RS 485) max. to set up a network with max. 126 stations (S7-200, OP, TP, TBP, PG/PC); Transmission speeds 9.6, 19.2, 187.5 kbit/s
Power supply	24 V DC, 120 mA; Powered from S7-200 communication interface or optional external power pack. Sensor power supply (24 V DC) of CPU is not affected
Ambient temperature	0 °C to +60 °C
Transport/storage temperature	-40 to +70 °C
Degree of protection	IP65 front
Dimensions (W x H x D) in mm	148 x 76 x 27
Installation opening (standard cutout) in mm	138 x 68
Cabinet/control panel thickness in mm	0.3 to 4
Weight	250 g

Ordering data

	Order No.
Text Display TD 200 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**

Overview



- The user-friendly text display fo r 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 cable supplied. A separate power supply is not required. It is also possible to connect several TD 200C displays to one S7-200.

The TD 200 features:

- Rugged plastics housing with degr ee 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 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 200C and S7-200 is more than 2.5 m. PROFIBUS bus cables are then available instead of the connection cable.
- Individually designed user interface:
  The control elements on the front of the device can be configured to suit requirements by printing on the film. It is configured accordingly using the Keypad Designer (a component of STEP 7-Micro/WIN).

Text Display TD 200C

Function

The TD 200C permits:

- Display of message texts:
  up to 80 message texts (alarms) with max. 4 variables display current operating states, and can be optionally parameterized as requiring acknowledgment and additionally protected by a password. In addition, up to 64 static messages also 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 also be 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, for example, to control motors without having to install additional control elements in the system.
- Additional functions and features:
  For example, processing of floating-point numbers, symbols for bar-graph display, various data blocks for operation of several TD 200C displays on one CPU, password protection for integrated 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 shift the cursor to the variable.
- Setting a PLC bit only with an STD 200 key pressed:
  A PLC M-bit is set when pressing a function key, and deleted again when the key is released.
- New character set (Greek, Latin2, Turkish) to support additional foreign languages.
- Programming the S7-200 memory submodule.
- Selection of the operating mo de of the CPU (RUN/STOP).
- Editing the V memory area.

Programming

The configuration data of the TD 200C are saved in the S7-200's CPU. The message texts and configuration parameters are generated using the STEP 7-Micro/WIN programming software V4. Additional parameterization software is not required. The front panel design is configured accordingly using the Keypad Designer (a component of STEP 7-Micro/WIN V4).

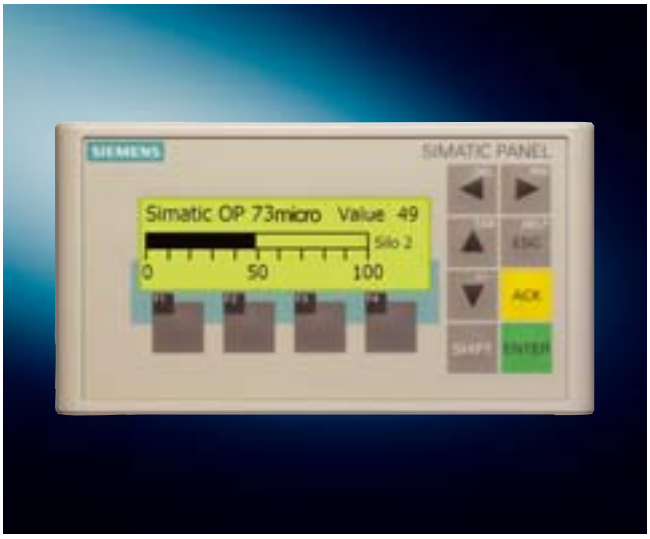
Special data areas are reserved in the S7-200's CPU for data exchange with the TD 200C. The TD 200C directly accesses the respectively required functions of the CPU via these data areas. Parameters can be set easily using a separate TD 200 Wizard in STEP 7 Micro/WIN V4.

Ordering data

Ordering data	Order No.
Text Display TD 200C A)	
With individually configurable control elements on the front of the device; for connecting to SIMATIC S7-200; can be used with STEP 7-Micro/WIN V4 and higher	**6ES7 272-1AA10-0YA0**
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**

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

Overview



- Operator panel for operator co ntrol and monitoring of small machines and plants
- A new dimension in graphics: small and clever
- Pixel graphics 3" LCD, monochrome
- 8 system keys, 4 freely configurable function keys
- Specifically for SIMATIC S7-200:
  Communication with the controller is point-to-point using the integral interface
- Connected to the PLC via MPI or PROFIBUS DP cable
- Start of delivery approximately end of 4th quarter 2004

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

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

The OP 73micro is specially designed for use with the SIMATIC S7-200.

Compatibility

- Same installation cutout as 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 ICON 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 the function keys, process images and process values in different font sizes
- Bar displays for the graphical display of dynamic values
- Language switchover during runtime
  - 5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- User administration (security) according to the requirements of the various sectors
  - 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
- 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 glob al function execution
- Template concept;
  creation of screen templates (picture elements configured in the template appear in each picture)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Downloading the configuration serially over RS485
  - Individual contrast settings
  - No batteries are necessary

SIMATIC OP 73micro

Function (continued)

Configuration

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

The necessary HardwareSupportPackage (HSP) can be downloaded for free via the following link:

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

A PC/PPI adaptor 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

Type	OP 73micro
Display	LCD
•Size	3“
•Resolution (W x H in pixels)	160 x 48
•Colors	Monochrome (yellow-green)
•MTBF of background lighting (at 25 °C)	Approx. 100,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	4 function keys
•System keys	8
•Numeric/alphanumeric input	Yes/yes 1)
Processor	ARM CPU
Memory	
•Type	Flash
•Usable memory for user data	128 KB
Ports	1 x RS 485
Interface with PLC	S7-200
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.1 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (built-in), NEMA 12, NEMA 4x, NEMA 4
•Rear	IP20
Certification	Available soon: FM, cULus, CE, C-Tick
Dimensions	
•Front W x H (mm)	154 x 84
•Cutout W x H (mm)	138 x 68
Weight	0.3 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	2)
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	2)
- Transport, storage	-20 °C to +70 °C
•Max. relative humidity	2)

Type	OP 73micro
Functions	
Message system	
•No. of messages	250
•Bit messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 128 entries each 3)
Process diagrams	250
•Text objects	1000 text elements
•Variables per diagram	20
•Fields per diagram	20
•Graphics objects	250
•Dynamic objects	Bars
- Libraries	Yes
Variables	500
User administration (security)	Yes
Online languages	5
Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	WinCC flexible, ideographic languages
Help system	Yes
Task planner	Yes
Configuration tool	From WinCC flexible 2004 Micro HSP for OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A (to be ordered separately)
•Transfer of the configuration	Serially via RS485

1) Only English font can be displayed
2) Status not yet established
3) Not battery-backed

Note:
All specified values are maximum values.
The total number of configurable elements is limited by the size of the user memory.

2

Ordering data

	Order No.
SIMATIC OP 73micro Operator panel for connecting to the SIMATIC S7-200, with 3" display, mono incl. installation accessories	**6AV6 640-0BA11-0AX0**
Starter pack OP 73micro A) comprising: •Operator Panel OP 73micro •SIMATIC WinCC flexible Micro engineering software •SIMATIC HMI Manual Collection, 5 languages (English, German, French, Italian, Spanish), comprising all currently available user manuals, product manuals and communication manuals for SIMATIC HMI •MPI cable (5 m)	**6AV6 650-0BA01-0AA0**
Configuration	
With SIMATIC WinCC flexible HSP OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A: http://www4.ad.siemens.de/WW/view/de/19241467	See Section 4
Documentation (to be ordered separately)	
Instruction manual 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 C) 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**

	Order No.
Accessories for supplementary ordering	
Service package comprising: •Gaskets •5 clamps •Clamp-type terminal strip (block of two)	**6AV6 671-1XA00-0AX0**
PC/PPI Multimaster cable 1) B) For connecting the S7-200 to the serial PC/OP interface and for downloading the configuration for Micro Panels	**6ES7 901-3CB03-0XA0**
PROFIBUS 830-1T connecting cable For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	**6XV1 830-1CH30**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

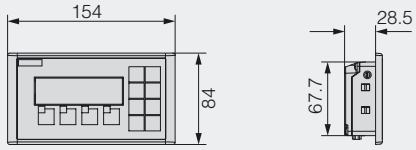
A) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

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

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

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 Desig ner (STEP 7 Micro/WIN Toolbox)

Benefits

- Fast configuring and start-up
- Service-friendly thanks to ma intenance-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 manufact uring 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 availabl e 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 connecti on 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

Type	TP 070
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240
•Colors	4 blue levels
•MTBF backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
•Numeric/alphanumeric input	Yes/No
Processor	RISC CPU
Operating system	Windows CE
Memory	
•Type	Flash / RAM
•Usable memory for user data	128 KB
Ports	1 x RS 485
Interface with PLC	S7-200
Power supply	24 V DC
•Permitted range	+18 V to +30 V DC
•Nominal current	0.24 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (built-in), NEMA 4 (with protective cover)
•Rear	IP20
Certification	CE, UL, CSA, FM
Dimensions	
•Front W x H (mm)	212 x 156
•Cutout W x H (mm)	198 x 142
Weight	0.7 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	85%
Functions	
Process diagrams	20
•Text objects	80 text elements
•Variables per diagram	10
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
Variables	50
Online languages	1
•Project languages	English, French, German, Italian and Spanish
Character set	Tahoma, freely scalable
Configuration tool	Micro/WIN TP Designer Version 3.1 and higher, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)
•Configuration transfer	Serially over RS 485

SIMATIC TP 070

Ordering data	Order No.
SIMATIC TP 070 A) Touch panel for connection to the SIMATIC S7-200, 5.7" STN display	**6AV6 545-0AA15-2AX0**
Configuration	
STEP 7-Micro/WIN32 V3.2 programming software	**6ES7 810-2BC02-0YX0**
TP-Designer for TP 070 V1.0 B) for configuration and parameterization of the TP 070; incl. documentation, on CD-ROM	**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 B) 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	
Protective foil (pack of 10)	**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service package C) comprising: •Gaskets •2 sets of labeling strips (for OPs) •7 clamps •Clamp-type terminal strip (block of two)	**6AV6 574-1AA00-4AX0**
PC/PPI cable Multimaster 1) C) 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 2/139
Connecting cables	See page 2/149

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

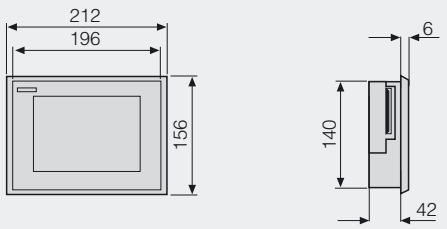
A) Subject to export regulations AL: N and ECCN: 5D992B2

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

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

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

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter unit in the category of touch panels with graphics capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN Tou ch 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
- The SIMATIC TP 170micro is t he innovated successor of the SIMATIC TP 070 Touch Panel

Benefits

- Fast configuring and start-up
- Service-friendly thanks to ma intenance-free design and the 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

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

- 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 availabl e 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 connecti on 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 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
  - 5 online languages, 32 configuration languages incl. Asiatic 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 calibration
  - Clean screen
  - No batteries are necessary

SIMATIC TP 170micro

Function

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

Type	TP 170micro
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240
•Colors	4 blue levels
•MTBF of backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
•Numeric/alphanumeric input	Yes/yes
Processor	RISC CPU
Operating system	Windows CE
Memory	
•Type	Flash / RAM
•Usable memory for user data	256 KB
Ports	1 x RS 485
Interface with PLC	S7-200
Power supply	24 V DC
•Permissible range	+18 to +30 V DC
•Nominal current	0.24 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (built-in), NEMA 4 (with protective cover)
•Rear	IP20
Certification	CE, UL, CSA, FM
Dimensions	
•Front W x H (mm)	212 x 156
•Cutout W x H (mm)	198 x 142
Weight	0.7 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	85%

Type	TP 170micro
Functions	
Message system	
•No. of messages	500
•Bit messages	Yes
•Analog messages	No
•No. of process values per message	8
•Message buffer	Circulating buffer, 128 entries each [1]
Process diagrams	250
•Text objects	500 text elements
•Variables per diagram	20
•Entries per diagram	20
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
- Libraries	Yes
Variables	250
User administration (security)	Yes
Online languages	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, freely scalable
Configuration tool	From WinCC flexible 2004 Micro (to be ordered separately)
•Configuration transfer	Serially over RS 485

1) Not battery-backed

2

Ordering data

	Order No.
SIMATIC TP 170micro A) Touch panel for connection to the SIMATIC S7-200, 5.7" STN display	**6AV6 640-0CA01-0AX0**
Starter pack TP 170micro A) comprising: •TP 170micro Touch Panel •SIMATIC WinCC flexible Micro engineering software •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	**6AV6 650-0CA01-0AA0**
Configuration	
with SIMATIC WinCC flexible	See Section 4
Documentation (to be ordered separately)	
Instruction manual 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 B) 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**

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

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

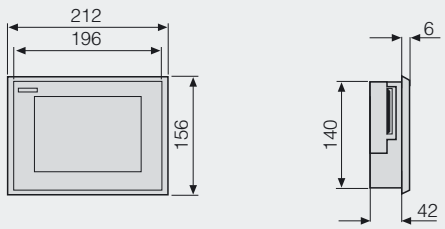
B) Subject to export regulations AL: N and ECCN: EAR99H

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

	Order No.
Accessories for supplementary ordering	
Protective foil (pack of 10)	**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service package B) comprising: •Gaskets •2 sets of labeling strips (for OPs) •7 clamps •Clamp-type terminal strip (block of two)	**6AV6 574-1AA00-4AX0**
PC/PPI cable Multimaster 1) B) for connecting the S7-200 to a serial PC/OP interface and for configuration download for micro panels	**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 2/139
Connecting cables	See page 2/149

Dimension drawings

Dimensions in mm



G_ST80_XX_00065

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

More information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC TP 177micro

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter unit in the category of touch panels with graphics capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN Tou ch 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
- The SIMATIC TP 177micro is the innovative successor to the SIMATIC TP 070/TP 170micro Touch Panels
- Start of delivery approximately end of 4th quarter 2004

Benefits

- Can even be used where installa tion space is restricted thanks to vertical installation
- Fast configuring and start-up
- Service-friendly thanks to ma intenance-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

The TP 177micro 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.

The TP 177micro is specially designed for use with the SIMATIC S7-200. With their quick response times, they are also ideally suited to jog mode.

Compatibility with TP 070/ TP 170micro

- Same installation cutout as the TP 070 / TP 170micro
- The TP 070 configurations c annot 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 hexadecimal number formats
- On-screen alphanumeric keyboard
- Plug-in terminals for connecting a 24 V DC power supply
- RS 485 interface for connection of the MPI cable or the PPI adaptor

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

Function

- Input/output fields
  for displaying and changing process parameters
- Buttons
  for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously
- 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).
- Vector graphics
  simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bar displays
  for the graphical display of dynamic values
- Language selection
  - 5 online languages, 32 configuration languages incl. Asiatic 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
- 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
- Template concept;
  creation of screen templates (picture elements configured in the template appear in each picture)
- Simple maintenance and configuration through:
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Downloading the configuration serially over RS485
  - Individual contrast setting and calibration
  - Clean screen
  - No batteries are necessary

Configuration

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

The necessary HardwareSupportPackage (HSP) can be downloaded free of charge via the following link:
http://www4.ad.siemens.de/WW/view/de/19241467

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

A PC/PPI adaptor 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"

SIMATIC TP 177micro

Technical specifications

Type	TP 177micro
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240 (240 x 320 with vertical design)
•Colors	4 blue levels
•MTBF of backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
•Numeric/alphanumeric input	Yes / Yes [1]
Processor	ARM CPU
Memory	
•Type	Flash / RAM
•Usable memory for user data	256 KB
Ports	1 x RS 485
Interface with PLC	S7-200
Power supply	24 V DC
•Permitted range	+18 V to +30 V DC
•Nominal current	0.24 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (in installed state), NEMA 4, NEMA 4x, NEMA 12
•Rear	IP20
Certification	Available soon: FM, cULus, CE, C-Tick
Dimensions	
•Front W x H (mm)	212 x 156
•Cutout W x H (mm)	198 x 142
Weight	0.7 kg
Ambient conditions [4]	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	[2]
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C [2]
- Operation (max. inclination)	[2]
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	[2]

Type	TP 177micro
Functions	
Message system	
•No. of messages	500
•Bit messages	Yes
•Analog messages	No
•No. of process values per message	8
•Message buffer	Circulating buffer, 128 entries each [3]
Process diagrams	250
•Text objects	500 text elements
•Variables per diagram	20
•Entries per diagram	20
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
- Libraries	Yes
Variables	250
User administration (security)	Yes
Online languages	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	WinCC flexible, ideographic languages
Configuration tool	From WinCC flexible 2004 Micro HSP for OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A (to be ordered separately)
•Configuration transfer	Serially over RS 485

1) Only English font can be displayed
2) Status not yet established on going to press
3) Not battery-backed
4) Ambient conditions for vertical mounting not yet specified on going to press

Note:
All specified values are maximum values.
The total number of configurable elements is limited by the size of the user memory.

Ordering data

	Order No.
SIMATIC TP 177micro A) Touch panel for connection to the SIMATIC S7-200, 5.7" STN display	**6AV6 640-0CA11-0AX0**
Starter pack TP 177micro A) comprising: •TP 177micro Touch Panel •SIMATIC WinCC flexible Micro engineering software •SIMATIC HMI Manual Collection, 5 languages (English, German, French, Italian, Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI •MPI cable (5 m)	**6AV6 650-0DA01-0AA0**
Configuration	
with SIMATIC WinCC flexible HSP OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A: http://www4.ad.siemens.de/WW/view/de/19241467	See Section 4
Documentation (to be ordered separately)	
Instruction manual 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 C) 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**

	Order No.
Accessories for supplementary ordering	
Protective foil (pack of 10)	**6AV6 671-2XC00-0AX0**
Service package comprising: •Gaskets •Tension clamps •Plug-in terminal strip (block of two)	**6AV6 671-2XA00-4AX0**
PC/PPI cable Multimaster 1) B) for connecting the S7-200 to the serial PC/OP interface and for downloading the configuration for Micro Panels	**6ES7 901-3CB30-0XA0**
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 2/139
Connecting cables	See page 2/149

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

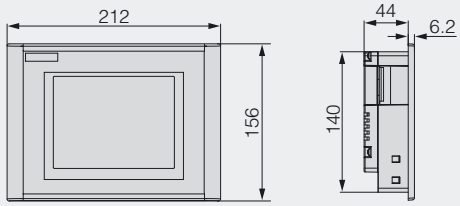
A) Subject to export regulations AL: N and ECCN: 5D002ENC3

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

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

SIMATIC Mobile Panel 170

Overview

- Mobile operator panel for dire ct operation of machines and plants from any location
- Provides an optimum view of the workpiece or the process and, at the same time, direct access and view of the operator unit
- Flexible use due to simple reconnection during operation
- Pixel graphics 5.7" color STN Touch Screen (analog/resistive), 16 colors
- 14 freely-configurable and fr eely-inscribable function keys (8 with LEDs)
- Two 3-level enabling keys;
  Optional variants with:
  - STOP keys
  - STOP keys, handwheel, key switches and illuminated push-button units
- Connection to the PLC and powe r supply is via the connection box and connecting cable

Benefits

- Hot swapping during normal op eration without interruption of the emergency stop circuit (with connecting box Plus) and without causing any bus errors
- Fast, accurate set up and positioning
- Reliable operation with well -proven safety system concept (Safety Category 3 to EN 954-1)
- Ergonomic and compa ct with low weight (approx. 1.3 kg)
- Rugged for industrial use
- Can be used worldwide:
  - 32 languages can be configured (including Asiatic and Cyrillic character sets)
  - Up to 5 languages are selectable online

Application

SIMATIC Mobile Panels are suitable for use in all sectors. They can always be used when mobility is required in the on-site operation of machines and plants: for example, in larger production plants, complex or fully enclosed machines, long transfer or production lines, or conveyor systems.

Design

- Ergonomic and compact with various holding and gripping positions (suitable for right-handed and left-handed persons)
- Pixel graphics 5.7" color ST N Touch Screen (analog/resistive)
- 14 freely-configurable and freely-inscribable function keys (8 with LEDs)
- The product is resistant to va rious oils, greases and standard detergents
- Two 3-level enabling keys
- Optional product variants with
  - STOP button or
  - STOP button, handwheel, keyswitch and illuminated push-button.
    The STOP button is specially provided with a "protective collar".
    If the STOP button is connected into the EMERGENCY-STOP loop, its function corresponds to an EMERGENCY-STOP.
- Extremely resistant to shock thanks to the double wall construction and the round housing shape
  (they will survive a fall from a height of 1.5 m without any damage)
- Dust-tight and splash-proof housing to the IP65 degree of protection
- Integrated, serial, MPI and PROFIBUS interface
  (up to 12 Mbit/s)
- Slot for one Compact Flash card (CF card)
- Connection to the control via t he reliable and rugged connecting box to the IP65 degree of protection:
  - Connecting box Basic: allows the STOP button to be integrated into the safety circuit
  - Connecting box Plus: allows the STOP button to be integrated into the safety circuit
    The emergency stop circuit always remains closed irrespective of whether the mobile panel is connected or not. Monitoring of the STOP button is possible.

Proven safety concept

The two enabling keys (to EN 60204-1) with three switching steps each, guarantee the protection of man and machine in critical situations. They are integrated in the rear handle.

The STOP button (to EN 60204-1) is hard-wired and latches positively when operated. It can be looped into the emergency stop circuit of a monitored system in which case it has the functionality of an emergency stop pushbutton, but it differs with respect to its gray color. There is therefore no danger of confusion with an emergency stop device. This is particularly important if the mobile control unit is not connected to the machine. SIMATIC Mobile Panels make it possible to provide safety functions at any point of a machine or system.

STOP and enabling keys are designed with dual circuits according to the safety directives, and meet the requirements of safety category 3 to EN 954-1.

Design

Innovative connection concept

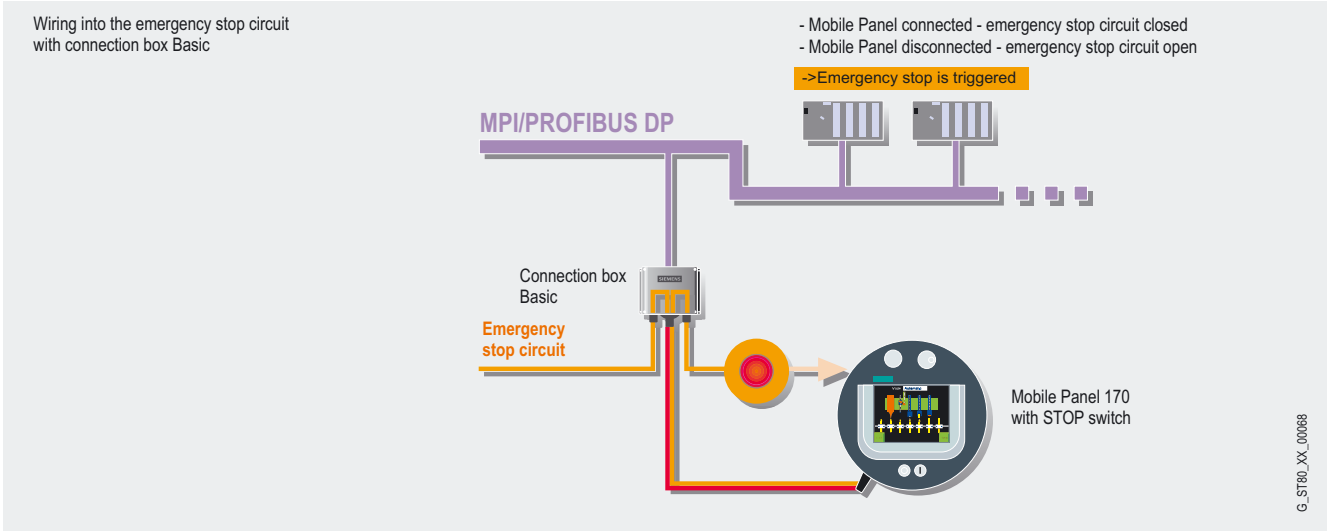
The mobile panel is simply connected to the connecting box where required in the system or on the machine, and is immediately available for use. The connecting box can be mounted anywhere, also outside the control cabinet. It guarantees fault-free hot swapping, making it possible to swap the operating locations simply and reliably if there are several connection points in a system or machine. The mobile panel can be configured such that the associated user-interface is selected depending on the connection point.

Configuration options with looping into emergency stop

The versions with STOP switches can be incorporated into the emergency stop circuit of a machine or system via the connecting boxes. Pressing the STOP switch on the mobile panel then triggers the emergency stop. The STOP switch on the mobile panel supplements the emergency stop device according to EN 418 which is fixed to the machine, but does not replace it. When disconnecting the mobile panel, the connecting box Plus automatically closes the emergency stop circuit, thus ensuring safe, fault-free operation when swapping its connection point.

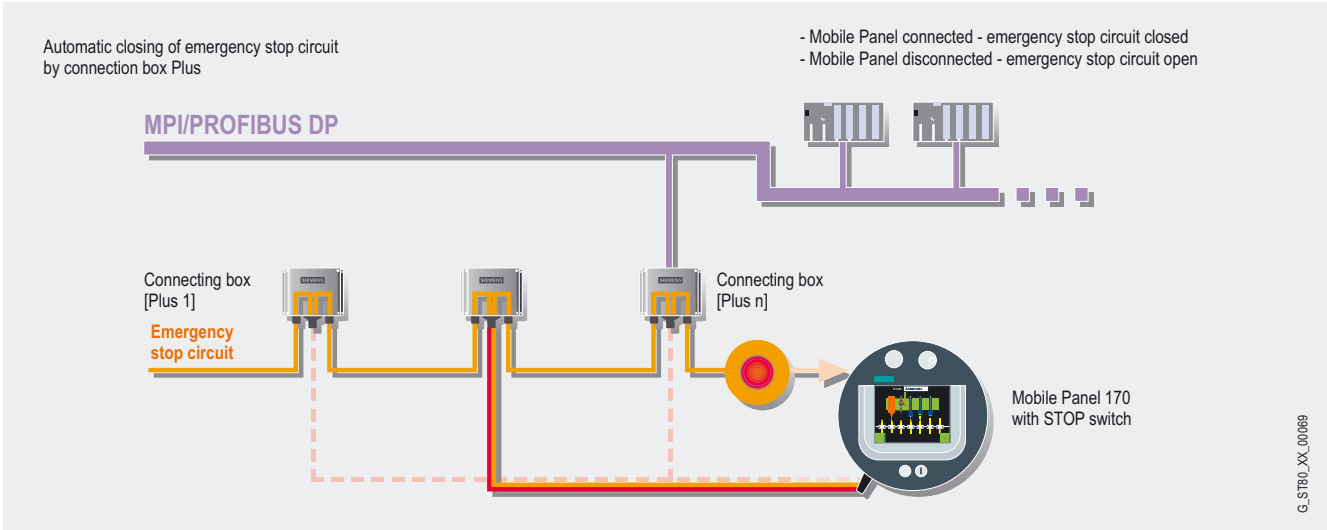
Connection at one point of the machine

If a connecting box Basic is used, disconnecting of the mobile panel results in opening the emergency stop circuit, and thus triggering of the emergency stop function. This configuration is therefore suitable for connecting the mobile panel to a fixed point on the machine.



Variable connection to different stations of a machine or system

If a Mobile Panel 170 with STOP switch is used together with the connecting box Plus, it is possible to design a configuration in which the mobile panel can be used variably and is looped into the emergency stop circuit at the same time. The emergency stop circuit remains closed irrespective of whether the mobile panel is connected or disconnected. When the mobile panel is connected, the STOP button is looped into the emergency stop circuit, when the STOP button is pressed, the circuit is opened and the emergency stop function is activated. If the mobile panel is disconnected during operation, the emergency stop circuit in the connecting box Plus is automatically closed.



SIMATIC Mobile Panel 170

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. The function keys can be used directly as PROFIBUS DP input peripherals.
- Direct control of the additional operating elements (handwheel, key-operated switch and illuminated pushbutton) as Profibus DP input periphery (DP direct keys)
- Buttons
  for direct initiation 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 editor (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  basic geometric shapes (e.g. lines, circles and rectangles) can be created direct in the configuration tool
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Curve functions and bar charts
  are used to visualize 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
- Password protection with 10 levels
- Message system;
  Administration of status, fault and system messages
- Recipe management
  - With additional data storage (on optional CF 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
- Interval timer
  for cyclic function processing
- Print;
  hardcopy and messages (see "recommended printers")
- Dynamic positioning of object s and dynamic hiding and showing of objects
- Permanent window;
  permanently defined screen area for outputting general information (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)
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading the configuration via MPI/PROFIBUS DP/RS232
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary

Additional functions when configuring with WinCC flexible

- Message system
  - Bit messages and analog messages (limit messages), as well as Alarm S telegram signaling procedure with 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

Configuration

Configuration can be carried out 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/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

2

Integration

Communication with the PLC is via PROFIBUS DP at up to 12 Mbit/s, via MPI, or via the serial interface. The interfaces are already integrated. A wide range of drivers –also for non-Siemens PLCs –are included in the standard scope of supply. The handwheel, keyswitch and illuminated pushbutton are directly controlled via a DP I/O (DP direct key function).

The connecting box allows the mobile panel to be connected to:

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

Additionally when configuring with WinCC flexible

- SINUMERIK
  (option 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

Type	Mobile Panel 170 With integral enabling button	Mobile Panel 170 With integral enabling button and STOP pushbutton	Mobile Panel 170 With integral STOP pushbutton, keyswitch, handwheel, illuminated pushbutton and enabling button
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	16 colors	16 colors	16 colors
• MTBF of background lighting (at 25 °C)	Approx. 50,000 hours	Approx. 50,000 hours	Approx. 50,000 hours
Control elements			
• Type of operator control	Touch and Key	Touch and Key	Touch and Key
• Programmable, freely inscribable function keys	14 (8 with LED)	14 (8 with LED)	14 (8 with LED)
• Numeric/alphanumeric input	Yes/yes 1)	Yes/yes 1)	Yes/yes 1)
• STOP pushbuttons	No	Optional, 2-channel, forced latching, can be looped into the EMERGENCY-OFF circuit	Optional, 2-channel, forced latching, can be looped into the EMERGENCY-OFF circuit
• Enabling button	2-channel, 3-stage	2-channel, 3-stage	2-channel, 3-stage
• Keyswitch	No	No	Yes, with 3 key positions
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Expansions for operator control of the process			
• DP direct keys/LEDs (function keys and operator elements - handwheel, keyswitch, illuminated pushbuttons - and OP keys/LEDs as I/O)	Yes	Yes	Yes
Operating system	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Useable memory for user data	768 KB	768 KB	768 KB
Ports	1 x RS 232, 1 x RS 422, 1 x RS 485 max. 12 Mbit/s	2 x RS 232, 1 x RS 422, 1 x RS 485 max. 12 Mbit/s	2 x RS 232, 1 x RS 422, 1 x RS 485 max. 12 Mbit/s
• CF card slot	1	1	1
Interface with PLC	SS5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (from V 3.0), SIMOTION, Allen Bradley (DF1), Telemecanique (ADJUST)2), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	SS5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (from V 3.0), SIMOTION, Allen Bradley (DF1), Telemecanique (ADJUST)2), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	SS5, S7-200, S7-300/400, 505, WinAC Soft/Slot PLC (from V 3.0), SIMOTION, Allen Bradley (DF1), Telemecanique (ADJUST)2), Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs

1) Only English font can be displayed
2) Cannot be connected in conjunction with WinCC flexible

SIMATIC Mobile Panel 170

2

Technical specifications (continued)

Type	Mobile Panel 170 With integral enabling button	Mobile Panel 170 With integral enabling button and STOP pushbutton	Mobile Panel 170 With integral STOP pushbutton, keyswitch, handwheel, illuminated pushbutton and enabling button
Clock	Hardware clock without battery backup	Hardware clock without battery backup	Hardware clock without battery backup
Power supply	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 °C to 40 °C	0 °C to 40 °C	0 °C to 40 °C
- Transport, storage	-20 °C to 60 °C	-20 °C to 60 °C	-20 °C 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, SIBE	cULus, CE, SIBE	cULus, CE, SIBE
Functionality when configuring with ProTool			
Message system			
•Status messages	1000	1000	1000
•Fault messages	1000	1000	1000
•System messages	Yes	Yes	Yes
•Message length (lines x characters)	1 x 70	1 x 70	1 x 70
•Message buffer	Circulating buffer, 128 entries each [3]	Circulating buffer, 128 entries each [3]	Circulating buffer, 128 entries each [3]
Recipes	100	100	100
•Records per recipe	200	200	200
•Entries per record	200	200	200
•Recipe memory	32 KB integrated flash, expandable [4]	32 KB integrated flash, expandable [4]	32 KB integrated flash, expandable [4]
Process diagrams	100	100	100
•Text objects	2000 text elements	2000 text elements	2000 text elements
•Variables per diagram	50	50	50
•Fields per diagram	50	50	50
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, hidden buttons	Diagrams, bars, hidden buttons	Diagrams, bars, hidden buttons
- Libraries	Yes	Yes	Yes
Variables	1000	1000	1000
Password protection (levels)	10	10	10
Printer functions	Color print, hardcopy, messages	Color print, hardcopy, messages	Color print, hardcopy, messages
Online languages	5	5	5
•Project languages	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages
Help system	Yes	Yes	Yes
Timer	Yes	Yes	Yes

3) Not battery-backed
4) By means of optional CF card

Technical specifications (continued)

Type	Mobile Panel 170 With integral enabling button	Mobile Panel 170 With integral enabling button and STOP pushbutton	Mobile Panel 170 With integral STOP pushbutton, keyswitch, handwheel, illuminated pushbutton and enabling button
Functionality when configuring with WinCC flexible			
Message system			
•No. of messages	2000	2000	2000
•Bit messages	Yes	Yes	Yes
•Analog messages	Yes	Yes	Yes
•No. of process values per message	8	8	8
•Message buffer	Circulating buffer, 256 entries each [3]	Circulating buffer, 256 entries each [3]	Circulating buffer, 256 entries each [3]
Recipes	100	100	100
•Records per recipe	200	200	200
•Entries per record	200	200	200
•Recipe memory	32 KB integrated flash, expandable [4]	32 KB integrated flash, expandable [4]	32 KB integrated flash, expandable [4]
Process diagrams	500	500	500
•Text objects	2500 text elements	2500 text elements	2500 text elements
•Variables per diagram	50	50	50
•Fields per diagram	50	50	50
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, hidden buttons	Diagrams, bars, hidden buttons	Diagrams, bars, hidden buttons
- Libraries	Yes	Yes	Yes
Variables	1000	1000	1000
User administration (security)			
•No. of user groups	10	10	10
•No. of users	32	32	32
•No. of user group privileges	Variable	Variable	Variable
Printer functions	Color print, hardcopy, messages	Color print, hardcopy, messages	Color print, hardcopy, messages
Online languages	5	5	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages	Tahoma, freely scalable ideographic languages
Help system	Yes	Yes	Yes
Task planner (timer)	Yes	Yes	Yes
Configuration tool	From ProTool/Lite Version 6.0 SP2 or from WinCC flexible 2004 Compact (to be ordered separately)	From ProTool/Lite Version 6.0 SP2 or from WinCC flexible 2004 Compact (to be ordered separately)	From ProTool/Lite Version 6.0 SP2 or from WinCC flexible 2004 Compact (to be ordered separately)
•Configuration transfer	Serial / MPI / PROFIBUS DP/ automatic transfer detection	Serial / MPI / PROFIBUS DP/ automatic transfer detection	Serial / MPI / PROFIBUS DP/ automatic transfer detection

3) Not battery-backed
4) By means of optional CF card

SIMATIC Mobile Panel 170

Technical specifications (continued)

Type	Junction box Basic:	Junction box Plus:
Ports	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 control of the process		
•Hot swapping	With interruption in emergency stop circuit	Without interruption in emergency stop circuit
•Monitoring of the STOP pushbutton	No	Yes
•Location identification	Yes	Yes
Housing degree of protection	IP65	IP65
Power supply	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 °C to +50 °C	0 °C to +50 °C
- Transport, storage	-20 °C to +70 °C	-20 °C to +70 °C
•Max. relative humidity	85%	85%

Ordering data

	Order No.
SIMATIC Mobile Panel 170 A)	
•With integral enabling button	**6AV6 545-4BA16-0CX0**
•With integral enabling button and STOP pushbutton	**6AV6 545-4BB16-0CX0**
•With integral enabling button, STOP pushbutton, handwheel, keyswitch and illuminated pushbutton	**6AV6 545-4BC16-0CX0**
Junction box B)	
•Basic	**6AV6 574-1AE04-4AA0**
•Plus	**6AV6 574-1AE14-4AA0**
Cable	
Standard cables	
•2 m	**6XV1 440-4AH20**
•5 m	**6XV1 440-4AH50**
•10 m	**6XV1 440-4AN10**
•25 m	**6XV1 440-4AN25**
Intermediate lengths 1)	
•8 m	**6XV1 440-4AH80**
•15 m	**6XV1 440-4AN15**
•20 m	**6XV1 440-4AN20**
Wall mount for Mobile Panel 170	**6AV6 574-1AF04-4AA0**

	Order No.
Starter package Basic A) •Mobile Panel 170 with integral enabling button •Junction box Basic •Cable, 10 m •Wall mount •SIMATIC ProTool/Lite •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Software update service for 1 year	**6AV6 575-1AJ06-0CX0**
Starter package Plus A) •Mobile Panel 170 with integral enabling button, STOP pushbutton, handwheel, keyswitch and illuminated pushbutton •Junction box Plus •Cable, 10 m •Wall mount •SIMATIC ProTool/Lite •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Software update service for 1 year	**6AV6 575-1AJ16-0CX0**

1) Delivery period approx. 6 weeks
A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: EAR99H

Ordering data	Order No.
Configuration	
with SIMATIC ProTool and SIMATIC ProTool/Pro	See Section 4
with SIMATIC WinCC flexible	See Section 4
Documentation (to be ordered separately)	
Instruction manual Mobile Panel 170 (WinCC flexible)	
•German	**6AV6 691-1DC01-0AA0**
•English	**6AV6 691-1DC01-0AB0**
•French	**6AV6 691-1DC01-0AC0**
•Italian	**6AV6 691-1DC01-0AD0**
•Spanish	**6AV6 691-1DC01-0AE0**
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**
SIMATIC HMI Manual Collection C)	**6AV6 691-1SA01-0AX0**
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	
Mobile Panel 170 Manual (ProTool)	
•German	**6AV6 591-1DC30-0AA0**
•English	**6AV6 591-1DC30-0AB0**
•French	**6AV6 591-1DC30-0AC0**
•Italian	**6AV6 591-1DC30-0AD0**
•Spanish	**6AV6 591-1DC30-0AE0**

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

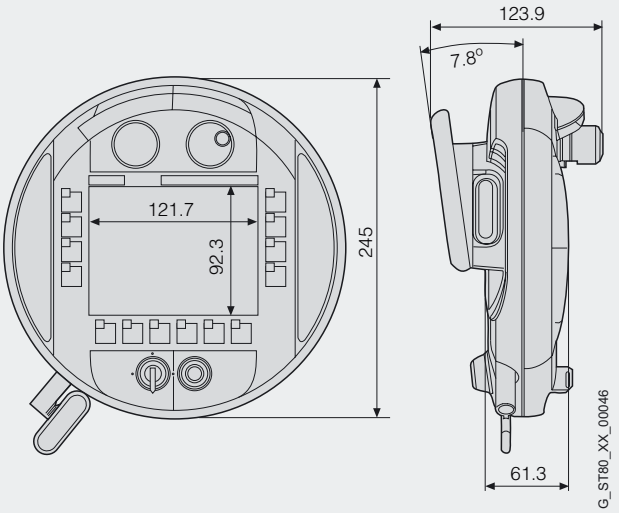
	Order No.
Brief start-up instructions for Mobile Panel 170 (ProTool)	
•German	**6AV6 591-1EC30-0AA0**
•English	**6AV6 591-1EC30-0AB0**
ProTool user manual configuring Windows-based systems	
•German	**6AV6 594-1MA06-1AA0**
•English	**6AV6 594-1MA06-1AB0**
•French	**6AV6 594-1MA06-1AC0**
•Italian	**6AV6 594-1MA06-1AD0**
•Spanish	**6AV6 594-1MA06-1AE0**
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**
Accessories for supplementary ordering	
CF card, 32 MB	**6AV6 574-2AC00-2AA0**
Protective foil to protect the Touch front against dirt/scratching (set of 10)	**6AV6 574-1AD04-4AA0**
Protective pockets for labeling strips (set of 5)	**6AV6 574-1AB04-4AA0**
Service package comprising: •Blanking plugs for cable duct •2 x PG screwed gland for junction box •1 set of screws for junction box cover •2 x terminal box (12-pin) •Dummy cap for junction box	**6AV6 574-1AA04-4AA0**
System interfaces	See page 2/139
Connecting cables	See page 2/149

SIMATIC Mobile Panel 170

2

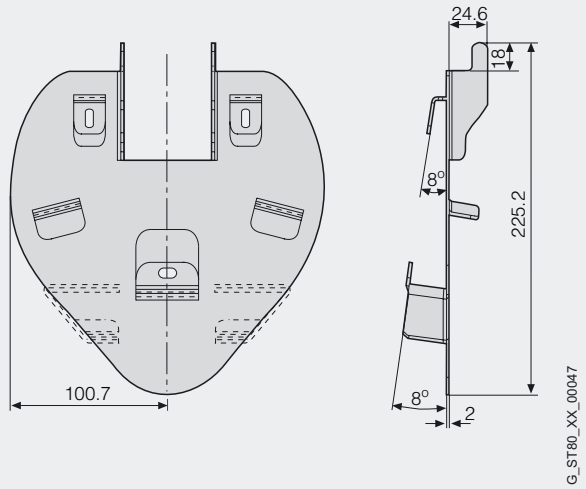
Dimension drawings

Dimensions in mm



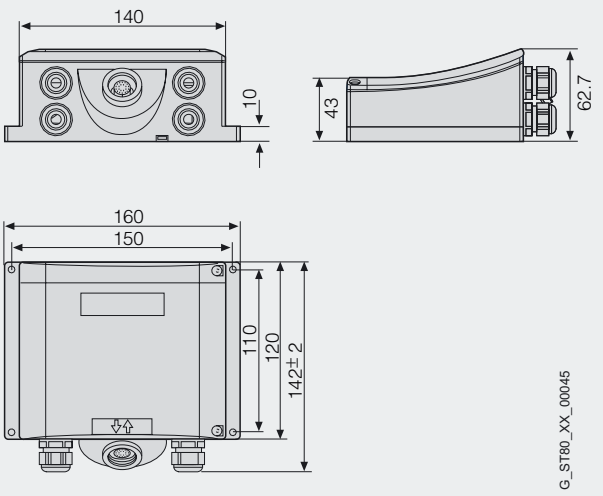
SIMATIC Mobile Panel front and rear views

Dimensions in mm



Wall mount for SIMATIC Mobile Panel

Dimensions in mm



Connecting box for SIMATIC Mobile Panel

More information

For further information, visit our website at

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

Overview

- Text display for displaying and storing messages
- For use directly at the machine as well as in a control room
- 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

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 alarm
- Operating and system message buffer
- Scrolling in messages
- Specification of message priorities
- Date and time in messages
- Mixed operation using upper and lower case letters

Other functions

- Loadable firmware
- Contrast adjustment
- User-friendly native driver for various non-Siemens PLCs
- Backup/restore function for firmware and user data (ProSave)
- PLC orders to trigger PLC-controlled actions
- Language selection with 3 online languages

Configuration

Configuring is performed using the configuration software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see configuration 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

Type	TD17
Display	LCD
•Number of lines (max.)	8
•Characters per line (max.)	40
•Character height (mm)	6 or 11
•Colors	Monochrome
•MTBF of backlighting at 25 °C	Approx. 200,000 hours
Control elements	Membrane keyboard
•System keys	7
Operating system	RMOS
Memory	
•Type	Flash / RAM
•Usable memory for user data	128 KB
Ports	1 x TTY, 1 x RS 232, 1 x RS 422, 1 x RS 485
Interface with PLC	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other non-Siemens PLCs
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.34 A
Backup battery	Optional, 3.6 V
Clock	Hardware clock, synchronized/with backup
Degree of protection	
•Front	IP65 (when installed)
•Rear	IP20
Certification	GL, FM, UL, CSA, CE
Dimensions	
•Front W x H (mm)	240 x 98
•Cutout W x H (mm)	231 x 89
Weight	0.9 kg

Type	TD17
Ambient conditions	
•Mounting position	+/- 90°
- max. permissible angle of inclination without forced ventilation	90°
•Temperature	
- Operation (vertical installation)	0 °C to 50 °C
- Operation (max. inclination)	0 °C to 35 °C
- Transport, storage	-25 °C to 70 °C
•Max. relative humidity	95%
Functionality [1]	
Message system	
•Operating messages	999
•System messages	Yes
•Message length (lines x characters)	2 x 40
•Number of process values per message	8
•Message buffer	Battery-backed cyclic buffer, 256 entries each
Variables	1.000
Password protection (levels)	10
Online languages	3
•Project languages	Danish, German, English, Finnish, French, Greek, Italian, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Help system	Yes
Configuration tool	ProTool/Lite Version 2.51 upwards, executable under Windows 98/SE/ME/NT/2000 (must be ordered separately)
•Configuration transfer	Serial

1) The specifications are maximum values.
The total number of configurable elements is limited by the size of the user memory.

Ordering data

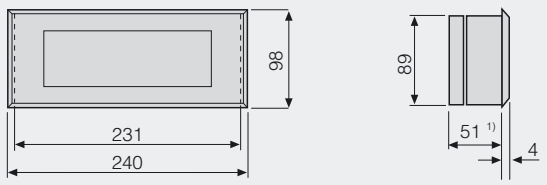
Ordering data	Order No.
SIMATIC TD17 Text display, 8 lines, 40 characters/line, incl. mounting accessories	**6AV3 017-1NE30-0AX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
Documentation (to be ordered separately)	
TD17 Manual Multi-language (English, French, German, 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 Manual Collection A) 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 2/130
Connecting cables	See page 2/149

1) Included in scope of supply

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

Dimension drawings

Dimensions in mm



1) Depth includes connectors and cabel 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

SIMATIC OP3

Overview

- Operator panel for operator co ntrol and monitoring of small machines and plants
- Specifically for SIMATIC S7
- Can also be used as a hand-held device
- LED-backlit LCD: 2-line, 20 char acters/line; character height 5 mm.
- 18 system keys, of which 5 ar e freely configurable function keys

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 char acters/line; character height 5 mm
- 18 system keys, of which 5 ar e 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 specific to the display)

Message functions

- Process value indication
- Management and editing of operating messages
- Date and time in messages
- Definition of message priorities

Other functions

- Limit value check for inputs
- STATUS VAR/CONTROL VAR in conjunction with SIMATIC S7
- Password protection
- Language selection with 3 online languages
- Contrast adjustment
- Linear conversion
- Variable limit values

Configuration

Configuring is performed using the configuration software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see configuration 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

Type	OP3
Display	LCD
•Number of lines (max.)	2
•Characters per line (max.)	20
•Character height (mm)	5
•Colors	Monochrome
•MTBF of backlighting (at 25 °C)	Approx. 200,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	5 function keys
•System keys	18
•Numeric/alphanumeric input	Yes/No
Operating system	RMOS
Memory	
•Type	Flash / RAM
•Usable memory for user data	128 KB
Ports	1 x RS 232, 1 x RS 485
Connection to PLC	S7-200, S7-300/400
Supply voltage	24 V DC
•Permitted range	+18 V to +30 V DC
•Nominal current	0.07 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (built-in)
•Rear	IP20
Certification	GL, FM, UL, CSA, CE
Dimensions	
•Front W x H (mm)	148 x 76
•Cutout W x H (mm)	138 x 68
Weight	0.25 kg

Type	OP3
Ambient conditions	
•Mounting position	+/- 180°
- Max. permissible angle of inclination without forced ventilation	180°
•Temperature	
- Operation (vertical mounting)	0 °C to +60 °C
- Operation (max. angle of inclination)	0 °C to +60 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	85%
Functionality [1]	
Message system	
•Status messages	499
•System messages	Yes
•Message length (lines x characters)	2 x 20
•No. of process values per message	8
Process diagrams	40
•Entries per diagram	20
Graphics objects	Character graphics
Variables	1024
Password protection (levels)	10
Online languages	3
•Project languages	English, French, German, Italian, Spanish
PG functions (STATUS/CONTROL)	Yes, with S7
Configuration tool	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)
•Transfer of the configuration	Serial / MPI

1) The specifications are maximum values.
The total number of configurable elements is limited by the size of the user memory.

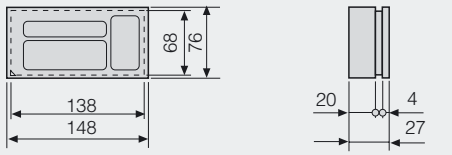
SIMATIC OP3

Ordering data	Order No.
SIMATIC OP3 Operator panel, 2-line, 20 characters/line, 18 system keys, incl. mounting accessories: •Cable (2.5 m) for point-to-point connection to SIMATIC S7 and for transmitting the configuration data from PC/PG with MPI card •Cable (3 m) for transmitting the configuration data from PC/PG with RS 232 interface •Cable (5 m) for 24 V DC power supply	**6AV3 503-1DB10**
SIMATIC OP3 starter kit A) comprising: •OP3 operator panel with mounting accessories •SIMATIC ProTool/Lite configuration software •Cable (2.5 m) for point-to-point connection to SIMATIC S7 and for transmitting the configuration data from PC/PG with MPI card •Cable (3 m) for transmitting the configuration data from PC/PG with RS 232 interface •24 V DC power supply cable (5 m) •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	**6AV6 520-0AA06-0CX0**
Configuration	
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 A) 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	
Plug-type power supply unit for convenient configuration 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 2/108
Connecting cables	See page 2/126

1) Not approved for sale in EU countries
A) 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

Overview

- Compact, multi-functional operat or panel for operator control and monitoring of machines and plants
- LED-backlit LCD: 4-line, 20 char acters/line; character height 8 mm
- 22 system keys, 8 freely-configur able 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 effici ent 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-configur able 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/numeric setpoint input using system keys
- Softkeys (function of the keys can be configured specific to the display)
- Insert strips for all function keys
- Function keys partially with two-color LED

Message functions

- Process value indication
- Management and editing of operating and fault messages
- Date and time in messages
- Definition of message priorities
- Differentiation between first and last value messages
- Help text on messages, diagrams, etc.

Other functions

- Limit value check for inputs
- STATUS VAR/CONTROL VAR in conjunction with SIMATIC S5 and S7
- Password protection
- Language selection with 3 online languages
- Selection from 17 languages, including system messages (also with Cyrillic character set)
- Contrast adjustment
- PLC orders to trigger PLC-controlled actions
- Recipe management
- DP direct keys for fast and deterministic operator actions
- Linear conversion
- Native drivers for third-party PLCs
- PROFIBUS DP up to 12 Mbit/s
- Variable limit values
- Integrated printer port

Service concept

- Backup/restoring of configuration, firmware and recipe data records
- Loadable firmware

Configuration

Configuring is performed using the configuration software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (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

Type	OP7/PP	OP7/DP	OP7/DP-12
Display	LCD	LCD	LCD
•Line display			
- No. of lines (max.)	4	4	4
- Characters per line (max.)	20	20	20
- Character height	8	8	8
•Colors	Monochrome	Monochrome	Monochrome
•MTBF of backlighting (at 25 °C)	Approx. 100,000 hours	Approx. 100,000 hours	Approx. 100,000 hours
Control elements	Membrane keyboard	Membrane keyboard	Membrane keyboard
•Function keys, programmable	8 function keys, 4 with LEDs	8 function keys, 4 with LEDs	8 function keys, 4 with LEDs
•System keys	22	22	22
•Numeric/alphanumeric input	Yes/yes	Yes/yes	Yes/yes
Operating system	RMOS	RMOS	RMOS
Memory			
•Type	Flash / RAM	Flash / RAM	Flash / RAM
•Usable memory for user data	128 KB	128 KB	128 KB
Ports	1 x RS 232/TTY, 1 x RS 422/485	1 x RS 232, 1 x RS 422/485, 1 x PPI/MPI/ PROFIBUS DP (up to 1.5 Mbit/s)	1 x RS 232/TTY, 1 x RS 422/485, 1 x PPI/MPI/ PROFIBUS DP (up to 12 Mbit/s)
Connection to PLC	S5, 505, SINUMERIK, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other non-Siemens PLCs	S5, S7-200, S7-300/400, SINUMERIK	S5, S7-200, S7-300/400, 505, SINUMERIK, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other non-Siemens PLCs
Supply voltage	24 V DC	24 V DC	24 V DC
•Permitted range	+18 to +30 V DC	+18 to +30 V DC	+18 to +30 V DC
•Nominal 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 (built-in), NEMA 4, NEMA 4X	IP65 (built-in), NEMA 4, NEMA 4X	IP65 (built-in), NEMA 4, NEMA 4X
•Rear	IP20	IP20	IP20
Certification	GL, FM, UL, CSA, CE, Ex Zone 2, Ex Zone 22	GL, FM, UL, CSA, CE, Ex Zone 2, Ex Zone 22	GL, FM, UL, CSA, CE, Ex Zone 2, Ex Zone 22
Dimensions			
•Front W x H (mm)	144 x 180	144 x 180	144 x 180
•Cutout W x H (mm)	135 x 171	135 x 171	135 x 171
Weight	0.43 kg	0.43 kg	0.43 kg
Ambient conditions			
•Mounting position	+/- 90°	+/- 90°	+/- 90°
- Max. permissible angle of inclination without forced ventilation	90°	90°	90°
•Temperature			
- Operation (vertical mounting)	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +35 °C	0 °C to +35 °C
- Transport, storage	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C
•Max. relative humidity	95%	95%	95%
Expansion for operator-process communication			
•DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	-	Yes	Yes
Peripherals	Printer	Printer	Printer

Technical specifications (continued)

Type	OP7/PP	OP7/DP	OP7/DP-12
Functionality [1]			
Message system			
•Status messages	499	499	499
•Fault messages	499	499	499
•System messages	Yes	Yes	Yes
•Message length (lines x characters)	4 x 20	4 x 20	4 x 20
•No. of process values per message	8	8	8
•Message buffer	Ring buffer, 256 entries each	Ring buffer, 256 entries each	Ring buffer, 256 entries each
Recipes	99	99	99
•Data records per recipe	99	99	99
•Entries per data record	99	99	99
•Recipe memory	4 KB integrated flash	4 KB integrated flash	4 KB integrated flash
Process diagrams	99	99	99
•Text objects	31,680 text elements	31,680 text elements	31,680 text elements
•Entries per diagram	99	99	99
•Variables per diagram	792	792	792
Graphics objects	Character graphics	Character graphics	Character graphics
Variables	2048	2048	2048
Password protection (levels)	10	10	10
Printer functions	Hardcopy, messages	Hardcopy, messages	Hardcopy, messages
Online languages	3	3	3
•Project languages	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Configuration tool	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)
•Transfer of the configuration	Serial	Serial	Serial

1) The specifications are maximum values.
The total number of configurable elements is limited by the size of the user memory.

SIMATIC OP7

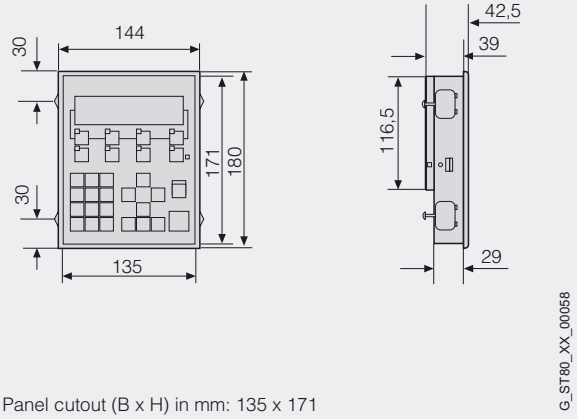
Ordering data	Order No.
SIMATIC OP7 Operator panel, 4-line, 20 characters/line, 22 system keys; incl. mounting accessories:	
• **OP7/PP** for connection to SIMATIC S5/505 and PLCs from other vendors; with - 1x RS 232/TTY interface - 1x RS 422/RS 485 interface	**6AV3 607-1JC00-0AX1**
• **OP7/DP** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other vendors; with - 1x RS 232 interface - 1x PPI/MPI/PROFIBUS DP interface, 1.5 Mbit/s - 1x 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 - 1x RS 232/TTY interface - 1x PPI/MPI/PROFIBUS DP interface, 12 Mbit/s - 1x RS 422/RS 485 interface	**6AV3 607-1JC30-0AX1**
SIMATIC OP7/PP starter kit comprising: •OP7/PP Operator Panel •SIMATIC ProTool/ Lite configuration software •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Standard function blocks •Connecting cable between PG/PC (9-pin, RS 232) and OP, 3.2 m (6XV1 440-2KH32)	**6AV6 520-0CA06-0CX0**
SIMATIC OP7/DP starter kit 1) A) As OP7/PP starter kit, but with OP7/DP	**6AV6 520-0CB06-0CX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
Configuration set for SIMATIC OP7 and SIMATIC OP17 A) comprising: •SIMATIC ProTool/Lite configuration software •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Standard function blocks •Connecting cable between PG/PC (9-pin, RS 232) and OP; 3.2 m (6XV1 440-2KH32)	**6AV6 573-1AA06-0CX0**

	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 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 Manual Collection A) 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 2), **OP7 and OP17** 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**
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
System interfaces	See page 2/130
Connecting cables	See page 2/149

1) Native drivers cannot be used with DP variants
2) Included in scope of supply
A) 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

2

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-configu rable and freely-inscribable function keys (16 with LEDs)

Benefits

- Clearly contrasting display, easier to read
- Large keys for enhanced operating reliability
- Fast variable updating
- Extensive functionality for effici ent 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 OP17 Operator Panels can be used in all applications in which operator control and monitoring of machines and installations is required locally –whet her 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 11 mm or
  - 8-line, 40 characters/line; character height 6 mm
- 22 system keys, 24 freely-configu rable and freely-inscribable function keys (16 with LEDs)
- Plastic housing with membrane front
- The front is resistant to variou s oils, greases and standard detergents
- Small mounting depth
- Electronic fuse
- Optional battery can be used
- 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/numeric setpoint input using system keys
- Softkeys (function of the keys can be configured specific to the display)
- Insert strips for all function keys
- Function keys partially with two-color LED

Message functions

- Process value indication
- Management and editing of operating and fault messages
- Date and time in messages
- Definition of message priorities
- Differentiation between first and last value messages
- Help text on messages, diagrams, etc.
- Mixed operation using upper and lower case letters

Other functions

- Limit value check for inputs
- STATUS VAR/CONTROL VAR in conjunction with SIMATIC S5 and S7
- Password protection
- Language selection with 3 online languages
- Selection from 17 languages, including system messages (also with Cyrillic character set)
- Contrast adjustment
- PLC orders to trigger PLC-controlled actions
- Recipe management
- DP direct keys for fast and deterministic operator actions
- Linear conversion
- Native drivers for third-party PLCs
- PROFIBUS DP up to 12 Mbit/s
- Variable limit values
- Internal real-time clock
- 48 timed interrupts
- Integrated printer port

Service concept

- Backup/restoring of configuration, firmware and recipe data records
- Loadable firmware

Configuration

Configuring is performed using the configuration software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (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

Type	OP17/PP	OP17/DP	OP17/DP-12
Display	LCD	LCD	LCD
•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	Monochrome	Monochrome	Monochrome
•MTBF of backlighting (at 25 °C)	Approx. 200,000 hours	Approx. 200,000 hours	Approx. 200,000 hours
Control elements	Membrane keyboard	Membrane keyboard	Membrane keyboard
•Function keys, programmable	24 function keys, 16 with LEDs	24 function keys, 16 with LEDs	24 function keys, 16 with LEDs
•System keys	22	22	22
•Numeric/alphanumeric input	Yes/No	Yes/No	Yes/No
Operating system	RMOS	RMOS	RMOS
Memory			
•Type	Flash / RAM	Flash / RAM	Flash / RAM
•Usable memory for user data	256 KB	256 KB	256 KB
Interfaces	2 x RS 232/TTY, 1 x RS 422/485	2 x RS 232, 1 x RS 422/485, 1 x PPI/MPI/ PROFIBUS DP (up to 1.5 Mbit/s)	2 x RS 232/TTY, 1 x RS 422/485, 1 x PPI/MPI/ PROFIBUS DP (up to 12 Mbit/s)
Connection to PLC	S5, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other non-Siemens PLCs	S5, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other non-Siemens PLCs	S5, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other non-Siemens PLCs
Supply voltage	24 V DC	24 V DC	24 V DC
•Permitted range	+18 to +30 V DC	+18 to +30 V DC	+18 to +30 V DC
•Nominal current	0.39 A	0.39 A	0.39 A
Backup battery	Optional, 3.6 V	Optional, 3.6 V	Optional, 3.6 V
Clock	Hardware clock, buffered/synchronized	Hardware clock, buffered/synchronized	Hardware clock, buffered/synchronized
Degree of protection			
•Front	IP65 (built-in), NEMA 4x	IP65 (built-in), NEMA 4x	IP65 (built-in), NEMA 4x
•Rear	IP20	IP20	IP20
Certification	cULus 508, CE with EMC, CSA, NEMA / UL50 Typ4, FM, ExZone 2/22, ABS, DNV, GL, LRS, PRS	cULus 508, CE with EMC, CSA, NEMA / UL50 Typ4, FM, ExZone 2/22, ABS, DNV, GL, LRS, PRS	cULus 508, CE with EMC, CSA, NEMA / UL50 Typ4, FM, ExZone 2/22, ABS, DNV, GL, LRS, PRS
Dimensions			
•Front W x H (mm)	240 x 204	240 x 204	240 x 204
•Cutout W x H (mm)	231 x 195	231 x 195	231 x 195
Weight	0.96 kg	0.96 kg	0.96 kg
Ambient conditions			
•Mounting position	+/- 90°	+/- 90°	+/- 90°
- Max. permissible angle of inclination without forced ventilation	90°	90°	90°
•Temperature			
- Operation (vertical mounting)	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +35 °C	0 °C to +35 °C
- Transport, storage	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C
•Max. relative humidity	95%	95%	95%
Expansion for operator-process communication			
•DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	-	Yes	Yes
Peripherals	Printer	Printer	Printer

SIMATIC OP17

Technical specifications (continued)

Type	OP17/PP	OP17/DP	OP17/DP-12
Functionality [1]			
Message system			
•Status messages	999	999	999
•Fault 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 per message	8	8	8
•Message buffer	Ring buffer with battery backup, 256 entries each	Ring buffer with battery backup, 256 entries each	Ring buffer with battery backup, 256 entries each
Recipes	99	99	99
•Data records per recipe	99	99	99
•Entries per data record	99	99	99
•Recipe memory	20 KB integrated flash	20 KB integrated flash	20 KB integrated flash
Process diagrams	99	99	99
•Text objects	31,860 text elements	31,860 text elements	31,860 text elements
•Entries per diagram	99	99	99
•Variables per diagram	792	792	792
•Graphics objects	Character graphics	Character graphics	Character graphics
Variables	2048	2048	2048
Password protection (levels)	10	10	10
Printer functions	Messages	Messages	Messages
Online languages	3	3	3
•Project languages	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Timer	Yes	Yes	Yes
Configuration tool	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)	From ProTool/Lite Version 2.51, executes under Windows 98/SE/ME/NT/2000 (to be ordered separately)
•Transfer of the configuration	Serial	Serial	Serial

1) The specifications are maximum values.
The total number of configurable elements is limited by the size of the user memory.

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**
SIMATIC OP17/PP starter kit A) comprising: •OP17/PP Operator Panel •SIMATIC ProTool/ Lite configuration software •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Standard function blocks •Connecting cable between PG/PC (9-pin, RS 232) and OP, 3.2 m (6XV1 440-2KH32)	**6AV6 520-0EA06-0CX0**
SIMATIC OP17/DP starter kit 1) A) As OP17/PP starter kit, but with OP17/DP	**6AV6 520-0EB06-0CX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
Configuration set for SIMATIC OP7 and SIMATIC OP17 A) comprising: •SIMATIC ProTool/Lite configuration software •SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish) •Standard function blocks •Connecting cable between PG/PC (9-pin, RS 232) and OP; 3.2 m (6XV1 440-2KH32)	**6AV6 573-1AA06-0CX0**

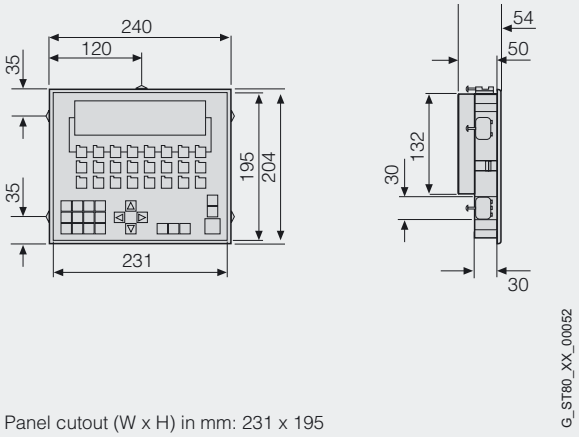
	Order No.
Documentation (to be ordered separately)	
OP7/OP17 Manual	
•German	**6AV3 991-1AE05-1AA0**
•English	**6AV3 991-1AE05-1AB0**
•French	**6AV3 991-1AE05-1AC0**
•Italian	**6AV3 991-1AE05-1AD0**
•Spanish	**6AV3 991-1AE05-1AE0**
Communication manual Instructions for connection of TD/OP to the controller	
•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 Manual Collection A) 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 2), **OP7 and OP17** 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 2/130
Connecting cables	See page 2/149

1) Native drivers cannot be used with DP variants
2) Included in scope of supply
A) 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

Overview

- Operator panel for operator co ntrol and monitoring of small machines and plants
- A new dimension in graphics: small and clever
- Pixel graphics 3" LCD, monochrome
- 8 system keys, 4 freely configurable function keys
- All interfaces on board (e.g. MPI, PROFIBUS DP)
- SIMATIC OP 73 is the successor to the OP3 Operator Panel
- Start of delivery approximately end of 4th quarter 2004

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 mainte nance-free design (no battery) and high service life of the backlighting
- Graphics library is availabl e 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 73B 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.

Compatibility with OP3

- Same installation cutout as OP3
- Transfer of OP3 configurations from ProTool/Lite, ProTool and ProTool/Pro

Migration manual with description of the essential changes to OP3 or ProTool

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-type terminals for connection of a 24 V DC power supply
- RS 485 interface for process co nnections (MPI, PROFIBUS DP 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 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
- Bars for the graphical display of dynamic values
- 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
- 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
- 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 executin g functions globally
- Template concept;
  Creation of picture templates (picture elements configured in the template appear in each picture)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Download of the configuration via MPI/PROFIBUS DP or serially via RS485
  - Individual contrast settings
  - No batteries are necessary

SIMATIC OP 73

Function (continued)

Configuration

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

The necessary HardwareSupportPackage (HSP) can be downloaded for free via the following link:

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

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

Type	OP 73
Display	LCD
•Size	3“
•Resolution (W x H in pixels)	160 x 48
•Colors	Monochrome (yellow-green)
•MTBF of background lighting (at 25 °C)	Approx. 100,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	4 function keys
•System keys	8
•Numeric/alphanumeric input	Yes/yes [1]
Processor	ARM CPU
Memory	
•Type	Flash
•Usable memory for user data	256 KB
Ports	1 x RS 485
Interface with PLC	S7-200, S7-300/400, WinAC
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.1 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (in installed state) NEMA 12, NEMA 4x, NEMA 4
•Rear	IP20
Certification	Available soon: FM, cULus, CE, C-Tick
Dimensions	
•Front W x H (mm)	154 x 84
•Cutout W x H (mm)	138 x 68
Weight	0.3 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	[2]
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	[2]
- Transport, storage	-20 °C to +70 °C
•Max. relative humidity	[2]

Type	OP 73
Functions	
Message system	
•No. of messages	500
•Bit messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 256 entries each [3]
Process diagrams	500
•Text objects	1000 text elements
•Variables per diagram	20
•Fields per diagram	20
•Graphics objects	500
•Dynamic objects	Bars
- Libraries	Yes
Variables	1000
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Online languages	5
Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	WinCC flexible, ideographic languages
Help system	Yes
Task planner	Yes
Configuration tool	From WinCC flexible 2004 Compact HSP for OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A (to be ordered separately)
•Transfer of the configuration	Serial through RS485/MPI/PROFIBUS DP

1) Only English font can be displayed
2) Status not yet established on going to press
3) Not battery-backed

Note:
All specified values are maximum values.
The total of all configured elements is limited by the size of the user memory

Ordering data	Order No.
SIMATIC OP 73 A)	**6AV6 641-0AA11-0AX0**
Operator panel with 3" display, monochrome, including mounting accessories	
Starter pack OP 73 A)	**6AV6 651-1AA01-0AA0**
comprising:	
•OP 73 Operator Panel	
•SIMATIC WinCC flexible Compact engineering software	
•SIMATIC HMI Manual Collection, 5 languages (English, German, French, Italian, Spanish), comprising all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	
•MPI cable (5 m)	
•PC/PPI Multimaster cable	
•Software update service for 1 year	
Configuration	
with SIMATIC WinCC flexible	See Section 4
HSP OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A: http://www4.ad.siemens.de/WW/view/de/19241467	
Documentation (to be ordered separately)	
Instruction manual 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**
User manual WinCC flexible Communication	
•German	**6AV6 691-1CA01-0AA0**
•English	**6AV6 691-1CA01-0AB0**

	Order No.
SIMATIC HMI Manual Collection B)	**6AV6 691-1SA01-0AX0**
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	
Accessories for supplementary ordering	
Service pack OP 73, OP 77A, OP 77B	**6AV6 671-1XA00-0AX0**
comprising:	
•Gaskets	
•5 clamps	
•Clamp-type terminal strip (block of two)	
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
PC/PPI Multimaster cable 1) C)	**6ES7 901-3CB30-0XA0**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

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

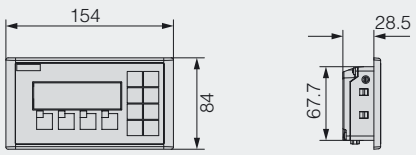
B) Subject to export regulations AL: N and ECCN: EAR99S

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

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

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" LC display, monochrome
- 23 system keys, 8 freely-configur able and freely-inscribable function keys (4 with LEDs)
- All interfaces on board (e.g. MPI, PROFIBUS DP)
- Start of delivery approximately end of 4th quarter 2004

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 star tup 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 availabl e 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 manufacturing automation, process automation or building automation. They are in use in an extensive range of sectors and applications.

Compatibility with OP7

- Same panel cutout as OP7
- Importing of OP7 configurations from ProTool/Lite, ProTool and ProTool/Pro

Migration manual with description of the essential changes from OP7 or ProTool

Design

- 4.5" LCD, 160 x 64 pixels, monochrome
- 23 system keys, 8 freely-configur able 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 lin ks (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 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
- Bars 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
- Message 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 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
- 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 a PC using ProSave
  - Download of the configuration via MPI/PROFIBUS DP and serially via RS 485
  - Individual contrast settings
  - No batteries are necessary

Configuration

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

The necessary HardwareSupportPackage (HSP) can be downloaded free of charge via the following link:
http://www4.ad.siemens.de/WW/view/de/19241467

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"

2

Technical specifications

Type	OP 77A
Display	LCD
•Size	4.5“
•Resolution (W x H in pixels)	160 x 64
•Colors	Monochrome (yellow-green)
•MTBF of background lighting (at 25 °C)	Approx. 100,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	8 function keys, 4 with LED
•System keys	23
•Numeric/alphanumeric input	Yes/yes 1)
Processor	ARM CPU
Memory	
•Type	Flash / RAM
•Usable memory for user data	256 KB
Ports	1 x RS 422/485
Interface with PLC	S7-200, S7-300/400, WinAC
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.2 A
Clock	Software clock, synchronized 2)
Degree of protection	
•Front	IP65 (built-in), NEMA 12, NEMA 4x, NEMA 4
•Rear	IP20
Certification	Available soon: FM, cULus, CE, C-Tick, EX zone 2/22, shipbuilding
Dimensions	
•Front W x H (mm)	150 x 186
•Cutout W x H (mm)	135 x 171
Weight	0.5 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	3)
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	3)
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	3)

Type	OP 77A
Expansion for operator-process communication	
Functions	
Message system	
•No. of messages	1000
•Bit messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 256 entries each 2)
Process diagrams	500
•Text objects	1000 text elements
•Variables per diagram	30
•Fields per diagram	30
•Graphics objects	1000
•Dynamic objects	Bars
- Libraries	Yes
Variables	1000
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Online languages	5
Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	WinCC flexible, ideographic languages
Help system	Yes
Task planner	Yes
Configuration tool	From WinCC flexible 2004 Compact HSP for OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A (to be ordered separately)
•Transfer of the configuration	Serial / via RS485/MPI/PROFIBUS DP

1) Only English font can be displayed
2) Not battery-backed
3) Status not yet established

Note:
All specified values are maximum values.
The total of all configured elements is limited by the size of the user memory

SIMATIC OP 77A

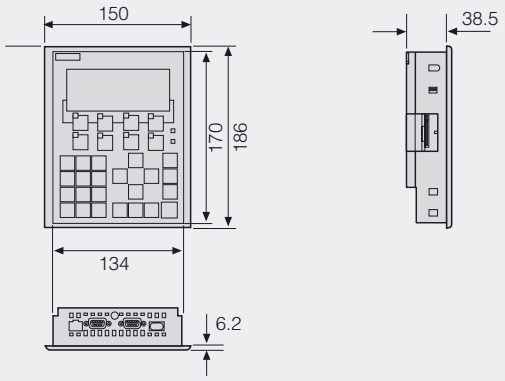
2

Ordering data	Order No.
SIMATIC OP 77A A)	**6AV6 641-0BA11-0AX0**
Operator panel with 4.5" display, monochrome, including mounting accessories	
Starter pack OP 77A A)	**6AV6 651-1BA01-0AA0**
comprising:	
•Operator Panel OP 77A	
•SIMATIC WinCC flexible Compact engineering software	
•SIMATIC HMI Manual Collection, 5 languages (English, German, French, Italian, Spanish), comprising all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	
•PC/PPI Multimaster cable	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
with SIMATIC WinCC flexible	See Section 4
HSP OP 73micro, OP 73; OP 77A, TP 177micro, TP 177A: http//www.ad.siemens.de/WW/view/de/19241467	
Documentation (to be ordered separately)	
Instruction manual 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**
User manual WinCC flexible Communication	
•German	**6AV6 691-1CA01-0AA0**
•English	**6AV6 691-1CA01-0AB0**
SIMATIC HMI Manual Collection B)	**6AV6 691-1SA01-0AX0**
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	
Accessories for supplementary ordering	
Service pack OP 73, OP 77A, OP 77B	**6AV6 671-1XA00-0AX0**
comprising:	
•Gaskets	
•5 clamps	
•Clamp-type terminal strip (block of two)	
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
PC/PPI Multimaster cable C)	**6ES7 901-3CB30-0XA0**
System interfaces	See page 2/139
Connecting cables	See page 2/149

1) French/Italian/Spanish available soon
A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: EAR99S
C) Subject to export regulations AL: N and ECCN: EAR99H

Dimension drawings

Dimensions in mm



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

G_ST80_EN_00087

More information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC OP 77B

Overview

- Compact operator panel for operating and monitoring machines and plants
- Together with the OP 77A [1] 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-configur able and freely-inscribable function keys (4 with LEDs)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- Non-Siemens PLCs can be connect ed via easy-to-use drivers

1) Start of delivery approximately end of 4th quarter 2004

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
- 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
- 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
- Standard hardware and software interfaces to increase flexibility:
  - Optional MMC (Multi Media Card), used for recipe data sets and for backing up the configuration and system data
- Integral printer port via USB

Application

The OP 77B Operator Panels can be used in all applications in which operator control and monitoring of machines and installations is required on site –whet her in production automation, process automation or building services automation. They are in use in an extensive range of sectors and applications.

Compatibility with OP7

- Same installation cutout as OP7
- Importing of OP7 configurations from ProTool/Lite, ProTool and ProTool/Pro

Migration manual and description of most important changes compared to OP7 and ProTool

Design

- 4.5" LCD, 160 x 64 pixels, monochrome
- 23 system keys, 8 freely-configur able 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) fo r 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

2

Technical specifications

Type	OP 77B
Display	LCD
•Size	4.5“
•Resolution (W x H in pixels)	160 x 64
•Colors	Monochrome (yellow-green)
•MTBF of background lighting (at 25 °C)	Approx. 100,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	8 function keys, 4 with LED
•System keys	23
•Numeric/alphanumeric input	Yes/yes [1]
Processor	ARM CPU
Operating system	Windows CE
Memory	
•Type	Flash / RAM
•Usable memory for user data	1 MB
Ports	1 x RS 232, 1 x RS 422, 1 x RS 485
•USB (Universal Serial Bus)	1 x USB
•Multi Media Card (MMC) slot	1 x MMC slot
Printer	Yes via USB (up to 100 mA)
Interface with PLC	S5, S7-200, S7-300/400, 505, WinAC, Allen Bradley, Mitsubishi, Modicon, Omron, GE Fanuc, other non-Siemens PLCs
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.2 A
Clock	Software clock, synchronized [2]
Degree of protection	
•Front	IP65 (built-in), NEMA 12, NEMA 4x, NEMA 4
•Rear	IP20
Certification	FM, cULus, CE, C-Tick, EX Zone 2/22, available soon: shipbuilding
Dimensions	
•Front W x H (mm)	150 x 186
•Cutout W x H (mm)	135 x 171
Weight	0.5 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 90°
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	95%

Type	OP 77B
Expansion for operator-process communication	
•DP direct keys/LEDs (OP keys/ LEDs as I/O peripherals)	Yes
Functions	
Message system	
•No. of messages	1000
•Bit messages	Yes
•Analog messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 256 entries each [2]
Recipes	100
•Data records per recipe	200
•Entries per data record	200
•Recipe memory	32 KB integrated flash, expandable [3]
Process diagrams	500
•Text objects	2500 text elements
•Variables per diagram	30
•Fields per diagram	30
•Graphics objects	1000
•Dynamic objects	Bars
- Libraries	Yes
Variables	1000
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Printer functions	Hardcopy, messages, report
Online languages	5
Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, ideographic languages freely scalable/WinCC flexible
Help system	Yes
Task planner (timer)	Yes
Configuration tool	From WinCC flexible 2004 Compact (to be ordered separately)
•Transfer of the configuration	Serial/MPI/PROFIBUS DP/USB

1) Only English font can be displayed
2) Not battery-backed
3) By means of optional MMC

Note:
all specified values are maximum values.
The total of all configured elements is limited by the size of the user memory

2

Ordering data

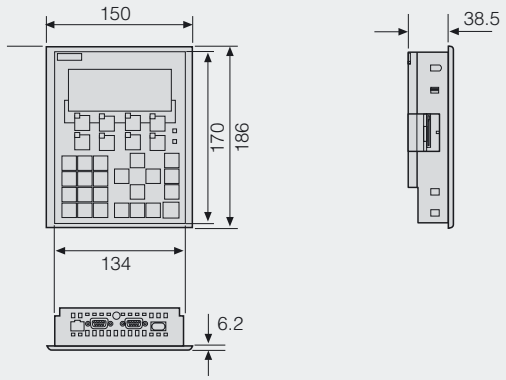
	Order No.
SIMATIC OP 77B A)	**6AV6 641-0CA01-0AX0**
Operator panel with 4.5" display, monochrome, including mounting accessories	
Starter pack OP 77B A)	**6AV6 651-1CA01-0AA0**
comprising:	
•OP 77B Operator Panel	
•SIMATIC WinCC flexible Compact engineering software	
•SIMATIC HMI Manual Collection, 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
with SIMATIC WinCC flexible	See Section 4
Configuring set B)	**6AV6 621-0AA01-0AA0**
•SIMATIC WinCC flexible Compact engineering software	
•SIMATIC HMI Manual Collection, 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•PC/PPI Multimaster cable	
•MPI cable (5 m)	
Documentation (to be ordered separately)	
Instruction manual 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**
Instruction manual (compact) OP 77B	
•German	**6AV6 691-1EA01-0AA0**
•English	**6AV6 691-1EA01-0AB0**
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 D)	**6AV6 691-1SA01-0AX0**
Electronic documentation, CD-ROM	
5 languages (English, French, German, Italian and Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	

	Order No.
Accessories	
Memory cards	
MMC card 64 MB C)	**6AV6 671-1CB00-0AX0**
Accessories for supplementary ordering	
Service pack OP 73, OP 73micro, OP 77A, OP 77B	**6AV6 671-1XA00-0AX0**
comprising:	
•Gaskets	
•5 clamps	
•Clamp-type terminal strip (block of two)	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
System interfaces	See page 2/139
Connecting cables	See page 2/149

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: 5D992B2
C) Subject to export regulations AL: N and ECCN: EAR99H
D) Subject to export regulations AL: N and ECCN: EAR99S

Dimension drawings

Dimensions in mm



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

More information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC TP 170A

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter unit in the category of touch panels with graphics capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN Tou ch Screen (analog/resistive), Blue mode (4 levels)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- Non-Siemens PLCs can be connect ed via easy-to-use drivers

Benefits

- 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:
  - 21 languages can be configured including Asiatic and Cyrillic character sets
  - When configuring with WinCC flexible:
    32 languages can be configured including Asiatic and Cyrillic character sets and
    up to 5 languages can be switched over online

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 –whet her 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

- 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 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 dirt and scratching
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 interface for process links and for downloading the configuration (MPI, PROFIBUS DP up to 1.5 Mbit/s)
  - RS 232 interface for process links and for downloading the configuration

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;
  21 configuration languages incl. Asiatic and Cyrillic character sets, 1 online language
- Password protection with 2 levels
- 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

Function (continued)

- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Downloading the configuration via MPI/PROFIBUS DP/RS232
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary

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:
  - 5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
  - Language-dependent texts and graphics
- Permanent window expanded by template concept
  - Generation of screen templates

Configuration

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

Projects generated using ProTool can be imported into WinCC flexible.

Integration

The TP 170A can be connected to:

- SIMATIC S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5 (9/25-pin adapter and RS232/TTY converter required)
- SIMATIC 505
- Non-Siemens PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - OMRON

Additionally when configuring with WinCC flexible

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

Note:
For further information see "System interfaces"

SIMATIC TP 170A

Technical specifications

Type	TP 170A
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240
•Colors	4 blue levels
•MTBF of backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
•Numeric/alphanumeric input	Yes/yes [1]
Processor	RISC CPU
Operating system	Windows CE
Memory	
•Type	Flash / RAM
•Usable memory for user data	320 KB [3]
Ports	1 x RS 232, 1 x RS 422, 1 x RS 485
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST) [2], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs
Supply voltage	24 V DC
•Permitted range	+18 V to +30 V DC
•Nominal current	0.24 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (built-in), NEMA 4 (with protective cover)
•Rear	IP20
Certification	CE, UL, CSA, FM
Dimensions	
•Front W x H (mm)	212 x 156
•Cutout W x H (mm)	198 x 142
Weight	0.7 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	85%

1) Only English font can be displayed
2) Cannot be connected in conjunction with WinCC flexible
3) ProTool V6 or WinCC flexible 2004 and higher
4) Not battery-backed

Type	TP 170A
Functionality when configuring with ProTool	
Message system	
•Status messages	1000
•Message length (lines x characters)	1 x 70
•Number of process values per message	8
Process diagrams	50
•Text objects	1000 text elements
•Variables per diagram	20
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
- Libraries	Yes
Variables	500 [3]
Password protection (levels)	2
Online languages	1
•Project languages	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, freely scalable ideographic languages
Functionality when configuring with WinCC flexible	
Message system	
•No. of messages	1000
•Bit messages	Yes
•Analog messages	No
•Number of process values per message	8
•Message buffer	Circulating buffer, 128 entries each [4]
Process diagrams	250
•Text objects	1000 text elements
•Variables per diagram	20
•Fields per diagram	20
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
- Libraries	Yes
Variables	500
User administration (security)	Yes
Online languages	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, freely scalable ideographic languages
Configuration tool	ProTool/Lite from Version 5.2 SP1 or from WinCC flexible 2004 Compact
•Transfer of the configuration	Serial / MPI / PROFIBUS DP

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Ordering data	Order No.
SIMATIC TP 170A [A]	**6AV6 545-0BA15-2AX0**
Touch panel with 5.7" STN display, Bluemode (4 levels), incl. mounting accessories	
TP 170A starter kit [A]	**6AV6 575-1AD06-0CX0**
comprising:	
•TP 170A Touch Panel	
•SIMATIC ProTool/ Lite configuration software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
•with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
•with SIMATIC WinCC flexible	See Section 4
Configuration set	
comprising: Configuring or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (English, German, French, Italian, Spanish), RS 232 cable (5 m), MPI cable (5 m)	
•with SIMATIC ProTool/Lite configuration software [B]	**6AV6 573-1FA06-0CX0**
•with engineering software SIMATIC WinCC flexible Compact [C]	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)	
Instruction manual 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 691-1CA01-0AC0**
•Italian	**6AV6 691-1CA01-0AD0**
•Spanish	**6AV6 691-1CA01-0AE0**

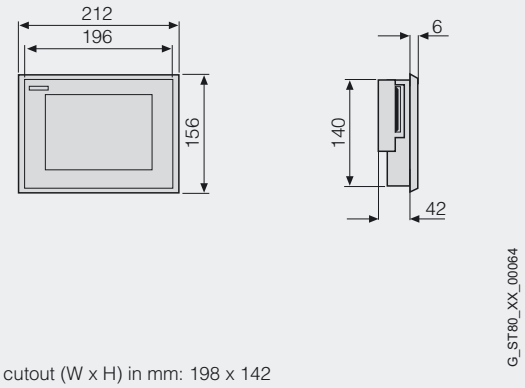
	Order No.
TP 170/OP 170B Manual (ProTool)	
•German	**6AV6 591-1DC11-2AA0**
•English	**6AV6 591-1DC11-2AB0**
ProTool user manual, configuring Windows-based systems	
•German	**6AV6 594-1MA06-1AA0**
•English	**6AV6 594-1MA06-1AB0**
•French	**6AV6 594-1MA06-1AC0**
•Italian	**6AV6 594-1MA06-1AD0**
•Spanish	**6AV6 594-1MA06-1AE0**
User manual Communications 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 [B]	**6AV6 691-1SA01-0AX0**
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	
Accessories for supplementary ordering	
Protective foil	**6AV6 574-1AD00-4AX0**
(pack of 10)	
Protective cover	**6AV6 574-1AE00-4AX0**
(2 sets)	
Service package [D]	**6AV6 574-1AA00-4AX0**
comprising:	
•Gaskets	
•2 sets of labeling strips (for OPs)	
•7 clamps	
•Clamp-type terminal strip (block of two)	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
System interfaces	See page 2/139
Connecting cables	See page 2/149

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: EAR99S
C) Subject to export regulations AL: N and ECCN: 5D992B2
D) Subject to export regulations AL: N and ECCN: EAR99H

SIMATIC TP 170A

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

Overview

- Touch panel for operating and m onitoring machines and plants
- Universal unit for first-time us ers in the category of touch panels with graphics capability with extensive functionality
- Pixel-graphics 5.7" STN touch screen (analog/resistive), Bluemode (4 levels) or color (16 colors)
- All interfaces RS 422/485 (e.g. MPI, PROFIBUS DP) are onboard
- SIMATIC S5 and non-Siemens PLCs can be connected using user-friendly drivers or converters

Benefits

- 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:
  - Backup/restore via MPI, PROFIBUS DP, RS 232 (serial) or optionally via compact flash card (CF card)
  - 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
- Can be used worldwide:
  - 32 languages can be configured including Asiatic and Cyrillic character sets
  - Up to 5 languages are selectable online
- Graphics library is available complete with ready-to-use display objects
- Standard hardware and software interfaces to increase flexibility:
  - Compact flash card, used for recipe data sets and for backing up the configuration and system data
- Integrated serial 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

- 5.7" STN, CCFL [1] backlit display, bluemode (4 levels) or color (16 colors)
- Resistive analog touch
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- On-screen alpha keyboard (with 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 dirt and scratching
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 interface for process links and for downloading the configuration (up to 12 Mbit/s)
  - RS 232 interface for process links and for downloading the configuration
  - Serial RS 232 printer interface
- Slot for a 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 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).
- Vector graphics;
  simple geometric forms (e.g. lines, circles and rectangles) can be created directly with the configuration tool
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Curve functions 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
- Password protection with 10 levels
- Message system;
  administration of status, fault and system messages
- 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 such as Excel and Access is possible
- Help texts
  for process diagrams, messages and variables
- Mathematical functions

SIMATIC TP 170B

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;
  hardcopy and messages (see "recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- 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)
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Download/upload of configuration via MPI/PROFIBUS DP/RS232 and CF Card (optional)
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary
- Message system; bit messages with message history (no battery backup)

Additional functions when configuring with WinCC flexible

- Message system
  - Analog messages (limit messages) as well as the Alarm S messaging alarm system 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;
  - Creation of a screen template
- 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

Configuration

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

Projects generated using ProTool can be imported into WinCC flexible.

Integration

The TP 170B can be connected to:

- SIMATIC S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5 (9/25-pin adapter and RS232/TTY converter required)
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Non-Siemens PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - OMRON

Additionally when configuring with WinCC flexible

- SINUMERIK
  (option 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

Type	TP 170B monochrome	TP 170B color
Display	STN liquid crystal display (LCD)	
•Size	5.7"	
•Resolution (W x H in pixels)	320 x 240	
•Colors	4 blue levels	16 colors
•MTBF of backlighting at 25 °C	Approx. 50,000 hours	
Control elements	Touch screen	
•Numeric/alphanumeric input	Yes/yes [1]	
Processor	RISC 32 bit, 66 MHz	
Operating system	Windows CE	
Memory		
•Type	Flash / RAM	
•Usable memory for user data	768 KB	
Ports	2 x RS 232, 1 x RS 422, 1 x RS 485, TTY using optional adapter and converter	
•CF card slot	1	
Printer	Yes	
Interface with PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST) [2], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	
Supply voltage	24 V DC	
•Permitted range	+18 to +30 V DC	
•Nominal current	0.25 A	
Clock	Software clock, synchronized, without battery backup	
Degree of protection		
•Front	IP65 (built-in), NEMA 12/4 (with protective cover)	
•Rear	IP20	
Certification	cULus 508, FM, CE, NEMA/UL50 type 12/type 4 with optional protective hood	
Dimensions		
•Front W x H (mm)	212 x 156	
•Cutout W x H (mm)	198 x 142	
Weight	0.7 kg	
Ambient conditions		
•Mounting position	Vertical	
- Max. permissible angle of inclination without forced ventilation	+/- 35°	
•Temperature		
- Operation (vertical installation)	0 °C to +50 °C	
- Operation (max. inclination)	0 °C to +40 °C	
- Transport, storage	-20 °C to +60 °C	
•Max. relative humidity	85%	
Expansion for operator-process communication		
•DP direct keys (TP buttons as I/O peripherals)	Yes	
Peripherals	Printer	
Functionality when configuring with ProTool		
Message system		
•Status messages	1000	
•Fault messages	1000	
•Message length (lines x characters)	1 x 70	
•Number of process values per message	8	
•Message buffer	Circulating buffer, 128 entries each [3]	

1) Only English font can be displayed
2) Cannot be connected in conjunction with WinCC flexible

SIMATIC TP 170B

2

Technical specifications (continued)

Type	TP 170B monochrome	TP 170B color
Functionality when configuring with ProTool (continued)		
Recipes	100	
•Records per recipe	200	
•Entries per record	200	
•Recipe memory	32 KB integrated flash, expandable [4]	
Process diagrams	100	
•Text objects	2,000 text elements	
•Variables per diagram	50	
•Fields per diagram	50	
•Graphics objects	Bitmaps, icons, background images, vector graphics	
•Dynamic objects	Graphs, bars, hidden buttons	
- Libraries	Yes	
Variables	1000	
Password protection (levels)	10	
Printer functions	Color print, hardcopy, messages	
Online languages	5	
•Project languages	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	
Character set	Tahoma, freely scalable ideographic languages	
Help system	Yes	
Interval timer	Yes	
Functionality when configuring with WinCC flexible		
Message system		
•No. of messages	2000	
•Bit messages	Yes	
•Analog messages	Yes	
•Number of process values per message	8	
•Message buffer	Circulating buffer, 256 entries each [3]	
Recipes	100	
•Records per recipe	200	
•Entries per record	200	
•Recipe memory	32 KB integrated flash, expandable [4]	
Process diagrams	500	
•Text objects	2,500 text elements	
•Variables per diagram	50	
•Fields per diagram	50	
•Graphics objects	Bitmaps, icons, background images, vector graphics	
•Dynamic objects	Graphs, bars, hidden buttons	
- Libraries	Yes	
Variables	1000	
User administration (security)		
•No. of user groups	10	
•No. of users	32	
•No. of user group privileges	Variable	
Printer functions	Color print, hardcopy, messages	
Online languages	5	
•Project languages (incl. system messages)	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	
Character set	Tahoma, freely scalable ideographic languages	
Help system	Yes	
Task planner (timer)	Yes	
Configuration tool	ProTool/Lite from Version 5.2 SP1 or from WinCC flexible 2004 Compact (to be ordered separately)	
•Configuration transfer	Serial / MPI / PROFIBUS DP	

3) Not battery-backed
4) By means of optional CF card

Ordering data	Order No.
SIMATIC TP 170B A)	
Touch panel with 5.7" STN display	
•Bluemode (4 levels)	**6AV6 545-0BB15-2AX0**
•Color (16 colors)	**6AV6 545-0BC15-2AX0**
incl. mounting accessories	
TP 170B starter kit A)	**6AV6 575-1AG06-0CX0**
comprising:	
•TP 170B with STN display, Bluemode	
•SIMATIC ProTool/ Lite configuration software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
•with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
•with SIMATIC WinCC flexible	See Section 4
Configuration set	
comprising: configuring or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish), RS 232 cable (5 m), MPI cable (5 m)	
•with SIMATIC ProTool/Lite configuration software B)	**6AV6 573-1FA06-0CX0**
•with engineering software SIMATIC WinCC flexible Compact C)	**6AV6 621-0AA01-0AA0**

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: EAR99S
C) Subject to export regulations AL: N and ECCN: 5D992B2
D) Subject to export regulations AL: N and ECCN: EAR99H

	Order No.
Documentation (to be ordered separately)	
Instruction manual 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, 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 B)	**6AV6 691-1SA01-0AX0**
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	

SIMATIC TP 170B

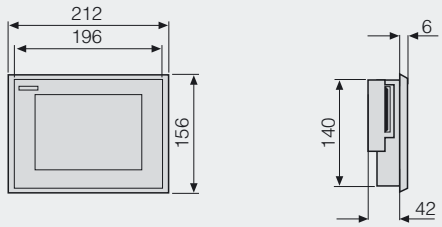
Ordering data

Ordering data	Order No.
Accessories	
Memory cards CF card, 32 MB	**6AV6 574-2AC00-2AA0**
Accessories for supplementary ordering	
Protective foil (pack of 10)	**6AV6 574-1AD00-4AX0**
Protective cover (2 sets)	**6AV6 574-1AE00-4AX0**
Service package D) comprising: •Gaskets •2 sets of labeling strips (for OPs) •7 clamps •Clamp-type terminal strip (block of two)	**6AV6 574-1AA00-4AX0**
TTY-RS 232 converter for connecting to S5 CPUs; 3.2 m long; Canon 15-pin –25-pin	**6ES5 734-1BD20**
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T connecting cable For connection of data terminal, 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**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

Dimension drawings

Dimensions in mm



G_ST80_XX_00064

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

More information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC TP 177A

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter unit in the category of touch panels with graphics 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 innov ative successor to the Touch Panel TP 170A
- Start of delivery approximately end of 4th quarter 2004

Benefits

- Can even be used where installa tion 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 Touch Panels TP 177 A 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.

With fast response times, the TP 177A is also eminently suitable for jog mode.

Compatibility with TP 170A

- Same installation cutout as TP 170A
- Transfer of the TP 170A configurations from ProTool/Lite, ProTool und ProTool/Pro
- Migration manual with descripti ons of the essential changes to 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 co nnections (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 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).
- Vector graphics
  simple geometric basic forms (line, circle and rectangle) can be created direct in the configuring tool
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Bars
  for the graphical display of dynamic values
- Language selection:
  - 5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
  - Language-dependent texts and graphics

SIMATIC TP 177A

Function

- User administration (security) acco rding to the requirements of the various sectors
  - Authentication by means of user ID and password
  - Privileges specific to user groups
- 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
- 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 global function execution
- Template concept
  Creation of screen templates (picture elements configured in the template appear in each picture)
- Simple maintenance and configuration through
  - Backup and restoring the configuration, operating system and firmware on a PC using ProSave
  - Download of the configuration via MPI/PROFIBUS DP and serially via RS485
  - Automatic transfer identification
  - Individual contrast setting and calibration
  - Clean screen
  - No batteries are necessary

Configuration

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

The necessary HardwareSupportPackage (HSP) can be downloaded for free via the following link:
http://www4.ad.siemens.de/WW/view/de/19241467

Projects generated using ProTool can be imported into 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

Type	TP 177A
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240 (240 x 320 with in portrait configuration)
•Colors	4 blue levels
•MTBF of backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
•Numeric/alphanumeric input	Yes/yes [1]
Processor	ARM CPU
Memory	
•Type	Flash / RAM
•Usable memory for user data	512 KB
Ports	1 x RS 422, 1 x RS 485
Connection to PLC	S7-200, S7-300/400, WinAC
Supply voltage	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.24 A
Clock	Software clock, without battery backup
Degree of protection	
•Front	IP65 (in installed state), NEMA 4x, NEMA 4
•Rear	IP20
Certification	Available soon: FM, cULus, CE, C-Tick
Dimensions	
•Front W x H (mm)	212 x 156
•Cutout W x H (mm)	198 x 142
Weight	0.7 kg
Ambient conditions [4]	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	[2]
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. angle of inclination)	[2]
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	[2]

Type	TP 177A
Functions	
Message system	
•No. of messages	1000
•Bit messages	Yes
•Analog messages	No
•No. of process values per message	8
•Message buffer	Circulating buffer, 256 entries each [3]
Process diagrams	250
•Text objects	1,000 text elements
•Variables per diagram	30
•Fields per diagram	30
•Graphics objects	Bitmaps, icons, background images
•Dynamic objects	Bars
- Libraries	Yes
Variables	500
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Online languages	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	WinCC flexible, ideographic languages
Help system	Yes
Task planner	Yes
Configuration tool	From WinCC flexible 2004 Compact HSP for OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A (to be ordered separately)
•Transfer of the configuration	Serially via RS 485/ MPI / PROFIBUS DP

1) Only English font can be displayed
2) Status not yet established on going to press
3) Not battery-backed
4) Ambient conditions for vertical mounting not specified on going to press

Note:
All specified values are maximum values.
The total number of configurable elements is limited by the size of the user memory.

SIMATIC TP 177A

Ordering data	Order No.
SIMATIC TP 177A A)	**6AV6 642-0AA11-0AX0**
Touch panel with 5.7" STN display, Bluemode (4 levels), incl. mounting accessories	
TP 177A starter kit A)	**6AV6 651-2AA01-0AA0**
comprising:	
•TP 177A Touch Panel	
•SIMATIC WinCC flexible Compact engineering software	
•SIMATIC HMI Manual Collection, 5 languages (English, German, French, Italian, Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	
•MPI cable (5 m)	
•PC/PPI Multimaster cable	
•Software update service for 1 year	
Configuration	
•With SIMATIC WinCC flexible	See Section 4
HSP OP 73micro, OP 73, OP 77A, TP 177micro, TP 177A: http://www4.ad.siemens.de/WW/view/de/19241467	

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

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

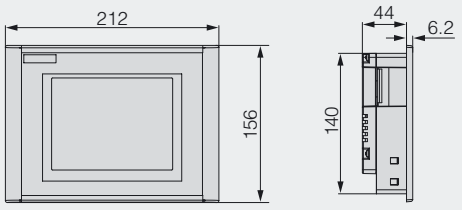
B) Subject to export regulations AL: N and ECCN: EAR99H

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

	Order No.
Documentation (to be ordered separately)	
Instruction manual TP 177A	
•German	**6AV6 691-1DG01-0AA0**
•English	**6AV6 691-1DG01-0AB0**
•French	**6AV6 691-1DG01-0AC0**
•Italian	**6AV6 691-1DG01-0AD0**
•Spanish	**6AV6 691-1DG01-0AE0**
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**
SIMATIC HMI Manual Collection C)	**6AV6 691-1SA01-0AX0**
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	
Accessories for supplementary ordering	
Protective foil	**6AV6 671-2XC00-0AX0**
(pack of 10)	
Service package	**6AV6 671-2XA00-0AX0**
comprising:	
•Gaskets	
•Clamps	
•Clamp-type terminal strip (block of two)	
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
PC/PPI Multimaster cable 1)	**6ES7 901-3CB03-0AX0**
For connecting the S7-200 to the serial PC/OP interface, and for image booting of the panel	
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

SIMATIC OP 170B

Overview

- Operator panel for operator co ntrol and monitoring of machines and plants
- Universal unit for first-time user s in the category of panels with graphics capability with extensive functionality
- Pixel-graphics 5.7" STN display, Bluemode (4 levels)
- 35 system keys, 24 freely-configu rable and freely-inscribable function keys (18 with LEDs)
- All interfaces RS 422/485 (e.g. MPI, PROFIBUS DP) are on board
- SIMATIC S5 and non-Siemens PLCs can be connected using convenient drivers or converters

Benefits

- 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:
  - Backup/restore via MPI, PROFIBUS DP, RS 232 (serial) or optionally via compact flash card (CF card)
  - 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
- Can be used worldwide:
  - 32 languages can be configured including Asiatic and Cyrillic character sets
  - Up to 5 languages are selectable online
- Graphics library is available complete with ready-to-use display objects
- Standard hardware and software interfaces to increase flexibility:
  - Compact flash card, used for recipe data sets and for backing up the configuration and system data
- Integrated serial printer port
- Extensive documentation on the SIMATIC HMI Manual Collection CD

Application

The OP 170B 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

- 5.7" STN, CCFL [1] backlit display, Bluemode (4 levels)
- 35 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- Numeric and alphanumeric 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 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
  - Serial RS 232 printer interface
- Slot for 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 initiation 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 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).
- Vector graphics;
  simple geometric forms (e.g. lines, circles and rectangles) can be created directly using the configuration tool
- Fixed texts
  for labeling function keys, process diagrams and process values in any character size
- Curve functions 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
- Password protection with 10 levels
- Message system;
  administration of status, fault and system messages
- 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 such as Excel and Access is possible

Functions (continued)

- 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
- Timer
  for cyclic function processing
- Print;
  hardcopy and messages (see "recommended printers")
- Dynamic positioning of objects and dynamic showing/hiding of objects
- 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)
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Download/upload of configuration via MPI/PROFIBUS DP/RS232 and CF Card (optional)
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary
- Message system; bit messages with message history (no battery backup)

Additional functions when configuring with WinCC flexible

- Message system
  - Analog messages (limit messages) as well as the Alarm S messaging alarm system 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
  - Creation of a screen template
- 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

Configuration

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

Projects generated using ProTool can be imported into WinCC flexible.

Integration

The OP 170B 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

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"

Technical specifications

Type	OP 170B
Display	STN liquid crystal display (LCD)
•Size	5.7"
•Resolution (W x H in pixels)	320 x 240
•Colors	4 blue levels
•MTBF of backlighting at 25 °C	Approx. 50,000 hours
Control elements	Membrane keyboard
•Function keys, programmable	24 function keys, 18 with LED
•Numeric/alphanumeric input	Yes / Yes[1]
Processor	RISC 32 bit, 66 MHz
Operating system	Windows CE
Memory	
•Type	Flash / RAM
•Usable memory for user data	768 KB
Ports	2 x RS 232, 1 x RS 422, 1 x RS 485 TTY using optional converter
•CF card slot	1
Interface with PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[2], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs
Power supply	24 V DC
•Permitted range	+18 to +30 V DC
•Nominal current	0.25 A
Clock	Software clock, synchronized, without battery bakkup
Degree of protection	
•Front	IP65 (when installed)
•Rear	IP20

1) Only English font can be displayed
2) Cannot be connected in conjunction with WinCC flexible

SIMATIC OP 170B

2

Technical specifications (continued)

Type	OP 170B
Certification	cULus, 508, NEMA/UL50 Type 4, FM, CE
Dimensions	
•Front W x H (mm)	240 x 252
•Cutout W x H (mm)	229 x 241
Weight	0.9 kg
Ambient conditions	
•Mounting position	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°
•Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C
•Max. relative humidity	85%
Expansion for operator-process communication	
•DP direct keys/LEDs (OP keys/ LEDs as I/O peripherals)	Yes
Peripherals	Printer
Functionality when configuring with ProTool	
Message system	
•Status messages	1000
•Fault messages	1000
•Message length (lines x characters)	1 x 70
•Number of process values per message	8
•Message buffer	Circulating buffer, 128 entries each [1]
Recipes	100
•Records per recipe	200
•Entries per record	200
•Recipe memory	32 KB integrated flash, expandable [2]
Process diagrams	100
•Text objects	2,000 text elements
•Variables per diagram	50
•Fields per diagram	50
•Graphics objects	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Graphs, bars, hidden buttons
- Libraries	Yes
Variables	1000
Password protection (levels)	10
Printer functions	Color print, hardcopy, messages
Online languages	5
•Project languages	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, freely scalable ideographic languages
Help system	Yes
Timer	Yes

Type	OP 170B
Functionality when configuring with WinCC flexible	
Message system	
•No. of messages	2000
•Bit messages	Yes
•Analog messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 256 entries each [1]
Recipes	100
•Records per recipe	200
•Entries per record	200
•Recipe memory	32 KB integrated flash, expandable [2]
Process diagrams	500
•Text objects	2,500 text elements
•Variables per diagram	50
•Fields per diagram	50
•Graphics objects	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Graphs, bars, hidden buttons
- Libraries	Yes
Variables	1000
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Printer functions	Color print, hardcopy, messages
Online languages	5
•Project languages (incl. system messages)	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, freely scalable ideographic languages
Help system	Yes
Task planner (timer)	Yes
Configuration tool	From ProTool Version 5.2 SP1 or from WinCC flexible 2004 Compact (to be ordered separately)
•Configuration transfer	Serial / MPI / PROFIBUS DP

1) Not battery-backed
2) By means of optional CF card

Ordering data	Order No.
SIMATIC OP 170B A)	**6AV6 542-0BB15-2AX0**
Operator panel with 5.7" STN display, Bluemode (4 levels), incl. mounting accessories	
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	See Section 4
with SIMATIC WinCC flexible	See Section 4
Configuration set	
comprising: configuring or engineering software, SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish), RS 232 cable (5 m), MPI cable (5 m)	
•with SIMATIC ProTool/Lite configuration software B)	**6AV6 573-1FA06-0CX0**
•with engineering software SIMATIC WinCC flexible Compact C)	**6AV6 621-0AA01-0AA0**
Documentation (to be ordered separately)	
Instruction manual 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, 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 B)	**6AV6 691-1SA01-0AX0**
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	
Accessories	
Memory cards	
CF card, 32 MB	**6AV6 574-2AC00-2AA0**
Accessories for supplementary ordering	
Service package D)	**6AV6 574-1AA00-4AX0**
comprising:	
•Gaskets	
•2 sets of labeling strips (for OPs)	
•7 clamps	
•Clamp-type terminal strip (block of two)	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T connecting cable	**6XV1 830-1CH30**
For connection of data terminal, precut/preassembled with two sub D connectors, 9-pin, terminated at both ends, 3 m	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
System interfaces	See page 2/139
Connecting cables	See page 2/149

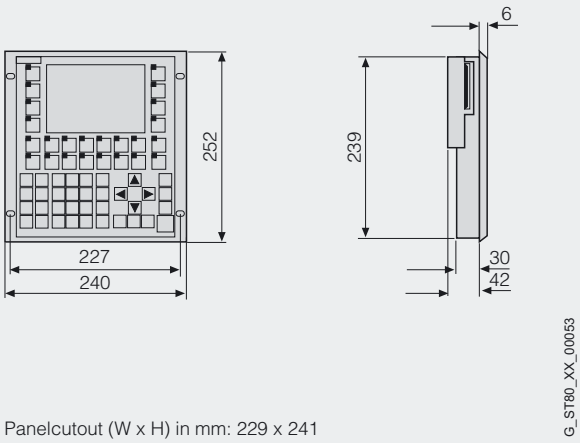
A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: EAR99S
C) Subject to export regulations AL: N and ECCN: 5D992B2
D) Subject to export regulations AL: N and ECCN: EAR99H

SIMATIC OP 170B

2

Dimension drawings

Dimensions in mm



Panelcutout (W x H) in mm: 229 x 241

More information

For further information, visit our website at

http://www.siemens.com/panels

Overview

- Touch panel with extensive f unctional scope for demanding machine visualization applications
- 5.7" pixel graphics 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 availabl e 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 compatib ility (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

SIMATIC TP 270

Function

- Displaying and changing process parameters
- Process visualization:
  - *TP 270 6"*:
    QVGA resolution (320 x 240 pixels),
    TP 270 10":
    VGA resolution (640 x 480 pixels)
    with 256 colors for pixels, 16 colors for text
  - Vector graphics (various line and shape objects)
  - Dynamic positioning and dynamic hiding and showing of objects
  - Pixel graphics, trend curves and bar charts
  - Display of up to 8 curves in a curve window;
    Curve graphics with scroll and zoom functions provide access to the history and permit flexible selection of the representation period.
    Read-off line for determining the current values and display via a table
  - Comprehensive libraries (SIMATIC HMI symbol library)
  - Display objects: Slider, gauge, clock
  - Cyclic function processing using an interval timer
- Multiplex function for variables
- Message system
  - Administration of status, fault and system messages
  - Status and fault messages with historical trend
  - Preconfigured message display, message window and message line
- Archiving messages and proce ss values (on CF card, optionally through Ethernet)
  - Various archive types: short-term and sequence archive
  - Storing of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives using trend curves
  - External evaluation with standard MS Excel and MS Access tools
- Message log and shift log
- Print functions (see "R ecommended printers")
- Language changeover
  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 editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS/CONTROL VAR PG functional ity in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Visual Basic Script, flexibility through implementation of new functions incl. interfacing with ProTool variables (comparing 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;
  permanently defined screen area for outputting general information (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 via Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading a configuration via USB/MPI/PROFIBUS DP/RS232/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 with standard word processors

Additional functions when configuring with WinCC flexible

- Project-specific faceplates wi th central modification facility
- Message system
  - Bit messages and analog messages (limit messages), as well as Alarm S telegram signaling procedure with 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 (option with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation of SIMATIC HMI system on basis of Internet Explorer
  - Web server with status HTML sites and control functions
- Client/server functions
  (option with "WinCC flexible /Sm@rtAccess")
  - Remote operator control and monitoring of other SIMATIC HMI systems
  - System-wide calling of information and archiving of process data

Configuration

Configuration can be carried out using the SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Standard or Advanced engineering software (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;
  Specific and fast process fault diagnostics 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;
  Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote operator control and monitoring as well as communication between various SIMATIC HMI systems (see WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote maintenance and servicing of machines/plants via 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 PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique [1)]
  - LG GLOFA GM
  - Modicon
  - GE-Fanuc
  - OMRON
- Over Ethernet (TCP/IP) to high er-level PC and network printer (optionally over NE2000-compatible network card)

Additionally when configuring with WinCC flexible

- Ethernet communication with SI MATIC 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

Type	TP 270 6"	TP 270 10"
Display	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 backlighting (at 25 °C)	Approx. 40,000 hours	Approx. 60,000 hours
Control elements	Touch screen	
•Numeric/alphanumeric input	Yes/yes	
•External mouse, keyboard, barcode reader	USB / USB / USB	
Processor	RISC CPU	
Operating system	Windows CE	
Memory		
•Type	Flash / RAM	
•Useable memory for user data	2048 KB configuration memory (without supplementary memory for options)	
Ports	2 x RS 232, 1 x RS 422, 1 x RS 485	
•USB (Universal Serial Bus)	1 x USB	
•CF card slot	1 x CF card slot	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[1)], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	
Supply voltage	24 V DC	
•Permitted range	+18 V to +30 V DC	
•Nominal current	0.6 A	
Backup battery	Optional, 3.6 V	
Clock	Hardware clock, synchronized, with backup	
Degree of protection		
•Front	IP65 (built-in), NEMA 12, NEMA 4x, NEMA 4	
•Rear	IP20	
Certification	FM, UL, cULus, Ex Zone 2, Ex Zone 22, CE, C-TICK, shipbuilding approval (e.g. ABS, GL, LRS, NK)	
Dimensions		
•Front W x H (mm)	212 x 156	335 x 275
•Cutout W x H (mm)	198 x 142	310 x 248
Weight	1 kg	4.5 kg

1) Cannot be connected in conjunction with WinCC flexible

SIMATIC TP 270

Technical specifications (continued)

Type	TP 270 6"	TP 270 10"
Ambient conditions		
•Mounting position	Vertical	
- Max. permissible angle of inclination without forced ventilation	+/- 35°	
•Temperature		
- Operation (vertical installation)	0 °C to +50 °C	
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C	
•Max. relative humidity	85%	
Expansion for operator-process communication		
•DP direct keys (TP buttons as I/O peripherals)	Yes	Yes
Peripherals	Printer, barcode reader, mouse, keyboard	
Applications/options		
•Under ProTool	ProAgent	
•Under WinCC flexible	ProAgent, Sm@rtAccess, Sm@rtService	
Functionality when configuring with ProTool		
Message system		
•Operating messages	2000	
•Fault messages	2000	
•Message length (lines x characters)	1 x 70	
•Number of process values per message	8	
•Message buffer	Circulating buffer, 512 entries each[2)]	
Recipes	300	
•Data records per recipe	500	
•Entries per data record	1000	
•Recipe memory	64 KB integrated flash, expandable	
Process diagrams	300	
•Text objects	10,000 text elements	
•Variables per diagram	200	
•Fields per diagram	200	
•Graphics objects	Bitmaps, icons, background images, vector graphics	
•Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Libraries	Yes	
Variables	2048	
Archiving		
•Number of archives per project	20	
•Number of process tags per proj.	20	
•Number of sequential archives	40	
•Entries per archive	10,000	
•Archive types	Short-term archive; sequence archive, message archive, process value archive	
•Storage location	CF card, Ethernet (option)	
•Data storage format	CSV	
•External evaluation	Readable, e.g. using MS Excel, MS Access	
•Size of archive	Dependent on the available memory on the CF card or spare hard disk memory on the network	
•Online evaluation	Using trend curves	
Password protection (levels)	10	
Visual Basic Scripts	Number = 50 / number of lines per script = 20	
Printer functions	Color printout, hardcopy, messages, shift log	
Online languages	5	
•Project languages	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	
Character set	Tahoma, Arial, freely scalable ideographic languages	
Help system	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Timer	Yes	

Technical specifications (continued)

Type	TP 270 6"	TP 270 10"
Functionality when configuring with WinCC flexible		
Message system		
•No. of messages	4000	
•Bit messages	Yes	
•Analog messages	Yes	
•Number of process values per message	8	
•Message buffer	Circulating buffer, 512 entries each [2)]	
Recipes	300	
•Data records per recipe	500	
•Entries per data record	1000	
•Recipe memory	64 KB integrated flash, expandable	
Process diagrams	500	
•Text objects	10,000 text elements	
•Variables per diagram	200	
•Fields per diagram	200	
•Graphics objects	Bitmaps, icons, background images, vector graphics	
•Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Libraries	Yes	
Variables	2048	
Archiving		
•Number of archives per project	20	
•Number of process tags per project	20	
•Number of sequential archives	400	
•Entries per archive	500,000	
•Archive types	Short-term archive; sequence archive, message archive, process value archive	
•Storage location	CF card, Ethernet (option)	
•Data storage format	CSV	
•External evaluation	Readable, e.g. using MS Excel, MS Access	
•Size of archive	Dependent on the available memory on the CF card or spare hard disk memory on the network	
•Online evaluation	Using trend curves	
User administration (security)		
•No. of user groups	10	
•No. of users	32	
•No. of user group privileges	Variable	
Visual Basic Scripts	Number = 50 / number of lines per script = 20	
Printer functions	Color printout, hardcopy, messages, shift log	
Online languages	5	
•Project languages (incl. system messages)	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	
Character set	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	
Help system	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Task planner (timer)	Yes	
Configuration tool	From ProTool Version 6 or from WinCC flexible 2004 Standard (to be ordered separately)	
•Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	

2) Not battery-backed

SIMATIC TP 270

2

Ordering data	Order No.
SIMATIC TP 270 A)	
Touch panel with	
•5.7" color STN display	**6AV6 545-0CA10-0AX0**
•10.4" color STN display	**6AV6 545-0CC10-0AX0**
incl. mounting accessories	
Starter kit TP 270 A) with	
•TP 270 6" Touch Panel	**6AV6 575-1AH16-0CX0**
•TP 270 10" Touch Panel	**6AV6 575-1AH36-0CX0**
comprising:	
•TP 270 Touch Panel	
•SIMATIC ProTool configuration software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
with SIMATIC ProTool and ProTool/Pro	See Section 4
with SIMATIC WinCC flexible	See Section 4
Configuring set B)	**6AV6 622-0BA01-0AA0**
comprising:	
•WinCC flexible Standard engineering software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, 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

	Order No.
Documentation (to be ordered separately)	
Instruction manual 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, 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 C)	**6AV6 691-1SA01-0AX0**
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	

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: 5D992B2
C) Subject to export regulations AL: N and ECCN: EAR99S

2

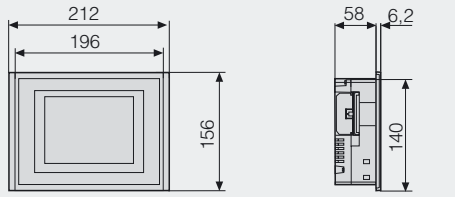
Ordering data

Ordering data	Order No.
Accessories	
Memory cards	
CF card, 32 MB	**6AV6 574-2AC00-2AA0**
Backup battery	**W79084-E1001-B2**
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	
Accessories for supplementary ordering	
Protective foil	
to protect the touch front against dirt/scratching (set of 10)	
•for TP 270 6"	**6AV6 574-1AD00-4DX0**
•for TP 270 10"	**6AV6 574-1AD00-4CX0**
Service package for TP 270 6" D)	**6AV6 574-1AA00-4AX0**
comprising:	
•Gaskets	
•2 sets of labeling strips (for OPs)	
•7 clamps	
•Clamp-type terminal strip (block of two)	
Service package for TP 270 10"	**6AV6 574-1AA00-2CX0**
•Gaskets	
•2 sets of labeling strips (for OPs)	
•10 clamps	
•Clamp-type terminal strip (block of two)	
•Socket wrench	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
TTY-RS 232 converter	**6ES5 734-1BD20**
for connecting to S5 CPUs; 3.2 m long; Canon 15-pin –25-pin	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

Dimension drawings

Dimensions in mm

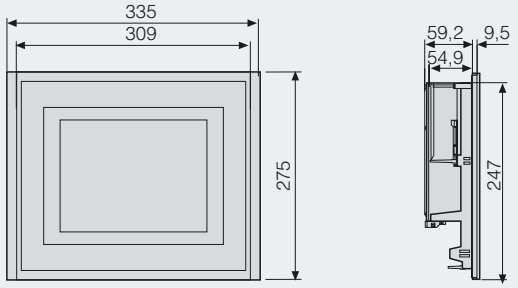


Panel cutout (W x H) in mm: 198 x 142

G_ST80_XX_00044

TP 270 6"

Dimensions in mm



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

G_ST80_XX_00043

TP 270 10"

More information

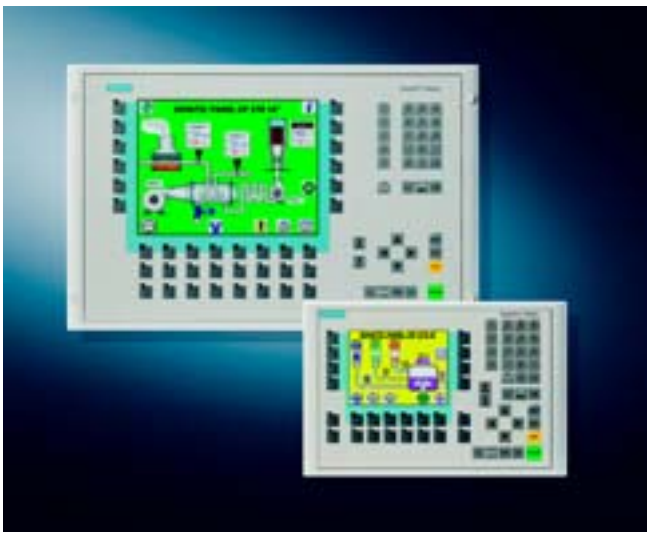
For further information, visit our website at

http://www.siemens.com/panels

2

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 270B 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 compatib ility (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 changing process parameters
- Function keys
  for direct initiation 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 visualization:
  - *OP 270 6":*
    QVGA resolution (320 x 240 pixels),
    OP 270 10":
    VGA resolution (640 x 480 pixels)
    with 256 colors for pixels, 16 colors for text
  - Vector graphics (various line and shape objects)
  - Dynamic positioning and dynamic hiding and showing of objects
  - Pixel graphics, trend curves and bar charts
  - Display of up to 8 curves in a curve window;
    Curve graphics with scroll and zoom functions provide access to the history and permit flexible selection of the representation period.
    Read-off line for determining the current values and display via a table
  - Comprehensive libraries (SIMATIC HMI symbol library)
  - Display objects: Slider, gauge, clock
  - Cyclic function processing using an interval timer
- Multiplex function for variables
- Message system
  - Administration of status, fault and system messages
  - Status and fault messages with historical trend
  - Preconfigured message display, message window and message line
- Archiving messages and proce ss values (on CF card, optionally through Ethernet)
  - Various archive types: short-term and sequence archive
  - Storing of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives using trend curves
  - External evaluation with standard MS Excel and MS Access tools
- Message log and shift log
- Print functions (see "R ecommended printers")
- Language changeover
  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 editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS/CONTROL VAR PG funct ionality in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Visual Basic Script, flexibility through implementation of new functions incl. interfacing with ProTool variables (comparing 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
  permanently defined screen area for outputting general information (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 via Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC using ProSave
  - Downloading/uploading a configuration via USB/MPI/PROFIBUS DP/RS232/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 with standard word processors

Additional functions when configuring with WinCC flexible

- Project-specific faceplates wi th central modification facility
- Message system
  - Bit messages and analog messages (limit messages), as well as Alarm S telegram signaling procedure with 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 (option with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation of SIMATIC HMI system on basis of Internet Explorer
  - Web server with status HTML sites and control functions
- Client/server functions
  (option with "WinCC flexible /Sm@rtAccess")
  - Remote operator control and monitoring of other SIMATIC HMI systems
  - System-wide calling of information and archiving of process data

Configuration

Configuration can be carried out using the SIMATIC ProTool or SIMATIC ProTool/Pro Configuration software (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Standard or Advanced engineering software (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;
  Specific and fast process fault diagnostics 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;
  Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote operator control and monitoring as well as communication between various SIMATIC HMI systems (see WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote maintenance and servicing of machines/plants via the Internet/intranet (see WinCC flexible RT options)

SIMATIC OP 270

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 high er-level PC and network printer (optionally over NE2000-compatible network card)

Additionally when configuring with WinCC flexible

- Ethernet communication with SI MATIC 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

Type	OP 270 6"	OP 270 10"
Display	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 backlighting (at 25 °C)	Approx. 40,000 hours	Approx. 60,000 hours
Control elements	Membrane keyboard	
•Function keys, programmable	24 function keys, 18 with LED	36 function keys, 28 with LED
•System keys	36	38
•Numeric/alphanumeric input	Yes/yes	
•External mouse, keyboard, barcode reader	USB / USB / USB	
Processor	RISC CPU	
Operating system	Windows CE	
Memory		
•Type	Flash / RAM	
•Useable memory for user data	2048 KB configuration memory (without supplementary memory for options)	
Ports	2 x RS 232, 1 x RS 422 1 x RS 485	
•USB (Universal Serial Bus)	1 x USB	
•CF card slot	1 x CF card slot	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[1)] Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	
Supply voltage	24 V DC	
•Permitted range	+18 V to +30 V DC	
•Nominal current	0.6 A	
Backup battery	Optional, 3.6 V	
Clock	Hardware clock, synchronized, with backup	
Degree of protection		
•Front	IP65 (built-in), NEMA 12, NEMA 4x, NEMA 4	
•Rear	IP20	
Certification	FM, UL, cULus, Ex Zone 2, Ex Zone 22, CE, C-TICK, shipbuilding approval (e.g. ABS, GL, NK)	
Dimensions		
•Front W x H (mm)	308 x 204	483 x 310
•Cutout W x H (mm)	282 x 178	436 x 295
Weight	1 kg	6 kg

1) Cannot be connected in conjunction with WinCC flexible

Technical specifications (continued)

Type	OP 270 6"	OP 270 10"
Ambient conditions		
•Mounting position	Vertical	
- Max. permissible angle of inclination without forced ventilation	+/- 35°	
•Temperature		
- Operation (vertical installation)	0 °C to +50 °C	
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C	
•Max. relative humidity	90%	
Expansion for operator-process communication		
•DP direct keys/LEDs (OP keys/ LEDs as I/O peripherals)	Yes	Yes
Peripherals	Printer, barcode reader, mouse, keyboard	
Applications/options		
•Under ProTool	ProAgent	
•Under WinCC flexible	ProAgent, Sm@rtAccess, Sm@rtService	
Functionality when configuring with ProTool		
Message system		
•Status messages	2000	
•Fault messages	2000	
•Message length (lines x characters)	1 x 70	
•Number of process values per message	8	
•Message buffer	Circulating buffer, 512 entries each [2]	
Recipes	300	
•Data records per recipe	500	
•Entries per data record	1000	
•Recipe memory	64 KB integrated flash, expandable	
Process diagrams	300	
•Text objects	10,000 text elements	
•Variables per diagram	200	
•Fields per diagram	200	
•Graphics objects	Bitmaps, icons, background images, vector graphics	
•Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Libraries	Yes	
Variables	2048	
Archiving		
•Number of archives per project	20	
•Number of proc. tags per project	20	
•Number of sequential archives	40	
•Entries per archive	10,000	
•Archive types	Short-term archive; sequence archive, message archive, process value archive	
•Storage location	CF card, Ethernet (option)	
•Data storage format	CSV	
•External evaluation	Readable, e.g. using MS Excel, MS Access	
•Size of archive	Dependent on the available memory on the CF card or spare hard disk memory over the network drive	
•Online evaluation	Using trend curves	
Password protection (levels)	10	
Visual Basic Scripts	Number = 50 / number of lines per script = 20	
Printer functions	Color printout, hardcopy, messages, shift log	
Online languages	5	
•Project languages	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	
Character set	Tahoma, Arial, freely scalable ideographic languages	
Help system	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Interval timer	Yes	

SIMATIC OP 270

Technical specifications (continued)

Functionality when configuring with WinCC flexible	
Message system	
•No. of messages	4000
•Bit messages	Yes
•Analog messages	Yes
•Number of process values per message	8
•Message buffer	Circulating buffer, 512 entries each [2]
Recipes	300
•Data records per recipe	500
•Entries per data record	1000
•Recipe memory	64 KB integrated flash, expandable
Process diagrams	500
•Text objects	10,000 text elements
•Variables per diagram	200
•Fields per diagram	200
•Graphics objects	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, slides, hidden buttons
- Libraries	Yes
Variables	2048
Archiving	
•Number of archives per project	20
•Number of process tags per project	20
•Number of sequential archives	400
•Entries per archive	500,000
•Archive types	Short-term archive; sequence archive, message archive, process value archive
•Storage location	CF card, Ethernet (option)
•Data storage format	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the CF card or spare hard disk memory on the network
•Online evaluation	Using trend curves
User administration (security)	
•No. of user groups	10
•No. of users	32
•No. of user group privileges	Variable
Visual Basic Scripts	Number = 50 / number of lines per script = 20
Printer functions	Color printout, hardcopy, messages, shift log
Online languages	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7
Task planner (interval timer)	Yes
Configuration tool	From ProTool Version 6 or from WinCC flexible 2004 Standard (to be ordered separately)
•Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet

2) Not battery-backed

Ordering data	Order No.
SIMATIC OP 270 A)	
Operator panel with	
•5.7" color STN display	**6AV6 542-0CA10-0AX0**
•10.4" color STN display	**6AV6 542-0CC10-0AX0**
incl. mounting accessories	
Starter kit OP 270 A) with	
•OP 270 6" Operator Panel	**6AV6 575-1AH06-0CX0**
•OP 270 10" Operator Panel	**6AV6 575-1AH26-0CX0**
comprising:	
•OP 270 Operator Panel	
•SIMATIC ProTool configuration software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
with SIMATIC ProTool or ProTool/Pro	See Section 4
with SIMATIC WinCC flexible	See Section 4
Configuring set B)	**6AV6 622-0BA01-0AA0**
comprising:	
•WinCC flexible Standard engineering software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, 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

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: 5D992B2
C) Subject to export regulations AL: N and ECCN: EAR99S

	Order No.
Documentation (to be ordered separately)	
Instruction manual 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, 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, Communications 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); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	

SIMATIC OP 270

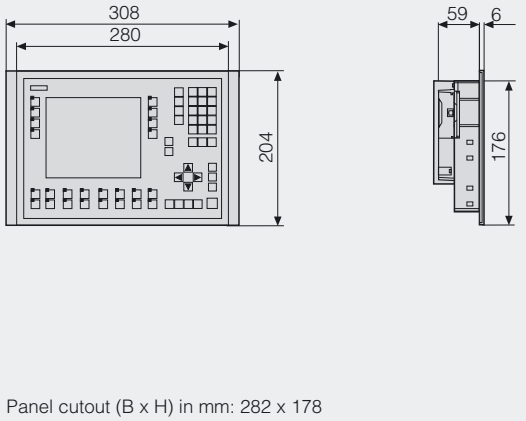
Ordering data

Ordering data	Order No.
Accessories	
Memory cards	
CF card, 32 MB	**6AV6 574-2AC00-2AA0**
Backup battery	**W79084-E1001-B2**
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	
Accessories for supplementary ordering	
Service package for OP 270 6" D)	**6AV6 574-1AA00-4AX0**
comprising:	
•Gaskets	
•2 sets of labeling strips	
•7 clamps	
•Clamp-type terminal strip (block of two)	
Service package for OP 270 10"	**6AV6 574-1AA00-2DX0**
comprising:	
•Gaskets	
•2 sets of labeling strips	
•10 clamps	
•Clamp-type terminal strip (block of two)	
•Socket wrench	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
TTY-RS 232 converter	**6ES5 734-1BD20**
for connecting to S5 CPUs; 3.2 m long; Canon 15-pin –25-pin	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

Dimension drawings

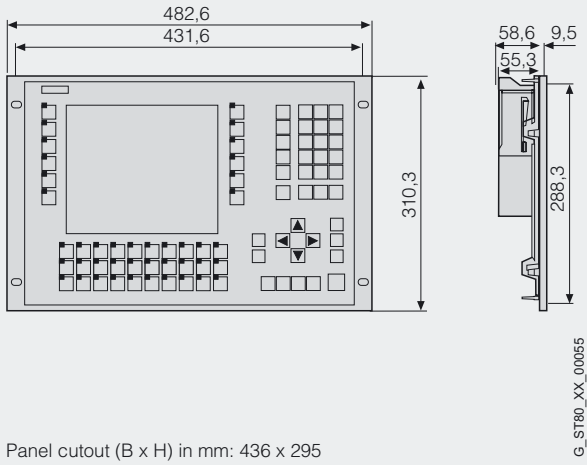
Dimensions in mm



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

SIMATIC MP 270B

Overview

- Like operator panels, Multi Pa nels (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 ba sed 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
- IP65/NEMA 4x/NEMA 12 degree of protection (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 downloading/uploading configurations
  - Ethernet interface (TCP/IP) for data transfer to a higher-level PC and for connecting a network printer
- Slot for Compact Flash card (CF card)
- Slot for PC card

SIMATIC MP 270B

Function

- Displaying and changing process parameters
- Function keys (only with MP 270B 10" Keys)
  support the direct activation 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 visualization:
  - MP 270B 6" Touch: QVGA resolution (320 x 240 pixels)
    MP 270B 10": VGA resolution (640 x 480 pixels)
    with 256 colors for pixels, 16 colors for text
  - Vector graphics (various line and shape objects)
  - Dynamic positioning and dynamic hiding and showing of objects
  - Pixel graphics, trend curves and bar charts
  - Display of up to 8 curves in a curve window;
    Curve graphics with scroll and zoom functions provide access to the history and permit flexible selection of the representation period.
    Read-off line for determining the current values and display via a table
  - Comprehensive libraries (SIMATIC HMI symbol library)
  - Display objects: Slider, gauge, clock
  - Cyclic function processing using an interval timer
- Multiplex function for variables
- Message system
  - Administration of status, fault and system messages
  - Status and fault messages with historical trend
  - Preconfigured message display, message window and message line
- Archiving of messages and process values (on PC/CF card or network drive through Ethernet)
  - Various archive types: short-term and sequence archive
  - Storing of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives using trend curves
  - External evaluation with standard MS Excel and MS Access tools
- Message log and shift log
- Print functions (see "R ecommended printers")
- Language changeover
  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 editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS/CONTROL VAR PG funct ionality in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Representation of HTML documen ts with MS Pocket Internet Explorer
- Visual Basic Script, flexibility through implementation of new functions incl. interfacing with ProTool variables (comparing 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;
  permanently defined screen area for outputting general information (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 or CF card (option) or via Ethernet
  - Backup and restoring the configuration, operating system, data records and firmware on a PC
  - Downloading/uploading a configuration via Ethernet/USB/MPI/PROFIBUS DP/RS232/modem and CF card (option)
  - Automatic transfer identification
  - Configuration simulation directly on the configuration computer
- Import/export of all texts including messages in CSV format for translation with standard word processors

Additional functions when configuring with WinCC flexible

- Project-specific faceplates wi th central modification facility
- Message system
  - Bit messages and analog messages (limit messages), as well as Alarm S telegram signaling procedure with 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 (option with "WinCC flexible/Sm@rtService")
  - E-mail generation
  - Remote operation of SIMATIC HMI system on basis of Internet Explorer
  - Web server with status HTML sites and control functions
- Client/server functions (option with "WinCC flexible/Sm@rt-Access")
  - Remote operator control and monitoring of other SIMATIC HMI systems
  - System-wide calling of information and archiving of process data

Configuration

Configuration can be carried out using the SIMATIC ProTool or SIMATIC ProTool/Pro configuration software (not MP 270B 6" Touch) (see HMI software/configuration software or visualization software) or with the SIMATIC WinCC flexible Standard or Advanced engineering software (see HMI software/SIMATIC WinCC flexible engineering software).

Projects generated using ProTool can be imported into WinCC flexible.

Function (continued)

Applications/options

When configuring with ProTool

- SIMATIC ProAgent/MP;
  Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- SIMATIC ThinClient/MP (only MP 270B 10" Touch);
  Use of the Multi Panel Touch variants as MS Windows terminal client and therefore use of the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)

When configuring with WinCC flexible

- SIMATIC ThinClient/MP (o nly MP 270B 10" Touch)
  Use of the Multi Panel Touch variants as MS Windows terminal client and therefore use of the MS terminal services (see multi panel options/SIMATIC ThinClient/MP)
- WinCC flexible /ProAgent;
  Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/process diagnostics software SIMATIC ProAgent)
- WinCC flexible /Sm@rtAccess;
  Remote operator control and monitoring as well as communication between various SIMATIC HMI systems (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
- WinCC flexible /Sm@rtService;
  Remote maintenance and servicing of machines/plants via the Internet/intranet (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
- WinCC flexible /OPC server
  Communication with applications (e.g. MES, ERP, or office applications) from different vendors (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)

Integration

The MP 270B 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 hig her-level PC, network printer

1) Cannot be connected in conjunction with WinCC flexible

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)

Note:
For further information see "System interfaces".

SIMATIC MP 270B

Technical specifications

Type	MP 270B 6" Touch	MP 270B 10" Key	MP 270B 10" Touch
Display	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 backlighting (at 25 °C)	Approx. 50,000 hours	Approx. 50,000 hours	Approx. 50,000 hours
Control elements	Touch screen	Membrane keyboard	Touch screen
• Function keys, programmable	–	36 function keys, 28 with LED	–
• System keys	–	38	–
• Numeric/alphanumeric input	Yes/yes	Yes/yes	Yes/yes
• External mouse, keyboard, barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
Processor	RISC CPU	RISC CPU	RISC CPU
Operating system	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Usable memory for user data	5 MB (of which 4 MB for configuration)	5 MB (of which 4 MB for configuration)	5 MB (of which 4 MB for configuration)
Ports	2 x RS 232, 1 x RS 422, 1 x RS 485	2 x RS 232, 1 x RS 422, 1 x RS 485	2 x RS 232, 1 x RS 422, 1 x RS 485
• 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)
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[1], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[1], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST)[1], Modicon (Modbus), LG GLOFA GM, other non-Siemens PLCs
Supply voltage	24 V DC	24 V DC	24 V DC
• Permitted range	+18 V to +30 V DC	+18 V to +30 V DC	+18 V to +30 V DC
• Nominal current	0.75 A	0.9 A	0.9 A
Backup battery	Optional, 3.6 V	Optional, 3.6 V	Optional, 3.6 V
Clock	Hardware clock, backed up, synchronized	Hardware clock, backed up, synchronized	Hardware clock, backed up, synchronized
Degree of protection			
• Front	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4
• Rear	IP20	IP20	IP20
Certification	FM Class i Div 2, cULus, Ex Zone 2, Ex Zone 22, CE, C-TICK, shipbuilding approval (e.g. ABS, GL, NK)	FM Class i Div 2, cULus, Ex Zone 2, Ex Zone 22, CE, C-TICK, shipbuilding approval (e.g. ABS, GL, NK)	FM Class i Div 2, cULus, Ex Zone 2, Ex Zone 22, CE, C-TICK, shipbuilding approval (e.g. ABS, GL, NK)
Dimensions			
• Front W x H (mm)	212 x 156	483 x 310	335 x 275
• Cutout W x H (mm)	198 x 142	436 x 295	310 x 248
Weight	1 kg	6 kg	4.5 kg
Ambient conditions			
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°	+/- 35°	+/- 35°
• Temperature			
- Operation (vertical installation)	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +40 °C	0 °C to +40 °C
- Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
• Max. relative humidity	85%	90%	90%
Expansion for operator control of the process			
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	–	Yes	–
• DP direct keys (TP buttons as I/O peripherals)	Yes	–	Yes
Peripherals	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader

1) Cannot be connected in conjunction with WinCC flexible

Technical specifications (continued)

Type	MP 270B 6" Touch	MP 270B 10" Key	MP 270B 10" Touch
Applications/options			
•Under ProTool	-	Internet Explorer, ProAgent	ThinClient/MP, Internet Explorer, ProAgent
•Under WinCC flexible	Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Thin Client/MP, Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server
Functionality when configuring with ProTool			
Message system			
•Status messages	–	2000	2000
•Fault messages	–	2000	2000
•Message length (lines x characters)	–	1 x 70	1 x 70
•Number of process values per message	–	8	8
•Message buffer	–	Circulating buffer, 512 entries each [2)]	Circulating buffer, 512 entries each [2)]
Recipes	–	300	300
•Data records per recipe	–	500	500
•Entries per data record	–	1000	1000
•Recipe memory	–	64 KB integrated flash, expandable	64 KB integrated flash, expandable
Process diagrams	–	300	300
•Text objects	–	10,000 text elements	10,000 text elements
•Variables per diagram	–	200	200
•Fields per diagram	–	200	200
•Entries per diagram	–	200	200
•Graphics objects	–	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	–	Diagrams, bars, slides, hidden buttons	Diagrams, bars, slides, hidden buttons
- Libraries	–	Yes	Yes
Variables	–	2048	2048
Archiving	–		
•Number of archives per project	–	20	20
•Number of process tags per project	–	20	20
•Archive types	–	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive
•Storage location	–	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	–	CSV	CSV
•External evaluation	–	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	–	Dependent on the available memory on the PC/CF card or spare hard disk memory over the network drive	Dependent on the available memory on the PC/CF card or spare hard disk memory over the network drive
•Online evaluation	–	Using trend curves	Using trend curves
Password protection (levels)	–	10	10
Visual Basic Scripts	–	Number = 50 / number of lines per script = 20	Number = 50 / number of lines per script = 20
Printer functions	–	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log
Online languages	–	5	5
•Project languages	–	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	–	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable
Help system	–	Yes	Yes
PG functions (STATUS/CONTROL)	–	For SIMATIC S5/S7	For SIMATIC S5/S7
Interval timer	–	Yes	Yes

2) Not battery-backed

SIMATIC MP 270B

Technical specifications (continued)

Type	MP 270B 6" Touch	MP 270B 10" Key	MP 270B 10" Touch
Functionality when configuring with WinCC flexible			
Message system			
•No. of messages	4000	4000	4000
•Bit messages	Yes	Yes	Yes
•Analog messages	Yes	Yes	Yes
•No. of process values p. message	8	8	8
•Message buffer	Circulating buffer, 512 entries each 2)	Circulating buffer, 512 entries each 2)	Circulating buffer, 512 entries each 2)
Recipes	300	300	300
•Data records per recipe	500	500	500
•Entries per data record	1000	1000	1000
•Recipe memory	64 KB integrated flash, expandable	64 KB integrated flash, expandable	64 KB integrated flash, expandable
Process diagrams	500	500	500
•Text objects	10,000 text elements	10,000 text elements	10,000 text elements
•Variables per diagram	200	200	200
•Fields per diagram	200	200	200
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, slides, hidden buttons	Diagrams, bars, slides, hidden buttons	Diagrams, bars, slides, hidden buttons
- Libraries	Yes	Yes	Yes
Variables	2048	2048	2048
Archiving			
•No.of archives per project	20	20	20
•No. of process tags per project	20	20	20
•No. of sequence archives	400	400	400
•Entries per archive	500,000	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	Short-term archive, sequence archive, message archive, process value archive
•Storage location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	CSV	CSV	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive
•Online evaluation	Using trend curves	Using trend curves	Using trend curves
User administration (security)			
•No. of user groups	10	10	10
•No. of users	32	32	32
•No. of user group privileges	Variable	Variable	Variable
Visual Basic Scripts	Number = 50 / number of lines per script = 200	Number = 50 / number of lines per script = 200	Number = 50 / number of lines per script = 200
Printer functions	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log
Online languages	5	5	5
•Project languages (incl. system messages)	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian	Danish, German, traditional Chinese, simplified Chinese, English, Finnish, French, Greek, Italian, Japanese, Korean, Dutch, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, Czech, Turkish, Hungarian
Character set	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Task planner (timer)	Yes	Yes	Yes
Configuration tool	From WinCC flexible 2004 Standard (to be ordered separately)	From ProTool Version 6.0 or WinCC flexible 2004 Standard (to be ordered separately)	From ProTool Version 6.0 or WinCC flexible 2004 Standard (to be ordered separately)
•Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet

2) Not battery-backed

2

Ordering data	Order No.
SIMATIC MP 270B A)	
Multi panel with	
•6" color TFT display, Touch	**6AV6 545-0AH10-0AX0**
•10" color TFT display, Touch	**6AV6 545-0AG10-0AX0**
•10" color TFT display, Key	**6AV6 542-0AG10-0AX0**
incl. mounting accessories	
MP 270B starter package A) with	
•MP 270B 10" Multi Panel, Touch	**6AV6 575-1AH56-0CX0**
•MP 270B 10" Multi Panel, Key	**6AV6 575-1AH46-0CX0**
comprising:	
•MP 270B Multi Panel	
•SIMATIC ProTool configuration software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable (5 m)	
•Software update service for 1 year	
Configuration	
with SIMATIC ProTool and ProTool/Pro (MP 270B 10" Touch and Key)	See Section 4
with SIMATIC WinCC flexible	See Section 4
Configuring set B)	**6AV6 622-0BA01-0AA0**
comprising:	
•WinCC flexible Standard engineering software	
•SIMATIC HMI Manual Collection (CD), 5 languages (German, English, French, 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
•SIMATIC ThinClient/MP	See page 2/126
When configuring with WinCC flexible	
•WinCC flexible /ProAgent	See Section 4
•SIMATIC ThinClient/MP	See page 2/126
•WinCC flexible /Sm@rtAccess	See Section 4
•WinCC flexible /Sm@rtService	See Section 4
•WinCC flexible /OPC server	See Section 4

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: 5D992B2
C) Subject to export regulations AL: N and ECCN: EAR99S

	Order No.
Documentation (to be ordered separately)	
Instruction manual 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, 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 Communications 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); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	

SIMATIC MP 270B

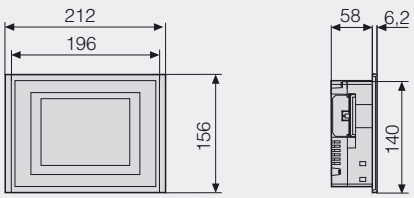
Ordering data (continued)

	Order No.
Accessories	
Memory cards	
•CF card, 32 MB	**6AV6 574-2AC00-2AA0**
•PC card (ATA flash), 64 MB	**6AV6 574-2AC00-2AF0**
Backup battery Lithium battery, 2.6 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**
Accessories for supplementary ordering	
Protective foil to protect the Touch front against dirt/scratching (set of 10)	
•for MP 270B 10" Touch	**6AV6 574-1AD00-4CX0**
•for MP 270B 6" Touch	**6AV6 574-1AD00-4DX0**
Service package for MP 270B 6" Touch D) comprising: •Gasket •2 sets of labeling strips (for OPs) •7 clamps •Clamp-type terminal strip (block of two)	**6AV6 574-1AA00-4AX0**
Service package for MP 270B 10" Touch comprising: •Gasket •10 clamps •Clamp-type terminal strip (block of two) •Socket wrench	**6AV6 574-1AA00-2CX0**
Service package for MP 270B 10" Key comprising: •Gasket •2 sets of labeling strips •10 clamps •Clamp-type terminal strip (block of two) •Socket wrench	**6AV6 574-1AA00-2DX0**
RS 485 bus connector 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 connecting to S5 CPUs; 3.2 m long; Canon 15-pin –25-pin	**6ES5 734-1BD20**
System interfaces	See page 2/139
Connecting cables	See page 2/149

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

Dimension drawings

Dimensions in mm

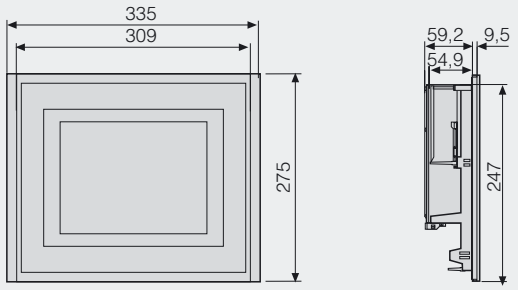


G_ST80_XX_00044

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

MP 270B 6“ Touch

Dimensions in mm

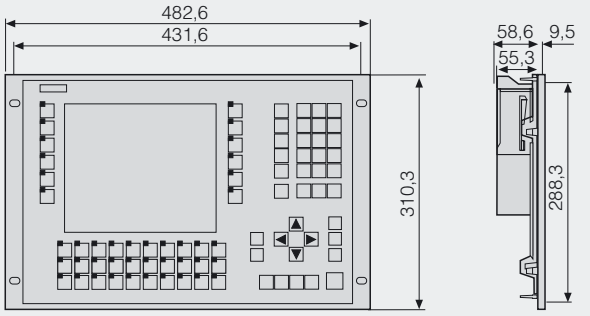


G_ST80_XX_00043

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

SIMATIC MP 370

Overview

- Multi panels (MPs) can be used ju st 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.
- IP65/NEMA 4x/NEMA 12 degree of protection (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;
    Read-off line 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 carried out using the configuring software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see HMI software/configuring software or visualization software) or using the SIMATIC WinCC flexible Standard or Advanced engineering software (see HMI software/engineering software SIMATIC WinCC flexible).

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 multifunctional 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/plants 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
- Via Ethernet (TCP/IP) to the hi gher-level PC, network printer

Additionally when configuring with WinCC flexible

- Ethernet communication with SIMATIC S7
- Multi-protocol capability
- OPC XML server (option 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"

2

Technical specifications

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
Display	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)
• Size	12.1"	12.1"	15.1"
• Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768
• Colors	256 colors	256 colors	256 colors
• MTBF of backlighting (at 25 °C)	Approx. 50,000 hours	Approx. 50,000 hours	Approx. 50,000 hours
Control elements	Membrane keyboard	Touch screen	Touch screen
• Function keys, programmable	36 function keys, all with LEDs	-	-
• System keys	38 (3 with LED)	-	-
• Numeric/alphanumeric input	Yes/yes	Yes/yes	Yes/yes
• External mouse, keyboard, barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
Processor	RISC CPU	RISC CPU	RISC CPU
Operating system	Windows CE	Windows CE	Windows CE
Memory			
• Type	Flash / RAM	Flash / RAM	Flash / RAM
• Usable memory for user data	12 MB (of which 7 MB for configuration)	12 MB (of which 7 MB for configuration)	12 MB (of which 7 MB for configuration)
Ports	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485
• 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)
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1 and DH485), Mitsubishi (FX), Telemecanique (ADJUST) [1)], Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1 and DH485), Mitsubishi (FX), Telemecanique (ADJUST) [1)], Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1 and DH485), Mitsubishi (FX), Telemecanique (ADJUST) [1)], Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs
Supply voltage	-15%, + 20%	-15%, + 20%	-15%, + 20%
• Permitted range	+ 18 to + 30 V DC	+ 18 to + 30 V DC	+ 18 to + 30 V DC
• Nominal current	1.15 A	1.15 A	1.8 A
Backup battery	Optional, 3.6 V	Optional, 3.6 V	Optional, 3.6 V
Clock	Hardware clock, backed up and synchronized	Hardware clock, backed up and synchronized	Hardware clock, backed up and synchronized
Degree of protection			
• Front	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4
• Rear	IP20	IP20	IP20
Certification	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, CE, C-TICK
Dimensions			
• Front W x H (mm)	483 x 310	335 x 275	400 x 310
• Cutout W x H (mm)	450 x 290	310 x 248	368 x 290
Weight	6 kg	5 kg	5.7 kg
Ambient conditions			
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°	+/- 35°	+/- 35°
• Temperature			
- Operation (vertical installation)	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C	0 °C to +35 °C	0 °C to +35 °C
- Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
• Max. relative humidity	85%	85%	85%

1) Cannot be connected in conjunction with WinCC flexible

2

Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
Expansion for operator control of the process			
•DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	Yes	-	-
•DP direct keys (TP buttons as I/O peripherals)	-	Yes	Yes
Peripherals	Printer, barcode reader, mouse, keyboard, diskette drive	Printer, barcode reader, mouse, keyboard, diskette drive	Printer, barcode reader, mouse, keyboard, diskette drive
Applications/options			
•Under ProTool	Soft PLC, Internet Explorer, ProAgent	Thin Client/MP, Soft PLC, Internet Explorer, ProAgent	Thin Client/MP, Soft PLC, Internet Explorer, ProAgent
•Under WinCC flexible	Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Thin Client/MP, Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Thin Client/MP, Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server
Functionality when configuring with ProTool			
Message system			
•Status messages	2000	2000	2000
•Fault messages	2000	2000	2000
•Message length (lines x characters)	1 x 70	1 x 70	1 x 70
•No. of process values per message	8	8	8
•Message buffer	Circulating buffer, 1024 entries each [2]	Circulating buffer, 1024 entries each [2]	Circulating buffer, 1024 entries each [2]
Recipes	500	500	500
•Data records per recipe	1000	1000	1000
•Entries per data record	1000	1000	1000
•Recipe memory	128 KB integrated flash, expandable	128 KB integrated flash, expandable	128 KB integrated flash, expandable
Process diagrams	300	300	300
•Text objects	30,000 text elements	30,000 text elements	30,000 text elements
•Variables per diagram	400	400	400
•Fields per diagram	400	400	400
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons
- Libraries	Yes	Yes	Yes
Variables	2048	2048	2048
Archiving			
•No. of archives per project	50	50	50
•No. of process tags per project	50	50	50
•No. of sequence archives	40	40	40
•Entries per archive	50,000	50,000	50,000
•Archive types	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive
•Storage location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	CSV	CSV	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive
•Online evaluation	Using trend curves	Using trend curves	Using trend curves
Password protection (levels)	10	10	10
Visual Basic scripts	Number = 50 / number of lines per script = 100	Number = 50 / number of lines per script = 100	Number = 50 / number of lines per script = 100
Printer functions	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log

Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
Functionality when configuring with ProTool (continued)			
Online languages	5	5	5
•Project languages	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Timer	Yes	Yes	Yes
Functionality when configuring with WinCC flexible			
Message system			
•No. of messages	4000	4000	4000
•Bit messages	Yes	Yes	Yes
•Analog messages	Yes	Yes	Yes
•No. of process values per message	8	8	8
•Message buffer	Circulating buffer, 1024 entries each [2]	Circulating buffer, 1024 entries each [2]	Circulating buffer, 1024 entries each [2]
Recipes	500	500	500
•Data records per recipe	1000	1000	1000
•Entries per data record	1000	1000	1000
•Recipe memory	128 KB integrated flash, expandable	128 KB integrated flash, expandable	128 KB integrated flash, expandable
Process diagrams	500	500	500
•Text objects	30,000 text elements	30,000 text elements	30,000 text elements
•Variables per diagram	400	400	400
•Fields per diagram	400	400	400
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons
- Libraries	Yes	Yes	Yes
Variables	2048	2048	2048
Archiving			
•No. of archives per project	50	50	50
•No. of process tags per project	50	50	50
•No. of sequence archives	400	400	400
•Entries per archive	500.000	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	Short-term archive, sequence archive, message archive, process value archive
•Storage location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	CSV	CSV	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive
•Online evaluation	Using trend curves	Using trend curves	Using trend curves
User administration (security)			
•No. of user groups	10	10	10
•No. of users	32	32	32
•No. of user group privileges	Variable	Variable	Variable

2) Not battery-backed

SIMATIC MP 370

Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
Functionality when configuring with WinCC flexible			
Visual Basic Scripts	Number = 100 / number of lines per script = 500	Number = 100 / number of lines per script = 500	Number = 100 / number of lines per script = 500
Printer functions	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log
Online languages	5	5	5
•Project languages (incl. system messages)	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Task planner (interval timer)	Yes	Yes	Yes
Configuration tool	ProTool from Version 5.2 SP3 or from WinCC flexible 2004 Standard (to be ordered separately)	ProTool from Version 5.2 SP3, or from WinCC flexible 2004 Standard (to be ordered separately)	ProTool from Version 6.0 SP2 or from WinCC flexible 2004 Standard (to be ordered separately)
•Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet

2) Not battery-backed

Ordering data

	Order No.
SIMATIC MP 370 A)	
Multi panel with	
•12" color TFT display, Touch	**6AV6 545-0DA10-0AX0**
•12" color TFT display, Key	**6AV6 542-0DA10-0AX0**
•15" color TFT display, Touch	**6AV6 545-0DB10-0AX0**
incl. mounting accessories	
Configuration	
with SIMATIC ProTool and ProTool/Pro	See Section 4
with SIMATIC WinCC flexible	See Section 4

A) Subject to export regulations AL: N and ECCN: 5D002ENC3
B) Subject to export regulations AL: N and ECCN: 5D992B2

	Order No.
Applications/options	
Configuring set B)	**6AV6 622-0BA01-0AA0**
comprising:	
•Engineering software WinCC flexible Standard	
•Documentation CD, 5 languages (English, French, German, Italian, Spanish)	
•RS 232 cable (5 m)	
•MPI cable, 5 m	
When configuring with ProTool	
•SIMATIC ProAgent/MP	See Section 4
•SIMATIC WinAC MP	See page 2/123
•SIMATIC ThinClient/MP	See page 2/126
When configuring with WinCC flexible	
•SIMATIC ThinClient/MP	See page 2/126
•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

Ordering data

	Order No.
Documentation (to be ordered separately)	
Instruction manual 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**
•Spanish	**6AV6 591-1DB10-2AE0**
ProTool user manual, 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 Configurations 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) 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**

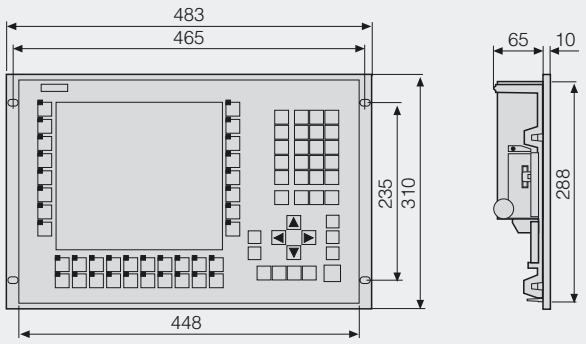
C) Subject to export regulations AL: N and ECCN: EAR99S

	Order No.
Accessories	
Memory cards	
•CF card, 32 MB	**6AV6 574-2AC00-2AA0**
•PC card (ATA Flash), 64 MB C)	**6AV6 574-2AC00-2AF0**
Backup battery Lithium battery, 2.6 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**
Accessories for supplementary ordering	
Key labeling strips for MP 370 Key for function keys, without labeling, set of 2 (plastic)	**6AV6 574-1AB00-2BA0**
Protective foil to protect the Touch front against dirt/scratching (set of 10)	
•for MP 370 12" Touch	**6AV6 574-1AD00-4CX0**
•for MP 370 15" Touch	**6AV6 574-1AD00-4EX0**
Service package for MP 370 Touch comprising: •Gasket •10 clamps •Clamp-type terminal strip (block of two) •Socket wrench	**6AV6 574-1AA00-2CX0**
Service package for MP 370 Key comprising: •2 sets of labeling strips •6 clamps •Clamp-type terminal strip (block of two) •Socket wrench	**6AV6 574-1AA00-2BX0**
Configuration cable between PG/PC and MP, RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
System interfaces	See page 2/139
Connecting cables	See page 2/149

SIMATIC MP 370

Dimension drawings

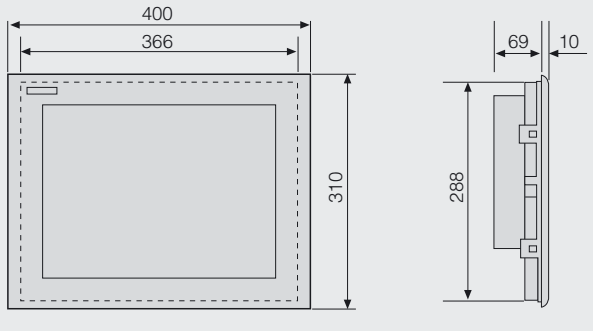
Dimensions in mm



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

MP 370 12" Keys

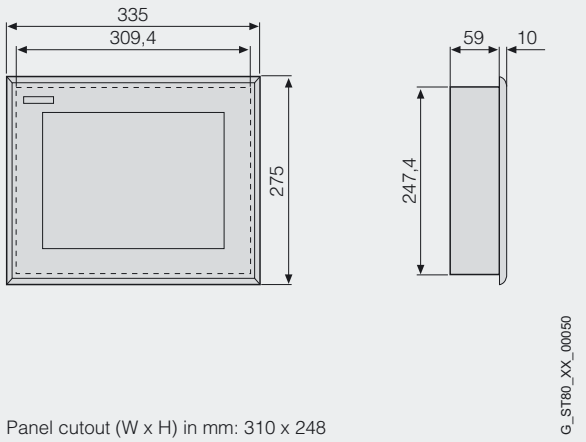
Dimensions in mm



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

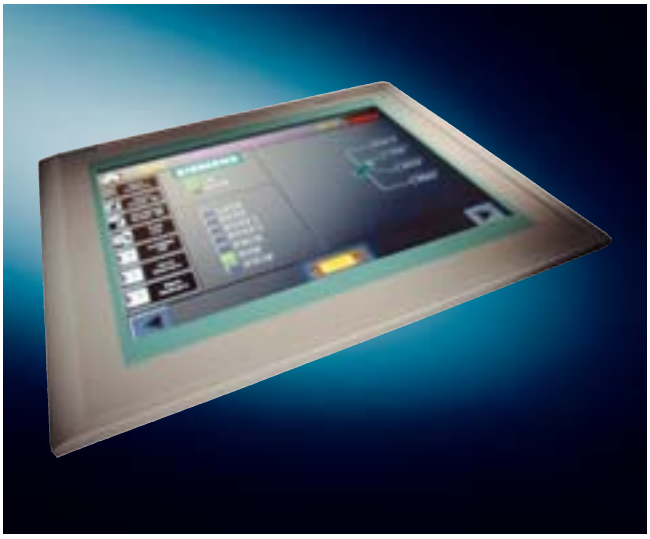
MP 370 12" Touch

More information

For further information, visit our website at

http://www.siemens.com/mp

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 fo r 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 ma chine 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".

SIMATIC WinAC MP

Function

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.

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.

Technical specifications

Type	SIMATIC WinAC MP V3.1
User memory	
•Flash memory (integrated)	5 MB
•Working memory (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 Mbits/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

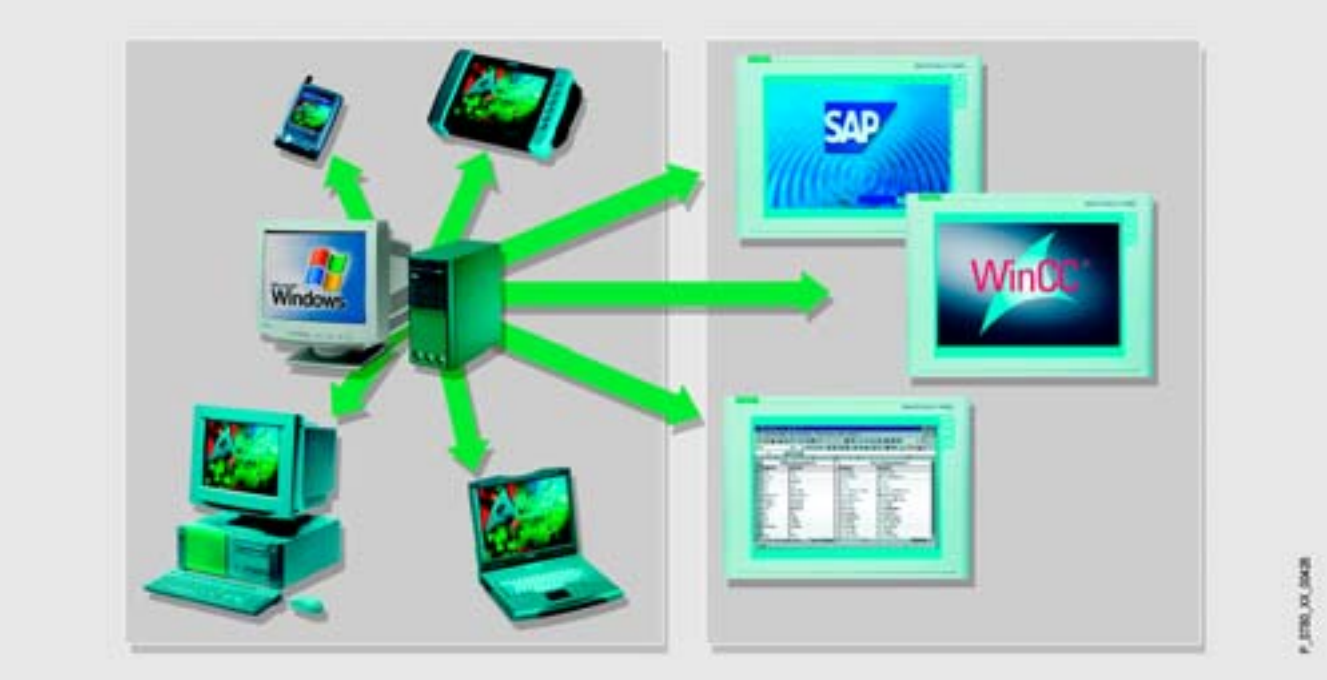
Ordering data

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

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

SIMATIC ThinClient/MP

Overview



- Multi panel option upgradeable
- SIMATIC ThinClient/MP exp ands 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 panel s 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

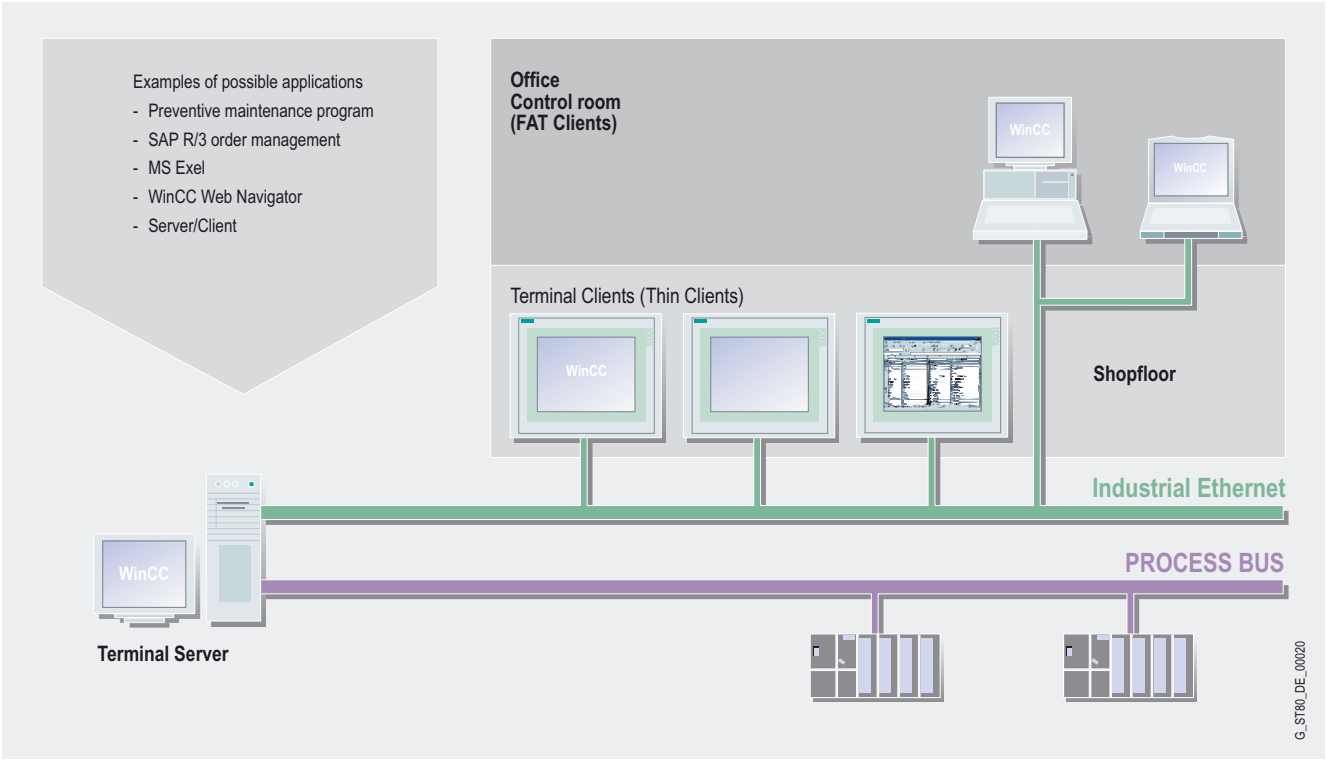
- PC functionality on rugged, compact and cost-optimized Windows CE platform
- Implementation of pure Thin Clie nt solutions or Thin Client functionality parallel to visualization with ProTool or WinCC flexible
- Low administration and main tenance costs since these only occur once for the central terminal 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 indivi dual approval of possible applications for the user at the server end

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 –vi sualization, maintenance management, quality assurance or office applications –are implemented on the terminal server which can also connect to the process.

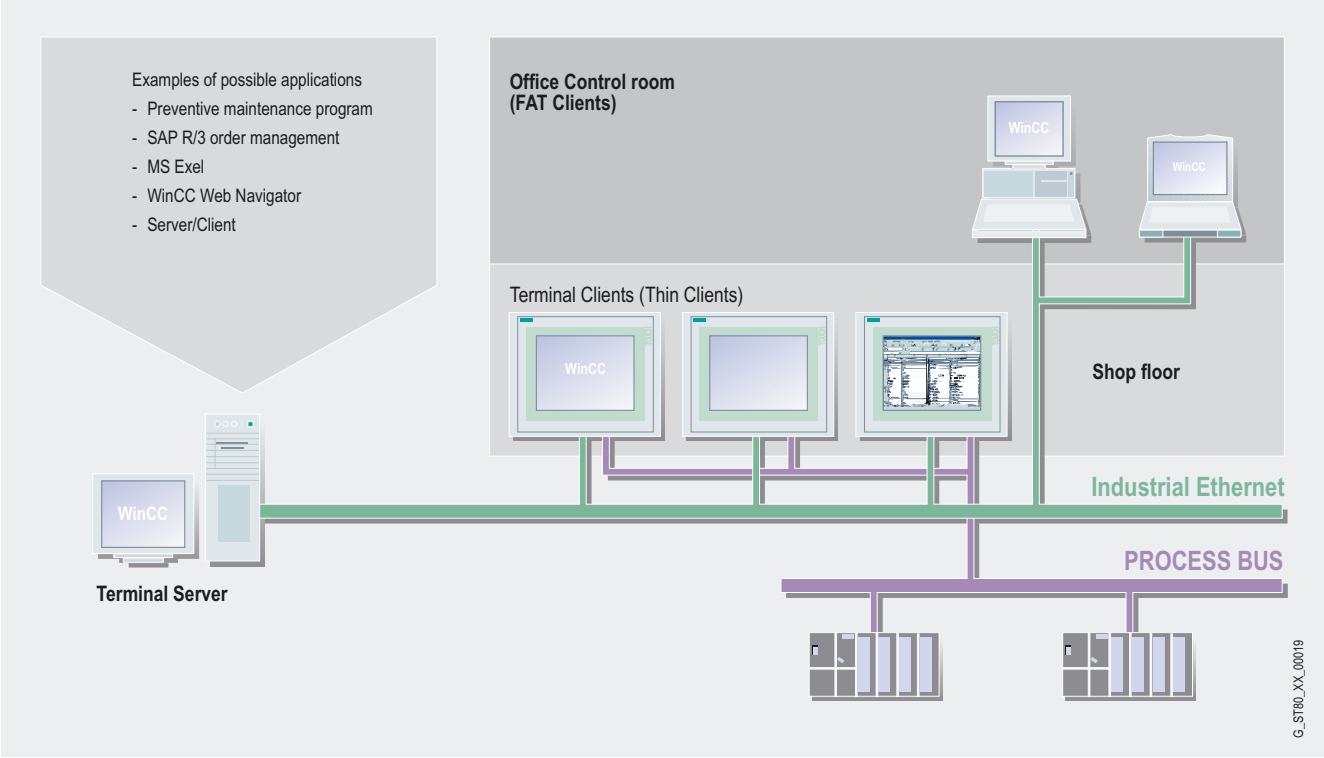


SIMATIC ThinClient/MP

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 fundamental physical separation of data, applications and display visualization. The terminal services of Windows 2000 servers enable Thin Clients (terminal clients) to run applications in the main memory of a central Windows 2000 terminal server instead of in its own main memory. The Thin Clients are then used as terminals solely for the purpose of visualizing and entering data which they then send to the terminal server.

SIMATIC ThinClient/MP enables the platforms MP 370 Touch and MP 270B 10" Touch to control PC applications that run on a Windows 2000 terminal server. These can be SCADA (e.g. SIMATIC WinCC + Web Navigator) or MS-Office applications.

Additional functions

- Autostart function
  supports the automatic setup of a connection to a fixed terminal server after the multifunctional platform has been switched on. This means that no other operations are required on starting.
- Configuration of extensive user authorizations, e.g.
  starting of and access to only one application on the terminal server
- Configuration of t he connection settings ensures quick and reliable connection setup

ThinClient/MP is executable on:

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

Installation

SIMATIC ThinClient/MP is installed and authorized quickly and easily on the multifunctional platforms using the supplied panel service tool ProSave.

System requirements for terminal server:

Operating system:

- Windows 2000 server with SP2 or higher, including installed terminal services

Licenses

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

1) One license from Microsoft is required for each multi panel that is operated as a Thin Client on the terminal server.

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

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

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

More information

For further information, visit our website at

http://www.siemens.com/mp

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

Three different types of interface are used for communication 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 (communication services implemented in the operating system of SIMATIC S7); 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 PROFIBUS interface and MPI interface are functionally identical (SIMATIC OPs are "active bus nodes" and not "DP slaves" as in the case of PROFIBUS interfacing to 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

The PPI interface is basically a point-to-point connection between one OP (PPI master) or alternatively one PG (PPI master) with one S7-200 (PPI slave).

However, it is also possible to connect

- One OP to several S7-200s
  (logical point-to-point-connection from the viewpoint of each S7-200).
- Several OPs and/or PGs to one S7-200
  (sequential logic point-to-point relationship; i.e. for each S7-200, only one connection is active at any one time).

MPI interface/PROFIBUS interface
(restrictions on OP3)

The MPI or PROFIBUS interface operates over the multipoint communications interfaces of SIMATIC OP and SIMATIC S7 through "PG/OP communication". You can connect:

- One OP (MPI master) to one or more S7-300/ 400 (MPI master)
- More than one OP (MPI master) to one or more S7-300/ 400 (MPI master)
- One OP (MPI master) to one or more S7-200(s) (MPI slave)[1)]
- Several OPs (MPI master) to one or more S7-200(s) (MPI slave)[1)]

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

In addition to the original master-master relationship, this produces a master-slave relationship that allows S7-200s (except S7-212) to be integrated in MPI or PROFIBUS networks. [1)]

The method of exchanging information between SIMATIC OP and SIMATIC S7 is irrespective of whether an MPI or PROFIBUS network is used:

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

The OP3 is only released for connection to SIMATIC S7-300/400 through MPI (master-master), i. e. it cannot communicate with FM 353, FM 354, FM 453, etc..

1) For transmission 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 including variants /PP	/DP	/DP-12	Connected via
SIMATIC S7 (PPI/MPI)						
S7-200 via *PPI*, **S7-300/400m** 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, S7-400, WinAC**	•	–	–	•	•	**PROFIBUS** [3] [4] (see Catalog ST 70/IK PI)

• System coupling is possible
– System coupling not possible

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

Overview

A range of interfaces of varying types and capacities are available for connecting SIMATIC OP (not OP3) to SIMATIC S5 (not S5-150U).

In each case, from the viewpoint of the connected OP, the connection is a logical point-to-point link, i.e. one OP is always permanently assigned to one PLC. The PLC must be provided with a standard function block, which must be invoked for each OP connected (the standard FB must be ordered separately).

AS511 interface (not OP3)

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

The AS511 interface operates through the PG interface of the SIMATIC S5 and uses the respective CPU resources, i.e. the performance of the OP depends on the performance of the used SIMATIC CPU.

FAP interface (not OP3)

S5-115,-135U through 2.CPU-SS (CPU 943B, CPU 944A/B, CPU 945, CPU 928B)
S5-95U, -100U through CP 521 (except CPU 100, except CPU 102)
S5-115U, -135U, -155U through CP 523 (except CPU 945, except CPU 922 < Version 9, except CPU 928 [6ES5 928-3UA11])

The FAP interface uses either the free ASCII interface of a SIMATIC CPU or interface modules CP 521/CP 523. In ET200, OPs must not be connected through CP 521.

Communication between the OPs and SIMATIC S5 is based on a special "FAP protocol", which is handled by the corresponding standard FB in the PLC.
More than one OP can be connected to one PLC; the performance depends on the cycle time of the SIMATIC.

PROFIBUS DP interface (not OP3)

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 following can be connected to the PROFIBUS DP interface:

- Up to 2 OPs as slaves through a PROFIBUS network to one SIMATIC S5-95U with integrated PROFIBUS DP/master interface [6ES5 095-8ME01];
- Up to 30 OPs can be connec ted as slaves through a PROFIBUS network to a SIMATIC S5 with separate PROFIBUS DP/IM 308C master interface, or CP 5431 FMS/DP.

The OP (DP slave) and SIMATIC S5 (DP master) communicate through PROFIBUS DP frames according to EN 50170 with superimposed “FAP protocol", which is processed in the programmable controller by the corresponding standard function block.

SIMATIC S5

PLC Target hardware (PROTOCOL) (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 including variants /PP	/DP	/DP-12	Connected via
SIMATIC S5 (AS511)						
S5-90U to S5135U (1st/2nd *PG-SS)* 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)						
Via *PROFIBUS DP* to **S5-95U/L2-DP/Master** (6ES5 928-3UA11)	•	–	–	•	•	**PROFIBUS** [1) 2)] (see Catalog ST 50/IK PI)
Via *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)
Via *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 including variants /PP	/DP	/DP-12	Anschluss über
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

Non-Siemens 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 link). 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 link)
- 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 th e 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 relationship).

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/s lave) 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/Sla ve) 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 throug h 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-Netz** (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-Netz** (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

Non-Siemens 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

The SIMATIC Touch Panels (TP) TP 070, TP 170micro, TP 177micro [4], TP 177A [4], TP 170A, TP 170B, TP 270, Operator Panels (OP) OP 73micro [4], OP 73 [4], OP 77A [4], OP 77B, OP 170B, OP 270, Mobile Panel 170, multifunctional platforms (MP)[1] MP 270B, MP 370 as well as the SIMATIC HMI software packages for PC ProTool/Pro Runtime and WinCC flexible Runtime offer 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 and 80 (DF1 protocol) or through KF2 module/DH+ network with PLC5 and SLC 500/03, 04 or 05
  - Allen Bradley SLC 500/03, 04 and 05 (DF1 protocol) or through KF-3 module/DH485 network with SLC 500 and MicroLogix
  - Allen Bradley SLC500/00, 01, 02, 03, 04 and MicroLogix (DH485 protocol)
  - GE Fanuc 90-Micro, 90-30 and 90-70 (SNP/SNPX protocol)
  - LG GLOFA GM with Cnet card (protocol-dedicated)
  - Mitsubishi FX (FX protocol)
  - Mitsubishi FX, series A and series Q (MP4 protocol)
  - Modicon 984-120, 130, 131, 141, 145, 380, 381, 385, 480, 485, 680, 685, 780 and 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 (ADJUST + UNI-TELWAY protocols)
  - Telemecanique TSX 37, TSX 57 (UNI-TELWAY protocol)

For further information, see the user manuals for ProTool or WinCC flexible, the manual "Communication Windows-Based Systems", and the online Help of ProTool or WinCC flexible.

Expanded functionality with WinCC flexible

For the first time, WinCC flexible offers OPC communication for SIMATIC MP 270B/MP 370, and HTTP communication for the panels of performance class TP/OP 270 and above. Both OPC and HTTP communication can be used in parallel with the process links to SIMATIC S7/S5/505 or the controllers of other manufacturers.

OPC data access
(only SIMATIC MP 270B/MP 370, WinCC flexible Runtime)

OPC data access is an open standard for local or remote exchange of variables between applications using Industrial Ethernet. In the original version, OPC is based on Microsoft COM/DCOM and therefore requires a Microsoft Windows operating system for PCs on the client and server sides (not Windows CE). As OPC XML, the communication is based on the Internet standard SOAP/XML and is therefore suitable for embedded systems with Windows CE.
Required options: WinCC flexible /OPC server

HTTP communication for exchange of variables between SIMATIC HMI systems
(only SIMATIC TP/OP 270, MP 270B/MP 370, WinCC flexible Runtime)

Communication based on HTTP telegrams permits exchange of variables between SIMATIC HMI systems.
Required options: WinCC flexible /Sm@rt Access

1) For simplicity, the abbreviation "SIMATIC TP/OP/MP " is used in the text below. This does not imply any constraints; the statements apply for all systems listed above. If there are any restrictions, this is stated explicitly in the text.
2) For further information, see Catalog PM 10
3) Required with WinCC flexible: "Sinumerik HMI copy license WinCC flexible CE" as well as "Sinumerik HMI copy license OA". The "Sinumerik HMI engineering package WinCC flexible" is also required for configuration; for further information, see Catalog NC 60
4) Start of delivery approximately end of 4th quarter 2004

Communications standard / Version	SIMATIC HMI TP 270 OP 270 MP 270B	MP 370	ProTool/Pro Runtime / WinCC flexible Runtime	Connected via
OPC Data Access V2.0 + V1.1 (COM) / V0.9 (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 exchange of variables between SIMATIC HMI systems				
HTTP client	• 4)	• 4)	• 5)	**Industrial Ethernet** (see Catalog IK PI)
HTTP server	• 4)	• 4)	• 5)	**Industrial Ethernet** (see Catalog IK PI)

• System coupling is possible
— System coupling not possible

1) WinCC flexible Runtime: WinCC flexible /OPC server option required for WinCC flexible Runtime
2) DCOM/XML gateway in the scope of supply of WinCC flexible enables access to the OPC XML server of the MP 270B, MP 370
3) Only MP 270B; MP 370 with WinCC flexible; WinCC flexible /OPC server option required for SIMATIC Multi Panel
4) Only with WinCC flexible: WinCC flexible /Sm@rtAccess option required for SIMATIC Panel
5) Only for WinCC flexible Runtime: WinCC flexible /Sm@rtAccess option required for WinCC flexible Runtime

SIMATIC S7

Overview

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

- PPI interface:
  For linking the SIMATIC TP/OP/MP to SIMATIC S7-200 via PPI. Communication is carried out using the PPI protocol; a standard FB as used with SIMATIC S5 is not necessary.
- MPI interface:
  For linking SIMATIC TP/OP/MP to SIMATIC S7 via the integral PPI interface on the S7-200 or the MPI interface on the S7-300/-400, or alternatively via the MPI interface of a separate interface module and the backplane bus to SIMATIC S7-CPU. Communication is carried out using the MPI protocol (PG/OP communication); a standard FB as used with SIMATIC S5 is not necessary.
- PROFIBUS interface:
  For linking the SIMATIC TP/OP/MP to SIMATIC 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. Communication is carried out using the MPI protocol (PG/OP communication); a standard FB as used with SIMATIC S5 is not necessary.
- Industrial Ethernet interface:
  For linking the SIMATIC TP/OP/MP to SIMATIC S7 via the integrated Industrial Ethernet interface of the CPU or alternatively via the Industrial Ethernet interface of a separate interface module and the backplane bus to the SIMATIC S7 CPU. Communication is carried out using the MPI protocol (PG/OP communication); a standard FB as used with SIMATIC S5 is not necessary.

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

- TP 070, TP 170micro, OP 73micro [2], TP 177micro [2]: 1 connection
- OP 73 [2]: max. 2 connections
- OP 77A [2], TP 177A [2], OP 77B, Mobile Panel 170, TP 170A, TP 170B, OP 170B: 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 link (not TP 070, OP73micro [2], TP 177micro [2], OP 73 [2], OP 77A [2], TP 177A [2])

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

One SIMATIC TP/OP/MP and/or one PG can be connected to one S7-200 (sequential logical point-to-point relationship, i.e. from the viewpoint of the S7-200, only one connection is active at a given time).
(Network topology: exclusively **PPI**)

MPI interface/PROFIBUS interface/Industrial Ethernet interface

The multi-point communication interfaces of SIMATIC TP/OP/MP and SIMATIC S7 are used. Possible are:

- Coupling of one or more TP/OP/MP (MPI master) to one or more S7-300/400 or WinAC (MPI master)
  (possible network topology: **MPI/PROFIBUS/Industrial Ethernet**)
- Connection of one or more TP/OP/MP (MPI master) to one or more S7-200 (MPI slave) [1]
  (possible network topology: **PPI**/**MPI/PROFIBUS**)

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). [1]

In general, this type of information transfer between SIMATIC TP/OP/MP and SIMATIC S7 is independent of the network used, PPI, MPI, PROFIBUS or Industrial Ethernet: The SIMATIC TPs/OPs/MPs are S7 clients and the SIMATIC S7 CPUs are S7 servers.

1) For transmission rate limitations for the S7-200, see Catalog ST 70.
2) Start of delivery approximately end of 4th quarter 2004

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TD 200**	**TP 070**	**TP 170micro**	**OP73 micro TP 177micro**	**OP 73 OP 77A TP 177A**	**Connected via**
SIMATIC S7 (PPI/MPI)						
Via *PPI* to **S7-200 (PPI)**	● 1)	–	● 4)	–	–	**6XV1 830-1CH30** 8) (3.2 m)
Via *MPI* or *PROFIBUS* (**PG/OP communication**) to **S7-200**	–	● 2) 3)	● 3) 4)	● 5)	● 6) 7)	**6XV1 830-1CH30** 8) (3.2 m)
Via *MPI* or *PROFIBUS* (**PG/OP communication**) to **S7-300, -400**	–	–	–	–	● 6) 7)	**6XV1 830-1CH30** 8) (3.2 m)
Via *PPI*-network **(PPI)** to max. 1 x **S7-200**	● 1)	–	● 4)	–	–	**PPI network** 9) (see Catalogs ST 70 and IK PI)
Via *PPI*-network **(PG/OP communication)** to 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**) to 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**) to 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**) to 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 connected via PPI to max. 1 x S7-200 (PPI/MPI); network operation (parallel programming device, etc.) is possible; max. transmission rate 187.5 kbit/s; cable included in scope of supply
2) TP 070 can only be connected over MPI point-to-point link to S7-200 (MPI); network operation (parallel programming device, etc.) is not possible; max. transmission rate 19.2 kbit/s;
3) Only to passive S7-200
4) TP 170micro can be connected to max. 1 x S7-200 (PPI/MPI); network operation (parallel programming device, etc.) is possible; max. transmission rate 187.5 kbit/s
5) OP 73micro, TP 177micro can be connected to max. 1 x S7-200 (MPI); network operation (parallel programming device, etc.) is possible; max. transmission rate 187.5 kbit/s
6) OP 73 can be connected to max. 2 x SIMATIC S7 (MPI); network operation (parallel programming device, etc.) is possible;
7) Max. transmission rate 1.5 Mbit/s
8) MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 Kbit/s) included in scope of supply of the programming device
9) Bus connector 6GK1 500-0EA02

SIMATIC S7

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TP 170A**	**OP 77B Mobile Panel 170 TP 170B OP 170B**	**TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime WinCC flexible Runtime**	**Connected via**
SIMATIC S7 (PPI/MPI)						
Via *PPI* to **S7-200 (PPI)**	● 1)	● 1) 4)	● 1)	● 1)	● 1) 5)	**6XV1 830-1CH30** 9) (3.2 m)
Via *MPI* or *PROFIBUS* (**PG/OP communication**) to **S7-200**	● 2) 3)	● 3) 4)	● 3)	● 3)	● 3) 5)	**6XV1 830-1CH30** 9) (3.2 m)
Via *MPI* or *PROFIBUS* (**PG/OP communication**) to **S7-300, -400**	● 2)	● 4)	—	—	● 5)	**6XV1 830-1CH30** 9) (3.2 m)
Via *PPI*-network **(PPI)** to max. 1 x **S7-200**	● 1)	● 1) 4)	● 1)	● 1)	● 1) 5)	**PPI network** 10) (see Catalogs ST 70 and IK PI)
Via *PPI*-network **(PG/OP communication)** to max. 4 x **S7-200**	—	—	—	—	● 6)	**PPI network** 10) (see Catalogs ST 70 and IK PI)
Via *MPI* or *PROFIBUS*-network (**PG/OP communication**) to max. 4 x **S7-200**	● 2) 3)	● 3) 4)	● 3) 6)	● 3) 6)	● 3) 5) 6)	**MPI or PROFIBUS network** 10) (see Catalogs ST 70 and IK PI)
Via *MPI* or *PROFIBUS*-network (**PG/OP communication**) to max. 4 x **S7-300, -400, WinAC**	● 2)	● 4)	● 6)	● 6)	● 5) 6)	**MPI or PROFIBUS network** 10) (see Catalogs ST 70 and IK PI)
Via *Industrial Ethernet (TCP/IP)* (**PG/OP communication**) to max. 4 x **S7-200, -300, -400, WinAC**	—	—	● 6) 7)	● 6) 7)	● 6) 8)	**Industrial Ethernet** (see Catalog IK PI)

● System coupling is possible
— System coupling not possible

1) Can be connected via PPI to max. 1 x S7-200 (PPI); network operation (parallel programming device, etc.) is possible
2) TP 170A under ProTool can only be connected to 1 x SIMATIC S7 (PPI/MPI);
network operation (parallel programming device, etc.) is possible;
max. transmission rate 1.5 Mbit/s
TP 170A under WinCC flexible can be connected to max. 4 x SIMATIC S7 (PPI/MPI);
max. transmission rate 1.5 Mbit/s
3) Only to passive S7-200
4) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH504 10 m: 6XV1 440-4AN10)
and terminal box; for cable assignment, see manual
5) Connection via integrated MPI/PROFIBUS interface; the CP 5611 must be used with the standard PC
6) Up to 8 S7 connections are possible depending on the scope of configuration (communication)
7) Not available under ProTool, only for configuration with WinCC flexible:
on MP 270B, MP 370 via integral Industrial Ethernet interface;
commercially available Ethernet CF card required on TP 270, OP 270.
8) Connection via integrated Industrial Ethernet interface; with the standard PC the CP 1512, CP 1612 or CP 1613 must be used
With an integrated Industrial Ethernet interface or when using the CP 1512 or CP 1612, SIMATIC NET driver software
Industrial Ethernet SOFTNET S7-Lean V6.2 (6GK1 704-1LW62-3AA0) is also required or
Industrial Ethernet SOFTNET-S7 V6.1 (66K1704-1CW61-3AA0)
(Industrial Ethernet SOFTNET-S7 Lean V6.2 from WinCC flexible 2004 +SP1 upwards included in the WinCC flexible Runtime package)
When using the CP 1613, the SIMATIC NET driver software S7-1613 / Windows V6.1 (6GK1 716-1CB61-3AA0) is required.
9) MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 Kbit/s) included in scope of supply of the programming device
10) Bus connector 6GK1 500-0EA02

Overview

For connecting SIMATIC TP/OP/MP to SIMATIC S5 (not S5-150U), there are various interfaces that differ according to type and performance. The one common feature is that, as far as the connected SIMATIC TP/OP/MP is concerned, the interface is always a logical point-to-point connection, i.e. a SIMATIC TP/OP/MP is always permanently assigned to one programmable controller.

AS511 interface (not Mobile Panel 170)

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 operates through die PG interface of the SIMATIC S5 and uses the respective CPU resources, i.e. the performance of the SIMATIC TP/OP/MP depends on the performance of the used SIMATIC CPU.

PROFIBUS DP interface (not TP 170A)

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 following can be connected to the PROFIBUS DP interface:

- Up to 2 SIMATIC TP/OP/MP can be connected as slaves through one PROFIBUS network to a SIMATIC S5-95U with integrated PROFIBUS DP master interface [6ES5 095-8ME01].
- Up to 30 SIMATIC TP/OP/MP can be connected as slaves through one 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) takes place through PROFIBUS DP message frames according to EN 50170 with a superposed HMI profile. The programmable controller must be equipped with a function block which is called up once for each connected SIMATIC TP/OP/MP (this FB is included with ProTool).

PLC	SIMATIC HMI					
Target hardware (PROTOCOL) (physical characteristics)	**TP 170A**	**OP 77B Mobile Panel 170 TP 170B OP 170B**	**TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime WinCC flexible Rutime**	**Connected 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* to 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 Mobile Panel 170
2) PC cable with integrated regulating transformer RS 232/TTY
3) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH50; 10 m: 6XV1 440-4AN10) and terminal box; for cable assignment, see manual
4) Connection via integrated MPI/PROFIBUS interface; the CP 5611 must be used with the standard PC
5) Bus connector 6GK1 500-0EA02

SIMATIC 505

Overview

For connecting SIMATIC TP/OP/MP to SIMATIC 505, various interfaces are available that differ with regard to type and performance. The one common feature is that, as far as the connected SIMATIC TP/OP/MP is concerned, the interface is always a logical point-to-point connection, i.e. a TP/OP/MP is always permanently assigned to one programmable controller.

NITP interface

The NITP interface operates through die PG interface of the SIMATIC 505 and uses the respective CPU resources, i.e. the performance of the SIMATIC TP/OP/MP depends on the performance of the used SIMATIC CPU.

PROFIBUS DP interface (not TP 170A)

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

When the PROFIBUS DP interface is used, up to 30 SIMATIC TPs/OPs/MPs can be connected as slaves via a PROFIBUS network to one SIMATIC 545, 555 with a plug-in PROFIBUS DP master interface of the CP 5434 type.

Communication between SIMATIC TP/OP/MP (DP/slave) and SIMATIC 505 (DP/master) takes place through PROFIBUS DP message frames according to EN 50170 with a superposed HMI profile. The programmable controller must contain an application ladder, which is called up for each connected SIMATIC TP/OP/MP (an application ladder example is included with ProTool).

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

● System coupling is possible
— System coupling not possible

1) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH50; 10 m: 6XV1 440-4AN10) and terminal box; for cable assignment, see manual
2) A standard adapter, 9-pin/25-pin male, is required on the PLC end
3) A generally available level converter RS 232/RS 422 is required on the PC end
4) Connection via integrated MPI/PROFIBUS interface; the CP 5611 must be used with the standard PC
5) Bus connector 6GK1 500-0EA02

Overview

Allen Bradley

Two communications protocols are available for connecting SIMATIC TP/OP/MP to Allen Bradley:

DF1 interface

This communication between SIMATIC TP/OP/MP and Allen Bradley is based on the DF1 protocol. The following have been tested and approved:

- Direct connection of a SIMATIC TP/OP/MP to the PG interface of an Allen Bradley PLC5 or to the DF1 interface of an Allen Bradley SLC 500 (point-to-point connection)
- The integration of a SIMATIC TP /OP/MP through Allen Bradley Gateway KF2 into an Allen Bradley DH+ network. Communication between the SIMATIC TP/OP/MP and up to 4 PLCs of the SLC 500 or PLC5 type (multipoint relationship from the viewpoint of the SIMATIC TP/OP/MP; only one connection is possible with TP 170A)
- The integration of a SIMATIC TP /OP/MP through Allen Bradley Gateway KF3 into an Allen Bradley DH485 network. Communication between the SIMATIC TP/OP/MP and up to 4 PLCs of the SLC 500 or Micro Logix type (multipoint relationship from the viewpoint of the SIMATIC TP/OP/MP; only one connection is possible with TP 170A)

DH485 interface

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

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

GE-Fanuc

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

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

LG GLOFA GM

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

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

Mitsubishi

Two communications protocols are available for connecting SIMATIC TP/OP/MP to Mitsubishi:

FX protocol

This communication between SIMATIC TP/OP/MP and Mitsubishi is based on the FX protocol. Direct connection of a SIMATIC TP/OP/MP to the PG interface of a Mitsubishi FX or FX0 (logical point-to-point relationship) has been tested and approved.

MP4 protocol

This communication between SIMATIC TP/OP/MP and Mitsubishi is based on the MP4 protocol. The following have been tested and approved:

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

Modicon

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

- Direct connection of a SIMATIC TP/OP/MP to the MODBUS interface of a Modicon 984, a TSX Quantum or a TSX Compact (point-to-point relationship).
- Integration of a SIMATIC TP /OP/MP via Modicon MODBUS PLUS Bridge BM85-000 or the bridge function of a MODICON 984-145 or TSX Quantum into a MODBUS PLUS network and communication between SIMATIC TP/OP/MP (MODBUS/master) and up to 4 PLCs Type Modicon 984 or TSX Quantum (MODBUS/Slave) in the network (multipoint relationship from the viewpoint of the SIMATIC TP/OP/MP; only one connection is possible with TP 170A)

Non-Siemens PLCs

Overview (continued)

Omron

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

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

Telemecanique[1)]

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

- Connection of a SIMATIC TP/OP/ MP (UNI-T/slave) through Telemecanique connection socket TSX SCA62 to a Telemecanique TSX 17 or TSX 47/67/87/107 (UNI-T/ master) (logical point-to-point relationship)
- Connection of a SIMATIC TP/OP/ MP (UNI-T/slave) through Telemecanique connection socket TSX SCA62 + ACC01 to a Telemecanique TSX 37 or TSX 57 (UNI-T/master) (logical point-to-point relationship)
- Integration of a SIMATIC TP/OP/MP through Telemecanique connection socket TSX into a UNI-TELWAY network and communication between SIMATIC TP/OP/MP (UNI-T/slave) and up to 4 PLCs Type TSX 17, TSX 37, TSX 57 or TSX 47/67/87/107 (UNI-T/master or slave) in the network (multipoint relationship from the viewpoint of the SIMATIC TP/OP/MP; only one connection is possible with TP 170A)

1) Not available under WinCC flexible

PLC **Target hardware (PROTOCOL)** (physical characteristics)	**SIMATIC HMI** **TP 170A**	**OP 77B** **Mobile Panel 170** **TP 170B** **OP 170B**	**TP 270** **OP 270** **MP 270B**	**MP 370**	**ProTool/Pro Runtime** **WinCC flexible Runtime**	**Connected via**
Allen Bradley (DF1)						
SLC 500/03,04,05 or MicroLogix (RS 232)	•	• 1)	•	– •	•	**1747 CP3** 2) **6XV1 440-2K...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 232)	•	• 1)	•	– •	•	**1784 CP10** 2) **6XV1 440-2L...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 422)	∞	• 1)	•	•	•	**6XV1 440-2V...** (max. 60 m)
Via **Gateway KF2** and *DH+ network* to max. 4 x **SLC 500/00,01,02,03,04** or **PLC 5/11,20,30,40,60,80** (RS 232)	• 4)	• 1)	•	– •	•	**1784 CP10** 2)3) **6XV1 440-2L...** 3) (max. 15 m)
Via **Gateway KF3** and *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 232)	• 4)	• 1)	•	– •	•	**1784 CP10** 2)3) **6XV1 440-2L...** 3) (max. 15 m)
Allen Bradley (DH485)						
SLC 500/03,04,05 or **MicroLogix** (RS 232)	•	• 1)	•	•	•	See online Help 5)
via **Adapter AIC** and *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 232)	• 4)	• 1)	•	•	•	See online Help 5)
via *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 485)	• 4)	• 1)	•	•	–	See online Help 5)

• System coupling is possible
– System coupling not possible

1) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH50; 10 m: 6XV1 440-4AN10) and terminal box; for cable assignment, see manual
2) Allen Bradley PC cable
3) Cable for connecting to KF2/KF3 gateway; at the gateway end, a Gander changer 25-pin female/25-pin female is required
4) TP 170A can only be connected to one PLC
5) Detailed information (cable assignments) in the online Help of ProTool or WinCC flexible and in the user manual Communication Windows-Based Systems

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

● System coupling is possible
— System coupling not possible

1) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH50; 10 m: 6XV1 440-4AN10) and terminal box; for cable assignment, see manual
2) With connection via a Mitsubishi PC cable, an adapter 6XV1 440-2UE32 for 15-pin male/ 9-pin male is required
3) Mitsubishi PC cable with integrated level converter RS 232/RS422
4) Detailed information (cable assignments) in the online Help of ProTool or WinCC flexible and in the user manual Communication Windows-Based Systems
5) TP 170A can only be connected to one PLC

Non-Siemens PLCs

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TP 170A**	**OP 77B Mobile Panel 170 TP 170B OP 170B**	**TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime WinCC flexible Runtime**	**Connected via**
Omron (Link/Multi Link)						
• **SYSMAC C** (except CPU CQM1 –CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	●	● 1)	●	●	●	See online Help 2)
Via **NT-AL001 converter** to max. 4 PLCs • **SYSMAC C** (except CPU CQM1 –CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	● 3)	● 1)	●	●	●	See online Help 2)
To max. 4 PLCs • **SYSMAC C** (except CPU CQM1 –CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 422)	● 3)	● 1)	●	●	–	See online Help 2)
Telemecanique (UNI-TELWAY) 5)						
via **connection socket TSX SCA62** to **TSX 17** or **TSX 47/67/87/107** (RS 485)	●	● 1)	●	●	● 4)	**6XV1 440-1E...** (max. 20 m)
Via **TSX SCA62 + ACC01 connection sockets** to **TSX 37/57** (RS 485)	●	● 1)	●	●	● 4)	**6XV1 440-1E...** (max. 20 m)
Via **connection socket TSX SCA62** and *UNI-TELWAY network* to **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) Connection of Mobile Panel 170 via special connecting cable (5 m: 6XV1 440-4AH50; 10 m: 6XV1 440-4AN10) and terminal box; for cable assignment, see manual
2) Detailed information (cable assignments) in the online Help of ProTool or WinCC flexible and in the User Manual Communication Windows-Based Systems
3) TP 170A can only be connected to one PLC
4) At the PC end, one RS 485 interface card and an adapted cable are required. Detailed information (tested board, cable assignments) in the Online Help of ProTool or WinCC flexible and in the User Manual Communication Windows-Based Systems
5) Not available with WinCC flexible

Overview

You can find the order numbers of the cables required for connecting the SIMATIC Panels under Ordering data.

Ordering data

	Order No.
Connecting cables 6ES5 731-...	
Standard lengths:	
•5.0 m	**6ES5 731-1BF00**
•10.0 m	**6ES5 731-1CB00**
Special lengths up to 1000.0 m	**6ES5 731-1 ■■■0**
PC 16-20 interface adapter required for the connection between programming device and connecting cable	**6ES5 731-6AG00**
Connecting cables 6ES5 734-...	
Standard lengths:	
•3.2 m	**6ES5 734-1BD20**
•10.0 m	**6ES5 734-2CB00**
Special lengths up to 1000.0 m	**6ES5 734-2 ■■■0**
Connecting cables 6ES7 705-...	
Standard length:	
•2.5 m [1]	**6ES7 705-0AA00-7BA0**
Connecting cables 6ES7 901-...	
Standard length:	
•5.0 m [2]	**6ES7 901-0BF00-0AA0**
Connecting cables 6XV1 418-...	
Standard lengths:	
•3.2 m	**6XV1 418-0CH32**
•10.0 m	**6XV1 418-0CN10**
Special lengths up to 16.0 m	**6XV1 418-0C ■■■**
Connecting cables 6XV1 440-1E...	
Lengths up to 20.0 m	**6XV1 440-1E ■■■**
Connecting cables 6XV1 440-1F...	
Lengths up to 1000.0 m	**6XV1 440-1F ■■■**
Connecting cables 6XV1 440-1K...	
Lengths up to 15.0 m	**6XV1 440-1K ■■■**
Connecting cables 6XV1 440-1L...	
Lengths up to 16.0 m	**6XV1 440-1L ■■■**
Connecting cables 6XV1 440-1M...	
Lengths up to 300.0 m	**6XV1 440-1M ■■■**
Connecting cables 6XV1 440-2A...	
Standard lengths:	
•3.2 m	**6XV1 440-2AH32**
•5.0 m	**6XV1 440-2AH50**
•10.0 m	**6XV1 440-2AN10**
Special lengths up to 1000.0 m	**6XV1 440-2A ■■■**
Connecting cables 6XV1 440-2B...	
Standard lengths:	
•3.2 m	**6XV1 440-2BH32**
•10.0 m	**6XV1 440-2BN10**
Special lengths up to 1000.0 m	**6XV1 440-2B ■■■**
Connecting cables 6XV1 440-2C...	
Standard lengths:	
•3.2 m	**6XV1 440-2CH32**
•10.0 m	**6XV1 440-2CN10**
Special lengths up to 16.0 m	**6XV1 440-2C ■■■**
For length key see Appendix	

	Order No.
Connecting cables 6XV1 440-2F...	
Lengths up to 1000.0 m	**6XV1 440-2F ■■■**
Connecting cables 6XV1 440-2G...	
Lengths up to 1000.0 m	**6XV1 440-2G ■■■**
Connecting cables 6XV1 440-2J...	
Special lengths up to 1000.0 m	**6XV1 440-2J ■■■**
Connecting cables 6XV1 440-2K...	
Standard length:	
•3.2 m	**6XV1 440-2KH32**
Special lengths up to 16.0 m	**6XV1 440-2K ■■■**
Connecting cables 6XV1 440-2L...	
Lengths up to 16.0 m	**6XV1 440-2L**
Connecting cables 6XV1 440-2M...	
Lengths up to 16.0 m	**6XV1 440-2M ■■■**
Connecting cables 6XV1 440-2P...	
•Lengths up to 500.0 m	**6XV1 440-2P ■■■**
Connecting cables 6XV1 440-2R...	
•Lengths up to 500.0 m	**6XV1 440-2R ■■■**
Connecting cables 6XV1 440-2V...	
Lengths up to 60.0 m	**6XV1 440-2V ■■■**
For length key see Appendix	

Note:
See appendix for length codes for connecting cables

1) Included in the OP3 scope of supply
2) Included in the PG scope of supply

Connecting cables

Ordering data (continued)	Order No.
Configuration cable	
For PC/PG 7xx (serial) (9-pin male/RS 232) for OP3 [1]	
For PC/PG 7xx with CP 5611	
•For OP3 [1]	**6ES7 705-0AA00-7BA0**
•For OP27 [2]	**6ES7 901-0BF00-0AA0**
For PG 7xx (serial) (25-pin female/TTY) [3]	
Standard lengths:	
•5.0 m	**6ES5 734-2BF00**
•10.0 m	**6ES5 734-2CB00**
Special lengths up to 1000.0 m	**6ES5 734-2 ■■■00**
or	
Standard lengths:	
•5.0 m	**6ES5 731-1BF00**
•10.0 m	**6ES5 731-1CB00**
Special lengths up to 200.0 m	**6ES5 731-1 ■■■00**
PC 16-20 interface adapter	**6ES5 731-6AG00**
required for the connection between programming device and connecting cable	
For PC (serial) [4] (9-pin male/RS 232)	
Standard length:	
•3.2 m	**6XV1 440-2KH32**
Special lengths up to 16.0 m	**6XV1 440-2K ■■■0**
For PC (serial) [4] (25-pin female/RS 232)	
Lengths up to 16.0 m	**6XV1 440-2L ■■■0**
Connecting cable	
between PG/PC and panel (9-pin female/RS 232)	
•5.0 m	**6ES7 901-1BF00-0XA0**
Configuration cable for MPI [2]	
•3.0 m	**6XV1 830-1CH30**
Printer cable	
For printer (25-pin female/TTY) for OP17/27/37, TP27/37	
Standard lengths:	
•3.2 m	**6XV1 440-2BH32**
•10.0 m	**6XV1 440-2BN10**
Special lengths up to 1000.0 m	**6XV1 440-2B ■■■**
For printer (25-pin female/RS 232) for OP17/27/37, TP27/37	
•3.2 m	**6XV1 440-2CH32**
•10.0 m	**6XV1 440-2CN10**
Special lengths up to 16.0 m	**6XV1 440-2C ■■■**
For length key see Appendix	

	Order No.
Accessories for supplementary ordering	
PROFIBUS RS 485 bus connector with axial cable outlet	**6GK1 500-0EA02**
SIMATIC S7 RS 485 bus connector with straight cable outlet with PG interface	**6ES7 972-0BB12-0XA0**
Further bus connectors/terminals	see Catalog IK PI
Y cable (adapter) 0.20 m long	**6XV1 440-2HE20**
Adapter cable 0.32 m long between TD/OP and connecting cable 6ES5 735-...	**6XV1 440-2DE32**
Adapter cable between TD/OP and PC cable (non-Siemens)	**6XV1 440-2UE32**

Note:
See appendix for length codes for connecting cables

1) Included in the OP3 scope of supply
2) Included in the PG scope of supply
3) Not OP3 and OP7/DP
4) Not OP3

Overview

Printer functions

	Hard-copy	Print list [1]	Print log [2]	Alarm log On/Off	Print alarm mes-sage buffer	Status mes-sage buffer	Print alarms with filter	Print all dia-grams	Dia-gram con-tents list	Print data set	Print all data sets	Recipe con-tents list	Header/ footer
OP7	•	–	–	•	•	•	–	•	•	•	•	•	•
OP17	•	–	–	•	•	•	–	•	•	•	•	•	•
OP/TP 27	•	•	–	•	•	•	•	–	–	–	–	–	–
OP/TP 37	•	•	–	•	•	•	•	–	–	–	–	–	–
OP 77B	•	–	•	•	–	–	–	–	–	–	–	–	–
OP/TP 170B	•	–	–	•	–	–	–	–	–	–	–	–	–
OP/TP 270	•	–	•	•	–	–	–	–	–	–	–	–	–

• Function possible
– Function not possible

1) Print the diagram list
2) Variables, messages, recipes
3) Start of delivery approximately end of 4th quarter 2004

Note:
TD17, OP3, OP 73micro [3], OP 73 [3], OP 77A [3],
TP 070, TP 170micro, TP 177micro [3], TP 170A, TP 177A [3]
have no printer interface

Released printers

	Brother	EPSON		HP Deskjet		GMW	Tally	Siemens
	HL1450 HL5140	LQ300+ LQ580	LQ590	TM-T88II	6127	IPP 144-40 G	T 2024 T2150	DR 2030
OP7	–	Serial	–	Serial	–	Serial	Serial	Serial
OP17	–	Serial	–	Serial	–	Serial	Serial	Serial
OP/TP27	–	Serial	–	Serial	–	Serial	Serial	Serial
OP/TP37	–	Serial or parallel	Parallel	Serial	–	Serial	Serial or parallel	Serial or parallel
OP 77B	USB	–	USB [1]	–	USB	–	–	–
OP/TP 170B	–	Serial	–	Serial	–	Serial	Serial	Serial
OP/TP 270	USB	Serial	USB	Serial	USB	Serial	Serial	Serial

1) System test not yet completed at time of printing catalog
(subject to change without prior notice)

Recommended printers

for Micro Panels and Panels

Overview (continued)

Supply sources

Manufacturer	Printer name	Printer type	Physical characteristics	Field of application	Supplier address for printer
Brother	**HL1450** [3] **HL 5140** [3]	Laser	Parallel / USB	Workplace printer	http://www.brother.com
EPSON	**LQ300+**	24 dot matrix B/W	Serial / parallel	Workplace printer	http://www.epson.de
	LQ580	24 dot matrix B/W	Serial [1] / parallel	Workplace printer	http://www.epson.de
	LQ590	24 dot matrix B/W	Parallel / USB	Workplace printer	http://www.epson.de
	TM T88II [2]	Thermal B/W	Serial	Built-in printer	http://www.epson.de
Hewlett-Packard	**Deskjet 6127** [3]	Color inkjet	USB	Workplace printer	http://www.hewlett-packard.de
GMW	**IPP 144-40 G** [2] [4]	Thermal B/W	Serial	Built-in printer	http://www.g-mw.de
Tally	**T 2024/9; T 2024/24 T 2150/24**	9 or 24 dot matrix	Serial / parallel	Workplace printer	http://www.tally.de
Siemens	**DR 2030/9; DR 2030/24**	9 or 24 dot matrix	Serial [1] / parallel	Workplace printer	http://www.siemens.de

1) For serial printing, a module is available as an option
2) "Hardcopy" and "Print log" not possible
3) Line-by-line message printout not possible
4) System test not yet completed at time of printing catalog (subject to change without prior notice)

More information

Printer and printer settings

For further information, visit our website at

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

Overview

Print functions

	Hardcopy	Print log	Alarm log On/Off
MP 270	•	•	•
MP 270B	•	•	•
MP 370	•	•	•

• Function possible

Released printers

	Brother	EPSON		HP Deskjet	GMW	Tally	Siemens
	HL1450 HL 5140	**LQ580 LQ300+ TM-T88II**	**LQ590**	**6127**	**IPP 144-40G**	**T 2024 T2150**	**DR 2030**
MP 270	USB	Serial	USB	USB	Serial	Serial	Serial
MP 270B	USB	Serial	USB	USB	Serial	Serial	Serial
MP 370	USB	Serial	USB	USB	Serial	Serial	Serial

Supply sources

Manufacturer	Printer name	Printer type	Physical characteristics	Field of application	Supplier address for printer
Brother	**HL1450** 3) **HL 5140** 3)	Laser	Parallel / USB	Workplace printer	http://www.brother.com
EPSON	**LQ300+**	24 dot matrix B/W	Serial / parallel	Workplace printer	http://www.epson.de
	LQ580	24 dot matrix B/W	Serial 1) / parallel	Workplace printer	http://www.epson.de
	LQ590	24 dot matrix B/W	Parallel / USB	Workplace printer	http://www.epson.de
	TM T88II 2)	Thermal B/W	Serial	Built-in printer	http://www.epson.de
Hewlett Packard	**Deskjet 6127** 3)	Color inkjet	USB	Workplace printer	http://www.hewlett-packard.de
GMW	**IPP 144-40G** 2) 4)	Thermal B/W	Serial	Built-in printer	http://www.g-mw.de
Tally	**T 2024/9; T 2024/24 T 2150**	9 or 24 dot matrix	Serial / parallel	Workplace printer	http://www.tally.de
Siemens	**DR 2030/9; DR 2030/24**	9 or 24 dot matrix	Serial 1) / parallel	Workplace printer	http://www.siemens.de

1) Optionally available module required
2) "Hardcopy" and "Print log" not possible
3) Line-by-line message printout not possible
4) System test not yet completed at time of printing catalog (subject to change without prior notice)

More information

Printer and printer settings

For further information, visit our website at

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

SIMATIC Panel PC

3

Introduction

Overview

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

Two device categories are available for varying requirements:

- SIMATIC Panel PC 670 and SIMATIC Panel PC 870
- SIMATIC Panel PC IL 70 and SIMATIC Panel PC IL 77

Common industrial functionality

- IP65 degree of protection, NEMA 4
- High EMC: CE mark for industrial environments
- Designed for continuous duty
- MTBF backlighting 50 ,000 h or 60,000 hrs
- Ethernet on board (10/100 Mbits)
- Up to 45°C ambient temperature during operation (maximum configuration)

SIMATIC Panel PC IL 70 and IL 77

Industrial compatibility

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

Investment protection

- Spare parts availability g uaranteed for at least 3 years
- The latest PC technology
- Attractive price

High system availability

- SIMATIC PC/PG Image & Partition Creator – software tool for saving of hard disk data (option)

SIMATIC Panel PC 670 and 870

High industrial compatibility

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

High investment protection

- Spare parts availability guaranteed for at least 5 years
- High level of continuity of components
- Equipment configuration is very service-friendly

High industrial functionality

- Built-in PROFIBUS DP/MPI interface
- Low mounting depth (Panel PC 670)
- ISA and PCI slots
- Maximum expandability (Panel PC 870)
- Distributed configuration (opera tor control unit and computing unit can be up to 20 m apart)
- Direct key module (optional)

High system availability

- SIMATIC PC/PG Image & Partition Creator – software tool for saving of hard disk data (add-on components)
- SIMATIC PC DiagMonitor – PC diagnostics/signaling software (add-on components)
- Second hard disk
- RAID1 (optional)

Benefits

SIMATIC Panel PC IL 70 and Panel PC IL 77

Industrial compatibility in combination with high performance at an attractive price

The SIMATIC Panel PC IL 70 and Panel PC IL 77 are the first choice for applications which require industrial compatibility in conjunction with high-performance IPC platforms.

Integral interfaces

The integral Ethernet interface can be used for communication with the office world or control 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.
For example, an external mouse, keyboard, CD-ROM or ZIP drive, printer, chip card or barcode reader etc. can be simply installed and operated during an application. The PCI slots provide sufficient freedom for installing PC expansion cards, e.g. communications cards for connecting to the process.

Price

The Panel PC IL 70 and Panel PC IL 77 offer industrial compatibility at an attractive price.

Benefits (continued)

SIMATIC Panel PC 670 and 870

Compact, rugged and high-performance

The Panel PCs 670/870 are panel PCs with full industrial functionality. With display sizes of 10" (only PC 670), 12" and 15" together with operation using membrane keyboard or touch screen, they are appropriate for many different operating concepts.

Rugged design

The complete system has been designed for a high degree of resistance to vibrations and shocks. For example, a special vibration-absorbing mount for the hard disk ensures reliable operation even under high mechanical stress.

Continuity

The continuity in the availability of the same components, e.g. motherboards from our own production, means that the SIMATIC Panel PCs 670 and 870 offer very high investment safeguarding.

Service-friendly design

Particular attention was paid during the design of the Panel PC 670 and 870 range to extreme service friendliness. For example, the computer box and front panel can be simply opened for fast replacement of components. The interior with the CPU and slots is easily accessible for subsequent expansions.

Integral interfaces

The PROFIBUS DP/MPI interface is already integrated in the SIMATIC Panel PC 670 and 870 at no extra charge. Also present is the Ethernet interface for linking to the control level or to the Internet.

Modern servicing/start-up interface

The standard USB (Universal Serial Bus) PC I/O interface guarantees simple connection of components at both the front and rear.

Compact design

The maximum mounting depth of 100/130 mm means that the SIMATIC Panel PC 670 can also be used where space for installation is at a premium.

Expansion

The 5 vacant PC slots in the SIMATIC Panel PC 870 provide sufficient options for expansions.

Options

The SIMATIC Panel PCs 670 and 870 provide a high degree of industrial functionality extending beyond standard PC features. For example, it is also possible to have a distributed design with the computing and operator units spatially separated.
A further component that ensures operational reliability is the optional direct key module. This can be used to operate the process independent of the bus system and without delay directly via PROFIBUS DP.

Overview SIMATIC Panel PC

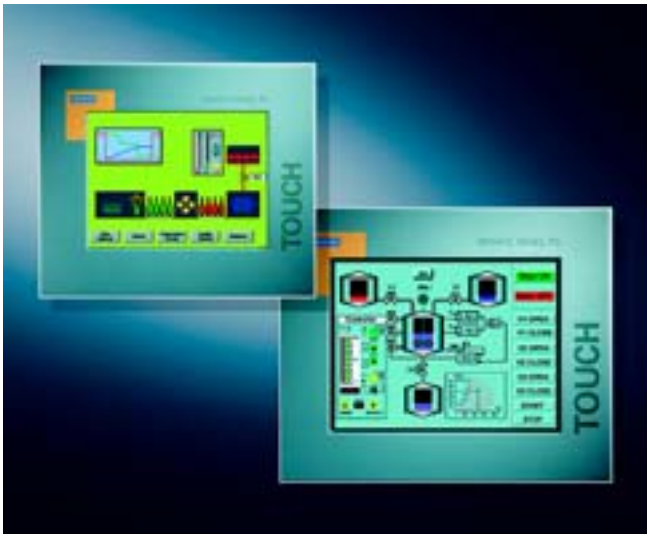
	SIMATIC Panel PC IL70 and IL 77	SIMATIC Panel PC 670	SIMATIC Panel PC 870
Design			
•Centralized configuration	•	•	•
•Distributed configuration	–	•	•
Display			
•Size	12.1"/15.1"/19.1" TFT (IL 77 only) [1]	10.4"/12.1"/15.1" TFT	12.1"/15.1" TFT
•Resolution	800 x 600 / 1024 x 768 / 1280 x 1024	640 x 480 / 800 x 600 / 1024 x 768	800 x 600 / 1024 x 768
Control elements			
•Membrane keyboard	• (only IL 77)	•	•
•Touch screen	•	•	•
General features			
•Processor	Intel Celeron 2.0 GHz or Intel Pentium 4; 2.4 GHz	Intel Celeron 1.2 GHz or Intel Pentium III 1.26 GHz	Intel Celeron 2.0 GHz or Intel Pentium 4 2.4 GHz, or Intel Pentium 4 mobile 2.2 GHz
•RAM	IL 70: 128 MB / 256 MB IL 77: 256 MB / 512 MB	128 MB, expandable to 256 MB, 512 MB or 1 GB	128 MB, expandable to 2 GB
•Free slots for expansion	3 x PCI, 1 x AGP (IL 70 only)	1 x PCI, 1 x ISA/PCI shared, 1 x Type III Cardbus slot (PCMCIA); Note: RAID1 option occupies one PCI slot	2 x PCI, 2 x PCI/ISA shared, 1 x ISA Note: RAID1 option occupies one PCI slot
•Operating system	Without, Windows NT 4.0 (Ger./Eng.) (IL 70 only), Windows 2000 Professional multi-language, Windows XP Professional Multi-Language	Without, Windows 98 SE (Eng., Ger), Windows NT 4.0 (Eng., Ger.), Windows 2000 Professional Multi-Language, Windows XP Professional Multi-Language	Without, Windows 2000 Professional Multi-Language, Windows XP Professional Multi-Language
Ports			
•PROFIBUS/MPI	– (using plug-in card)	•	•
•Ethernet	•	•	•
•USB	•	•	•
Ambient conditions			
•Vibration resistance in operation	0.25 g	1 g	1 g
•Shock resistance in operation	1 g	5 g	5 g

• available
– not available

1) From 1st quarter 2005

SIMATIC Panel PC IL 70

Overview



- Industry standard PC platform for demanding tasks in the field of HMI
- Maximum performance due to the highest processor performance at a low starter price
- Design of the front panels:
  - 12“ or 15“ TFT color display
  - Touch screen

Benefits

- Industry standard vibrat ion and shock resistance
- Investment safeguarding thanks to guaranteed availability of spare parts for the components
- USB interface for simple and fa st connection of required components
- Integral Ethernet interface
- Minimization of downtimes than ks to high system availability: Data backup solutions (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 IL 70 is used both in manufacturing automation and in process automation and can be installed in control cabinets and in control panels.

A SIMATIC Panel PC IL 70 is a platform for PC-based Automation:

- PC-based machine-level visualiz ation on-site with SIMATIC ProTool/Pro or SIMATIC WinCC flexible
- Complex solutions with SIMATI C 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 ProTool/Pro, WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

Design

The Panel PC IL 70 comprises a computing unit (Box PC) and an operator unit (front panel).

Components of the computing unit:

- Metal housing, resistant to vi bration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 2.0 GHz with 128 MB RAM
  - Intel Pentium 4; 2.4 GHz with 256 MB RAM
- Hard disk: ≥ 20 GB;
- Diskette drive: 1.44 MB, 3.5“
- CD-ROM drive
- AGP graphics, on board
- Interfaces:
  - Ethernet on board
  - 2 x USB connection (USB 2.0)
- Free slots for expansion:
  - 3 x PCI, 1 x AGP (slots for card holder)
- Power supply: 110/230 V AC, 50/60 Hz

Components of the operator unit:

The front panels are available in the following designs:

12" Touch

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

15" Touch

- 15” TFT color display, 1024 x 768 pixels (XGA)
- Touch screen, analog resistive

Side view of the Panel PC IL 70

Design (continued)

Expansion components

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive da ta saving of hard disk contents
- Fast, bit-exact restoration of system and data partitions; user software and special installations are also saved
- Software tool for adaptati on of hard disk partitioning

3.5" USB diskette drive

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 with degree of protection IP54 means that data exchange is possible from the front without opening the control cabinet door.

The drive is connected via the USB interface of the Panel PC. The power supply is also connected via 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 delivery of the operating system
- Windows 98/NT: Use of the US B diskette drive is not possible

Note:
For further information, see "Expansion components"

Technical specifications

Typee	Panel PC IL 70
General features	
•Processor	Intel Pentium 4 technology; Intel Celeron 2.0 GHz, Intel Pentium 4; 2.4 GHz
•RAM	128 MB or 256 MB, maximum expansion to 2 GB
•Free slots for expansion	3 x PCI, 1 x AGP (slots with card retainer)
•Operating system	Windows 2000 Prof. (multi-language[1]), Windows NT4.0 (Eng., Ger.), Windows XP Prof. (multi-language[1]), opt. without operating system
•Power supply	110 V / 230 V AC (wide range) 50/60 Hz
•MTBF of backlighting	Typically 50,000 h (at 24 h continuous operation, depending on temperature)
Drives	
•Hard disk	2.5" hard disk drive ≥ 20 GB
•CD-ROM	On rear, access from side
•Diskette drive	1.44 MB, on rear, access from side
Interfaces	
•PROFIBUS/MPI	Can be implemented through plug-in card
•Ethernet	On board, 10/100 Mbit/s, RJ45, no plug-in card required
•USB (Universal Serial Bus)	2 x on rear (USB 2.0)
•Serial interface	COM1: 1 x V.24 (RS232)
•Parallel interface	LPT1 (EPP/ECP)
•Keyboard, mouse	PS/2 (external keyboard); PS/2 (external mouse)
•Multimedia	Audio in/out, microphone in, joystick port
•Graphics interface	No (only as alternative to integrated TFT display)
Monitoring functions	
•Temperature and watchdog	On board

Ambient conditions	
•Degree of protection	IP65 (on front) according to EN 60529
•Vibration resistance in operation	Tested to DIN IEC 68-2-6: 20 to 58 Hz: 0.0185mm, 58 to 200 Hz: 2.5 m/s^2 (0.25g)
•Shock resistance in operation	Tested to DIN IEC 68-2-29: 10 m/s^2 (1 g), 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 in operation	+5 °C to +45 °C when fully equipped
•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)
Approvals	CE, UL 508 C-UL US LISTED
Packages	Optional with SIMATIC ProTool/Pro, SIMATIC WinCC flexible, SIMATIC WinCC

Front panels	**12" Touch**	**15" Touch**
Display		
•Size	12.1" TFT Touch	15.1" TFT Touch
•Resolution (pixels)	800 x 600	1024 x 768
Control elements		
•Touch screen	Yes	Yes
Dimensions		
•Operator unit (W x H) in mm	391 x 330	449 x 373
•Mounting dimensions of centralized model (W x H x D, without CD-ROM) in mm	367 x 305 x 213	425 x 349 x 213
Weight		
•Panel PCs in centralized configuration	Approx. 13 kg	Approx. 15 kg
Expansion components	SIMATIC NET communications modules, 3.5" USB diskette drive, SIMATIC PC/PG Image & Partition Creator	

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 50081-2-2

Note for SIMATIC PC operating system licenses
The enclosed operating system license only permits installation on the supplied SIMATIC PCs. In accordance with Microsoft OEM licensing guidelines, installation is only permissible on these SIMATIC systems.

SIMATIC Panel PC IL 70

Ordering data	Order No.
Panel PC configuration	
SIMATIC Panel PC IL 70 A)	**6AG7 01■-■■A00-0A■0**
Front panels:	
•12" TFT Touch	**0**
•15" TFT Touch	**1**
CPU/RAM:	
•Celeron 2.0 GHz/ 128 MB SDRAM	**0 A**
•Pentium IV 2.4 GHz/ 256 MB SDRAM	**1 B**
Operating system:	
•Without operating system	**A**
•Windows NT 4.0, German	**B**
•Windows NT 4.0, English	**C**
•Windows 2000 Professional multi-language (English, French, German, Italian, Spanish, traditional Chinese, simplified Chinese, Korean, Japanese)	**D**
•Windows XP Professional multi-language (English, French, German, Italian, Spanish, traditional Chinese, simplified Chinese, Korean, Japanese)	**E**

	Order No.
Expansion components	
SIMATIC PC/PG Image & Partition Creator B) Software tool for data saving and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (Eng/Ger/Fr/Sp/It)	**6ES7 648-6AA02-0YX0**
Accessories	
Memory module	
•128 MB DDR333 D)	**6AV7 570-0JA00-1AA0**
•256 MB DDR333 D)	**6AV7 570-0JA10-1AA0**
USB 3.5" diskette drive with 1 m connecting cable 1) D)	**6FC5 235-0AA05-1AA2**
Front cover for USB diskette drive, with frame, cover and bearing block	**6FC5 247-0AA20-0AA0**
Communications components	
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet	**6GK1 161-3AA00**
CP 5611 PCI card (32 bit) for connecting a PG/PC to PROFIBUS	**6GK1 561-1AA00**
CP 5613 A2 C) PCI card (32 bit) for connecting a PC to PROFIBUS	**6GK1 561-3AA01**

1) For Windows 2000 and XP

A) Subject to export regulations AL: N and ECCN: 5D992B2

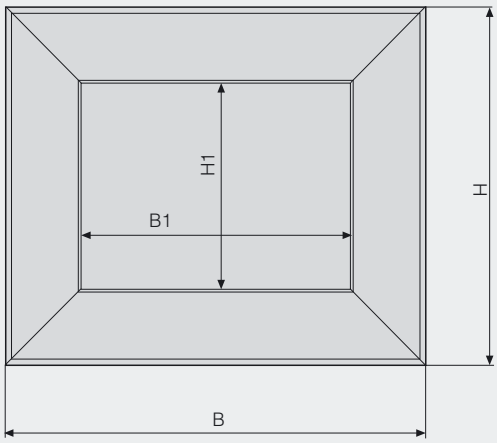
B) Subject to export regulations AL: N and ECCN: EAR99S

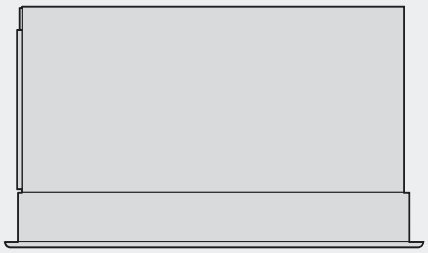
C) Subject to export regulations AL: N and ECCN: 5D992B1

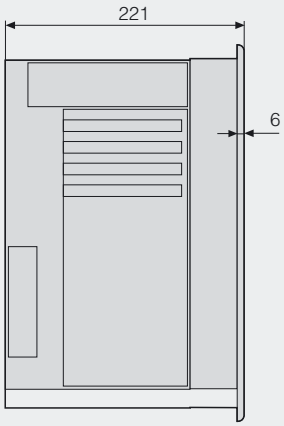
D) Subject to export regulations AL: N and ECCN: EAR99H

Dimension drawings

Dimensions in mm







Panel cutout	W	H	D
12,1" TFT Touch	367	305	213
15,1" TFT Touch	425	349	213

Front dimensions	W	H
12,1" TFT	391	330
15,1" TFT	449	373

Display	W1	H1
12,1" TFT	251	189,4
15,1" TFT	309,1	233,1

G_ST80_XX_00033

Panel PC IL 70 operator unit

More information

Additional information can be found in the Internet under

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

SIMATIC Panel PC IL 77

Overview

- Industrial PC platform for de manding 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

- Industry standard resistance to vibrations and shocks
- Investment safeguarding through guaranteed availability of spare parts for the components
- USB interface for simple and fa st connection of required components
- Integral Ethernet interface
- Minimization of downtimes thro ugh high system availability: 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 IL 77 is used both in manufacturing automation and in process automation and can be installed in control cabinets and control panels.

A SIMATIC Panel PC IL 77 is a platform for PC-based Automation:

- PC-based machine-level visualiz ation on site with SIMATIC ProTool/Pro or 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 ProTool/Pro, WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

Design

The Panel PC IL 77 comprises a computing unit (Box PC) and an operator unit (front panel).

Components of the computing unit:

- Metal housing, resistant to vi bration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 2.0 GHz
  - Intel Pentium 4 2.4 GHz
- Memory:
  - 256 MB DDR 333
  - 512 MB DDR 333
  - With expansion capability up to 2.5 GB
- Hard disk: ≥ 30 GB;
- Diskette drive: 1.44 MB, 3.5", optionally via USB, can be ordered as accessory
- CD-ROM drive, optional
- Interfaces:
  - Ethernet on board
  - 4 x USB connection (USB 2.0)
  - 1 x USB connection on front (USB 2.0)
- Free slots for expansions:
  - 3 x PCI (slots with card retainer + 1 slot specially prepared for WinAC Slot module),
- Power supply: 110/230 V AC, 50/60 Hz

Components of the operator unit:

The front panels are available in the following designs:

12" Touch

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Touch screen, analog resistive
- USB 2.0 connection on front

15" Touch

- 15” TFT color display, 1024 x 768 pixels (XGA)
- Touch screen, analog resistive
- USB 2.0 connection on front

19“ Touch

- 19.1“ TFT color display, 1280 x 1024 pixels (XGA)
- Touch screen, analog resistive
- USB 2.0 connection 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 connection 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 connection on front

Design (continued)

Expansion components

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive da ta saving of hard disk contents
- Fast, bit-exact restoration of system and data partitions; user software and special installations are also saved
- Software tool for adaptati on of hard disk partitioning

3.5" USB diskette drive

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 with degree of protection IP54 permits data exchange from the front without opening the control cabinet door.

The drive is connected via the USB interface of the Panel PC. The power supply is also connected via 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 USB diskette drive with SIMATIC Panel PCs:

- Windows XP: Possible without separate driver
- Windows 2000: The required driver is included in the scope of delivery of the operating system
- Windows 98/NT: Use of the USB diskette drive not possible

Note:
For further information see "Expansion components"

Function

- Integral, parameterizable moni toring functions (program sequence (watchdog), housing inside temperature, fan speed)

Integration

Integral interfaces

- Ethernet
  The integral Ethernet interface (10/100 Mbit/s) can be used for IT communication and for data exchange with programmable controllers such as SIMATIC S7 (with "SOFTNET S7" software package).
- Other interfaces
  Three free slots for PC modules, the USB 2.0 (Universal Serial Bus) port, and serial/parallel interfaces are available for connecting other I/O devices.

SIMATIC Panel PC IL 77

Technical specifications

Type	Panel PC IL 77
General features	
•Processor	Intel Pentium 4 technology; Intel Celeron 2.0 GHz, Intel Pentium 4, 2.4 GHz
•RAM	256 MB or 512 MB, maximum expansion to 2,5 GB
•Free slots for expansion	3 x PCI, (slots with card retainer)
•Operating system	Windows 2000 Prof. (multi-language[1]), Windows XP Prof. (multi-language[1]), optionally without operating system
•Power supply	110 V / 230 V AC (wide range) 50/60 Hz
•MTBF of backlighting	Typically 50,000 h (at 24 h continuous operation, depending on temperature)
Drives	
•Hard disk	2.5" hard disk drive ≥ 30 GB
•CD-ROM	Optional on rear, operated from the side
•Diskette drive	1.44 MB, 3.5", optionally 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 (USB 2.0), 1 x on front (USB 2.0)
•Serial interface	COM1: 1 x V.24 (RS232)
•Parallel interface	LPT1 (EPP/ECP)
•Keyboard, mouse	PS/2 (external keyboard); PS/2 (external mouse)
•Multimedia	Audio In/Out, microphone In
•Graphics interface	Not used

Type	Panel PC IL 77
Monitoring functions	
•Temperature and watchdog	On board
Ambient conditions	
•Degree of protection	IP65 (front) acc. to EN 60529, NEMA 4
•Vibration resistance in operation	Tested to DIN IEC 68-2-6: 20 to 58 Hz: 0.0185 mm, 58 to 200 Hz: 2.5 m/s^2 (0.25g)
•Shock resistance in operation	Tested to DIN IEC 68-2-29: 10 m/s^2 (1 g), 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 in operation	+5 °C to +45 °C when fully equipped
•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)
Approvals	CE, UL 508 C-UL US LISTED
Packages	Optional with SIMATIC ProTool/Pro, 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 for SIMATIC PC operating system licenses

The enclosed operating system license only permits installation on the SIMATIC PCs supplied. In accordance with Microsoft OEM licensing guidelines, installation is only permissible on these SIMATIC systems.

Front panels	12" Touch	12" Key [1]	15" Touch	15" Key [1]	19" Touch [2]
Display					
•Size	12.1" TFT Touch	12,1" TFT Key	15.1" TFT Touch	15.1" TFT Key	19.1" TFT Touch
•Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768	1024 x 768	1240 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 at the front	No	Yes	No	Yes	No
•Numeric/alphanumeric input	Yes/yes [3]	Yes/yes	Yes/yes [3]	Yes/yes	Yes/yes [3]
Dimensions					
•Operator 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 CD-ROM) in mm	368 x 290 x 152	450 x 290 x 137	450 x 296 x 155	450 x 327 x 162	450 x 380 x 150
•Additional mounting depth (versions with CD-ROM)	+27 mm	+27 mm	+27 mm	+27 mm	+27 mm
Weight					
•Panel PCs in centralized configuration	Approx. 11 kg	Approx. 12 kg	Approx. 13 kg	Approx. 13 kg	Approx. 15 kg
Expansion components	SIMATIC NET communications modules, 3.5" USB diskette drive, SIMATIC PC/PG Image & Partition Creator				
Accessories	Touch protection foil	Insertable strips for keyboard	Touch protection foil	Insertable strips for keyboard	Touch protection foil

1) Start of delivery approximately end of 2nd quarter 2005

2) Start of delivery approximately end of 1st quarter 2005

3) Using virtual keyboard

Ordering data

	Order No.
Panel PC configuration	
SIMATIC Panel PC IL 77 A)	**6AG7 10■-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**
Main memory:	
•256 MB DDR 333	**0**
•512 MB DDR 333	**1**
Optical drives:	
•Without 2)	**0**
•CD-ROM	**1**
Operating system:	
•Without operating system	**A**
•Windows 2000 Professional multi-language (English, French, German, Italian, Spanish, traditional Chinese, simplified Chinese, Korean, Japanese)	**B**
•Windows XP Professional multi-language (English, French, German, Italian, Spanish, traditional Chinese, simplified Chinese, Korean, Japanese)	**C**

1) For Windows 2000 and XP

2) Not recommended for applications with WinCC / WinCC flexible

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

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

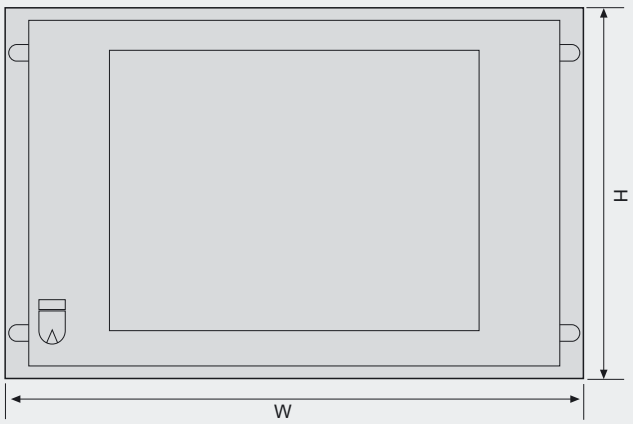
C) Subject to export regulations AL: N and ECCN: EAR99H

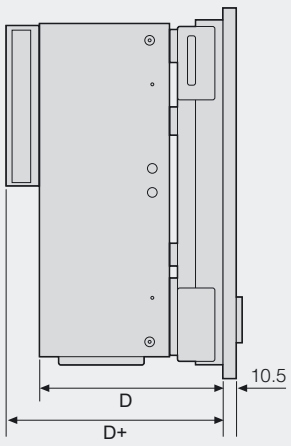
	Order No.
Expansion components	
SIMATIC PC/PG Image & Partition Creator B) Software tool for data saving and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (Eng/Ger/Fr/Sp/It)	**6ES7 648-6AA02-0YX0**
Accessories	
USB 3.5" diskette drive with 1 m cable 1) C)	**6FC5 235-0AA05-1AA2**
Front cover for USB diskette drive, with frame, cover and bearing block	**6FC5 247-0AA20-0AA0**
Communications components	
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet	**6GK1 161-3AA00**
CP 5611 PCI card (32 bit) for connecting a PG/PC to PROFIBUS	**6GK1 561-1AA00**
CP 5613 A2 A) PCI card (32 bit) for connecting a PC to PROFIBUS	**6GK1 561-3AA01**
Memory expansion C) 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**

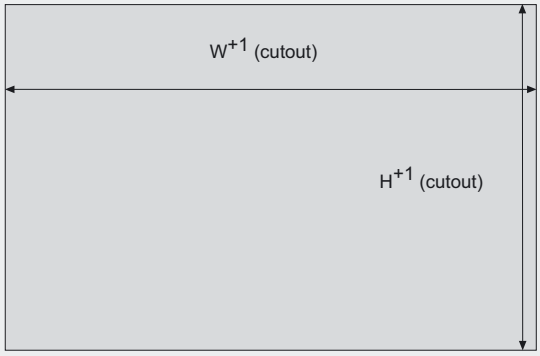
SIMATIC Panel PC IL 77

Dimension drawings

Dimensions in mm







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

Installation cutouts	W+1	H+1	D	D+
Touch				
12"	368	290	152	179
15"	450	290	155	182
19"	449	380	on req.	on req.
Key				
12"	450	290	137	164
15"	450	321	162	189

on req. = on request

G_ST80_EN_000178

More information

Additional information can be found in the Internet under

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

SIMATIC Panel PC 670

Overview

- PC platform with high industrial suitability for demanding tasks in the area of PC-based automation
- Rugged construction:
  the PC can withstand even extremely harsh mechanical stress and is reliable
- Compact design
- High investment protection
- Can be integrated quickly
- Distributed configuration:
  offers additional applications thanks to the separation of operator unit and computing unit by up to 20 m
- Front panel versions:
  - 10", 12" or 15" TFT color display
  - Membrane keyboard or touch screen

Benefits

- Highly suitable for use in in dustry thanks to rugged design, even if subjected to strong vibrations and shocks
- High investment security th rough guaranteed spare parts availability (5 years)
- High continuity of the compo nents for long-term machine concepts without renewed engineering overhead
- Savings in time and costs through service-friendly device design:
  - Operator unit and computing unit can be easily separated for quick replacement of components or later expansions
  - USB port on front and rear for simple and fast connection of additional hardware components
- High industrial functionality thanks to integral PROFIBUS DP/MPI and Ethernet interfaces
- Operational safety:
  - With the optional direct key module, the process can be operated without delay via 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 670 is designed for implementation directly at the machine. The shallow mounting depth of only 100/130 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 machine-level visua lization on-site with SIMATIC ProTool/Pro or SIMATIC WinCC flexible
- Complex solutions with SIMA TIC 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 ProTool/Pro, WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

Design

The Panel PC 670 comprises a computing unit and an operator unit.

Components of the computing unit:

- Rugged metal housing, resistant to vibration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 1.2 GHz or
  - Intel Pentium III 1.26 GHz
- Main memory, standard configuration:
  128 MB (8 to 32 MB shared graphics memory configurable via BIOS)
- Hard disk: ≥ 40 GB;
  the special vibration-absorbing hard disk support ensures reliable operation even under extremely high mechanical stress
- Diskette drive: 1.44 MB, 3.5"
- Graphics on board
- Interfaces:
  - Ethernet on board
  - PROFIBUS DP/MPI on board, electrically isolated
  - 2 x USB connection
- Free slots for expansion:
  - 1 x PCI, 1 x ISA/PCI shared (slots for card holder);
    Note: RAID1 option occupies one PCI slot
  - 1 x Cardbus slot Type III (PCMCIA)
- Power supply: 110 V / 230 V AC (autorange), 50/60 Hz or 24 V DC

Optional additional components:

- Main memory expansion to 256 MB, 512 MB, or 1 GB
- Hard disk ≥ 80 GB
- CD-ROM drive
- CD-RW/DVD drive
- Direct control key module
- 2 x ≥ 40 GB hard disk system
- RAID1 system

SIMATIC Panel PC 670

Design (continued)

Components of the operator unit:

The front panels are available in the following designs:

10" Key

- 10.4" TFT color display, 640 x 480 pixels (VGA)
- Membrane keyboard with inter national PC character set and 36 additional function keys with LED and an integrated mouse

12" Key

- 12.1" TFT color display, 800 x 600 pixels (SVGA)
- Membrane keyboard with inter national 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)
- Touch screen, analog resistive

15" Key

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

15" Touch

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Touch screen, analog resistive

The front panels have a USB interface for connecting an external keyboard or mouse. The touch variants are optionally available without a USB connection. In this case, they comply with NEMA 4.

The computing unit is connected via a ribbon cable attached to the rear of the operator unit.

Side-view of the Panel PC 670

Types of configuration

- Centralized configuration: Comp uting unit and operator unit are integrated
- Distributed configuration: Comput ing unit and operator unit are physically separated (up to 20 m)

Distributed configuration:

In the case of the distributed configuration, the operator unit and the computing unit can be operated separated by a distance of up to 20 m, whereby the Look & Feel and the functional scope of the PC are retained. This offers even more application possibilities for the Panel PC 670:

Space-saving installation of the flat distributed operator unit (69 mm), e.g. in the control cabinet door or on a swing arm (girders)

- Additional installation possibilities (e.g. in operator consoles) since the distributed operator unit can be installed at an angle of up to 70° from the vertical
- Extremely resistant to interference
- Quick and easy start-up

The connection between the operator unit and the computing unit is a rugged industrial cable with the following characteristics:

- 10 million bending cycles
- Silicone and CFC free, casing material flame-retardant acc. to IEC 60 332.1
- Oil-resistant to VDE 0472 Part 803 Test Type B
- Suitable for trailing
- Plug connector with lock

Expansion components

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive data saving of hard disk contents
- Fast, bit-exact restoration of system and data partitions; user software and special installations are also saved
- Software tool for adaptati on 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" USB diskette drive

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 the IP54 degree of protection mean that data exchange is possible from the front without opening the control cabinet door.

The device is connected via the USB interface of the Panel PC. The power supply is also connected via 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 USB diskette drive with SIMATIC Panel PCs:

- Windows XP: Possible without separate driver.
- Windows 2000: The required driver is included in the scope of delivery of the operating system
- Windows 98 [1]/NT: Use of the USB diskette drive not possible

Note:
For further information see "Expansion components"

1) Only available for a limited period

Technical specifications

Type	Panel PC 670 – centralized configuration	Panel PC 670 – distributed configuration
General features		
•Processor	Intel Pentium III technology, Intel Celeron 1.2 GHz, Intel Pentium III 1.26 GHz	
•RAM	128 MB, 256 MB, 512 MB to 1 GB	
•Free slots for expansion	1 x PCI, 1x PCI/ISA shared, (all slots with card retainer) 1 x type III Cardbus slot (PCMCIA); Note: RAID1 option occupies one PCI slot	
•Operating system	Windows 2000 Prof. (multi-language [1]), Windows 98 [6] SE (d, e), Windows NT4.0 (d, e) [2], Windows XP Prof. (multi-language [1]), opt. without operating system	
•Power supply	110 V / 230 V AC (autorange) 50/60 Hz; or 24 V DC	
•MTBF of backlighting	Typically 60,000 hrs (at 24 h continuous operation, depending on temperature)	
Drives		
•Hard disk	3.5" hard disk drive ≥ 40 GB, with isolation mounts against vibration	
•CD-ROM	•Optional, also with 2-hard-disk system or RAID1 system	Optional, in computing unit
•DVD/CD-R/RW	•Optional, also with 2-hard-disk system or RAID1 system	Optional, in computing unit
•Diskette drive	1.44 MB, on rear, can be accessed from the side	1.44 MB in computing unit
Ports		
•PROFIBUS/MPI	On board, isolated, max. 12 Mbit/s, no plug-in card required	
•Ethernet	On board, 10/100 Mbit/s, RJ45, no plug-in card required	
•USB (Universal Serial Bus)	1 x on front [4], 2 x on rear	Front: 1 x on front [4], 1 x on rear, computing unit: 2 x
•Serial interface	COM1: 1 x V.24 (RS232), COM2: 1 x V.24(RS232C)/TTY for S5 communication	
•Parallel interface	LPT1 (EPP/ECP)	
•Keyboard, mouse	PS/2 (external keyboard); PS/2 (external mouse)	
•Graphics interface	Analog VGA, resolution as for integrated display, 16-bit color depth	
Monitoring functions		
•Temperature and watchdog	On board	
•Status LEDs	Power, temperature (on front)	
Ambient conditions		
•Degree of protection	IP65 (front) acc. to EN 60529, NEMA 4 [3]	IP65 (front) acc. EN 60529, NEMA 4 [3] IP20 (computing unit) acc. to EN 60529
•Vibration resistance in operation	Tested to DIN IEC 68-2-6: - 10 to 58 Hz: 0.075 mm - 58 to 200 Hz: 9.8 m/s^2 (1g)	
•Shock resistance in operation	Tested to DIN IEC 68-2-29: 50 m/s^2 (5 g), 30 ms, 100 shocks	
•EMC	CE, EN 55011, EN 61000-6-2, EN 61000-6-4 [5]	
•Ambient temperature in operation	+5 °C to +45 °C when fully equipped	
•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)	
Approvals	CE, cULus, FM Class 1 Div.2 [3]	CE, cULus
Packages	Optional with SIMATIC ProTool/Pro, SIMATIC WinCC flexible, SIMATIC WinCC	

1) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/CHIN simplified/ Korean/Japanese
2) For centralized configuration only
3) For touch variants without front USB interface
4) Touch variants available optionally without front USB interface
5) 61000-6-2 replaces 50082-2, 61000-6-4 replaces 50081-2
6) Only available for a limited period

Note for SIMATIC PC operating system licenses
The enclosed operating system license only permits installation on the supplied SIMATIC PCs only. In accordance with Microsoft OEM licensing guidelines, installation is only permissible on these SIMATIC systems.

SIMATIC Panel PC 670

Technical specifications

Front panels	10" Key	12" Touch	12" Key	15" Touch	15" Key
Design					
•Centralized configuration	Yes	Yes	Yes	Yes	Yes
•Distributed configuration	No	Yes	Yes	Yes	Yes
Display					
•Size	10.4" TFT	12.1" TFT Touch	12.1" TFT	15.1" TFT touch	15.1" TFT
•Resolution (pixels)	640 x 480	800 x 600	800 x 600	1024 x 768	1024 x 768
Control elements					
•Keyboard	Yes	No	Yes	No	Yes
•Function keys	36 with LEDs	No	36 with LEDs	No	36 with LEDs
•Touch screen	No	Yes	No	Yes	No
•Mouse at the front	Yes	No	Yes	No	Yes
•Numeric/alphanumeric input	Yes/yes	Yes/yes [1]	Yes/yes	Yes/yes [1]	Yes/yes
Dimensions					
•Operator unit (W x H) in mm	483 x 310 (19", 7 HU)	400 x 310 (7 HU)	483 x 310 (19", 7 HU)	483 x 310 (19", 7 HU)	483 x 355 (19", 8 HU)
•Mounting dimensions of centralized model (W x H x D, without CD-ROM) in mm	450 x 296 x 100	368 x 290 x 125	450 x 290 x 100	450 x 296 x 130	450 x 327 x 130
•Mounting dimensions of operator unit in distributed configuration (W x H x D) in mm	-	368 x 290 x 85	450 x 290 x 69	450 x 296 x 91	450 x 327 x 91
•Mounting dimensions of computing unit in distributed configuration (W x H x D) in mm	-	298 x 305 x 104	298 x 305 x 104	298 x 305 x 104	298 x 305 x 104
•Additional mounting depth (versions with CD-ROM)	+20 mm	+20 mm	+20 mm	+20 mm	+20 mm
Weight					
•Panel PCs in centralized configuration	Approx. 12 kg	Approx. 11 kg	Approx. 12 kg	Approx. 13 kg	Approx. 13 kg
•Operator unit in distributed configuration	-	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg
•Computing unit in distributed configuration	-	Approx. 7.5 kg	Approx. 7.5 kg	Approx. 7.5 kg	Approx. 7.5 kg
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET communications processors, 3.5" USB diskette drive, SIMATIC PC/PG Image & Partition Creator, SIMATIC PC DiagMonitor				
Accessories	Keyboard slide-in labels, direct key module	Touch protection foil	Keyboard slide-in labels, direct key module	Touch protection foil	Keyboard slide-in labels, direct key module

1) Using virtual keyboard

Ordering data

Order No.

Panel PC configurator (contract-based production and delivery)

SIMATIC Panel PC 670 — **6AV7 7■■-■■■■■-0A■0**

Design:
- •Centralized configuration — 2
- •Distributed configuration — 3

Front panels:
- •10" TFT Key [2] — 2 1
- •12" TFT Touch — 2
- •12" TFT Key — 3
- •15" TFT Touch — 4
- •15" TFT Key — 5
- •12" TFT Touch without front USB interface — 6
- •15" TFT Touch without front USB interface — 7

RAM:
- •128 MB [2] — 1
- •256 MB — 2
- •512 MB — 3
- •1 GB [1] — 4

CPU
- •Celeron 1.2 GHz — A
- •Intel Pentium III 1.26 GHz — B

Country-specific design/ power supply:
- •Computing and operator unit 24 V DC — A
- •Computing and operator unit 110 V/230 V US — B
- •Computer and operator unit 110 V/230 V Europe — C
- •Computing unit 110 V/230 V US, operator unit 24 V DC — 3 D
- •Computing unit 110 V/230 V Europe, operator unit 24 V DC — 3 E
- •Computing unit 24 V DC, operator unit 110 V/230 V US — 3 F
- •Computing unit 24 V DC, operator unit 110 V/230 V Europe — 3 G

Panel PC configurator (continued)

SIMATIC Panel PC 670 — **6AV7 7■■-■■■■■-0A■0**

Drives:
- •40 GB hard disk [2] — 0
- •40 GB hard disk + CD-ROM — 1
- •80 GB hard disk [2] — 2
- •80 GB hard disk + CD-ROM — 3
- •80 GB hard disk + CD-RW/DVD — 4
- •2 x 40 GB hard disk (2.5") + CD-ROM
  - Without operating system [C] — 5 A
  - Windows 2000 Professional multi-language — 5 D
  - Windows XP Professional multi-language — 5 G
- •2 x 40 GB hard disk (2.5") + CD-ROM/DVD
  - Without operating system — 6 A
  - Windows 2000 Professional multi-language — 6 D
  - Windows XP Professional multi-language — 6 G
- •RAID1 + 2 x 40 GB hard disk (2.5") + CD-ROM
  - Without operating system — 7 A
  - Windows 2000 Professional multi-language — 7 D
  - Windows XP Professional multi-language — 7 G
- •RAID1 + 2 x 40 GB hard disk (2.5") + CD-ROM/DVD
  - Without operating system — 8 A
  - Windows 2000 Professional multi-language — 8 D
  - Windows XP Professional multi-language — 8 G

Distance between computing unit and operator unit/cable length:
- •0 m (centralized design) — 2 0
- •2 m — 3 1
- •5 m — 3 2
- •10 m — 3 3
- •20 m — 3 4

Operating system:
- •Without operating system — A
- •Windows NT 4.0, German — 2 B
- •Windows NT 4.0, English — 2 C
- •Windows 2000 Professional multi-language — D
- •Windows 98 German [2] [3] — E
- •Windows 98 English [2] [3] — F
- •Windows XP Professional multi-language — G

1) Not for Windows 98 SE [3]

2) Not recommended in conjunction with WinCC / WinCC flexible

3) Only available for a short period

SIMATIC Panel PC 670

Ordering data	Order No.
Delivery versions (ex stock)	
Panel PC 670, 10" TFT display	
Celeron 1.2 GHz, 40 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
•Without operating system A)	**6AV7 721-1AC10-0AA0**
•Windows NT 4.0, German B)	**6AV7 721-1AC10-0AB0**
•Windows NT 4.0, English B)	**6AV7 721-1AC10-0AC0**
Panel PC 670, 12" TFT display	
Pentium III 1.26 GHz, 40 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
•Without operating system A)	**6AV7 723-1BC10-0AA0**
•Windows NT 4.0, German B)	**6AV7 723-1BC10-0AB0**
•Windows NT 4.0, English B)	**6AV7 723-1BC10-0AC0**
•Windows 2000 Professional multi-language C)	**6AV7 723-1BC10-0AD0**
Panel PC 670, 12" TFT Touch display	
Pentium III 1.26 GHz, 40 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
•Without operating system A)	**6AV7 722-1BC10-0AA0**
•Windows NT 4.0, German B)	**6AV7 722-1BC10-0AB0**
•Windows NT 4.0, English B)	**6AV7 722-1BC10-0AC0**
•Windows 2000 Professional multi-language C)	**6AV7 722-1BC10-0AD0**
Panel PC 670, 15" TFT display	
Pentium III 1.26 GHz, 40 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
•Without operating system A)	**6AV7 725-1BC10-0AA0**
•Windows NT 4.0, German B)	**6AV7 725-1BC10-0AB0**
•Windows NT 4.0, English B)	**6AV7 725-1BC10-0AC0**
•Windows 2000 Professional multi-language C)	**6AV7 725-1BC10-0AD0**
Panel PC 670, 15" TFT Touch display	
Pentium III 1.26 GHz, 40 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
•Without operating system A)	**6AV7 724-1BC10-0AA0**
•Windows NT 4.0, German B)	**6AV7 724-1BC10-0AB0**
•Windows NT 4.0, English B)	**6AV7 724-1BC10-0AC0**
•Windows 2000 Professional multi-language C)	**6AV7 724-1BC10-0AD0**

	Order No.
Expansion components	
SIMATIC PC/PG Image & Partition Creator A)	**6ES7 648-6AA02-0YX0**
Software tool for data saving and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (G/E/F/S/I)	
SIMATIC PC/PG DiagMonitor V1.0 A)	**6ES7 648-6CA01-0YX0**
Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)	
USB 3.5" diskette drive with 1 m cable 1) C)	**6FC5 235-0AA05-1AA2**
Uninterruptible power supplies	
SITOP power, DC UPS module 15 A with RS 232 interface	**6EP1 931-2EC31**
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	
Communications components	
CP 1613	**6GK1 161-3AA00**
PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet	
CP 5613 A2 B)	**6GK1 561-3AA01**
PCI card (32 bit) for connecting a PC to PROFIBUS	
Accessories	
Memory expansion C)	
•128 MB	**6ES7 648-2AC10-0CA0**
•256 MB	**6ES7 648-2AC20-0CA0**
•512 MB	**6ES7 648-2AC30-0CA0**
Direct key module for Panel PC 670/870 C)	**6AV7 671-7DA00-0AA0**
Option package for direct key module	**6ES7 648-0AA00-0XA0**
•Transfer module to interface module with 16 I/Os	
Protective foil for Panel PC 670/870	
to protect the touch front against contamination/scratching (set of 10)	
•for 12" touch	**6AV7 671-2BA00-0AA0**
•for 15" touch	**6AV7 671-4BA00-0AA0**
Key inscription strips for PC 670/870 panel	
for inscription of softkeys and function keys, without inscriptions, set of 3 (plastic), for	
•10" panel	**6AV7 671-0CA00-0AA0**
•12" panel	**6AV7 671-3CA00-0AA0**
•15" panel	**6AV7 671-5CA00-0AA0**

1) For Windows 2000 and XP

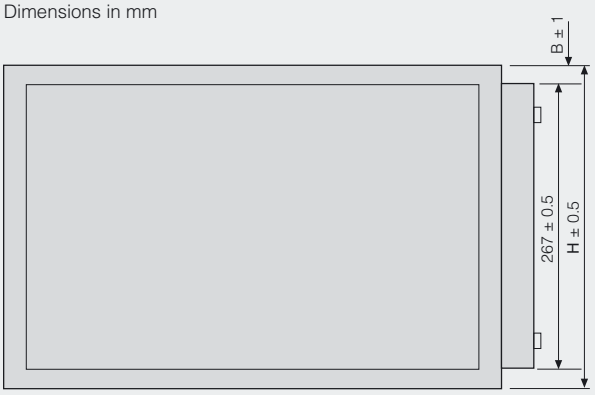
A) Subject to export regulations AL: N and ECCN: EAR99S

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

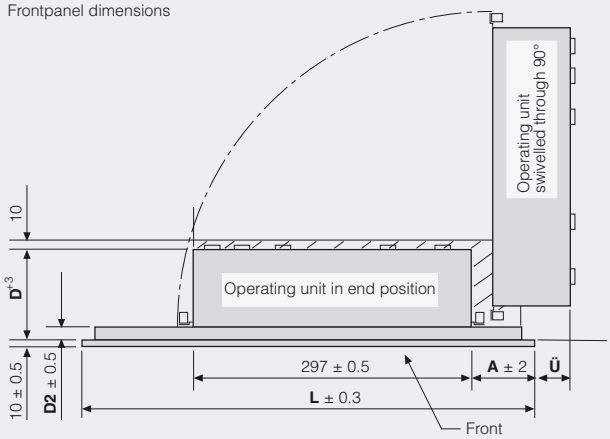
C) Subject to export regulations AL: N and ECCN: EAR99H

Dimension drawings

Dimensions in mm



Frontpanel dimensions



All dimensions exclude screw projections

Operating unit PC 670	L	H	D [1]	D2	A	B	Ü
(a) with key fronts:							
10.4"-TFT	483	310	100	20	68	21	38
12.1"-TFT	483	310	100	20	68	21	38
15.1"-TFT	483	355	130	42	80	29	28
(b) with touch screen fronts:							
12.1"-TFT	400	310	125	36	58	23	50
15.1"-TFT	483	310	130	42	87	23	22

1) with CD-ROM

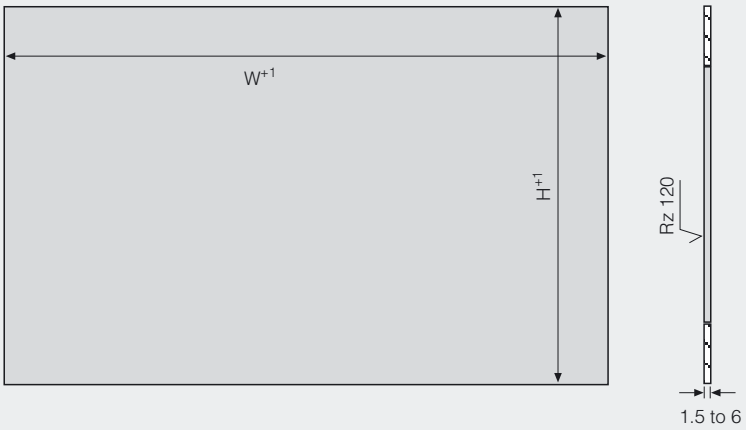
G_ST80_XX_00036

Centralized configuration of operator unit

SIMATIC Panel PC 670

Dimension drawings (continued)

Dimensions in mm



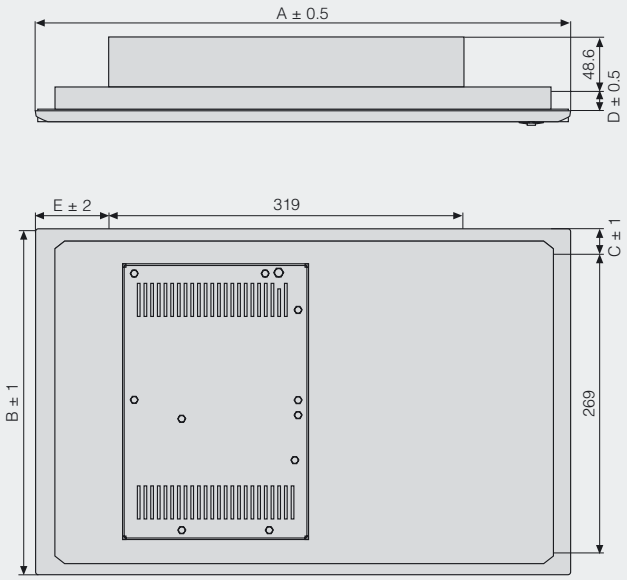
Operating units PC 670	W	H
(a) with key fronts:		
10.4"-TFT	450	296
12.1"-TFT	450	296
15.1"-TFT	450	327
(b) with touch screen fronts:		
12.1"-TFT	368	296
15.1"-TFT	450	296

G_ST80_XX_00035

Panel cutout for standard unit (W x H x D) in mm (without CD-ROM)

Cutout for installation

Dimensions in mm



Dim.	12"	12" Touch	15"	15" Touch
A	483	400	483	483
B	310	310	355	310
C	21	23	23	29
D	20	36	42	42
E	68	58	87	80

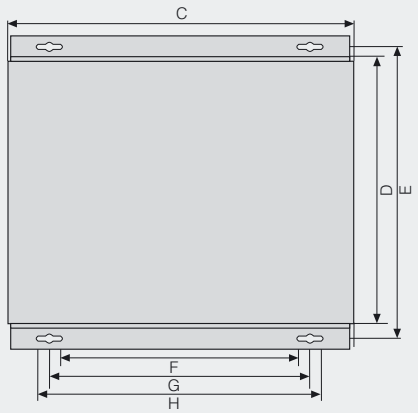
G_ST80_XX_00034

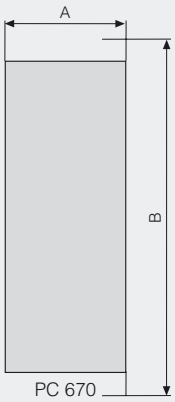
All dimensions exclude screw projections

Distributed configuration of operator unit

Dimension drawings (continued)

Dimensions in mm





Dim.	W	H
A	103.5	–
B	–	304.6
C	297.2	–
D	–	–
E	–	289.6
F	211	–
G	–	–
H	253	–

G_ST80_XX_00039

Distributed configuration of computing unit

More information

Additional information can be found in the Internet under

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

SIMATIC Panel PC 870

Overview

- PC platform with high degree of industrial compatibility for demanding tasks in the field of PC-based Automation
- Rugged design:
  The PC is even resistant to extremely harsh mechanical stress and is reliable in operation
- Extended investment protection
- Fast integration capability
- Remote configuration:
  Additional applications are possible thanks to the separation of the operating unit and computing unit
- Design of the front panels:
  - 12" or 15" TFT color display
  - Membrane keyboard or touch screen

Benefits

- Highly suitable for use in in dustry thanks to rugged design even in the face of strong vibrations and shocks
- High investment security th rough guaranteed spare parts availability (5 years)
- High continuity of the compo nents for long-term machine concepts without renewed engineering overhead
- Savings in time and costs through service-friendly device design:
  - Operator unit and computing unit can be easily separated for quick replacement of components or later expansions
  - USB port on front and rear for simple and fast connection of additional hardware components
- High industrial functionality thanks to integral PROFIBUS DP/MPI and Ethernet interfaces
- Operational safety:
  - With the optional direct key module, the process can be operated without delay via 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 870 is designed for applications directly at the machine.

It is used both in manufacturing automation and in process automation and is installed in control cabinets and desks, 19" cabinets and racks and on swing arms (girders).

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

- PC-based machine-level visua lization on-site with SIMATIC ProTool/Pro or SIMATIC WinCC flexible
- Complex solutions with SIMA TIC 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 ProTool/Pro, WinCC flexible or WinCC as SIMATIC HMI packages at a special price (see SIMATIC HMI complete systems).

Design

The Panel PC 870 comprises a computing unit and an operator unit.

Components of the computing unit:

- Rugged metal housing, resistant to vibration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 2.0 GHz or
  - Intel Pentium 4, 2.4 GHz
  - Intel Pentium 4 mobile 2.2 GHz
- Main memory, standard configuration:
  128 MB (of which 8 to 32 MB shared graphics memory configurable via BIOS)
- Hard disk: ≥ 40 GB;
  the special vibration-absorbing hard disk support ensures reliable operation even under extremely high mechanical stress
- Diskette drive: 1.44 MB, 3.5"
- Graphics on board
- Interfaces:
  - Ethernet on board
  - PROFIBUS DP/MPI on board, electrically isolated
  - 2 x USB connection
- Free slots for expansion:
  - 2 x PCI, 2 x ISA/PCI shared, 1 x ISA (slots for card holder)
- Power supply: 110 V / 230 V AC (autorange) 50/60 Hz or 24 V DC

Optional extras:

- Main memory expansion to 256 MB, 512 MB, 1 or 2 GB
- Hard disk ≥ 80 GB
- CD-ROM drive
- CD-RW/DVD drive
- Direct control key module
- Dual hard disk (2 x 40 GB)
- RAID system

Design (continued)

Components of the operator unit:

The front panels are available in the following designs:

12" Key

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

12" Touch (in distributed configuration only)

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

15" Key

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

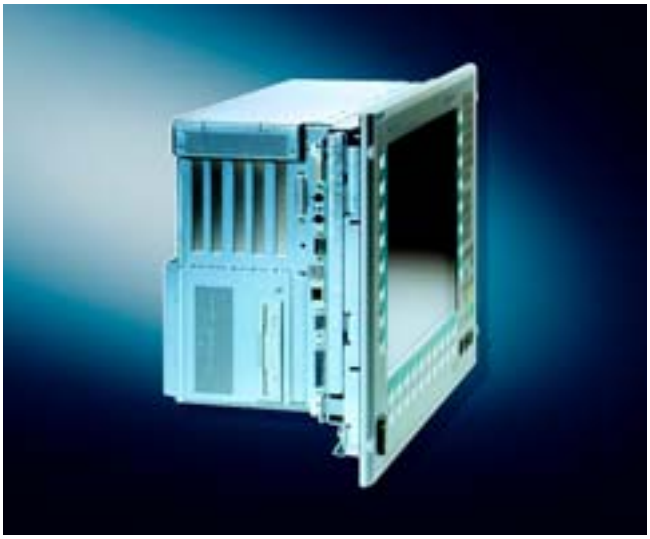
15" Touch

- 15" TFT color display, 1024 x 768 pixels (XGA)
- Touch screen, analog resistive

The front panels have a USB interface for connecting an external keyboard or mouse. The Touch variants are optionally available without a USB connection. In this case, they comply with NEMA 4.

The computing unit is connected via a ribbon cable attached at the rear of the operator unit.

Side-view of the Panel PC 870



Types of configuration

- Centralized configuration: Comp uting unit and operator unit are integrated
- Distributed configuration: Comput ing unit and operator unit are physically separated

Distributed configuration:

In the case of the distributed configuration, the operator unit and the computing unit can be operated separated by a distance of up to 20 m, whereby the Look & Feel and the functional scope of the PC are retained. This offers even more application possibilities for the Panel PC 870:

Space-saving installation of the flat distributed operator unit (69 mm), e.g. in the control cabinet door or on a movable swing arm (girders)

- Additional installation possibilities (e.g. in operator consoles), since the distributed operator unit can be installed at an angle of up to 70° from the vertical
- Extremely resistant to interference
- Quick and easy start-up

The connection between the operator unit and the computing unit is a rugged industrial cable with the following characteristics:

- 10 million bending cycles
- Silicone and CFC free, casing material flame-retardant acc. to IEC 60 332.1
- Oil-resistant to VDE 0472 Part 803 Test Type B
- Suitable for trailing
- Plug connector with lock

Expansion components

SIMATIC PC/PG Image & Partition Creator

- Software tool for preventive data saving of hard disk contents
- Fast, bit-exact restoration of system and data partitions; user software and special installations are also saved
- Software tool for adaptati on of hard disk partitioning

SIMATIC PC DiagMonitor

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

3.5" USB diskette drive"

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 with degree of protection IP54 means that data exchange is possible from the front without opening the control cabinet door.

The drive is connected via the USB interface of the Panel PC. The power supply is also connected via 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 USB diskette drive with SIMATIC panel PCs:

- Windows XP: Possible without separate driver.
- Windows 2000: The required driver is included in the scope of delivery of the operating system
- Windows 98/NT: Use of the USB diskette drive not possible

Note:
For further information see "Expansion components"

SIMATIC Panel PC 870

Technical specifications

Type	Panel PC 870 – centralized configuration	Panel PC 870 – distributed configuration
General features		
•Processor	Intel Pentium 4 technology, Intel Celeron 2.0 GHz, Intel Pentium 4 2.4 GHz, Intel Pentium 4 mobile 2.2 GHz	
•RAM	128 MB, 256 MB, 512 MB to 1 GB [1]	
•Free slots for expansions	2x PCI, 2x PCI/ISA shared, 1x ISA (all slots with card holder)	
•Operating system	Windows 2000 Prof. (multi-language[2]), Windows XP Prof. (multi-language[2]), optionally without operating system	
•Power supply	110 V / 230 V AC (autorange) 50/60 Hz; or 24 V DC (only with Pentium 4 mobile processor)	
•MTBF of backlighting	Typically 60,000 h (at 24 h continuous operation, depending on temperature)	
Drives		
•Hard disk	3.5" hard disk drive ≥ 40 GB, with isolation mounts against vibration	
•CD-ROM	Optional, on rear	Optional, in computing unit
•DVD/CD-R/RW	Optional, on rear	Optional, in computing unit
•Diskette drive	1.44 MB, on rear, operation from side	1.44 MB, in computing unit
Ports		
•PROFIBUS/MPI	On board, floating, max. 12 Mbit/s, no plug-in card required, CP 5611-compatible	
•Ethernet	On board, 10/100 Mbit/s, RJ45, no plug-in card required	
•USB (Universal Serial Bus)	1 on front (USB 1.1) [3], 2 on rear (USB 2.0)	Front: 1 on front [3], 1 on rear (USB 1.1), computing unit: 2x (USB 2.0)
•Serial interface	COM1: 1 x V.24 (RS232), COM2: 1 x V.24 (RS232C)	
•Parallel interface	LPT1 (EPP/ECP)	
•Keyboard, mouse	PS/2 (external keyboard); PS/2 (external mouse)	
•Graphics interface	Analog VGA, resolution in each case as on integral display	
- Graphics	Color depth 16 bits, graphics memory to 32 MB	
Monitoring functions		
•Temperature, fan and watchdog	On board	
•Status LEDs	Power, temperature (on front)	
Ambient conditions		
•Degree of protection	IP65 (front) acc. to EN60529, NEMA 4 [4]	IP65 (front) acc. to EN 60529, NEMA 4 [4], IP20 (computing unit) acc. to EN 60529
•Vibration resistance in operation	Tested to DIN IEC 68-2-6: - 10 to 58 Hz: 0.075 mm - 58 to 200 Hz: 9.8 m/s^2 (1g)	
•Shock resistance in operation	Tested to DIN IEC 68-2-29: 50 m/s^2 (5 g), 30 ms, 100 shocks	
•EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2 [5]	
•Ambient temperature in operation	+5 °C to +45 °C when fully equipped	
•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)	
Approvals	CE, cULus, UL508	
Packages	Optional with SIMATIC ProTool/Pro, SIMATIC WinCC flexible, SIMATIC WinCC	

1) Expandable up to 2 GB using accessories
2) Multilanguage comprises: E/F/G/I/SP/CHIN traditional/CHIN simplified/ Korean/Japanese
3) Touch variants available optionally without front USB interface
4) For Touch variants without front USB interface
5) 61000-6-2 replaces 50082-2, 61000-6-4 replaces 50081-2

Note for SIMATIC PC operating system licenses
The enclosed operating system license only permits installation on the supplied SIMATIC PCs. In accordance with Microsoft OEM licensing guidelines, installation is only permissible on these SIMATIC systems.

Technical specifications

Front panels	12" Touch	12" Key	15" Touch	15" Key
Design				
•Centralized configuration	No	Yes	Yes	Yes
•Distributed configuration	Yes	Yes	Yes	Yes
Display				
•Size	12.1" TFT Touch	12.1" TFT	15.1" TFT Touch	15.1" TFT
•Resolution (pixels)	800 x 600 pixels	800 x 600 pixels	1024 x 768 pixels	1024 x 768 pixels
Control elements				
•Keyboard	No	Yes	No	Yes
•Function keys	No	36 with LEDs	No	36 with LEDs
•Touch screen	Yes	No	Yes	No
•Mouse at the front	No	Yes	No	Yes
•Numeric/alphanumeric input	Yes/yes [1]	Yes/yes	Yes/yes [1]	Yes/yes
Ports				
•USB (USB 1.1)	Yes	Yes	Yes	Yes
Dimensions				
•Operator 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)
•Mounting dimensions, centralized configuration, (W x H x D, without CD-ROM) in mm	-	450 x 290 x 187	450 x 296 x 212	450 x 327 x 212
•Mounting dimensions of operator unit, distributed configuration, (W x H x D) in mm	368 x 290 x 85	450 x 290 x 69	450 x 296 x 91	450 x 327 x 91
•Mounting dimensions of computing unit, distributed configuration, (W x H x D) in mm	376 x 335 x 189	376 x 335 x 189	376 x 335 x 189	376 x 335 x 189
•Additional mounting depth (versions with CD-ROM)	+25 mm	+25 mm	+25 mm	+25 mm
Weight				
•Panel PCs in centralized configuration	-	Approx. 16 kg	Approx. 17 kg	Approx. 17 kg
•Operator unit in distributed configuration	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg
•Processor unit in distributed configuration	Approx. 11.5 kg	Approx. 11.5 kg	Approx. 11.5 kg	Approx. 11.5 kg
Expansion components	Uninterruptible power supply (UPS), SIMATIC NET communications modules, 3.5" USB diskette drive, SIMATIC PC/PG Image & Partition Creator, SIMATIC PC DiagMonitor			
Accessories	Touch protection foil	Keyboard slide-in strips, direct control key module	Touch protection foil	Keyboard slide-in strips, direct control key module

1) Using virtual keyboard

SIMATIC Panel PC 870

Ordering data

Panel PC configurator (contract-based production and delivery)

	Order No.
SIMATIC Panel PC 870 V2	**6AV7 7■■-■■■■■-■A■0**
Design:	
•Centralized configuration	4
•Distributed configuration	5
Front panels:	
•12" TFT Touch	2
•12" TFT Key	3
•15" TFT Touch	4
•15" TFT Key	5
•12" TFT Touch without front USB interface	6
•15" TFT Touch without front USB interface	7
RAM:	
•128 MB SDRAM 2)	1
•256 MB SDRAM	2
•512 MB SDRAM	3
•1 GB SDRAM	4
CPU	
•Celeron 2.0 GHz	A
•Intel Pentium 4 2.4 GHz	B
•Intel Pentium 4 mobile 2.2 GHz	C
Country-specific design/ power supply:	
•Computing and operator unit 24 V DC	A
•Computing and operator unit 110 V/230 V US	B
•Computing and operator unit 110 V/230 V Europe	C
•Computing unit 110 V/230 V US, operator unit 24 V DC	D
•Computing unit 110 V/230 V Europe, operator unit 24 V DC	E
•Computing unit 24 V DC, operator unit 110 V/230 V US	F
•Computing unit 24 V DC, operator unit 110 V/230 V Europe	G
Drives:	
•40 GB hard disk	0
•80 GB hard disk	2
•2 x 40 GB (2.5")	5
•RAID1, 2 x 40 GB (2.5"), (1 PCI less)	6
Distance betw. computing unit and operator unit/cable length:	
•0 m (centralized design)	0
•2 m	1
•5 m	2
•10 m	3
•20 m	4
Optical drives	
•Without optical drive 2)	0
•CD-ROM	1
•CD-R/RW/DVD (combined)	2
Operating system:	
•Without operating system	A
•Windows 2000 Professional multi-language	D
•Windows XP Professional multi-language	E

1) For Windows 2000 and XP

	Order No.
Expansion components	
SIMATIC PC/PG Image & Partition Creator A) Software tool for data saving and hard disk partitioning for SIMATIC PCs, incl. manual on CD-ROM (Ger/Eng/Fr/Sp/It)	**6ES7 648-6AA02-0YX0**
SIMATIC PC/PG DiagMonitor V1.0 A) Software tool for monitoring SIMATIC PCs, incl. manual, on CD-ROM (German/English)	**6ES7 648-6CA01-0YX0**
SB 3.5" diskette drive with 1 m cable 1) C)	**6FC5 235-0AA05-1AA2**
Front cover for USB diskette drive, with frame, cover and bearing block	**6FC5 247-0AA20-0AA0**
Uninterruptible power supplies	
SITOP power, DC UPS module 15 A 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 931-2EC31**
SITOP power, battery module 24 V/3.2 Ah for DC UPS module 15 A	**6EP1 935-6MD11**
Communications components	
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet	**6GK1 161-3AA00**
CP 5613 A2 B) PCI card (32 bit) for connecting a PC to PROFIBUS	**6GK1 561-3AA01**
Accessories	
Memory expansion C)	
•128 MB	**6ES7 648-2AD10-0EA0**
•256 MB	**6ES7 648-2AD20-0EA0**
•512 MB	**6ES7 648-2AD30-0EA0**
•1 GB	**6ES7 648-2AD40-0EA0**
Direct key module for Panel PC 670/870 C)	**6AV7 671-7DA00-0AA0**
Option package for direct key module •Transfer module for interface connection to 16 I/Os	**6ES7 648-0AA00-0XA0**
Protective foil for Panel PC 670/870 to protect the Touch front against fouling/scratching (set of 10)	
•for 12" Touch	**6AV7 671-2BA00-0AA0**
•for 15" Touch	**6AV7 671-4BA00-0AA0**
Key labeling strips for PC 670/870 Panel for labeling of softkeys and function keys, without labeling, set of 3 (plastic), for	
•12" panel	**6AV7 671-3CA00-0AA0**
•15" panel	**6AV7 671-5CA00-0AA0**

2) Not recommended for applications with WinCC / WinCC flexible

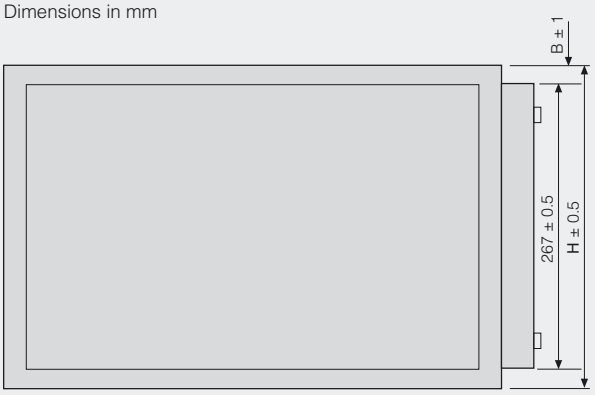
A) Subject to export regulations AL: N and ECCN: EAR99S

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

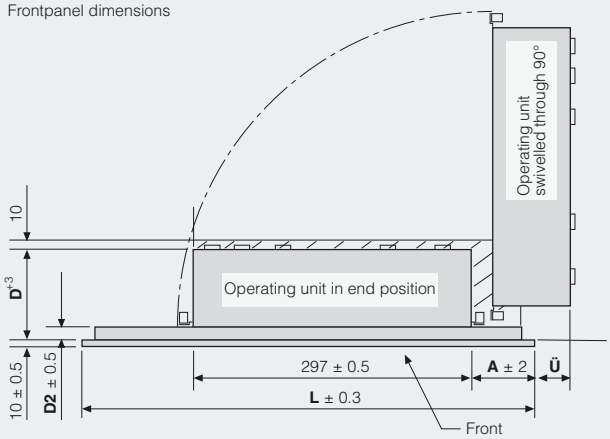
C) Subject to export regulations AL: N and ECCN: EAR99H

Dimension drawings

Dimensions in mm



Frontpanel dimensions



All dimensions exclude screw projections

Operating units PC 870 V2	L	H	D [1]	D2	A	B	Ü
(a) with key fronts:							
12.1"-TFT	483	310	187	60	50	12	143
15.1"-TFT	483	355	212	60	50	20	143
(b) with touch screen fronts:							
15.1"-TFT	483	310	212	60	50	12	143

1) with CD-ROM

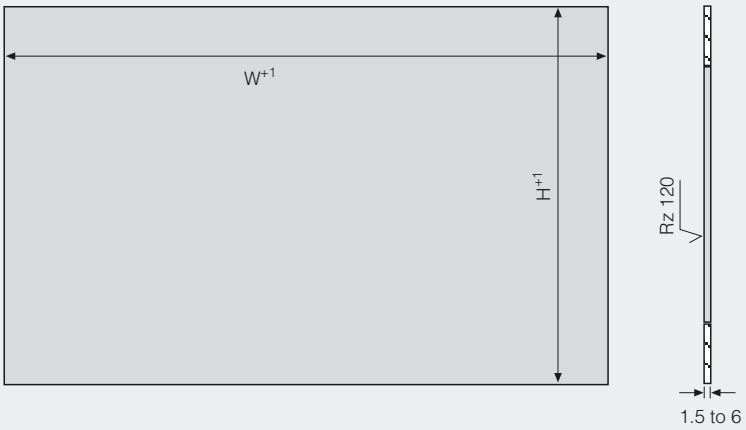
G_ST80_XX_00038

Centralized configuration of operator unit

SIMATIC Panel PC 870

Dimensional Drawings (continued)

Dimensions in mm



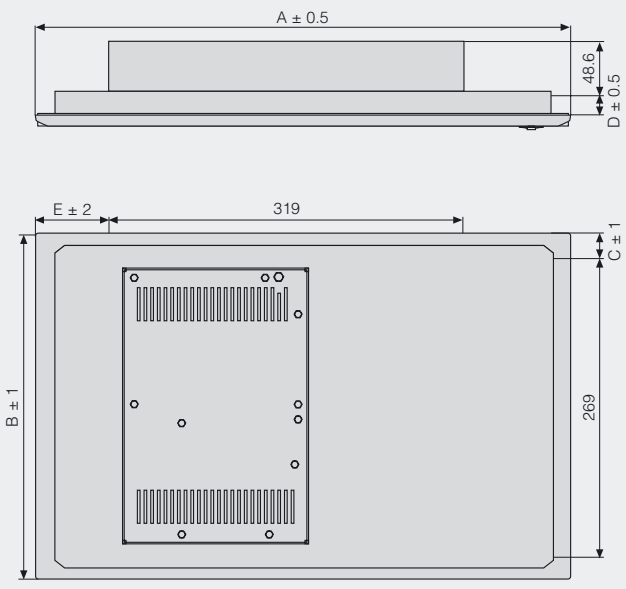
Operating units PC 870	W	H
(a) with key fronts:		
12.1"-TFT	450	296
15.1"-TFT	450	327
(b) with touch screen fronts:		
15.1"-TFT	450	296

G_ST80_XX_00037

Panel cutout for standard unit (W x H x D) in mm (without CD-ROM)

Cutout for installation

Dimensions in mm



Dim.	12"	12" Touch	15"	15" Touch
A	483	400	483	483
B	310	310	355	310
C	21	23	23	29
D	20	36	42	42
E	68	58	87	80

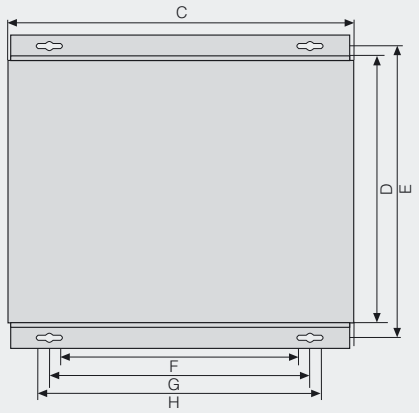
G_ST80_XX_00034

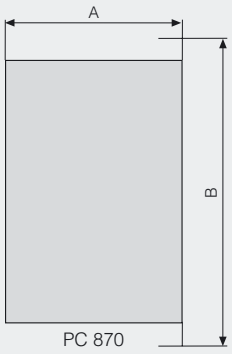
All dimensions exclude screw projections

Distributed configuration of operator unit

Dimensional Drawings (continued)

Dimensions in mm





Dim.	W	H
A	189	–
B	–	334.6
C	376	–
D	–	290.1
E	–	317.9
F	259	–
G	280	–
H	301	–

G_ST80_XX_00040

Distributed configuration of computing unit

More information

Additional information can be found in the Internet under

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

SIMATIC PC DiagMonitor

Overview

Measuring the temperature inside the casing at various measuring points

The monitoring and remote signaling software SIMATIC PC DiagMonitor detects possible faults in the hardware and software early.

It can be used with the SIMATIC Box PC 620/840, Rack PC 840 and Panel PC 670/870 and can be ordered directly using the PC configurator or as a separate product.

Function

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

It monitors

- The temperature of the processor and inside the casing
- The fan
- The system state by means of "watchdog" and "heartbeat"
- The function of the hard disk or RAID1

It signals

- The operating hours for managing service intervals
- Every alarm and logs it in a list
- Overshoot/undershoot of the permissible operating temperature
- Program interruption after th e watchdog timer has elapsed
- Hard disk problems by evaluating the diagnostic bytes

It communicates

- Locally with the OPC client
- Locally through DLL or SN MP with a central server
- Remote over the LAN, e-mail, SMS
- Through diagnostic LEDs on the device itself

It reacts in the event of an alarm

- By starting customer applications
- By executing a "Reset"
- With the simple integration or activation of PC tools

It logs

- By automatic recording in a log file

System requirements:

Executable under Windows 98, Windows NT WS, Windows 2000/XP Professional

Licensing: Single license

Ordering data	Order No.
SIMATIC PC DiagMonitor V 1.1 A) Software tool for monitoring the SIMATIC PC, incl. manual on CD ROM (German, English)	**6ES7 648-6CA01-0YX0**

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

Overview

SIMATIC PC/PG Image Creator is the software tool for easy and fast backup and restoring of the contents of a hard disk (images of individual partitions or complete hard disks). This software can be ordered using the configurator for the SIMATIC PCs.

SIMATIC PC/PG Image & Partition Creator as a single product contains, in addition to the SIMATIC PC/PG Image Creator, the additional SIMATIC PC/PG Partition Creator software tool which enables subsequent modification of the hard disk partitions without loss of data.

Ordering data

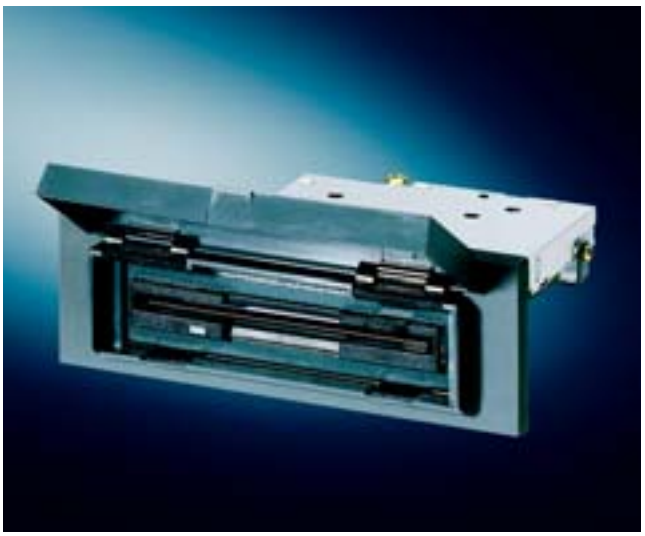
Ordering data	Order No.
SIMATIC PC/PG Image Creator A) V1.1 Software tool for preventative data backup for SIMATIC PCs, incl. manual on CD-ROM (German, English, French, Spanish, Italian)	Can be ordered via the SIMATIC PC configurator
SIMATIC PC/PG Image & Partition Creator A) V1.1 Software tools for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

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

3

3.5" disk drive, USB 1.1

Overview



The 3.5" disk drive is suitable for archiving user data and can be installed in front panels. It is connected via a USB 1.1 interface.

Function

The 3.5" disk drive is envisaged for transfer of user data. Installation in front panels makes it possible to transfer data without opening the control cabinet door. You can use normal density (720 KB) and high density (1.2/1.44 MB) 3.5" disks to store user data.

Integration

The 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
- SIMATIC Panel PC 670/870/I L 70 with Windows 2000/XP

Technical specifications

SINUMERIK 3.5" disk drive, USB 1.1	
Power consumption, max.	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 (32 °F).
Permissible ambient temperature	
•Storage and transport	-20 ..+60 °C (-4 ..+140 °F)
•Operation	+4 ..+50 °C (39 ..122 °F)
Max. distance to PCU	5 m (16 ft 5 in)
Weight, approx.	0.32 kg (0.71 lb)
Dimensions (W x H x D)	145 mm x 50 mm x 161 mm (5.71 in x 1.97 in x 6.34 in)

Ordering data

	Order No.
SINUMERIK 3.5" disk drive, USB 1.1 A) incl. connecting cable Length: 1 m (3.28 ft)	**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 disk drive is compatible with the Windows 2000/XP operating systems. The drivers required for the disk drive are already included in the scope of supply of the operating systems.

Note for SINUMERIK PCU 50/PCU 70

Operation of the USB disk drive requires a PCU 50/PCU 70 (566 MHz, 1.2 GHz) with BIOS V02.03.07 and Windows NT4.0 V07.03.03 or Windows XP V07.03.02.01 operating system.

HMI Software

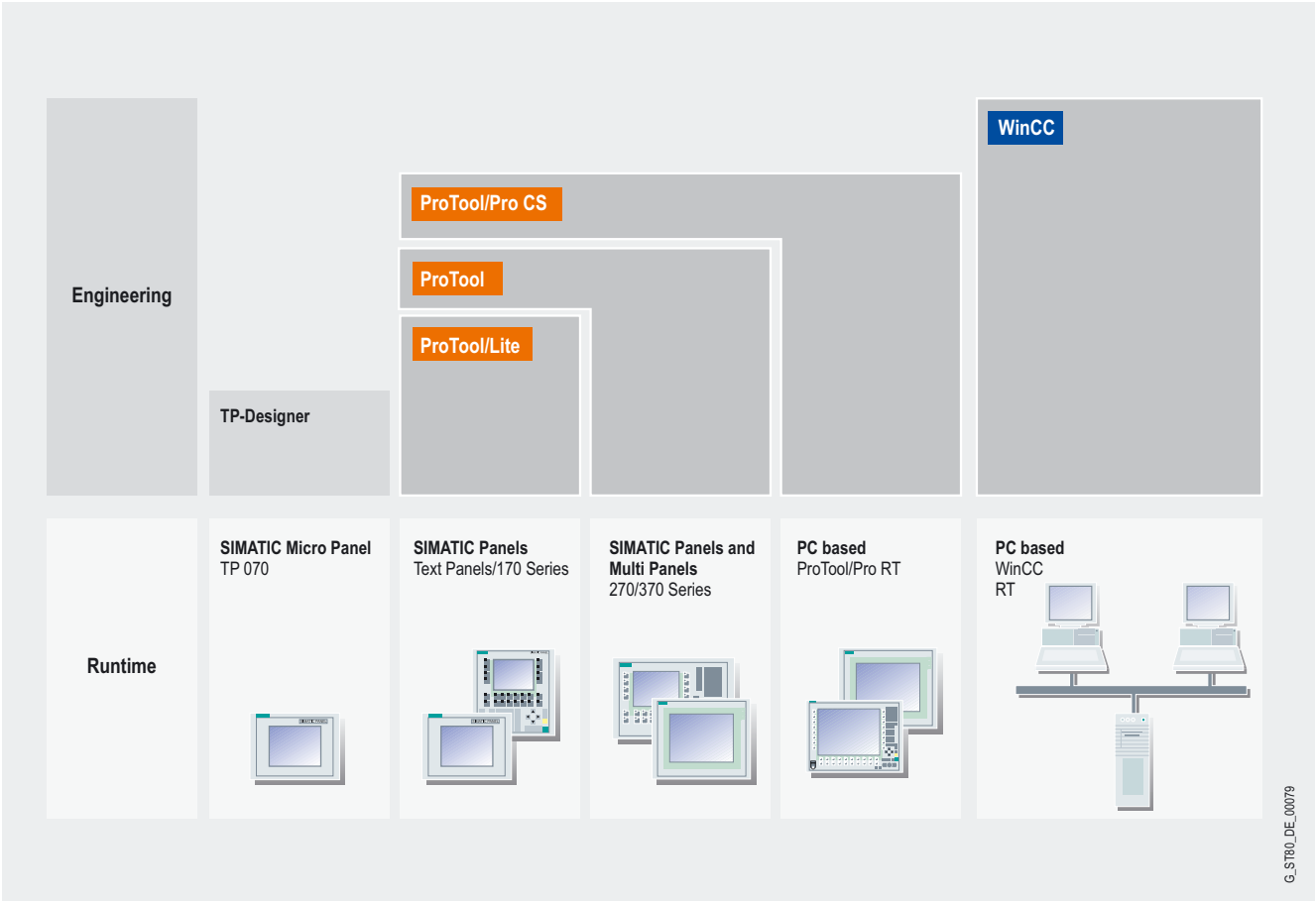
4

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 configuring ProTool/Pro Runtime for the PC as well as the SIMATIC HMI operator panels, the ProTool family offers the system-wide, scaleable configuring tools ProTool/Lite, ProTool and ProTool/Pro CS.
- SIMATIC WinCC
  is the **process visualization or SCADA system** (PC-based HMI system) for visualizing and operating 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).

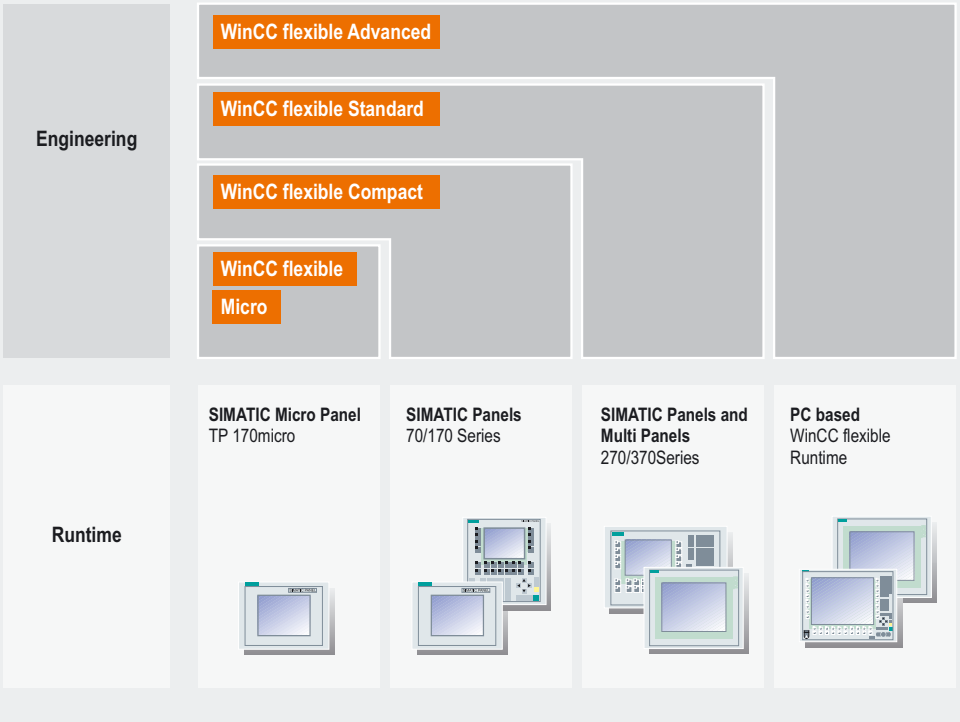


Overview (continued)

SIMATIC WinCC flexible

is the logical development of the SIMATIC HMI software products. For applications directly at the machine (previously covered by the ProTool family), WinCC flexible provides a significant leap forward in configuring efficiency as well as new, innovative automation concepts. In process-oriented plant and machine engineering, SIMATIC WinCC flexible 2004 also supports:

- Further increases in productivity (configuring efficiency) when generating HMI projects
- Implementation of innovative, TCP/IP and Web-based automation and HMI concepts
- Increased availability of machines and plants thanks to new service concepts
- Secure, flexible and worldwide access to process data
- New SIMATIC HMI operator panels



It is easy to change over from the ProTool family to WinCC flexible by loading or converting the configuration data. The ProTool family will, however, continue to be available alongside WinCC flexible for the foreseeable future.

SIMATIC WinCC remains the process visualization system for plant monitoring with single-user and multi-user solutions and the platform for IT & business integration under Windows 2000 and XP Professional.

In a further step, WinCC flexible will also become the platform for integration of the visualization system SIMATIC WinCC. Then, compatible transfer of WinCC V6 projects will be possible in the same way as is possible today for ProTool V6 projects.

Introduction

Overview (continued)

SIMATIC ProTool configuration software

- The integrated family of conf iguring 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 Mobile Panel 170
  - SIMATIC Panels of the 170/270 series, as well as C7-635
  - 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 sing le-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 configuring systems with WinCC flexible Micro/Compact/Standard/Advanced for SIMATIC operator panels, the HMI part of SIMATIC C7 as well as the PC-based visualization software WinCC flexible RT
  - SIMATIC Micro Panels
  - SIMATIC Panels of the 70/170/270 series as well as C7-635 and C7-636 (keys)
  - SIMATIC Multi Panels of the 270/370 series
  - SIMATIC WinCC flexible RT
- For Windows 2000/XP Professional
- Expanded integration into Totall y Integrated Automation (TIA): STEP 7, SIMOTION, Component based Automation (CBA)
- Maximum configuring efficiency thanks to preconfigured objects, modular system, intelligent tools and mass data processing
- Optionally expandable with func tions for version administration and logging changes (WinCC flexible/ChangeControl)

SIMATIC WinCC flexible RT visualization software

- Modular PC-based HMI solu tion for single-user systems directly at the machine (further development of ProTool/Pro RT)
- For Windows 2000/XP Professional
- Basic package for visualizing, signaling and logging as cost-effective first-time user solution; expandable with selected option packages
- Flexible expansion with VB scripts and customized ActiveX controls (Open Platform Program)
- Can be integrated into innova tive 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)

SIMATIC WinCC SCADA system

- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and systems in all sectors - from the simple single-user station through to distributed multi-user systems with redundant servers and cross-location solutions with Web clients. WinCC is the information hub for company-wide vertical integration (process visualization and platform for IT & business integration).
- For universal use thanks to solu tions 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 co mpany 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 the engineering outlay, reduces the lifecycle costs

Overview

	SIMATIC ProTool/Pro RT	SIMATIC WinCC flexible RT	SIMATIC WinCC
Application areas	HMI software designed for applications in (series) machine building on the factory floor	HMI software designed for applications in (series) machine building on the factory floor	SCADA software for operator control and monitoring of simple to 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 using e-mail, remote operation, monitoring and administration over the 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 functions Processing of large volumes of data
Strategies	Integrated solution concept from operator panels through to PC-based operator control stations based on ProTool/Pro Runtime	Integrated solution concept from operator panels through to PC-based operator control stations based on WinCC flexible Runtime	High-quality SCADA functionality and integration platform for ERP/MES solutions based on the integrated Historian functionality (IT & business integration)
Configuration	A compatible family of configuring tools supports integrated solutions Fast configuration due to preconfigured objects	A compatible family of configuring tools supports integrated solutions Fast configuration due to preconfigured objects and variable blocks that can be cross-referenced Tabular editors for efficient mass data processing Intelligent tools for easy configuration of complex plants, e.g. menus, automatic compilation	Flexibility through customized dynamic sampling possibilities Object library and building block system (including referencing) Efficient configuring of mass data using configuring tool Easy configuration of I&C applications; text library for the signaling system Online loading of changes in active projects
Functional scope	HMI functional scope matched to the machine application Expansion of standard functions can be quickly and easily implemented using VB scripts Inching mode is possible	HMI basic functionality expandable with option packages Expansion of standard functions can be quickly and easily implemented using VB scripts Inching mode is possible	High-quality, comprehensive SCADA functionality Expansion of standard functions can be quickly and easily implemented using VB scripts and C scripts Integral component of the PCS 7 process control system
Openness and expansion capability	Customized solutions based on ActiveX controls are possible	Customized solutions based on ActiveX controls are possible (Open Platform Program) Access using VB scripts to runtime display objects	Expandable using open Windows interfaces for integration in a factory-wide or 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 diagnosis software

- Process diagnosis software for fast, targeted fault diagnosis in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for different 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 the engineering outlay, reduces the lifecycle costs
- With ProAgent,
  - plant and machine personnel are optimally supported with troubleshooting and fault rectification,
  - plant availability is increased and
  - downtimes are reduced
- No further configuration overhead for diagnostics functionality
- Frees up PLC capacity with re gard 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

- Standard **configuration software** for SIMATIC Operator Panels and for the HMI part of the 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 b een 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 struct ured storage of reusable graphics objects
- Complete simulation of the proj ect 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 dependent on the device type used.

- Efficient configuring with shor t familiarization time thanks to:
  - Standard operating mechanisms of Windows
  - Validity checks
  - Integral online help with direct assistance
  - Copying from one project to another
  - Replacing project parts
  - etc.
- Process visualization with Windows-compatible user interface with predefined graphics objects, such as:
  - Numerical display
  - Comprehensive HMI symbol library
  - Text display, bar graphs, trend curve graphics with browse and zoom function and read line
  - Animated graphics from the HMI symbol library
  - Signal-dependent text and graphics lists
  - Switches, buttons and selection fields for texts and graphics as an example for process operation
  - Editing fields for process values (signals)
  - Analog indication and sliders as examples of further graphics objects
- Alarms and messages
  - System messages, status messages, fault messages
  - Bit signaling system, Alarm S (SIMATIC S7)
- Message and process value archiving
- Logging using the report editor for time-based and event-based project documentation
- Recipes
  - Creation of data records via a configurable picture object or via process images when distributed within the project
  - Transmission of data records from or to the PLC
  - Import/export of data records
  - Access protection with passwords
- Flexibility thanks to Visual Basic script and OLE automation
- Library for predefined or for user-generated display elements
- DP direct keys
  If keys or buttons in the panels and multi panels are configured as DP direct keys, they are transferred to the SIMATIC S7 as I/O peripherals over PROFIBUS DP. This permits time-critical operations with extremely short response times.
- Function expansions for mult ifunctional platforms (MP 270B 10“/MP 370)
  - Optional installation of MS Pocket Internet Explorer (included in the ProTool package)
  - Optional installation of Soft PLC SIMATIC WinAC MP (MP 370 12“)
  - Optional installation of ThinClient software SIMATIC ThinClient/MP
- Integration of ProTool in STEP 7
  - Shared use of STEP 7 data such as variable names, symbol lists, communications parameters and signaling system
  - Management and handling of ProTool or ProTool/Lite projects using SIMATIC Manager within STEP 7 projects
  - Automatic synchronization with the STEP 7 symbol list: References are retained in STEP 7 even if a PLC is replaced or they are resynchronized by means of automatic functions

Function

- Complete simulation of ProTool configuration (Windows CE-based systems);
  a complete configuration can be quickly and easily simulated on the configuration computer: The complete HMI target system is presented on the configuration computer. Using the mouse, e.g. the softkeys or function keys of the device are easily operated. Simulation of the PLC hardware and animation of the variables can be implemented with the SIMATIC engineering tool S7-PLCSIM instead of the ProTool simulator.
- Connection of ProTool to STEP 7 Lite
- Integration of ProTool in th e engineering tool SIMOTION SCOUT
- Import/ export of all project texts (fixed text, text lists, messages, information text, etc.) for easy translation of the HMI projects using standard text editors
- Conversion of projects wi th different resolutions
  Conversion of a project for another HMI system is possible in just a few steps even when the display resolution is higher or lower (e.g. from OP37 10“ to MP 370 12“). All contents of the display are automatically "zoomed" to the new resolution. The function comprises all the graphical devices configured in ProTool.
- Conversion of OP27/37 and TP27/37 projects for Windows CE-based devices
  Conversion is easy using the instruction manual "Configuration support for new users"
- Downloading projects
  onto SIMATIC operator panels (dependent on the hardware interface)
  - Serial
  - MPI, PROFIBUS DP
  - Ethernet, USB
  - Analog/ISDN (Teleservice, modem line)

Service tool ProSave V6.0 + SP2

- Service tool under Windows for panels and multi panels
- Linking over serial, MPI, Ethernet, USB interface
- Can be used autonomously or integrated into ProTool
- Language selection, with ni ne languages including Asian ideographic languages

Can be used for

- Backup/restoring
- Additionally with the Windows CE-based devices: installation of options, license transfer and operating system update

Can be used with the following operator panels:

- Line devices: TD17, OP7, OP17, C7-633, C7-634
- Graphics devices: OP27, TP27, OP37, TP37
- Windows CE-based devices: TP 070, TP 170A, TP 170B, OP 170B, Mobile Panel 170, OP 270, TP 270, C7-635 Touch, C7-635 Key, MP 270, MP 270B 10“, MP 370

Einsetzbar bei folgenden Bediengeräen:

- Zeilengeräe: TD17, OP 7, OP17, C7-633, C7-634
- Grafikgeräe: OP27, TP27, OP37, TP37
- Windows CE-basierte Geräe: TP 070, TP 170A, TP 170B, OP 170B, Mobile Panel 170, OP 270, TP 270, C7-635 Touch, C7-635 Tasten, MP 270, MP 270B 10“, MP 370

System requirements

Operating system	
•Minimum	Windows 98 SE, Windows ME
•Recommended	Windows NT 4.0 SP 6a, Windows 2000 SP3, Windows XP Professional, for multi-language 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 accelerated hardware
Resolution	
•Minimum	800 x 600 [1]
•Recommended	800 x 600
RAM [2]	
•Minimum	64 MB
•Recommended	≥ 128 MB
Hard disk (free memory)	≥ 300 MB for ProTool + 40 MB for each additional language
CD-ROM	For software installation

1) ProTool/Lite also 640 x 480
2) The required RAM is determined in particular by the size of the graphics used.

Options

SIMATIC ProAgent

- 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 fo r diagnostics functionality
- Frees up PLC capacity with re gard to memory and program execution time

Note:
For further details, see "SIMATIC ProAgent process diagnostics software

4

SIMATIC ProTool/Lite and SIMATIC ProTool

Integration

The following can be configured with

SIMATIC ProTool/Lite:

- Text panels
  - TD17 Text Display
  - OP3, OP7 and OP17 Operator Panels
- Panels of the 170 series
  - TP 170A and TP 170B Touch Panels
  - OP 170B Operator Panels
  - 170 Mobile Panels
- HMI part of the SIMATIC C7 control systems
  - C7-621, -623, -624, -633, -634, -635

SIMATIC ProTool:

- Text panels
  - TD17 Text Display
  - OP3, OP7 and OP17 Operator Panels
- Panels of the 170 series
  - TP 170A and TP 170B Touch Panels
  - OP 170B Operator Panels
  - 170 Mobile Panels
- Panels of the 270 series
  - OP27 Operator Panel
  - TP27 Touch Panel
  - OP 270 Operator Panels
  - TP 270 Touch Panels
- Multi Panels of the 270 and 370 series
  - MP 270B (10"), MP 370
- HMI part of the SIMATIC C7 control systems
  - C7-621, -623, -624, -626, -633, -634, -635

Note:
For information on communication, see "Operator control and monitoring units/system coupling"

Ordering data

Ordering data	Order No.
Configuration software SIMATIC ProTool V6.0 + SP2 including ProAgent V6.0 + SP3 1) A) (ProAgent for OP; ProAgent/MP), language versions: G/E/F/I/S, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	**6AV6 581-3BX06-0DX0**
Configuration software SIMATIC ProTool/Lite V6.0 + SP3 A) Language variants: G/E/F/I/S, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	**6AV6 580-3BX06-0DX0**
Standard function blocks V3.32 for SIMATIC S5 for linking TD17, OP7, OP17, OP27, OP37, TP27, TP37; executes on SIMATIC S5-90U to 155U, on 3.5" diskettes (MS-DOS)	**6AV3 980-1AA21-0AX0**
Software update service	
• SIMATIC ProTool 2) A)	**6AV6 581-3AX00-0AX2**
• SIMATIC ProTool/Lite 2) A)	**6AV6 580-3AX00-0AX2**
Powerpack	
• ProTool/Lite to ProTool V6.0 + SP3 A)	**6AV6 571-3AB06-0DX0**
Upgrade	
• ProTool/Lite to ProTool/Lite V6.0 + SP3 A)	**6AV6 580-3BX06-0DX4**
• ProTool to ProTool V6.0 + SP3 A)	**6AV6 581-3BX06-0DX4**

1) Runtime licenses for ProAgent must be ordered separately

2) For a period of 12 months the customer automatically receives all upgrades and service packs for a fixed price per installed ProTool or ProTool/Lite package. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

A) Subject to export regulations AL: N und ECCN: EAR99S

Ordering data (continued)

	Order No.
Documentation	
ProTool user manual, 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, configuring graphic displays	
•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, 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 manual	
Description of TD/OP/TP connection 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 manual	
Description of connection of 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 A)	**6AV6 691-1SA01-0AX0**
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	

A) Subject to export regulations AL: N und ECCN: EAR99S

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

4

SIMATIC ProTool/Pro visualization software

SIMATIC ProTool/Pro

Overview

- **PC-based HMI solution** for single-user systems direct at the machine
- SIMATIC ProTool/Pro consists of:
  - SIMATIC ProTool/Pro RT runtime software for PC-based systems
  - Configuring software SIMATIC ProTool/Pro Configuration (CS) for configuring PC-based systems as well as SIMATIC Operator Panels
- For 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 Pr oTool/Pro Configuration (CS) for configuring PC-based systems as well as SIMATIC Operator Panels
- SIMATIC ProTool/Pro RT runt ime 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 configuring with shor t familiarization time thanks to:
  - Standard operating mechanisms of Windows
  - Validity checks
  - Integral online help with direct assistance
  - Copying from one project to another
  - Replacing project parts
  - etc.
- Process visualization with Windows-compatible user interface with predefined graphics objects, such as:
  - Numerical display
  - Comprehensive HMI symbol library
  - Text display, bar graphs, trend curve graphics with browse and zoom function and read line
  - Animated graphics from the HMI symbol library
  - Signal-dependent text and graphics lists
  - Switches, buttons and selection fields for texts and graphics as an example for process operation
  - Editing fields for process values (signals)
  - Analog indication and sliders as examples of further graphics objects
- Alarms and messages
  - System messages, status messages, fault messages
  - Bit signaling system, Alarm S (SIMATIC S7)
- Message and process value archiving
  - Different archive types
  - Online evaluation of process value archives through trend curve graphics
  - External evaluation using MS standard tools
  - Archiving in CSV files or ODBC databases
- Logging with the report editor for time-driven and event-driven project documentation with freely-designable layout
- Recipes
  - Creation of data records via a configurable graphics object or via process images when distributed within the project
  - Transmission of data records from or to the PLC
  - Import/export of data records
  - Access protection with passwords
- Flexibility thanks to Visual Basic script and OLE automation
- Library for predefined or for user-generated display elements

Function

- Online connection through teleservice (analog/ISDN, ProTool/Pro RT)
- OPC (client/server)
- Integration of ProTool/Pro Configuration in STEP 7
  - Shared use of STEP 7 data such as variable names, symbol lists, communications parameters and signaling system
  - Administration and handling of the ProTool/Pro projects using SIMATIC Manager within STEP 7 projects
  - Automatic synchronization with the STEP 7 symbol list: References are retained in STEP 7 even if a PLC is replaced or they are resynchronized by means of automatic functions
  - Supports the SIMATIC PC station
- Complete simulation of the ProTool/Pro configuration (Windows CE-based systems);
  A complete configuration can be quickly and easily simulated on the configuration computer: The complete HMI target system is displayed on the configuration computer. Using the mouse, the softkeys or function keys of the device are easily operated. Simulation of the PLC hardware and animation of the variables can also be implemented with the SIMATIC engineering tool S7-PLCSIM instead of the ProTool simulator.
- Interfacing ProTool/Pro C onfiguration to STEP 7 Lite
- Integration of ProTool/Pro Conf iguration in the engineering tool SIMOTION SCOUT
- Import/ export of all project texts (fixed text, text lists, messages, information text, etc.) for easy translation of the HMI projects using standard text editors
- Conversion of OP27/37 and TP27/37 projects for Windows CE-based devices;
  for easy conversion refer to the instruction manual "Configuration support for new users".
- Downloading projects:
  to SIMATIC operator panels and all PC systems based on ProTool/Pro Runtime (dependent on the available device interface)
  - Serial
  - MPI, PROFIBUS DP
  - Ethernet, USB
  - Analog/ISDN (Teleservice, modem line)

Service tool ProSave V6.0 + SP2

- Service tool under Windows for panels and multi panels
- Linking over serial, MPI, Ethernet, USB interface
- Integrated in ProTool/Pro and can also be used stand-alone
- Language selection, with ni ne languages including Asian ideographic languages

Can be used for:

- Backup/restoring

Additionally with the Windows CE-based devices:

- Installation of options
- License transfer
- Operating system update

Can be used with the following operator panels:

- Line devices: TD17, OP7, OP17, C7-633, C7-634
- Graphics devices: OP27, TP27, OP37, TP37
- Windows CE-based devices: TP070, TP 170A, TP 170B, OP 170B, Mobile Panel 170, OP 270, TP 270, C7-635 TP, C7-635 OP, MP 270, MP 270B 10", MP 370

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 multi-language 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 accelerated hardware	SVGA with accelerated hardware
Resolution		
•Minimum	640 x 480	800 x 600
•Recommended	800 x 600	
RAM 1)		
•Minimum	64 MB	
•Recommended	≥ 128 MB	
Hard disk (free memory) 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) The required RAM is determined in particular by the size of the graphics used.
2) Without taking archives into account.
In addition to ProTool, Windows also makes demands on the free hard disk space; e.g. free memory space must be allowed for the swap file.
The following formula is recommended:
Size of swap file = 3 x size of RAM.
For further information, please refer to your Windows documentation.
3) For 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 acquisition and control unit for machine data, permitting comprehensive evaluations and analyses to be carried out directly on site.

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 details, see "SIMATIC ProTool/Pro options"

SIMATIC ProAgent

- Targeted and rapid process faul t 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 re gard to memory and program execution time

Note:
For further details, see "SIMATIC ProAgent process diagnostics software"

SIMATIC ProTool/Pro

Integration

SIMATIC ProTool/Pro Configuration (CS) can be used to configure:

- 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 SI MATIC C7 control system
  - C7-621, C7-623, C7-624, C7-626, C7-633, C7-634, C7-635
- SIMATIC Panel PC 670/870/IL 70 and other PC-based systems (Touch/Key)

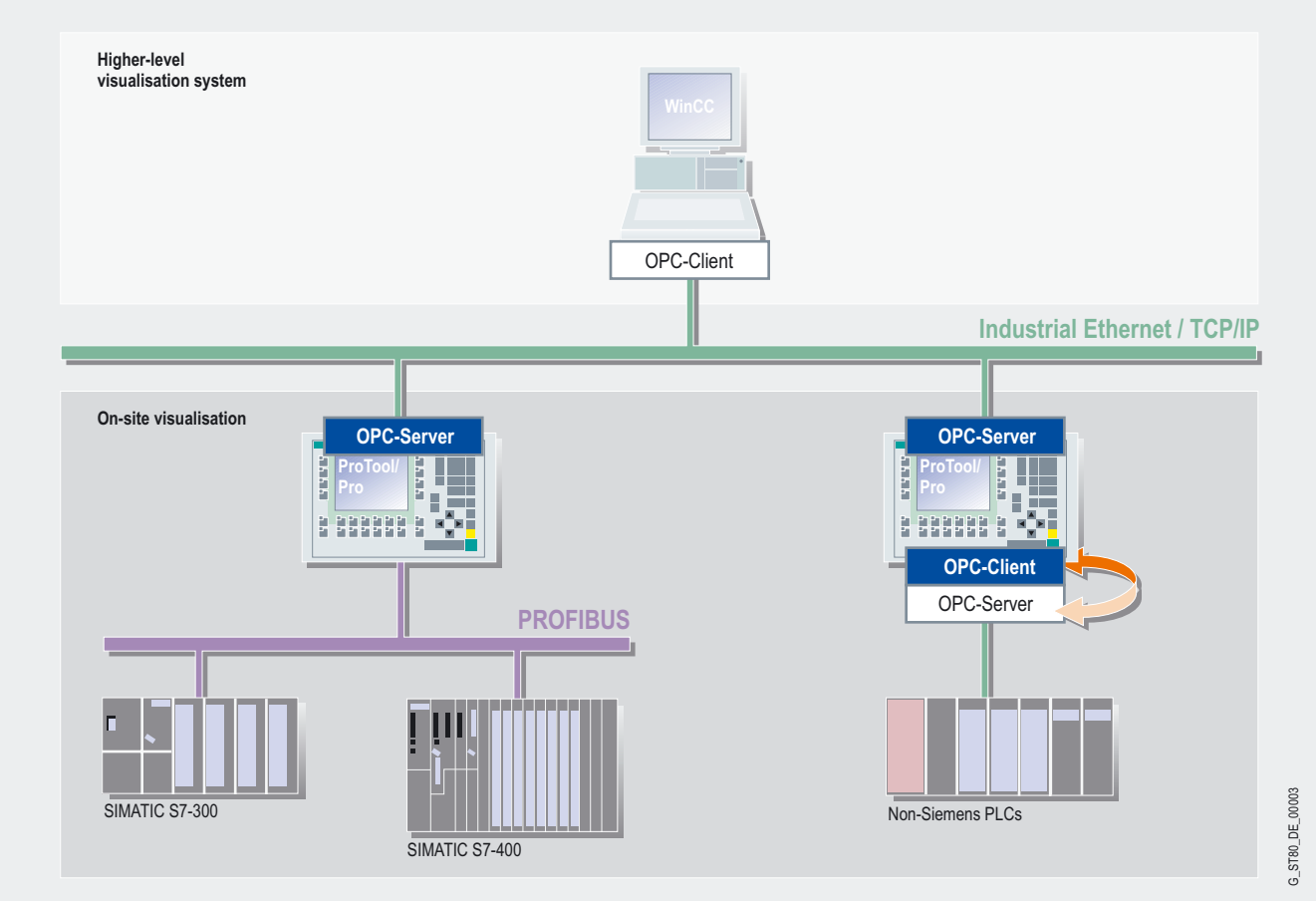
SIMATIC ProTool/Pro Runtime supports linking to:

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 [8] 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 [9][10] CP 1612 [9][10] CP 1613 [11]
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 [12]	
SINUMERIK [13]	
Non-Siemens PLCs	
Allen Bradley (DF1/DH485) [14]	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) [15]	COM1/COM2
Telemecanique (Uni-Telway)	RS 485-Interface Board [7]
OPC (client + server)	
Data Access V2.0 + V1.1	CP 1512 [9] CP 1612 [9]

1) ProTool/Pro RT is a passive station (DP slave); the function block required for interfacing is included in the scope of supply 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) Constraints with regard to baud rate for S7-200; see Catalog ST 70
5) ProTool/Pro RT is an active station; communication with S7 functions
6) ProTool/Pro RT is a passive station (DP slave). The Application Ladder required for interfacing is included in the scope of supply of ProTool/Pro
7) See ProTool online Help
8) Only point-to-point to S7-300/-400;
no configuration download; operating systems: Windows 98/ME/2000/XP;
Order No. 6ES7 972-0CA23-0XA0
9) For Panel PC 670/870 via internal Ethernet interface
10) Additionally 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)
11) Additionally required: S7-1613/Windows V6.2 (6GK1 716-1CB62-3AA0)
12) For further information, see Catalog PM 10
13) "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60
14) DH485 interface only for Windows NT4.0/2000/XP operating systems
15) OMRON interface only for Windows NT4.0/2000/XP operating systems

Note:
For further information, see "Operator control and monitoring units/system coupling"

Integration



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
•Message buffer size	1024
•Pending message events	500
Archives (number)	100
•Archivable data	Process values (max. 100), messages
•Max. number of entries per archive (incl. sequential archive)	500,000
•Archive types	Short-term archives, sequential archives (max. 40 per archive)
•Data storage format	CSV (**C**omma **S**eparated **V**ariable) and interfacing to ODBC database (database not included in scope of supply)
Recipes	1000
•Entries per recipe	2000 3)
•Data records	5000 2)
Diagrams	300
•Fields per diagram	400
•Variables per diagram	400
•Static text	30,000
•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	3,500
Variables	2048 3)

Type	SIMATIC ProTool/Pro Runtime
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 partners, max.	ProTool/Pro permits up to 8 connections, depending on the scope of configuration (communication)
SIMATIC S7 PPI interface	
•Number of connectable partners, max.	1 for ProTool/Pro
SIMATIC S5 loop-through arrangement	No
SIMATIC S5 PROFIBUS DP interface,	
•Number of connectable partners, max.	1 for ProTool/Pro

1) Only 500 text and graphics lists in total
2) Depends on the storage medium used
3) Depends on the number of licensed PowerTags

Ordering data	Order No.
SIMATIC ProTool/Pro Configuration V6.0 + SP3 incl. ProAgent V6.0 + SP3 A) 3) Language versions: G/E/F/I/S 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 German, English, French, Spanish, Italian	**6AV6 582-2BX06-0DX0**
SIMATIC ProTool/Pro Runtime V6.0 + SP3 for PC systems incl. ProAgent V6.0 + SP3 A) 3) on CD-ROM with license (single license) for	
•128 PowerTags (RT 128)	**6AV6 584-1AB06-0DX0**
•256 PowerTags (RT 256)	**6AV6 584-1AC06-0DX0**
•512 PowerTags (RT 512)	**6AV6 584-1AD06-0DX0**
•2048 PowerTags (RT 2048)	**6AV6 584-1AF06-0DX0**
Upgrade	
•ProTool/Pro to ProTool/ Pro V6.0 + SP3 1) A)	**6AV6 582-2BX06-0DX4**
•ProTool/Pro RT to ProTool/ Pro RT V6.0 + SP3 A)	**6AV6 584-3AX06-0DX4**
Powerpacks	
SIMATIC ProTool/Pro RT PowerTags from A)	
•128 to 256 PowerTags	**6AV6 570-1BC00-0AX0**
•128 to 512 PowerTags	**6AV6 570-1BD00-0AX0**
•128 to 2048 PowerTags	**6AV6 570-1BF00-0AX0**
•256 to 512 PowerTags	**6AV6 570-1CD00-0AX0**
•256 to 2048 PowerTags	**6AV6 570-1CF00-0AX0**
•512 to 2048 PowerTags	**6AV6 570-1DF00-0AX0**
•SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP3 A)	**6AV6 571-2AC06-0DX0**
•SIMATIC ProTool to ProTool/Pro V6.0 + SP3 A)	**6AV6 571-2BC06-0DX0**
Software update service 2) A)	
•Software Update Service SIMATIC ProTool/Pro	**6AV6 582-3AX00-0AX2**

1) Upgrade for Configuration Station (CS) as well as Runtime (RT) Station

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/Pro package. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

3) The runtime licenses for ProAgent/PC must be purchased separately for each target system

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

B) Subject to export regulations AL: N und ECCN: 5D992B1

C) Subject to export regulations AL: N und ECCN: EAR99H

	Order No.
Versions for China/Taiwan/Korea/Japan	
SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA B) Language/script variants: English/Chinese traditional and simplified/Korean/Japanese; comprising: •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: English, Chinese (traditional and simplified), Korean and Japanese	**6AV6 582-2BX06-0CV0**
SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems B) on CD-ROM with license (single license) for	
•128 PowerTags (RT 128)	**6AV6 584-1AB06-0CV0**
•256 PowerTags (RT 256)	**6AV6 584-1AC06-0CV0**
•512 PowerTags (RT 512)	**6AV6 584-1AD06-0CV0**
•2048 PowerTags (RT 2048)	**6AV6 584-1AF06-0CV0**
Communication via Industrial Ethernet	
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	**6GK1 161-3AA00**
S7-1613 V6.1 B) Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows NT4.0 / 2000 / XP	**6GK1 716-1CB61-3AA0**
CP 1612 C) PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET S7 must be ordered separately)	**6GK1 161-2AA00**
CP 1512 PCMCIA card (Cardbus 32 bit) for connecting a PG/notebook computer to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	**6GK1 151-2AA00**
SOFTNET-S7 V6.1 Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows NT4.0 / 2000 / XP (max. 64 connections)	**6GK1 704-1CW61-3AA0**
SOFTNET-S7 Lean V6.1 B) Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000 / XP (max. 8 connections)	**6GK1 704-1LW61-3AA0**

SIMATIC ProTool/Pro

Ordering data	Order No.
Communication via PROFIBUS	
CP 5613 A2 [A] PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA01**
CP 5614 [A] PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-4AA00**
S7-5613 V6.2 [A] Software for S7 communication incl. PG/OP communication, FDL, S7 OPC server, for Windows 2000 / XP /2003 Server	**6GK1 713-5CB62-3AA0**
CP 5512 PCMCIA card (CARDBUS 32 bit) for connecting a PG/notebook computer to PROFIBUS or MPI (communication software included in ProTool/Pro)	**6GK1 551-2AA00**
CP 5611 PCI card (32 bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)	**6GK1 561-1AA00**
CP 5611 MPI Comprising PCI card CP 5611 (32 bit) and MPI cable, 5 m	**6GK1 561-1AM00**
PC/PPI adapter [B] 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, max. 19.2 Kbit/s	**6ES7 972-0CA23-0XA0**

	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, 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 graphic displays	
•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**
Communications 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); comprising: all available user manuals, product manuals and communication manuals for SIMATIC HMI	**6AV6 691-1SA01-0AX0**

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

More information

Asian language variant of ProTool/Pro V6.0 + SP2

ProTool/Pro V6.0 + SP2 is also available in simplified Chinese, traditional Chinese, Japanese and Korean as well as English specially for the Asian market. This requires a Chinese (simplified or traditional), Korean or Japanese Windows 98 SE or Windows NT 4.0/2000/XP version. ProTool/Pro V6.0 + SP2 ASIA features a configuration interface in the local language.

For the TP170A, TP170B, OP170B, Mobile Panel 170, OP27/37, TP27/37, TP/OP 270, MP 270B 10", MP 370 as well as ProTool/Pro Runtime for the PC, texts with Chinese (simplified/traditional) or Korean characters can be configured. The online Help is also available for these systems in simplified Chinese, traditional Chinese, Korean and English.

It is also possible to configure Japanese texts for the TP170A, TP170B, OP170B, Mobile Panel, TP/OP 270, MP 270B 10", MP 370 as well as ProTool/Pro Runtime for PCs. The online Help is also available for these systems in Japanese.

The OP27/37 and TP27/37 do not support Japanese characters. These devices can only be configured using Latin characters under the Japanese configuration interface.

All other panels (TD17, OP3, OP7, OP17, OP25, OP35 and C7 units) can only be configured with Latin characters under the Chinese, Korean, Japanese or English configuration interface.

The operating system packages required can be obtained from the relevant Siemens sales representative. For indirect export to China, Taiwan, Korea or Japan, a special configuration of Windows 2000 or XP can be used to simplify the configuration process.

The configuring software ProTool/Pro Configuration V6.0 + SP2 ASIA as well as the Runtime software ProTool/Pro Runtime V6.0 + SP2 ASIA are separate delivery packages (CD-ROM) that contain the language variants of English, simplified and traditional Chinese, Korean and Japan.

The Runtime licenses are not language-dependent, the English handling program (AuthorsW) executes under the Chinese, Korean and Japanese Windows variants listed above.

The documentation can be ordered in Chinese, Korean and Japanese through the regional companies in China, Korea, Taiwan and Japan.

Contact:

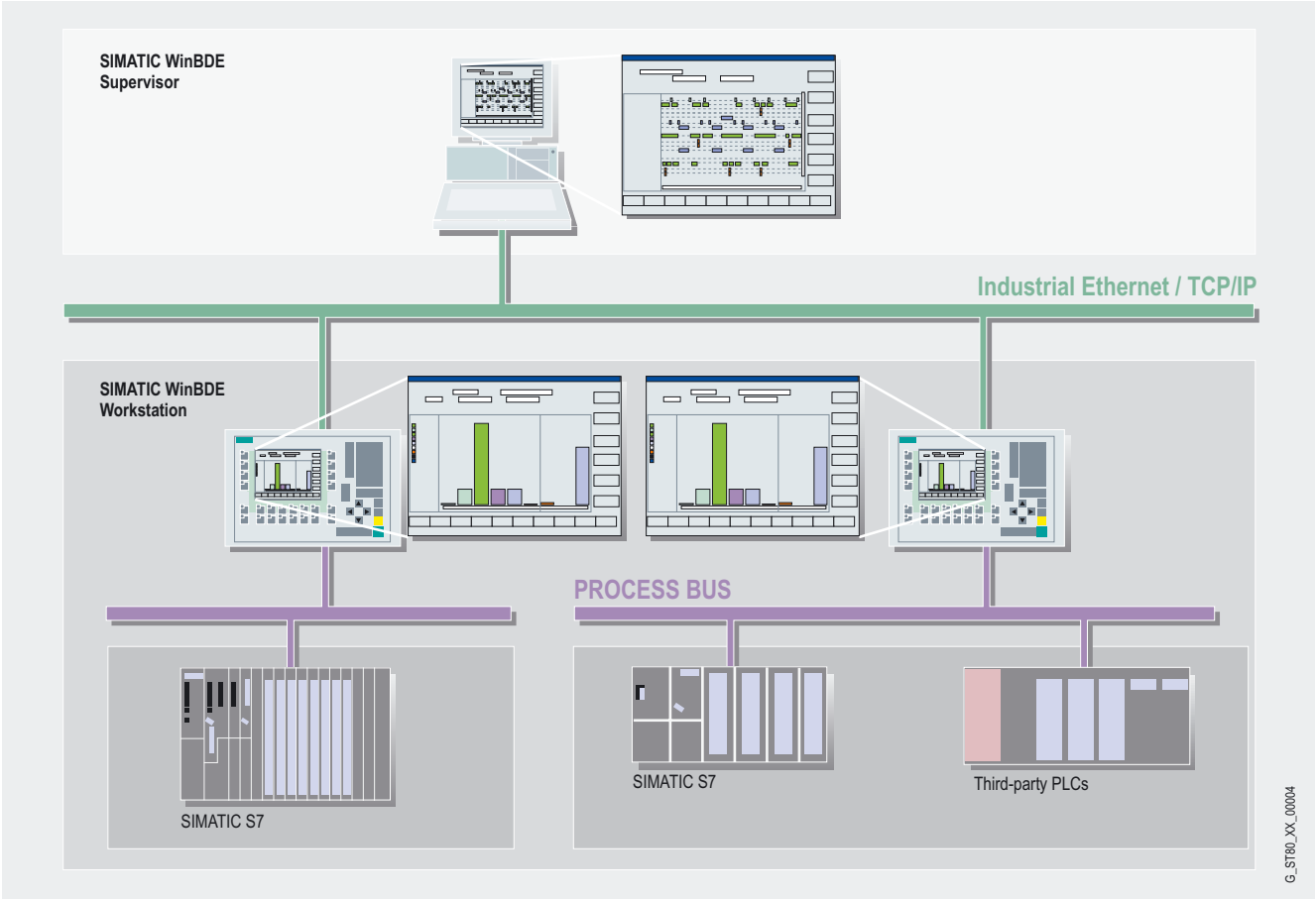
- **Simplified Chinese**
  Siemens Ltd. China
  A&D Group
  7, Wangjing Zhonghuan Nanlu
  Chaoyang District
  P.O. Box 8543
  Beijing 100102, P.R. China
- **Traditional Chinese**
  Siemens Ltd. Taiwan
  A&D Group
  Tun-Hua S. Road Sec. 2
  Taipei
  Taiwan, R.O.C.
  P.O. Box 26-755 Taipei
- **Korean**
  Siemens Ltd. Seoul
  A&D Group
  726 Asia Building 10th floor
  Yeoksam-dong,
  Kangnam-Gu
  Seoul 138-080 P.O. 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.com/protoolpro

SIMATIC ProTool/Pro options

Overview



- SIMATIC WinBDE is the machine data management software for acquisition, evaluation and analysis of machine data
- The operator unit is then transformed into the central acquisition and operating terminal for machine data, either directly on site (Workstation) or spanning several plants (Supervisor)
- **Current version:**
  - SIMATIC WinBDE Workstation V7.2 + SP1
  - SIMATIC WinBDE Supervisor V7.2 + SP1

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 everythi ng 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"

SIMATIC WinCC flexible ES

Overview

- Uniform range of **engineering tools** for configuration of SIMATIC HMI devices, the operating component of SIMATIC C7 devices, the SIMOTION/SINUMERIK panel PCs, and the PC-based visualization software WinCC flexible Runtime
- For Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2004 Advanced
  - SIMATIC WinCC flexible 2004 Standard
  - SIMATIC WinCC flexible 2004 Compact
  - SIMATIC WinCC flexible 2004 Micro

Benefits

- Uniformity of configuration soft ware reduces training, maintenance and updating requirements, and guarantees future compatibility
- Minimization of engineering requir ements 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 mult i-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 configuration of 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 Panel: OP 73micro [1], TP 170micro, TP 177micro [1]
- **WinCC flexible Compact**
  - Micro Panel: OP 73micro [1], TP 170micro, TP 177micro [1]
  - Panels of the 70 series: OP 73 [1], OP 77A [1], OP 77B
  - Panels of the 170 series: TP 170A, TP 177A [1], TP 170B, OP 170B, Mobile Panel 170
  - C7 devices: C7-635 (Touch), C7-635 (Key) , C7-636 (Key)
- **WinCC flexible Standard**
  - Micro Panel: OP 73micro [1], TP 170micro, TP 177micro [1]
  - Panels of the 70 series: OP 73 [1], OP 77A [1], OP 77B
  - Panels of the 170 series: TP 170A, TP 177A [1], TP 170B, OP 170B, Mobile Panel 170
  - Panels of the 270 series: TP 270, OP 270
  - Multi Panels of the 270 series MP 270B
  - Multi Panels of the 370 series MP 370
  - C7 devices: C7-635 (Touch), C7-635 (Key) , C7-636 (Key)
- **WinCC flexible Advanced**
  - Micro Panel: OP 73micro [1], TP 170micro, TP 177micro [1]
  - Panels of the 70 series: OP 73 [1], OP 77A [1], OP 77B
  - Panels of the 170 series: TP 170A, TP 177A [1], TP 170B, OP 170B, Mobile Panel 170
  - Panels of the 270 series: TP 270, OP 270
  - Multi Panels of the 270 series MP 270B
  - Multi Panels of the 370 series MP 370
  - C7 devices: C7-635 (Touch), C7-635 (Key) , C7-636 (Key)
  - Standard PC
  - SIMATIC Panel PC: Panel PC 670, Panel PC 870, Panel PC IL70, Panel PC IL77
  - SIMOTION Panel PC: P012K, P015K, P012T, P015T, PCR, PCR-Touch
  - SINUMERIK Panel PC: OP010, OP012, OP015, TP012, TP015, OP015A

1) Start of delivery approximately end of 4th quarter 2004
For configuration, a Hardware Support Package (HSP) is required that can be downloaded free of charge by clicking 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 in SIMATIC ST EP 7 (from Version V5.3 or Professional Edition 2004)
  - Management of HMI projects within STEP 7
  - Shared use of communications settings and process point definitions, i.e. symbols and messages
  - Display of HMI configuration objects in the SIMATIC Manager of STEP 7
- Integration in SIMOTION SCOUT (to be released separately)
  - Management of HMI projects within SCOUT
  - Shared use of communications settings and process point definitions
  - Integration of the WinCC flexible editors into the SCOUT workbench
- Integration in Component based Automation (CBA) with SIMATIC iMap (to be released separately)
  - Management of CBA components with sequence and HMI parts in SIMATIC iMap
  - Connection of CBA components with/without HMI parts in SIMATIC iMap
  - Generation of HMI basic data from SIMATIC iMap for WinCC flexible Advanced, e.g. tag list and interconnected HMI blocks

Configuration GUI

- Innovative engineering tools ba sed on state-of-the-art SW technology, Microsoft.NET
- Clear, fast access to editor s and project data using the workbench application
- Adaptive GUI of engineering tools dependent on configured target system
- User-definable settings for GUI, e.g. layout, toolbars, object default settings

Project handling

- Device-independent configur ation data can be used on different target systems without conversion; the GUI is adapted in the process to the functional possibilities of the currently configured device.
- Cross-device use of shared conf iguration data (e.g. text library) in multi-device projects.
- Wizard-supported definition of basic structure of HMI projects (e.g. display division, operator prompting)

Display editor with comprehensive possibilities for fast and efficient configuring of displays

- Generation of linked graphics objects using drag & drop, e.g. of variables for generation of input/output boxes with process interface, or of buttons with display selection function
- Templates for definition of glob al graphics objects and functions (comparable with slide master of MS PowerPoint)
- Convenient editor for generation of faceplates with defined external interface comprising graphics objects
- Graphic configuring of trajectories
- Level system with max. 32 levels
- Tools for alignment, rotation and mirroring functions

Tabular editors

- Fast and convenient generation and modification of configuration objects of the same type, e.g. variables, texts or messages, in tabular editors
- Intelligent default settings depe ndent on previously configured data, e.g. automatic incrementing of addresses when generating successive variables
- Modification of properties by simple access to the properties dialog without superfluous operations ("Always on Top")
- Simultaneous modification of shared object properties

Object-oriented data management with convenient search and modification options

- Cross-reference list with direct access to all objects, e.g. for modifying or selecting
- Searching for objects throughout the project
- Central rewiring of variables
- Search/replace texts

Project documentation

- Selective project documentation on printer or in file (.pdf, rtf, htm, tif, txt)

Libraries for predefined or self-generated configuration objects

- Large number of scaleable, dynamic graphics objects included in scope of delivery
- Graphics of scalable size for indu strial applications included in WMF format in the scope of delivery
- Preview function for library objects
- Storage of all configuration object s in the library, e.g. blocks as well as complete displays or variables; customer-specific or project-specific generation of faceplates from simple graphics objects. Modifications of these faceplates can be carried out centrally in the block definition.

Language support

- Multi-language project genera tion (max. 32 languages) in the editors through switchable views
- Automatic translation on basi s of system-specific and user-specific dictionaries in a central text library
- Central management of language-dependent texts and graphics in libraries
- Editing, exporting and importing of texts for translation
- Language-dependent graphics

Visual Basic script support

- IntelliSense function for fast programming of access operations to runtime objects
- Simple generation of control sequences in script code; script debugging in simulator and WinCC flexible Runtime

Graphic configuration of operator prompting

- Simple derivation of operator pr ompting from hierarchical input tree

SIMATIC WinCC flexible ES

Function (continued)

Test and startup support

- Simulation of the HMI projects from the engineering PC
- Jump to cause of fault starting from compiler messages
- Expanded ProSave service tool for all operator systems supported by WinCC flexible or ProTool

Task planner for definition of all global tasks

- Configuration of global system functions or time-triggered events

ChangeControl (option)

- Management of project versions with rollback and comparison functions
- Logging of changes in configuration, e.g. for regulated industries

Definition of runtime data in the engineering tools

- Users and passwords
- Recipe data sets

Migration of existing HMI projects

- Complete data importing with projects for ProTool/Pro RT and operator panels of the 170, 270 and 370 series
- Conversion of configuration data with OP/TP27 and OP/TP37; analog conversion within ProTool V6.0
- Conversion of OP3 or OP7 configuration data to OP 73 or OP 77B

Compatibility

- Integral upward compatibility: further processing of WinCC flexible configuration data with future versions without loss of data
- Integral downward compatibility: generation of configuring data for older versions of the 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
	For multi-language configurations: Windows 2000 SP4 MUI, Windows XP Professional SP1 MUI
Processor	
•Minimum	Pentium III, 800 MHz
•Recommended	≥ Pentium 4, 2.0 GHz
Resolution	
•Minimum	1024 x 768
•Recommended	≥ 1280 x 1024
RAM	
•Minimum	256 MB in the case of WinCC flexible Micro; otherwise 512 MB
•Recommended	≥ 512 MB
Hard disk (free memory)[1)]	≥ 1 GB
Diskette drive [2)]	3.5"/1.44 MB
CD-ROM	For software installation

1) In addition to WinCC flexible, Windows also makes demands on the spare hard disk space;
e.g. spare memory space must be allowed for the swap file. The following formula is recommended: size of swap file = 3 x size of RAM.
For further information, please refer to your Windows documentation.

2) For authorization of the engineering software.

Options

SIMATIC WinCC flexible/ChangeControl

WinCC flexible/ChangeControl enables consistent saving of configuration data. Delivered customer projects, 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.

The history of changes can be exactly proven 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 details, see "WinCC flexible ES options"

4

SIMATIC WinCC flexible ES

Ordering data	Order No.
WinCC flexible 2004 Advanced A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •SW for WinCC flexible /ChangeControl engineering option 1) •Simulation software for WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German, French, Italian, Spanish	**6AV6 613-0AA01-0AA0**
WinCC flexible 2004 Standard A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Simulation software for the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German, French, Italian, Spanish	**6AV6 612-0AA01-0AA0**
WinCC flexible 2004 Compact A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring the micro panels and the panels of the 70/170 series incl. C7-635/636 •Simulation software for the micro panels and the panels of the 70/170 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German, French, Italian, Spanish	**6AV6 611-0AA01-0AA0**
WinCC flexible 2004 Micro A) Single license, on CD-ROM without authorization, includes: •Engineering software for configuring the micro panels •Electronic documentation (.pdf) in English, German, French, Italian, Spanish	**6AV6 610-0AA01-0AA0**

	Order No.
Versions for Russia	
WinCC flexible 2004 Russia Advanced A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •SW for WinCC flexible /ChangeControl engineering option 1) •Simulation software for WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German	**6AV6 613-0AA21-0AA0**
WinCC flexible 2004 Russia Standard A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Simulation software for the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German	**6AV6 612-0AA21-0AA0**
WinCC flexible 2004 Russia Compact A) Single license, on CD-ROM incl. authorization, includes: •Engineering software for configuring the micro panels and the panels of the 70/170 series incl. C7-635/636 •Simulation software for the micro panels and the panels of the 70/170 series incl. C7-635/636 •Native drivers •Electronic documentation (.pdf) in English, German	**6AV6 611-0AA21-0AA0**
Powerpacks	
SIMATIC WinCC flexible Powerpacks A) Single license, only authorization	
•WinCC flexible Standard to WinCC flexible 2004 Advanced	**6AV6 613-2CD01-0AD0**
•WinCC flexible Compact to WinCC flexible 2004 Advanced	**6AV6 613-2BD01-0AD0**
•WinCC flexible Compact to WinCC flexible 2004 Standard	**6AV6 612-2BC01-0AD0**

A) Subject to export regulations AL: N und ECCN: 5D992B2

Ordering data

	Order No.
Software update service	
Software update service SIMATIC WinCC flexible 2) A)	
•WinCC flexible Advanced	**6AV6 613-0AA00-0AL0**
•WinCC flexible Standard	**6AV6 612-0AA00-0AL0**
•WinCC flexible Compact	**6AV6 611-0AA00-0AL0**
Versions for China/Taiwan/Korea/Japan	
WinCC flexible 2004 ASIA Advanced A)	**6AV6 613-0AA11-0AA0**
Single license, on CD-ROM without authorization, includes:	
•Engineering software for configuring WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636	
•SW for WinCC flexible /ChangeControl engineering option 1)	
•Simulation software for WinCC flexible Runtime as well as the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636	
•Native drivers	
•Electronic documentation (.pdf) in English, simplified Chinese, traditional Chinese, Korean, Japanese	
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 B)	**6AV6 691-1SA01-0AX0**
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	

1) The licenses for WinCC flexible /ChangeControl must be purchased separately for each engineering station

2) For a period of 12 months, customers are automatically supplied with all updates and service packs for a fixed price per installed WinCC flexible engineering system or option.
The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

A) Subject to export regulations AL: N and ECCN: 5D992B2

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

More information

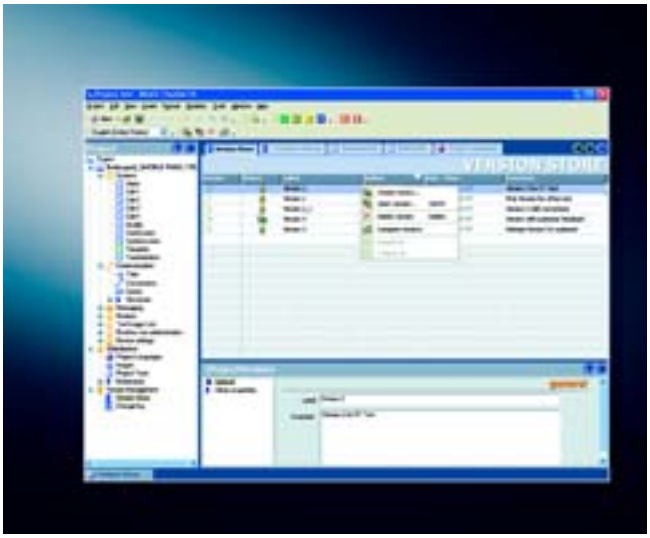
Additional information can be found in the Internet under

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

4

WinCC flexible /ChangeControl

Overview



- Option for version assignment to configuration data and for tracking of modifications to configuration (e.g. as proof in regulated sectors)
- For the SIMATIC WinCC flexib le Advanced engineering tool
- One license is necessary fo r each configuration station

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 modificat ions 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 co nstruction for project management, e.g. delivered customer versions and their modifications
- For saving of intermediate st ates 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 activa ted/deactivated and shows who carried out modifications, and when/which.
  Modification reasons can be entered as comments.

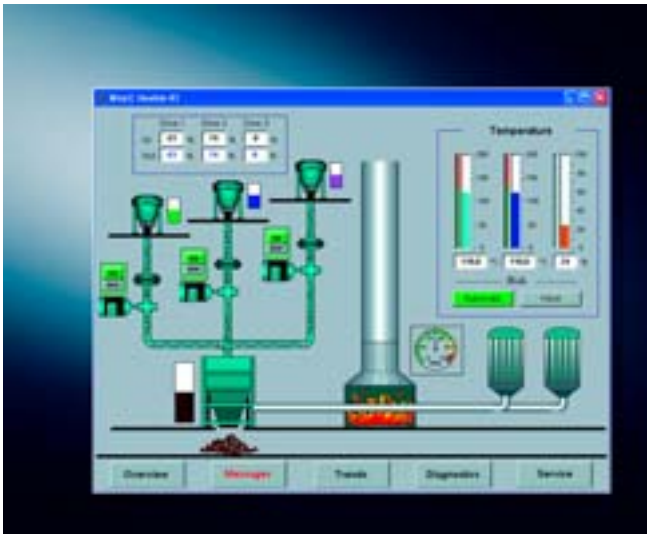
Ordering data

	Order No.
WinCC flexible/ChangeControl 2004 for WinCC flexible 2004 Advanced 1) A)	
Single license, only authorization	**6AV6 613-6AA01-0AB0**

1) Use of the ChangeControl option for integral operation with STEP 7 has not been released.

A) Subject to export regulations AL: N und ECCN: 5D992B2

Overview



- **PC-based visualization software** for single-user systems direct at the machine
- For Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2004 Runtime with 128, 512 or 2048 PowerTags

Benefits

- Optimized price/performance ratio through individually scalable system functionality
- Functions for all visualization tasks: input functions, graphics and curves, message system, logging system, archiving (option), recipe management (option), process fault diagnostics (option)
- Flexible runtime functionality using Visual Basic scripts
- Innovative servicing concept with remote operation, diagnostics, administration using intranet/Internet and e-mail communication increase the availability (option)
- Support of simple, distributed automation solutions on basis of TCP/IP networks at machine level (option)

Application

SIMATIC WinCC flexible Runtime is the high-performance 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.

SIMATIC WinCC flexible Runtime can be used together with the following operator panels:

- SIMATIC Panel PCs
  - Panel PC 670
  - Panel PC 870
  - Panel PC IL 70
  - Panel PC IL 77
- 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 using operator interface corresponding to Windows standards

comprising programmable graphic objects and project-specific faceplates:

- Numeric and alphanumeric input/output boxes
- Static text and graphic displays as well as vector graphics
- Animated graphics from the HMI symbol library
- Bar graphs, trend curve graphics with browse and zoom function and read line
- Signal-dependent text and graphics lists
- Buttons and switches for process operations
- Editing fields for process values (signals)
- Analog indication and sliders as examples of further graphics objects
- Project-specific faceplates generated from the basic system objects
- Graphic displays for various standard formats, e.g. bitmaps, .jpg, .wmf

Alarms and messages

- Bit messages and analog messages as well as the Alarm S event-driven alarm system in the case of SIMATIC S7
- Freely-definable message classes for definition of acknowledgment response and display of message events

Message and process value archiving [1)]

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

Recipes [1)]

- Generation of data sets fo r machine or production data
- Data record display or input for a configurable picture 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, events and recipes

- Time-dependent or event-de pendent output of report
- Freely configurable layout

Flexible expansion of system function using Visual Basic script

Language support for multi-language projects

- Up to 16 online languages (including Asian and Cyrillic)
- Language-dependent texts and graphics
- Language switchover during runtime

User-oriented access protection according to requirements of regulated sectors

- Authentication by means of user ID and password
- Privileges specific to user groups

On board link to many different PLCs

- Simultaneous connection using several protocols: OPC client or SIMATIC HMI HTTP protocol are additive, that is, they can be used in combination with other controller connections
- Communication using 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 on basis of Ethernet networks or via intranet/Internet
- Reading and writing of variables;
  WinCC flexible Runtime or SIMATIC Panels provide data (variables) to other SIMATIC HMI systems or Office applications
- A SIMATIC HMI system can be used for remote operator control and monitoring of another system;
  entry-level solution for client/server configurations for distributed operator stations or for solutions with master station or control room

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

- Display of and access to proce ss images on remote PC or panel
- Sending of e-mails on demand or event-controlled
- System diagnostics visualized on device-specific HTML sites

1) Option for SIMATIC WinCC flexible Runtime; runtime licenses must be purchased separately

Function expansions in contrast to ProTool/Pro Runtime V6

- Expansion of graphics system by faceplate function and language-dependent graphics
- Expansion of message system by analog message procedure and freely-definable message classes
- Improved access protection ac cording to requirements of regulated sectors
- Access using scripts to runtime graphics objects, from xP270 onwards and PC
- Expanded communications faciliti es for operation, servicing and diagnostics
  - Multi-protocol support
  - Remote operation, diagnostics and administration
  - Event-controlled sending of e-mails
  - Device-specific HTML sites
  - HTTP communication with further SIMATIC operator panels

Changes in contrast to ProTool/Pro Runtime V6

- With a reduced basic prize, archiving, messages and OPC server are available as optional functions

Funktion

System requirements for	WinCC flexible Runtime
Operating system	Windows 2000 SP4, Windows XP Professional SP1
	For multi-language configurations: Windows 2000 SP4 MUI, Windows XP Professional SP1 MUI
Processor	
•Minimum	Pentium II, 233 MHz
•Recommended	≥ Pentium III, 500 MHz
Graphics	
•Minimum	VGA
•Recommended	SVGA with accelerated hardware
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) [2]	≥ 100 MB
Diskette drive [3]	3.5"/1.44 MB
CD-ROM	For software installation

1) The required RAM is determined in particular by the size of the graphics used.
2) Without taking archives into account.
In addition to WinCC flexible, Windows also makes demands on the free hard disk space; e.g. spare memory space must be allowed for the swap file. The following formula is recommended: size of swap file = 3 x size of RAM.
For further information, please refer to your Windows documentation.
3) For authorization of the runtime software.

Options

SIMATIC WinCC flexible/Archives

•Message and process value archiving
- Archiving in CSV files or ODBC databases
- Online evaluation of process value archives through trend curve graphics
- Evaluation of message archives using e.g. standard Microsoft tools

SIMATIC WinCC flexible/Recipes

•Generation and management of data sets for machine or production data
- Data record display or input via a configurable picture 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/OPC server

•Incorporation of automation components from different vendors into an automation concept

•Communication for data ex change between HMI systems and/or high-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 servicin g of machines and plants via Internet/intranet

•Event-controlled sending of e-mails

•System diagnostics visualized on device-specific HTML sites

SIMATIC WinCC flexible/Sm@rtAccess

•Flexible solution for location- independent access to process data

•Communication between different SIMATIC HMI systems

Note:
For further details, see "SIMATIC WinCC flexible RT options"

SIMATIC WinCC flexible/ProAgent

•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 overhead for diagnostics functionality

•Sets PLC capacity free with re gard to memory and program execution time

Note:
For further details, see "SIMATIC ProAgent process diagnostics software"

SIMATIC WinBDE

•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 details, see "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 [7] PC adapter USB [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] CP 1612 [8] CP 1613 [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 [10]	
SINUMERIK [11]	
Non-Siemens PLCs	
Allen Bradley (DF1/DH485) [12]	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) [12] [14]	
Data Access V2.0 + V1.1 (COM) / V0.9 (XML) client only	CP 1512 [8] CP 1612 [8]
HTTP communication for exchange of data between SIMATIC HMI (client + server) [13] [14]	CP 1512 [8] CP 1612 [8]

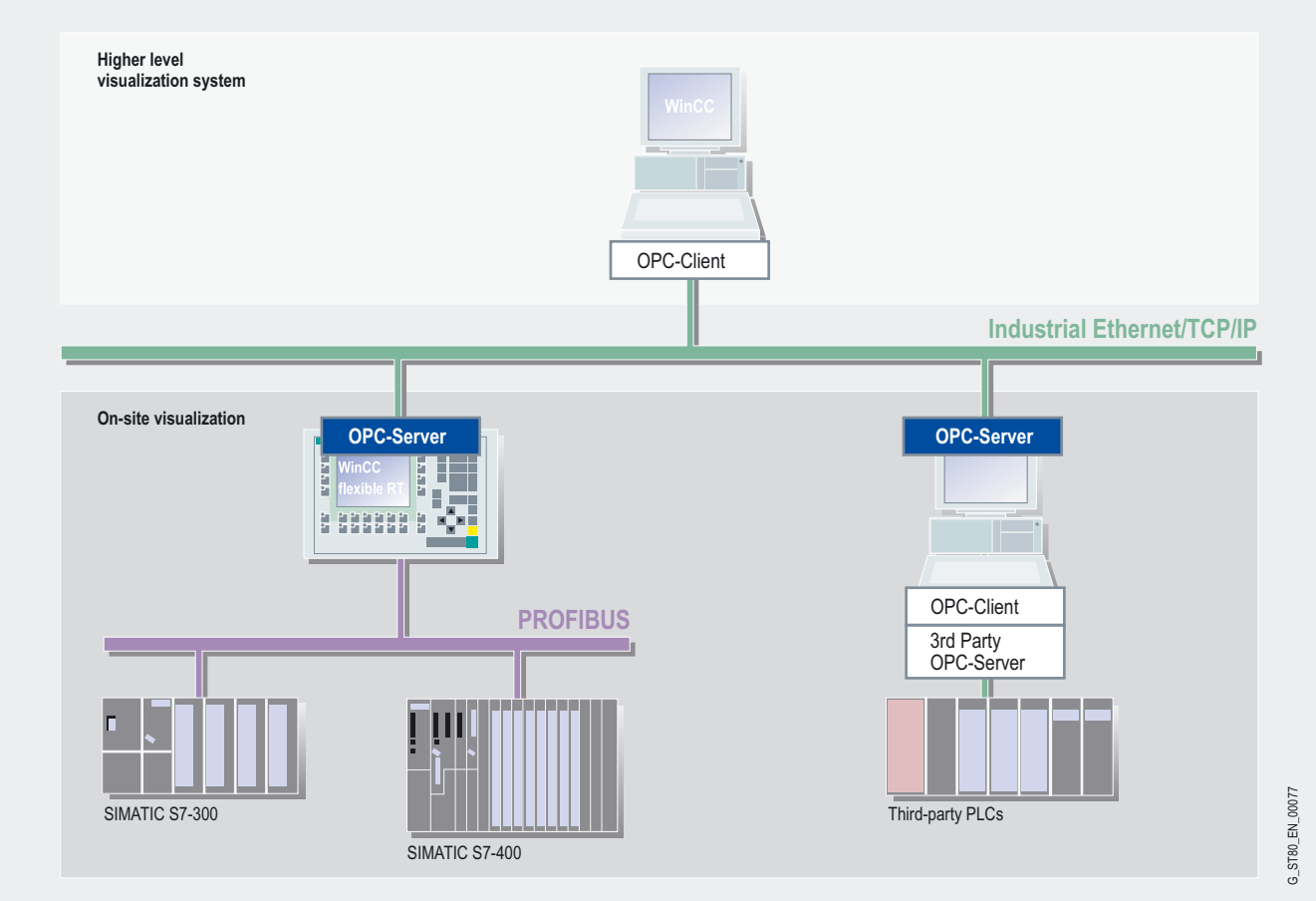
1) WinCC flexible RT is a passive station (DP slave); the function block required for interfacing is included in the scope of supply of WinCC flexible
2) For Panel PC 670/870 via internal MPI interface
3) Only point-to-point to S7-200; no configuration download; operating systems: Windows 2000/XP;
Order No. 6ES7 901-3CB30-0AX0
4) Constraints with regard to baud rate for S7-200; see Catalog ST 70
5) WinCC flexible RT is an active station; communication with S7 functions
6) WinCC flexible RT is a passive station (DP slave). The application ladder required for interfacing is included in the scope of supply of WinCC flexible
7) 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)
8) For Panel PC 670/870 via internal Ethernet interface
9) Additionally required: S7-1613 V6.2 (6GK1 716-1CB62-3AA0)
10) For further information, see Catalog PM 10
11) "SINUMERIK HMI copy license OA" option required; for further information, see Catalog NC 60
12) OPC client included in scope of delivery, required for OPC server option "WinCC flexible /OPC server for WinCC flexible Runtime"
13) TP/OP/MP 270B upwards; options "WinCC flexible/Sm@rtAccess for WinCC flexible Runtime" and "WinCC flexible /Sm@rtAccess for SIMATIC Panel" required
14) OPC and HTTP communication are additive, that is, they can be used in combination with the above-listed PC connections

Application note

Parallel to any PLC link, WinCC flexible Runtime permits use of the OPC client channel; this permits e.g. connection to an SNMP OPC server for visualization of the data present there. The SNMP OPC server permits monitoring of any network components (e.g. switch) which support the SNMP protocol. Further information can be found in Catalog IK PI.

Note:
For further information, see "Operator control and monitoring devices/system coupling"

Integration



Application example SIMATIC WinCC flexible Runtime

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)
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

Ordering data	Order No.
SIMATIC WinCC flexible 2004 Runtime	
for PC systems; incl. software of the options for PC systems A) 1)	
Single license, on CD-ROM incl. authorization, for:	
•128 PowerTags (RT 128)	**6AV6 613-1BA01-0AA0**
•512 PowerTags (RT 512)	**6AV6 613-1DA01-0AA0**
•2048 PowerTags (RT 2048)	**6AV6 613-1FA01-0AA0**
Powerpacks	
SIMATIC WinCC flexible 2004 Runtime A)	
Single license, only authorization for PowerTags, from	
•128 to 512 PowerTags	**6AV6 613-4BD01-0AD0**
•128 to 2048 PowerTags	**6AV6 613-4BF01-0AD0**
•512 to 2048 PowerTags	**6AV6 613-4DF01-0AD0**
Upgrade	
•ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2004 Runtime 128 PowerTags B)	**6AV6 613-3BB01-0AA0**
•ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2004 Runtime 512 PowerTags B)	**6AV6 613-3CD01-0AA0**
•ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2004 Runtime 512 PowerTags B)	**6AV6 613-3DD01-0AA0**
•ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2004 Runtime 2048 PowerTags B)	**6AV6 613-3FF01-0AA0**
Versions for China/Taiwan/Korea/Japan	
SIMATIC WinCC flexible 2004 ASIA Runtime A)	
for PC systems; incl. software of the options for PC systems 1)	
Single license, on CD-ROM incl. authorization, for:	
•128 PowerTags (RT 128)	**6AV6 613-1BA11-0AA0**
•512 PowerTags (RT 512)	**6AV6 613-1DA11-0AA0**
•2048 Power Tags (RT 2048)	**6AV6 613-1FA11-0AA0**

1) The runtime licenses for the WinCC flexible Runtime options must be purchased separately for each target system
A) Subject to export regulations AL: N und ECCN: 5D992B2
B) Subject to export regulations AL: N und ECCN: 5D992B1

Ordering data

	Order No.
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) 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**
Communication via Industrial Ethernet	
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	**6GK1 161-3AA00**
S7-1613 V6.2 A) Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000/ XP/2003 Server	**6GK1 716-1CB62-3AA0**
CP 1612 B) PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	**6GK1 161-2AA00**
CP 1512 PCMCIA card (Cardbus 32 bit) for connecting a PG/notebook computer to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	**6GK1 151-2AA00**

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

	Order No.
Communication via PROFIBUS	
CP 5613 A) PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA00**
CP 5613 A2 A) PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA01**
CP 5614 A) PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-4AA00**
S7-5613 V6.2 A) Software for S7 communication incl. PG/OP communication, FDL, S7-OPC server, for Windows 2000 / XP/ 2003 Server	**6GK1 713-5CB62-3AA0**
CP 5511 PCMCIA card (16 bit) for connecting a PG/PC to PROFIBUS or MPI (communications software included in WinCC flexible)	**6GK1 551-1AA00**
CP 5512 PCMCIA card (Cardbus 32 bit) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in WinCC flexible)	**6GK1 551-2AA00**
CP 5611 PCI card (32 bit) for connection to a PG/PC to PROFIBUS (communications software included in WinCC flexible)	**6GK1 561-1AA00**
CP 5611 MPI Comprising CP 5611 (32 bit) and MPI cable, 5 m	**6GK1 561-1AM00**
PC/PPI adapter B) 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

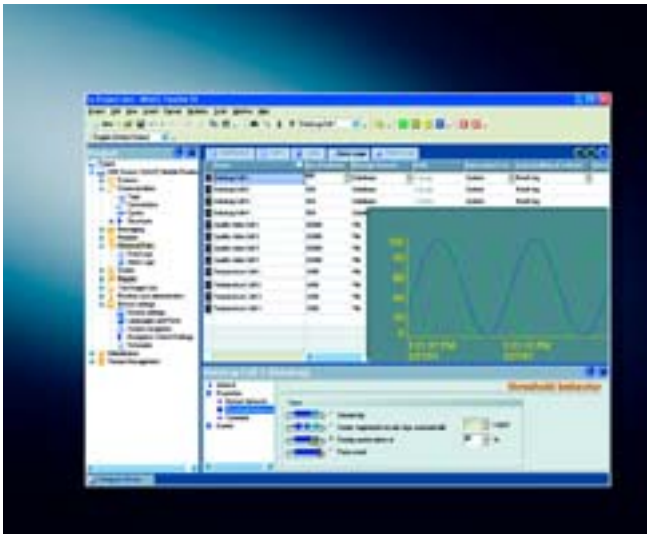
Additional information can be found in the Internet under

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

4

WinCC flexible /Archives

Overview



- Option for SIMATIC WinCC flexible Runtime for the long-term archiving of process values and messages
- Process value and message archiving is used to record and process the data from an industrial plant/machine. Evaluation of the archived process data provides information on the operating state of the plant/machine
- One license is necessary for each operator station

Benefits

- Message and process value archives permit foresighted diagnostics which prevents downtimes
- Early detection of d anger 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 ev aluation 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 pr ocess-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

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)	500000 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

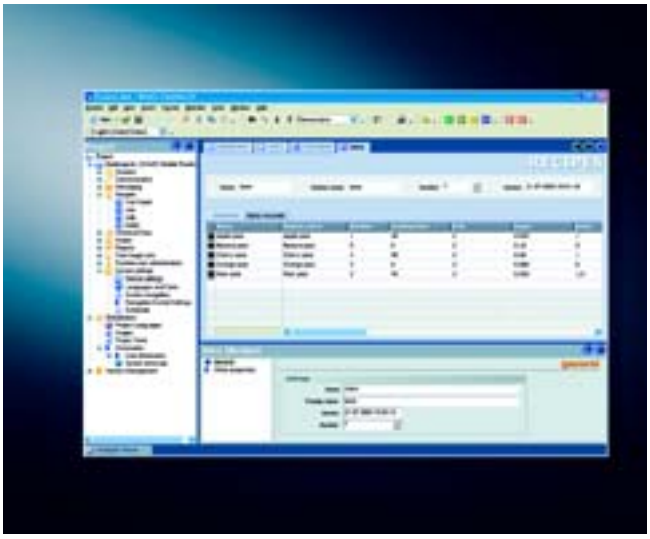
Ordering data

	Order No.
WinCC flexible /Archives for WinCC flexible Runtime 1) A) Single license, only authorization	**6AV6 618-7ED01-0AB0**
WinCC flexible / Archives+Recipes for WinCC flexible Runtime 1) A) Single license per option, only authorizations	**6AV6 618-7GD01-0AB0**

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

A) Subject to export regulations AL: N und ECCN: 5D992B2

Overview



- Option for SIMATIC WinCC flexible Runtime for managing data records in recipes containing associated machine or production data
- The data from a data set can be transferred e.g. from the operator panel to the PLC in order to convert the 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 da ta elements with support of a configurable graphic object, or representation in technical relationships for several process graphics
- Simple operator promptin g using standard functions
- Export/import of data sets for further processing with other tools (e.g. MS Excel)

Application

- Assignment of plant/machine pa rameters in the production industry
- Batch-oriented production, e.g. in the food or plastics industry

Function

- Input of data sets (e.g. oper ating 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 syn chronized exchange of data with the PLC
- Saving of data sets on local media or on remote data servers via networks
- Import/export of data sets as CSV files
- Logging of data sets, e.g. as batch report/shift report
- Convenient and flexible management of data sets using powerful standard functions

WinCC flexible recipes and the associated data sets are conveniently created using a separate editor in the WinCC flexible Advanced engineering tool, and assigned default data. A configurable table object is used to display the data during runtime. Furthermore, the individual data set elements can also be directly output for several process displays on the basis of standard input/output boxes. The data can therefore be clearly presented for the operator in technological layers.

Technical specifications

Type	WinCC flexible /Recipes The specifications are maximum values
Execution platform	SIMATIC WinCC flexible Runtime
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 Runtime 1) A) Single license, only authorization	**6AV6 618-7FD01-0AB0**
WinCC flexible / Archives+Recipes for WinCC flexible Runtime 1) A) Single license per option, only authorization	**6AV6 618-7GD01-0AB0**

1) One license is necessary for each operator station. A license is not required for the engineering system for configuring the runtime option.
A) Subject to export regulations AL: N und ECCN: 5D992B2

WinCC flexible /Sm@rtAccess

Overview

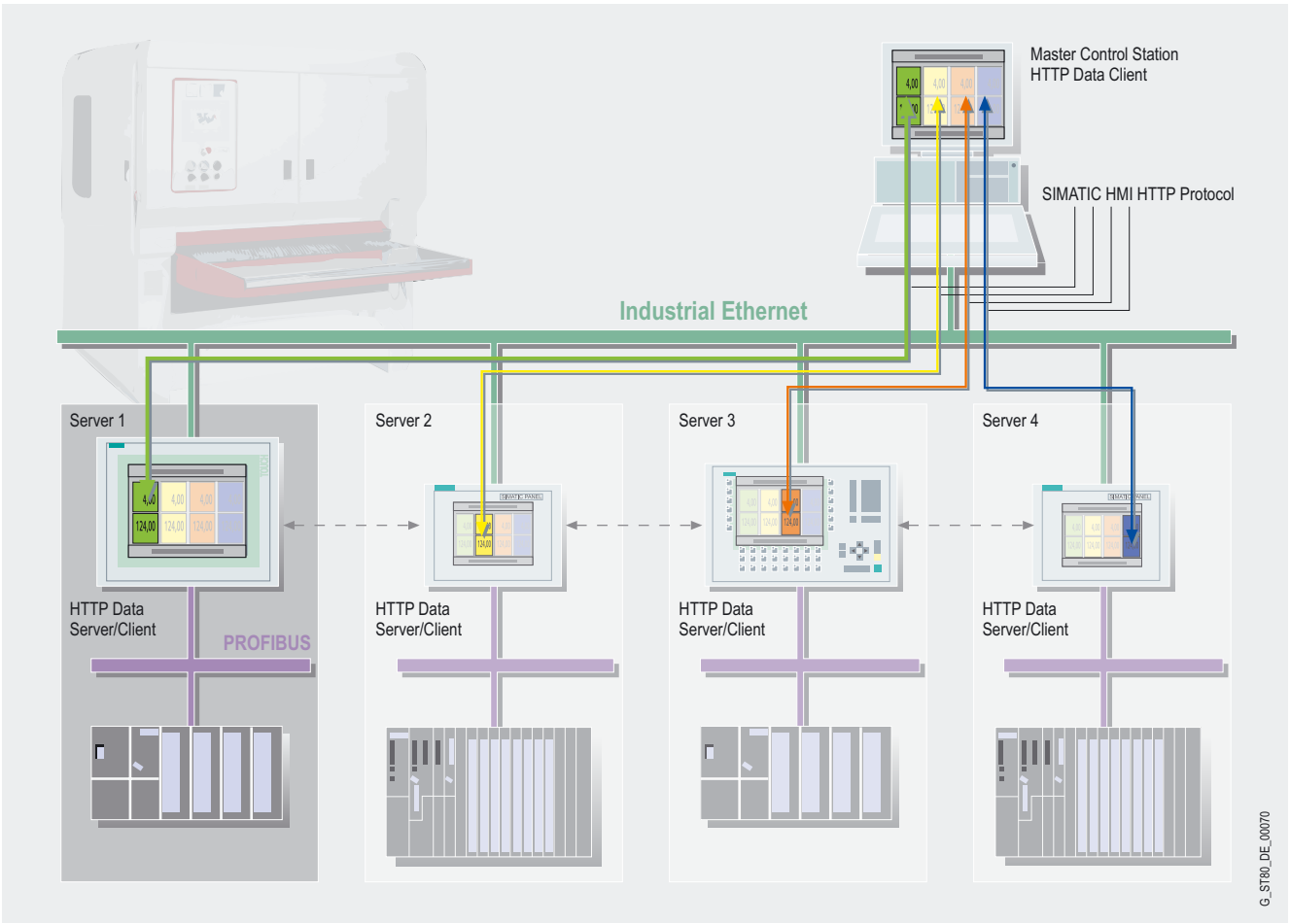
- Option for SIMATIC WinCC flexible Runtime as well as SIMATIC panels for communication between various SIMATIC HMI systems.
- Available for the following SIMATIC HMI systems:
  - OP 270, TP 270
  - MP 270B, MP 370
  - WinCC flexible Runtime
- Communication between HMI systems on basis of Ethernet networks or via intranet/Internet:
  - Reading and writing of variables;
    WinCC flexible Runtime or SIMATIC Panels provide data (variables) to other SIMATIC HMI systems or Office applications
  - A SIMATIC HMI system can be used for remote operator control and monitoring of another system;
    start of client/server configurations for distributed operator stations or for solutions with master station or control room
- Local operation, visualization and data processing are possible to the same extent as plant-wide calling of information or central archiving of process data. Uniform flows of information guarantee an overview of the status of all processes.
- One license is necessary for each operator station

Benefits

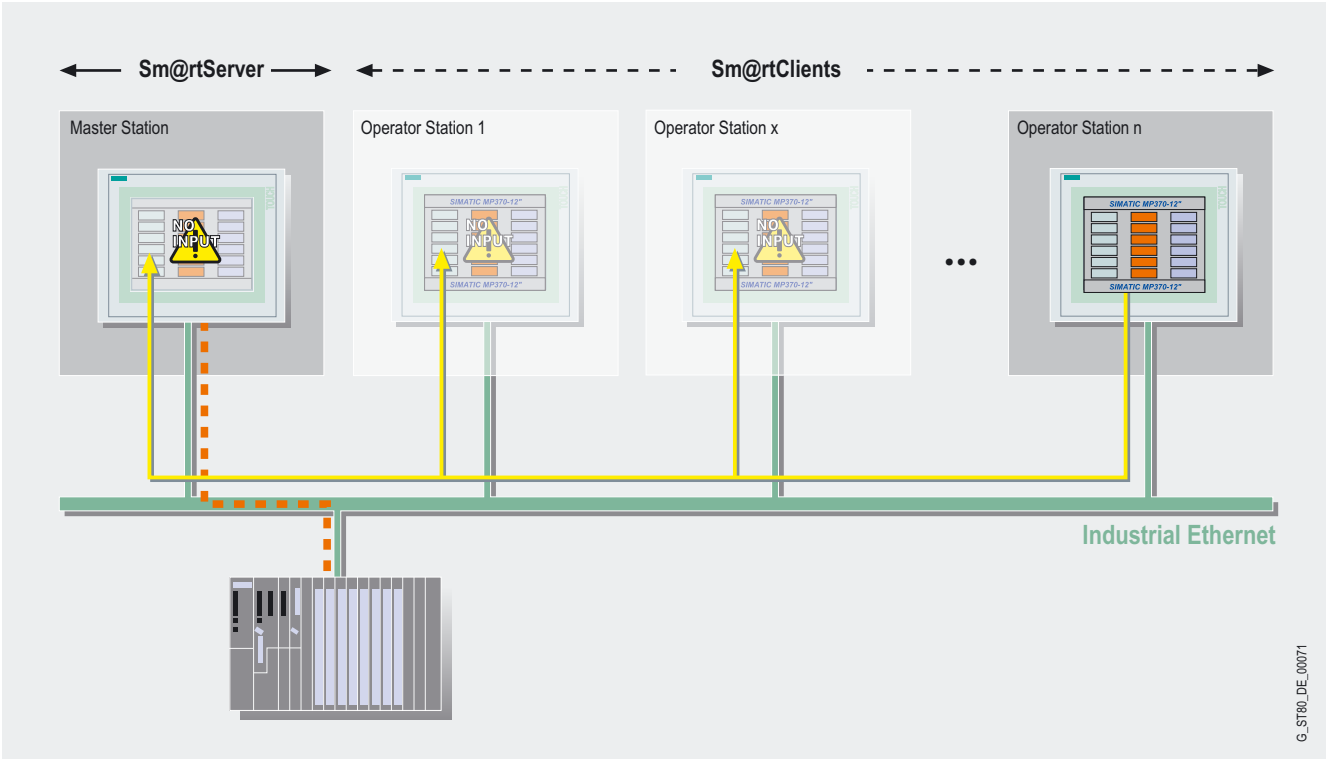
- Flexible solution for locatio n-independent access to HMI systems and process data
- Reduction in load on fieldbuses:
  WinCC flexible Runtime as well as SIMATIC Panels permit a control system, for example, to access the process data. The sensitive field level is not loaded by the control level as 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

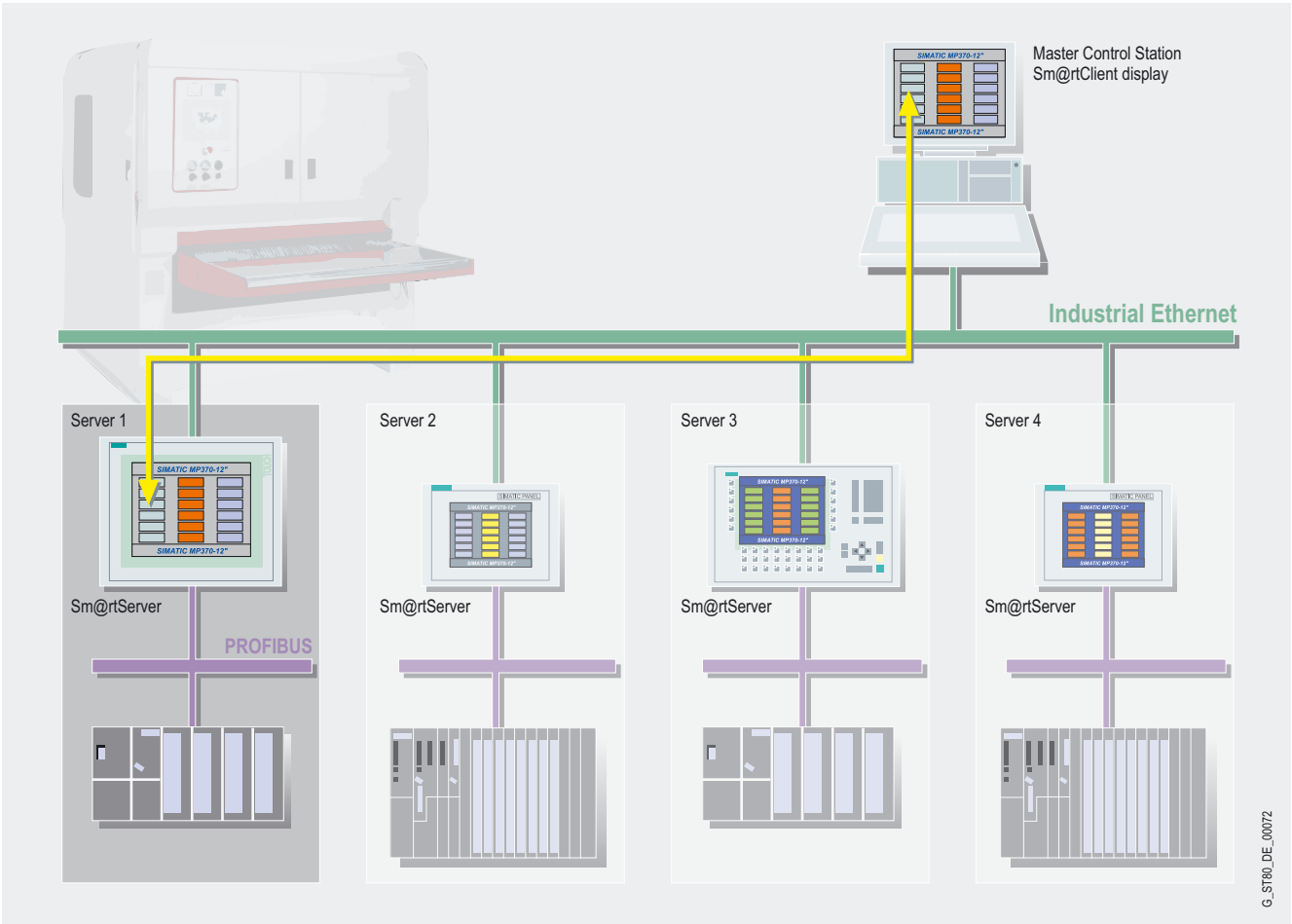
- Use of HMI systems at machin e level as data servers for higher-level automation components such as control systems or office systems. For example, process values from various machines can be output in a master display.
- Control and monitoring of spatia lly distributed machines with several operator 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 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	OP 270, TP 270
•SIMATIC Multi Panels	MP 270B, MP 370
•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@rtAccess SIMATIC HMI HTTP protocol	
Number of connections of a client	
•for panels/multi panels	8
•for WinCC flexible Runtime	16
Sm@rtAccess Sm@rtClient concept	
Number of Sm@rtClients that can switch simultaneously to one Sm@rtServer[1)2)]	
•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 graphic	
•for panels/multi panels	1
•for WinCC flexible Runtime	2

1) Containing 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) A)] Single license, only authorization	**6AV6 618-7AB01-0AB0**
WinCC flexible /Sm@rtAccess for WinCC flexible Runtime [1) A)] Single license, only authorization	**6AV6 618-7AD01-0AB0**

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

A) Subject to export regulations AL: N und ECCN: 5D992B2

WinCC flexible /Sm@rtService

Overview

- Option for SIMATIC WinCC flexible Runtime as well as SIMATIC Panels for remote maintenance and servicing of machines/plants via the Internet/intranet
- Available for the follow ing SIMATIC HMI systems:
  - 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 servicin g of machines and plants via Internet/intranet
- Calling of system in formation, 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 operator control and monitoring of SIMATIC HMI systems via Industrial Ethernet or intranet/Internet

Microsoft Internet Explorer V6.0 SP1 or higher is sufficient for access to an HMI system.

Integral Web server for provision of standard HTML pages
The following functions can be access from the home page:

- Remote operation of HMI system via intranet/Internet using the Internet Explorer
- Starting and stopping of HM I 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 of configurati on data via intranet/Internet
- Supplementing by own HTML sites

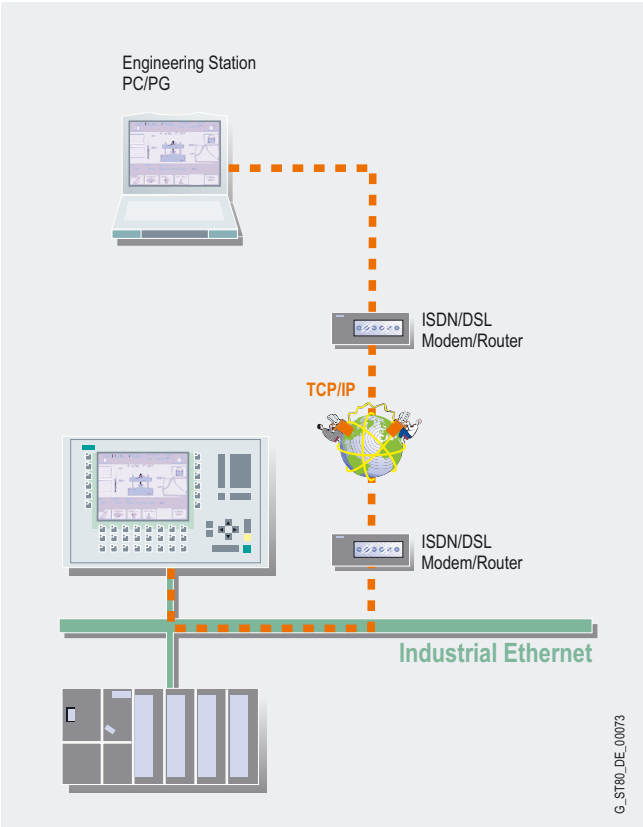
Sending of e-mails to the maintenance personnel via SMTP server (Simple Mail Transfer Protocol)

- Events which trigger sending of an e-mail:
  - Message of a particular message class
  - Selectable standard functions: change in value of a variable, activation of a function key, scripts etc.
- Possible contents of an e-mail
  - Subject
  - Message text with process variables
  - Date/time
- The optional use of e-mail/SM S routers permits access to standard networks (external service provider required)

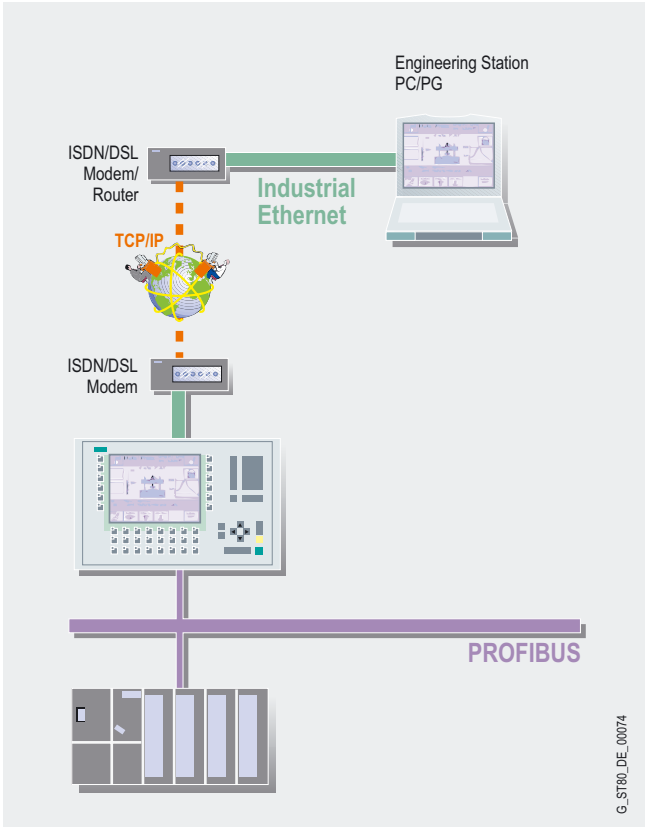
Standard functions permit convenient use of the maintenance and servicing functionality. WinCC permits simple, fast configuration of maintenance and servicing functions.

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

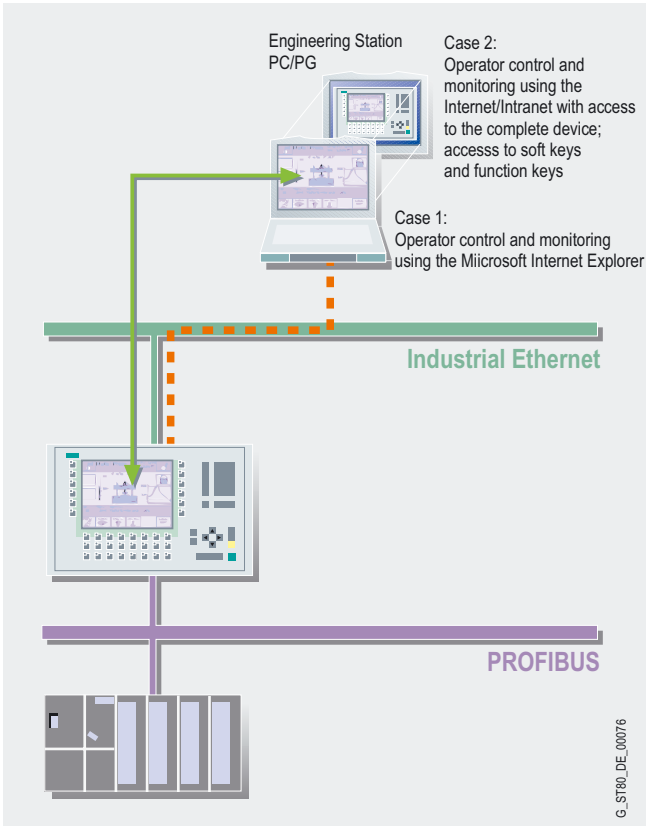
Function (continued)



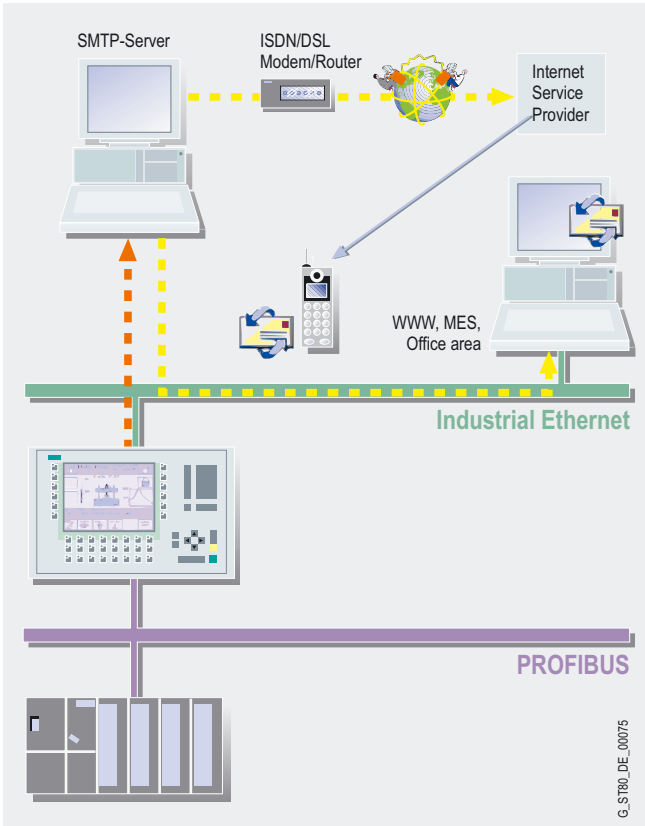
Remote operator control and monitoring of SIMATIC HMI systems via Industrial Ethernet or intranet/Internet



Remote operator control and monitoring of SIMATIC HMI systems via Industrial Ethernet or intranet/Internet



Remote operator control and monitoring of SIMATIC HMI systems via Industrial Ethernet or intranet/Internet



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

Technical specifications

Type	WinCC flexible /Sm@rtService
Execution platform	
•SIMATIC Panels	OP 270, TP 270
•SIMATIC Multi Panels	MP 270B, MP 370
•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 using	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 number

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) A)	
Single license, only authorization	**6AV6 618-7BB01-0AB0**
WinCC flexible/Sm@rtService for WinCC flexible Runtime 1) A)	
Single license, only authorization	**6AV6 618-7BD01-0AB0**

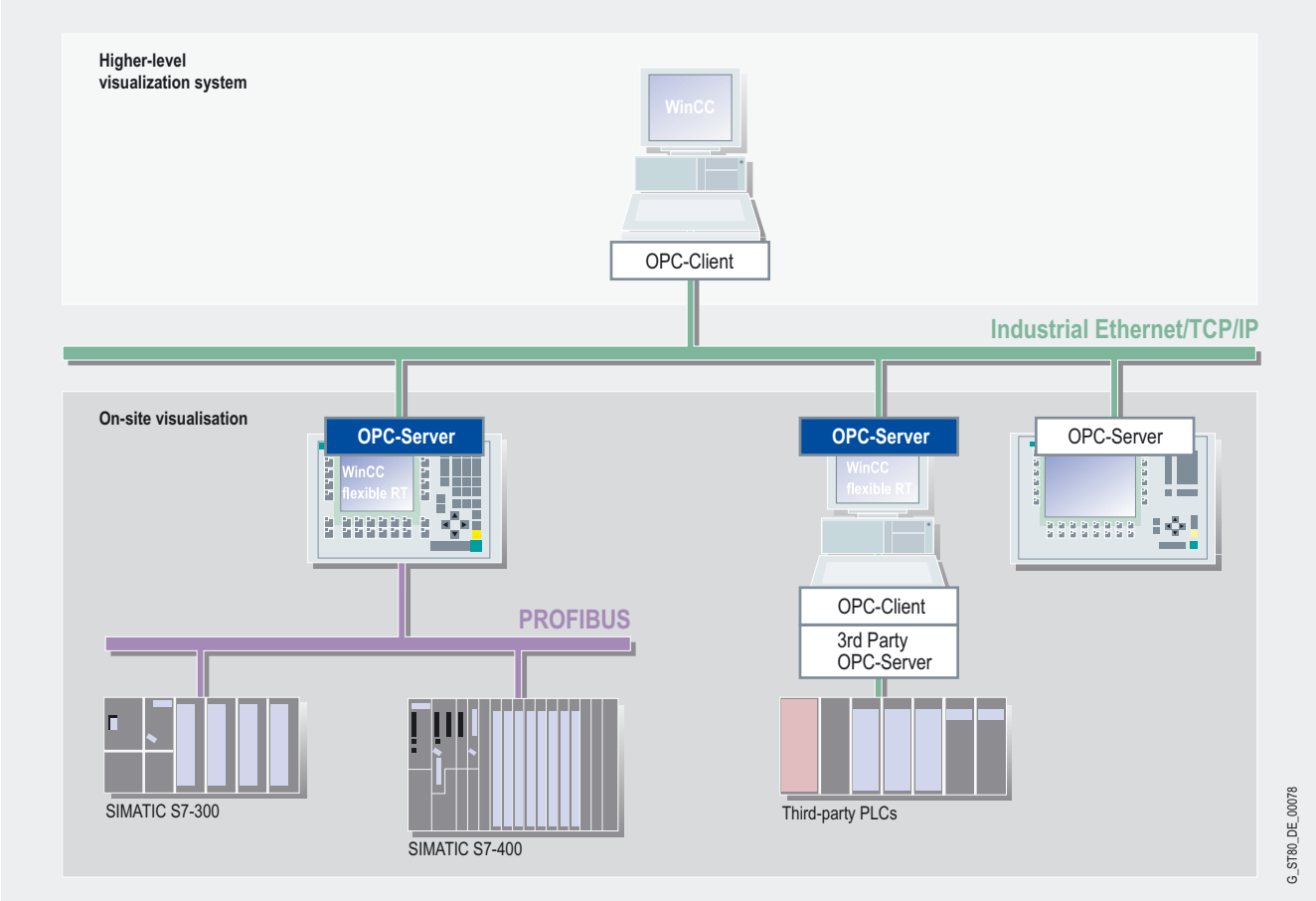
1) One license is necessary for each operator station. A license is not required for the remote service PC or the engineering system for configuring the runtime option.

A) Subject to export regulations AL: N und ECCN: 5D992B2

SIMATIC WinCC flexible RT options

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 follow ing 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 co mponents 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 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 V0.9 [1]
• DCOM server for WinCC flexible Runtime	Supports the OPC data access specifications V1.0a and V2.0
• Number of connections which an OPC server can accept	8

1) Data access via XML has a scope of functions based on OPC data access. A software adapter installed on the OPC client PC is required so that DCOM-based OPC clients can access the OPC-XML server without adaptation. The software adapter is included in the scope of delivery of the option "WinCC flexible /OPC server for SIMATIC Multi Panels".

Ordering data

	Order No.
WinCC flexible /OPC Server for SIMATIC Multi Panels [1] [A]	
Single license, only authorization	**6AV6 618-7CC01-0AB0**
WinCC flexible /OPC Server for WinCC flexible Runtime [1] [A]	
Single license, only authorization	**6AV6 618-7CD01-0AB0**

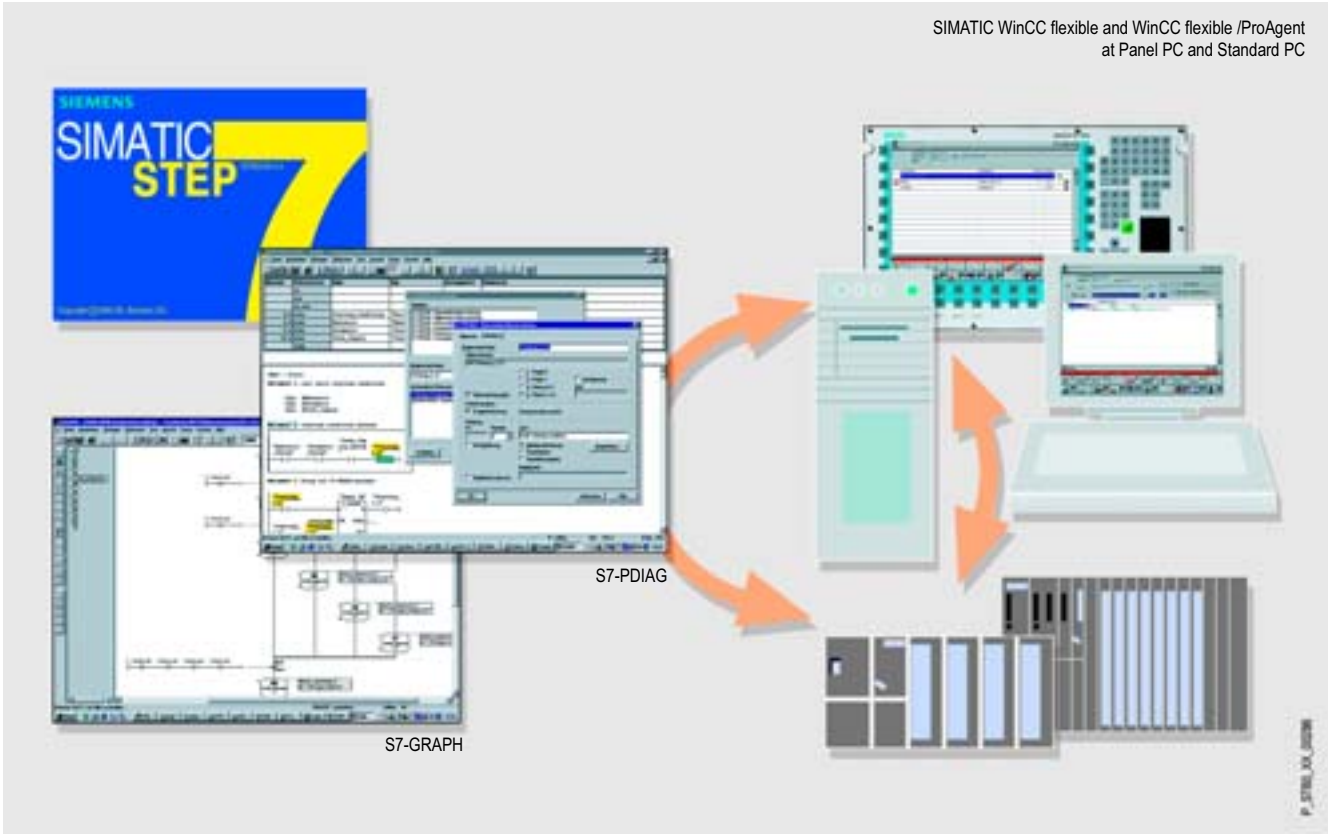
1) One license is necessary for each operator station. A license is not required for the engineering system for configuring the runtime option.

A) Subject to export regulations AL: N und ECCN: 5D992B2

WinCC flexible /ProAgent

Overview

SIMATIC WinCC flexible and WinCC flexible /ProAgent
at Panel PC and Standard PC



- Precise and rapid process faul t diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration fo r diagnostics functionality
- Reduces PLC memory and processor usage

Note:
For further details, see
"SIMATIC ProAgent process diagnostics software"

Ordering data

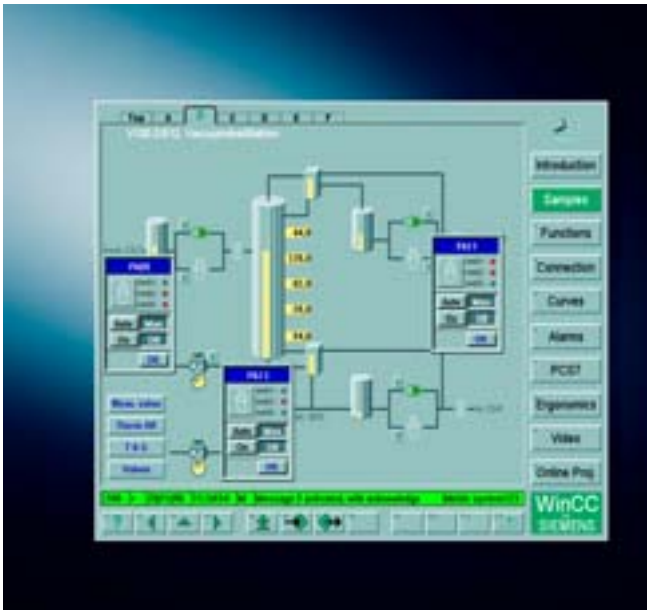
	Order No.
WinCC flexible /ProAgent Software option package for process diagnostics based on S7-PDIAG from V5.1, S7-GRAPH from V5.2; functional expansion for SIMATIC WinCC flexible; electronic documentation in German, English, French, Spanish, Italian	
• **WinCC flexible /ProAgent for SIMATIC Panels** 1) A) Runtime license (Single License) runs on: TP/OP 270, MP 270B and MP 370	**6AV6618-7DB01-0AB0**
• **WinCC flexible /ProAgent for WinCC flexible Runtime** 1) A) Runtime license (Single License)	**6AV6618-7DD01-0AB0**
Documentation (must be ordered separately)	
SIMATIC HMI Manual Collection B) 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**

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

A) Subject to export regulations AL: N und ECCN: 5D992B2

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

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 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. Building 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 SP2:**
    Executes under Windows XP Professional/ Windows 2003 Server and Windows 2000
  - **SIMATIC WinCC V5.1 SP2:**
    Executes under Windows NT 4.0 / 2000

New features of V6.0:

- Historian concept in the basi c system with significantly enhanced archiving performance, integrated long-term archiving and optional evaluation functions; based on the Microsoft SQL Server 2000
- Customized expansion capability of the WinCC Graphics Designer by means of Visual Basic for Application (VBA)
- Easy, open and rugged Runtime Scripting with Visual Basic Scripting (VBScript)
- Expanded, integrated scalability by increasing the number of servers (12) and clients (32) with expansion of the functionality at the same time, and also thanks to the option of using a central archive server
- Extended Web functionality with WinCC clients as Web servers with access to all lower-level WinCC servers
- Further functional adaptation of the WebNavigator client to a WinCC client
- Enhancement of the reporting and logging system thanks to higher flexibility, greater openness and more simple operation
- Executable under Windows XP (s ingle-user station and client)
- New options:
  - WinCC/Dat@Monitor (display and analysis of current process states and historical data on office PCs)
  - WinCC/ConnectivityPack (OPC Alarms&Events / Historical Data Access, database access via WinCC OLE-DB)
  - WinCC/IndustrialDataBridge (connection of external databases)
  - FDA options: WinCC/Audit and SIMATIC Logon Services

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- All HMI functions are on board (user administration, operating possibilities, graphical system, messaging system, archiving, reporting and logging system, diagnostics)
- Integration platform in the corp oration thanks to the Historian functionality integrated into WinCC based on the Microsoft SQL Server and tools and clients for evaluation
- Company-wide, flexible client/server structures with operator stations on the Web, distributed servers and data integrity due to redundancy
- Easily integrated thanks to st andardized interfaces such as OPC (OLE for Process Control), WinCC-OLE-DB, VBA, VBScript, C-API (ODK)
- For universal use thanks to so lutions for all sectors (e.g. conforming to FDA 21 CFR Part 11) and multiple languages for worldwide use
- 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

SIMATIC WinCC

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 reducing the engineering and training overhead and result in greater personnel flexibility and operating reliability. If you are familiar with Microsoft Windows, you will have no problems with WinCC Explorer, the central control point of WinCC.

In conjunction with other SIMATIC components, the system also offers additional functions, such as process diagnostics and maintenance. All SIMATIC engineering tools interact when configuring the functions.

SIMATIC WinCC offers a complete basic functionality for process visualization and operation. For this purpose, WinCC offers a range of editors and interfaces whose functionality allow individual configuration for the relevant application.

WinCC editors	Task/configurable runtime functionality
WinCC Explorer	Central project management for fast access to all project data and central settings
WinCC Graphics Designer	Graphics system for user-definable visualization and operation through pixel-graphic objects
WinCC Alarm Logging	Messaging system for acquiring and archiving events with operator control and display possibilities based on DIN 19235; freely selectable alarm classes, alarm display and logging
WinCC Tag Logging	Process archiving for measured value acquisition, compression and storage, e.g. for trend and tabular representation and further processing
WinCC Report Designer	Report and logging system for time- and event-controlled documentation of messages, operations and current process data in the form of user reports or project documentation in user-definable layout
WinCC User Administrator	Tool for convenient administration of users and access rights
WinCC Global Script	Processing functions with unlimited functionality through usage of VBScript and ANSI-C

Ports

	Task/configurable runtime functionality
Communications channels	For the communication with lower-level controls (SIMATIC logs, PROFIBUS DP, PROFIBUS FMS, DDE and OPC server included in delivery)
Standard interfaces	For the open integration of other Windows applications through WinCC, WinCC-OLE-DB, ActiveX, OLE, DDE, OPC etc.)
Programming interfaces	For individual access to data and functions of WinCC and for the integration into user programs with VBA, VB Script, C-API (ODK), C-Script (ANSI-C)

Kompatibilität

WinCC version	Windows NT4.0 SP6a	Windows 2000 Professional; Server; Advanced Server; with SP2, SP3, SP4	Windows XP Professional	Windows XP Professional SP1	Internet Explorer
V5.1 SP2	•	•	–	–	IE V5.5; IE V6.0, IE V6.0 SP1
V6.0 SP2	–	•	•	•	IE V6.0 SP1

Integration

Integration in corporation-wide solutions (IT and business integration)

WinCC builds consistently on Microsoft technologies, which ensures the widest possible openness and integration capability. ActiveX controls permit technology-specific and sector-specific expansions. Cross-vendor communication is also easy. The reason is: WinCC is OPC-compliant and can therefore be implemented as an OPC client and server and supports, in addition to access to current process values, standards like OPC HDA (Historical Data Access) and OPC Alarm & Events. Also important: Visual Basic for Applications (VBA) for application-specific expansions of the WinCC Graphics Designer and Visual Basic Scripting (VBS) in the form of an easy-to-learn, open runtime language. If preferred, professional application development engineers can also use ANSI-C. And access to the API programming interfaces is easy using the Open Development Kit ODK.

For the first time, WinCC V6 has integrated a powerful, flexible Historian functionality based on the Microsoft SQL Server 2000 into the basic system. The user therefore has all the options: from high-performance archiving of current process data and long-term archiving with high-level data compression through to a central information hub in the shape of a corporation-wide Historian server. Flexibly implementable clients and tools for evaluation, open interfaces and special options (Connectivity Pack, Industrial DataBridge, Client Access Licenses) form the basis of an effective IT and business integration.

Integration in automation solutions (valid from WinCC V6.0 upwards)

WinCC is an open process visualization system and offers the opportunity for connecting a wide range of different PLCs.

Approved communication software

Only the specified (or higher) versions of communications software may be used. The applicable SIMATIC NET updates are available to upgrade older versions and releases and are supplied with the WinCC base package/upgrade.

Number of PLCs that can be connected

The following applies for the numbers of PLCs that can be connected over Industrial Ethernet CP 1613 with a maximum frame length of 512 bytes:

Type of interface	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

Via PROFIBUS, the CP 5611 can be used to connect up to 8 PLCs and the CP 5613 can be used to connect up to 44 PLCs. Industrial Ethernet is recommended with 10 PLCs or more.

Mixed operation with different PLCs

With their multiprotocol stack, the CP 1613 and CP 5613 communications processors support the simultaneous use of two protocols with a single bus cable, for example, where several different PLC types are used. Two interface boards of the same type can be used with WinCC only in conjunction with the channels SIMATIC S5 Ethernet Layer 4 (2 x CP 1613), SIMATIC S7 Protocol Suite (2 x CP 1613, 2 x CP 5613) or PROFIBUS DP (4 x CP 5613; up to 12 slaves per CP 5613). In addition to communication via Industrial Ethernet CP 1613 or PROFIBUS CP 5613, a CP 5511 or CP 5611 can be used for communication with SIMATIC S7 via MPI.

Client/server communication

The TCP/IP protocol is used to handle communications between clients and server. It is recommended that a separate PC LAN is constructed. For small projects with a relatively low message volume, a SIMATIC NET Industrial Ethernet can be implemented for both the process communication (WinCC server ↔ PLC) and the PC-PC communication (WinCC client ↔ WinCC server).

Communication redundancy

WinCC does not itself support redundant bus interfaces. The S7-REDCONNECT software package is required for redundant connection of PCs to SIMATIC S7 via 2 x Industrial Ethernet. This connects the SIMATIC S7 to applications on the PC, e.g. SIMATIC WinCC. Complete communications redundancy can also be achieved by setting up optical rings (see Catalog IK PI).

Channel DLL PROFIBUS DP

According to the PROFIBUS standard, DP slaves are always permanently assigned to a DP master; i.e. a second WinCC station (DP master) cannot access the same PLCs (DP slave). This means that redundant operation of two WinCC stations is not possible when using the PROFIBUS DP interface.

Interfacing to non-Siemens PLCs:

OPC (OLE for Process Control) is recommended for interfacing to non-Siemens PLCs.

For the latest information about OPC servers from a wide range of different manufacturers, see:
http://www.opcfoundation.org/05_man.asp

WinCC supports the 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

4

Integration (continued)

Interface overview (from WinCC V6.0 upwards)

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 to 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 to SIMATIC 535/545/555/565/575
SIMATIC 505 Ethernet Layer 4	Channel DLL for 505 Layer 4 communication
SIMATIC 505 TCP/IP	Channel DLL for 505 TCP/IP communication
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 provides process data for OPC clients
PROFIBUS FMS	Channel DLL for PROFIBUS FMS
PROFIBUS DP	Channel DLL for PROFIBUS DP

1) Application note:
parallel use of the OPC client channel permits e.g. connection to an SNMP OPC server for visualization of the data present there.
The SNMP OPC server permits monitoring of any network components (e.g. Switch) which support the SNMP protocol. Further information can be found in the Catalog IK PI

Integration (continued)

Communication components for PG/PC for SIMATIC (from WinCC V6.0 upwards)

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 expanding the OS/OP							
CP 1612 PCI card for connecting the PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)			•	•		•	**6GK1 161-2AA00**
CP 1512 PCMCIA card (Cardbus 32 bit) for connecting the PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)			•	•		•	**6GK1 151-2AA00**
SOFTNET-S7 V6.2 Communications software for S7 functions (max. 64 connections) •For Windows 2000/XP/2003 Server			•	•			**6GK1 704-1CW62-3AA0**
SOFTNET-S7 Lean V6.2 Communications software for S7 functions (max. 8 connections) •For Windows 2000/XP/2003 Server			•	•			**6GK1 704-1LW62-3AA0**
CP 1613 PCI card for connecting the PG/PC to Industrial Ethernet (communications software must be ordered separately)	•	•	•	•	•	•	**6GK1 161-3AA00**
S7-1613 V6.2 Communications software for S7 functions and S5/505 Layer 4 communication with TCP/IP •For Windows 2000/XP/2003 Server		•	•	•	•		**6GK1 716-1CB62-3AA0**
TF-1613 V6.2 Communications software for TF functions and S5/505 Layer 4 communication with TCP/IP •For Windows 2000	•	•	•		•		**6GK1 716-1TB62-3AA0**

• System coupling is possible

1) Via any interface board with NDIS 3.0 interface; communications software is not necessary

Additional information can be found in the Internet under

http://www4.ad.siemens.de/view/cs/de/14627901

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Integration (continued)

Communication components for PG/PC for SIMATIC (from WinCC V6.0 upwards)

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 basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		•			Included in basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			•		Included in basic package
PROFIBUS FMS Channel DLL for PROFIBUS FMS				•	Included in basic package
Communication components for expanding the OS/OP					
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 up to 19.2 kbit/s		•			**6ES7 972-0CA23-0XA0**
CP 5613 PCI card for connecting the PC to PROFIBUS (communications software must be ordered separately)	•	•	•	•	**6GK1 561-3AA00**
CP 5613 A2 PCI card for connecting PC to PROFIBUS (communication software must be ordered separately)	•	•	•	•	**6GK1 561-3AA01**
S7-5613 V6.2 Communications software for S7 functions + FDL •For Windows 2000/XP/2003 Server	•	•			**6GK1 713-5CB62-3AA0**
DP-5613 V6.2 Communications software for DP master + FDL •For Windows 2000/XP/2003 Server	•		•		**6GK1 713-5DB62-3AA0**
FMS-5613 V6.2 Communications software for PROFIBUS-FMS + FDL •For Windows 2000/XP/2003 Server	•			•	**6GK1 713-5FB62-3AA0**

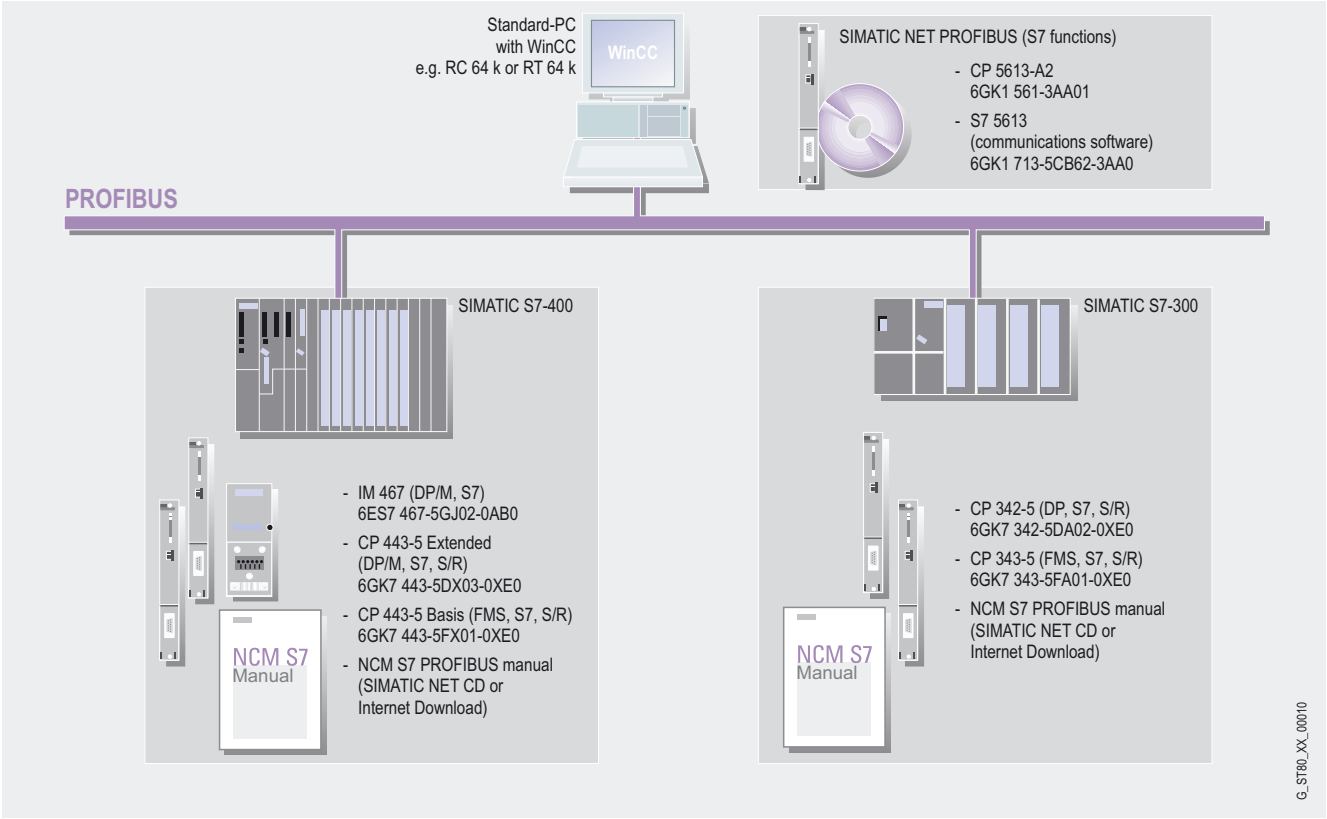
• System coupling is possible

Additional information can be found in the Internet under

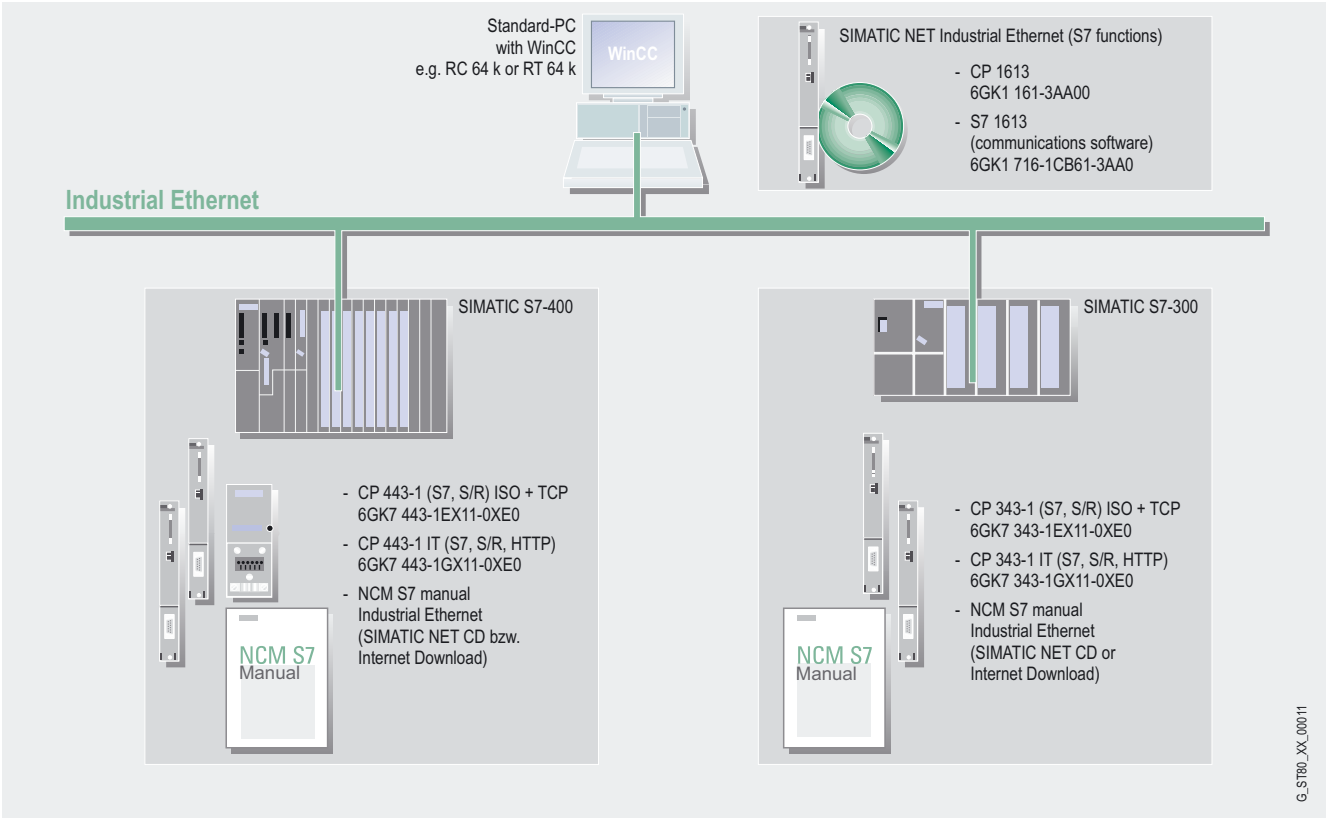
http://www4.ad.siemens.de/view/cs/de/14628484

Integration (continued)

Communication examples

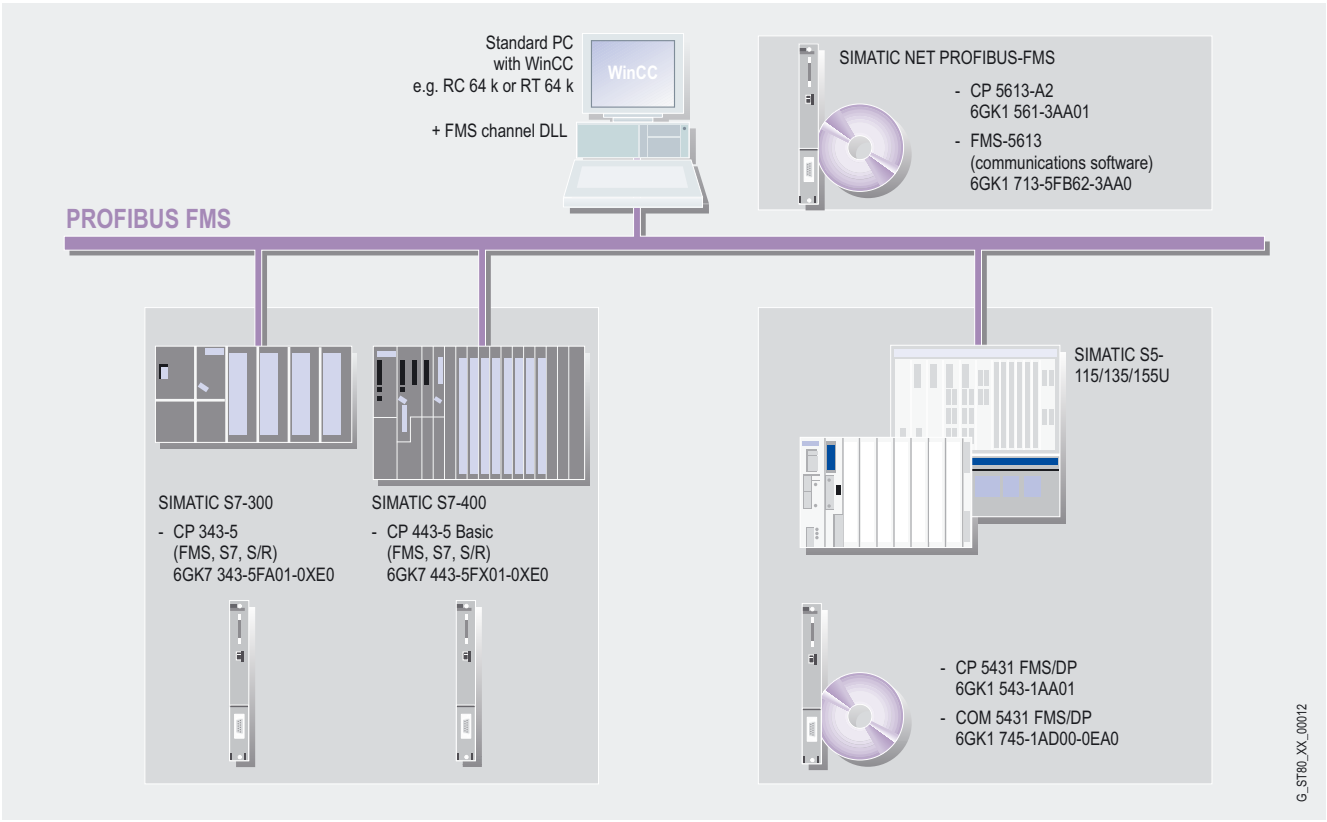


WinCC single-user system: PROFIBUS with S7 communication

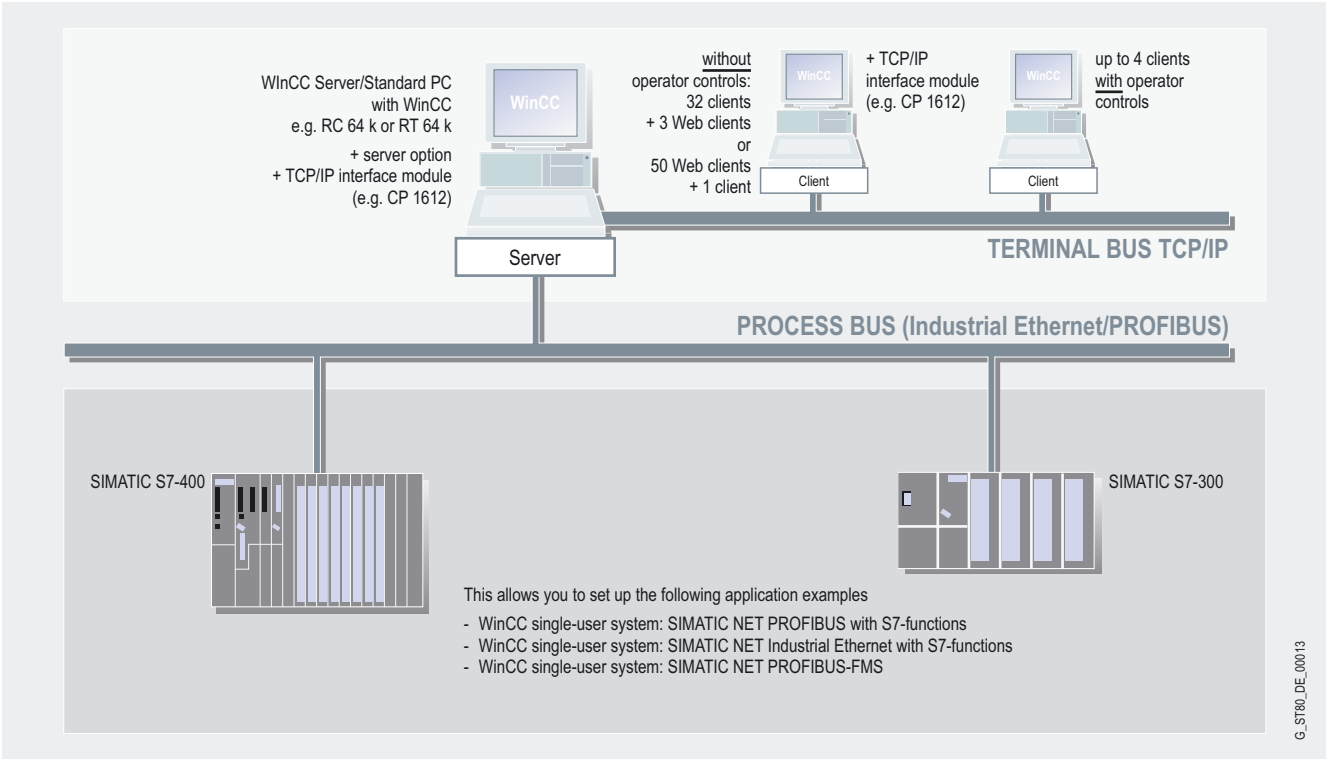


WinCC single-user system: Industrial Ethernet with S7 communication

Integration (continued)

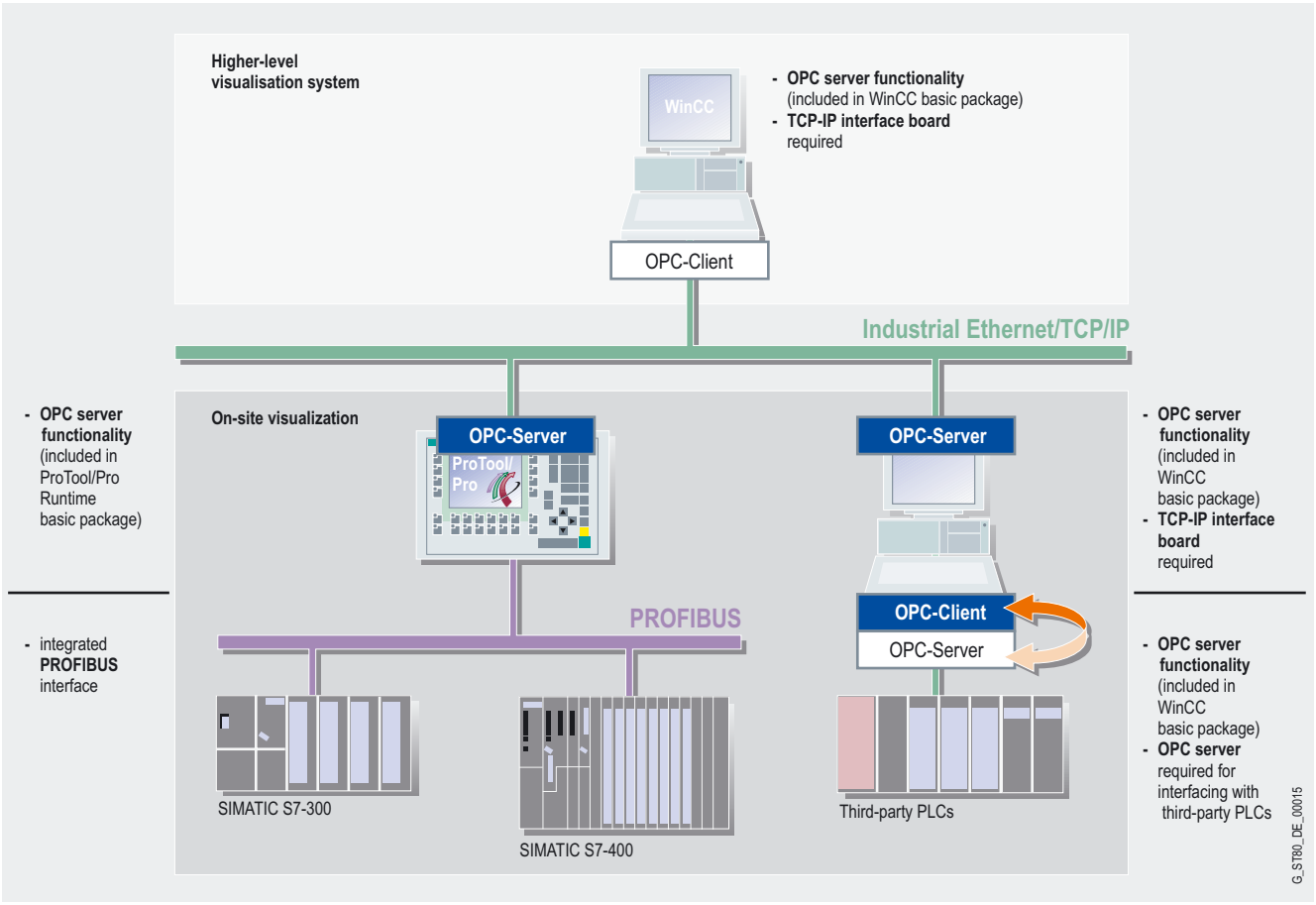


WinCC single-user system: PROFIBUS FMS



WinCC multi-user system with operator-accessible server (for WinCC V6)

Integration (continued)



OPC coupling

Technical specifications

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP2
Operating system	Windows NT4.0/ Windows 2000 WebClient, additionally: Windows 98, Windows ME, Windows 2000 terminal services	Windows XP Professional/ Windows 2003 Server and Windows 2000 WebClient/Dat@Monitor Client, additionally: Windows NT4.0/ Windows XP Home, Windows 2000 terminal services
Hardware requirements for PC		
CPU [1]		
•Minimum	Pentium II, 400 MHz	Single-user system/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 system/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
RAM (main memory)		
•Minimum	≥ 128/256 MB (single-user station/server), ≥ 128 MB (client) [2]	Single-user system/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 system/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 system/server: 20 GB Client: 5 GB WebClient/Dat@Monitor client: 5 GB
•Recommended	> 3 GB	Single-user system/server: 80 GB Client: 20 GB WebClient/Dat@Monitor client: 10 GB
•Hard disk (free disk 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 of comparable performance can also be used
2) At least 32 MB more when using online configuration

Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP2
Functionality/quantity framework		
Messages (number)	50,000	50,000
•Message text (number of characters)	10 x 256	10 x 256
•Message archive	> 500,000 messages [1]	> 500,000 messages [1]
•Process values per message	10	10
•Continuous loading, max. messages	2/s	Central archive server: 100/s Server/single-user station: 10/s
•Message surge, max.	2000 in 10 min.	Central archive server: 15,000/10 sec. every 5 min Server/single-user station: 2,000/10 sec. every 5 min
Archive		
•Archive data points	Max. 30,000 per server	Max. 80,000 per server [2]
•Archive types	Short-term and sequential 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 archives		
•Archive (recipes)	500	Determined by system [1]
•Data records per user archive	65,536 [4]	65,536 [4]
•No. of fields per user archive	500 [4]	500 [4]
Graphics system		
•No. of diagrams	Determined by system [1]	Determined by system [1]
•No. of objects per picture	Determined by system [1]	Determined by system [1]
•No. of operator-controllable fields per picture	Determined by system [1]	Determined by system [1]
Process variables	64 K [5]	64 K [5]
Trend curves		
•Curve windows per display	8	25
•Curves per curve window	15	80
User administration		
•User groups	28	128
•No. of users	128	128
•Authorization groups	999	999
Runtime languages	> 9 per project	> 9 per project
Configuration languages	5 European (Ger., Eng., Fr., Ita., Sp.), 4 Asian (simpl.+trad. Chi. / Kor. / Jpn)	5 European (Ger., Eng., Fr., Ita., Sp.), 4 Asian (simpl.+trad. Chi. / Kor. / Jpn)
Protocols		
•Message sequence reports (simultaneous)	1 per server/single-user station	1 per server/single-user station
•Message archive reports (simultaneous)	1	3
•Application reports	Determined by system [1]	Determined by system [1]
•Report lines per body	66	66
•Variables per report	300 [6]	300 [6]
Multi-user system		
•Server	6	12
•Clients for server with operator terminal	3	4
•Clients for server without operator terminal	16	32 clients + 3 WebClients or 50 WebClients + 1 client

1) Dependent on available memory
2) Dependent on the number of licensed archive variables
3) Dbase III only with TagLogging short-term archives
4) The product of number of fields and number of data records must not exceed 320,000
5) Depends on the number of licensed PowerTags
6) The number of variables per report depends on the performance of the process communication

SIMATIC WinCC

Ordering data

	Order No.
SIMATIC WinCC system software V5.1 SP2	
Runtime packages on CD-ROM [A]	
Language versions: G/E/F/I/S; 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 [A]	
Language versions: G/E/F/I/S; 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 [A]	
Language/script versions: English/Chinese traditional and simplified/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**
•64k PowerTags (RT Max)	**6AV6 381-1BF05-1AV0**
Complete packages on CD-ROM [A]	
Language/script versions: English/Chinese traditional and simplified/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 Powerpacks	
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 SP2	
Runtime packages on CD-ROM [B]	
Language/script versions: G/E/F/I/S; with license for:	
•128 PowerTags (RT 128)	**6AV6 381-1BC06-0CX0**
•256 PowerTags (RT 256)	**6AV6 381-1BD06-0CX0**
•1024 PowerTags (RT 1024)	**6AV6 381-1BE06-0CX0**
•8 K PowerTags (RT 8K)	**6AV6 381-1BH06-0CX0**
•64k PowerTags (RT Max)	**6AV6 381-1BF06-0CX0**
Incl. 512 archive variables each	
Complete packages on CD-ROM [B]	
Language versions: G/E/F/I/S; with license for:	
•128 PowerTags (RC 128)	**6AV6 381-1BM06-0CX0**
•256 PowerTags (RC 256)	**6AV6 381-1BN06-0CX0**
•1024 PowerTags (RC 1024)	**6AV6 381-1BP06-0CX0**
•8 K PowerTags (RC 8K)	**6AV6 381-1BS06-0CX0**
•64 K PowerTags (RC Max)	**6AV6 381-1BQ06-0CX0**
Incl. 512 archive variables each	
SIMATIC WinCC system software V6.0 SP2 ASIA	
Runtime packages on CD-ROM [B]	
Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/ Japanese; with license for:	
•128 PowerTags (RT 128)	**6AV6 381-1BC06-0CV0**
•256 PowerTags (RT 256)	**6AV6 381-1BD06-0CV0**
•1024 PowerTags (RT 1024)	**6AV6 381-1BE06-0CV0**
•8 K PowerTags (RT 8k)	**6AV6 381-1BH06-0CV0**
•64k PowerTags (RT Max)	**6AV6 381-1BF06-0CV0**
Incl. 512 archive variables each	
Complete packages on CD-ROM [B]	
Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/ Japanese; with license for:	
•128 PowerTags (RC 128)	**6AV6 381-1BM06-0CV0**
•256 PowerTags (RC 256)	**6AV6 381-1BN06-0CV0**
•1024 PowerTags (RC 1024)	**6AV6 381-1BP06-0CV0**
•8 K PowerTags (RC 8K)	**6AV6 381-1BS06-0CV0**
•64 K PowerTags (RC Max)	**6AV6 381-1BQ06-0CV0**
Incl. 512 archive variables each	

A) Subject to export regulations AL: N und ECCN: 5D002ENC3
B) Subject to export regulations AL: N und ECCN: 5D992B2

Ordering data (continued)

	Order No.
SIMATIC WinCC system software V6.0	
For upgrading from:	
Runtime packages	
•128 to 256 PowerTags	**6AV6 371-1BD06-0AX0**
•128 to 1024 PowerTags	**6AV6 371-1BE06-0AX0**
•128 to 8 K PowerTags	**6AV6 371-1BK06-0AX0**
•128 to 64 K PowerTags	**6AV6 371-1BF06-0AX0**
•256 to 1024 PowerTags	**6AV6 371-1BG06-0AX0**
•256 to 8 K PowerTags	**6AV6 371-1BL06-0AX0**
•256 to 64 K PowerTags	**6AV6 371-1BH06-0AX0**
•1024 to 8 K PowerTags	**6AV6 371-1BM06-0AX0**
•1024 to 64 K PowerTags	**6AV6 371-1BJ06-0AX0**
•8 K to 64 K PowerTags	**6AV6 371-1BN06-0AX0**
Complete packages	
•128 to 256 PowerTags	**6AV6 371-1BD16-0AX0**
•128 to 1024 PowerTags	**6AV6 371-1BE16-0AX0**
•128 to 8 K PowerTags	**6AV6 371-1BK16-0AX0**
•128 to 64 K PowerTags	**6AV6 371-1BF16-0AX0**
•256 to 1024 PowerTags	**6AV6 371-1BG16-0AX0**
•256 to 8 K PowerTags	**6AV6 371-1BL16-0AX0**
•256 to 64 K PowerTags	**6AV6 371-1BH16-0AX0**
•1024 to 8 K PowerTags	**6AV6 371-1BM16-0AX0**
•1024 to 64 K PowerTags	**6AV6 371-1BJ16-0AX0**
•8 K to 64 K PowerTags	**6AV6 371-1BN16-0AX0**
SIMATIC WinCC V6.0 Archive Powerpacks	
For upgrading the archiving from	
•512 to 1500 archive variables	**6AV6 371-1DQ06-0AX0**
•512 to 5000 archive variables	**6AV6 371-1DQ06-0BX0**
•512 to 30000 archive variables	**6AV6 371-1DQ06-0EX0**
•512 to 80000 archive variables	**6AV6 371-1DQ06-0GX0**
•1500 to 5000 archive variables	**6AV6 371-1DQ06-0AB0**
•1500 to 30000 archive variables	**6AV6 371-1DQ06-0AE0**
•1500 to 80000 archive variables	**6AV6 371-1DQ06-0AG0**
•5000 to 30000 archive variables	**6AV6 371-1DQ06-0BE0**
•5000 to 80000 archive variables	**6AV6 371-1DQ06-0BG0**
•30000 to 80000 archive variables	**6AV6 371-1DQ06-0EG0**

	Order No.
SIMATIC WinCC Upgrade / Comprehensive Support	
WinCC V5 Upgrade 1) A)	
For upgrading of RT and RC software packages and stations to the latest version	
•from V4.x to V5.1 SP2	**6AV6 381-1AA05-1CX4**
•from V5.x to V5.1 SP2	**6AV6 381-1AA05-1CX3**
•from V4.x /V5.x ASIA to V5.1 ASIA	**6AV6 381-1AA05-1AV3**
WinCC V6 Upgrade 1) B)	
For upgrading the RT version	
•from V5.x to V6.0 SP2	**6AV6 381-1AA06-0CX4**
•from V5.x ASIA to V6.0 SP2 ASIA	**6AV6 381-1AA06-0CV4**
For upgrading the RC version	
•from V5.x to V6.0 SP2	**6AV6 381-1AB06-0CX4**
•from V5.x ASIA to V6.0 SP2 ASIA	**6AV6 381-1AB06-0CV4**
WinCC Comprehensive Support 2) B)	
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 basic documentation	
Containing 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**

1) In accordance with license stipulations, 1 upgrade package must be ordered for each WinCC station.

2) Comprehensive Support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiry. In accordance with license stipulations, 1 Comprehensive Support Package must be ordered for each WinCC station.

A) Subject to export regulations AL: N und ECCN: 5D002ENC3

B) Subject to export regulations AL: N und ECCN: 5D992B2

Ordering data (continued)

SIMATIC WinCC communication

Communication via Industrial Ethernet

	Order No.
CP 1612 A) PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	**6GK1 161-2AA00**
CP 1512 PCMCIA card (Cardbus 32 bit) for connecting a PG/notebook computer to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	**6GK1 151-2AA00**
SOFTNET-S7 V6.2 B) Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 64 connections)	**6GK1 704-1CW62-3AA0**
SOFTNET-S7 Lean V6.2 B) Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 8 connections)	**6GK1 704-1LW62-3AA0**
CP 1613 PCI card (32 bit) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	**6GK1 161-3AA00**
S7-1613 V6.2 B) Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000/XP/2003 server	**6GK1 716-1CB62-3AA0**
TF-1613 V6.2 B) Software for TF protocol, S5-compatible communication incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000	**6GK1 716-1TB62-3AA0**
Channel DLL SIMATIC S5 PMC Ethernet Layer 4 C) (only for WinCC V5.1) Additional software packages required for S5-PMC	**6AV6 371-1CD05-0PX0**
•PMC/LS-B message functions	**6ES5 848-7WL01**
•PMC/LS-B status, standard displays from V4.3 upwards	**6ES5 848-7UL01**
•Parameterization software PMC Pro from V2.2 upwards, German	**6ES5 886-4WF11**
•Parameterization software PMC Pro from V2.2 upwards, English	**6ES5 886-4WF21**

Communication via PROFIBUS

	Order No.
CP 5611 PCI card (32 bit) for connection to a PG/PC to PROFIBUS (communications software included in the WinCC basic package)	**6GK1 561-1AA00**
CP 5611 MPI Comprising CP 5611 (32 bit) and MPI cable, 5 m	**6GK1 561-1AM00**
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/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 B) PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA00**
CP 5613 A2 B) PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA01**
S7-5613 V6.2 B) Software for S7 communication incl. PG/OP communication, FDL, S7-OPC server, for Windows 2000 / XP/ 2003 Server	**6GK1 713-5CB62-3AA0**
DP-5613 V6.2 B) Software for DP protocol incl. PG/OP communication, FDL, DP-OPC server, for Windows 2000 / XP/ 2003 Server	**6GK1 713-5DB62-3AA0**
FMS-5613 V6.2 B) Software for FMS protocol incl. PG/OP communication, FDL, FMS-OPC server, for Windows 2000 / XP/ 2003 Server	**6GK1 713-5FB62-3AA0**
Channel DLL SIMATIC S5 PMC PROFIBUS C) (only for WinCC V5.1) Additional software packages required for S5-PMC	**6AV6 371-1CD05-0NX0**
•PMC/LS-B message functions	**6ES5 848-7WL01**
•PMC/LS-B Status, standard displays from V4.3 upwards	**6ES5 848-7UL01**
•Parameterization software PMC Pro from V2.2 upwards, German	**6ES5 886-4WF11**
•Parameterization software PMC Pro from V2.2 upwards, English	**6ES5 886-4WF21**

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

More information

WinCC language versions

For the Asian market, SIMATIC WinCC V5 is also available in simplified Chinese, traditional Chinese, Korean and Japanese. These WinCC versions meet the needs of machine manufacturers, plant constructors and exporters who supply the regions of China, Taiwan, Korea and Japan.

WinCC ASIA contains all the familiar WinCC functions as well as a configuration interface in the relevant national language and in English. The online Help is available in simplified and traditional Chinese, in Korean, Japanese and in English. The Chinese, Korean, Japanese or multilingual version of Windows is required to run these versions.

WinCC ASIA is supplied on a stand-alone CD-ROM that contains all the above-mentioned language variants. The corresponding documentation can be obtained from the regional companies in China, Korea, Taiwan and Japan.

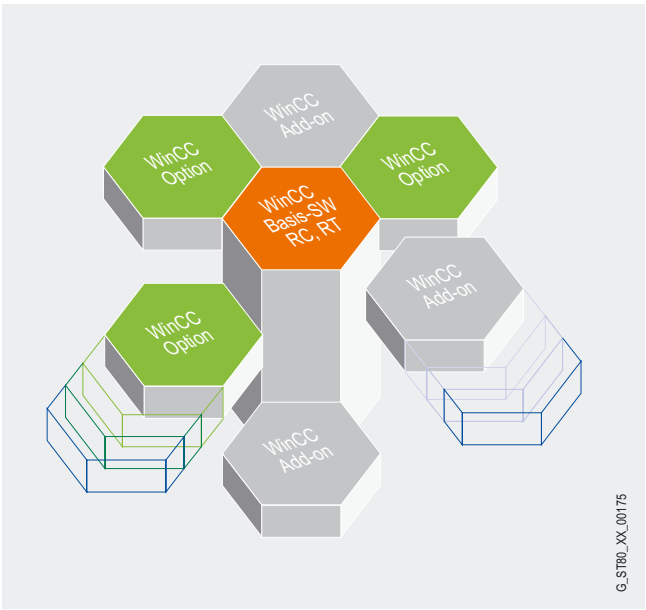
Runtime licenses are language-independent. The English data handling program (AuthorsW) can also run under the Chinese, Korean and Japanese versions of Windows.

Additional information can be found in the Internet under

http://www.siemens.com/wincc

WinCC options

Overview



- The universally usable WinCC basic software provides the basis for modular expansions. These function expansions can be obtained in the form of WinCC options and WinCC add-ons.
- WinCC options are produced under the responsibility of the WinCC development department and are supplied by Siemens Automation & Drives. You are supported by our technical consulting services and the central hotline.

Options for flexible system configurations

- WinCC/Server
  - For setting up a high-performance client/server system
- WinCC/Web Navigator
  - For operating and monitoring plants over the Internet, the company intranet, or an LAN

Options for increasing availability

- WinCC/Redundancy
  - For enhancing the availability of the system through redundancy
- WinCC/ProAgent
  - For reliable process diagnostics
- WinCC/Messenger (only for WinCC V5.1)
  - For the automatic or user-controlled transmission of messages with text, language and graphical information by e-mail directly from WinCC
- WinCC/Guardian (only for WinCC V5.1)
  - For embedding live camera images into WinCC displays, video monitoring and storing video sequences in a database

Options for IT and business integration

- WinCC/Dat@Monitor (only for WinCC V6.0)
  - For displaying and analyzing current process states and historical data on office PCs using standard tools
- WinCC/Connectivity Pack (only for WinCC V6.0)
  - Access to WinCC archive using OPC HDA, OPC A&E and WinCC OLE-DB
- WinCC/IndustrialDataBridge
  - Configurable interfacing to databases and IT systems
- WinCC/Client access license (only for WinCC V6.0)
  - Access from (office) computers to WinCC archive data
- SIMATIC IT PDA (only for WinCC V5.1; for WinCC V6.0, comparable functionality is already included in the basic system)
  - Fast, file-based archiving
- SIMATIC IT PPA
  - Compression and evaluation of archived values from different sources (WinCC, other databases, etc.) using MS SQL Server
- SIMATIC WinBDE
  - Machine data acquisition and evaluation

Options for process I&C

- WinCC/Basic Process Control (only for WinCC V5.1; included in the basic system for WinCC V6.0)
  - With functional expansion for instrumentation and control applications

Options for SCADA expansions

- WinCC/User Archives
  - For managing records in user archives
- WinCC/Storage (only for WinC C V5.1; for WinCC V6.0, a comparable functionality is already included in the basic system)
  - For long-term acquisition of process data, messages and reports

Options for sector-specific expansions (FDA compatible)

- WinCC/Advanced User Administrator (for WinCC V5.1)
  - Central management of WinCC users, plant-wide (according to CFR 21 Part 11)
- SIMATIC Logon Service (for WinCC V6.0)
  - Central management of WinCC users, plant-wide (according to CFR 21 Part 11)
- WinCC/Audit (for WinC C V6.0) change management
  - Creation of Audit Trails with engineering and runtime

Options for individual system expansions

- WinCC/IndustrialX
  - For production of customized WinCC ActiveX objects in a VB development environment
- WinCC/ODK
  - For using the 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, WinCC Knowledge Base CD

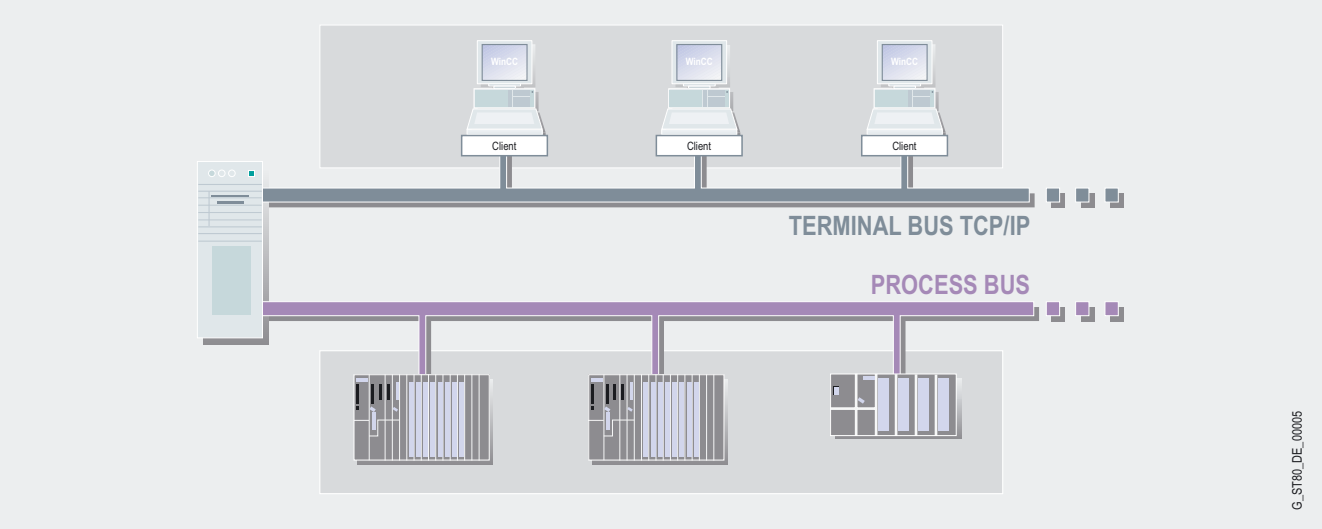
More information

WinCC options

Additional information can be found in the Internet under

http://www.siemens.com/wincc/options

Overview



- Option for SIMATIC WinCC that enables the establishment of a powerful client/server system
- For installing the option on the se rver, one of the following operating systems is required: Windows 2000 Server, Windows 2000 Advanced Server or Windows Server 2003 (for V6 only)
- Several coordinated HMI stati ons can be operated together with networked automation systems
- Client/server solution:
  - One server supplies up to 32 connected clients with process and archive data, messages, pictures and logs
  - Depending on the plant size, up to 12 servers and 32 clients can be used
- Requirement: network connection (TCP/IP) between the server computer and the connected clients [1)]
- One server license is required per server

What's new with V6?

- The server can now supply up to 32 clients
- Up to 12 WinCC servers can be configured in a plant (also as redundant server pairs)
- Harmonization of the functional ities of standard clients and multi clients
- WinCC clients can also be configured as WinCC Web Navigator servers (see also WinCC/Web Navigator option and WinCC/Dat@Monitor WebEdition)

Note regarding V5.1

A maximum of 16 clients on up to 6 servers is possible with WinCC V5.1. WinCC clients cannot be configured as Web servers. Instead, they require 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 fram ework, relieving the individual servers and better performance due to distributing the complete application or tasks over several servers
- Low-cost configuration on the cli ent 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. messa ge 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.

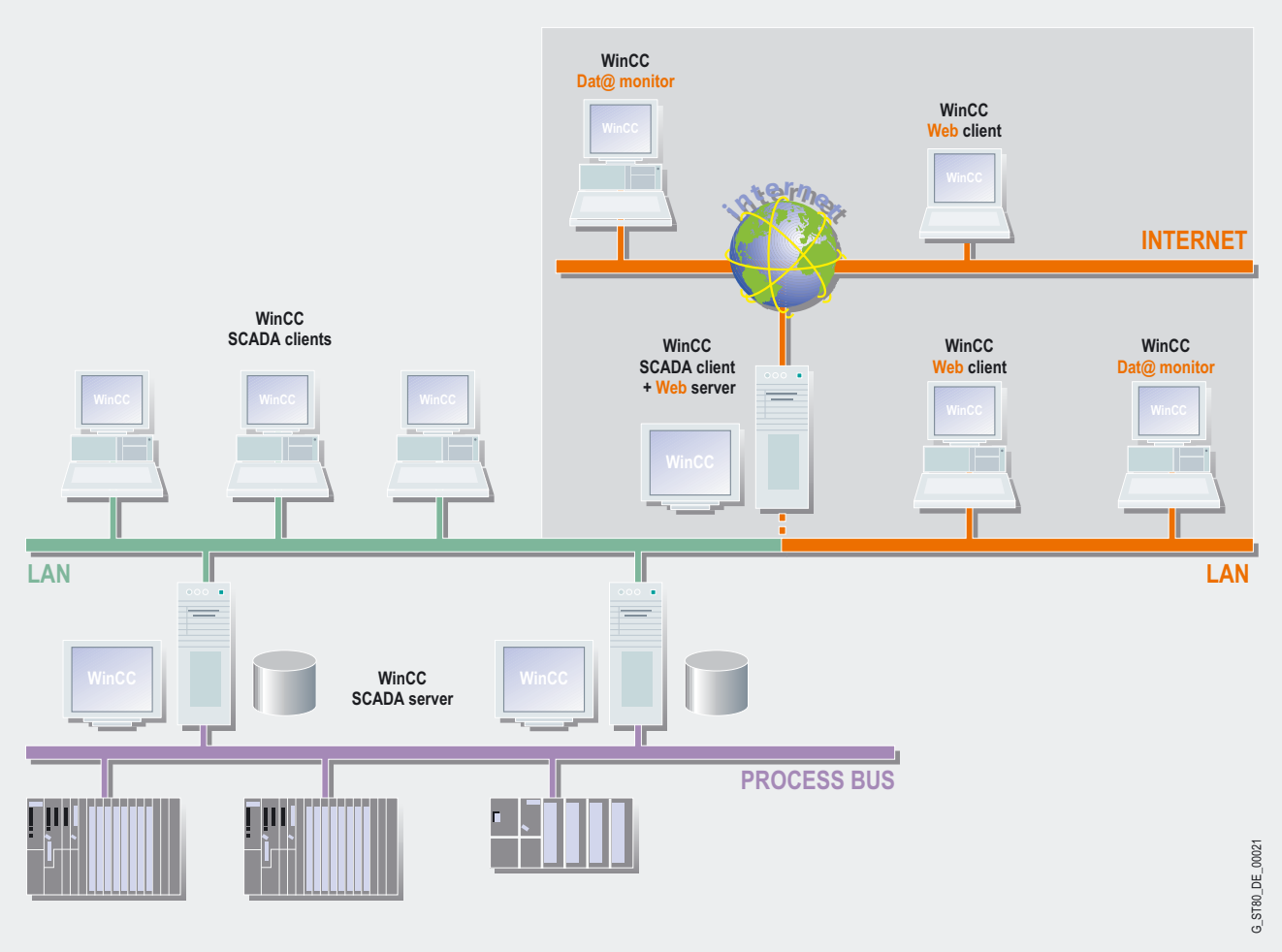
For the clients, you need only the smallest runtime license, RT128. If you also want to use the client for configuring your system, you will need the smallest full license, RC128. This makes it possible to configure low-cost operating and configuration stations in a network. The configuration can be performed online without any detrimental affect on the functions of the server and operating stations.

WinCC/Server

Ordering data	Order No.
WinCC/Server A)	
•For WinCC V5.1	**6AV6 371-1CA05-0AX0**
•For WinCC V6.0	**6AV6 371-1CA06-0AX0**
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**

A) Subject to export regulations AL: N und ECCN: EAR99S

Overview



- Option for SIMATIC WinCC for op erating and monitoring plants over the Internet or the company intranet or an LAN
- Configuration comprising:
  - One Web server with SIMATIC WinCC software as single-user, client or server version and
  - One Web client that permits operator control and monitoring of an ongoing WinCC project using an Internet browser with ActiveX support. The WinCC Basic system does not have to be installed on the computer
- Licensing:
  - A license is required for using the Web server
  - There are licenses for accessing 3, 10, 25 or 50 clients on the Web server
  - Low-cost Web Navigator diagnostics licenses are available for remote diagnostics via several distributed Web servers

What's new with V6?

- Installation of the Web server –in distributed plants –also on a WinCC client;
  - Access to up to 12 lower-level WinCC stations (servers or single-user systems) possible
  - Web clients offer shared views of the data of different WinCC servers
  - If WinCC/Redundancy is used, the Web clients also switch via the lower-level WinCC server (requirement: WinCC client functions as Web server)
  - By separating the Web functionality from the WinCC data servers, the overall system becomes even more secure and is easier to scale with regard to load.
- Integrated user manag ement with WinCC V6:
  The configured WinCC operator authorizations are taken into account on the Web client.
- Access to user archives
- VB scripts are supported just as are the objects and RT functionalities new to WinCC V6
- For use as integration platform, user-friendly services and tools are offered to distribute customized objects (controls, files) to the Web clients. These components can then also be integrated into a cross-Web/server navigation system.
- Load distribution across several Web servers in order to operate several hundred Web clients in one plant; the Web clients are automatically distributed among the Web servers.

Note regarding V5.1

In conjunction with WinCC V5.1, the Web navigator server must be installed on a WinCC single-user system or server.

WinCC/Web Navigator

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 t he 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

Web Navigator licenses

The Web Navigator client software can be installed as many times as necessary without the need for a license.

- Server-based licensing;
  a corresponding license is required to use the Web navigator server. Licenses are available for simultaneous access by 3, 10, 25 or 50 clients on the Web server.
- Diagnostic client licensing;
  for cost-optimized access from one or just a few Web Navigator clients to many Web servers (e.g. for diagnostic purposes). This client license guarantees access to the web server at any time. Functionally, there is no difference between this and the regular Web Navigator clients and mixed operation is possible.

Web Navigator clients can

- access several different Web servers or
- via a subordinate server, access several higher-level WinCC stations simultaneously

The only requirement on the server side is a Web Navigator Diagnostics server license or a standard Web Navigator license.

Optionally, several Web Navigator servers with the same WinCC project can be combined in a "Server farm". This makes it possible for several hundred Web clients to access the same database. The service ensures that the accessing clients are evenly distributed across all servers. If a server fails, the Web client is automatically routed to the next available server.

To use this functionality, a "Web Load Balancing License" must be installed on the participating Web servers. A Load Balance package contains 2 licenses.

For redundant WinCC stations on which the Web Navigator is installed, there is a low-cost method of expanding to the Web Load Balancing functionality. For this, a Web Load StepUp License must be installed on the participating Web servers. A StepUp package contains 2 licenses.

ThinClient solutions

The Web Navigator can also be used with the Windows 2000/2003 terminal services. The minimum requirement is the Windows 2000/2003 Server operating system. This allows the connection of, for example Windows CE-based visualization stations, such as SIMATIC MP 370 with the ThinClient MP option or MOBIC T8, to WinCC.

In addition to the web client, the Windows terminal services must be installed. The operating system must be at least the Windows 2000 server operating system. Up to 25 thin clients can be connected to a terminal server.

Typical applications:

- Mobile devices
- Hand-held devices
- Rugged local vis ualization devices

Mixed configuration

Web navigator and Dat@Monitor clients can be mixed in a system.

Function

A Web Navigator server can be created and configured easily using the Web Configurator (Wizard). WinCC process images that have to be visualized via the Internet are created in the usual manner with the WinCC Graphics Designer. Under normal circumstances, it is possible to start from the project locally without any modifications. The Web Publishing Wizard optimizes the images for transfer and display on the Internet. For presenting the WinCC process images on the Web client, only one standard browser is necessary (MS Internet Explorer from V6.0 upwards).

The operator on the Web client is integrated into the central WinCC user administration and is only able to observe or operate in accordance with the configured access rights. The Web Navigator supports the commonly used security mechanisms that are used for applications on the Internet such as routers, firewalls and proxy servers.

Ordering data

	Order No.
WinCC/Web Navigator A)	
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**
V6.0 SP1; for WinCC V6.0 SP2 2) A)	
•Base Pack (3 client licenses)	**6AV6 371-1DH06-0AX1**
•10 client licenses	**6AV6 371-1DH06-0BX1**
•25 client licenses	**6AV6 371-1DH06-0CX1**
•50 client licenses	**6AV6 371-1DH06-0DX1**
V6.0 SP1 ASIA; for WinCC V6.0 SP2 ASIA A)	
•Base Pack (3 client licenses)	**6AV6 371-1DH06-0AV1**
•10 client licenses	**6AV6 371-1DH06-0BV1**
•25 client licenses	**6AV6 371-1DH06-0CV1**
•50 client licenses	**6AV6 371-1DH06-0DV1**
WinCC/Web Navigator China/Taiwan A)	
V1.2; for WinCC V5.1 1) A)	
•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	
•From 3 to 10 clients	**6AV6 371-1DH05-0AB0**
•From 3 to 25 clients	**6AV6 371-1DH05-0AC0**
•From 3 to 50 clients	**6AV6 371-1DH05-0AD0**
•From 10 to 25 clients	**6AV6 371-1DH05-0BC0**
•From 10 to 50 clients	**6AV6 371-1DH05-0BD0**
•From 25 to 50 clients	**6AV6 371-1DH05-0CD0**
V6.x (also for ASIA versions)	
•From 3 to 10 clients	**6AV6 371-1DH06-0AB0**
•From 3 to 25 clients	**6AV6 371-1DH06-0AC0**
•From 3 to 50 clients	**6AV6 371-1DH06-0AD0**
•From 10 to 25 clients	**6AV6 371-1DH06-0BC0**
•From 10 to 50 clients	**6AV6 371-1DH06-0BD0**
•From 25 to 50 clients	**6AV6 371-1DH06-0CD0**

	Order No.
WinCC/Web Navigator diagnostics client A)	
•For WinCC V5.1 SP2	**6AV6 371-1DH05-1EX8**
•For WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1EV0**
•For WinCC V6.0 SP2	**6AV6 371-1DH06-0EX1**
•For WinCC V6.0 SP2 ASIA	**6AV6 371-1DH06-0EV1**
WinCC/Web Navigator diagnostics server A)	
•For WinCC V5.1 SP2	**6AV6 371-1DH05-1FX8**
•For WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1FV0**
•For WinCC V6.0 SP2	**6AV6 371-1DH06-0FX1**
•For WinCC V6.0 SP2 ASIA	**6AV6 371-1DH06-0FV1**
WinCC/Web Navigator upgrade A)	
V1.x to V6.0 SP1	
•For 3 clients	**6AV6 371-1DH06-0AX6**
•For 10 clients	**6AV6 371-1DH06-0BX6**
•For 25 clients	**6AV6 371-1DH06-0CX6**
•For 50 clients	**6AV6 371-1DH06-0DX6**
WinCC/ Web Load Balancing	
•Load Balancing	**6AV6 371-1DH06-0JX1**
•Load Balancing StepUp	**6AV6 371-1DH06-0FJ0**
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) Requirement: WinCC V5.1 China/Taiwan/Korea/Japan
2) V6.0 and later in English, French, German, Italian and Spanish
A) Subject to export regulations AL: N und ECCN: 5D992B2

More information

System requirements – Web server

For WinCC/Web Navigator V6 SP1

- Operating system:
  - Windows 2000 Professional with SP3 or SP4, for up to 3 WebClients
  - Windows 2000 Server with SP3 or SP4, for up to 50 WebClients
  - Windows XP Professional with and without SP1, for up to 3 Web-Clients
  - Windows 2003 Server for up to 50 WebClients
- Internet Information Server (IIS)
  The IIS is included on the Windows 2000/XP CD and is installed automatically with Windows 2000 Server. For Windows 2000 Professional, the IIS must be installed separately.
- Internet Explorer V6.0 or higher
- SIMATIC WinCC V6.0 SP2
- SIMATIC WinCC optional Web Na vigator server installation

For WinCC/Web Navigator V1.2 SP2

- Operating system:
  - Windows 2000 Professional with SP3 or SP4, for up to 3 WebClients
  - Windows 2000 Server with SP3 or SP4, for up to 50 WebClients
  - 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; the Windows NT 4.0 OptionPack is required in both cases (included in scope of delivery)
  - Windows 2003 Server for up to 50 Web Clients
- Internet Information Server (IIS)
  The IIS is included on the Windows 2000 CD and is installed automatically with Windows 2000 Server. For Windows 2000 Professional, the IIS must be installed separately. For Windows NT 4.0, it can be installed with the supplied OptionPack.
- Internet Explorer V5.01 or higher
- SIMATIC WinCC V5.1 SP1
- SIMATIC WinCC/Web Navigator server installation

System requirements – Web client

For WinCC/Web Navigator V6 SP1

- Windows NT 4.0, Windows 2000/XP (also XP Home) or operation with the Windows 2000/2003 terminal services
- Internet Explorer V6.0 or higher

For WinCC/Web Navigator V1.2 SP2

- Windows 98/ME/NT 4.0, Wi ndows 2000 or Windows XP Professional/Home
- Internet Explorer V5.01 or higher
- Web Navigator Client/Diagnostics Client Installation;
  This installation contains the OCX objects for displaying the WinCC displays/objects in Internet Explorer

WinCC Web Navigator V1.2 China/Taiwan

(Requirement: SIMATIC WinCC V5.1 China/Taiwan/Korea/ Japan)

This version contains the following functional differences as compared with the standard version of WinCC/Web Navigator V1.2:

- The server and the client execute on Windows 2000 MUI (multi-language user interface) and with the respective local language versions of simplified and traditional Chinese
- The client executes on Window s ME simplified Chinese and traditional Chinese
- Operation with the Microsoft terminal services
- Access of a Chinese Web Naviga tor client to a non-Chinese server and vice versa is not permitted in this version

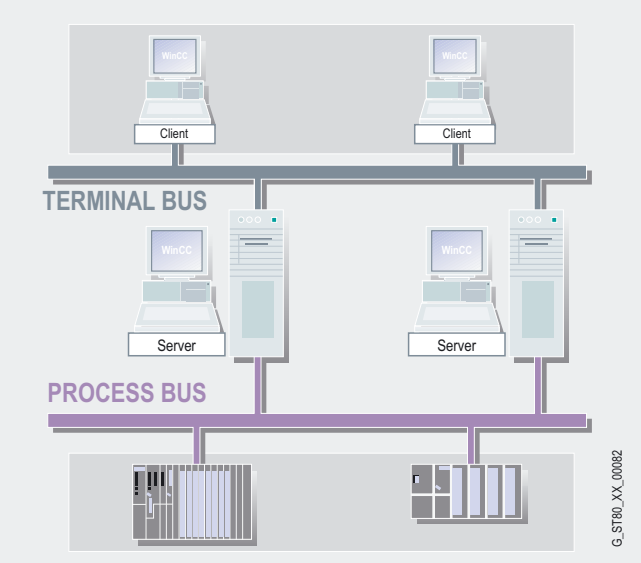
WinCC Web Navigator V6.0 SP1 ASIA

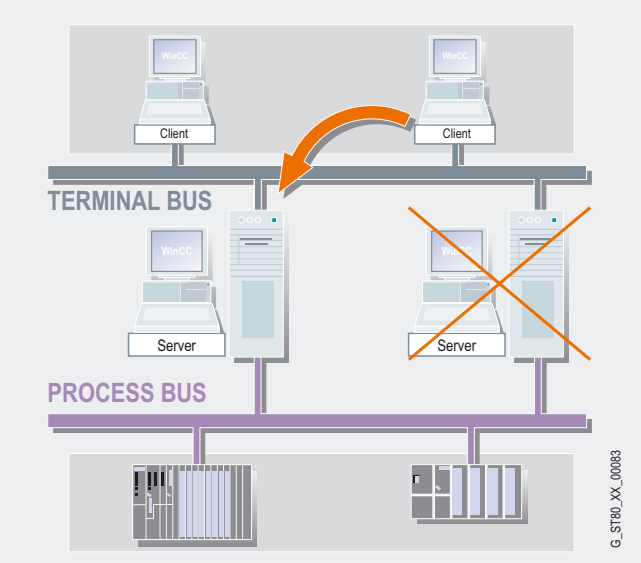
(Requirement SIMATIC WinCC V6.0 SP2 ASIA)

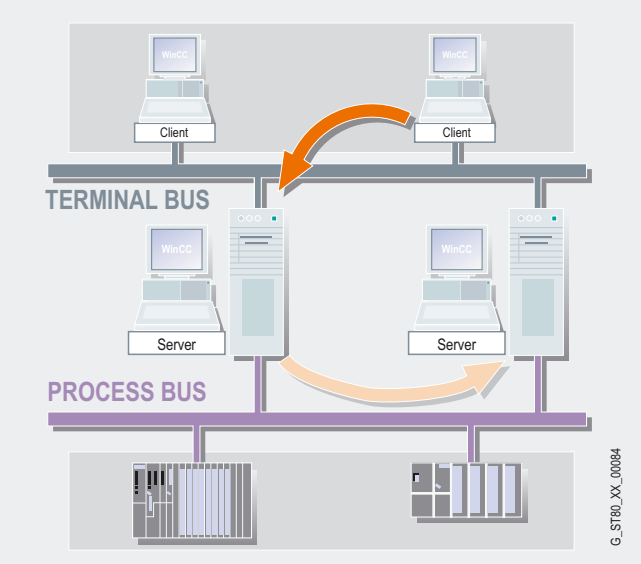
This version has the following functional divergences from the standard version WinCC/Web Navigator V6.0 SP1:

- Access of an Asian Web Navigator client to a non-Asian server and vice versa is not permitted in this version.

Overview







- Option for SIMATIC WinCC that makes it possible to operate two coupled WinCC single-user systems, process data servers or historian servers in parallel for the purposes of monitoring each other
- If one of the two server compute rs or one of the two WinCC stations fails, the second takes over control of the complete system. When the failed server or station resumes operation, the contents of all message and process value archives are copied back to the restored partner
- The communication channels for controlling SIMATIC S7 can also be redundantly configured using WinCC/Redundancy
- A WinCC/Redundancy package is required for each redundant pair of servers

Benefits

- Increased system availability wi th 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 arch ives in the background after rectification of the fault

Function

Two WinCC stations or process data servers are normally operated in parallel. Each station has its own process connection and data archive. WinCC/Redundancy ensures automatic archive matching for system and user archive data.

If one of the two server computers or WinCC stations fails, the second takes over archiving the messages and process data so that continuous data integrity is guaranteed. In client/server operation, the clients are automatically switched from the failed server to the redundant partner ensuring continuous visualization and operation of the plant from any operator station.

When the failed partner is restored, all process values, messages and data from the archives during the failure time period are automatically updated to match those of the partner. This is performed in the background without affecting the running plant. On completion, two equally effective servers or stations are available again.

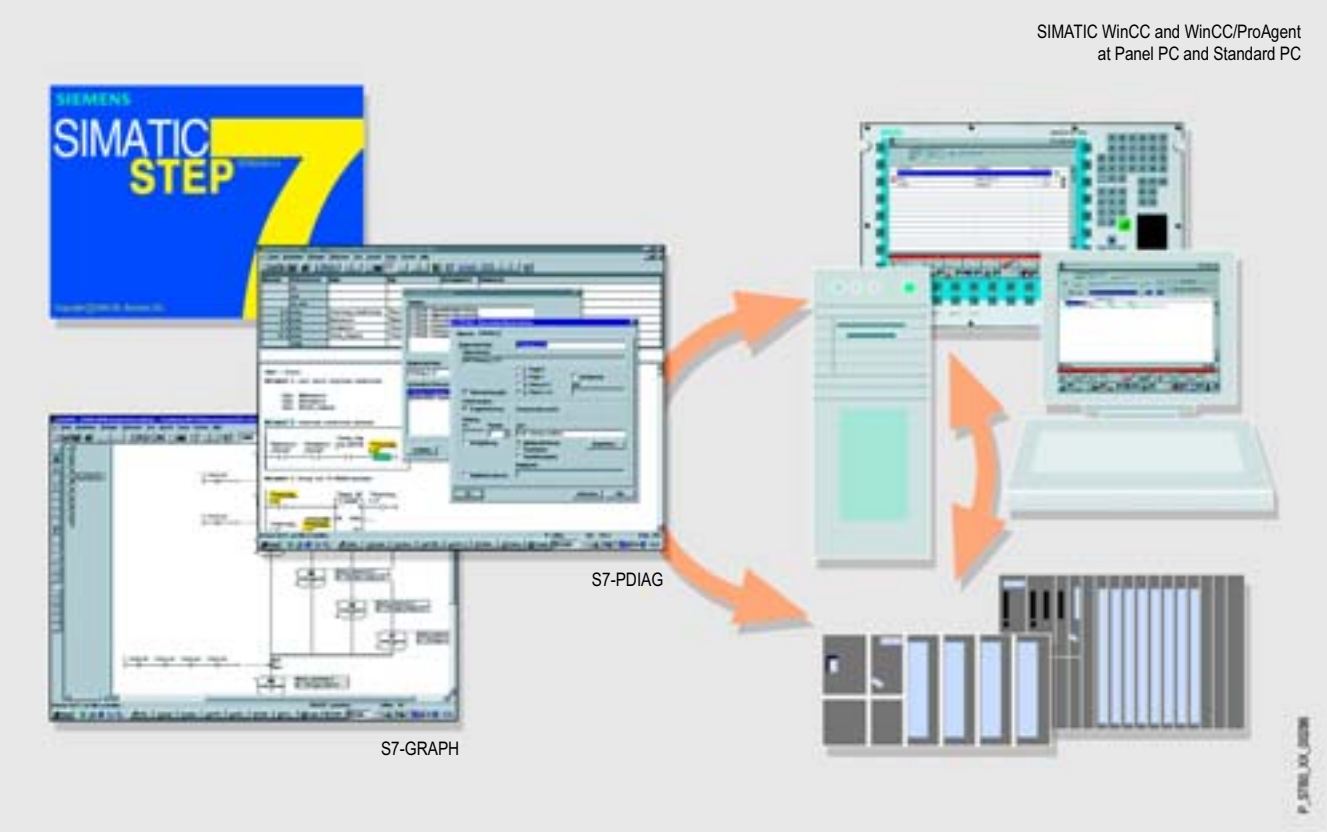
The communication to the SIMATIC S7 PLC can also have a redundant design, so that two communications modules are inserted and two communications paths are used (S7-REDCONNECT software package). By using the H-series SIMATIC S7 failsafe controllers, you can also increase availability at control level if required.

WinCC/Redundancy

Ordering data	Order No.
WinCC/Redundancy A)	
•For WinCC V5.1	**6AV6 371-1CF05-0AX0**
•For WinCC V6.0	**6AV6 371-1CF06-0AX0**
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**

A) Subject to export regulations AL: N und ECCN: EAR99S

Overview



- Precise and rapid process faul t diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- Standardized diagnostics concept for various SIMATIC components
- No further configuration fo r 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 A) Software option package for process diagnostics on basis of S7-GRAPH V5 or later and S7-PDIAG V5 or later, expansion of functions for SIMATIC WinCC; electronic documentation in German, English, French; functions and standard screens for implementation on an FI45, PC (resolution 1024 x 768 pixels) and Panel PC 670/870 15" (resolution 1024 x 768 pixels) in German, English, French, runtime license (single license); for WinCC version:	
• V5.1 (ProAgent V5.6)	**6AV6 371-1DG05-6AX0**
• V6.0 SP2 (ProAgent V6.0 SP1)	**6AV6 371-1DG06-0BX0**
Upgrade	
• to SIMATIC WinCC/ProAgent V5.6	**6AV6 371-1DG05-6AX4**
• to SIMATIC WinCC/ProAgent V6.0 SP1	**6AV6 371-1DG06-0BX4**
Documentation (must be ordered separately)	
SIMATIC HMI Document Collection A) Electronic documentation, on CD-ROM 5 languages (English, German, French, Italian and Spanish); Comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	**6AV6 691-1SA01-0AX0**

A) Subject to export regulations AL: N und ECCN: EAR99S

WinCC/Messenger

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

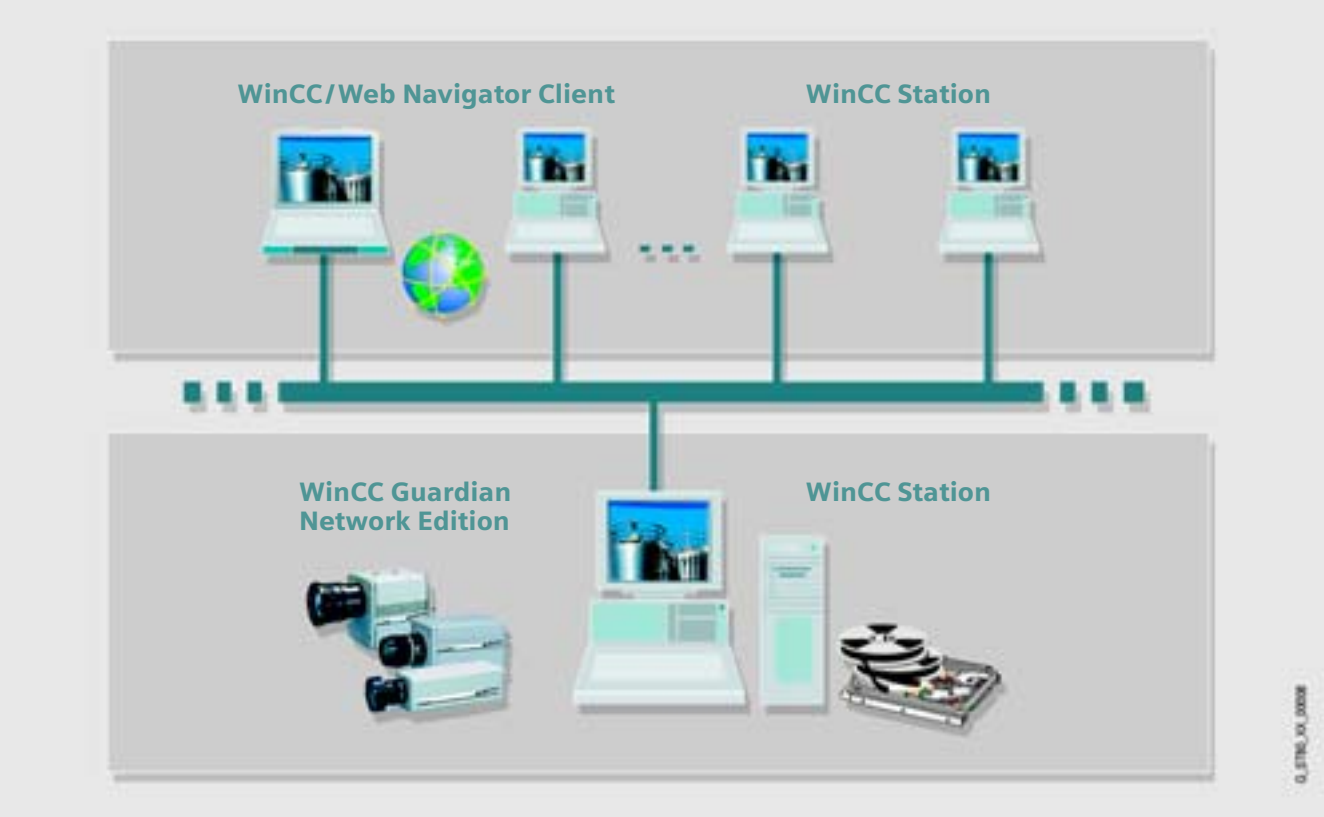
The Messenger functionality is implemented with ActiveX controls. These can be easily integrated into the process displays of SIMATIC WinCC and can be freely connected with the WinCC process signals. In accordance with the situation, for example, as the result of an alarm status, e-mails can be sent 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 A) Option only for WinCC V5.1	**6AV6 371-1EJ05-0DX0**

A) Subject to export regulations AL: N und ECCN: EAR99S

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 worldwid e thanks to event-driven embedding of live camera pictures
- Video-supported automation of process operations
- Cost savings due to the integr ation of separate monitoring screens in the WinCC process visualization
- Subsequent process diagnostic s 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:
www.osprey.com

Winnov Videum AV:
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 A)	
Option only for WinCC V5.1	
•Single User Edition	**6AV6 371-1EJ05-0EX0**
•Network Edition	**6AV6 371-1EJ05-0FX0**

A) Subject to export regulations AL: N und ECCN: EAR99S

WinCC/Dat@Monitor

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 compability:
  - Dat@Symphony –tool for moni toring and navigating only via WinCC pictures using Internet Explorer (view only)
  - Dat@View –Internet Explorer-b ased 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 acc ess 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 t hanks to direct use of displays from the WinCC project
- Evaluation via preconfigured te mplates 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 com patible and therefore support access over any type of connection (LAN, GSM, wireless, modem, Internet, etc.)
- All commonly used security mechanisms such as login/password, firewalls, encoding etc. are supported
- The user can combine the available tools as required. The license only applies to simultaneous access to a Web server
- Displays from the WinCC project can be used or special overview displays can be configured for visualization purposes. Animation, scripts, navigation and access rights all remain valid
- WinCC/Dat@Monitor is purely for display purposes, intervention in the running process on site is not possible.
- Evaluation possibilities:
  Company-wide Excel reports that contain historical and current process values can be stored centrally for general access (reports, statistics). It is also possible to generate local scans for individual use online and to execute them. Curve display and tabular display of previously exported archive data is also possible.
- A higher-level navigation system provides the different tools of the Web Server Suite with a common framework and supports the integration of additional components

Ordering data

Ordering data	Order No.
WinCC/Dat@Monitor WebEdition V6.0 SP1 for WinCC V6.0 SP2 A)	
• 3 client licenses	**6AV6 371-1DN06-0AX1**
• 10 client licenses	**6AV6 371-1DN06-0BX1**
• 25 client licenses	**6AV6 371-1DN06-0CX1**
• 50 client licenses	**6AV6 371-1DN06-0DX1**
WinCC/Dat@Monitor WebEdition V6.0 SP1 ASIA; for WinCC V6.0 SP2 ASIA A)	
• 3 client licenses	**6AV6 371-1DN06-0AV1**
• 10 client licenses	**6AV6 371-1DN06-0BV1**
• 25 client licenses	**6AV6 371-1DN06-0CV1**
• 50 client licenses	**6AV6 371-1DN06-0DV1**
WinCC/ Web Load Balancing	
• Load Balancing	**6AV6 371-1DH06-0JX1**
• Load Balancing StepUp	**6AV6 371-1DH06-0FJ0**
WinCC/Dat@Monitor WebEdition Powerpack (also for ASIA versions)	
• From 3 to 10 clients	**6AV6 371-1DN06-0AB0**
• From 3 to 25 clients	**6AV6 371-1DN06-0AC0**
• From 3 to 50 clients	**6AV6 371-1DN06-0AD0**
• From 10 to 25 clients	**6AV6 371-1DN06-0BC0**
• From 10 to 50 clients	**6AV6 371-1DN06-0BD0**
• From 25 to 50 clients	**6AV6 371-1DN06-0CD0**

A) Subject to export regulations AL: N und ECCN: EAR99S
B) Subject to export regulations AL: N und ECCN: 5D992B2

WinCC/Client Access License (CAL)

Overview

- In the case of a system on wh ich 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 Li cense (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

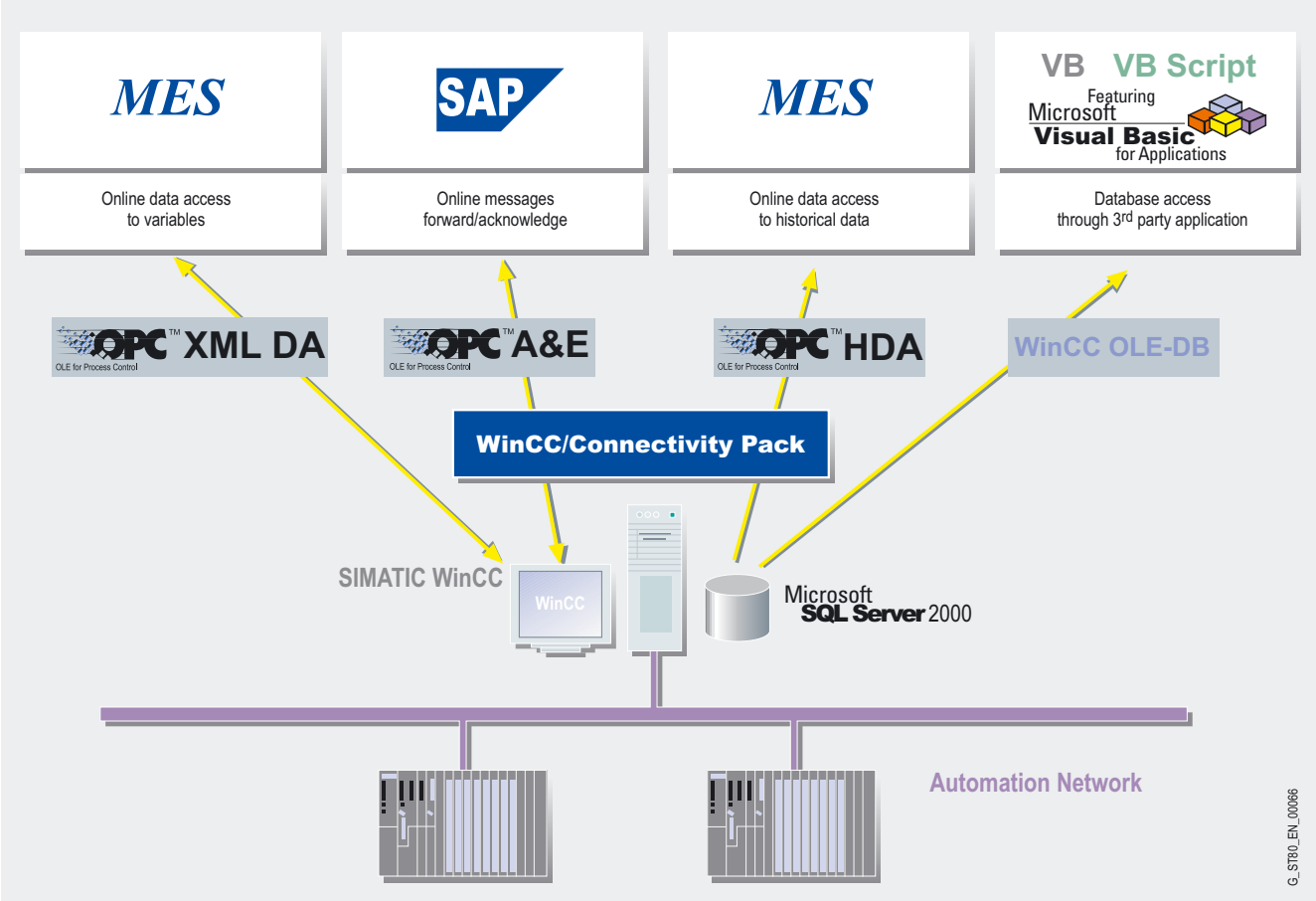
Ordering data	Order No.
WinCC/Client Access License A) for client access to historical WinCC data	**6AV6 371-1ES06-0AX0**
WinCC/Client access license per processor A) for access to the historical WinCC data; any number of clients per processor	**6AV6 371-1ES06-0CX0**

A) Subject to export regulations AL: N und ECCN: EAR99S

4

WinCC/Connectivity Pack

Overview



Cross-vendor communication in the field of automation has always been extremely important for WinCC. This applies all the more for the release of pre-processed production data for higher-level information systems (for example, MES = Management Execution System, ERP = Enterprise Resource Planning or Office packages = MS Excel, MS Access etc.). WinCC has integrated OPC Data Access servers and OPC XML DA servers that provide access to all online values in the system, and it provides open interfaces for access to historic WinCC data.

- New features off 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 that even allows remote computers without WinCC installed to access the WinCC archive and alarm data.
- The functionality of the OPC server (XML DA, HDA and A&E) and the WinCC OLE-DB Provider is ensured by the WinCC/Connectivity Pack.
- The Connectivity Pack license is required for each WinCC system that is to be accessed
- Access to WinCC archive and al arm data via the interfaces of the Connectivity Pack from a computer that has no WinCC basic system license or WinCC Option license installed requires a WinCC/Client Access License on the client side. (See also WinCC/Client Access License)
- Option only for WinCC V6.0

Benefits

- Access to variables, historic Wi nCC data and alarm data from any computer
- The ability to analyze and eval uate process data with specialized tools or applications created by the customer (e.g. with VisualBasic)

Function

As an OPC HDA server, WinCC provides other applications with historical data from the WinCC archive system. The time interval of the requested data can be established from an OPC HDA client (a reporting tool, for example) by entering the start and end time. Furthermore, the OPC HDA server allows various different equipment functions to be formed on the server (e.g. standard deviation, variance, mean values, integrals, etc.) and therefore helps off-load the network because only preprocessed data is transferred.

By means of the OPC A&E server, WinCC messages together with all accompanying process values are transferred to any subscribers at the production or corporate management level. Filter mechanisms and subscriptions ensure that only selected, modified data is transferred. Acknowledgment is of course also possible at this level.

Cross-platform communication between Windows and non-Windows systems –even via Internet –is possible using the WinCC OPC XML DA server. It enables read/write exchange of WinCC online values (external and internal WinCC variables) with third-party systems.

WinCC OLE-DB enables standardized and easy access to the archive data of WinCC (MS SQL Server 2000). In the same manner as the OPC HDA and OPC A&E interfaces, access via the WinCC OLE-DB provider supplies all the WinCC archive data with the accompanying process values as well as messages and user texts.

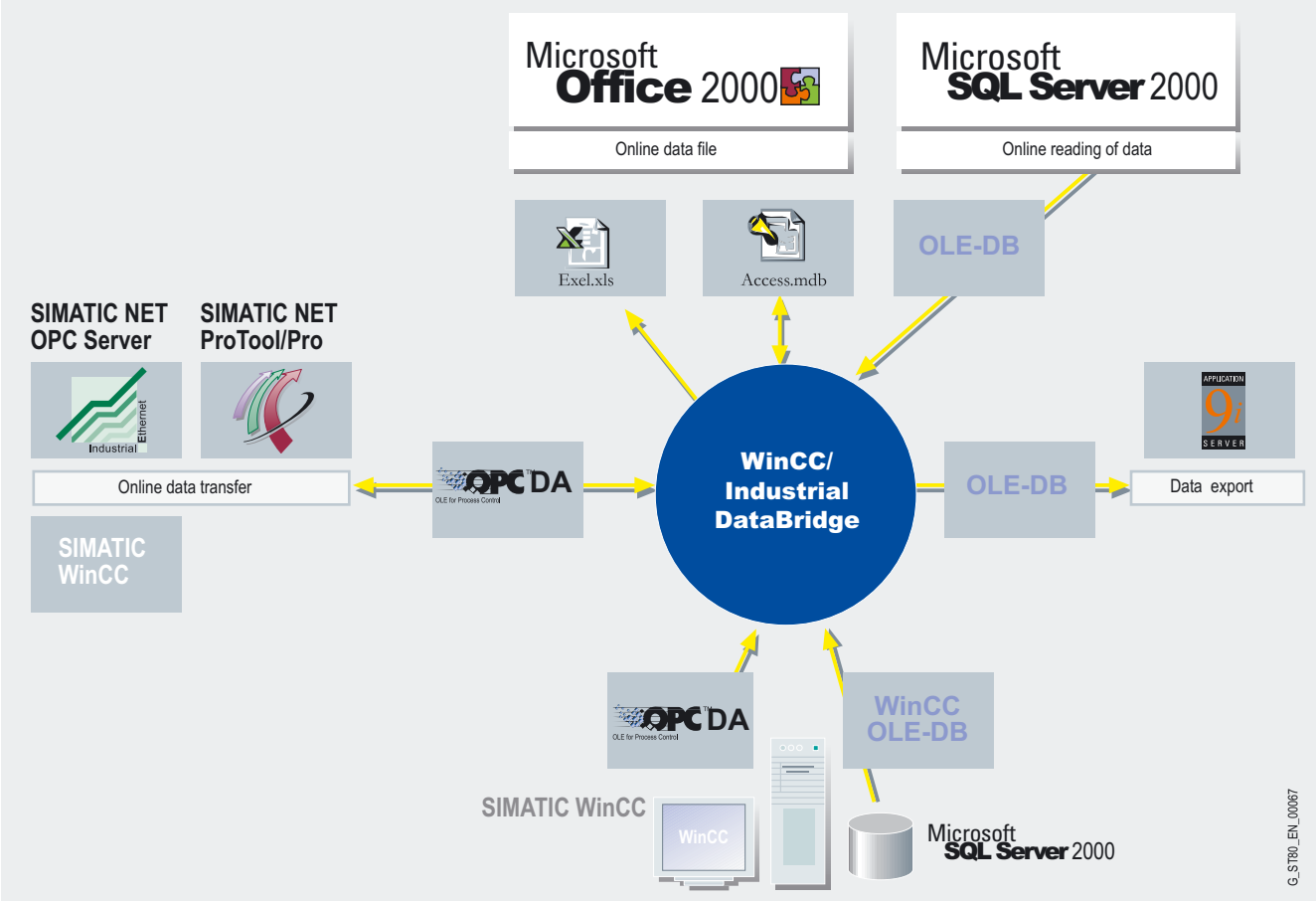
Ordering data

	Order No.
WinCC/Connectivity Pack V6.0 SP1 A)	**6AV6 371-1DR06-0AX1**

A) Subject to export regulations AL: N und ECCN: EAR99S

WinCC/IndustrialDataBridge

Overview



- The WinCC/IndustrialDataBridge option uses standard interfaces to link the automation world with the IT world and ensures a flow of information in both directions. Typical examples of such interfaces include OPC in the automation area and SQL database interfaces in the IT world.
- For example, SIMATIC WinCC with its OPC DA server interface is the data source and an external database is the data destination.
- Access to the messages and pr ocess values in the WinCC database is also possible.
- WinCC/IndustrialDataBridge can be used as a stand-alone application with its standard interfaces such as OPC DA and OLE-DB, e.g. also together with ProTool/Pro, WinCC V5.1, SIMATIC NET and SIMATIC WinAC.
- Option only for WinCC V6.0
- A WinCC Client Access license (see also WinCC/Client Access license option) is required for a computer on which no WinCC basic system license or WinCC Option license is installed and to which the WinCC/IndustrialDataBridge option makes a read/write access.

Benefits

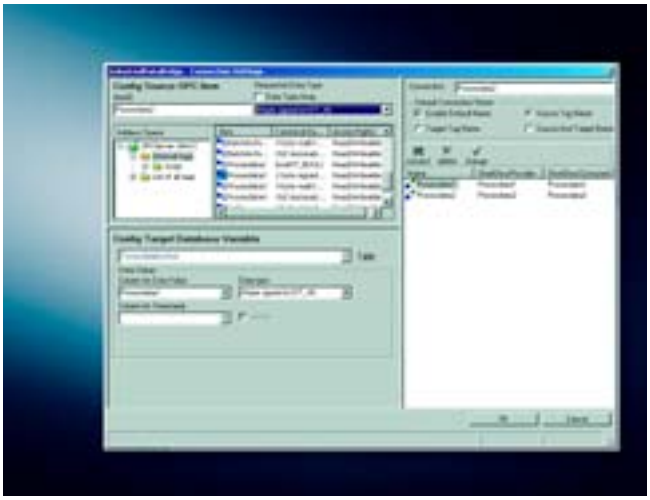
- Connecting the automation le vel with the IT world
- Integration of systems from di fferent manufacturers via a host of standard interfaces (including OPC, OLE-DB, Office formats)
- Simple configuration with standard software without programming and thus at low cost
- High-performance data transfer 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 establ ishes a connection between the source interface and the destination interface and transfers the data dependent on a change in value, after a configurable time has elapsed or once a specific event has occurred.
- Via IndustrialDataBridge, data is transferred between automation systems of different manufacturers, e.g. via OPC. By connecting OPC servers via the IndustrialDataBridge, communication between different devices, data sources and data destinations is possible. The international interface standard OPC will continue to create an open system in the future that with IndustrialDataBridge even today offers the functionality of OPC Data Exchange.
- Storage of process data in Office formats, such as Excel or Access. Databases can also be integrated for archiving larger volumes of data.
- IndustrialDataBridge has a Send/Receive interface with which data transfer to SIMATIC S5 or S7 stations or other Send/Receive-enabled devices is possible.
- SCADA systems and control systems from a wide range of different manufacturers can be connected via the OPC interface using IndustrialDataBridge. Communication via RFC1006 or Send/Receive is also supported.
- SQL databases are available as data destinations for production data acquisition. The data can be transferred from the data source either event driven with the OPC module or directly from the PLC using the Send/Receive module.
- Cyclic data archiving can be implemented via the data sources OPC Data Access, WinAC ODK or Send/Receive and the data destination of SQL databases. At the database end, various different transmission mechanisms are available.

Interfaces:

As data source:

- OPC Data Access 1.0 and 2.0 (e.g. SIMATIC WinCC, SIMATIC ProTool/Pro, SIMATIC WinAC and SIMATIC NET as OPC server)
- Databases via SQL/OLE DB/ODBC (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 (e.g. SIMATIC WinCC, SIMATIC ProTool/Pro, SIMATIC WinAC and SIMATIC NET as OPC server)
- Databases via SQL/OLE DB/ODBC (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 enabled separately.

Ordering data

Ordering data	Order No.
WinCC/IndustrialDataBridge A)	
V6.0 SP1 option for WinCC V6.0 SP2	
For data transfer with databases and OPC servers; language versions: German/English	
• With 128 tags	**6AV6 371-1DX06-0AX1**
• With 512 tags	**6AV6 371-1DX06-0BX1**
• With 2048 tags	**6AV6 371-1DX06-0CX1**
• With 10000 tags	**6AV6 371-1DX06-0DX1**
WinCC/IndustrialDataBridge Powerpack	
• From 128 to 512 tags	**6AV6 371-1DX06-0AB0**
• From 128 to 2048 tags	**6AV6 371-1DX06-0AC0**
• From 128 to 10000 tags	**6AV6 371-1DX06-0AD0**
• From 512 to 2048 tags	**6AV6 371-1DX06-0BC0**
• From 512 to 10000 tags	**6AV6 371-1DX06-0BD0**
• From 2048 to 10000 tags	**6AV6 371-1DX06-0CD0**

A) Subject to export regulations AL: N und ECCN: EAR99S

4

SIMATIC IT PDA / SIMATIC IT PPA

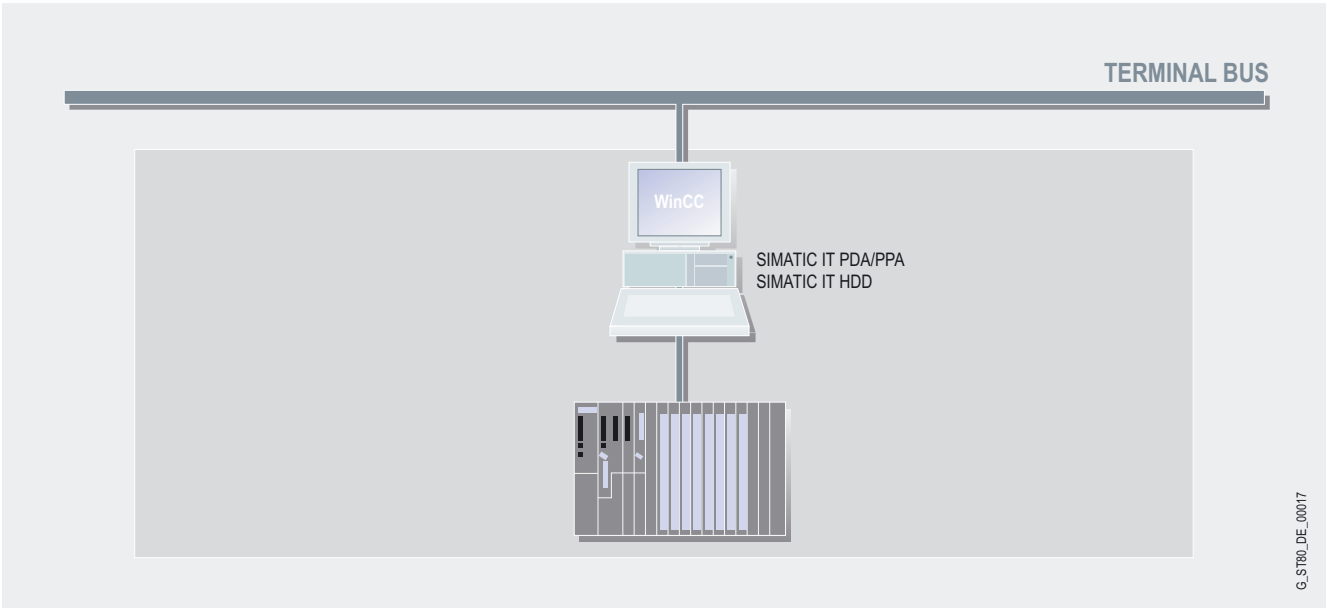
Overview

SIMATIC IT PDA (Plant Data Archive)

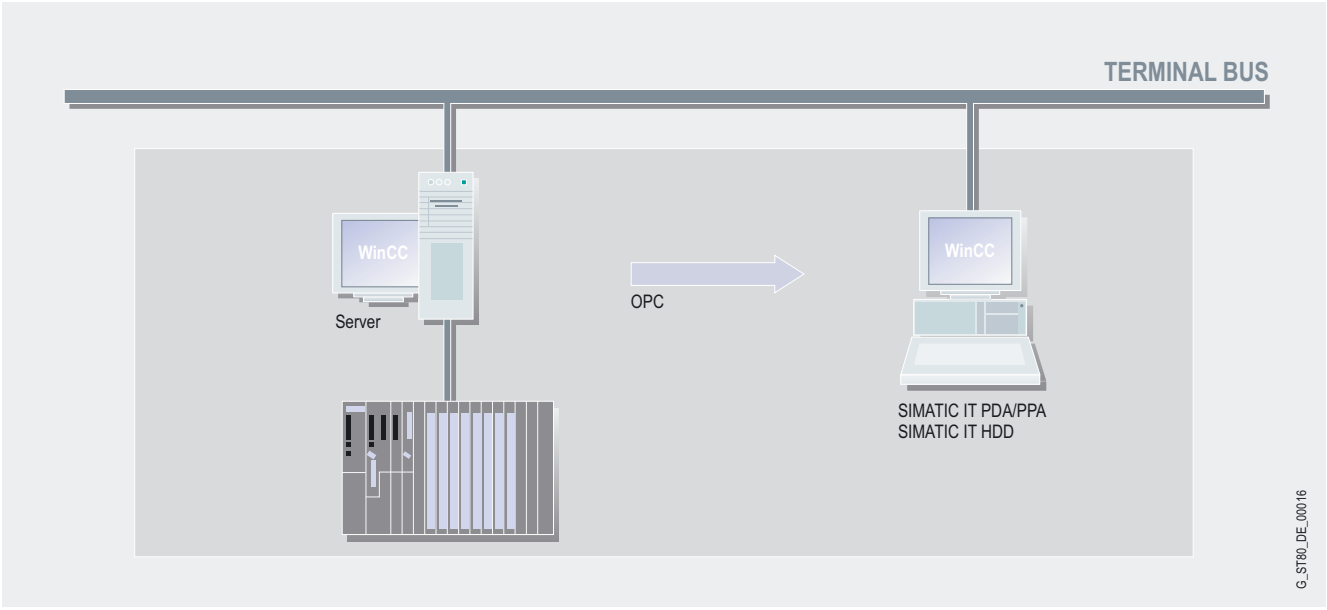
- The SIMATIC IT PDA option is a file-based archive which can process the measured values at a rate of up to 1,500 tags per second.
- Only for WinCC V5.1; for WinC C V6.0, this functionality is included in the basic system

SIMATIC IT PPA (Plant Performance Analyzer)

- High-performance Microsoft SQL server database that processes up to 1,500 archive variables and supports analysis and evaluation by means of a convenient tool (SIMATIC IT HDD)
- The prerequisite is that the option SIMATIC IT PDA has already been installed (for WinCC V5.1). For WinCC V6.0, the analyzing and evaluating possibilities are more important because the database is already included in the WinCC basic system
- Enables expansion to a company wide data compression and serves as a direct connection to IT Frameworks

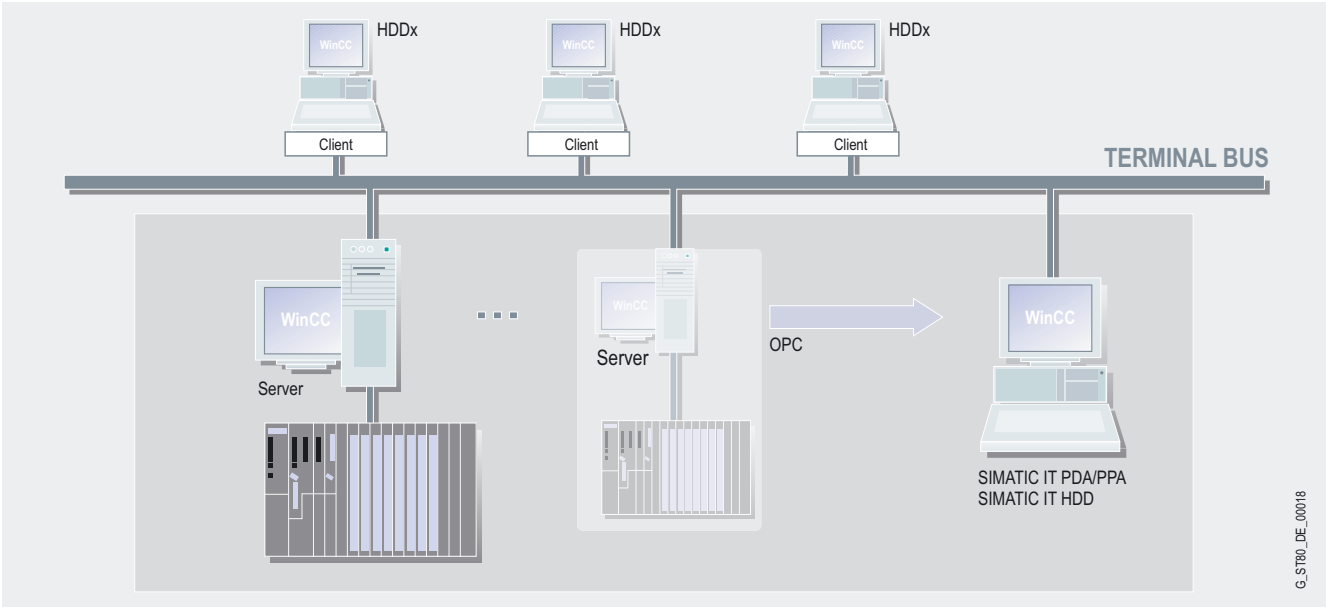


SIMATIC IT PDA and SIMATIC WinCC on a WinCC single user system



SIMATIC IT PDA/PPA with WinCC single user system

Overview (continued)



SIMATIC IT PDA/PPA with a distributed server system with multi clients

Benefits

SIMATIC IT PPA / PPA

- Long-term data archiving in the standard database MS SQL server format. The prerequisite under WinCC V5.1 is the SIMATIC IT PDA option
- Data compression and compressed storage of measured values
- Data compression using WinC C Archive and archived data from other sources, e.g. external databases
- Integrated evaluation rules for the relevance of measured values
- Display of the archive data is possible in curves and tables via a standardized ActiveX control in a WinCC process image
- Wizard-supported ActiveX control configuration, also online
- Linking of WinCC process data archive to the IT framework

Ordering data

Ordering data	Order No.
SIMATIC IT PDA A)	
For WinCC V5.1	
• V4.4; incl. 1 fat client	**6BQ3 073-2NA10-0AA0**
• Expansion by 5 PDA lean clients	**6BQ3 073-2NA20-0AA0**
SIMATIC IT PPA A)	
For WinCC V5.1	
• V4.4; incl. 1 fat client	**6BQ3 073-2NA30-0AA0**
• Expansion by 5 PPA lean clients	**6BQ3 073-2NA40-0AA0**

A) Subject to export regulations AL: N und ECCN: 5A992B

Function

SIMATIC IT PPA

- Measured values can be read ei ther periodically or event-controlled
- Data buffers are defined according either to a time span or to events (all data between two events)
- The data in the PDA or WinC C archive can be directly accessed via a browser
- Up to 1,500 archive variables
- Implemented evaluation rules
- Implemented compression functions (mean value, integral, sum, etc.)
- OPC HDA "Quality flag management"
- Databases with ODBC interfaces can be integrated
- HDDx (Historical Data Display), an ActiveX control for viewing trend curves and tables
- Creation of KPI (Key Performance Indicators) using VBScript

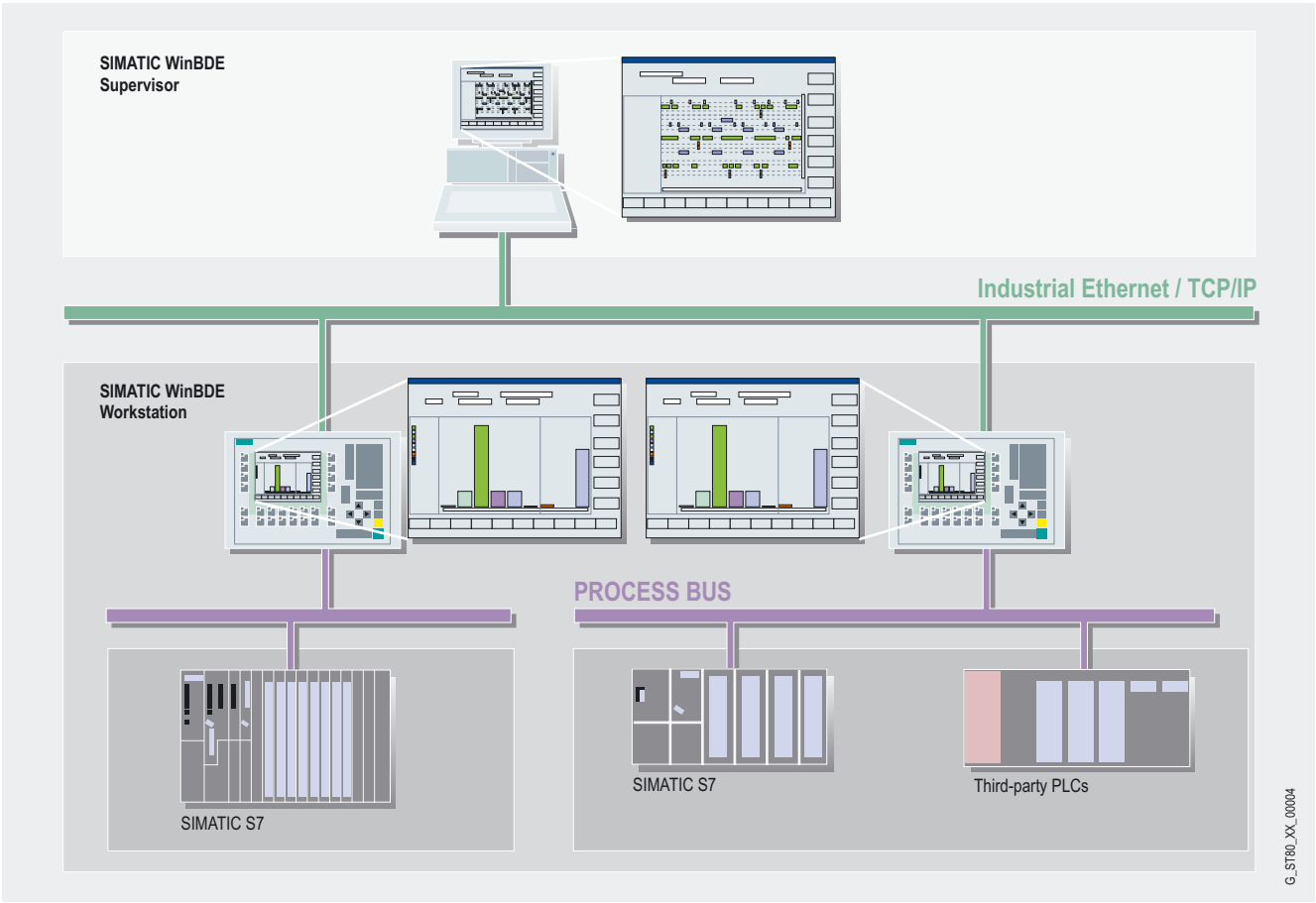
With the evaluation and analysis function you can edit the measured values from the WinCC archive (for example averaging and totaling) and save them in the Microsoft SQL server database. In addition to data from the WinCC archive, you can also analyze and save data from other databases there.

The data interface to WinCC is provided by OPC. SIMATIC IT PPA can be used on a dedicated PC beside a WinCC single-user system, a client-server system and in a distributed server system with clients.

SIMATIC IT HDD (Historical Data Display) is an application for viewing and visually analyzing archived measured values. This enables both the data from the PDA archive (under WinCC V5.1) as well as the data from any OLE DB sources to be displayed. On the SIMATIC IT PPA server, the HDD runs as a FAT client application, which can also be used for configuring the archiving and compression functions. On the WinCC client, the HDD runs as a lean client application and in WinCC Runtime as ActiveX Control.

SIMATIC WinBDE

Overview



- SIMATIC WinBDE is the machine data management software for acquisition, evaluation and analysis of machine data
- The WinCC operator station is then transformed into the central acquisition and operating terminal for machine data, either directly on site (Workstation) or spanning several plants (Supervisor)
- **Current version:**
  - SIMATIC WinBDE Workstation V7.2 + SP1
  - SIMATIC WinBDE Supervisor V7.2 + SP1

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 an d processing supports the generation of objective availability verification for production equipment and manufacturing units
- WinBDE can be used for everythi ng from individual machines right up to complete production plants

Design

SIMATIC WinBDE Workstation

- Direct acquisition and evaluat ion 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 compari son 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 cl ients can then access the WinBDE evaluations

Function

Data input

- Automatic recording using WinCC or ProTool/Pro
- Manual input of machine states through dialogs
- Creation of part type master data through dialogs

Machine data evaluation

- Fault analysis and diagnostics with duration and frequency
- Status analysis with chronological trends
- Machine performance through ob jective determination of availability
- Quantity evaluations using machine counters
- Calculation of KPI/OEE figure s (availability, performance, quality, OEE)
- Calculation of the mean ti me between failures (MTBF)
- Calculation of the mean time to repair (MTTR)
- Evaluations on the basis of work shifts, days, weeks, etc.
- Accurate logbook/report
- Export and printout of evaluation data

Production data evaluation

- Part-type-specific production quantity evaluation
- Machine-specific quantity evaluation
- Calculation of KPI/OEE figure s (performance, quality, OEE)

Integration

Workstation connection

- Up to 32 machines or units via ProTool/Pro or WinCC (the max. possible number of ProTool/Pro connections must be observed)

Supervisor connection

- Up to 32 machines or units vi a lower-level SIMATIC WinBDE Workstations

Requirements

SIMATIC WinBDE Workstation:

- Minimum resources recommended for the HMI software used
- SIMATIC Panel PC 670/870 12" or 15" with keyboard; standard PC (min. Pentium II, 400 MHz)
- Min. 128 MB RAM
- Ethernet connection (for operation with WinBDE Supervisor)
- Runtime VGA, XGA recommended , 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; for WinCC flexible on request 2)

SIMATIC WinBDE Supervisor:

- SIMATIC Panel PC 670/870, 12 " or 15" with keyboard; standard PC (min. Pentium II, 400 MHz)
- 256 MB RAM
- Runtime VGA, XGA recommended , customizing at least XGA
- Ethernet connection
- Windows NT 4.0, Windows 2000, Windows XP

Terminal server:

- Windows 2000 server with SP3 or higher, including 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 service license

1) One license from Microsoft is required for each device that is operated as a client on the terminal server.
2) See documentation for number of PowerTags required.

Ordering data	Order No.
SIMATIC WinBDE V7.2 + SP1	
Complete packages (runtime including configuration software) on CD-ROM	
Machine data management workstation A)	
License for connection of:	
• 1 machine / equipment unit	**6AV6 371-1EW06-0AX0**
• 8 machines / equipment units	**6AV6 371-1EW06-0CX0**
• 32 machines / equipment units	**6AV6 371-1EW06-0EX0**
Machine data management supervisor A)	
License for connection of:	
• 64 machines / equipment units	**6AV6 371-1EW06-0GX0**
• 128 machines / equipment units	**6AV6 371-1EW06-0HX0**
WinBDE terminal server licenses A)	
• For workstation	**6AV6 371-1EW06-0LX0**
• For supervisor	**6AV6 371-1EW06-0MX0**

A) Subject to export regulations AL:N und ECCN: 5D992B1

WinCC/Basic Process Control

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 contains the following additional configuration options:

- Basic data
  for an efficient screen division in overview, workspace and keypad areas
- Split Screen Wizard
  for setting the screen resolution and multichannel operation
- Picture Tree Manager
  for graphical configuration of a process picture hierarchy
- Alarm Logging Wizard
  for simple parameterization of message windows with pages for new, old and deleted messages, listings with operator input, I&C system and history list and connection for an audible signal device
- 3D bar graphs and group displays as additional smart objects

Powerful functions are available for runtime operation:

- Scrolling through the picture hierarchy
- Saving/recalling user-specific screen compositions
- Selection of process pictures and measuring points by name
- Online composition of trend curves
- Group displays for operator prompting in the picture hierarchy
- Sign-of-life monitoring for pro cess links to plant configuration screen and automatic I&C system messages
- Control of external sensors
- Time synchronization
  (setting the PC clock with DCF77 or GPS; distribution over PROFIBUS or Industrial Ethernet)

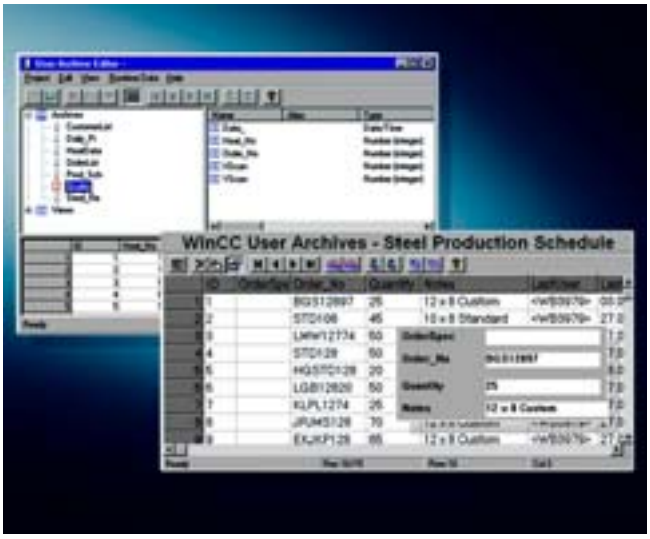
Basic Process Control functions cannot be represented with WinCC/Web Navigator.

Ordering data	Order No.
WinCC/Basic Process Control A)	
• V5.2; for WinCC V5.1	**6ES7 652-0XX05-2YA0**
Hardware for I&C functions	
DCF-77 receiver	
For time synchronization	
• DCF77 (Europe)	**2XV9 450-1AR14**
• GPS (worldwide) B)	**2XV9 450-1AR13**
Multi-VGA	
• 2 screens	**6ES7 652-0XX02-1XE0**
• 4 screens	**6ES7 652-0XX02-1XE1**
Chipcard reader	**6ES7 652-0XX01-1XC0**
Chipcard for chipcard reader	**6ES7 652-0XX05-1XD1**
(pack of 10)	

A) Subject to export regulations AL: N und ECCN: EAR99S
B) Subject to export regulations AL: N und ECCN: 7A994

Note:
For further information on I&C options, see Catalog ST PCS7

Overview



- Option for SIMATIC WinCC for managing records in user archives that contain related data
- WinCC and its automation part ners (e.g. a SIMATIC S7 PLC) write to these records and, if necessary, exchange them with each other
- Only servers (or single-user systems) require individual licenses

New features of V6:

The option WinCC/User Archives can now also be used within the context of the WinCC/Web Navigator (see also the option WinCC/Web Navigator)

Benefits

- Storage and management of any user data in records
- Flexible display using ActiveX con trols, either in table or formula view
- Easy interfacing of record fields to the process via direct variable interfacing
- Import/export functions for furt her 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 prod uction 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 A)	
•For WinCC V5.1	**6AV6 371-1CB05-0AX0**
•For WinCC V6.0	**6AV6 371-1CB06-0AX0**
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**

A) Subject to export regulations AL: N und ECCN: EAR99S

4

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 su bsequent analysis with WinCC
- Export in CSV format for furthe r 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

Ordering data	Order No.
WinCC/Storage V5.2 Option for WinCC V5.1	**6ES7 652-0XX5-2YC0**

Overview

- SIMATIC Logon Service and WinCC/Advanced User Administrator are software option packages used for the central, plant-wide administration of all users of WinCC.
  - Central user administration with the SIMATIC Logon Service uses the Windows mechanisms. The SIMATIC Logon Service must be installed on all participating WinCC machines.
- WinCC Audit is used for change management or for recording all operator actions, and for monitoring engineering changes in a falsification-proof long-term audit trail database.
  The WinCC Audit RC package is required for configuring the change monitor. It is required for each configuring station and also includes an RT license.
  A WinCC Audit RT license is also required for each further station that has to be monitored for changes.
- The FDA options WinCC Audit and SIMATIC Logon support users in validating their systems, and they comply with the requirements of FDA CFR 21 Part 11. This can be checked in a declaration of conformity (White Paper).
- For WinCC V6.0: SIMATIC Logo n Service and WinCC/Audit, for WinCC V5.1: WinCC/Advanced User Administrator

Benefits

- Central, plant-wide user administration
- High degree of security thanks to precautions on the administrator and user side
- Fast and simple monitoring of all operator actions
- Fast and simple monitori ng of configuration changes
- Fewer plant downtimes thanks to understandable and fast analysis of implemented changes
- Reduction in the engineering out lay required to comply with FDA 21 CFR Part11 & EU 178/2002
- Compliance with Food and Drug Administration (FDA) requirements for the pharmaceutical industry and the food and beverages industry

Design

In the SIMATIC WinCC environment, the Advanced User Administrator and SIMATIC Logon Service can be operated on the most diverse structures such as single-user stations or client-server architectures. With AUA, the database for user administration can be installed on a separate file server to further increase security.

SIMATIC Logon Service can be used for coordinating several WinCC stations. Operation is possible both in a Windows workgroup and in a domain. The high availability is guaranteed by using a primary/secondary domain controller.

WinCC Audit comprises three components: the configuration tool for monitoring changes, the audit trail database, and the viewer for visualizing the audit trail data.

FDA Options

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 stored encoded 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, the 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. A log file in ASCII format can be generated for analysis.

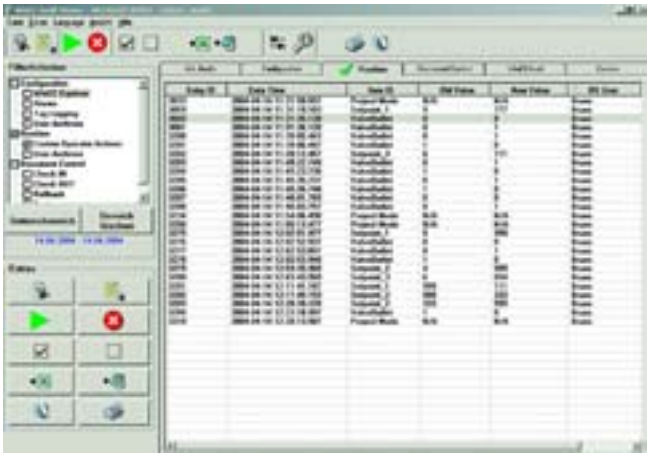
In addition, Advanced User Administrator and SIMATIC Logon Service allow the administrator to set up new users online, plant-wide and across applications, or to block existing users. SIMATIC Logon Service also supports electronic signature.

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.

Monitoring RT operation

In addition to recording operator activities, the Audit Trail also records the starting and modifying of recipes (customized tables). In addition, plant operators can use an Audit Entry function to also record entirely individual activities in the Audit Trail, such as pressing a button, on specific objects or events such as function keys, slides and others.



Monitoring configuration changes

WinCC Audit differentiates here between configuration changes that modify the WinCC database or that are 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 pictures, scripts, and log layouts, and customer-specific documents. That is, all these documents or files can be monitored for changes by WinCC Audit, and intermediate versions can be created or fetched back using the rollback function. Overall, monitoring can be configured extremely simply 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.

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 the Audit Trail are:

- Date and time of the modification
- Object name
- Old value and new value
- User name
- Event/function
- Comment (reason for change)

The 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. The 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 A)	
Expanded user administration for WinCC V5.1	
• Engineering license for 1 project incl. 1 Runtime license for one operator station, electr. documentation (G/E) 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 A)	**6ES7 658-7BX11-2YA0**
WinCC/Audit A)	
• WinCC/Audit RT –Creation of audit trails in RT	**6AV6 371-1DV06-0AX0**
• WinCC/Audit RC –Creation of audit trails in RT and CS	**6AV6 371-1DV16-0AX0**

A) Subject to export regulations AL: N und 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

4

WinCC/IndustrialX

Overview

- WinCC/IndustrialX makes it even easier to develop a visualization solution in which customized objects can be standardized
- A license must be installe d on every development computer (the current version of Visual Basic is required on the development computer)

Benefits

- Easy creation with configurat ion assistants (Wizards)
- Rapid familiarization due to t he 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, sect or-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, s ector-specific objects (graphical display and logical processing) with know-how protection
- Data structures supply objects (templates)
- By active process data suppl y, customized ActiveX components compliant to Web Navigator can be created
- Integration in WinCC through structure names

Ordering data

Ordering data	Order No.
WinCC/IndustrialX A)	
• V1.1	**6AV6 371-1EL15-0AX0**

A) Subject to export regulations AL: N und ECCN: EAR99S

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 vi a an open, standard programming language
- Access to data and functions of the WinCC configuration and runtime system
- Development of customer's ow n 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 t he value of a variable
- PDLRTSetProp: Sets the obj ect properties in a display
- DBExport: Exports the database table

They can be used in the following places:

- within WinCC, for example in gl obal scripts or as part of C actions in the Graphics Designer,
- in Windows applications in t he programming language C (the current version of Microsoft Visual C++ is necessary as a development environment for WinCC).

Ordering data	Order No.
WinCC/ODK A)	
• V5 SP1; for WinCC V5.1	**6AV6 371-1CC05-0BX0**
• V6; for WinCC V6.0	**6AV6 371-1CC06-0AX0**
WinCC/ODK upgrade A) to V6	**6AV6 371-1CC06-0AX4**
WinCC/CDK A)	
• For WinCC V5.1	**6AV6 371-1EE05-0AX0**
• For WinCC V6.0	**On request**

A) Subject to export regulations AL: N und ECCN: EAR99S

Overview

- WinCC offers, in the form of Comprehensive Support, a Software Update Service (SUS) as a comprehensive support package.
- The overall package includes:
  - The latest updates/upgrades for WinCC incl. options
  - A continuously updated WinCC Knowledge Base CD in English and German with comprehensive information about all areas of WinCC (Hotline know-how)
- The WinCC user receives a wel come package initially and over a period of 12 months, replacements are delivered automatically. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.
- WinCC Comprehensive Support must be obtained for each WinCC system (single-user, server, client). Several systems can be equipped cost-efffectively with WinCC Comprehensive Support with the packages of 3 and 10 licenses supplied in addition to the single-license package from WinCC V6 upwards which are based on an appropriate quantity discount.

Benefits

- Efficient support reduces config uration 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) A) Automatic delivery of the latest updates/upgrades for WinCC basic software and options as well as Knowledge Base CD valid for	
• 1 license	**6AV6 381-1AA00-0AX5**
• 3 licenses	**6AV6 381-1AA00-0BX5**
• 10 licenses	**6AV6 381-1AA00-0CX5**

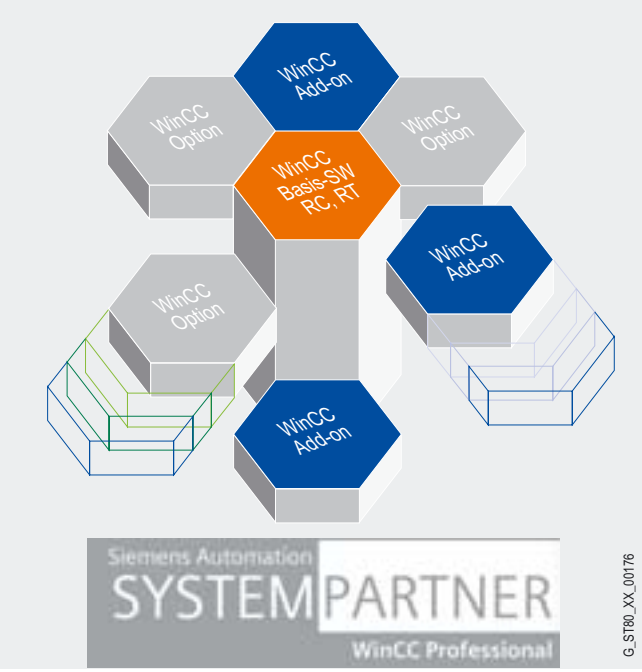
1) Comprehensive Support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiry.

A) Subject to export regulations AL: N und ECCN: 5D992B2

4

WinCC Add-ons and partner management

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.

Overview

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

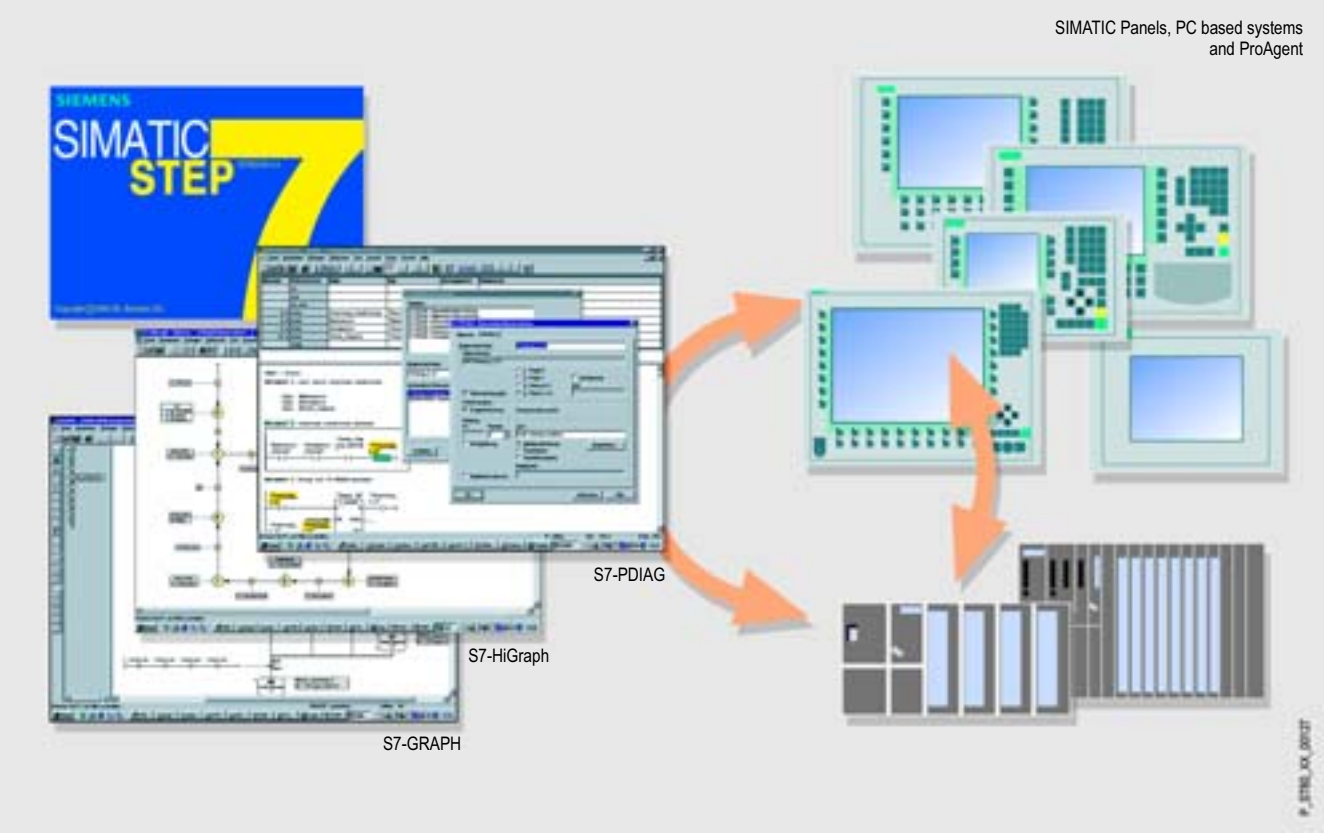
Additional information can be found in the Internet under

http://www.siemens.com/solution-provider

SIMATIC ProAgent

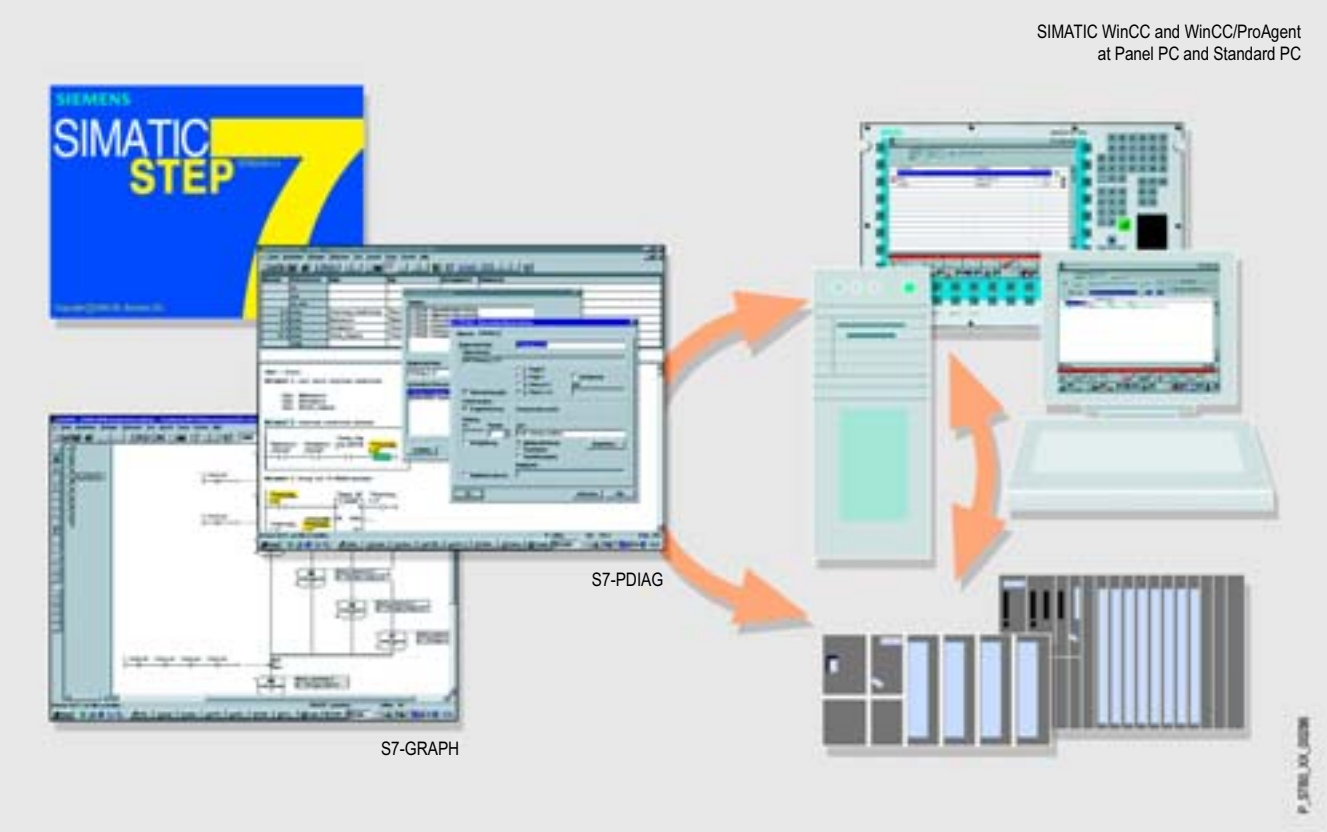
Overview

- Process diagnostics software for quick, selective fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics conce pt 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

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/machine personnel in locating and correcting faults,
  - improves plant availability and
  - reduces downtimes.
- No further configuration fo r diagnostics functionality
- Reduces PLC memory and processor usage
- No special user know-how required due to comprehensible display of the error cause

Application

Increases in productivity are being increasingly achieved by saving costs. Maintenance is becoming of increasing importance. Of prime importance is the elimination of faults as fast as possible with as small a personnel overhead as possible. In the ideal case, the operating personnel should also handle part of the maintenance tasks. Operating personnel are on site, are acquainted with the sequences, and can intervene rapidly. This saves time and costs. This is where ProAgent supports the operating personnel with fast fault identification especially in the automobile industry and machine tool construction sector.

When a process fault occurs, SIMATIC ProAgent provides information on the location and cause of the fault and provides support with fault rectification.

ProAgent provides a solution which is tailored to SIMATIC S7-300, S7-400 and WinAC. It can be used in combination with the S7-PDIAG, S7-GRAPH and S7-HiGraph[1)] engineering tools for STEP 7. The ProAgent option package contains standard views that are updated during runtime with process-specific data.

1) Process diagnostics with S7-HiGraph in conjunction with TP 270/OP 270, MP 270/MP 370, ProTool/Pro RT and ProTool/ ProAgent. S7-HiGraph for WinCC flexible /ProAgent not yet released.

SIMATIC ProAgent

Function

- Context-sensitive activation of the diagnostics based on a process error message
- Output of the operands with symbolic code and comment
- Changeover is possible between LAD, STL and the signal list
- Supportive troubleshooting by direct process access when using the motion view
- Output of the incorrect operan d directly in the message, complete with address, symbol and comment[1)]
- Consistency check in RT:
  icons are used to identify inconsistent diagnostics units. Fast error localization is possible during the start-up phase with regard to the configured data.
- Direct, context-sensitive switching to the diagnostics view for each unit through the use of ProAgent functions
- Context-sensitive switching to STEP 7 (LAD/STL/CSF editor, S7-GRAPH, HW-CONFIG (on system fault messages)), fully automatic support [2)]
- S7-GRAPH OCX for graphic representation of sequencers (overview representation)[3)]

1) In combination with TP 270/OP 270, MP 270/MP 370, ProTool/Pro RT, WinCC/ProAgent V6.0 upwards and WinCC flexible /ProAgent

2) WinCC/ProAgent V5.5 upwards only

3) Only WinCC/ProAgent V5.6 upwards in combination with S7-GRAPH V5.1 upwards (OCX is supplied with S7-GRAPH 5.1 upwards)

Standardized user interface with standard views

- Message view
- Unit overview diagram
- Diagnostics detail view
- Motion view
- Sequencer operating view

The displayed diagram contents refer to the previously selected units or messages. This enables the calling up of a context-sensitive diagnostics diagram, depending on the message or selected technological unit.

Message view

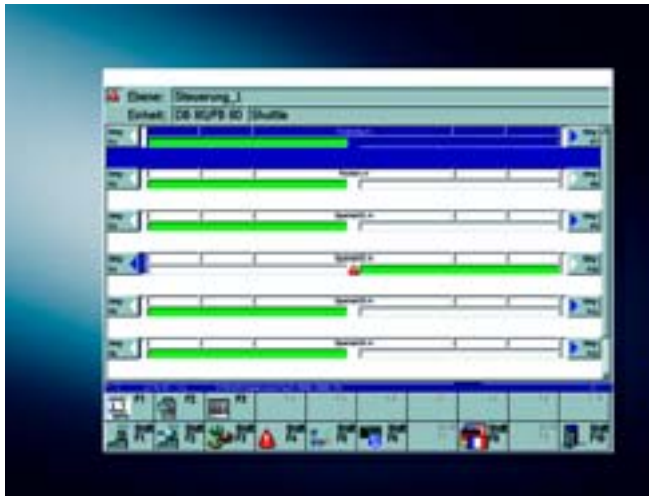
All process messages are displayed in the message view. Using a selected message, you can make a context-sensitive jump to other diagnostics views. The incorrect operand is also indicated directly by the message, allowing the operating personnel to respond immediately to a fault without having to take further steps at the HMI device. ProTool supports this function on the Windows CE-based devices TP 270/OP 270, MP 270B/MP 370 and on the PC-based system ProTool/Pro RT. The function is available for WinCC/ProAgent from Version 6.0 upwards. WinCC flexible /ProAgent also supports this function.

Function

Unit overview diagram

The unit overview sets out all technological units and their subunits (plant/machine parts) in the form of a table. In this view, users can, for example, identify the control mode or the status of the unit. The control mode can be changed over by the user.

Faulty units are marked with an attribute.



Motion view

The motion view is used for supportive troubleshooting. Each motion line contains a comment line, which describes the movement (e.g. X-axis), two actions for executing the movement, feedback through actuation of a movement and information about the end positions reached (up to 16).

The motion itself is controlled with the softkeys at the side of the SIMATIC Panels and Multi Panels. Time-critical motion can be controlled directly via the inputs of the PLC (depending on the target hardware: 24 V direct keys, DP direct keys via PROFIBUS).

Diagnostics detail view

The diagnostic detail view shows the incorrect operand at the time at which the process fault occurred. Current status information can also optionally be displayed. The result of the diagnostics is displayed either in the ladder diagram (LAD), the statement list (STL) or a clear signal list. The operands are output for each display format with symbols and comments from the S7 symbol table. Only the operands responsible for causing the fault are displayed and marked with a highlighting attribute. You can also select a view in which the current status of all operands in the PLC are retrieved.

Sequencer operating view

The sequencer operating view provides support for controlling sequencers. Like Status/Control in S7-GRAPH, it makes functions available such as initializing and acknowledging sequencers, activating and deactivating single steps, and selecting control modes. The steps are output as a list together with the number and name of each step. Active and faulty steps are marked with attributes to provide the operating personnel with a clear overview of the current status of the sequencer.

SIMATIC ProAgent

Technical specifications

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible/ ProAgent [1]
Interfaces					
•Can be used in conjunction with PLC:	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
•Interface types	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 upwards)	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 views for simple embedding into the user displays, sample project for OP 270
•Device/resolution in pixels/representation	OP27/320 x 240/ monochrome OP27/320 x 240/ color OP37/640 x 480/ color TP27-6/320 x 240/ monochrome TP27-6/320 x 240/ color TP27-10/640 x 480/ color TP37/640 x 480/ color C7-626/320 x 240/ monochrome	TP 270/OP 270, 6" MP 270B, 10" Key/Touch MP 370, Key/Touch	PC/1024 x 768 PC/800 x 600 Panel PC 670/870 15"/1024 x 768, Key/Touch Panel PC 670/870 12"/800 x 600, Key/Touch Panel PC 670, 10"/640 x 480 Panel PC IL 70 12"/15" Touch FI45/1024 x 768	PC/1024 x 768 Panel PC 670/870 15"/1024 x 768, Key/Touch Panel PC IL 70 15" Touch FI45/1024 x 768	
No. of languages for online language selection	5 (G/E/F/I/S)	5 (G/E/F/I/S)	5 (G/E/F/I/S)	3 (G/E/F)	5 (G/E/F/I/S)
Functions					
Changing the HMI diagnostics data storage in RT	No	No	No	WinCC/ProAgent V6.0 upwards	No
Unit overview diagram	Yes	Yes	Yes	Yes	Yes
Message view	Yes	Yes	Yes	Yes	Yes
Sequencer operating view	No	Yes	Yes	Yes	Yes
Diagnostics detail view	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: standard setting for symbols	Yes	Yes	Yes	Yes
Criteria analysis	At time of error / current status	At time of error / current status	At time of error / current status	At time of error / current status / can be archived	At time of error / current status
Motion view					
•No. of representable motions	OP27, C7-626, TP27-6: 4; OP37, TP27-10, TP37: 5	6	6	6	6
•Directions of motion	2	2	2	2	2
•No. of representable end positions per movement	8	16	16	16	16

1) WinCC flexible /ProAgent will only be available with Service Pack 1 of WinCC flexible 2004

Technical specifications (continued)

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible/ ProAgent [1]
Documentation					
In electronic form	G/E/F/I/S; in scope of supply	G/E/F/I/S; in scope of supply	G/E/F/I/S; in scope of supply	G/E/F; in scope of supply	G/E/F/I/S; in scope of supply
Prerequisites					
HMI software	ProTool V6.0	ProTool V6.0	ProTool/Pro V6.0	WinCC V5.1 (ProAgent V5.6)/ WinCC V6.0 + SP2 (ProAgent V6.0 + SP1)	WinCC flexible 2004 + SP1
Operating system, configuration	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	Windows 98SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	*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 upwards)	*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 upwards	V5.0 upwards	V5.0 upwards	*WinCC/ProAgent V5.6:* from V5.1 + SP2 *WinCC/ProAgent V6.0 + SP1:* V5.3 upwards	V5.3 upwards
•S7-GRAPH	V5.0 upwards	V5.0 upwards	V5.0 upwards	V5.3 upwards	from V5.2 + SP3
•S7-PDIAG	V4.02 upwards	V4.02 upwards	V4.02 upwards	*WinCC/ProAgent V5.6:* V5.0 upwards *WinCC/ProAgent V6.0:* V5.1 upwards	V5.1 upwards
•S7-HiGraph	No	V5.0 upwards	V5.0 upwards	No	not yet released
Type of delivery (a license is required for each target hardware)	License verification	Runtime license	Runtime license	CD-ROM/ Runtime license	Runtime license

1) WinCC flexible /ProAgent will only be available with Service Pack 1 of WinCC flexible 2004

SIMATIC ProAgent

Ordering data	Order No.
SIMATIC ProAgent	
Software option package for process diagnostics on basis of S7-GRAPH, S7-PDIAG and S7-HiGraph [1], can be loaded with SIMATIC ProTool configuration software V6.0 upwards [2]; function expansion for ProTool, electronic documentation in German, English, French, Italian and Spanish	
• **SIMATIC ProAgent for OP** [A] Functions and standard screens for use on an OP27/OP37, TP27/TP37 or C7-626 in English, German, French, Italian and Spanish, runtime license (single license)	**6AV3 681-1AB06-0AX0**
• **SIMATIC ProAgent/MP** [A] Functions and standard screens for use on an OP 270/TP 270 and MP 270/MP 370 Keys in English, German, French, Italian and Spanish, runtime license (single license)	**6AV3 681-1CB06-0AX0**
• **SIMATIC ProAgent/PC** [A] Functions and standard screens for use on a Panel PC 670/870 10", 12" and 15" Keys, FI45, PC (resolution 640 x 480, 800 x 600 and 1024 x 768 pixels) in English, German, French, Italian and Spanish, runtime license (single license)	**6AV3 681-1BB06-0AX0**
SIMATIC WinCC/ProAgent [A]	
Software option package for process diagnostics on basis of S7-GRAPH V5 or later and S7-PDIAG V5 or later; functional expansion for SIMATIC WinCC; electronic documentation in German, English, French; functions and standard screens for implementation on an FI45, PC (resolution 1024 x 768 pixels) and Panel PC 670/870 15" (resolution 1024 x 768 pixels) in German, English, French, runtime license (single license)	
WinCC version:	
•V5.1 (ProAgent V5.6)	**6AV6 371-1DG05-6AX0**
•V6.0 (ProAgent V6.0 SP1)	**6AV6 371-1DG06-0BX0**
Upgrade	
•to V5.6	**6AV6 371-1DG05-6AX4**
•to V6.0 (SP1)	**6AV6 371-1DG06-0BX4**
SIMATIC WinCC flexible / ProAgent	
Software optional package for process diagnostics based on S7-PDIAG from V5.1, S7-GRAPH from V5.2 + SP3; functional expansion for SIMATIC WinCC flexible; Electronic documentation in German, English, French, Spanish, Italian	
• **WinCC flexible /ProAgent for SIMATIC Panels** [B] Runtime license (single license) runs on TP/OP 270, MP 270B and MP 370	**6AV6 618-7DB01-0AB0**
• **WinCC flexible /ProAgent for WinCC flexible Runtime** [B] Runtime license (single license)	**6AV6 618-7DD01-0AB0**
Documentation (must be ordered separately)	
SIMATIC HMI Manual Collection [A]	**6AV6 691-1SA01-0AX0**
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	

1) Only in combination with ProAgent/MP and ProAgent/PC
2) Configuration software included on ProTool CD V6
A) Subject to export regulations AL: N und ECCN: EAR99S
B) Subject to export regulations AL: N und ECCN: 5D992B2

HMI complete systems

5

Overview

Overview

HMI complete systems

SIMATIC Panel PC with SIMATIC ProTool/Pro

- SIMATIC Panel PC Packages with ProTool/Pro are modern human machine interfaces for simple visualization at the machine.
- This package can be supplied only when you order a new Panel PC together with the ProTool/Pro Runtime software.

SIMATIC Panel PC with SIMATIC WinCC flexible

- SIMATIC Panel PC packages wi th WinCC flexible are modern human machine interfaces for simple visualization at the machine
- This package can be supplied only when you order a new panel PC together with the WinCC flexible runtime software

SIMATIC Panel PC with SIMATIC WinCC

- SIMATIC Panel PC Packages wi th WinCC make it possible to order all the necessary components for an HMI solution simply on the basis of a Panel PC.
- This package can be supplied only when you order a new Panel PC together with the WinCC software.

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 equipped –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 ProTool/Pro Runtime software is included with the devices.

Runtime licenses are required for ProTool/Pro Runtime. You can choose here between the following:

- License for 128 Power Tags
- License for 256 Power Tags
- License for 512 Power Tags
- License for 2048 Power Tags

Power Tags refer exclusively to 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

SIMATIC Panel PC with SIMATIC WinCC flexible

The order configurator gives you a free choice of how the Panel PC hardware is equipped –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 included with the devices. The package also contains the Runtime options WinCC flexible/Archives and WinCC flexible/Recipes.

Runtime licenses are required for WinCC flexible Runtime. You can choose here between the following:

- License for 128 Power Tags
- License for 512 Power Tags
- License for 2048 Power Tags

Power Tags refer exclusively to 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 equipped –depending on individual requirements for display and system performance. Only the minimum requirements that WinCC places on the basic hardware need to be met.

Minimum configuration

- Processor from Pentium III 500 MHz or Celeron from 566 MHz
- 12" or 15" display size (at le ast 600 x 800 pixels resolution)
- Main memory from 128 MB
- At least 10 GB with CD-ROM
- Windows NT4.0 English, German, Windows 2000 multi-language or Windows XP Professional multi-language

For process communication, you can choose between the onboard, CP 5611-compatible, PROFIBUS interface or the powerful modules CP 1613 for Industrial Ethernet and CP 5613 for PROFIBUS.

From the configurator for the WinCC package, another order item can be selected that then contains the relevant WinCC software package and the communications module.

Both order items are delivered together. Customers must install the communications hardware and the WinCC software themselves.

Licenses are required for the Runtime version of WinCC. You can choose here between the following:

- License for 128 Power Tags
- License for 512 Power Tags
- License for 1024 Power Tags
- License for 8K Power Tags (with WinCC V6.0)
- License for 64K Power Tags

Power Tags refer exclusively to process variables that have an external process link to the controller. Variables without process link, constant limit values of variables, and messages are also available for additional system performance..

Ordering Data

Ordering Data	Order No.
SIMATIC ProTool/Pro package A)	**6AV6 584-4A■00-0AX0**
Runtime license enclosed	
• 128 PowerTags	**B**
• 256 PowerTags	**C**
• 512 PowerTags	**D**
• 2048 PowerTags	**F**
SIMATIC WinCC flexible Package B)	**6AV6 623-2■A00-0AA0**
Runtime license enclosed	
• 128 PowerTags	**B**
• 512 PowerTags	**D**
• 2048 PowerTags	**F**
SIMATIC WinCC package C)	**6AV6 382-1■■00-0AX0**
WinCC V5.1 Runtime	
• 128 PowerTags	**C**
• 256 PowerTags	**D**
• 1024 PowerTags	**E**
• 64k PowerTags	**F**
Communications module	
• Without/via on board interfaces	**■A**
• Industrial Ethernet (with CP 1613)	**■B**
• PROFIBUS (with CP 5613)	**■C**
SIMATIC WinCC Package B)	**6AV6 382-1■■06-0AX0**
WinCC V6.0 Runtime	
• 128 PowerTags	**C**
• 256 PowerTags	**D**
• 1024 PowerTags	**E**
• 8k PowerTags	**H**
• 64k PowerTags	**F**
Communications module	
• Without/via on board interfaces	**■A**
• Industrial Ethernet (with CP 1613)	**■B**
• PROFIBUS (with CP 5613)	**■C**
Communications software for CP 1613/CP 5613	See section 4

A) Subject to export regulations AL: N and ECCN: 5D992B1
B) Subject to export regulations AL: N and ECCN: 5D992B2
C) Subject to export regulations AL: N and ECCN: 5D002ENC3

Note:
for ordering data of the Panel PCs and accessories, see Configurators in "SIMATIC Panel PCs"

More information

Additional information can be found in the Internet under

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

Customized products

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Product modifications

Overview

Sector products

The SIMATIC HMI products are equipped with additional features to facilitate their optimal use in special industry sectors. One example here are the stainless-steel front panels for the food, beverages and tobacco industry. Apart from the front, the devices are identical in function and technology to the standard products. Products are offered for the following sections:

- Automobile industry –HMI for manufacturing automation
- Food, beverages and tobacco industry
- Chemicals and pharmaceuticals industry

Customized design products

The SIMATIC HMI products with customized design are fully compatible with the standard products as regards technology and function.

The identical technology enables the use of standard devices in the event of a fault in case the machine or plant supplier has no customized product in the spare parts store at the moment.

Embedded in the SIMATIC world, they are configured with SIMATIC ProTool or WinCC. They differ from the standard products in design only, that is:

- Change of logo and type designation
- Modification of keyboard colors, key labeling and key symbols
- Modification of the hous ing color (front frame)

Overview (continued)

OEM products

The OEM products for OEM (Original Equipment Manufacturer) customers are suitable for individual industrial automation solutions that cannot be implemented with the help of standard products or panels that have been modified only in design.

Customized products are individual solutions based on standard components. They are specified, offered, developed and supplied individually in cooperation with the customer.

For this purpose, we simply combine the standard components, the customized components and the additionally required software into a SIMATIC HMI OEM device, as in a modular system.

Possible modifications:

- Changes to the keyboard layout, key size/design and key arrangement
  The SIMATIC HMI devices with modified layout are almost identical to the standard devices as regards technology and function. They differ from the standard products in keyboard design only.

Thanks to the fact that the panels with customized layout are mechanically and functionally compatible with the standard devices, you can change between the devices in the event of a fault. However, the keyboard/operator interface must be modified.

- Freely definable front dimens ions and mechanical features, housing for desktop or bracket-mounting
- Different processors and memory media
- Different display technologies, sizes and resolutions
- Distributed configuration up to 500 m
- Additional modules or interfaces such as direct key modules
- Freely selectable Windows vers ions as operating systems, preinstalled SIMATIC HMI software packages

However, new OEM products can frequently be based efficiently and at low cost on existing OEM products. The end product then represents a customized modification of an existing OEM product.

Our OEM devices are available in all performance classes – from OEM Push Button Panels through Text Displays, Touch and Operator Panels right up to multifunctional platforms (MPs) and Panel PCs with extensive modification of hardware, accessories and software. The customized OEM products are developed and manufactured in various steps and in line with quality standards.

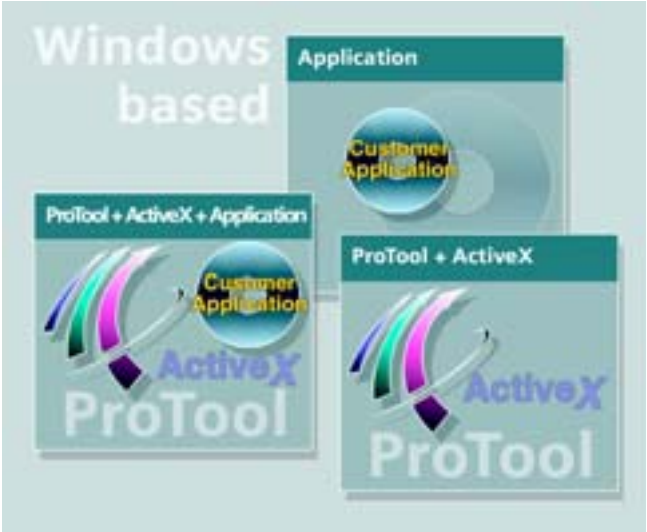
Open Platform Program

Open Platform Program software tools for creating software expansions for ProTool and ProTool/Pro or customer applications based on the SIMATIC HMI/WinCE platforms and Panel PC products.

The Open Platform Program enables optimal implementation of customized hardware and software solutions. According to requirements, HMI platforms can be used for other CE software. Customers can develop their own software or add their own specific functions to ProTool. As the hardware platform, all Windows CE-based SIMATIC Panels (from TP 170B) can be used as standard devices or as OEM versions. We provide you with the necessary development package including support services.

The Software Development Kits (SDKs) contain the necessary software tools with which the following software solutions can be implemented:

- Proprietary applications
- Expansions of the HMI ProTool software via proprietary ActiveX controls
- Project functions or tasks that interact with ProTool.



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HMI operator stations for the automobile industry

Overview

The CC-4000 is a modular aluminum control housing system with a host of excellent technical features, of which some are patented. The SIMATIC HMI Panels and Panel PCs can be enclosed in this system simply and at low cost.

Benefits

- Modern design combined wi th convincing functionality
- Enhanced heat dissipation thanks to finned aluminum profile and backplane heat sink element
- Simple access to controllers through hinged front frame or hinged backplane
- Module system for precise adapta tion and tailoring to the Panel or Panel PC
- High-grade aluminum extruded section with clean surface finish
- Design-oriented color surfaces , also possible in customized RAL colors

Application

In the automobile industry, trouble-free operation is of paramount importance. This places high demands on the enclosures of industrial controllers with regard to sealing against dust and water, and also with regard to the management of internal heat dissipation.

BERNSTEIN control housings of the type CC-4000 in combination with the BERNSTEIN support systems CS-2000 and CS-2000 SL are the ideal solution.

Design

- The modular design with aluminum frame profiles and expansion profiles of different depths enables the installation of Panel PC 670 host systems as well as the PC 670 terminals
- Access via hinged front frame or hinged backplane
- Integrated support system adap ters on top and bottom for direct attachment of support system couplings
- Integral grips make handling eas ier and underline the design character

Certificates/approvals:

- IP65
- NEMA 4/EEMAC Type 12
- UL-/CSA

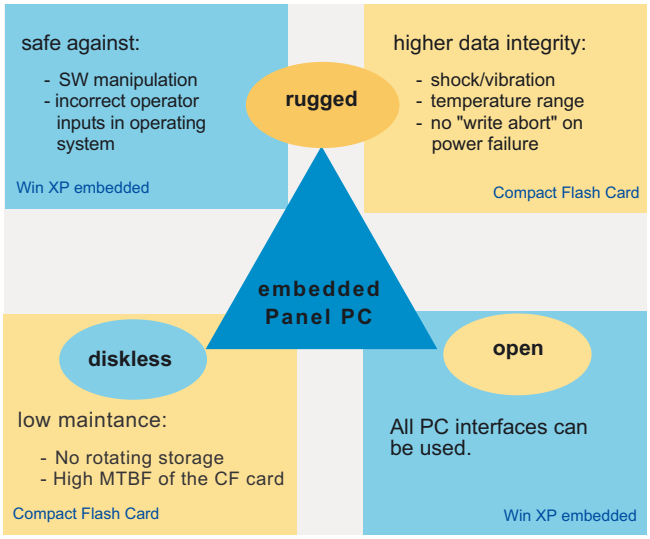
Technical specifications

Example for the automobile industry	
Type	HMI operator unit Version B1 (with FO link expansion)
Panel PC 670	•Pentium III 1.26 Ghz, 256 MB RAM •60 GB HD DVD/CD-RW •MPI/Profibus + Ethernet interface 10/100 MBd •European preset 230 V
Front panel	•PC670 15" Touch •15" XGA 1024 x 768 resolution
Additional components	
Operator panel housing	•Bernstein CC-4000
Dimensions	•608 x 788 x 280 mm
Operator panel	•with slide-in strip
Keyboard	•Country-specific Cherry keyboard with trackball mouse
Elements	•14 x 3SB3 elements, emergency-off, 2 x blanking plug
Circuit breaker	•Machine circuit breaker
Mouse	•IP65 piezo mouse built into operator panel
Locking	•E1 lock for keyboard drawer and housing lock (1-removable / 0-removable) •E7 keylock switch (1-not removable / 0-removable) and pushbutton
Installation	•Installation in operator p anel housing with electrical wiring
Ventilation	•24V fan without integral power section
Terminals	•Use of 3-core terminals
Core labeling	•Yes
Base profile	- 3 x machining M32 (2 x Murr, 1 x blanking plug) - RJ45 Ethernet connection - HAN 25, HAN 7
Other	•Contact "Keyswitch" to terminals •Facility for stand-mounting provided
Software	•WIN 2000 Professional multi-language WIN CC RT Max, STEP 7 and Softnet included as image CD
Required power supply at the system	•230 V AC/50 Hz, 4 A MCB slow •24 V DC, 1.5 A

Embedded Panel PC for mechanical engineering

Overview

SIMATIC HMI embedded Panel PCs



Rugged, high-performance systems are necessary in the industrial environment. SIMATIC Panel PCs set an extremely high standard and, in addition to high performance, are also equipped with special protection against industrial conditions.

These PC systems are usually supplied with Windows 2000 or Windows XP as a result of their widespread use and easy handling. These operating systems are also highly reliable, but they do require a hard disk as a boot disk and working disk due to their high performance and wide application spectrum.

Hard disk drives are, however, not the optimal solution for every application with regard to service life, fault tolerance and heat loss. For demanding requirements in these areas, storage systems based on Flash memories are usually a better solution.

With flash memory, the usual Windows 2000 or Windows XP operating systems cannot be used. If their flexibility is essential or if applications are required that are only available with these operating systems, **Windows XP embedded** may be the optimal solution.

In contrast to XP Professional, the embedded variant is not installed on the target system; an operating system image is generated with the help of the **Microsoft Target Designer**. We provide the components for this system that are tailored to the SIMATIC Panel PC systems and offer our customers the opportunity to generate the operating system themselves or to allow us to generate the operating system tailored to their requirements.

Versions

Hardware basis: Panel PC 670

- Operator units:
  - Touch 12“, 15“, (19“ from 2005) from PC 670
  - Key 10”, 12“, 15“ from PC 670
  - Touch 6“, 8“, 10“ on a project basis
- Mass storage:
  - Compact Flash 256 MB –1 GB hard disk
  - Larger memory size on request
- Slots:
  - 2 x PCI for PC 670
- Operating system:
  - Windows XP embedded
- TIA integration:
  - WinCC Flexible$_{XPe}$ as HMI software
  - WinAC$_{XPe}$ as Soft PLC
- Software:
  - Generation of a Windows XPe if desired
  - Images installed at factory
  - (Ready to Run)

Hardware basis: Micro Panel PC

- Operator units:
  - Touch 12“, 15“, (19“ from 2005) from PC 670
  - Key 10”, 12“, 15“ from PC 670
  - Touch 6“, 8“, 10“ on a project basis
- Mass storage:
  - Compact Flash 256MB –1 GB
  - Hard disk
  - Larger memory volume on request
- Slots:
  - Max. 3 x PC104 on the Micro Panel PC
- Operating system:
  - Windows XP embedded
- TIA integration:
  - WinCC Flexible$_{XPe}$ as HMI software
  - WinAC$_{XPe}$ as Soft PLC
- Software:
  - Generation of a Windows XPe if desired
  - Images installed at factory
  - (Ready to Run)

Embedded Panel PC for mechanical engineering

Benefits

- Full industrial suitability
- Full scalability
- Without fans (Micro Panel PC)
- Retentive memory (Micro Panel PC)
- Compact or distributed design
- Global service network

Windows XP embedded used in conjunction with the SIMATIC Panel PCs offers an excellent platform in terms of reliability, ruggedness and flexibility. The flexibility of the PC world is combined with the safety of an embedded system in the industrial environment. The Windows XP embedded Support Package enables a customized platform to be generated effectively and quickly.

We would also be happy to proceed in consultation with you and supply customized SIMATIC hardware and software combined for your specific application. This can save you extensive installation work and spare your time for other tasks.

Application

In applications in which hard disks are operating at the limits of their specifications and can be identified as a potential weak-point, embedded systems provide greater flexibility.

For example:

- **Directly at the machine in manufacturing industry, machine building, packaging machinery, sheet-metal machining, process engineering or building services**
  In these areas, the MTBF is frequently reduced by machine vibrations and ambient temperatures. Flash memory can be implemented at higher temperatures and can withstand ten times the vibration limit of a hard disk.
- On **swing arms and girders**
  This is a widespread situation for an operating panel. If there are no soft buffers, however, shocks arise at the hard stops of the rotating movement which can damage the hard disk over time. Flash memories can do without bearings or moving read heads that can cause damage to the magnetic storage medium. The shock withstand capability of Compact Flash memory is more than 100 times higher than that of hard disk memory.
- As **information terminals in public areas**
  Thanks to the modular design of Windows XP embedded, functions can be specifically suppressed. This means that fewer resources are reserved in the system and operational reliability is increased because mistakes and misuse can be excluded.
- **Space-saving, high-performance, implementation of control and visualization tasks on a single platform**
  In small-scale plants, the visualization and control tasks can be combined in a single device without the need for an additional control cabinet.

Design

- HW basis as for Panel PC 670
- Optional:
  Replacement of hard disk by Compact Flash module.
  (constraints of the configuration without optical drive)

Technical specifications

All the technical features of the PC 670 and the Micro Panel PC remain available with the embedded versions and are described in the relevant product information.

Variations:

- The functional scope of the op erating system can be restricted when Windows XP is used under certain circumstances.
- When a Compact Flash card is used:
  - Data transfer rate for read operations: DMA2; ~8MB/s
  - Data transfer rate for write operations: DMA2; dependent on application
  - Without optical drives

Versions

Microsoft Windows XP embedded is the standard operating system for SIMATIC Panel PC 670 embedded. The hardware can be supplied without the operating system which provides the customer with the flexibility of using other embedded operating systems.
To facilitate creation of the image, the components used to describe the hardware for Microsoft Target Designer are supplied with the hardware.
The operating system can be generated by the customer or by Siemens. The generated image can be installed at the factory for each item of hardware ordered.
The TIA software packages WinCC flexible and WinAC round off the embedded spectrum of the PC 670. Both software products are customized when Siemens generates the application image to ensure that less memory capacity is used on the Flash cards.

Embedded Panel PC for mechanical engineering

Selection and Ordering data

Selection guide/Creation of an offer

SIMATIC Embedded Panel PCs are based on modified PC 670 hardware, resp. the modification possibilities are listed below.

The individual packages of the embedded modifications are added to the basic price of the PC 670.

A Micro Panel PC is offered with reference to a specific project on request.

Enquiries for a PC 670 embedded are responded to quickly via the enquiry portal:

http://intra1.nbgm.siemens.de/customizecenter

Please specify the Order No. of the PC 670 and the XPe modification code as well as any other customer information that is applicable.

Selection guide for OEM Panel PC 670

Building on the Panel PC 670, the following modifications can be implemented project-specifically:

Mass storage
- With hard disk of the standard device
- With 256 MB CF module (without optical drive)
- With 512 MB CF module (without optical drive)
- With 1024 MB CF module (without optical drive)

Operating system
- Without operating system
- Windows XP embedded

HMI software
- Without 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)

WinAC Software
- Without WinAC software
- WinAC Basis V3.0
- WinAC RTX V3.1 (CP 5613 required)

Communication method
- Point-to-point coupling via integral interfaces
- Industrial Ethernet CP 1613
- PROFIBUS CP 5613 built-in

Software installation
- Software included
- Software image installed at factory, provided by customer [1) 2) 3)]
- Software image installed at fa ctory, provided by Siemens [1) 2) 3)]

Non-recurring costs
- Customer training for Windows XPe and 5 h hotline support
- Create customized image for XPe, possibly with WinCC flexible + WinAC
- Create customized image for Windows XPe with customer applications Target Designer

1) Only available in conjunction with Panel PC order
2) Only in conjunction with a product agreement
3) Take account of non-recurring costs when software image is generated by Siemens

OEM Micro Panel PC

The Micro Panel PC can be supplied as an embedded system in its basic version. Analogously to the OEM Panel PC 670, it is possible to install visualization software (WinCC flexible) and automation software (Win AC Basis) on these devices on a customized basis.

Creation of an offer

Product specification in accordance with customer requirements.

Quote drawn up by SIMATIC HMI specialists, definition of:
- Non-recurring costs
- Costs for prototype devices
- Price of series devices
- General conditions (project declaration)
- Training, generation of XP embedded

A lower limit-exists for annual purchase quantities (minimum quantity per design: 10) and will be agreed with the customer for the project.

Customized products can only be ordered in conjunction with a project declaration.

Options

We offer the XP embedded operating system together with our Panel PCs. You can either order these devices from us with the XPe license and our XP embedded support package, or you can obtain them already installed with an XP embedded image that has been generated specially for you.

More information

For further information, visit our website at

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

Contact

Please contact the HMI partner at your Siemens sales office/ national company.

Panels and Panel PCs for the food, beverages and tobacco industry

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 st eel 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 suit able 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 instal lation cutout as on the corresponding standard product
- Optimized frame profile and lo w 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	Multi Panel MP 370	Panel PC 670
Display	5.7" color STN Touch	15.1" TFT Touch	15.1" TFT Touch
Resolution (pixels)	320 x 240	1024 x 768	1024 x 768
MTBF of backlighting at 25 °C	50,000 hours	50,000 hours	50,000 hours
General features			
Processor	RISC 32 bit, 66 MHz	RISC CPU	Intel Pentium III technology, Intel Celeron 1.2 GHz, Intel Pentium III 1.26 GHz
Memory	768 KB RAM; 23 KB Flash	12 MB Flash	256 MB RAM up to 1 GB
Power supply	24 V DC	24 V DC	110 V / 230 V AC (autorange) 50 / 60 Hz or 24 V DC
Operating system	Windows CE	Windows CE	Windows 2000 Prof. (multi-language), Windows 98 SE (Ger, Eng), Windows NT4.0 (Ger, Eng), Windows XP Prof. (multi-language), opt. without operating system
Interfaces	2 x RS 232, 1 x RS 422, 1 x RS 485, 1 x CF 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 CF Card Slot, 1 x USB, 1 x RJ45	1 x RS 232, 1 x RS 232C / TTY for S5C communication, 1 x RJ45, PROFIBUS/MPI can be implemented using plug-in card, 2 x USB on rear
Special features	-	-	Without front USB port
Front			
Material	Stainless steel 1.4301, polyester membrane	Stainless steel 1.4301, polyester membrane	Stainless steel 1.4301, polyester membrane
Surface	Ground, 240 grit	Ground, 240 grit	Ground, 240 grit
Seal	EPDM	EPDM	EPDM
Special features	Optimized frame profile, inclined surfaces	Optimized frame profile, inclined surfaces	Optimized frame profile, inclined surfaces
Ambient conditions			
Degree of protection	IP66 on front, IP20 on rear	IP66 on front, IP20 on rear	IP66 on front, IP20 on rear
Ambient temperature in operation	Vertical installation: 0 °C to + 50 °C Max. angle of inclination +/- 35°: 0 °C to + 40 °C	Vertical installation: 0 °C to + 50 °C Max. angle of inclination +/- 35°: 0 °C to + 35 °C	+ 5 °C to + 45 °C in full configuration
Relative humidity	Max. 85% (no condensation)	Max. 85% (no condensation)	5 % to 80 % at + 25 °C (no condensation)
Transport/storage temperature	-20 °C to + 60 °C	-20 °C to + 60 °C	-20 °C to + 60 °C
Approvals	CE, UL, CSA, FM	FM Class I Div 2, cULus, EX Zone 2/22, CE, C-TICK	CE, cULus, FM Class 1 Div 2
Dimensions			
Front panel W x H (in mm)	212 x 156	400 x 310	483 x 310
Installation cutout W x H (in mm)	198 x 142	368 x 290	450 x 296
External dimensions of the clamping frame W x H (in mm)	224 x 168	412 x 322	495 x 322
Weight	Approx. 1.5 kg	Approx. 7 kg	Approx. 15 kg
Special features	Clamping frame on rear	Clamping frame on rear	Clamping frame on rear
HMI engineering software	From ProTool/Lite, from WinCC flexible Compact	From ProTool, from WinCC flexible Standard	From ProTool/Pro, from WinCC flexible Advanced
HMI runtime software	-	-	From ProTool/Pro RT, from WinCC flexible RT

Panels and Panel PCs for the food, beverages and tobacco industry

Ordering data Data	Order No.
TP 170B color with stainless steel front A)	**6AV6 545-8BC10-0AA0**
Configuration as for 6AV6 545-0BC15-2AX0	
Delivery time	Available ex warehouse
Minimum unit quantity	None, can be ordered individually without product agreement
Project quantities or continuous supply	Order only in conjunction with a product agreement 1)
Repairs and spare parts	Via spare parts service
MP 370 15"Touch with stainless steel front A)	**6AV6 545-8DB10-0AA0**
Configuration as for 6AV6 545-0DB10-0AX0	
Delivery time	Available ex warehouse
Minimum unit quantity	None, can be ordered individually without product agreement
Project quantities or continuous supply	Order only in conjunction with a product agreement 1)
Repairs and spare parts	Via spare parts service
Panel PC 670 15" with stainless steel front B)	**6AV7 728-.....-....**
Configuration as for Panel PC 670 Configurator	Defined preferred versions (MLFB) available soon, other configurations on request
Delivery time	Order-related manufacture and delivery
Minimum unit quantity	No, single unit orders are possible without product agreement
Project quantities or continuous supply	Order only in conjunction with a product agreement 1)
Repairs and spare parts	Via regional repair center

1) A special product agreement is required for continuous supply or for delivery of larger unit quantities to OEM customers. The products are then manufactured in consultation with customer planning. For this purpose, individual agreements are made with the customer for material planning and manufacture.

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

B) Subject to export regulations AL: N and ECCN: 5D992B2, 5D992B1, 4A994

More information

Explanations

- EN 1672-2, edition: 2003- 04 (draft standard), Food Production Machinery –Ge neral 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

For further information, visit our website at

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

6

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 de sign, 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 resp onsible 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

Device type	Order No. of associated standard device	Design Version	Order No. of design device [1]	Minimum quantity per year	Minimum quantity per order
TD17 Text Display	**6AV3 017-1NE30-0AX0**	A	**6AV3 017-5AA00-XXXX**	25	20
		B	**6AV3 017-5AB00-XXXX**	25	20
		C	**6AV3 017-5AC00-XXXX**	25	20
OP3 Operator Panel	**6AV3 503-1DB10**	A	**6AV3 503-5DB00-XXXX**	100	50
		B	**6AV3 503-5DB10-XXXX**	100	50
		C	**6AV3 503-5DB20-XXXX**	200	50
OP 73micro Operator Panel [4]	**6AV6 640-0BA01-0AX0**	A	**6AV6 640-5BA00-XXXX**	50	25
		B	**6AV6 640-5BA10-XXXX**	50	25
		C	**6AV6 640-5BA20-XXXX**	100	25
OP 73 Operator Panel [4]	**6AV6 641-0AA01-0AX0**	A	**6AV6 641-5AA00-XXXX**	50	25
		B	**6AV6 641-5AA10-XXXX**	50	25
		C	**6AV6 641-5AA20-XXXX**	100	25
OP7/DP Operator Panel	**6AV3 607-1JC20-0AX1**	A	**6AV3 607-5BA00-XXXX**	50	20 [2]
		B	**6AV3 607-5BB00-XXXX**	50	20 [2]
		C	**6AV3 607-5BC00-XXXX**	250	20 [2]
OP7/DP12 Operator Panel	**6AV3 607-1JC30-0AX1**	A	**6AV3 607-5CA00-XXXX**	50	20 [2]
		B	**6AV3 607-5CB00-XXXX**	50	20
		C	**6AV3 607-5CC00-XXXX**	250	20
OP 77A Operator Panel [4]	**6AV6 641-0BA01-0AX0**	A	**6AV6 641-5BA00-XXXX**	50	20
		B	**6AV6 641-5BA10-XXXX**	50	20
		C	**6AV6 641-5BA20-XXXX**	250	20
OP 77B Operator Panel	**6AV6 641-0CA01-0AX0**	A	**6AV6 641-5CA00-XXXX**	50	20
		B	**6AV6 641-5CA10-XXXX**	50	20
		C	**6AV6 641-5CA20-XXXX**	250	20
OP17/DP Operator Panel	**6AV3 617-1JC20-0AX0**	A	**6AV3 617-5BA00-XXXX**	25	20
		B	**6AV3 617-5BB00-XXXX**	25	20
		C	**6AV3 617-5BC00-XXXX**	100	20
OP17/DP12 Operator Panel	**6AV3 617-1JC30-0AX1**	A	**6AV3 617-5CA00-XXXX**	25	20
		B	**6AV3 617-5CB00-XXXX**	25	20
		C	**6AV3 617-5CC00-XXXX**	100	20
OP 170B Operator Panel	**6AV6 542-0BB15-2AX0**	A	**6AV6 542-5BB00-XXXX**	50	25
		B	**6AV6 542-5BB10-XXXX**	50	25
		C [5]	**6AV6 542-5BB20-XXXX**	100	25
OP 270 6" Operator Panel	**6AV6 542-0CA10-0AX0**	A	**6AV6 542-5FA00-XXXX**	24	12 [3]
		B	**6AV6 542-5FA10-XXXX**	24	12 [3]
		C	**6AV6 542-5FA20-XXXX**	48	12 [3]
OP 270 10" Operator Panel	**6AV6 542-0CC10-0AX0**	A	**6AV6 542-5FB00-XXXX**	24	12 [3]
		B	**6AV6 542-5FB10-XXXX**	24	12 [3]
		C	**6AV6 542-5FB20-XXXX**	48	12 [3]

1) XXXX corresponds to customer identification; is assigned on placement of order
2) Only even numbers
3) The ordering quantity must always be a multiple of 6 (e.g. 12, 18, 24 etc.)
4) Start of delivery approximately 2 months after start of delivery of the standard product
5) Possible color versions on request, the UL/CSA certification must be checked in individual cases when coloring the plastic frame

Selection and Ordering data

Device type	Order No. of associated standard device	Design Version	Order No. of design device [1]	Minimum quantity per year	Minimum quantity per order
TP 070 Touch Panel	**6AV6 545-0AA15-2AX0**	A	**6AV6 545-5AA00-XXXX**	50	25
		C [2]	**6AV6 545-5AC00-XXXX**	150	25
TP 170micro Touch Panel	**6AV6 640-0CA01-0AX0**	A	**6AV6 640-5CA00-XXXX**	50	25
		C [2]	**6AV6 640-5CA20-XXXX**	150	25
TP 170A Touch Panel	**6AV6 545-0BA15-2AX0**	A	**6AV6 545-5BA00-XXXX**	50	25
		C [2]	**6AV6 545-5BC00-XXXX**	150	25
TP 170 B mono Touch Panel	**6AV6 545-0BB15-2AX0**	A	**6AV6 545-5CA00-XXXX**	50	25
		C [2]	**6AV6 545-5CC00-XXXX**	150	25
TP 170 B color Touch Panel	**6AV6 545-0BC15-2AX0**	A	**6AV6 545-5DA00-XXXX**	50	25
		C [2]	**6AV6 545-5DC00-XXXX**	150	25
TP 177A Touch Panel [4]	**6AV6 642-0DA01-2AX0**	A	**6AV6 642-5DA00-XXXX**	50	25 [3]
		B	**6AV6 642-5DA10-XXXX**	50	25 [3]
		C [2]	**6AV6 642-5DA20-XXXX**	150	25 [3]
TP 177micro Touch Panel [4]	**6AV6 640-0DA01-0AX0**	A	**6AV6 640-5DA00-XXXX**	50	25 [3]
		B	**6AV6 640-5DA10-XXXX**	50	25 [3]
		C [2]	**6AV6 640-5DA20-XXXX**	150	25 [3]
TP 270 6" Touch Panel	**6AV6 545-0CA10-0AX0**	A	**6AV6 545-5FA00-XXXX**	24	12 [3]
		B	**6AV6 545-5FA10-XXXX**	24	12 [3]
		C	**6AV6 545-5FA20-XXXX**	48	12 [3]
TP 270 10" Touch Panel	**6AV6 545-0CC10-0AX0**	A	**6AV6 545-5FB00-XXXX**	24	12 [3]
		B	**6AV6 545-5FB10-XXXX**	24	12 [3]
		C	**6AV6 545-5FB20-XXXX**	48	12 [3]
MP 270B Multi Panel 6" Touch	**6AV6 545-0AH10-0AX0**	A	**6AV6 545-5FD00-XXXX**	24	12 [3]
		B	**6AV6 545-5FD10-XXXX**	24	12 [3]
		C	**6AV6 545-5FD20-XXXX**	48	12 [3]
MP 270B Multi Panel 10" Touch	**6AV6 545-0AG10-0AX0**	A	**6AV6 545-5FC10-XXXX**	10	10
		B	**6AV6 545-5FC10-XXXX**	10	10
		C	**6AV6 545-5FC20-XXXX**	50	10
MP 270B Multi Panel 10" Key	**6AV6 542-0AG10-0AX0**	A	**6AV6 542-5FC10-XXXX**	10	10
		B	**6AV6 542-5FC10-XXXX**	10	10
		C	**6AV6 542-5FC20-XXXX**	50	10
MP 370 Multi Panel Touch	**6AV6 545-0DA10-0AX0**	A	**6AV6 545-5EA00-XXXX**	20	10
		B	**6AV6 545-5EA10-XXXX**	20	10
		C	**6AV6 545-5EA20-XXXX**	50	10
MP 370 Multi Panel Key	**6AV6 542-0DA10-0AX0**	A	**6AV6 542-5EA00-XXXX**	20	10
		B	**6AV6 542-5EA10-XXXX**	20	10
		C	**6AV6 542-5EA20-XXXX**	50	10
MP 370 Multi Panel 15" Touch	**6AV6 545-0DB10-0AX0**	A	**6AV6 545-0EB00-XXXX**	20	10
		B	**6AV6 545-0EB10-XXXX**	20	10
		C	**6AV6 545-0EB20-XXXX**	50	10
C7-613	**6ES7 613-1CA00-0AE3**	A	**6ES7 613-1SA00-XXXX**	25	25
		B	**6ES7 613-1SB00-XXXX**	25	25
		C	**6ES7 613-1SC00-XXXX**	50	25
C7-635 Touch	**6ES7 635-2EB00-0AE3**	A	**6ES7 613-3SA00-XXXX**	50	50
		B	**6ES7 613-3SB00-XXXX**	50	50
		C	**6ES7 613-3SC00-XXXX**	50	50
C7-635 Key	**6ES7 635-2EC00-0AE3**	A	**6ES7 613-2SA00-XXXX**	25	25
		B	**6ES7 613-2SB00-XXXX**	25	25
		C	**6ES7 613-2SC00-XXXX**	50	25

1) XXXX corresponds to customer identification; is assigned on placement of order
2) Possible color versions on request, the UL/CSA certification must be checked in individual cases when coloring the plastic frame
3) The ordering quantity must always be a multiple of 6 (e.g. 12, 18, 24 etc.)
4) Start of delivery approximately 2 months after start of delivery of the standard product

Customized design

Selection and Ordering data

Device type	Order No. of associated standard device	Design Version	Order No. of design device [1]	Minimum quantity	
				per year	per order
Panel PC 670 10", Key	**Depending on configuration**	A	**6AV7 651-0AA00-XXXX**	20	5
		B	**6AV7 651-0AB00-XXXX**	20	5
		C [2]	**6AV7 651-0AC00-XXXX**	50	10
Panel PC 670 12", Key	**Depending on configuration**	A	**6AV7 651-1AA00-XXXX**	20	5
		B	**6AV7 651-1AB00-XXXX**	20	5
		C [2]	**6AV7 651-1AC00-XXXX**	50	10
Panel PC 670 15", Key	**Depending on configuration**	A	**6AV7 651-2AA00-XXXX**	20	5
		B	**6AV7 651-2AB00-XXXX**	20	5
		C [2]	**6AV7 651-2AC00-XXXX**	50	10
Panel PC 670 12", Touch	**Depending on configuration**	A	**6AV7 651-3AA00-XXXX**	20	5
		B	**6AV7 651-3AB00-XXXX**	20	5
		C [2]	**6AV7 651-3AC00-XXXX**	50	10
Panel PC 670 15", Touch	**Depending on configuration**	A	**6AV7 651-4AA00-XXXX**	20	5
		B	**6AV7 651-4AB00-XXXX**	20	5
		C [2]	**6AV7 651-4AC00-XXXX**	50	10
Panel PC 870 12", Key	**Depending on configuration**	A	**6AV7 703-5AA00-XXXX**	20	5
		B	**6AV7 703-5AB00-XXXX**	20	5
		C [2]	**6AV7 703-5AC00-XXXX**	50	10
Panel PC 870 15", Key	**Depending on configuration**	A	**6AV7 705-5AA00-XXXX**	20	5
		B	**6AV7 705-5AB00-XXXX**	20	5
		C [2]	**6AV7 705-5AC00-XXXX**	50	10
Panel PC 870 12", Touch	**Depending on configuration**	A	**6AV7 704-5AA00-XXXX**	20	5
		B	**6AV7 704-5AB00-XXXX**	20	5
		C [2]	**6AV7 704-5AC00-XXXX**	50	10
Panel PC 870 15", Touch	**Depending on configuration**	A	**6AV7 707-5AA00-XXXX**	20	5
		B	**6AV7 707-5AB00-XXXX**	20	5
		C [2]	**6AV7 707-5AC00-XXXX**	50	10
IL 77	**Depending on configuration**	A	**Still to be determined**	20	3
		B	**Still to be determined**	20	3
		C [2]	**Still to be determined**	50	10
SCD 1297 12“	**Depending on configuration**	A	**6AV8 105-0XX10-XXXX**	20	5
		B	**6AV8 105-0XX20-XXXX**	20	5
		C [2]	**6AV8 105-0XX30-XXXX**	50	5
SCD 1597 15“	**Depending on configuration**	A	**6AV8 105-1XX10-XXXX**	20	5
		B	**6AV8 105-1XX20-XXXX**	20	5
		C [2]	**6AV8 105-1XX30-XXXX**	50	5
SCD 1897/1898 18“	**Depending on configuration**	A	**6AV8 105-2XX10-XXXX**	20	5
		B	**6AV8 105-2XX20-XXXX**	20	5
		C [2]	**6AV8 105-2XX30-XXXX**	50	5

1) XXXX corresponds to customer identification; is assigned on placement of order
2) Possible color versions on request, the UL/CSA certification must be checked in individual cases when coloring the plastic frame

More information

Costs/discounts

An extra charge compared to the standard device will be made for the customized design device.

In addition to the adjusted unit price, there are non-recurring costs for design creation and factory introduction of the design version. The costs depend on the device and the design version.

Minimum quantities

In order to provide high-quality products at a price appropriate to global markets, it is necessary to specify a minimum annual quantity and a minimum ordering quantity.

An overview of all possible design devices with the associated minimum quantities can be found in the tables.

Handling

Special handling of orders is necessary for the customized design. Two release steps by the customer should guarantee that the end product is completely according to expectations.

Repairs/stocking of spare parts

Only identity repairs are carried out.

The customized spare parts required for this (device fronts) must be stocked by the customer at the end of delivery.

Ordering information

The pre-defined services can be ordered direct using units.

Contact

Please contact the HMI partner at your Siemens sales office/ National Company (see Internet)

For further information, visit our website at

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

Customized product modifications

OEM products

Overview

- The OEM concept of SIMATIC HMI is "Customizing at its best": Customer requirements resulting from sector and application know-how in combination with experience in the development of HMI devices of all performance classes results in reliable, tailor-made solutions at a fair price.
- OEM products are available in all performance categories – from OEM Push Button Panels, via Micro Panels, Panels and Multi Panels to Panel PCs –with extensive modifications in the hardware, fitted equipment and installed software.
- You can choose from the following modifications:
  - Changes to keyboard layout: number of keys, key size/design and key arrangement
  - Freely definable front dimensions and device mechanics
  - Different processors
  - Different memory media and memory sizes
  - Number, size and arrangement of keys
  - Display technologies, sizes and resolutions
  - Options such as direct key modules
  - Distributed configuration of the panel PCs: up to 500 m
  - Housing for desktop or supporting arm mounting (operator station concept)
  - Additional modules or interfaces, including of course the necessary device drivers
  - Selectable Windows operating systems
  - Pre-installed SIMATIC HMI software package

Benefits

- Solutions for OEM customers are suitable to demanding industrial automation tasks that cannot be solved by means of standard products
- The customized OEM products ar e developed in defined steps in accordance with quality standards and manufactured at the factory where the standard products are produced under constant close cooperation with the customer
- Customers in the automobile in dustry, the food, beverages and tobacco industries and in the plastics industry profit from the experience gained from a number of previous implemented OEM variants and sector standards

More information

Product specification/quotation

- Product specification accordi ng to customer requirements
- Quotation by SIMATIC HMI sp ecialists, determination of:
  - One-off costs
  - Costs for the prototypes
  - Series device prices
  - General conditions (product agreements)
- The minimum annual quantity an d the minimum ordering quantity are agreed upon for the project with the customer.

Note:
ordering of customized products is only possible in conjunction with a product agreement.

The customized OEM products are developed and manufactured in various steps and in line with quality standards. Prototypes are produced in order to test the products. Following release of the devices by the customer, they will be certified and production will be started.

The devices will be mass produced in close agreement with customer planning. Individual product agreements will be made with the customer for planning, production and logistics.

Should any questions or problems arise, customers can approach our worldwide SIMATIC Customer Support 24 hours a day. Furthermore, special OEM after-sales support also exists.

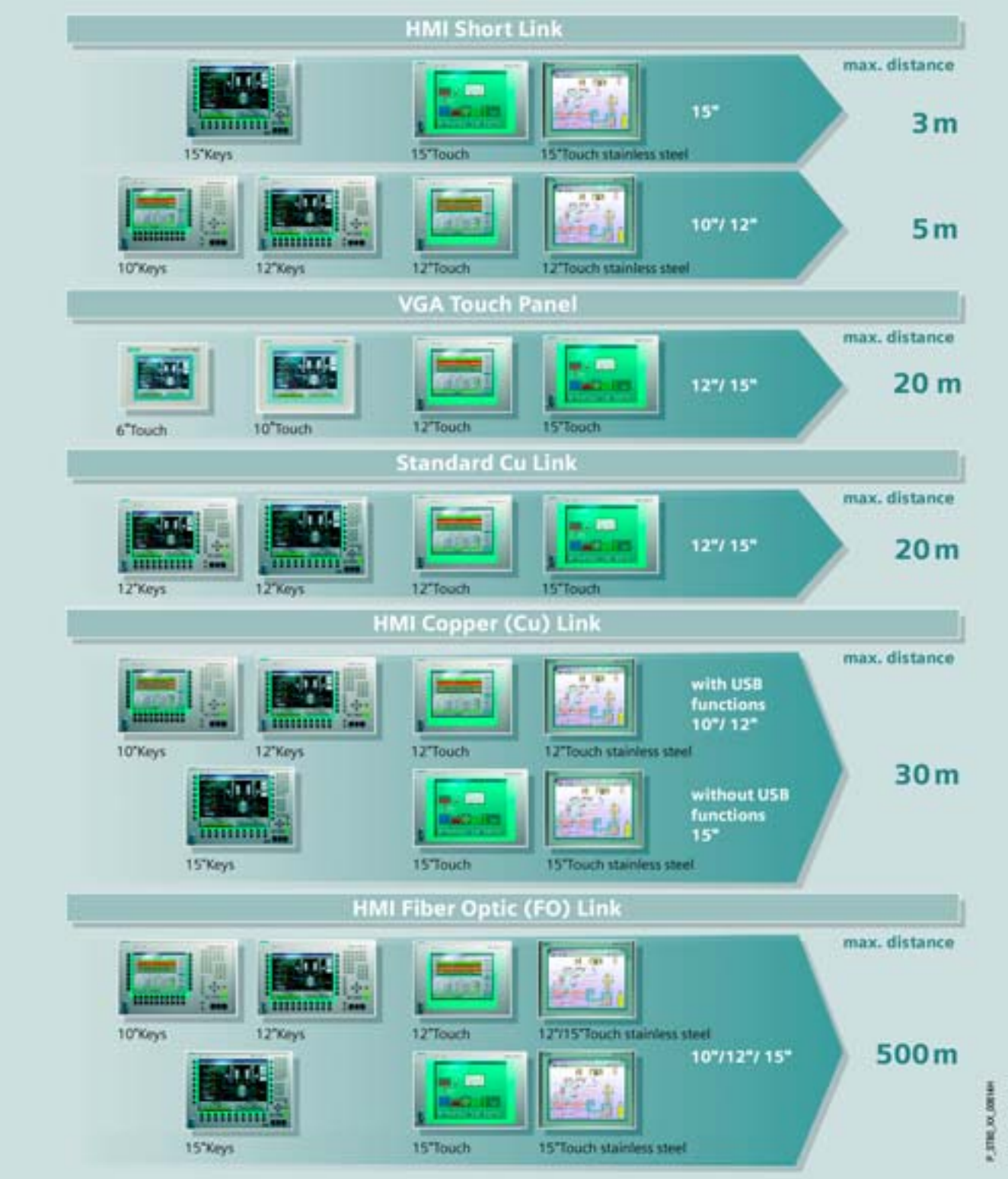
Contact

Please address the HMI contact of your local Siemens office/ national company

For further information, visit our website at

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

Application possibilities for HMI Links



Distance of different HMI links

Customized product modifications

HMI operator stations

Overview

SIMATIC HMI operator stations are off-the-shelf turnkey solutions with SIMATIC Panels or Panel PCs.

Operator stations for: SIMATIC Panels and Multi Panels

Variant 1 | Variant 2 | Variant 3

Operator stations for: SIMATIC Panel PC

Variant 1 | Variant 2 | Variant 3 | Variant 4

Benefits

- High level of industrial capab ility thanks to rugged and field-proven design
- Turnkey solutions, ergonomically and technically tested and certified
- Safe operation even under demanding environmental conditions
- Temperature-tested and temperature-monitored
- Also suitable for special sectors
- For the highest level of avai lability and investment security
- Support, service and repair in Siemens quality:
  - Avoiding thermal hotspots in the housing through optimal installation of the HMI products
  - Calculation of the actual maximum permissible ambient temperature of the overall operator station in continuous operation at the place of use. The power losses of the devices are also accounted for
  - Guaranteed observance of load limits for rotating mass memories and large displays through shock and vibration tests of the overall operator station in operation
  - Observance of legal requirements (certification)
  - Calculation and testing of required degrees of protection and EMC measures
  - Ensuring the surface quality and its resistance to abrasion and chemicals
  - All measures for improving the usability of the operator stations in special environments are based on passive technology where possible (e.g. no active air conditioning) with the aim of ensuring long and fault-free operation

Application

Complete HMI operator stations can be used wherever the installation of HMI devices in a control cabinet or direct at the machine is not possible. Operator stations are suitable for:

- Industrial use
- Semi-industrial use
- Use in the food, beverages, and tobacco industry

Design

The HMI operator station concept is based on a modular system whereby HMI devices are installed in selected housings according to function.

- HMI device enclosure for all-round protection (IP65)
- Can be mounted on a stand, 500 mm supporting arm or 750 mm supporting arm
- Can be rotated using adjustment elements
- Connection for external keyboard and mouse
- Specific hardware components can be installed

Operator stations for SIMATIC Panels

Variants for SIMATIC Multi Panel, Operator Panel, Touch Panel:

- Compact design thanks to shallow installation depth
- Diverse installation methods thanks to light weight
- Maximum housing depth 99 mm
- **Variant 1**:
  Enclosure
- **Variant 2**:
  Enclosure with single-row operator panel
- **Variant 3**:
  Enclosure with double-row operator panel

All version types are designed for ambient temperature of up to + 40 °C.

Operator stations for SIMATIC Panel PCs

Versions for Panel PC 670:

- Rugged and suitable for use in harsh industrial environments
- Maximum housing depth 180 mm
- **Variant 1**:
  Enclosure
- **Variant 2**:
  Enclosure with single-row operator panel
- **Variant 3**:
  Enclosure with double-row operator panel
- **Variant 4**:
  Enclosure with double-row operator panel and keyboard drawer

All version types are designed for the range + 34 °C to + 39 °C, depending on versions and power losses.

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 (SIMAT IC HMI devices from 10" display)
- Ensuring the data transfer and access to drives and interfaces
- Direct operation of the mach ine (conventional operator elements for direct connection to machine units)
- Simple alphanumeric input
- Cleaning agents taken into account

HMI operator stations

Technical specifications

	SIMATIC Panels		
	Variant 1	**Variant 2**	**Variant 3**
Housing data			
Installable HMI products	TP 270 10“ Touch OP 270 10” Key MP 270B 10” Key / Touch MP 370 12” Key / Touch MP 370 15“ Touch	TP 270 10“ Touch OP 270 10” Key MP 270B 10” Key / Touch MP 370 12” Key / Touch MP 370 15“ Touch	TP 270 10“ Touch OP 270 10” Key MP 270B 10” Key / Touch MP 370 12” Key / Touch MP 370 15“ Touch
Housing width in mm (min.-max.)	416 - 564	416 –564	416 - 564
Housing height in mm (min.-max.)	348 –383	462 –497	528 - 563
Housing depth in mm	99	99	99
Weight in kg	11	11.5	12
Material	Aluminum	Aluminum	Aluminum
Surface treatment	Clear anodized	Clear anodized	Clear anodized
Degree of protection	IP65	IP65	IP65
Approvals	CE	CE	CE
Housing color	RAL 9023	RAL 9023	RAL 9023
Control elements	-	3SB, single-row	3SB, double-row
Ambient temperature for housing	40	40	40
Housing lock	Double-bit 3	Double-bit 3	Double-bit 3
24V fan	Yes	Yes	Yes
Supporting arm mounting (optional)	Yes	Yes	Yes
Stand mounting (optional)	Yes	Yes	Yes

Technical specifications (continued)

	SIMATIC Panel PC			
	Variant 1	**Variant 2**	**Variant 3**	**Variant 4**
Housing data				
Installable HMI products	PC 670 10“ PC 670 12“ Key / Touch PC 670 15“ Key / Touch	PC 670 10“ PC 670 12“ Key / Touch PC 670 15“ Key / Touch	PC 670 10“ PC 670 12“ Key / Touch PC 670 15“ Key / Touch	PC 670 10“ PC 670 12“ Key / Touch PC 670 15“ Key / Touch
Housing width in mm	595	595	595	595
Housing height in mm (min.-max.)	407 - 451	521 - 565	587 - 631	701 - 745
Housing depth in mm	180	180	180	180
Weight in kg	26.5	29	35	39
Material	Aluminum	Aluminum	Aluminum	Aluminum
Surface treatment	Clear anodized	Clear anodized	Clear anodized	Clear anodized
Degree of protection	IP65	IP65	IP65	IP65
Approvals	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
Ambient temperature for housing	-	-	-	-
Ambient temperature for housing with partial load	39	39	39	39
Ambient temperature for housing with full load	34	35	36	36
Housing lock	Double-bit 3	Double-bit 3	Double-bit 3	Double-bit 3
24V fan	Yes	Yes	Yes	Yes
Supporting arm mounting (optional)	Yes	Yes	Yes	Yes
Stand mounting (optional)	Yes	Yes	Yes	Yes

More information

For further information, visit our website at

Link to the SIMATIC HMI selection assistance –operator station concept:

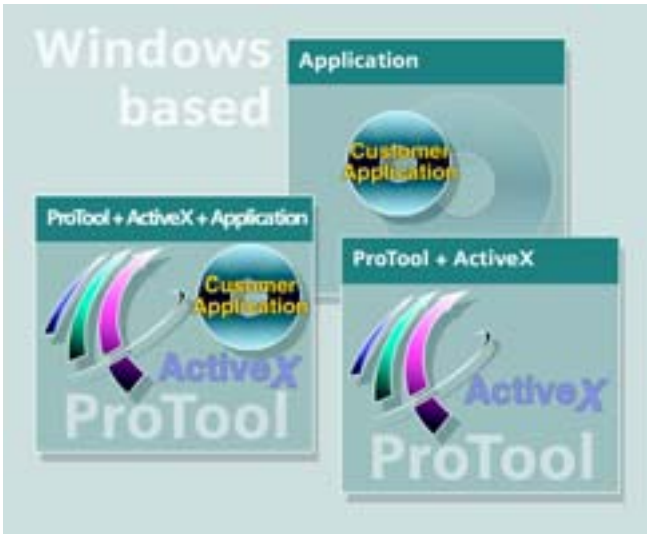
http://intra1.nbgm.siemens.com/customizecenter/index.php3

6

Customized product modifications

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 implementi ng 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

To meet special requirements, you can build on ProTool or WinCC, or you can use third-party products, or proprietary applications.

SIMATIC ProTool or WinCC flexible, the standard configuring software for the SIMATIC HMI panel family, offers several methods for implementing additional functionality. Depending on complexity and requirements, the following can be added:

- New project functions
- Proprietary ActiveX objects
- Additional applications that ru n in parallel with ProTool or WinCC flexible
- Porting of proprietary software or third-party software to panel hardware.

Within the scope of the Open Platform Program, there is also a Software Development Kit available for SIMATIC ProTool/Pro or WinCC flexible for developing customized software solutions for PC destination platforms.

More information

For further information, visit our website at

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

Industrial
LCD monitors

7

Introduction

Overview

Industrial LCD monitors are used wherever the display panel is separated from the computer for technical and commercial reasons.

The SCD 1897/1898, SCD 1597 and SCD 1297 monitors are LCD monitors in a rugged industrial design.

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" rack-mounted units)

Benefits

Rugged industrial design:

Resistance to power failure, durability, industry-compatible design: these are the demands placed on LCD monitors in industrial applications. The industrial LCD monitors meet these demands in all variants and therefore comply with the Industry CE standard. As an option, industrial LCD monitors can also be supplied with 24 V DC in addition to the usual supply voltages of 110 V or 230 V AC. The industrial LCD monitors also cope with vibrations of up to 1 g and shocks of up to 5 g. The extended temperature range of the devices is another safety feature. The industrial LCD monitors feature a mineral glass screen which provides higher mechanical protection against pressure, increased service life due to protection from scratches and clear readability. Electromagnetic disturbance and emitted interference are prevented by the use of the industrial TFT display.

More scope due to greater variety

The industrial LCD monitors are available with 12", 15" and 18" displays as built-in, rack-mounted and desktop units. The monitors can even be operated at distances up to 20 m from the computing unit. The operating concept provides a choice between touch and key operation.

High quality working

The industrial LCD monitors have a totally stationary display, i.e. no flickering. The brightness and the contrast levels outshines every conventional CRT monitor. Their uniform brightness, focus and lack of reflection set new standards. With reading angles of up to 170° horizontal and vertical, you will always know what's going on.

Industrial LCD monitors at a glance

	SCD 1297	SCD 1597	SCD 1897 / SCD 1898
Variants			
•Desktop units	–	•	•
•Built-in units (for control cabinets, consoles and booms)	•	•	•
•19" rack-mounted units	•	•	•
Display	12" TFT	15" TFT	18" TFT
•Resolution	800 x 600	1024 x 768	1280 x 1024
•Colors	256 k	16 million	16 million
•Viewing angle (H x V)	120° x 100°	130° x 110°	170° x 170°
Operation (optional)			
Touch operation	•	•	•
Key/mouse operation	•	•	–
Ambient conditions			
•Degree of protection to EN 60 529	IP65 (built-in unit), IP54 (19" rack-mounted unit)	IP20 (desktop unit), IP65 (built-in unit), IP54 (19" rack-mounted unit)	IP20 (desktop unit), IP65 (built-in unit), IP54 (19" rack-mounted unit)
•Vibration loading during operation	1 g	1 g	1 g
•Shock loading during operation	5 g	5 g	5 g

• possible
– not possible

Overview

- The SCD 1297 Monitors are rugged, industry standard LCD monitors
- They can be used in any applic ations 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 design:
  - Safe from power-failure and durable thanks to high resistance to shock and vibration as well as extremely high EMC compatibility
  - Housing to IP65 degree of protection, resistant to dust and humidity
  - Mineral glass screen, so high mechanical protection against pressure and protected from scratches
  - Complies with the "Industry" CE standard
- Wide range of variants
- No x-ray radiation
- Low energy requirements
- Comfortable working:
  - Large reading angle between 120° horizontal and 100° vertical
  - Sharp, high-contrast display
  - No flicker, constant brightness
  - Auto adjust
- Configuration through on-screen display (OSD)
- Low space requirements and low weight
- Long 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 to 80 kHz
- Image refresh frequency 50 to 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 computing 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.

12" devices

Technical specifications

Type	SCD 1297-E / 1297-ET	SCD 1297- K	SCD 1297-R / 1297-RT
General features			
•Can be separated from computing 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° x 100°	120° x 100°	120° x 100°
•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

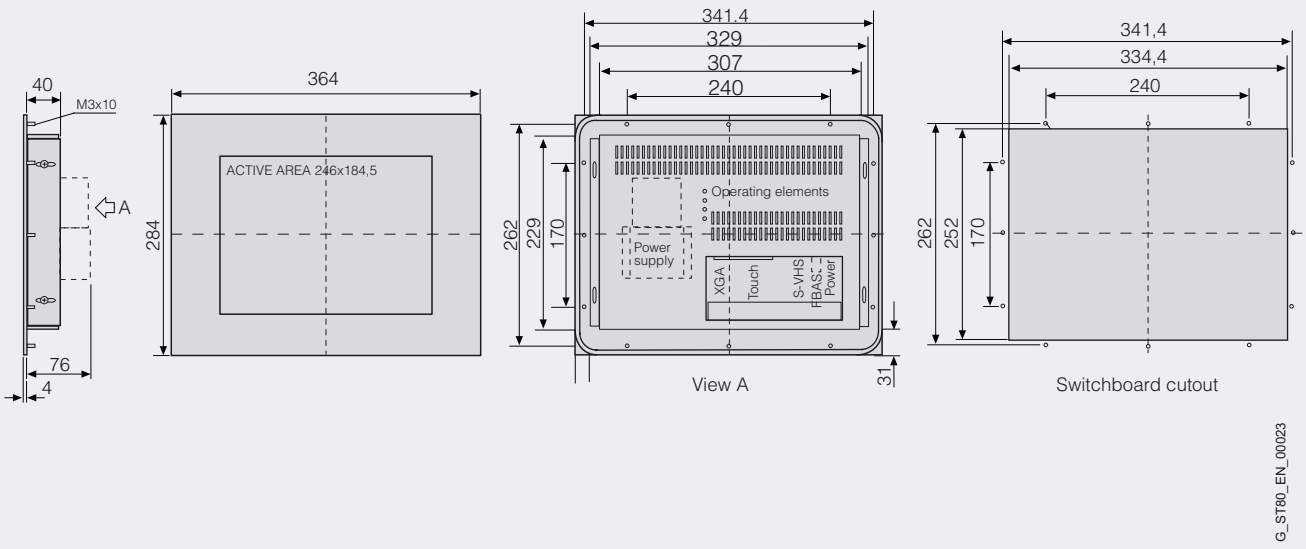
Ordering data

	Order No.
Standard configuration	
12" LCD monitors	**6AV8 101-0■■00-■■A1**
Built-in versions:	
•Built-in unit	**B**
•19" rack-mounted unit	**C**
Operating functions:	
•Display device without operating functions	**A**
•Touch	**B**
•Keyboard (only with built-in unit)	**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 functionality)	
- 20.0 m	**J**
•Video + 2*PS/2 (only for keyboard functionality)	
- 1.8 m	**L**
- 5.0 m	**N**
•Video + X27 (only for keyboard functionality)	
- 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 + power 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

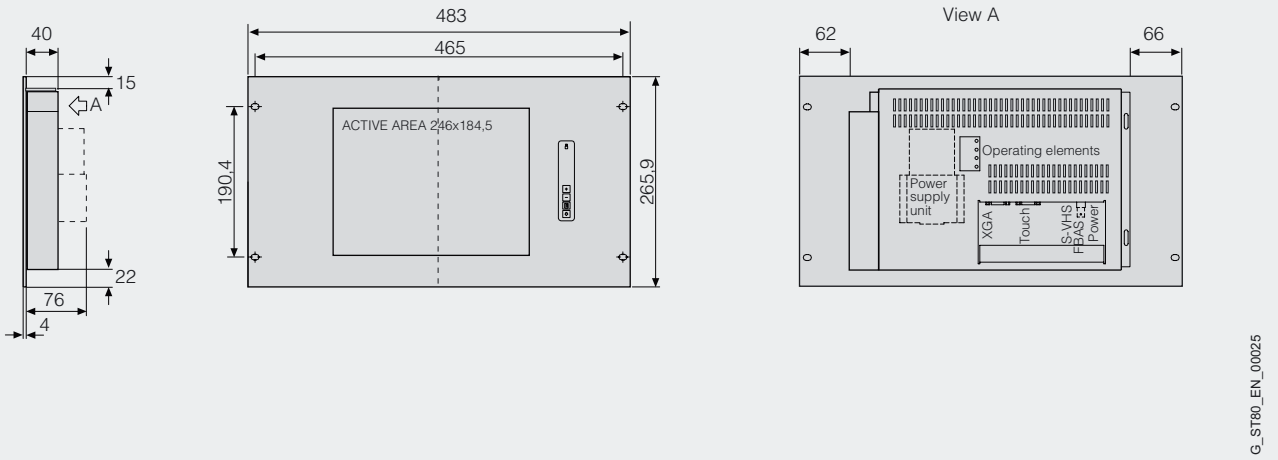


SCD 1297-E, SCD 1297-ET

12" devices

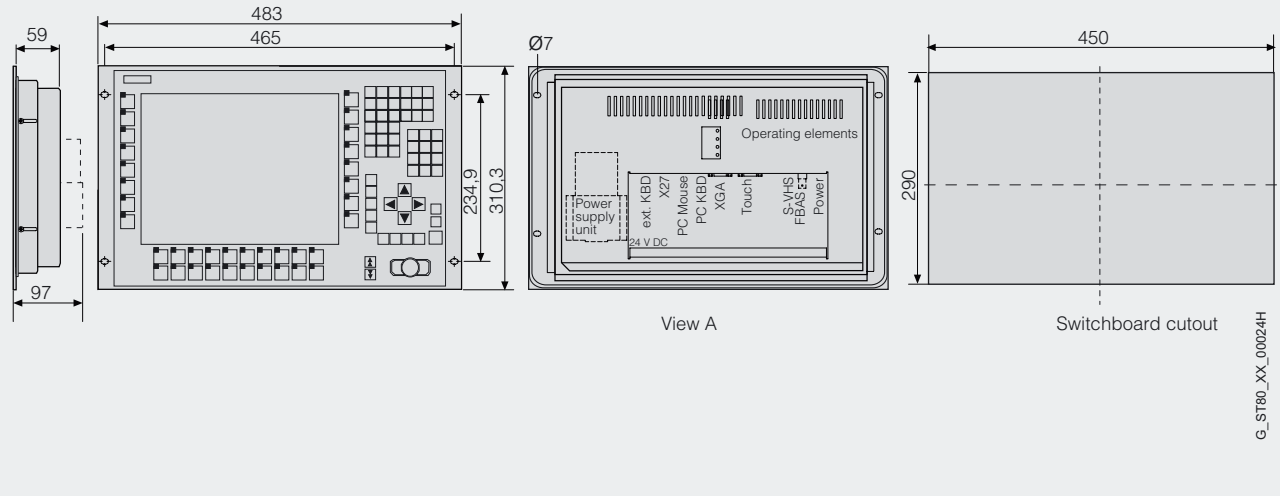
Dimension drawings (continued)

Dimensions in mm



SCD 1297-R, SCD 1297-RT

Dimensions in mm



SCD 1297-K

More information

Additional information can be found in the Internet under

http://www.siemens.com/industrial-lcd

Overview

- The SCD 1597 Monitors are rugged, industry standard LCD monitors
- They can be used in any applic ations 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 design:
  - Safe from power-failure and durable thanks to high resistance to shock and vibration as well as extremely high EMC compatibility
  - Housing to IP65 degree of protection (desktop unit IP20), resistant to dust and humidity
  - Mineral glass screen, so high mechanical protection against pressure and protected from scratches
  - Complies with the "Industry" CE standard
- Wide range of variants
- No X-ray radiation
- Low energy requirements
- Comfortable working:
  - Large reading angle between 130° horizontal and 110° vertical
  - Sharp, high-contrast display
  - No flicker, constant brightness
  - Auto adjust
- Configuration through on-screen display (OSD)
- Low space requirements and low weight
- Long 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 pi xels, 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 computing unit

Three versions of the SCD 1597 12" industrial LCD monitors are available:

- Desktop units
  - SCD 1597-I –for display only
  - SCD 1597-IT with analog resistive touch screen
- 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.

15" devices

Technical specifications

Type	SCD 1597-E / 1597-ET	SCD 1597- K	SCD 1597-R / 1597-RT	SCD 1597-I / 1597-IT
General features				
•Can be separated from computing unit	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m
•On-screen display (OSD) configuration	Yes	Yes	Yes	Yes
•Anti-glare and hardened mineral glass sheet	Yes	Yes	Yes	Yes
•Presentation	Full screen	Full screen	Full screen	Full screen
•Power switch	No	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	110/230 V AC,
•Frequency/power input	47 –63 Hz / 30 VA	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	IP20
•Vibration resistance in operation	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)	1 g (10 m/s^2)
•Shock resistance in operation	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)	5 g (50 m/s^2)
•EMC	CE	CE	CE	CE
•Ambient temperature in operation	0 to +40 °C	0 to +40 °C	0 to +40 °C	0 to +40 °C
Certification	UL, CE	UL, CE	UL, CE	UL, CE
Display				
•Viewable area in inches	15" TFT	15" TFT	15" TFT	15" TFT
•Resolution (pixels) optimally	1024 x 768	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	250 cd/m^2 / 300:1
•Viewing angle (H x V)	130° x 110°	130° x 110°	130° x 110°	130° x 110°
•Shadow mask (H x V) (mm)	0.30 x 0.30	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	304 x 228
•No. of colors	16 million	16 million	16 million	16 million
•MTBF of background lighting (at 25 °C)	35,000 h	35,000 h	35,000 h	35,000 h
•Image refresh rate	50 –72 Hz	50 –72 Hz	50 –72 Hz	50 –72 Hz
•Line frequency	30 –80 kHz	30 –80 kHz	30 –80 kHz	30 –80 kHz
Control elements				
•Membrane keyboard & Piezo mouse	No	Yes	No	No
•Function keys	No	36 with LEDs	No	No
•Alpha and numeric keypads	Yes	Yes	No	No
•Touch screen	Optional	No	Optional	Optional
Interfaces				
•Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes	Yes
•Serial interface for touch screen	Optional	No	Optional	Optional
•2*PS/2 interfaces for keyboard & mouse	No	Yes	No	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	370 x 373 x 62 (base depth 205)
•Mounting cutout/depth W x H x D (mm)	394 x 306 x 83	448 x 333 x 95	-	370 x 373 x 62 (base depth 205)
Weight (kg)	5.5	5.5	5.5	5.5

Ordering data	Order No.
Standard configuration	
15" LCD monitors	**6AV8 101-1■■00-■■A1**
Built-in versions:	
•Desktop unit (only for 230 V)	**A**
•Built-in unit	**B**
•19" rack-mounted unit	**C**
Operating functions:	
•Display device without operating functions	**A**
•Touch	**B**
•Keyboard (only with built-in unit)	**C**
Power supplies:	
•110/230 V AC	**0**
•24 V DC (only with desktop unit)	**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 functionality)	
- 20.0 m	**J**
•Video + 2*PS/2 (only for keyboard functionality)	
- 1.8 m	**L**
- 5.0 m	**N**
•Video + X27 (only for keyboard functionality)	
- 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 + power 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**

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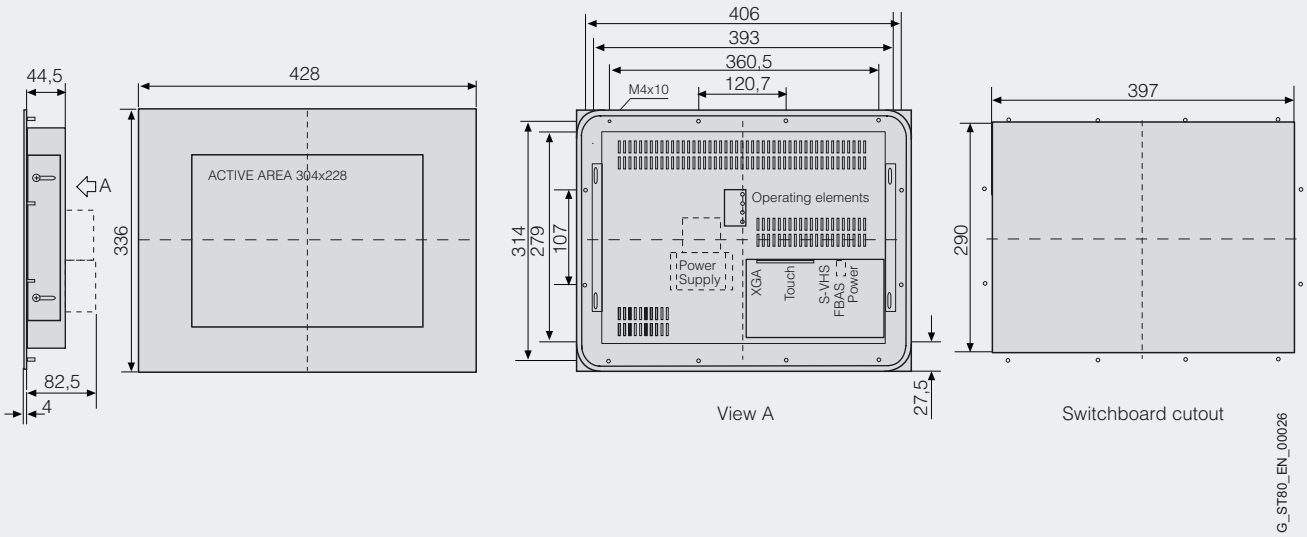
15" devices

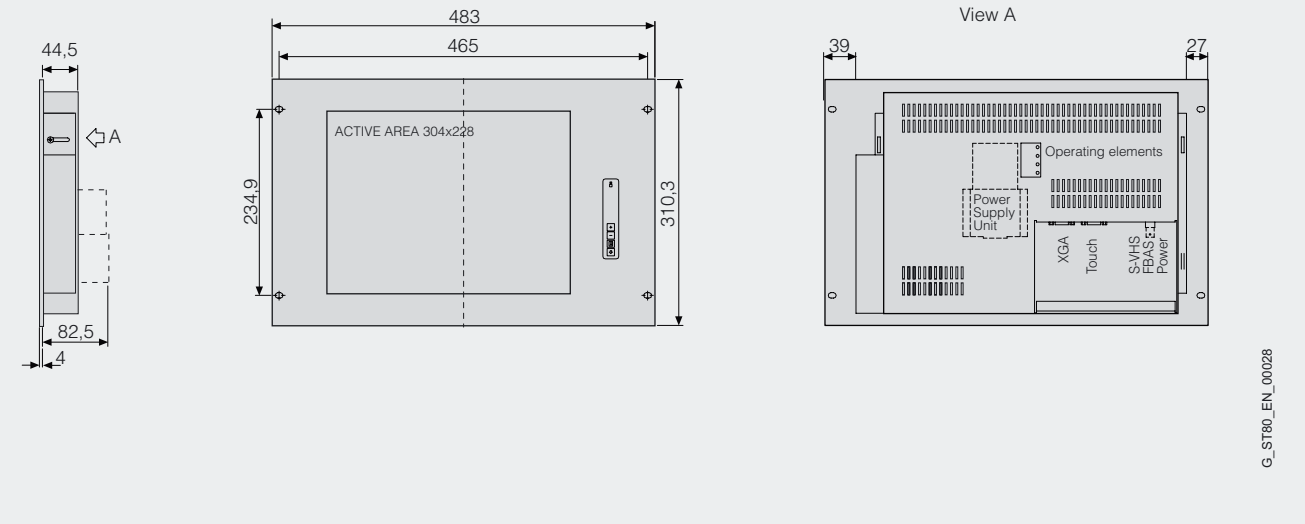
Dimension drawings

Dimensions in mm



SCD 1597-E, SCD 1597-ET

Dimensions in mm



SCD 1597-R, SCD 1597-RT

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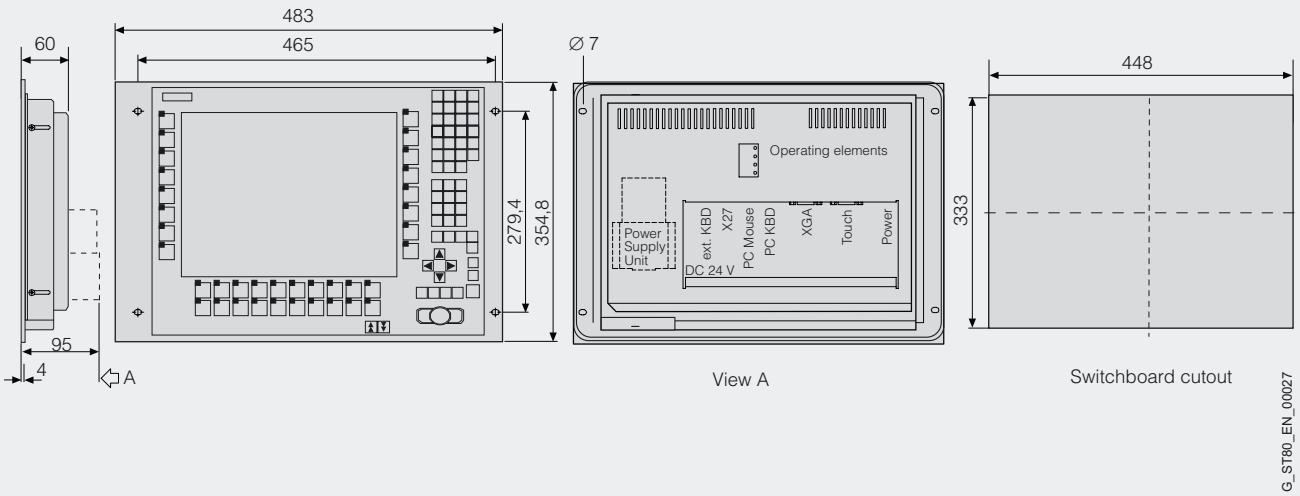
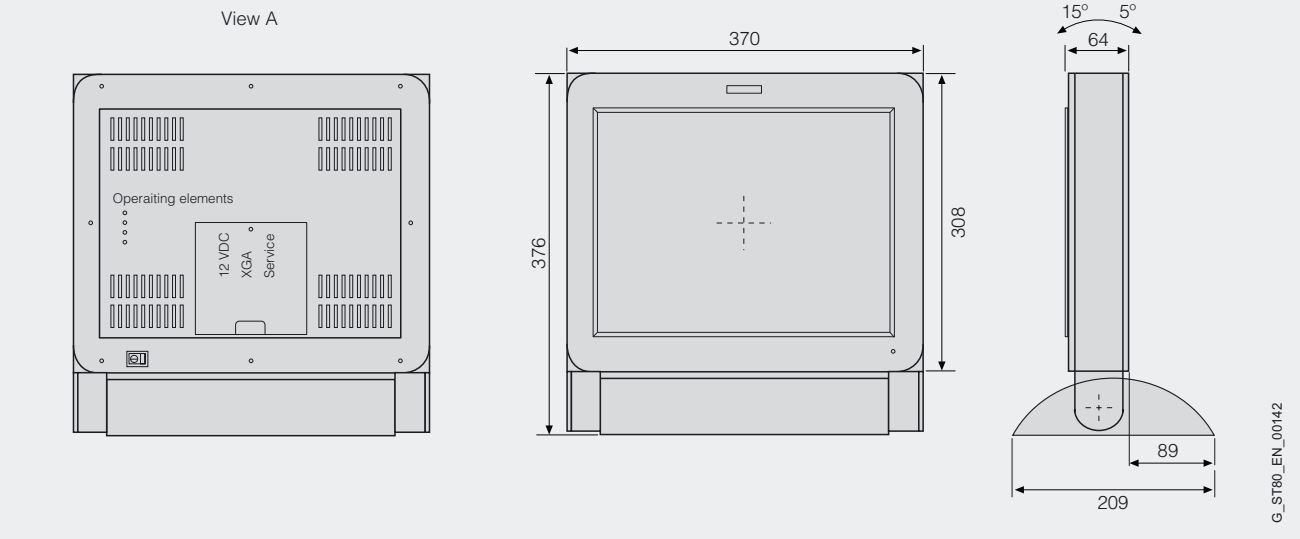
Dimension drawings (continued)

Dimensions in mm



SCD 1597-K

Dimensions in mm



SCD 1597-I

More information

Additional information can be found in the Internet under

http://www.siemens.com/industrial-lcd

18" devices

Overview

- The SCD 1897 and SCD 1898 Monitors are rugged, industry standard LCD monitors
- They can be used in any app lication 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

Benefits

- Rugged industrial design:
  - Safe from power-failure and durable thanks to high resistance to shock and vibration as well as extremely high EMC compatibility
  - Housing front to IP65 degree of protection (desktop unit IP20), resistant to dust and humidity
  - Mineral glass screen, so high mechanical protection against pressure and protected from scratches
  - Complies with the "Industry" CE standard
- Wide range of variants
- No X-ray radiation
- Low energy requirements
- Comfortable working:
  - Large reading angle between 170° horizontal and vertical
  - Sharp, high-contrast display
  - No flicker, constant brightness
  - Auto adjust
- Configuration through on-screen display (OSD)
- Low space requirements and low weight
- Long service life

Application

The SCD 1897/1898 LCD monitors are used wherever the operator/display panel is separated from the computer for technical and economical reasons.

Design

- Rugged aluminium housing
- 18" TFT display
- Resolution 1280 x 1024 pixels, 16 million colors
- Non-reflective, hardened mineral glass screen
- Only display or touch screen
- Line frequency 30-100 kHz
- Image refresh frequency 50-97 Hz
- 110/230 V AC power supply
- Can be positioned up to 20 m from the computing unit

Three versions of the 18" industrial LCD monitors are available:

- Desktop units
  - SCD 1898-I –for display only
  - SCD 1898-IT with analog resistive touch screen
- Built-in units
  (for control cabinets, consoles and booms)
  - SCD 1897-E –for display only
  - SCD 1897-ET with analog resistive touch screen
- 19" rack-mounted units
  - SCD 1897-R –for display only
  - SCD 1897-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)

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 the comparable CRT monitor size (20" CRT corresponds to 18" 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

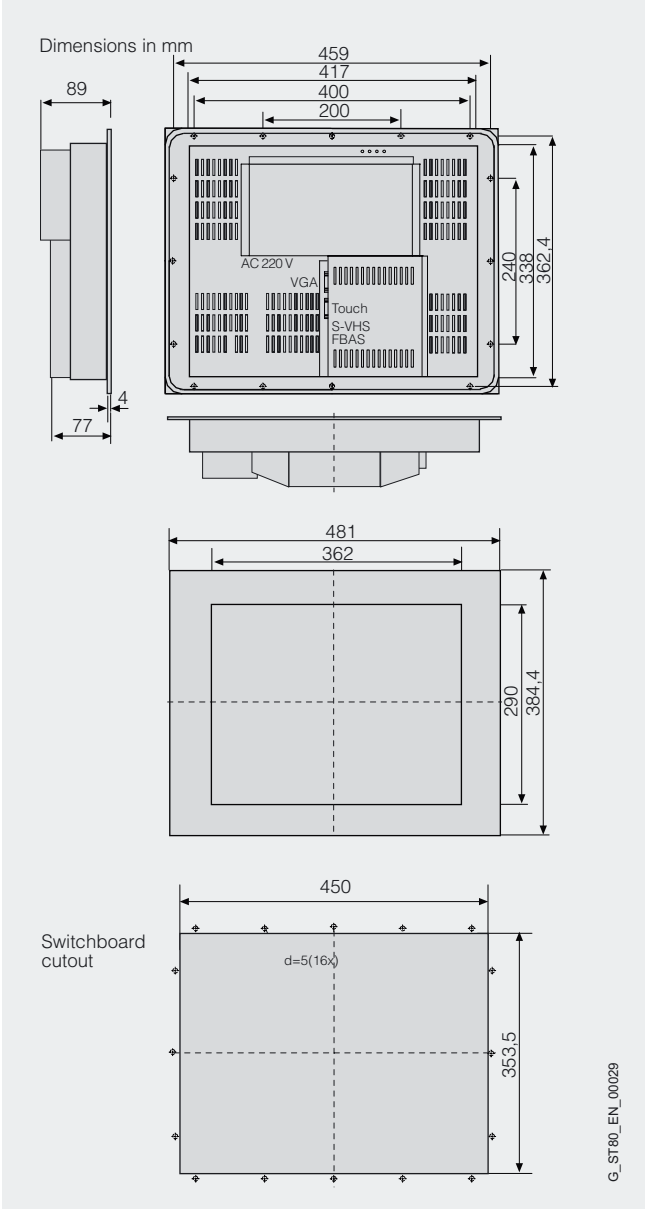
Type	SCD 1897-E / 1897-ET	SCD 1897-R / 1897-RT	SCD 1898-I / 1898-IT
General features			
•Can be separated from computing unit	1.8 to 20 m	1.8 to 20 m	1.8 to 20 m
•On-screen display (OSD) configuration	Yes	Yes	Yes
•Anti-glare and hardened mineral glass sheet	Yes	Yes	Yes
•Presentation	1:1, full screen, zoom	1:1, full screen, zoom	1:1, full screen, zoom
•Power switch	At the rear	At the rear	At the rear
•Power supply	110/230 V AC	110/230 V AC	110/230 V AC
•Frequency/power input	47 to 63 Hz/60 VA	47 to 63 Hz/60 VA	47 to 63 Hz/60 VA
Ambient conditions			
•Degree of protection to EN 60 529	IP65	IP54	IP20
•Vibration resistance in operation	1g (10m/s^2)	1g (10m/s^2)	1g (10m/s^2)
•Shock resistance in operation	5g (50m/s^2)	5g (50m/s^2)	5g (50m/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	18" TFT	18" TFT	18" TFT
•Resolution (pixels) optimally	1280 x 1024	1280 x 1024	1280 x 1024
•Brightness/contrast (typ.)	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
•Viewable area (H x V) (mm)	359 x 287	359 x 287	359 x 287
•No. 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 keypads	No	No	No
•Touch screen	Optional	Optional	Optional
Interfaces			
•Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
•Serial interface for touch screen	Optional	Optional	Optional
•2*PS/2 interfaces for keyboard & mouse	No	No	No
Dimensions			
•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	10

18" devices

Ordering data

	Order No.
Standard configuration	
18" LCD monitors	**6AV8 101-2■■00-0■A0**
Built-in variants:	
•Built-in unit 1897	**B**
•19"-rack-mounted unit 1897	**C**
•Desktop unit 1898	**D**
Operating functions:	
•Display device without operating functions	**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 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**

Dimension drawings

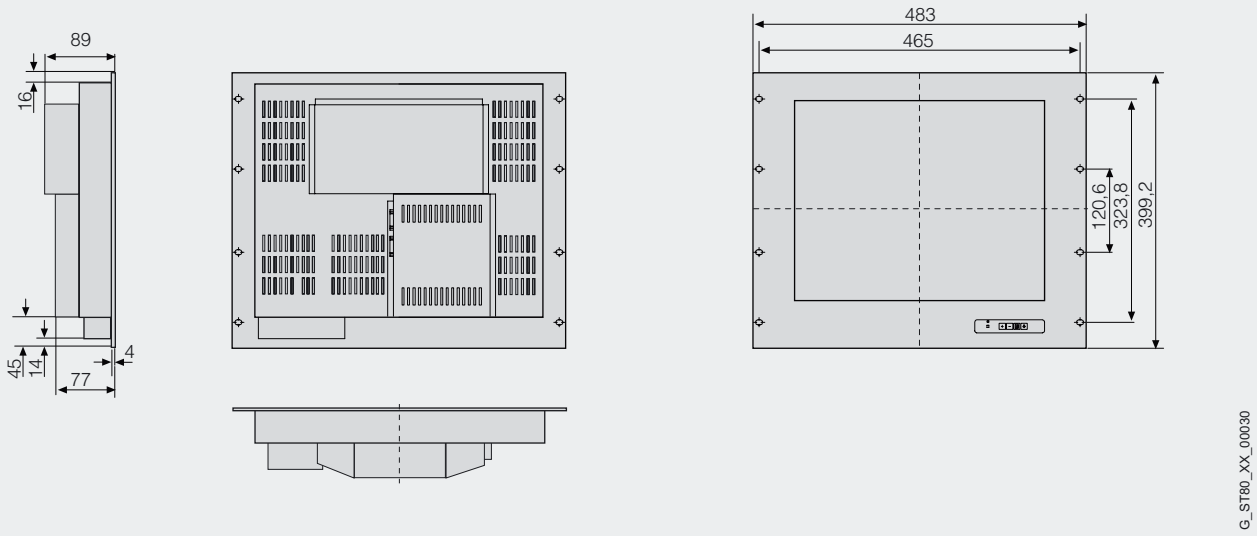


SCD 1897-E, SCD 1897-ET

7

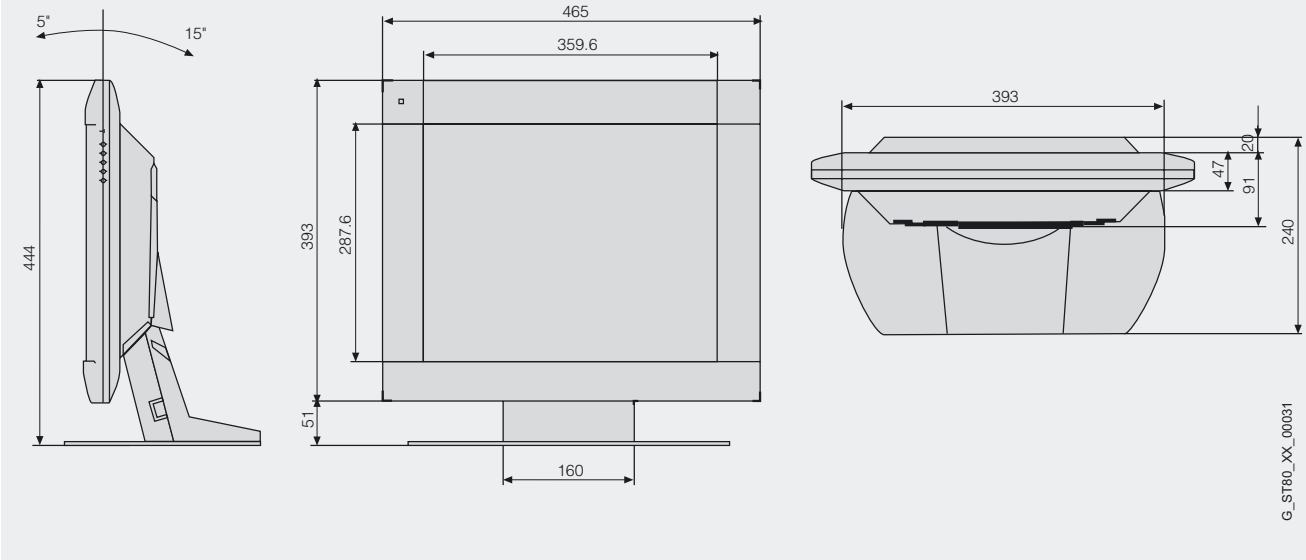
Dimension drawings

Dimensions in mm



SCD 1897-R, SCD 1897-RT

Dimensions in mm



SCD 1898-I, SCD 1898-IT

More information

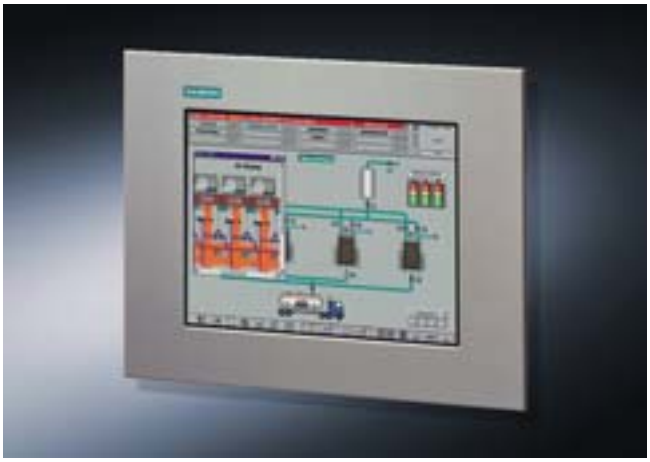
Additional information can be found in the Internet under

http://www.siemens.com/industrial-lcd

7

SCD 1215-E

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-rays
- High electromagnetic compatibility
- Designed for cubicle mounting

Application

The LCD monitor can be used in many industrial sectors. These include, for example:

- Electromagnetically contaminated environments
- Info terminals
- Mechanical engineering

Use with the following systems is possible:

- COROS LS-C (25 kHz)
- DISIT, WF 470, CP 527n (15 kHz)
- SIMATIC PC, PCS 7; WinCC, VIDEOMAT
- TELEPERM XP, MX-Terminal
- CP 581, PG 7xx, COROS LS-A/LS-B

Notes

Good picture quality is only guaranteed with an interference-free standard video signal at the monitor input.

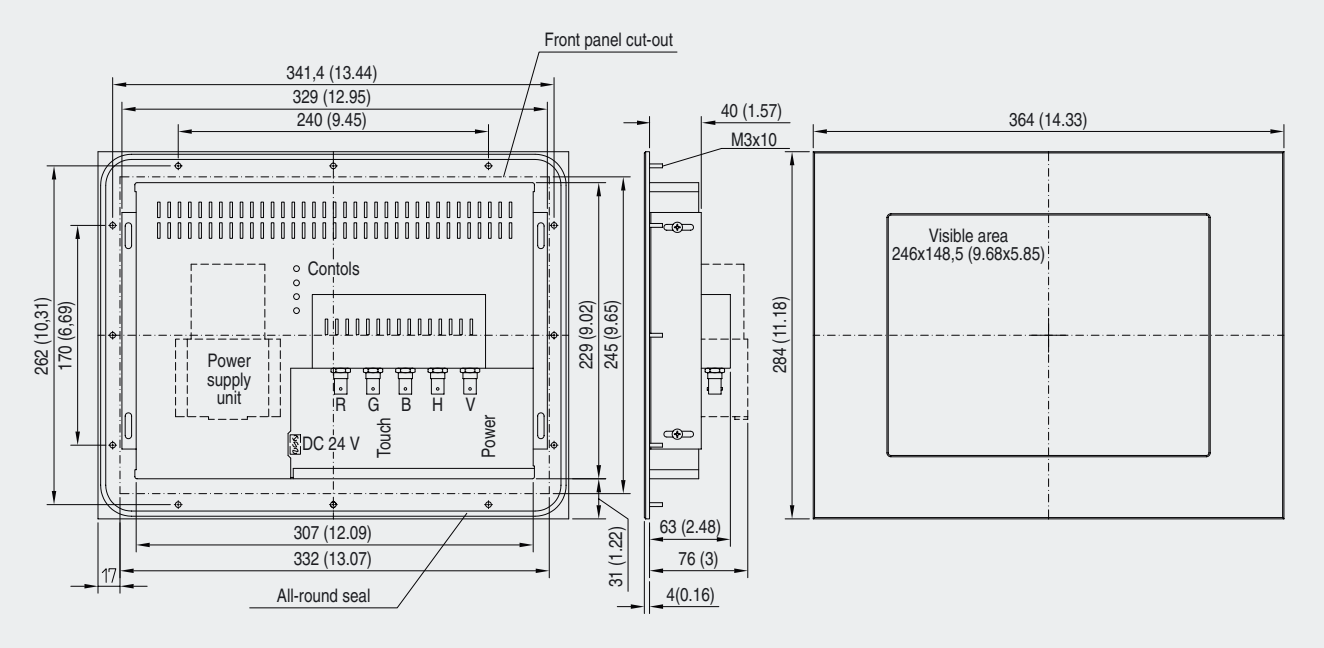
Information on the subject of "Special requirements for the operation of LCDs with 15 kHz and higher - possible measures for trouble-free operation" is available from the A&D Mall on the Internet at *www.siemens.de/automation/mall* under the headings for the respective LCD monitors.

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	
LCD- monitor SCD 1215-E Industrial LCD, 15 ... 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation via OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 240-4MV**
Accessories	
DC/DC converter For connecting 12" and 15" LCD monitors for 12 V DC to a 24 V DC supply. It transforms the voltage into 12 V DC.	**6AV8 107-1BA00-0AA0**
High-quality video cable	
• Length 2 m	**6GF6 902-0VK**
• Length 5 m	**6GF6 905-0VK**

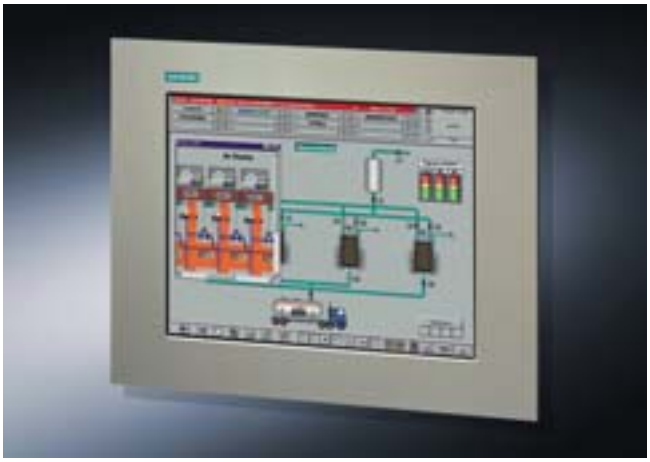
Dimension drawings



SCD 1215-E, dimensioned drawing, dimensions in mm (inch)

SCD 1515-E

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-rays
- High electromagnetic compatibility
- Designed for cubicle mounting

Application

The LCD monitor can be used in many industrial sectors. These include, for example:

- Electromagnetically contaminated environments
- Info terminals
- Mechanical engineering

Use with the following systems is possible:

- COROS LS-C (25 kHz)
- DISIT, WF 470, CP 527n (15 kHz)
- SIMATIC PC, PCS 7; WinCC, VIDEOMAT
- TELEPERM XP, MX-Terminal
- CP 581, PG 7xx, COROS LS-A/LS-B

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.

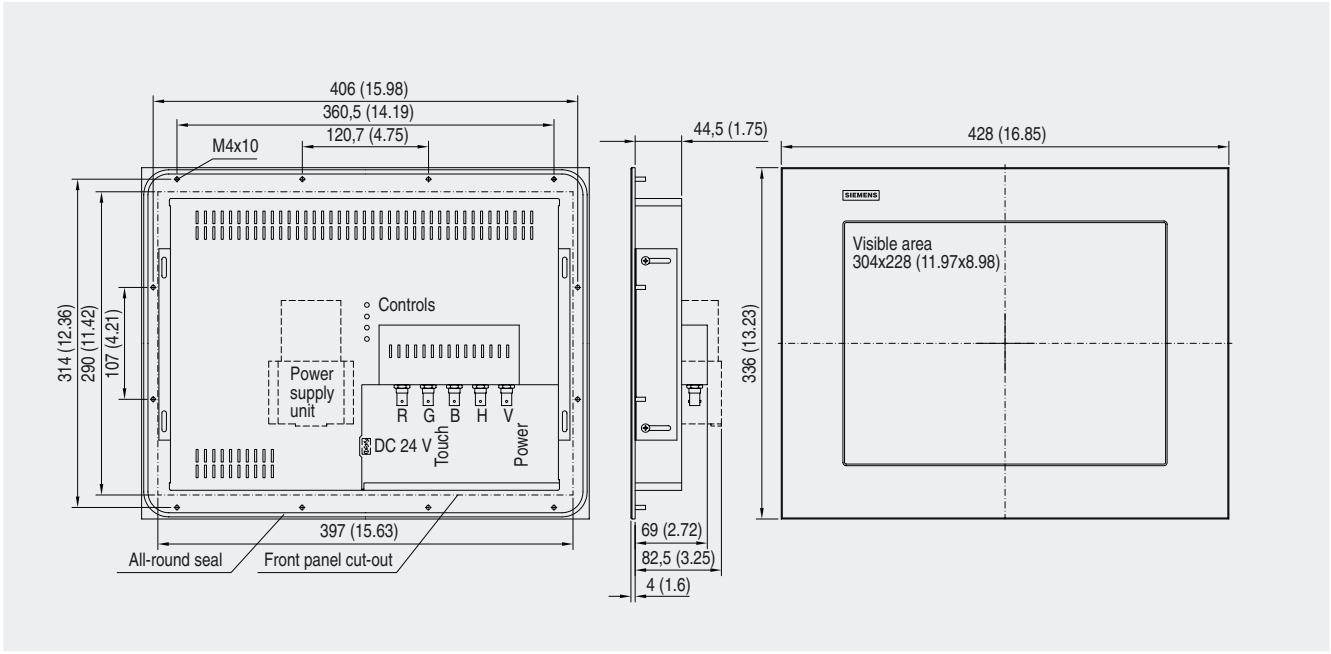
Screen diagonal

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

Ordering data	Order No.
Standard configuration	
LCD monitor SCD 1515-E Industrial LCD, 15 ... 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation via OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 230-4MV**
Accessories	
DC/DC converter For connecting 12" and 15" LCD monitors for 12 V DC to a 24 V DC supply. It transforms the voltage into 12 V DC.	**6AV8 107-1BA00-0AA0**
High-quality video cable	
• Length 2 m	**6GF6 902-0VK**
• Length 5 m	**6GF6 905-0VK**

Dimension drawings



SCD 1515-E, dimensioned drawing, dimensions in mm (inch)

SCD 1815-E/1815-I

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-rays
- High electromagnetic compatibility
- Large viewing angle

Application

The LCD monitor can be used in many industrial sectors. These include, for example:

- Electromagnetically contaminated environments
- Info terminals
- Mechanical engineering

Use with the following systems is possible:

- COROS LS-C (25 kHz)
- DISIT, WF 470, CP 527n (15 kHz)
- SIMATIC PC, PCS 7; WinCC, VIDEOMAT
- TELEPERM XP, MX-Terminal
- CP 581, PG 7xx, COROS LS-A/LS-B

In the case of the SCD 1815-I, use is also possible with

- TELEPERM M
- MADAM S/R
- OS 254/OS 265

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 in the Internet at *www.siemens.de/automation/mall* under the headings for the respective LCD monitors.

Screen diagonal

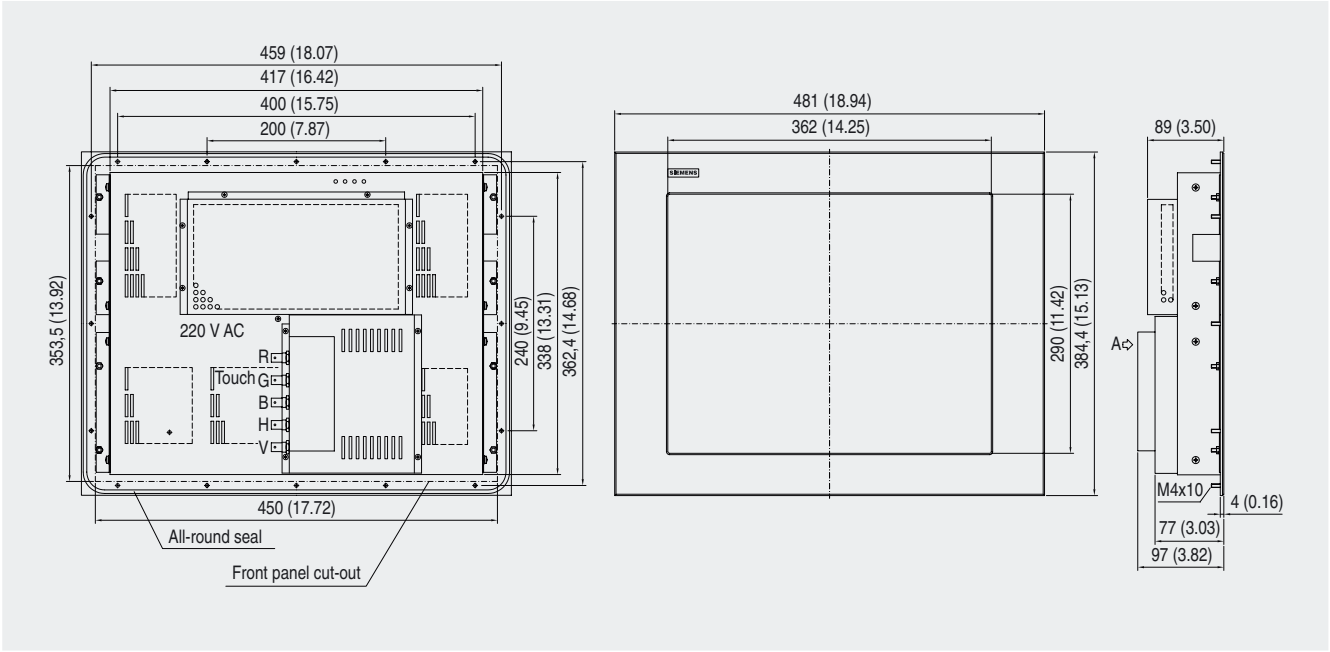
The rule of thumb for LCDs is: "display size in inch plus 2 equals the comparable size of a CRT monitor" (a 12" LCD is equivalent to a 14" CRT).

Light pen mode

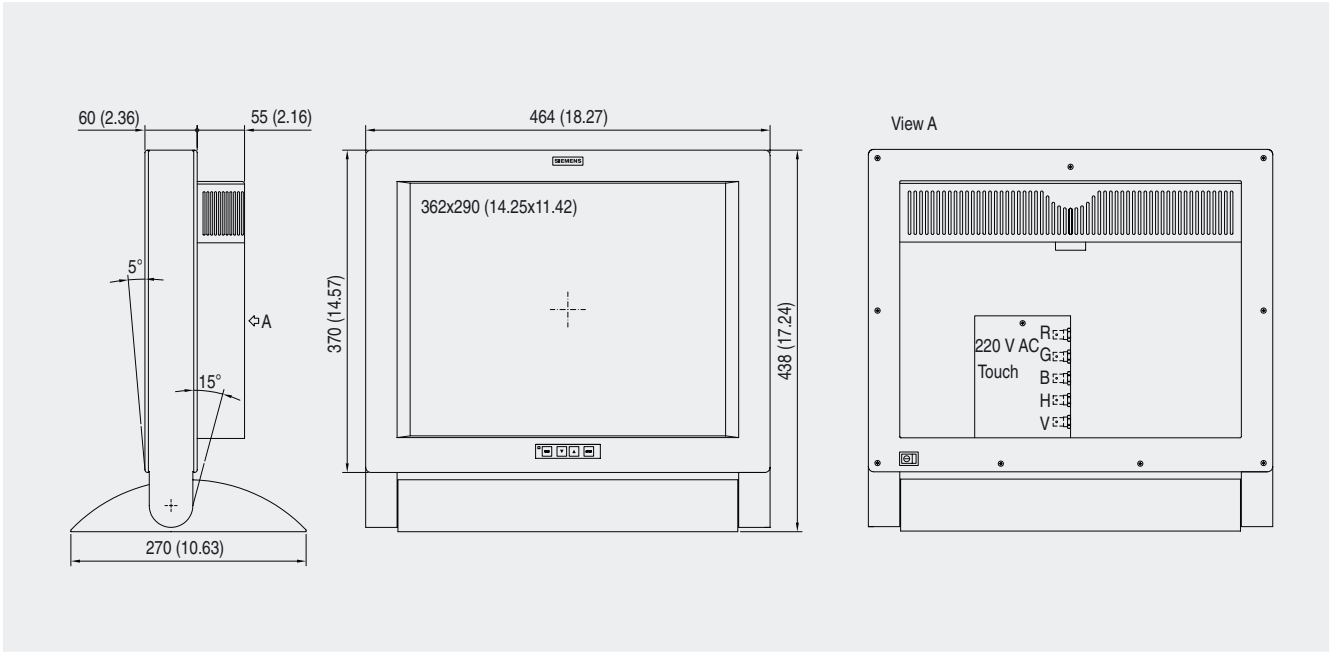
Light pen mode is not possible with the SCD 1815-I. If light pen operation is required for your system, please get in direct touch with the TELEPERM Hotline, Tel.: +49 (180) 50 50 222.

Ordering data	Order No.
Standard configuration	
LCD monitor SCD 1815-I Desktop version, technical data same as 1815-E.	**6GF6 220-1MV**
LCD monitor SCD 1815-E 18" (1280 x 1024 pixel), built-in version, industrial LCD, 15 ... 97 kHz, scaling DSP, color TFT panel with large viewing angle and safety glass, operation via OSD, analog input 5 x BNC, UL 1950, IP65	**6GF6 220-4MV**
Accessories	
High-quality video cable	
• Length 2 m	**6GF6 902-0VK**
• Length 5 m	**6GF6 905-0VK**

Dimension drawings



SCD 1815-E, dimensioned drawing, dimensions in mm (inch)



SCD 1815-I, dimensioned 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

Courses for SIMATIC HMI

Manager, sales personnel
Project manager, projekt staff member
Engineers, programmers
Commissioning engineers, project planning engineers
Service Personnel
Operator, user
Maintenance personnel

Titel	Target group	Duration	Course code
SIMATIC HMI (**H**uman **M**achine **I**nterface)			
SIMATIC ProTool/Pro, System course	✔ ✔ ✔ ✔	3 days	ST-BPROPRS
SIMATIC WinCC V6, System course	✔ ✔ ✔ ✔	5 days	ST-BWINCCS
SIMATIC WinCC, Advanced course	✔ ✔ ✔ ✔	5 days	ST-BWINCCV
SIMATIC WinCC, Options, Networks, Databases	✔ ✔ ✔ ✔	5 days	ST-BWINOND
SIMATIC WinCC flexible, System course1	✔ ✔ ✔ ✔	3 days	ST-WCCFSYS1

Standards and approbations

Operating system licenses for SIMATIC PC/PG

The enclosed operating system license is approved only for the installation of the SIMATIC PC/PG supplied.

The Microsoft OEM license allows you to install the software only on this SIMATIC system.

UL (U) and CSA (C) standards

All HMI products comply with the UL (U) and CSA (C) standards or an application for approval has been submitted.

Products, for which there is no approval, are specially marked (see the product ordering data).

CE marking

The electronic products described in this catalog comply with the requirements and protection objectives of the following EU guidelines and with the harmonized European standards (EN) which have been published for programmable controllers in the Official Journal of the European Union:

- 89/336/EWG "Electromagnetic Compatibility" (EMC guideline)
- 73/23/EWG "Electrical Equipment for Use Within Specific Voltage Limits" (low voltage guideline)

The EU conformity declarartion is available for examination by the appropriate authorites at:

SIMATIC HMI:
Siemens AG,
Automation and Drives
Dept. A&D AS SM ID
Postfach 4848
90327 Nürnberg
Federal Republic of Germany

SIMATIC, SIMATIC NET, SIMATIC PC:
Siemens AG,
Automation and Drives
Dept. A&D AS RD4
Postfach 1963
92209 Amberg
Federal Republic of Germany

Siemens contacts worldwide

Overview

At

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 partner companies possess the know-how for developing reliable, economic and future-oriented solutions –for all sectors and all automation components: covering all SIMATIC components, visualization systems, communications networks using SIMATIC PCS 7, microsystems and motion control systems up to products for vertical integration of industrial automation and office environments.

Your benefits

- Customized, economic and future-oriented solutions
- Significant advantages with resp ect to speed, efficiency and locality
- Solution provider has spec ial 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.

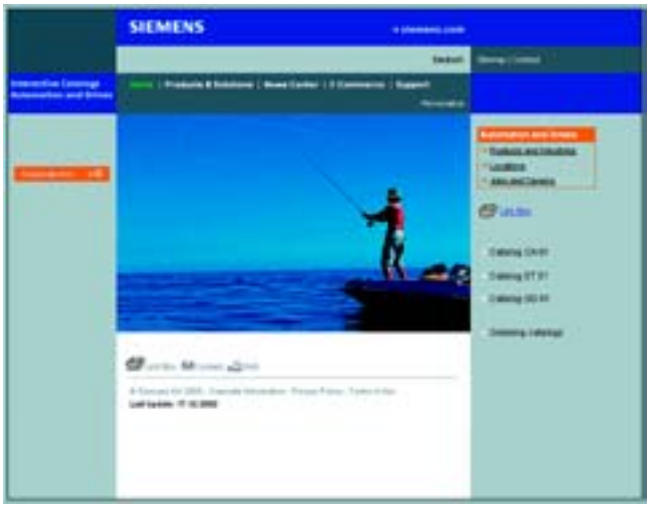
The Siemens Automation and Drives Group (A&D) has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

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 electronically:

- Automation and Drives CA 01,
  Order No.:
  CD: E86060-D4001-A100-C3-7600
  DVD: E86060-D4001-A500-C3-7600

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
E-Mail:
adsupport@siemens.com

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 50 448 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 Automation Value Card

Knowledge Base on CD-ROM

For locations without online connections to the Internet there are excerpts of the free part of the information sources available on CD-ROM (Service & Support Knowledge Base). This CD-ROM contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service and Technical Support.

The CD-ROM also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The CD-ROM will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on CD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** CD from your Siemens contact.

Order No. **6ZB5310-0EP30-0BA2**

Orders via the Internet
(with Automation Value Card or credit card) at:

http://www.siemens.com/automation/service&support

in the Shop domain.

Automation Value Card

Small card – great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Automation and Drives will accompany you in each phase of your automation project.

It doesn't matter whether you want just specific services from our Technical Support or want to purchase high-quality Support Tools in our Online Shop, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

Automation Value Card Order Nos.	
Credits	Order No.
200	**6ES7 997-0BA00-0XA0**
500	**6ES7 997-0BB00-0XA0**
1000	**6ES7 997-0BC00-0XA0**
10000	**6ES7 997-0BG00-0XA0**

Detailed information on the services offered is available on our Internet site at:

http://www.siemens.com/automation/service&support

Service & Support àla 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.

Safety of electronic equipment

Safety of electronic equipment

The information on this page is mainly of a general nature and applies regardless of the type of electronic control system and its manufacturer.

Reliability

With a range of effective product development and production measures, we maximize the reliability of our devices and components.

These measures include

- use of high-quality components;
- worst-case dimensioning of all circuits;
- systematic, computer-controlled testing of all subcontractor-supplied components;
- burn-in of all large-s cale integrated circuits (such as processors and memory);
- measures to prevent static ch arge from building up when handling MOS circuits;
- visual inspections at various stages of manufacture;
- in-circuit testing of all modules, i.e. computer-aided testing of all components and their interaction within the circuit;
- heat-run at elevated ambient temperature over several days;
- thorough computer-controlled final testing;
- static analysis of all rejects for immediate initiation of corrective measures.

In safety engineering, these measures are termed basic measures. They can be used to prevent or rectify most conceivable faults.

Hazard risk

Wherever faults can cause personal injury or material damage, special safety measures have to be applied to the plant, and therefore also to the PLC. There are special, plant-specific regulations for these applications and these have to be taken into account in the design of a control system.

For electronic control systems that influence the safety of a machine or plant, the measures required for preventing or correcting faults depend on the danger the plant represents. Beyond a certain level of danger, the above basic measures are no longer sufficient, and additional measures –such as two-channel configuration, tests or checksums –must be implemented and certified for the control system.

Division into a safe and a non-safe area

Most plants contain components that perform safety-related tasks, such as Emergency Stop pushbuttons, safety guards and two-hand controls). To avoid having to view the entire control system in terms of its safety, we generally distinguish between a **safe** area and a **non-safe** area. Because the failure of electronic components does not present a danger in the non-safe area, the control system does not have to meet any special safety requirements in this area. In the safe area, only control systems and circuit arrangements that comply with the applicable regulations must be used.

In practice, the following distinctions are made:

- Control systems with few safety features, e.g. machine controls.
- Control systems with a balanced mix of safe non-safe areas, e.g. chemical plants and cable cars.
- Control systems with high safety requirements, e.g. boiler-firing systems.

Important note

Even if a high degree of safety has been built into an electronic control system, –such as mult i-channel design –the safety guidelines in the operating instructions must be strictly adhered to. Existing safety precautions may otherwise become ineffective or additional hazards be created.

Notes about servicing

The brightness of STN and TFT backlit displays decreases with time. This process depends on various factors, including ambient temperature. According to the manufacturer's information, the displays have a lifespan (to failure or a brightness reduction of 50 % and at an ambient temperature of 25 °C) of:

OP 73micro	100,000 h
TP 070	50,000 h
TP 170micro	50,000 h
TP 177micro	50,000 h
Mobile Panel 170	50,000 h
OP 73	100,000 h
OP 77A	100,000 h
OP 77B	100,000 h
TP 170A	50,000 h
TP 177A	50,000 h
TP/OP 170B	50,000 h
TP 270 6″	40,000 h
TP 270 10″	60,000 h
OP 270 6″	40,000 h
OP 270 10″	60,000 h
MP 270B	50,000 h
MP 370	50,000 h
Panel PC IL 70	50,000 h
Panel PC IL 77	50,000 h
Panel PC 670/870	60,000 h

Depending on the actual operating conditions, the gas discharge tubes must be replaced when the display is no longer readable.

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)

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Subject Index

Subject Index

Order No. Index

Order No. Index

Suggestions for improving the catalog

Fax form

To

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90475 Nürnberg
Federal Republic of Germany

Fax. +49/911-895-2352

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Capacity

Company/Dept.

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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.

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Please grade our catalog on a point system from 1 (= good) to 6 (= poor):

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Notes

Notes

Notes

Notes

Conditions of sale and delivery
Export regulations

Terms and Conditions of Sale and Delivery

By using this catalog you can acquire hardware and software products described therein from 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.

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For software products, the General License Conditions for Software Products for Automation and Drives for Customers with Seat or registered Office in Germany shall apply.

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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 and/or copper, surcharges may be calculated if the respective limits of the notes are exceeded.

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:
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.

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Siemens AG
Automation and Drives
Human Machine Interface
Postfach 48 48
90327 NÜRNBERG
FEDERAL REPUBLIC OF GERMANY

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