Catalog ST 80 · 2003

simatic hmi

Human Machine
Interface Systems

SIEMENS

Related catalogs

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For further information regarding SIMATIC HMI visit our Internet site: *www.siemens.com/simatic-hmi*

Human Machine Interface Systems

Catalog ST 80 · 2003

Supersedes:
Catalog ST 80 · 2002/2003

The products contained in this catalog are also contained in Catalog CA 01
Order No.:
E86060-D4001-A110-B9-7600

For further information contact your nearest Siemens branch office.

The products and systems described in this catalog are manufactured under application of a quality management system certified by DQS in accordance with DIN EN ISO 9001 (Certified Registration No. 2613-05). The DQS certificate is recognized by all EQ Net countries.

SIEMENS

Welcome to Automation and Drives

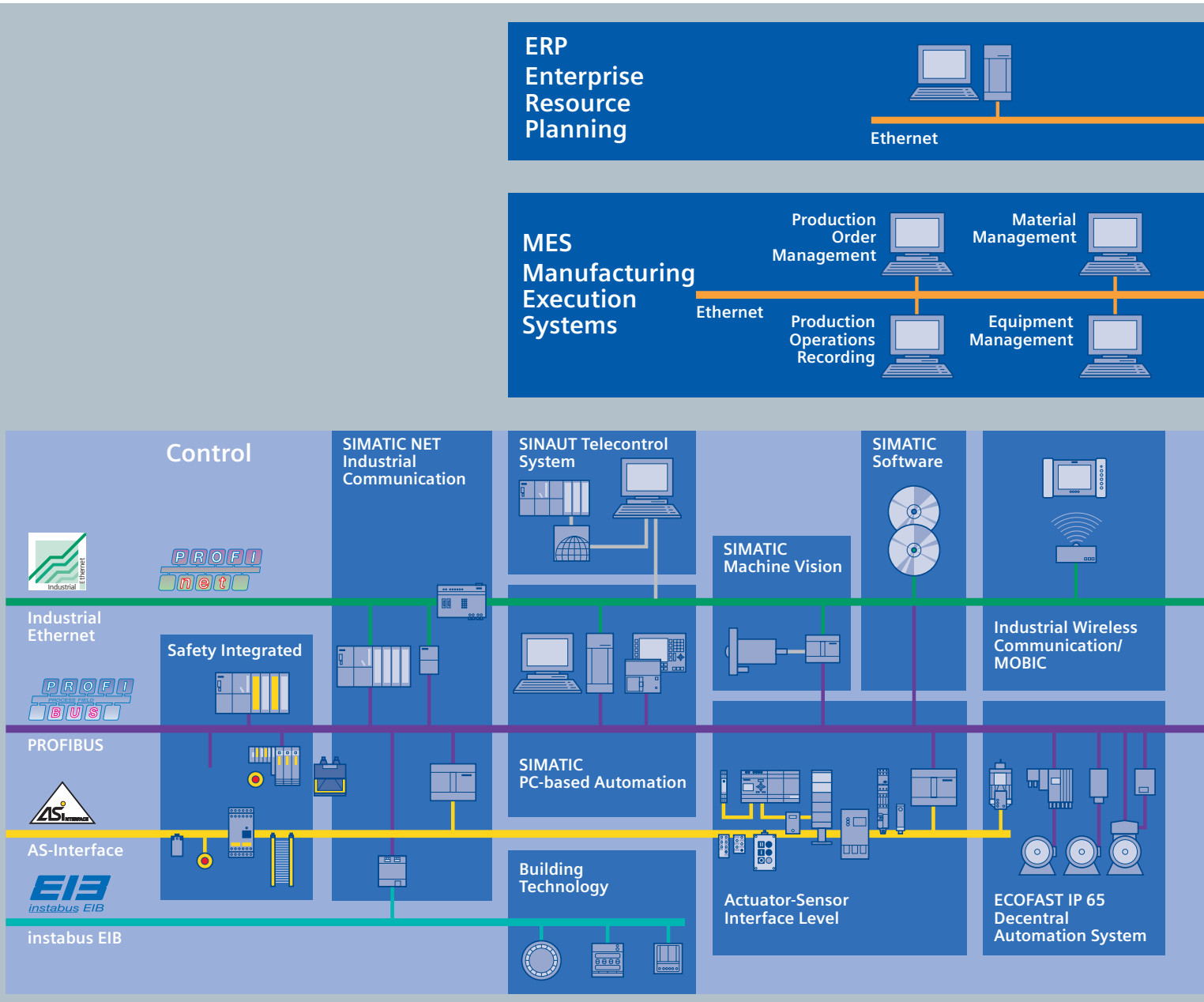
We would like to cordially welcome you to Automation and Drives and our comprehensive range of products, systems, solutions and services for production and process automation and building technology worldwide.

With integrated automation blocks, powerful engineering tools and innovative concepts such as Totally Integrated Automation and Totally Integrated Power, we deliver solution platforms based on standards that offer you a considerable savings potential.

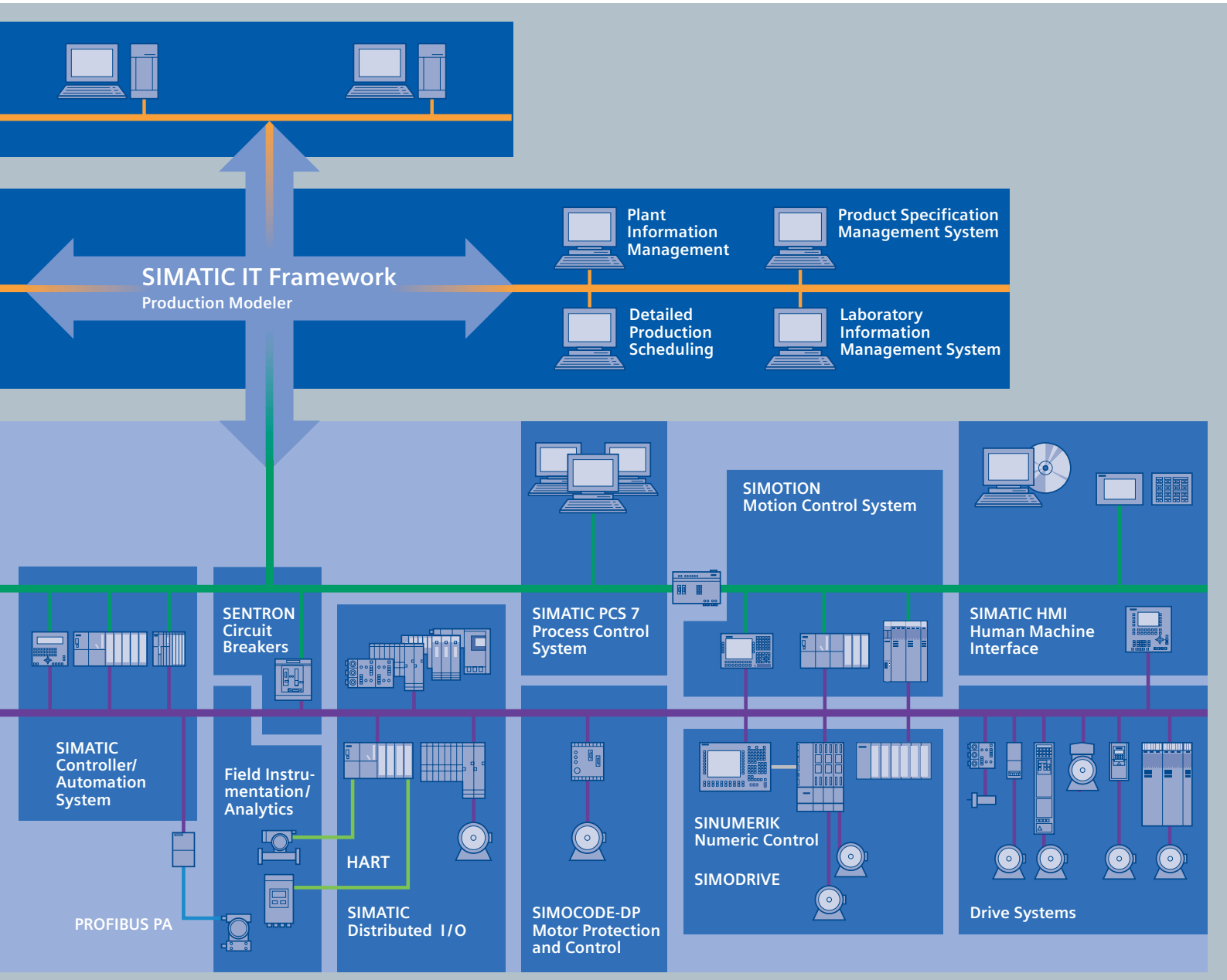
Discover the world of our technology now. If you need more detailed information, please contact one of your regional Siemens partners.
They will be glad to assist you.

Totally Integrated Automation – innovations for more productivity

With the launch of Totally Integrated Automation in 1996, we were the first ones on the market to consistently implement the trend from equipment to an integrated automation solution, and have continuously perfected 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.



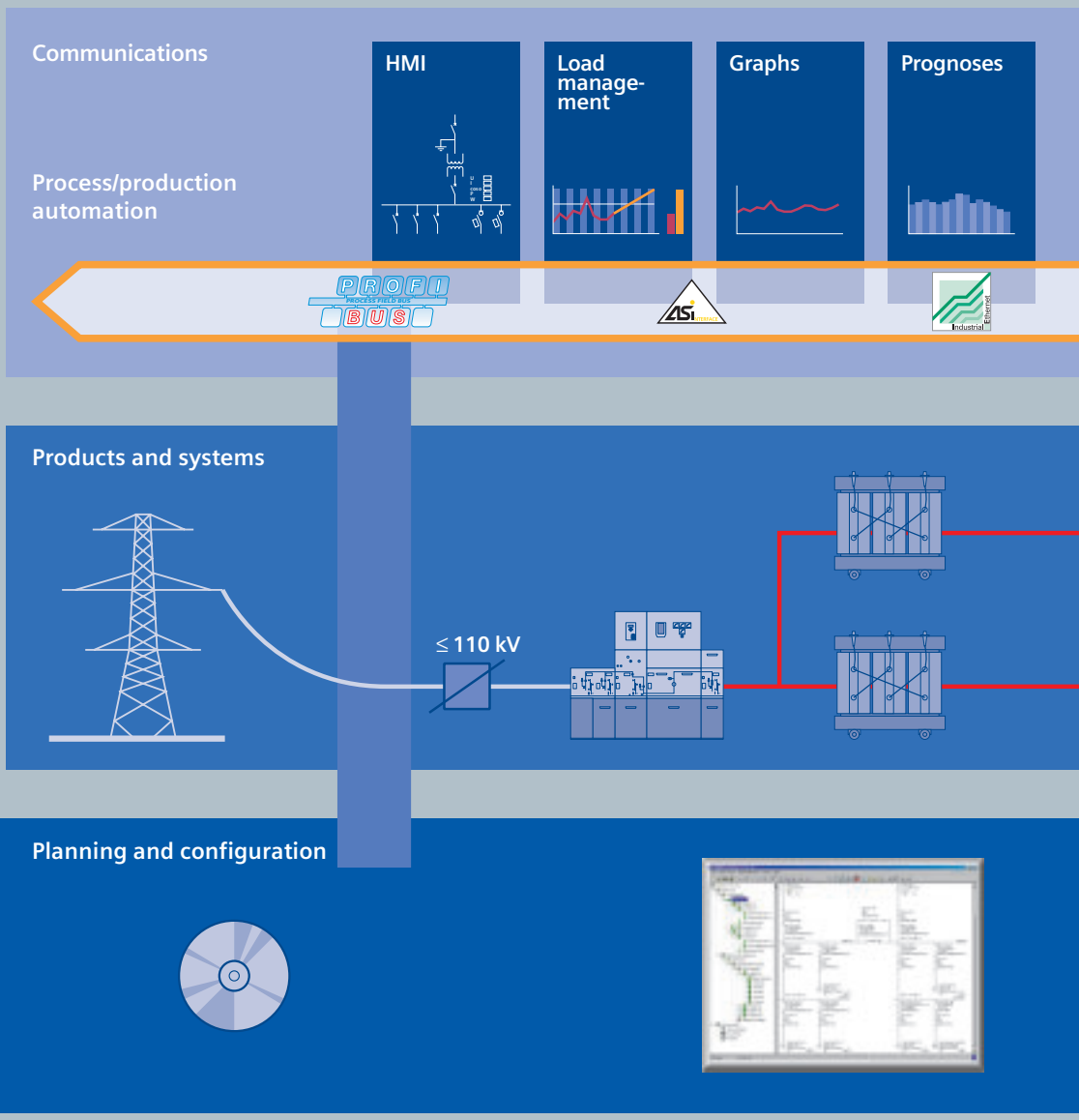
Totally Integrated Automation is an integrated platform for the entire production line - from receiving to technical processing and production areas to shipping. Thanks to the system-oriented engineering environment, integrated, open communications as well as intelligent diagnostics options, your plant 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.

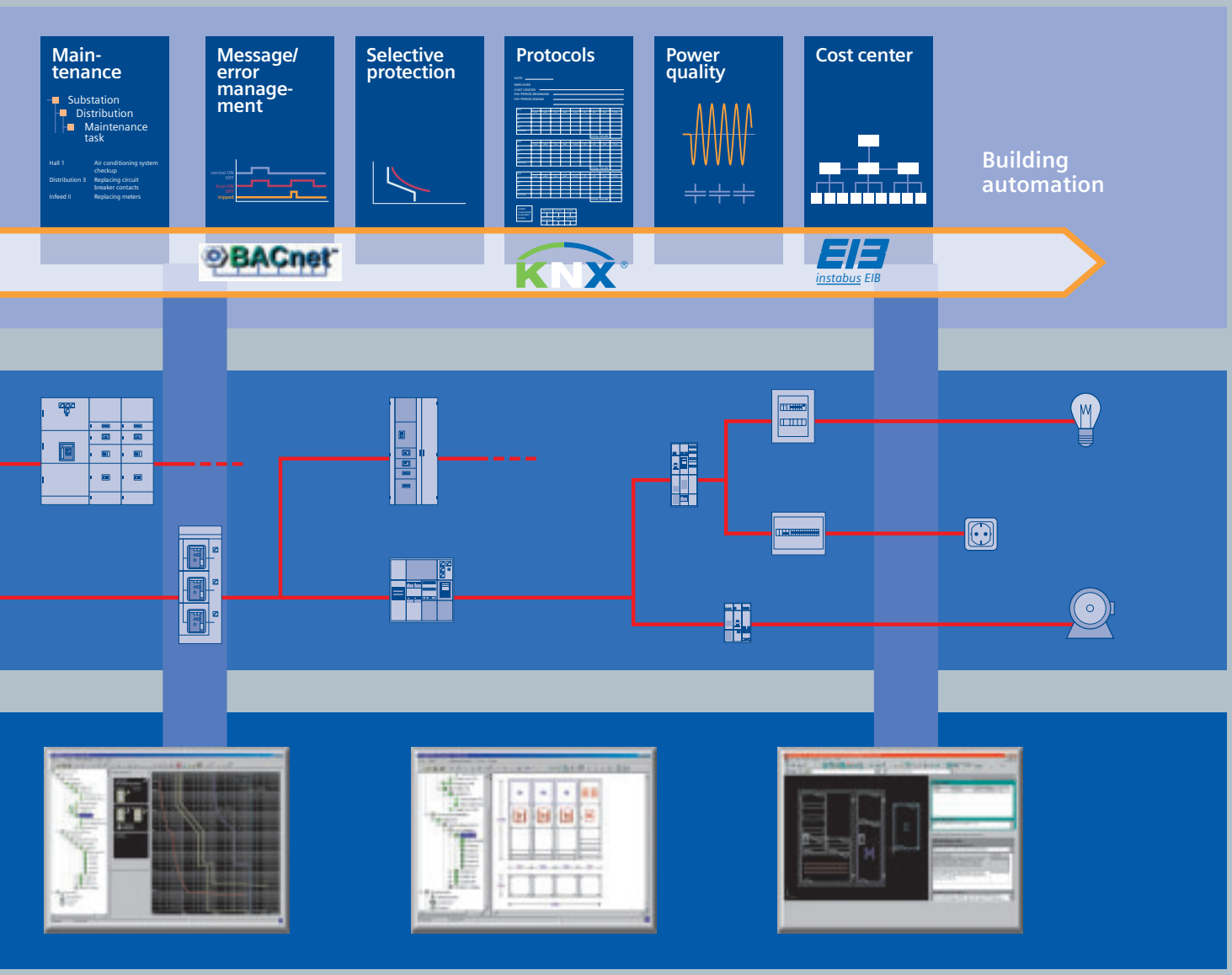


Totally Integrated Power – energy distribution and management from one source

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
instabus EIB

Attain transparency and lower costs:
Human Machine Interface Systems SIMATIC HMI

The interface between man and machine – the human machine interface or HMI for short – interfaces between the world of automation and the individual requirements of the operator. HMI keeps the process under control, keeps machines and plant operating optimally, ensures availability and productivity.

Making increasing complexity ever simpler

A true mine field. Modern processes are increasingly complex and ever greater demands are made on the functionality of machines and plants. And the operator must keep a clear overview of the situation. That is why the human-machine interface has to provide the highest degree of transparency possible. Making increasing complexity ever simpler, that is our aim with every HMI innovation. We shape technical advances in HMI and translate them into solutions that are at the forefront of technology.

Everything from a single source

With SIMATIC HMI, Siemens A&D offers a complete product spectrum for the wide range of operator control and monitoring tasks and also implements customized systems: From operator devices and visualization software for local operator control and monitoring up to the SCADA system for the most diverse demands in process visualization.

Well-equipped for integration in the world of automation

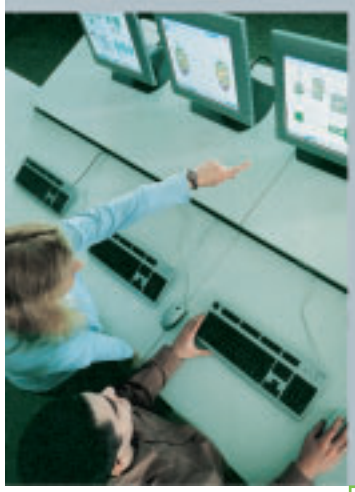
With its open, standardized interfaces in hardware and software, SIMATIC HMI products can be integrated into the production and automation levels as well as into the management level at any time. They can be connected to almost any PLC on the market and the multilingual configuration and visualization software, which even includes ideographic languages, supports worldwide use.

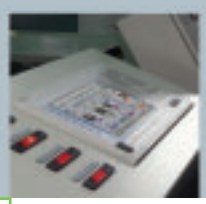
Part of the corporate IT landscape

In plant optimization, quality assurance at the MES level (Manufacturing Execution System) or to provide management data for corporate planning (ERP – Enterprise Resource Planning): beyond the boundaries of the automated process, SIMATIC HMI becomes an integral component of the company-wide IT landscape.

Integrated in the World Wide Web

SIMATIC HMI uses the Web as a control desk – within the plant as well as throughout the worldwide corporate network. Using the WinCC/Web Navigator, you can operate and monitor plants via the Internet or the company-internal Intranet. Operator panels such as the SIMATIC MP 370 Multi Panel can be integrated as rugged thin clients which also establish a connection between the automation level and the control desk. And via wireless LAN or mobile telephone connections you can use thin clients such as laptops, organizers or WebPads. Process, service or management information can then be supplied to the respective users.





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 has never been achieved before. TIA enables total integration of the individual automation components - from the PLC, distributed I/O and drives technology through the human-machine interface system right up to the production management level. This means that you continuously benefit from the three-fold uniformity in programming or configuring, data management and communication. The impressive result is: drastic reduction of the engineering costs of an automation solution and therefore of the overall costs.

As a part of TIA, SIMATIC HMI uses identical configuring tools under Windows, accesses shared data and communicates company-wide. For example, the SIMATIC Pro Tool configuration software can be integrated in the central configuring tool of the SIMATIC world, SIMATIC STEP 7 and can be used for configuration of all operating units. At the same time, ProTool and WinCC can access variables and message lists of the PLC and utilize their communication partners. This prevents time-consuming multiple entries and their attendant sources of error from the very start.

In cooperation with other SIMATIC components, SIMATIC HMI also supports system diagnostics and process diagnostics during normal operation. You can, for example, start STEP 7 diagnostics directly from the WinCC display for the comprehensive fault diagnosis of circuit diagrams through to the PLC program. And with SIMATIC ProAgent, process diagnosis messages from the PLC are displayed on operator panels or visualization systems – without the need for any additional configuration work on the HMI system and without the need for additional diagnostic instruments.

Competent partners for automation solutions

With SIMATIC HMI, you not only obtain excellent products that meet your requirements, we also help you to select a partner for your automation solution. In our worldwide network of Siemens Automation Solution Providers, you will always find experienced representatives in your area who are always up-to-date as far as SIMATIC HMI technology is concerned. The Siemens-internal WinCC Competence Center also implements, in addition to technology-specific products, customized and sector-specific solutions based on WinCC. WinCC Professionals are external system integrators, experts who combine WinCC skills with their own sector and technology know-how for tailor-made, attractively priced solutions. Numerous products from our partners, that perfectly interact with WinCC, are available as WinCC add-ons.

Security of investment included

You cannot fail to profit from our many years of experience in automatic engineering. The same applies to our global service network, our long-term spare parts supply and our efficient support services. All this serves to secure your investment over the long term. Further services, from training through to ordering over the Internet, round off our range of products, systems and services.

Higher plant availability

All operator panels and panel PCs are designed for harsh industrial conditions. The redundant WinCC process visualization systems ensure high plant availability during normal operation. The process diagnostics ProAgent from SIMATIC HMI gives you effective support with error location and rectification and significantly reduces downtimes. Furthermore, special software options, such as SIMATIC IT WinBDE support the preventative maintenance of machines and plants.

More than just HMI

The multi panels under Windows CE combine the advantages of two different worlds: The rugged construction of an operator panel and the flexibility typical of a PC. Siemens, the first manufacturer to produce this new class of device, has introduced the multifunctional platforms. Apart from the classical HMI functions, other automation tasks such as PLC functions can execute simultaneously. And for PC-based Automation, the SIMATIC Panel PCs are available as compact automation platforms.

SIMATIC HMI

The Human Machine Interface

SIMATIC® HMI®
The entire world of operator control and monitoring

Process visualization

SIMATIC WinCC

The SCADA system for scalable process visualization for every requirement – from single-user systems to redundant multi-user systems and as a platform for IT and business integration. WinCC is the ideal information hub for IT and business integration, e. g. integrating MES and ERP systems.

Local operator control and monitoring

SIMATIC Push Button Panels

The operator panels with bus capability for easy and direct machine operation.

SIMATIC Micro Panels

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

SIMATIC Mobile Panels

Mobile operator panels for direct plant and machine operation from any location in the plant.

SIMATIC Panels

The rugged and compact solution for use directly at the machine – finely graduated in performance and user-friendliness in the form of text displays, operator panels and touch panels.

SIMATIC Multi Panels

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

SIMATIC Panel PC

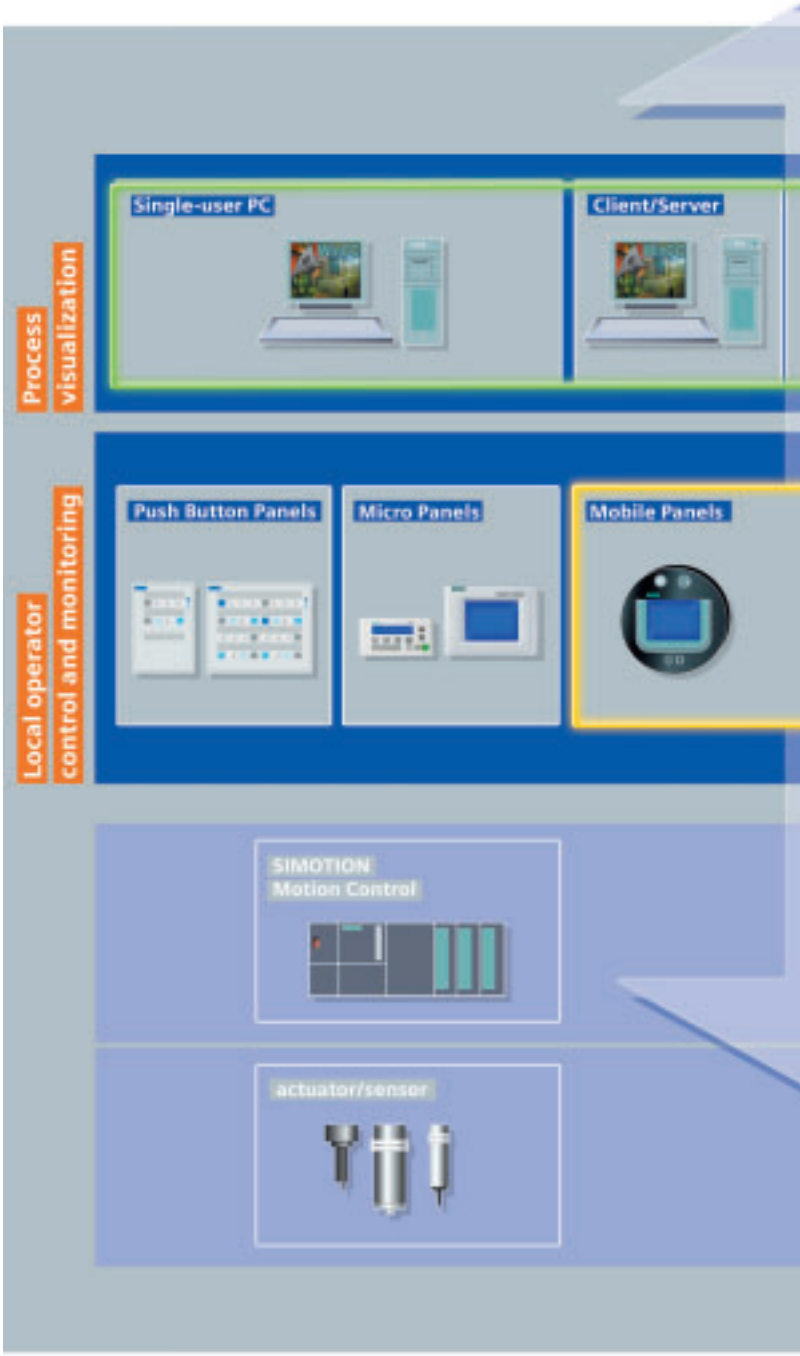
The industrial platforms for PC visualization on-site or for the numerous automation tasks of PC-based Automation.

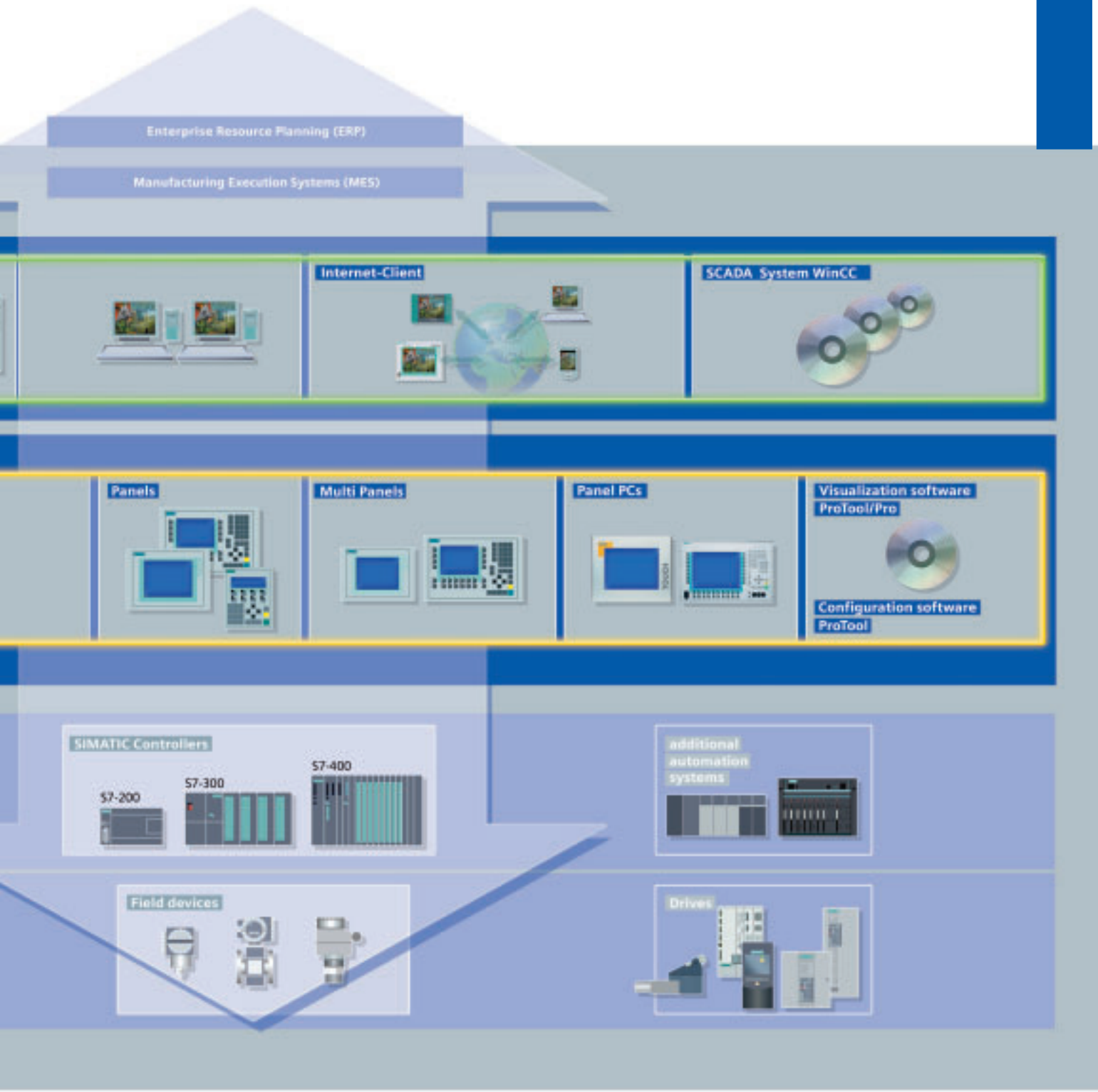
SIMATIC ProTool®

The uniform and integrated configuration software under Windows for all SIMATIC HMI operator panels.

SIMATIC ProTool/Pro®

The visualization software for PC-based operator control and monitoring at the machine level. It supports short response times and reliable operator control of the process.

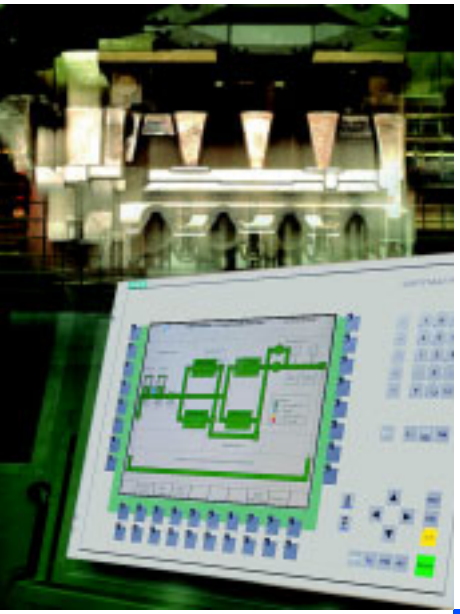



Enterprise Resource Planning (ERP)
Manufacturing Execution Systems (MES)
Internet-Client
SCADA System WinCC
Panels
Multi Panels
Panel PCs
Visualization software
ProTool/Pro
Configuration software
ProTool
SIMATIC Controllers
S7-200
S7-300
S7-400
additional automation systems
Field devices
Drives

SIMATIC HMI
The Human Machine Interface

Operator Control and Monitoring Devices

2



Operator Control and Monitoring Devices at a Glance

Overview

For operator control and monitoring directly at the machine, SIMATIC HMI® offers the complete product family from a single source: starting from pushbutton, micro panels, panels and multi panels through mobile panels as far as PC-based solutions with Panel PCs and the visualization software ProTool/Pro® Runtime.

Pushbutton panels

Pushbutton panels (PP) are the innovative alternative to conventionally wired operator keypads. Preassembled ready for installation, these bus-capable operator panels ensure drastic savings in time as compared to conventional wiring.

Micro panels

Tailored to applications with the SIMATIC S7-200 Micro PLC, either with a text-based display or touchscreen. The micro panels are configured using STEP 7-Micro/WIN, the SIMATIC S7-200 programming software or with TP-Designer.

Mobile panels

The portable operator panels support HMI functions 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 installation.

Panels

Text panels
used as text displays (TD) for display only or as operator panels (OP) for operator control and monitoring with a membrane keyboard.

170/270 series
With pixel graphics display for realistic presentation of procedures (also in color), available either as touch panels (TP) with a touch-sensitive display or as operator panels (OP) with a membrane keyboard.

Multi panels

270/370 series
in versions for operation via touchscreen or membrane keyboard, they can be used like the panels for operation and monitoring. In addition, multi panels (MP) allow the installation of additional applications permitting, for example, the integration of several automation tasks on a single platform by using the PLC WinAC MP software.

Benefits

Rugged and compact for use directly at the machine

With degree of protection IP 65 at the front, high electromagnetic compatibility and their extreme resistance to vibration, the SIMATIC Operator Panels are ideally suited to implementation directly at the machine in a harsh industrial environment. Thanks to their compact structure with a low mounting depth, the stationary operator panels will fit in anywhere, even in confined spaces.

It is the extremely rugged and shock-resistant housing to the degree of protection IP 65 that make the mobile panels industry-compatible. Lightweight and ergonomically designed, they are easy and convenient to operate.

One configuration software tool for everything

SIMATIC® ProTool® is the tool for system-wide configuration of all SIMATIC Panels, as well as PC-based systems with the ProTool/Pro Runtime visualization software. ProTool is available in three performance versions to suit the application. The software supports easy and efficient configuration. Programming expertise is not required.

Configurations can be created and reused again and again throughout the product family. A project can be converted for another HMI system in just a few steps, even in the case of higher or lower resolution of the display. In this case, all display components are simply zoomed in or out to suit the new resolution. The engineering work therefore only has to be performed once and can then be scaled up or down for different HMI platforms. The benefits are reduced maintenance and service costs and future orientation.

A component of Totally Integrated Automation

Siemens supplies the complete set of building blocks of perfectly interacting components for automation solutions from a single source and –with Totally Integrated Automation –one of the most successful automation concepts worldwide. SIMATIC ProTool is an integral component of this world. This ensures decisive advantages. Due to the threefold uniformity of configuration/programming, data storage and communication, the engineering costs of an automation solution are considerably reduced.

Open for a wide range of automation systems

Despite the consistent integration in the world of SIMATIC, the panels remain open for connection to a wide range of programmable controllers from other manufacturers. A comprehensive range of user-friendly drivers is included in the standard scope of supply.

Innovative HMI

On the basis of the Windows CE operating system, the mobile panels, panels and multi panels of the 170, 270 and 370 series support innovative operator control and monitoring combined with ruggedness, stability and simplicity. Standard hardware and software interfaces, such as PC/CF Card, USB, Ethernet, PROFIBUS DP, Visual Basic scripts or customer-specific ActiveX Controls provide greater flexibility and openness and access to the office computing environment.

Export-orientated

The SIMATIC Panels are perfectly equipped for worldwide use. With online language changeover, switching between up to 5 languages is possible at the press of a button during normal operation. The large number of languages offered includes Chinese, Taiwanese, Korean, Japanese and Russian. The configuration desktop of ProTool including the online Help and all the documentation is also multilingual. In addition to English, French, German, Spanish and Italian, Asian language versions of ProTool are available. Up to 32 languages can be used in a project. And all this is supported worldwide by the Siemens Service Centers.

Operator Control and Monitoring Devices at a Glance

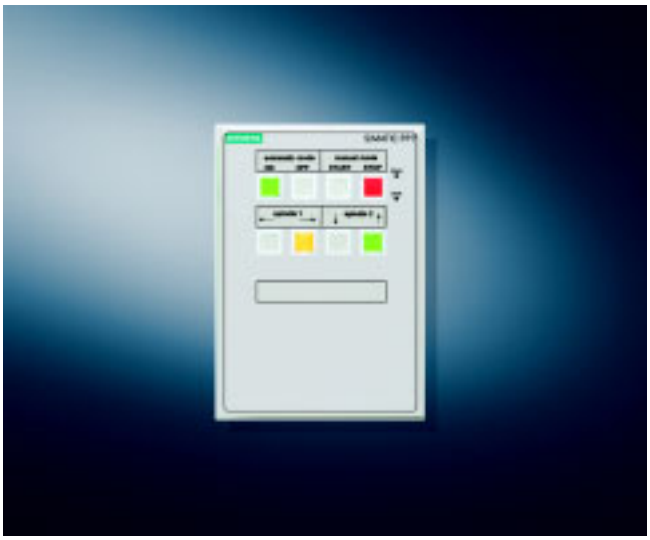
	Micro panels	Mobile panels	Panels			Multi panels	
			Text panels	170er series	270er series	270er series	370er series
Display	Text display/ 5,7" STN	5.7" STN	Textdisplay	5.7" STN	5.7"/10.4" STN	10.4" TFT	12.1"/15.1" TFT
• Colors	Monochrome/ 4 blue levels	16 colors	Monochrome	4 blue levels/ 16 colors	256 colors	256 colors	256 colors
Control elements							
• Membrane keyboard	●	●	●	●	●	●	●
• Touch screen	●	●	–	●	●	●	●
Interfaces							
• Serial / MPI / PROFIBUS DP	● / ● / –	● / ● / ●	● / ● / ●	● / ● / ●	● / ● / ●	● / ● / ●	● / ● / ●
• USB / Ethernet	– / –	– / –	– / –	– / –	● / Optional	● / ●	● / ●
• CF / PC card slot	– / –	● / –	– / –	● / –	● / –	● / ●	● / ●
Usable memory for user data	128 KB	768 KB	256 KB	768 KB	2 MB	5 MB	12 MB
Functions							
• Status/fault messages	● / ●	● / ●	● / ●	● / ●	● / ●	● / ●	● / ●
• Message buffer	–	●	●	●	●	●	●
• Recipes	–	●	●	●	●	●	●
• Process diagrams	●	●	● / (Character graphics)	●	●	●	●
• Bar/curve diagrams (pixel graphics)	● / –	● / ●	– / –	● / ●	● / ●	● / ●	● / ●
• Archiving	–	–	–	–	●	●	●
• Visual Basic Scripts	–	–	–	–	●	●	●
• Online languages	1	5	3	5	5	5	5
• Password protection	●	●	●	●	●	●	●
• Print functions	–	●	●	●	●	●	●
• PG functions (STATUS/ CONTROL) for SIMATIC S5/S7	–	–	●	–	●	●	●
Interface with PLC							
• SIMATIC S7 / WinAC	S7-200 only	● / ●	● / ●	● / ●	● / ●	● / ●	● / ●
• SIMATIC S5 / 505	– / –	● / ●	● / ●	● / ●	● / ●	● / ●	● / ●
• SINUMERIK / SIMOTION	– / –	– / ●	● / –	● / ●	● / ●	● / ●	● / ●
• Third-party	–	●	●	●	●	●	●
Applications, optional							
• SIMATIC ProAgent	–	–	–	–	●	●	●
• SIMATIC ThinClient/MP	–	–	–	–	–	●	●
• MS Pocket Internet Explorer (included in scope of supply)	–	–	–	–	–	●	●
• SIMATIC WinAC MP	–	–	–	–	–	–	●

● available
– not available

The specifications always refer to the most powerful unit in the class.

SIMATIC PP7

Overview



SIMATIC Push Button Panels are the innovative alternative to conventional control panels for simple and direct machine operation:

- Preassembled, ready to switch on;
  After connecting to the PLC, all the keys and lamps are ready for use immediately
- Connection is possible to any PLC via a bus cable (PROFIBUS DP or MPI)
- Equipped with 8 short-stroke keys, 4 additional digital inputs and 5 mounting locations for 22.5 mm standard elements.

Benefits

- Up to 90% time saving: No need to individually mount and wire pushbuttons, switches and lamps
- Simplification of the configuration and start-up phases, for example, by using standard cables
- Service-friendly thanks to rear display for displaying operating status and messages in plain text, without a programming device
- Easy, user-friendly machine operation thanks to multi-colored indicator lights
- User-friendly labeling of pushbuttons and lamps thanks to slide-in labels

Area of application

The rugged Push Button Panel PP7 is designed for easy and direct machine operation.

It can be used in any HMI application in which pushbuttons and lamps are essential. For example, in control desks on machines and installations in the food processing industry for which smooth fronts are necessary for easy cleaning. In special-purpose machine manufacturing, with the pushbutton panels, it is easy to construct standard operator panels for quick, flexible and modular expansion. Changes to the pushbutton and lamp functions can be made at any time in the future without the need to modify the wiring.

Design

The pushbutton 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 cleaned 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 (pushbuttons, 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

Functions

- Color modes for LED (e.g. red, green, orange, red flashing, green flashing, orange flashing)
- Integrated 0.5 Hz flashing pulse for LED
- Integrated diagnostics functions
- Integrated lamp and pushbutton test (also for additional digital 24 V inputs)
- Menu-driven parameterization through display on rear with mini keyboard.
- Short-stroke keys and digital inputs can also be parameterized individually as switches.
- Parameterizable pulse stretching for short-stroke keys and digital inputs (max. 1000 ms)

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 masters from any manufacturer (e.g. Allen Bradley, ...)

System interfaces

PLC Target hardware (PROTOCOL) (connected/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)
Third-party 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
Service life	
• Short-stroke keys (in on-off operations)	1,500,000
• LEDs (ON period)	100 %
Supply voltage	24 V DC
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.2 A
Interfaces	1 x RS485
Connection to PLC	S5, S7-200/-300/-400, WinAC, additional DP standard master
Ambient conditions	
• Mounting position	
- 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
• Relative humidity, max.	95%
Dimensions	
• Front (W x H in mm)	144 x 204
• Mounting cutout/depth W x H x D (mm)	130 x 190 x 53[1]
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	IP 65
• Rear	IP 20
Certification	CE, UL, CSA, FM

1) Depth without plug-in elements

SIMATIC PP7

Ordering Data

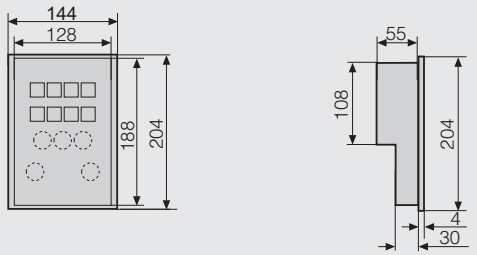
	Order No.
SIMATIC PP7	**6AV3 688-3AA03-0AX0**
Pushbutton panel including mounting accessories:	
• 8 x short-stroke keys	
• 8 x large-area LEDs	
• 4 x DI terminals (24 V)	
• Max. 5 x 22.5 mm preperforated cutouts for additional components	
Documentation (to be ordered separately)	
Product manual for PP7/PP17 [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 startup guide	
for PP7, PP17-I, PP17-II	
• German	**6AV3 991-1CA00-1BA0**
• English	**6AV3 991-1CA00-1BB0**
Accessories for reordering	
PROFIBUS 830-1T plug-in cable	**6XV1 830-1CH30**
for data terminal connection fully assembled 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 seal	
• 1 x PP17-I/PP17-II seal	
• 5 x clamping terminals	
• PP7 plug-in terminal block	
• PP17-I/PP17-II plug-in terminal blocks	

Note:
Generally available plastic printer sheets can be used for slide-in key labels. Word templates are included on a diskette with the product manual.

1) Incl. 3.5" diskette; diskette contains GSD files/TYP files and word templates for labeling strips

Dimension drawings

Dimensions in mm



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

G_ST80_XX_00061

Further 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 simple and direct machine operation:

- Preassembled, ready to switch on;
  after connecting to the PLC, all the keys and lamps are immediately ready for use
- Connection is possible to any PLC via a bus cable (PROFIBUS DP or MPI)
- *PP17-I:*
  Equipped with 16 short-stroke keys, 16 additional digital inputs, 16 additional digital outputs and 12 slots for 22.5 mm standard elements
  PP17-II:
  Equipped with 32 short-stroke keys, 16 additional digital inputs and 16 additional digital outputs.

Benefits

- Up to 90% time saving: No need to individually mount and wire pushbuttons, switches and lamps
- Simplification of the configuration and start-up phases, for example, by using standard cables
- Service-friendly thanks to rear display for displaying operating status and messages in plain text, without a programming device
- Easy, user-friendly machine operation thanks to multi-colored indicator lights
- User-friendly labeling of pushbuttons and lamps thanks to slide-in labels

Area of application

The rugged PP17 Push Button Panels are designed for simple and direct machine operation.

They can be used in any HMI application in which push buttons and lamps are essential. For example, in control desks on machines and installations in the food processing industry for which smooth fronts are necessary for easy cleaning. In special-purpose machine manufacturing, it is easy to configure standard operator panels with pushbutton panels which can be expanded quickly, flexibly and modularly. Changes to the pushbutton and lamp functions can be made at any time in the future without the need to modify the wiring.

Design

The pushbutton panels impress customers with their compact design:

- Preassembled with 16 (PP17-I) or 32 (PP17-II) short-stroke keys that can be inscribed as required using slide-in labels
- Smooth, easily cleaned 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 (pushbuttons, 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

Functions

- Color modes for LED (e.g. red, green, orange, red flashing, green flashing, orange flashing)
- Integrated 0.5 Hz and 2 Hz flashing frequencies for digital outputs and LEDs
- Integrated diagnostics functions
- Integrated lamp and pushbutton test (also for additional digital 24 V inputs and outputs)
- Menu-driven parameterization through display on rear with mini keyboard
- Short-stroke keys and digital inputs can also be parameterized individually as switches
- Parameterizable pulse stretching for short-stroke keys and digital inputs (max. 1000 ms)

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 masters from any manufacturer (e.g. Allen Bradley, ...)

2

SIMATIC PP17

System interfaces

PLC Target hardware (PROTOCOL) (connected/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 interfaces **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)
Third-party 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		
• Number 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 (in on-off operations)	1,500,000	1,500,000
• LEDs (ON period)	100 %	100 %
Supply voltage	24 V DC	24 V DC
• Permitted range	+18 to +30 V DC	+18 to +30 V DC
• Current input, typ.	0.2 A	0.2 A
Interfaces	1 x RS485	1 x RS485
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		
- 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
• Relative humidity, max.	95%	95%
Dimensions		
• Front W x H (mm)	240 x 204	240 x 204
• Mounting cutout/depth W x H x D (mm)	226 x 190 x 53[2]	226 x 190 x53[2]
Weight	1.13 kg	1.13 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
• Slots for 22.5 mm standard elements	12	0
Degree of protection		
• Front	IP 65	IP 65
• Rear	IP 20	IP 20
Certification	CE, UL, CSA, FM	CE, UL, CSA, FM

1) Bulbs up to 2 Watt per output
2) Depth without plug-in elements

SIMATIC PP17

2

Ordering Data

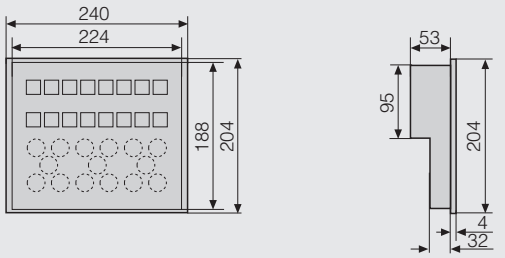
	Order No.
SIMATIC PP17	
Pushbutton panel including mounting accessories:	
PP17-I	**6AV3 688-3CD13-0AX0**
• 16 x short-stroke keys	
• 16 x large-area LEDs	
• 16 x DI terminals (24 V)	
• 16 x DO terminals (24 V)	
• 1 x enable input	
• Max. 12 x 22.5 mm preperforated cutouts for additional components	
PP17-II	**6AV3 688-3ED13-0AX0**
• 32 x short-stroke keys	
• 32 x large-area LEDs	
• 16 x DI terminals (24 V)	
• 16 x DO terminals (24 V)	
• 1 x enable input	
Documentation (to be ordered separately)	
Product 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 startup guide	
for PP7, PP17-I, PP17-II	
• German	**6AV3 991-1CA00-1BA0**
• English	**6AV3 991-1CA00-1BB0**
Accessories for reordering	
PROFIBUS 830-1T plug-in cable	**6XV1 830-1CH30**
for data terminal connection fully assembled 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 seal	
• 1 x PP17-I/PP17-II seal	
• 5 x clamping terminals	
• PP7 plug-in terminal block	
• PP17-I/PP17-II plug-in terminal blocks	

Note:
Generally available plastic printer sheets can be used for slide-in key labels. Word templates are included on a diskette with the product manual.

1) Incl. 3.5" diskette; diskette contains GSD files/TYP files and word templates for labeling strips

Dimension drawings

Dimensions in mm



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

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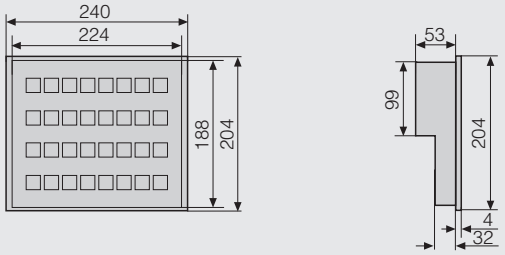
PP17-I

Dimensions in mm



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

G_ST80_XX_00060

PP17-II

Further Information

For further information, visit our website at

http://www.siemens.com/panels

TD 200 text display

Overview

- The user-friendly text display for the S7-200
- For HMI functions:
  display of message texts, interventions in the control 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
- Customized front design on request
- Addressing and setting of contrast in supplied menu

Area of application

The TD 200 text display is the optimum solution for all HMI tasks with SIMATIC S7-200.

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

The TD 200 enables:

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

Design

The TD 200 features:

- Rugged plastic housing with degree of protection IP 65 (front)
  TD 200 new: 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 with poor lighting
- Ergonomically designed input keys;
  including programmable function keys
- Integral interface for connection of cable
- Connection for optional power supply;
  a power supply unit is required if the distance between the TD 200 and S7-200 is more than 2.5 m. PROFIBUS cables are then available instead of the connection cable
- User-specific labeling strips;
  fitting via slot on front panel.
  TD 200 new: It is necessary to remove the rear of the housing before fitting the labeling strips. Therefore carry out before mounting the display.

Functions

The TD 200 permits:

- Display of message texts;
  up to 80 message texts with max. 4 variables display current operating states, and can be optionally parameterized as requiring acknowledgment and additionally protected by a password. System texts are stored in English, German, French, Spanish and Italian in the unit. Various character sets can be selected, and messages can be additionally saved in the simplified Chinese character set.
- Display and modification of process parameters;
  process parameters are output on the display, and can be modified using the input keys, e.g. for temperature settings or modifications to speed
- Setting of inputs and outputs;
  a memory bit is assigned to each of the 8 programmable function keys. These can then be set during operation, e.g. during commissioning, testing and diagnostics. It is then possible e.g. to control motors without having to install additional control elements in the system
- Additional functions and features;
  e.g. processing of floating-point numbers, symbols for bargraph display, various data blocks for operation of several TD 200 displays on one CPU, password protection for integral SETUP menu and modified variables

Supplementary functions of *TD 200 new*:

- 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 further 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 (*TD 200 new: STEP 7 Micro/WIN V3.2 and later SP4*). 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. Easy setting of the parameters is possible using a separate TD 200 wizard in STEP 7-Micro/WIN (*TD 200 new: STEP 7 Micro/WIN V3.2 and later SP4*).

2

TD 200 text display

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	IP 65 front
Dimensions (W x H x D) in mm	148 x 76 x 27
Installation opening (standard cut-out) in mm	138 x 68
Cabinet/control panel thickness in mm	0.3 to 4
Weight	250 g

Dimension drawings

Dimensions in mm

G_ST80_XX_00063

Panel cutout (W x H x D) in mm: 138 x 68 x 30

Ordering Data

	Order No.
Text Display TD 200	**6ES7 272-0AA30-0YA0**
for connection to SIMATIC S7-200	
TD 200 Manual	
• German	**6ES7 272-0AA20-8AA0**
• English	**6ES7 272-0AA20-8BA0**
• French	**6ES7 272-0AA20-8CA0**
• Spanish	**6ES7 272-0AA20-8DA0**
• Italian	**6ES7 272-0AA20-8EA0**
PROFIBUS bus connector with 90° outgoing cable	
• without programming port	**6ES7 972-0BA12-0XA0**
• with programming port	**6ES7 972-0BB12-0XA0**
PROFIBUS bus connector	
• without programming port	**6ES7 972-0BA41-0XA0**
• with programming port	**6ES7 972-0BB41-0XA0**
PROFIBUS FC Standard Cable	**6XV1 830-0EH10**
for connection to PPI; standard type with special design for quick assembly, 2-wire, shielded meter goods, max. delivery quantity 1000 m, min. order quantity 20 m	

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Low-cost starter unit in the category of panels with graphics capability complete with all the basic functions required for simple tasks
- Pixel graphics 5.7" STN Touch Screen (analog/resistive), Blue mode (4 levels)
- Specifically for SIMATIC S7-200:
  Communication to the PLC is performed via the integrated interface over a point-to-point connection
- Connected to the PLC via MPI or PROFIBUS DP cable
- Configured with TP Designer (STEP 7-Micro/WIN Toolbox)

Benefits

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

Area of application

The TP 070 Touch Panels can be used in all applications in which operator control and monitoring of machines and installations is required locally – whether in production automation, process automation or building service automation. They are in use in an extensive range of sectors and applications.

The TP 070 is specially designed for use with SIMATIC S7-200. It performs HMI functions for small-scale machines and installations.

With its quick response times, the TP 070 is also ideally suited to jog mode.

Design

- 5.7" STN display, CCFL[1] backlit, Blue mode (4 levels)
- Resistive analog touch
- Compact design with a mounting depth of only 45 mm
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option to achieve NEMA 4 degree of protection as well as for additional protection from dirt and scratching
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- Plug-type terminals for connection of a 24 V DC power supply (200 mA)
- RS 485 interface for connection of the MPI cable or the PPI adaptor

1) **C**old **c**athode **f**luorescence **l**amps

Functions

- 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 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 Paint Shop, 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
- 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 with the STEP 7-Micro/Win Toolbox "TP-Designer" configuration software. Configuration of the TP 070 is described in detail in the TP-Designer online Help.

The 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.

SIMATIC TP 070

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

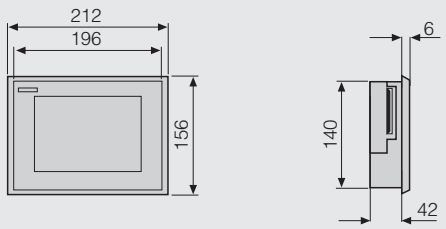
Type	TP 070
Display	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (pixels)	320 x 240
• Colors	4 blue levels
• MTBF backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Touch screen
• Numeric/alphanumeric input	Yes/No
Processor	66 MHz RISC
Operating system	Win CE
Memory	
• Type	Flash / RAM
• Usable memory for user data	128 KB
Interfaces	1 x RS485
Interface with PLC	S7-200
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.24 A
Clock	Software clock
Degree of protection	
• Front	IP 65 (built-in), NEMA 4 (with protective cover)
• Rear	IP 20
Certification	CE, UL, CSA, FM
Dimensions	
• Front (W x H in mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142 x 45
Weight (kg)	0.7
Ambient conditions	
• Mounting position	
- max. permissible angle of inclination without forced ventilation	35°
• Temperature	
- Operation (vertical installation)	0 to +50 °C
- Operation (max. inclination)	0 to +40 °C
- Transport, storage	-20 to +60 °C
• Relative humidity, max.	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, Spanish
Character set	Tahoma, freely scalable
Configuration tool	Micro/WIN TP-Designer Version 3.1 upwards, executable under Windows 98 SE/ME/NT/2000 (must be ordered separately)
• Configuration transfer	Serial

Ordering Data

	Order No.
SIMATIC TP 070 Touch panel for connection to SIMATIC S7-200, 5.7" STN display	**6AV6 545-0AA15-2AX0**
Configuration	
Programming software STEP 7-Micro/WIN32 V3.2	**6ES7 810-2BC02-0YX0**
TP-Designer for TP 070 V1.0 for configuring and parameterizing the TP 070; incl. documentation, on CD-ROM	**6ES7 850-2BC00-0YX0**
Documentation (to be ordered separately)	
Manual TP 070	
• 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**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories for reordering	
Protective membrane for TP 070/TP 170 (pack of 10)	**6AV6 574-1AD00-4AX0**
Protective cover for TP 070/TP 170 (2 sets)	**6AV6 574-1AE00-4AX0**
Service package for TP 070 Comprising: • Mounting seals • 2 sets of labeling strips (for OPs) • 7 clamping terminals • Plug-in terminal block (dual block)	**6AV6 574-1AA00-4AX0**
PC/PPI cable (5 m) with built-in RS 232/RS 485 converter, between S7-200 and PC/OP or data terminals, 5 m	**6ES7 901-3BF21-0XA0**
PROFIBUS 830-1T plug-in cable for data terminal connection fully assembled with two sub D connectors, 9-pin, 3 m	**6XV1 830-1CH30**

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 198 x 142 x 45

Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC Mobile Panel 170

Overview

- Mobile operator panel for direct 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 freely-inscribable function keys (8 with LEDs)
- Two 3-level enabling keys;
  Optional versions with:
  - STOP keys
  - STOP keys, handwheel, key switches and illuminated push-button units
- Connection to the PLC and power supply is via the connection box and connecting cable

Benefits

- Hot swapping during normal operation without interruption of the emergency stop circuit (with junction 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 compact with low weight (approx. 1.3 kg)
- Rugged for industrial use
- Can be used worldwide:
  - 21 languages can be configured (including Asiatic and Cyrillic character sets)
  - Up to 5 languages are selectable online

Area of application

SIMATIC Mobile Panels are suitable for industrial applications in all sectors. They can be used wherever mobile, on-site operation of machines and plants is required: for example with larger production plants, complex or encapsulated machines, long transfer or production lines, or with conveying technology.

Design

- Ergonomic and compact with various holding and gripping positions (suitable for right-handed and left-handed persons)
- Pixel graphics 5.7" color STN Touch Screen (analog/resistive)
- 14 freely-configurable and freely-inscribable function keys (8 with LEDs)
- The product is resistant to various oils, greases and standard detergents
- Two 3-level enabling keys
- Optional product versions with
  - STOP button or
  - STOP button, handwheel, key switch and illuminated push-button
    The STOP button is secured with a protective collar.
    If the STOP button is looped into the emergency stop circuit, it will have the functionality of an emergency stop pushbutton.
- 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 splashproof housing to the IP 65 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 the reliable and rugged junction box to the IP 65 degree of protection:
  - Junction box Basic: allows the STOP button to be integrated into the safety circuit
  - Junction 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 enable 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 switches are designed with dual circuits according to the safety directives, and meet the requirements of safety category 3 to EN 954-1.

Design (cont.)

Innovative connection concept

The mobile panel is simply connected to the junction box where required in the system or on the machine, and is immediately available for use. The junction 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 junction 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 junction box Plus automatically closes the emergency stop circuit, thus ensuring safe, fault-free operation when swapping its connection point.

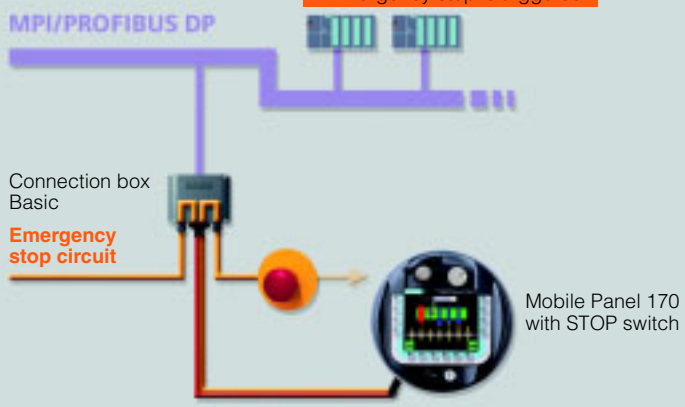
Connection at one point of the machine

If a junction 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.

Wiring into the emergency stop circuit with connection box Basic

- Mobile Panel connected – emergency stop circuit closed
- Mobile Panel disconnected – emergency stop circuit open

→ Emergency stop is triggered

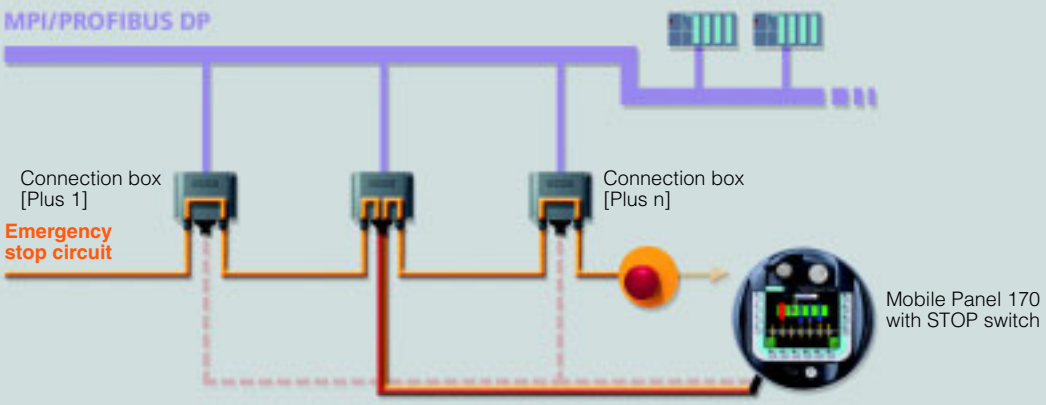


Variable connection to different stations of a machine or system

If a Mobile Panel 170 with STOP switch is used together with the junction 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 junction box Plus is automatically closed.

Automatic closing of emergency stop circuit by connection box Plus

- Mobile Panel connected – emergency stop circuit closed
- Mobile Panel disconnected – emergency stop circuit open



SIMATIC Mobile Panel 170

Functions

- 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.
- Control elements (handwheel, key switch and illuminated pushbutton)
  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 Paint Shop, 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, 21 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Message system;
  administration of operating, fault and system messages
- 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 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 objects 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 or CF Card
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary

Configuration

Configuring is performed using the configuration software SIMATIC ProTool/Lite, SIMATIC ProTool or SIMATIC ProTool/Pro Configuration Version 6.0 SP2 upwards (see configuration or visualization software).

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. The cable can be up to 10 meters long.
A wide range of drivers – also for third-party 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 junction box allows the mobile panel to be connected to:

- SIMATIC S7:S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC
- SIMOTION
- SIMATIC S5
- SIMATIC 505
- Third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon Modbus
  - GE-Fanuc
  - Lucky Goldstar GLOFA
  - OMRON

Note:
For further information see "System interfaces"

Technical specifications

Type	Mobile Panel 170
Display	STN liquid crystal display (LCD)
• Size in inches / W x H in mm	5.7'' / 116 x 87
• Resolution (pixels)	320 x 240
• Colors	16 colors
• MTBF of backlighting (at 25°C)	Approx. 50000 hours
Control elements	
• Type of operator control	Touch and keys
• Programmable, freely inscribable function keys	14 (8 with LED)
• Numeric/alphanumeric input	Yes/yes
• Enabling button (EN 60204-1)	2-channel, 3-stage
• STOP button (EN 60204-1)	Optional, 2-channel, forced blocking, can be looped into the emergency stop circuit
• Keyswitch	Optional, 3 switching positions
• Illuminated pushbutton	Optional
• Handwheel	Optional
Expansions for operator control of the process	
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	F1...F14
• DP direct keys/LEDs (TP buttons as I/O peripherals)	4-byte or encoded
Operating system	Win CE
Memory	
• Type	Flash / RAM
• Useable memory for user data	768 KB
Interfaces	2 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
• CF card slot	1 x CF card slot
Interface with PLC	S5, S7-200, S7-300/400, 505, WinAC Soft-PLC/Slot-PLC (V 3.0 upwards), SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (Uni-Telway), Modicon (Modbus), further PLCs from other vendors
Clock	Hardware clock, unbuffered, synchronized
Supply voltage	Via junction box
Degree of protection	IP 65
Ambient conditions	
• Temperature	
- Operation	0 °C to 40 °C
- Transport, storage	-20 °C to 60 °C
• Relative humidity, max.	80 %

Type	Mobile Panel 170
Dimensions	
• External dimensions in mm	W 245 / D 58
Weight (kg)	1.3
Certification	cULus, CE, SIBE
Functions	
Message system	
• Operating messages	1000
• Fault messages	1000
• System messages	Yes
• Message length (lines x characters)	1 x 70
• Message buffer	Circulating buffer, 256 each, no battery back-up
Recipes	100
• Records per recipe	200
• Entries per record	200
• Recipe memory	32 KB integrated flash, expandable
Process diagrams	100
• Text objects	2000 text elements
• Graphics objects	Bitmaps, icons, background images, vector graphics
• Dynamic objects	Graphs, bars, hidden buttons
- Libraries	Yes
Variables	1000
Password protection (levels)	10
Printer functions	Hardcopy, messages
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, freely scalable
Help text	Yes
Timer	Yes
Configuration tool	ProTool/Lite Version 6.0 SP2 upwards, executable under Windows 98/SE/ME/NT/2000/XP Professional (must be ordered separately)
• Configuration transfer	Serial / MPI / PROFIBUS DP/ automatic transfer detection

Type	Junction box Basic:	Junction box Plus:
Ports	1 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s	1 x RS232, 1 x RS422, 1 x RS485 max. 12 Mbit/s
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 button	No	Yes
• Location identification	Yes	Yes
Housing degree of protection	IP 65	IP 65
Power supply	24 V DC	24 V DC
Dimensions		
• External dimensions W x H x D (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
• Relative humidity, max.	85 %	85 %

SIMATIC Mobile Panel 170

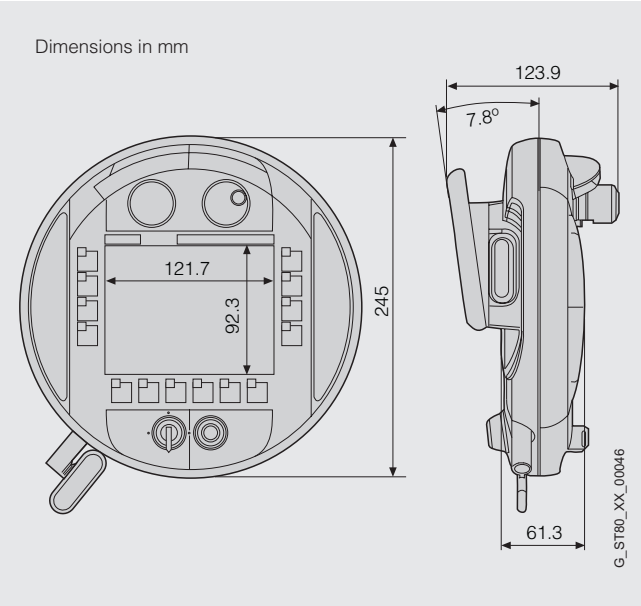
2

Ordering Data

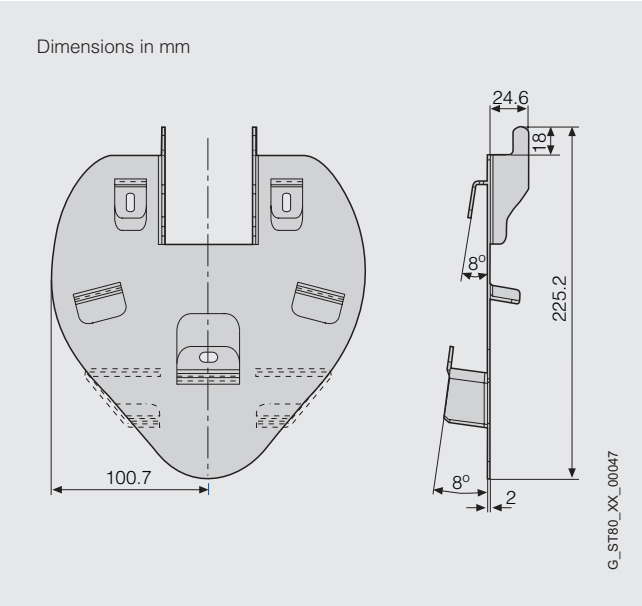
	Order No.
SIMATIC Mobile Panel 170	
• With integrated enabling button	**6AV6 545-4BA16-0CX0**
• With integrated enabling button and STOP button	**6AV6 545-4BB16-0CX0**
• With integrated enabling button, STOP button, handwheel, keyswitch and illuminated push-button	**6AV6 545-4BC16-0CX0**
Junction box	
• Basic	**6AV6 574-1AE04-4AA0**
• Plus	**6AV6 574-1AE14-4AA0**
Connection cable	
• 5m	**6XV1 440-4AH50**
• 10m	**6XV1 440-4AN10**
Wall bracket for Mobile Panel 170	**6AV6 574-1AF04-4AA0**
Starter package Basic	**6AV6 575-1AJ06-0CX0**
• Mobile Panel 170 with integrated enabling button	
• Junction box Basic:	
• Connection cable, 10m	
• Wall bracket	
• SIMATIC ProTool/Lite	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• Software update service for 1 year	
Starter package Plus	**6AV6 575-1AJ16-0CX0**
• Mobile Panel 170 with integrated enabling button, STOP button, handwheel, keyswitch and illuminated pushbutton	
• Junction box Plus	
• Connection cable, 10m	
• Wall bracket	
• SIMATIC ProTool/Lite	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• Software update service for 1 year	
Configuration	
with SIMATIC ProTool and SIMATIC ProTool/Pro	**see Section 4**

	Order No.
Documentation (to be ordered separately)	
Manual Mobile Panel 170	
• 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**
Short startup guide for Mobile Panel 170	
• German	**6AV6 591-1EC30-0AA0**
• English	**6AV6 591-1EC30-0AB0**
• French	**6AV6 591-1EC30-0AC0**
• Italian	**6AV6 591-1EC30-0AD0**
• Spanish	**6AV6 591-1EC30-0AE0**
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**
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**
Accessories for reordering	
CF card, 16 MB	**6AV6 574-2AC00-2AA0**
Protective membrane	
for protecting the touch front against dirt and scratches (pack of 10)	**6AV6 574-1AD04-4AA0**
Protective envelopes	
for labeling strips (pack of 5)	**6AV6 574-1AB04-4AA0**
Service package	**6AV6 574-1AA04-4AA0**
Comprising:	
• Blanking plug for cable inlet	
• 2 x Pg screwed cable gland for junction box	
• 1 set of screws for junction box cover	
• 2 x terminal box (12-pole)	

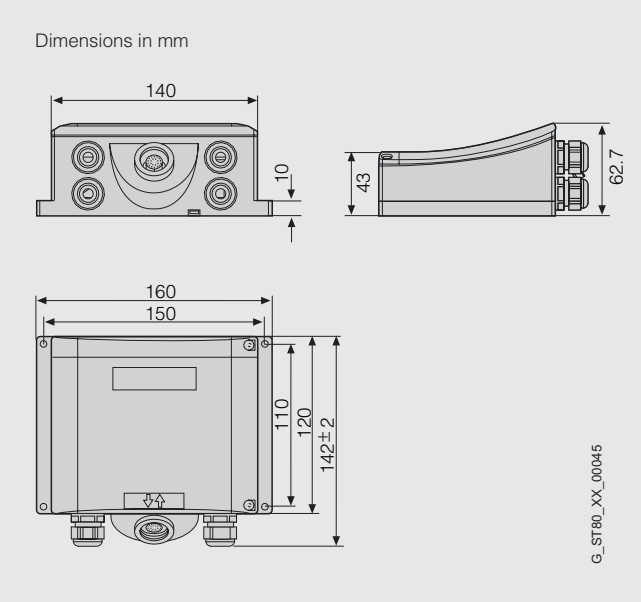
Dimension drawings



SIMATIC Mobile Panel front and side view



Wall mounting for SIMATIC Mobile Panel



Connection box for SIMATIC Mobile Panel

Further Information

For further information, visit our website at

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

2

SIMATIC TD17

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

Area of 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
- 47 mm mounting depth
- Electronic fuse

Functions

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 third-party 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
- Third-party PLCs, including
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

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

Technical specifications

Type	TD17
Display	LCD
• Line display	
- Line number (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 system keys
Operating system	RMOS
Memory	
• Type	Flash / RAM
• Usable memory for user data	128 KB
Interfaces	1 x TTY, 1 x RS232, 1 x RS422, 1 x RS485
Interface with PLC	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current consumption, typ.	0.34 A
Backup battery	Optional, 3.6 V
Clock	Hardware clock, with back-up
Degree of protection	
• Front	IP 65 (installed)
• Rear	IP 20
Certification	GL, FM, UL, CSA, CE
Dimensions	
• Front (W x H in mm)	240 x 98
• Mounting cutout/depth W x H x D (mm)	231 x 89 x 47
Weight (kg)	0.9

Type	TD17
Ambient conditions	
• Mounting position	
- max. permissible angle of inclination without forced ventilation	35°
• Temperature	
- Operation (vertical installation)	0 °C to +50 °C
- Operation (max. inclination)	0 °C to +35 °C
- Transport, storage	-25 °C to +70 °C
• Relative humidity, max.	95%
Functionality[1)]	
Message system	
• Status messages	999
• System messages	Yes
• Message length (lines x characters)	4 x 20 or 8 x 40
• Number of process values per message	8
• Message buffer	Battery-backed cyclic buffer, 256 entries each
Password protection (levels)	10
Help text	Yes
Online languages	3
• Project languages	Danish, German, English, Finnish, French, Italian, Greek, Dutch, Norwegian, Polish, Portuguese, Russian, Spanish, Czech, Turkish, Hungarian
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.

SIMATIC TD17

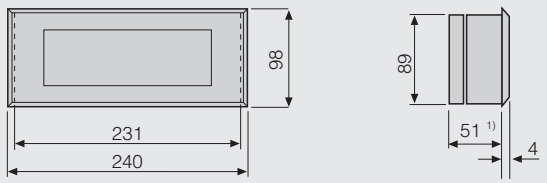
Ordering Data

	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)	
Manual TD17 Multilingual (English, French, German, Italian, Spanish)	**6AV3 991-1AE00-0AX0**
Communications Manual Instructions for connecting the TD/OP to the PLC	
• German	**6AV3 991-1BC05-1AA0**
• English	**6AV3 991-1BC05-1AB0**
• French	**6AV3 991-1BC05-1AC0**
• Italian	**6AV3 991-1BC05-1AD0**
• Spanish	**6AV3 991-1BC05-1AE0**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories for reordering	
Service package for TD17, OP7 and OP17 [1] Comprising: • 1 x TD17 seal • 1 x OP7 seal • 1 x OP17 seal • 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/85**

1) Included in the scope of delivery

Dimension drawings

Dimensions in mm



1) Depth includes connectors and cabel connectors

Panel cutout (W x H x D) in mm: 231 x 89 x 47

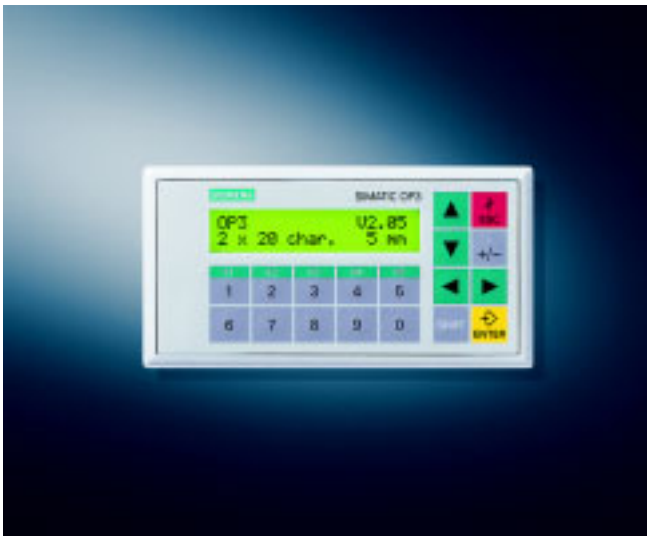
G_ST80_XX_00062

Further Information

For further information, visit our website at

http://www.siemens.com/panels

Overview



- Operator panel for operator control 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 characters/line; character height 5 mm.
- 18 system keys, of which 5 are 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

Area of application

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

Design

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

Functions

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 value

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 connection to SIMATIC S7-200/-300/-400 PLCs is possible via the integrated interface.

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

Note
For further information, see "System interfaces".

SIMATIC OP3

Technical specifications

Type	OP3
Display	LCD
• Line display	
- Characters per line (max.)	20
- Number of lines (max.)	2
• Character height (mm)	5
• Colors	Monochrome
• MTBF backlighting (at 25 °C)	Approx. 200,000 hours
Control elements	Membrane keyboard
• Function keys, programmable	5 function keys
• System keys	18 system keys
• Numeric/alphanumeric input	Yes/yes
Operating system	RMOS
Memory	
• Type	Flash / RAM
• Usable memory for user data	128 KB
Interfaces	1 x RS 232, 1 x RS 485
Connection to PLC	S7-200, S7-300/400
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.07 A
Clock	Software clock
Degree of protection	
• Front	IP 65 (built-in)
• Rear	IP 20
Certification	GL, FM, UL, CSA, CE
Dimensions	
• Front W x H (mm)	148 x 76
• Mounting cutout/depth W x H x D (mm)	138 x 68 x 25
Weight (kg)	0.25

Type	OP3
Ambient conditions	
• Mounting position	
- 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
• Relative humidity, max.	85%
Functionality[1)]	
Message system	
• Operating messages	499
• Fault messages	No
• System messages	Yes
• Message length (lines x characters)	2 x 20
• Number of process values per message	8
• Message buffer	No
Process diagrams	40
• Entries per diagram	20
• Graphics objects	Character graphics
Variables	1,024
Password protection (levels)	10
Online languages	3
• Project languages	English, German, French, Italian and Spanish
PG functions (STATUS/CONTROL)	Yes for S7
Configuration tool	ProTool/Lite Version 2.51 upwards, executable under Windows 98/SE/ME/NT/2000 (must 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.

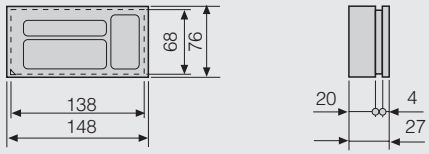
Ordering Data

	Order No.
SIMATIC OP3 Operator panel, 2 lines, 20 characters/line, 18 system keys, incl. mounting accessories: • Cable (2.5 m) for point-to-point connection to SIMATIC S7 and for transferring the configuration data from the PC/PG using the MPI card • Cable (3 m) for transferring the configuration data from the PC/PG using the RS 232 interface • Cable (5 m) for 24 V DC power supply	**6AV3 503-1DB10**
Starter kit SIMATIC OP3 Comprising: • OP3 Operator Panel with mounting accessories • Cable (2.5 m) for point-to-point connection to SIMATIC S7 and for transferring the configuration data from the PC/PG using the MPI card • Cable (3 m) for transferring the configuration data from the PC/PG using the RS 232 interface • 24 V DC power supply cable (5 m) • Documentation CD, 5-language (English, French, German, Italian, Spanish) • Configuration software SIMATIC ProTool/Lite, incl. configuring guide	**6AV6 520-0AA06-0CX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	**see Section 4**
Documentation (to be ordered separately)	
Manual OP3	
• 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**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories for reordering	
Plug-in power supply for easy configuration of OP3:	
• 230 V AC/ 24 V DC	**6ES7 705-0AA00-1AA0**
• 115 V AC / 24 V DC [1]	**6ES7 705-0AA00-1BA0**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/85**

1) Not approved for sale in EU member states

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 138 x 68 x 25

G_ST80_XX_00057

Further Information

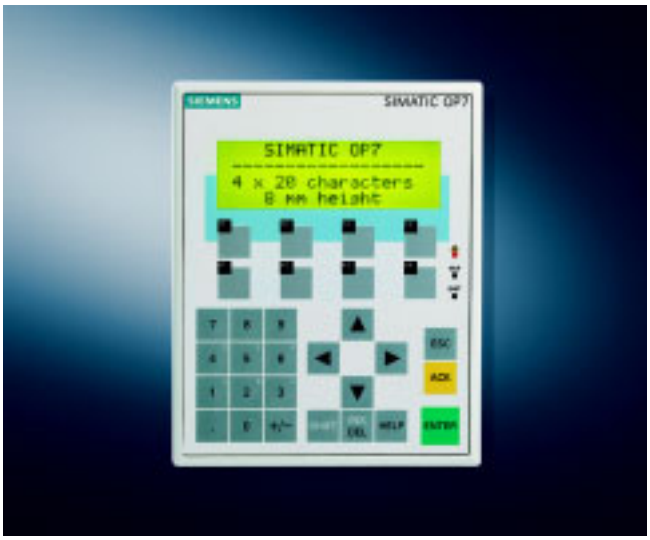
For further information, visit our website at

http://www.siemens.com/panels

2

SIMATIC OP7

Overview



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

Benefits

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

Area of application

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

Design

- LED-backlit LCD, 4-line, 20 characters/line; character height 8 mm
- 22 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- Plastic housing with membrane front
- The front is resistant to various oils, greases and standard detergents
- 38.5 mm 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

Functions

Operator functions

- Alphanumeric setpoint input using system keys
- Softkeys (function of the keys can be configured specific to the display)
- Insertion strips for all softkeys and function keys
- Dual softkey rows can be configured
- Function keys with LEDs

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
- Automation equipment orders to trigger automation equipment-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
- Downloadable 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
- Third-party PLCs, e.g.
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

Note:
For further information see "System interfaces"

Technical specifications

Type	OP7
Display	LCD
• Line display	
- Characters per line (max.)	20
- Number of lines (max.)	4
• Character height (mm)	8
• Colors	Monochrome
• MTBF backlighting (at 25 °C)	Approx. 100,000 hours
Control elements	Membrane keyboard
• Function keys, programmable	8 function keys, 4 with LEDs
• System keys	22 system keys
• Numeric/alphanumeric input	Yes/yes
Operating system	RMOS
Memory	
• Type	Flash / RAM
• Usable memory for user data	128 KB
Interfaces	1 x TTY (not for OP7-DP), 1 x RS232, 1 x RS485, 1 x RS422
Printer	Yes
Connection to PLC	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.19 A
Clock	Software clock
Degree of protection	
• Front	IP 65 (built-in)
• Rear	IP 20
Certification	GL, FM, UL, CSA, CE, EX zone 2, EX zone 22
Dimensions	
• Front W x H (mm)	144 x 180
• Mounting cutout/depth W x H x D (mm)	135 x 171 x 38.5
Weight (kg)	0.43

Type	OP7
Ambient conditions	
• Mounting position	
- Max. permissible angle of inclination without forced ventilation	90°
• Temperature	
- Operation (vertical mounting)	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C
- Transport, storage	-25 °C to +70 °C
• Relative humidity, max.	95%
Expansion for operator control of the process	
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	K1 to K4 (not OP7/PP)
• DP direct keys/LEDs (TP buttons as I/O peripherals)	F1 to F4, K1 to K4 (not OP7/PP)
Functionality[1]	
Message system	
• Operating messages	499
• Fault messages	499
• System messages	Yes
• Message length (lines x characters)	4 x 20
• Number of process values per message	8
• Message buffer	Ring buffer, 256 entries each
Recipes	99
• Data records per recipe	99
• Entries per data record	99
• Recipe memory	4 KB integrated flash
Process diagrams	99
• Entries per diagram	99
• Graphics objects	Character graphics
Variables	2048
Password protection (levels)	10
Printer functions	Messages, displays, recipes
Online languages	3
• Project languages	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Help text	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7
Timer	No
Configuration tool	ProTool/Lite Version 2.51 upwards, executable under Windows 98/SE/ME/NT/2000 (must be ordered separately)
• Transfer of the configuration	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

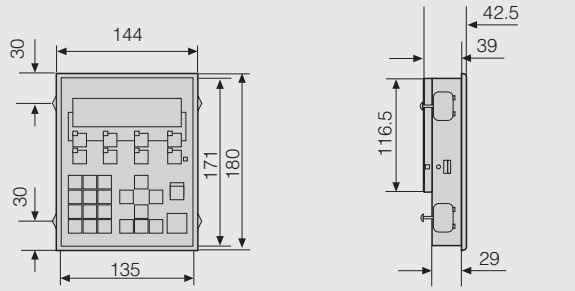
	Order No.
SIMATIC OP7	
Operator panel, 4-line, 20 characters/line, 22 system keys; incl. mounting accessories:	
• **OP7/PP** for connection to SIMATIC S5/505 and PLCs from other manufacturers; with - 1 x RS 232/TTY interface - 1 x RS 422/RS 485 interface	**6AV3 607-1JC00-0AX1**
• **OP7/DP** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other manufacturers; with - 1x RS 232 interface - 1 x PPI/MPI/PROFIBUS DP-interface, 1.5 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 607-1JC20-0AX1**
• **OP7/DP-12** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other manufacturers; with - 1x RS 232/TTY interface - 1 x PPI/MPI/PROFIBUS DP-interface, 12 Mbit/s - 1 x RS 422/RS 485 interface	**6AV3 607-1JC30-0AX1**
Starter kit SIMATIC OP7/PP Comprising: • OP7/PP Operator Panel • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • Standard function blocks • Connecting cable between PG/PC (9-core, RS 232) and OP, 3.2 m (6XV1 440-2KH32)	**6AV6 520-0CA06-0CX0**
Starter kit SIMATIC OP7/DP [1] like starter kit OP7/PP, 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 Comprising: • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • Standard function blocks • Connecting cable between PG/PC (9-core, RS 232) and OP; 3.2 m (6XV1 440-2KH32)	**6AV6 573-1AA06-0CX0**

	Order No.
Documentation (to be ordered separately)	
Manual OP7/OP17	
• 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**
Communications manual Instructions for connecting the TD/OP to the PLC	
• German	**6AV3 991-1BC05-1AA0**
• English	**6AV3 991-1BC05-1AB0**
• French	**6AV3 991-1BC05-1AC0**
• Italian	**6AV3 991-1BC05-1AD0**
• Spanish	**6AV3 991-1BC05-1AE0**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories for reordering	
Service package for TD17, OP7 and OP17[2] comprising: • 1 x TD17 seal • 1 x OP7 seal • 1 x OP17 seal • 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/85**

1) Native drivers cannot be used with DP versions
2) Included in the scope of delivery

Dimension drawings

Dimensions in mm



G_ST80_XX_00058

Panel cutout (W x H x D) in mm: 135 x 171 x 38.5

Further 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-configurable 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 efficient HMI – from receipe management through linear conversion as far as the backing up and restoring of firmware and user data
- Easy handling and configuration
- Maintenance-free thanks to electronic fuse

Area of application

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

Design

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

Functions

Operating functions

- Alphanumeric setpoint input using system keys
- Softkeys (function of the keys can be configured specific to the display)
- Insertion strips for all softkeys and function keys
- Dual softkey rows can be configured
- Function keys 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
- Automation equipment orders to trigger automation equipment-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
- Downloadable 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
- Third-party PLCs, e.g.
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Modicon
  - Omron
  - GE Fanuc

Note:
For further information see "System interfaces"

Technical specifications

Type	OP17
Display	LCD
• Line display	
- Characters per line (max.)	40
- Number of lines (max.)	8
• Character height (mm)	6 or 11 mm
• Colors	Monochrome
• MTBF backlighting (at 25 °C)	Approx. 200,000 hours
Control elements	Membrane keyboard
• Function keys, programmable	24 function keys, 16 with LEDs
• System keys	22 system keys
• Numeric/alphanumeric input	Yes/yes
Operating system	RMOS
Memory	
• Type	Flash / RAM
• Usable memory for user data	256 KB
Interfaces	1 x TTY (not for OP17-DP), 2 x RS232, 1 x RS422, 1 x RS485 (not for OP17-DP)
Printer	Yes
Connection to PLC	S5, S7-200, S7-300/400, 505, SINUMERIK, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.39 A
Backup battery	Optional, 3.6 V
Clock	Hardware clock, with back-up
Degree of protection	
• Front	IP 65 (built-in)
• Rear	IP 20
Certification	GL, FM, UL, CSA, CE
Dimensions	
• Front W x H (mm)	240 x 204
• Mounting cutout/depth W x H x D (mm)	231 x 195 x 50
Weight (kg)	0.96

Type	OP17
Ambient conditions	
• Mounting position	
- Max. permissible angle of inclination without forced ventilation	90°
• Temperature	
- Operation (vertical mounting)	0 °C to +50 °C
- Operation (max. angle of inclination)	0 °C to +35 °C
- Transport, storage	-25 °C to +70 °C
• Relative humidity, max.	95%
Expansion for operator control of the process	
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	K1 to K16 (not OP17/PP)
• DP direct keys/LEDs (TP buttons as I/O peripherals)	F1 to F8, K1 to K16 (not OP17/PP)
Functionality[1]	
Message system	
• Operating messages	999
• Fault messages	999
• System messages	Yes
• Message length (lines x characters)	2 x 40
• Number of process values per message	8
• Message buffer	Ring buffer with battery back-up, 256 entries each
Recipes	99
• Data records per recipe	99
• Entries per data record	99
• Recipe memory	20 KB integrated flash
Process diagrams	99
• Entries per diagram	99
• Graphics objects	Character graphics
Variables	2048
Password protection (levels)	9
Printer functions	Messages, list of displays, etc.
Online languages	3
• Project languages	Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Help text	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7
Timer	Yes
Configuration tool	ProTool/Lite Version 2.51 upwards, executable under Windows 98/SE/ME/NT/2000 (must be ordered separately)
• Transfer of the configuration	Serial

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

SIMATIC OP17

2

Ordering Data

	Order No.
SIMATIC OP17	
Operator panel, 4-line, 20 characters/line or 8 lines, 40 characters/line, 22 system keys; incl. mounting accessories:	
• **OP17/PP** for connection to SIMATIC S5/505 and PLCs from other manufacturers, 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 manufacturers, with - 2x RS 232 interface - 1 x PPI/MPI/PROFIBUS DP-interface, 1.5 Mbit/s - 1 x RS422 interface	**6AV3 617-1JC20-0AX1**
• **OP17/DP-12** for connection to SIMATIC S5/S7/505, PROFIBUS DP and PLCs from other manufacturers, with - 2x 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**
Starter kit SIMATIC OP17/PP Comprising: • OP17/PP Operator Panel • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • Standard function blocks • Connecting cable between PG/PC (9-core, RS 232) and OP, 3.2 m (6XV1 440-2KH32)	**6AV6 520-0EA06-0CX0**
Starter kit SIMATIC OP17/DP [1] like starter kit OP17/PP, 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 Comprising: • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • Standard function blocks • Connecting cable between PG/PC (9-core, RS 232) and OP; 3.2 m (6XV1 440-2KH32)	**6AV6 573-1AA06-0CX0**

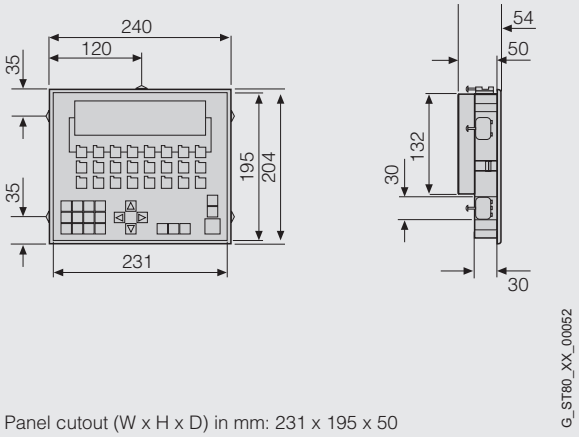
	Order No.
Documentation (to be ordered separately)	
Manual OP7/OP17	
• German	**6AV3 991-1AE05-1AA0**
• English	**6AV3 991-1AE05-1AB0**
• French	**6AV3 991-1AE05-1AC0**
• Italian	**6AV3 991-1AE05-1AD0**
• Spanish	**6AV3 991-1AE05-1AE0**
Communications Manual Instructions for connecting the TD/OP to the PLC	
• German	**6AV3 991-1BC05-1AA0**
• English	**6AV3 991-1BC05-1AB0**
• French	**6AV3 991-1BC05-1AC0**
• Italian	**6AV3 991-1BC05-1AD0**
• Spanish	**6AV3 991-1BC05-1AE0**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories for reordering	
Service package for TD17, OP7 and OP17[2] comprising: • 1 x TD17 seal • 1 x OP7 seal • 1 x OP17 seal • 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/85**

1) Native drivers cannot be used with DP versions

2) Included in the scope of delivery

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 231 x 195 x 50

Further 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 Touch Screen (analog/resistive), Blue mode (4 levels)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- Third-party PLCs can be connected 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)

Area of application

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

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

Design

- 5.7" STN, CCFL[1)] backlit display, Blue mode (4 levels)
- Resistive analog Touch
- Numeric system keyboard for decimal, binary and hexadecimal number formats
- On-screen alphanumeric keyboard
- Compact design with a mounting depth of only 45 mm
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option to achieve NEMA4 degree of protection as well as for additional protection from dirt and scratching
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 for process connections and for downloading the configuration (MPI, PROFIBUS DP up to 1.5 Mbit/s)
  - RS 232 interface for process connections and for downloading the configuration

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

Functions

- 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 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 Paint Shop, 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
- 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
- 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
- Simple maintenance and configuration through
  - 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 setting and calibration
  - Clean screen
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary

Configuration

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

Integration

The TP 170A can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- Other third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron

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 (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	66 MHz RISC
Operating system	Win CE
Memory	
• Type	Flash / RAM
• Usable memory for user data	320 KB
Interfaces	1 x RS232, 1 x RS422, 1 x RS485
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current input, typ.	0.24 A
Clock	Software clock, synchronized
Degree of protection	
• Front	IP 65 (built-in), NEMA 4 (with protective cover)
• Rear	IP 20
Certification	CE, UL, CSA, FM
Dimensions	
• Front W x H (mm)	212 x 156
• Mounting cutout/depth W x H x D (mm)	198 x 142 x 45
Weight (kg)	0.7

Type	TP 170A
Ambient conditions	
• Mounting position	
- 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
• Relative humidity, max.	85%
Functions	
Message system	
• Operating messages	1000
• Fault messages	No
• Message length (lines x characters)	1 x 70
• Number of process values per message	8
• Message buffer	No
Process diagrams	50
• Text objects	1,000 text elements
• Variables per diagram	20
• Graphics objects	Bitmaps, icons, background images
• Dynamic objects	Bars
- Directories	Yes
Variables	500 [2)]
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
Configuration tool	ProTool/Lite, Version 5.2 SP1 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)
• Transfer of the configuration	Serial / MPI / PROFIBUS DP

1) English font only can be displayed
2) From ProTool V6

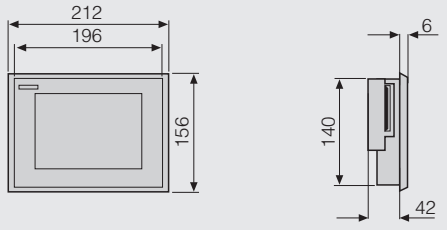
Ordering Data

	Order No.
SIMATIC TP 170A Touch panel with 5.7" STN display, blue mode (4 levels) incl. mounting accessories	**6AV6 545-0BA15-2AX0**
Starter kit TP 170A Comprising: • TP 170A Touch Panel • SIMATIC ProTool/Lite • Documentation CD, 5-language (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable (5 m) • Software update service for 1 year	**6AV6 575-1AD06-0CX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	**see Section 4**
Configuration set for TP 170/OP 170B • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable (5 m)	**6AV6 573-1FA06-0CX0**
Documentation (to be ordered separately)	
Manual TP 170/OP 170B	
• 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**
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**
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**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**

	Order No.
Accessories	
Protective membranes for TP 170 (pack of 10)	**6AV6 574-1AD00-4AX0**
Protective cover for TP 170 (2 sets)	**6AV6 574-1AE00-4AX0**
Service package for TP 170/OP 170B comprising: • Mounting seals • 2 sets of labeling strips (for OPs) • 7 clamping terminals • Plug-in terminal block (dual block)	**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T plug-in cable for data terminal connection, fully assembled 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 198 x 142 x 45

Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC TP 170B

Overview

- Touch panel for operator control and monitoring of small machines and plants
- Universal starter unit in the class of touch panels with graphics capability and extensive functional scope
- 5.7" pixel graphics STN Touch Screen (analog/resistive), Blue mode (4 levels) or color (16 colors)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- Third-party PLCs can be connected via easy-to-use drivers

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering overhead, 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:
  - 21 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

Area of 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, Blue mode (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 a mounting depth of only 45 mm
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- A protective cover is available as an option to achieve NEMA4 degree of protection as well as for additional protection from dirt and scratching
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 for process connections and for downloading the configuration (up to 12 Mbit/s)
  - RS 232 interface for process connections and for downloading the configuration
  - Serial RS 232 printer port
- Slot for a compact flash card

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

Functions

- 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 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 Paint Shop, Designer or CorelDraw).
- Vector graphics;
  basic geometric shapes (e.g. lines, circles and rectangles) can be created using the configuring tool directly
- 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, 21 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 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 objects and dynamic hiding and showing 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 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

Configuration

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

Integration

The TP 170B can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Other third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron

Note:
For further information see "System interfaces"

SIMATIC TP 170B

Technical specifications

Type	TP 170B monochrom	TP 170B color
Display	STN liquid crystal display (LCD)	
• Size	5.7"	
• Resolution (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	66 MHz RISC	
Operating system	Win CE	
Memory		
• Type	Flash / RAM	
• Usable memory for user data	768 KB	
Interfaces	2 x RS232, 1 x RS422, 1 x RS485	
• CF card slot	1 x CF card slot	
Printer	Yes	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other third-party PLCs	
Supply voltage	24 V DC	
• Rated voltage	24 V	
• Permitted range	+18 to +30 V DC	
• Current input, typ.	0.25 A	
Clock	Software clock, synchronized	
Degree of protection		
• Front	IP 65 (installed)	
• Rear	IP 20	
Certification	CE, UL, CSA, FM	
Dimensions		
• Front W x H (mm)	212 x 156	
• Mounting cutout/depth W x H x D (mm)	198 x 142 x 45	
Weight (kg)	0.7	
Ambient conditions		
• Mounting position		
- 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	
• Relative humidity, max.	85%	
Expansion for operator control of the process		
• DP direct keys/LEDs (TP buttons as I/O peripherals)	4-byte or encoded	

1) English font only can be displayed

Technical specifications (cont.)

Type	TP 170B monochrom	TP 170B color
Functions		
Message system		
• Operating messages	1000	
• Fault messages	1000	
• Message length (lines x characters)	1 x 70	
• Number of process values per message	8	
• Message buffer	Ring buffer, 126 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	100	
• Text objects	2,000 text elements	
• Variables per diagram	50	
• Graphics objects	Bitmaps, icons, background images, vector graphics	
• Dynamic objects	Diagrams, bars, hidden buttons	
- Directories	Yes	
Variables	1000	
Password protection (levels)	10	
Printer functions	Hardcopy, messages	
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, freely scalable	
Help text	Yes	
Timer	Yes	
Configuration tool	ProTool/Lite, Version 5.2 SP1 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	
• Transfer of the configuration	Serial / MPI / PROFIBUS DP	

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

SIMATIC TP 170B

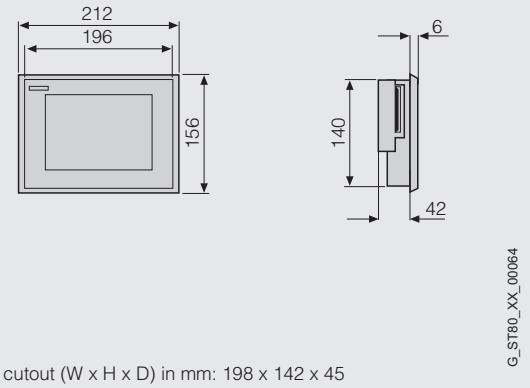
Ordering Data

	Order No.
SIMATIC TP 170B	
Touch panel with 5.7" STN display	
• Blue mode (4 levels)	**6AV6 545-0BB15-2AX0**
• Color (16 colors)	**6AV6 545-0BC15-2AX0**
incl. mounting accessories	
Starter kit for TP 170B	**6AV6 575-1AG06-0CX0**
Comprising:	
• TP 170B with STN display, Blue mode	
• SIMATIC ProTool/Lite	
• Documentation CD, 5-language (English, French, German, 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**
Configuration set for TP 170/OP 170B	**6AV6 573-1FA06-0CX0**
• SIMATIC ProTool/Lite configuration software with user manual	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• RS 232 cable (5 m)	
• MPI cable (5 m)	
Documentation (to be ordered separately)	
Manual TP 170/OP 170B	
• 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**
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**
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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

	Order No.
Accessories	
Memory cards	
CF card, 16 MB	**6AV6 574-2AC00-2AA0**
Accessories for reordering	
Service package for TP 170/OP 170B	**6AV6 574-1AA00-4AX0**
Comprising:	
• Mounting seals	
• 2 sets of labeling strips (for OPs)	
• 7 clamping terminals	
• Plug-in terminal block (dual block)	
Protective membranes for TP 170	**6AV6 574-1AD00-4AX0**
(pack of 10)	
Protective cover for TP 170	**6AV6 574-1AE00-4AX0**
(2 sets)	
TTY-to-RS 232 converter	**6ES5 734-1BD20**
for connection to S5 CPUs; length 3.2 m; Canon 15-pin – 25-pin	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T plug-in cable	**6XV1 830-1CH30**
for data terminal connection, fully assembled 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 198 x 142 x 45

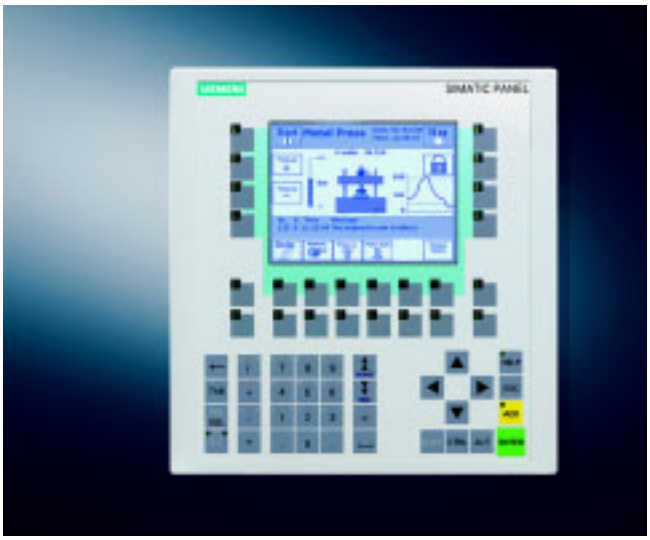
Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC OP 170B

Overview



- Operator panel for operator control and monitoring of small machines and plants
- Universal starter unit in the class of panels with graphics capability and extensive functional scope
- Pixel graphics 5.7" STN display, Blue mode (4 levels)
- 35 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- All interfaces (e.g. MPI, PROFIBUS DP) are on board
- Third-party PLCs can be connected via easy-to-use drivers

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering overhead, 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:
  - 21 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

Area of 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, Blue mode (4 levels)
- 35 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- Numeric and alphanumeric on-screen keyboard
- Compact design with a mounting depth of only 45 mm
- 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 port
- Slot for compact flash card

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

Functions

- 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 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 Paint Shop, Designer or CorelDraw).
- Vector graphics;
  basic geometric shapes (e.g. lines, circles and rectangles) can be created using the configuring tool directly
- 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, 21 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Message system;
  administration of operating, fault and system messages
- 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 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 objects 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 and CF Card (optional)
  - Automatic transfer identification
  - Individual contrast settings
  - Configuration simulation directly on the configuration computer
  - No batteries are necessary

Configuration

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

Integration

The OP 170B can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Other third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron

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

SIMATIC OP 170B

Technical specifications

Type	OP 170B
Display	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (pixels)	320 x 240
• Colors	4 gray levels
• MTBF of backlighting (at 25 °C)	Approx. 50,000 hours
Control elements	Membrane keyboard
• Function keys, programmable	24 function keys, 18 with LED
• System keys	35 system keys
• Numeric/alphanumeric input	Yes / Yes[1)]
Processor	66 MHz RISC
Operating system	Win CE
Memory	
• Type	Flash / RAM
• Usable memory for user data	768 KB
Interfaces	2 x RS232, 1 x RS422, 1 x RS485
• CF card slot	1 x CF card slot
Printer	Yes
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current consumption, typ.	0.25 A
Clock	Software clock, synchronized
Degree of protection	
• Front	IP 65 (installed)
• Rear	IP 20
Certification	CE, UL, CSA, FM
Dimensions	
• Front W x H (mm)	240 x 252
• Mounting cutout/depth W x H x D (mm)	229 x 241 x 45
Weight (kg)	0.9
Ambient conditions	
• Mounting position	
- 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
• Relative humidity, max.	85%

Type	OP 170B
Expansion for operator control of the process	
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	F1 to F8, K1 to K10
• DP direct keys/LEDs (TP buttons as I/O peripherals)	F1 to F14, K1 to K10
Functions	
Message system	
• Operating messages	1000
• Fault messages	1000
• Message length (lines x characters)	1 x 70
• Number of process values per message	8
• Message buffer	Ring 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	100
• Text objects	2,000 text elements
• Variables per diagram	50
• Graphics objects	Bitmaps, icons, background images, vector graphics
• Dynamic objects	Graphs, bars, hidden buttons
- Directories	Yes
Variables	1000
Password protection (levels)	10
Printer functions	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
Help text	Yes
Timer	Yes
Configuration tool	ProTool/Lite, Version 5.2 SP2 upwards, executable under Windows 98/SE/ME/NT/2000 (must be ordered separately)
• Transfer of the configuration	Serial / MPI / PROFIBUS DP

1) English font only can be displayed
2) Not battery-backed
3) By means of optional CF card

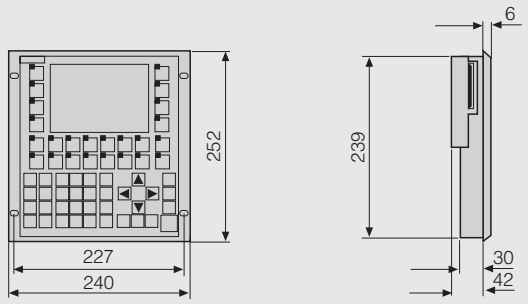
Ordering Data

	Order No.
SIMATIC OP 170B Operator panel with 5.7" STN display, blue mode (4 levels) incl. mounting accessories	**6AV6 542-0BB15-2AX0**
Configuration	
with SIMATIC ProTool/Lite, ProTool or ProTool/Pro	**see Section 4**
Configuration set for TP 170/OP 170B • SIMATIC ProTool/Lite configuration software with user manual • Documentation CD, 5-language (English, French, German, Italian, Spanish) • RS 232 cable (5 m) • MPI cable (5 m)	**6AV6 573-1FA06-0CX0**
Documentation (to be ordered separately)	
Manual TP 170/OP 170B	
• 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**
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**
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**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**
Accessories	
Memory cards	
CF card, 16 MB	**6AV6 574-2AC00-2AA0**

	Order No.
Accessories for reordering	
Service packet for TP 170/OP 170B Comprising: • Mounting seals • 2 sets of labeling strips (for OPs) • 7 clamping terminals • Plug-in terminal block (dual block)	**6AV6 574-1AA00-4AX0**
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
PROFIBUS 830-1T plug-in cable for data terminal connection, fully assembled 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**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

Dimension drawings

Dimensions in mm



Panel cutout (W x H x D) in mm: 229 x 241 x 45

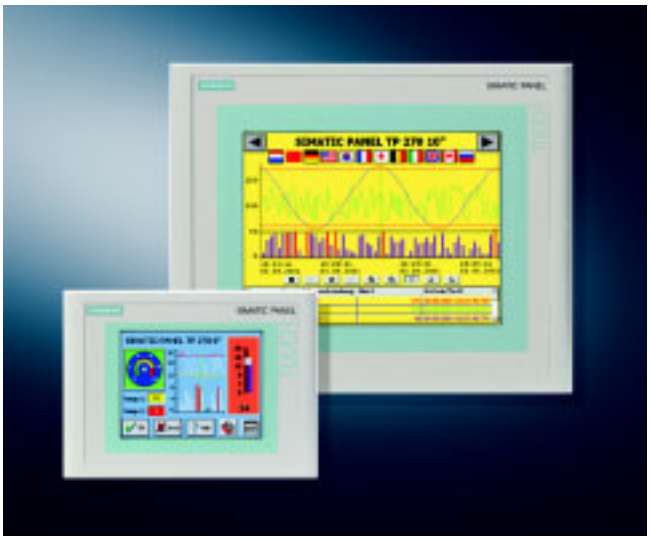
Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC TP 270

Overview



- Touch panel with extensive functional 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 the innovative successors to the SIMATIC TP27.

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering overhead, reduces the lifecycle costs
- Reduces the service and start-up costs due to:
  - Backup/restore via Compact Flash card (CF card), USB, MPI, PROFIBUS DP, RS 232 (serial) and optionally via Ethernet (TCP/IP)
  - Remote downloading/uploading of the configuration and firmware
  - Specific drivers can be downloaded
  - Long service life of the backlighting
- Graphics library is available complete with ready-to-use display objects
- Can be used worldwide:
  - 32 languages can be configured (including Asiatic and Cyrillic character sets)
  - Up to 5 languages are selectable online
- Standard hardware and software interfaces to increase flexibility:
  - CF card, used for recipe data sets and for backing up the configuration and system data
  - Integrated USB interface for "Hot plug-in/out" of I/O devices (printer, keyboard, mouse, barcode reader)
  - Standard Windows storage format (CSV) for archives and recipes for further processing using standard tools (e.g. MS Excel)
  - Ethernet (TCP/IP) for centralized data management and project management (optional)

Area of 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 (thanks to Windows CE) satisfy demanding machine visualization tasks 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 a mounting depth of only 59 mm
- Rugged plastic (TP 270 6“) or aluminum die-cast housing (TP 270 10") with IP 65/NEMA 4/NEMA 12 (front) or IP 20 (rear of unit) degree of protection
- The front is resistant to various oils, greases and standard detergents
- High electromagnetic compatibility (EMC) and extreme vibration resistance
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 for process connections and for downloading the configuration (MPI and PROFIBUS DP up to 12 Mbit/s)
  - RS 232 interface for process connections and for downloading the configuration
  - Serial RS 232 interface (printer, download/upload)
  - USB for mouse, keyboard, printer and downloading/uploading configurations
  - Ethernet (TCP/IP) optionally via network card for data transfer to a higher-level PC and for connecting a network printer
- Slot for compact flash card

Functions

- 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 a historical trend
  - Pre-configured message display, message window and message line
- Archiving messages and process 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 "Recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on CF card)
  - Online/offline editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS VAR/CONTROL VAR PG functionality 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
  - 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

Configuration

Configuring is performed using the configuration software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration Version 6.0 upwards (see configuration or visualization software)

Options

SIMATIC ProAgent/MP;
specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see process diagnostics software SIMATIC ProAgent).

Integration

The TP 270 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Other third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron
- Optionally via Ethernet (TCP/IP) to higher-level PC; network printer via optional NE2000-compatible network card

Note:
For further information see "System interfaces"

SIMATIC TP 270

Technical specifications

Type	TP 270 6"	TP 270 10"
Display	STN liquid crystal display (LCD)	
• Size	5.7"	10.4"
• Resolution (pixels)	320 x 240	640 x 480
• Colors	256 colors	256colors
• 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, bar-code reader	USB / USB / USB	
Processor	64-bit RISC CPU	
Operating system	Win CE	
Memory		
• Type	Flash / RAM	
• Useable memory for user data	2048 KB	
Interfaces	2 x RS232, 1 x RS422, 1 x RS485	
• USB (Universal Serial Bus)	1 x USB	
• CF card slot	1 x CF card slot	
Printer	Yes	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SIMOTION, SINUMERIK, Allen Bradley (DF1, DH485), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), OMRON (Link/MultiLink), other third-party PLCs	
Supply voltage	24 V DC	
• Rated voltage	24 V	
• Permitted range	+18 to +30 V DC	
• Current input, typ.	0.6 A	
Backup battery	Optional, 3.6 V	
Clock	Hardware clock, synchronized, with back-up	
Degree of protection		
• Front	IP 65 (built-in), NEMA 12, NEMA 4x, NEMA 4	
• Rear	IP 20	
Certification	FM, Ex zone 2, Ex zone 22, CE, C-TICK, cULus, FM Class I Div 2	
Dimensions		
• Front W x H (mm)	212 x 156	335 x 275
• Mounting cutout/depth W x H x D (mm)	198 x 142 x 59	310 x 248 x 59
Weight (kg)	1	4.5
Ambient conditions		
• Mounting position		
- 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	
• Relative humidity, max.	85%	
Expansion for operator control of the process		
• DP direct keys/LEDs (TP buttons as I/O peripherals)	4-byte or encoded	5-byte or encoded
Peripherals	Printer, barcode reader, mouse, keyboard	

Technical specifications (cont.)

Type	TP 270 6"	TP 270 10"
Functions		
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	Ring buffer, 512 entries each	
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	
• Graphics objects	Bitmaps, icons, background images, vector graphics	
• Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Directories	Yes	
Variables	2048	
Archiving		
• Number of archives per project	20	
• Number of process 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	
• Data storage format	CSV	
• Online evaluation	Using trend curves	
• External evaluation	Can be read, e.g. by Excel, Access	
Password protection (levels)	10	
Visual Basic Scripts		
• Number	50	
• No. 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, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	
Help text	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Timer	Yes	
Configuration tool	ProTool Version 6 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	
• Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	

SIMATIC TP 270

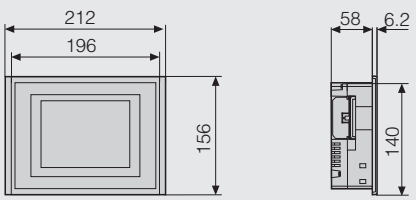
Ordering Data

	Order No.
SIMATIC TP 270	
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 for TP 270 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	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• RS 232 cable (5 m)	
• MPI cable (5 m)	
• Software update service for 1 year	
Options	
SIMATIC ProAgent/MP	**see Section 4**
Configuration	
with SIMATIC ProTool and ProTool/Pro	**see Section 4**
Documentation (to be ordered separately)	
Manual TP/OP 270 and MP 270B	
• 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**
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**
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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

	Order No.
Accessories	
Memory cards	
CF card, 16 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 reordering	
Protective membrane	
for protecting the touch front against dirt and scratches (pack of 10)	
• For TP 270 6“	**6AV6 574-1AD00-4DX0**
• For TP 270 10“	**6AV6 574-1AD00-4CX0**
Service packet for TP 270 6"	**6AV6 574-1AA00-4AX0**
Comprising:	
• Mounting seals	
• 2 sets of labeling strips (for OPs)	
• 7 clamping terminals	
• Plug-in terminal block (dual block)	
Service packet for TP 270 10“	**6AV6 574-1AA00-2CX0**
• Mounting seals	
• 2 sets of labeling strips (for OPs)	
• 10 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
TTY-to-RS 232 converter	**6ES5 734-1BD20**
for connection to S5 CPUs; length 3.2 m; Canon 15-pin – 25-pin	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

Dimension drawings

Dimensions in mm



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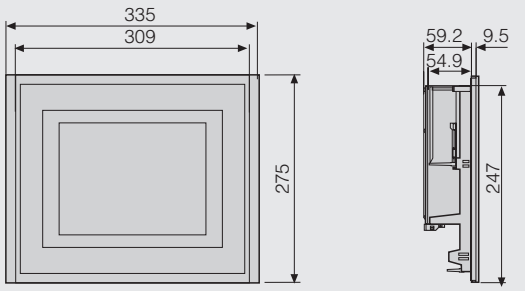
Panel cutout (W x H x D) in mm: 198 x 142 x 59

TP 270 6“

Dimensions in mm



G_ST80_XX_00043

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

TP 270 10“

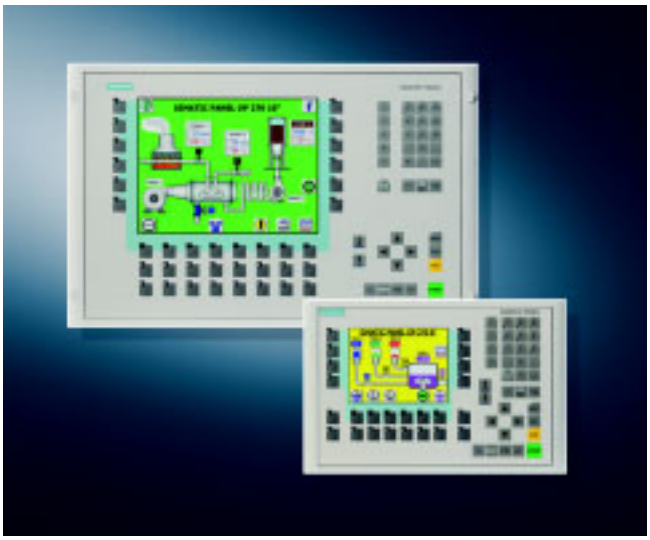
Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC OP 270

Overview



- Operator panel with extensive functional scope for demanding machine visualization applications
- 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
- The SIMATIC OP 270 Operator Panels are the innovative successors to the SIMATIC OP27 Operator Panels.

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering overhead, reduces the lifecycle costs
- Reduces the service and start-up costs due to:
  - Backup/restore via Compact Flash card (CF card), USB, MPI, PROFIBUS DP, RS 232 (serial) and optionally via Ethernet (TCP/IP)
  - 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)
  - Ethernet (TCP/IP) for centralized data management and project management (optional)

Area of 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 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 (thanks to Windows CE) 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 a mounting depth of only 55 mm (OP 270 6") or 59 mm (OP 270 10")
- Rugged plastic (OP 270 6") or aluminum die-cast housing (OP 270 10") with IP 65/NEMA 4/NEMA 12 (front) or IP 20 (rear of unit) degree of protection
- The front is resistant to various oils, greases and standard detergents
- High electromagnetic compatibility (EMC) and extreme vibration resistance
- Plug-type terminals for connection of a 24 V DC power supply
- Interfaces:
  - RS 485/422 for process connections and for downloading the configuration (MPI and PROFIBUS DP up to 12 Mbit/s)
  - RS 232 interface for process connections and for downloading the configuration
  - Serial RS 232 interface (printer, download/upload)
  - USB for mouse, keyboard, printer and downloading/uploading configurations
  - Ethernet (TCP/IP) optionally via network card for data transfer to a higher-level PC and for connecting a network printer
- Slot for compact flash card

Functions

- 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 display with scroll and zoom functions for accessing historical data and for flexible display of the period to be presented;
    read-off line for determining the actual values which are displayed in 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 a historical trend
  - Pre-configured message display, message window and message line
- Archiving messages and process 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 "Recommended printers")
- Language selection
  5 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
- Password protection with 10 levels
- Recipe management
  - With additional data storage (on CF card)
  - Online/offline editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS VAR/CONTROL VAR PG functionality 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
  - 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

Configuration

Configuring is performed using the configuration software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration Version 6.0 upwards (see configuration or visualization software)

Options

SIMATIC ProAgent/MP;
Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see process diagnostics software SIMATIC ProAgent).

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
- Third-party PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron
- Optionally via Ethernet (TCP/IP) to higher-level PC; network printer via NE2000-compatible network card

Note:
For further information see "System interfaces"

SIMATIC OP 270

Technical specifications

Type	OP 270 6"	OP 270 10"
Display	STN liquid crystal display (LCD)	
• Size	5.7"	10.4"
• Resolution (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 system keys	38 system keys
• Numeric/alphanumeric input	Yes/yes	
• External mouse, keyboard, bar-code reader	USB / USB / USB	
Processor	64-bit RISC CPU	
Operating system	Win CE	
Memory		
• Type	Flash / RAM	
• Useable memory for user data	2048 KB	
Interfaces	2 x RS232, 1 x RS422 1 x RS485	
• USB (Universal Serial Bus)	1 x USB	
• CF card slot	1 x CF card slot	
Printer	Yes	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1, DH485), Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), OMRON (Link/MultiLink), other third-party PLCs	
Supply voltage	24 V DC	
• Rated voltage	24 V	
• Permitted range	+18 to +30 V DC	
• Current consumption, typ.	0.6 A	
Backup battery	Optional, 3.6 V	
Clock	Hardware clock, synchronized, with back-up	
Degree of protection		
• Front	IP 65 (built-in), NEMA 12, NEMA 4x, NEMA 4	
• Rear	IP 20	
Certification	FM, Ex zone 2, Ex zone 22, CE, C-TICK, cULus, FM Class I Div 2	
Dimensions		
• Front W x H (mm)	308 x 204	483 x 310
• Mounting cutout/depth W x H x D (mm)	282 x 178 x 59	436 x 295 x 55
Weight (kg)	1	6
Ambient conditions		
• Mounting position		
- 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	
• Relative humidity, max.	90%	

Technical specifications (cont.)

Type	OP 270 6"	OP 270 10"
Expansion for operator control of the process		
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	F1 to F14, K1 to K10	F1 to F20, K1 to K16
Peripherals	Printer, barcode reader, mouse, keyboard	
Functions		
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	Ring buffer, 512 entries each	
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	
• Graphics objects	Bitmaps, icons, background images, vector graphics	
• Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Directories	Yes	
Variables	2048	
Archiving		
• Number of archives per project	20	
• Number of process 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	
• Data storage format	CSV	
• Online evaluation	Using trend curves	
• External evaluation	Can be read, e.g. by Excel, Access	
Password protection (levels)	10	
Visual Basic Scripts		
• Number	50	
• No. 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, Courier New, 2 further character sets can be loaded, ideographic languages freely scalable	
Help text	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Timer	Yes	
Configuration tool	ProTool Version 6 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	
• Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	

SIMATIC OP 270

Ordering Data

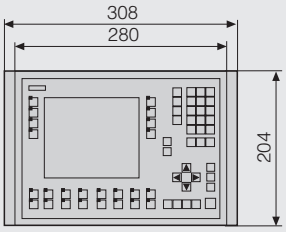
	Order No.
SIMATIC OP 270	
Operator panel with	
• 5.7“ color STN display	**6AV6 542-0CA10-0AX0**
• 10.4“ color STN display	**6AV6 542-0CC10-0AX0**
incl. mounting accessories	
Starter kit for OP 270 with	
• OP 270 6" Operator Panel	**6AV6 575-1AH06-0CX0**
• OP 270 10" Operator Panel	**6AV6 575-1AH26-0CX0**
Comprising:	
• OP 270 Operator Panel	
• SIMATIC ProTool	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• RS 232 cable (5 m)	
• MPI cable (5 m)	
• Software update service for 1 year	
Options	
SIMATIC ProAgent/MP	**see Section 4**
Configuration	
with SIMATIC ProTool or ProTool/Pro	**see Section 4**
Documentation (to be ordered separately)	
Manual TP/OP 270 and MP 270B	
• 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**
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**
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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

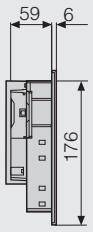
	Order No.
Accessories	
Memory cards	
CF card, 16 MB	**6AV6 574-2AC00-2AA0**
Backup battery	**W79084-E1001-B2**
Lithium battery, 3.6 V DC; 1.7 Ah for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B, MP 370	
Accessories for reordering	
Service package for OP 270 6"	**6AV6 574-1AA00-4AX0**
Comprising:	
• Mounting seals	
• 2 sets of labeling strips	
• 7 clamping terminals	
• Plug-in terminal block (dual block)	
Service package for OP 270 10"	**6AV6 574-1AA00-2DX0**
Comprising:	
• Mounting seals	
• 2 sets of labeling strips	
• 10 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
TTY-to-RS 232 converter	**6ES5 734-1BD20**
for connection to S5 CPUs; length 3.2 m; Canon 15-pin – 25-pin	
RS 232 cable (5 m)	**6ES7 901-1BF00-0XA0**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

2

Dimension drawings

Dimensions in mm





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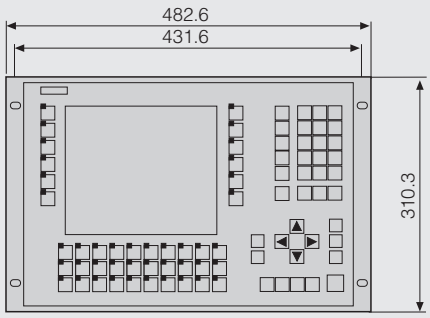
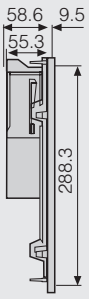
Panel cutout (W x H x D) in mm: 282 x 178 x 59

OP 270 6“

Dimensions in mm





G_ST80_XX_00055

Panel cutout (W x H x D) in mm: 436 x 295 x 55

OP 270 10“

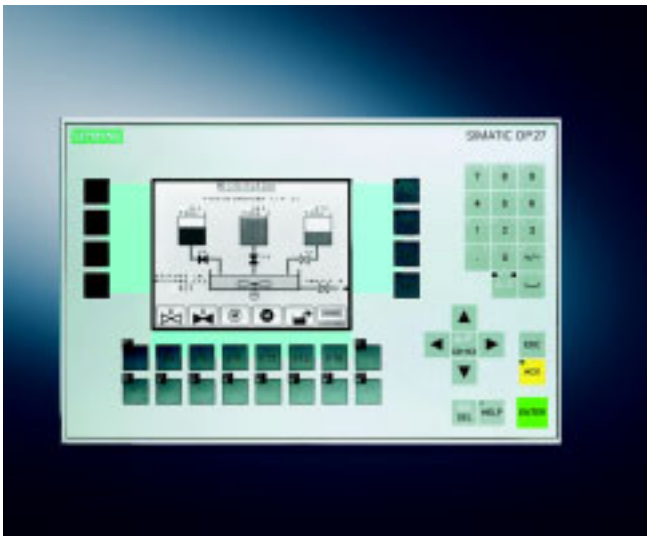
Further Information

For further information, visit our website at

http://www.siemens.com/panels

SIMATIC OP27

Overview



- Operator panel for convenient machine operation and monitoring
- Pixel graphics 5.7" STN display, monochrome, 8 gray levels
- 24 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- All interfaces on board, e.g. PROFIBUS DP or MPI
- The OP27 Operator Panels will be replaced by the innovative Windows CE-based SIMATIC OP 270.

Benefits

- Backup/restore for configuration/recipes via PC card
- Extensive functionality, e.g. recipe management
- Can be used worldwide: Up to 3 languages selectable online, also Asian ideographic languages
- Easy maintenance due to long service life of the backlighting
- Expansion of the operator control of the process (optional):
  - 24 V DC direct control keys:
    Module with 8 24 V DC outputs that can be controlled via OP softkeys
  - Control Panel Interface (CPI):
    Module for connecting external pushbuttons/indicator lights as I/O peripherals via the OP to PROFIBUS DP

Area of application

The OP27 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 display, monochrome (8 gray levels)
- 24 system keys, 24 freely-configurable and freely-inscribable function keys (18 with LEDs)
- Numeric and alphanumeric input
- Compact design with a mounting depth of only 59 mm (without direct control key module/CPI module)
- Rugged die-cast aluminum housing with membrane front
- 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 for process connections (MPI and PROFIBUS DP up to 12 Mbit/s)
  - RS 232 for process connections and for downloading the configuration
  - Serial RS 232 printer port
- Slot for PC card

Functions

Operator functions

- Process operation using softkeys (diagram-dependent assignment of the F keys), function keys (fixed assignment of the K keys) and system keys (cannot be configured)

Message functions

- Process value indication
- Dynamic fields (character graphics, pixel graphics): e.g. input/output fields, moveable figures, bar displays, curves
- Process diagrams with static diagram elements (character graphics, pixel graphics)
- Evaluation of machine status (hiding of dynamic fields, diagrams, etc. depending on a variable or on a change in display mode, such as color inversion or flashing)
- Management and editing of status and fault messages with message history
- Definition of message priorities and differentiation between first and last messages
- Additional help texts for process diagrams, messages and variables

Other functions

- Safe process control using limit value monitoring from the OP for inputs/outputs
- Relieving the PLC using conversion functions in the OP
- STATUS VAR/CONTROL VAR PG functionality in conjunction with SIMATIC S5 and SIMATIC S7
- Integrated printer port
- Printer functions: Hardcopy, message printouts, shift log (through diagram list printout)
- Language selection (3 online languages), including Chinese and Korean
- Recipe management
  - Storage of recipe data and configurations on a memory card (type 2 PC card) or the stand-alone service tool ProSave
- Password protection against unauthorized inputs (9 levels)
- Current control and screensaver to extend the lifespan of the CCFL backlighting
- Many linking possibilities for various PLCs using integrated interfaces:

The OP also offers the following possibilities for time-critical operating sequences:

- 24 V DC direct keys (optional)
  Module with 8 24 V DC outputs that can be activated via OP softkeys
- DP direct control keys
  OP keys as I/O peripherals through PROFIBUS DP (hotkeys)
- Control Panel Interface (CPI) (optional)
  for connecting external keys or LEDs as I/O peripherals through the OP on PROFIBUS DP (for SIMATIC S7)

Configuration

Configuring is performed using the configuration software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see configuration or visualization software)

Options

SIMATIC ProAgent for OP;
specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see "process diagnostics software").

Integration

The OP27 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- Third-party PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - AEG Modicon
  - Omron
  - GE-Fanuc

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

SIMATIC OP27

Technical specifications

Type	OP27 mono
Display	STN liquid crystal display (LCD)
• Size	5.7"
• Resolution (pixels)	320 x 240
• Colors	8 gray levels
• MTBF of background lighting (at 25 °C)	Approx. 50,000 hours
Control elements	Membrane keyboard
• Function keys, programmable	24 function keys, 18 with LED
• System keys	24 system keys
• Numeric/alphanumeric input	Yes/yes
Operating system	RMOS
Memory	
• Type	Flash / RAM
• Usable memory for user data	1024 KB
Interfaces	1 x TTY, 2 x RS232, 1 x RS422, 1 x RS485
• PC card slot	1 x PC card slot
Printer	Yes
Connection to PLC	S5, S7-200, S7-300/400, 505, Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other third-party PLCs
Supply voltage	24 V DC
• Rated voltage	24 V
• Permitted range	+18 to +30 V DC
• Current consumption, typ.	0.3 A
Backup battery	Optional, 3.6 V
Clock	Hardware clock, with back-up
Degree of protection	
• Front	IP 65 (installed)
• Rear	IP 20
Certification	CE, UL, CSA, FM
Dimensions	
• Front (W x H in mm)	296 x 192
• Mounting cutout/depth W x H x D (mm)	282 x 178 x 59
• Mounting depth	
- With optional direct key module and cable (mm)	107
- With optional Control Panel Interface and cable (mm)	94
Weight (kg)	1.85
Ambient conditions	
• Mounting position	
- 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
• Relative humidity, max.	95%

Type	OP27 mono
Expansion for operator-process communication	
• 24 V DC direct key module/outputs	8
• CPI module for connection of	16 or 32 keys and 16 or 32 indicator lights
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	F1 to F14, K1 to K10
Functions	
Message system	
• Status messages	2000
• Fault messages	2000
• System messages	Yes
• Message length (lines x characters)	2 x 35
• Number of process values per message	8
• Message buffer	Ring buffer with battery back-up, 256 entries each
Recipes	255
• Data records per recipe	500
• Entries per data record	500
• Recipe memory	32 KB integrated flash, expandable
Process diagrams	300
• Text objects	10,000 text elements
• Variables per diagram	200
• Graphics objects	Bitmaps, icons, background images, character graphics
• Dynamic objects	Graphs, bars
Variables	2048
Password protection (levels)	9
Printer functions	Hardcopy, messages, shift log
Online languages	3
• 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	Pictographic languages are scalable
Help text	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7
Configuration tool	ProTool Version 3.1 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)
• Transfer of the configuration	Serial / MPI / PROFIBUS DP

2

Ordering Data

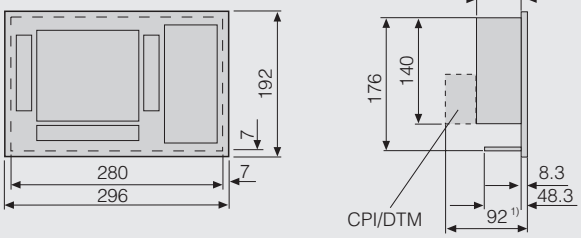
	Order No.
SIMATIC OP27	
Operator panel with 5.7" STN monochrome LC display, incl. mounting accessories	**6AV3 627-1JK00-0AX0**
Configuration	
with SIMATIC ProTool or SIMATIC ProTool/Pro CS	**see Section 4**
Options	
SIMATIC ProAgent	**see Section 4**
Configuration set for OP27	**6AV6 573-1BA06-0CX0**
Comprising:	
• SIMATIC ProTool configuration software with user manual	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• Standard function blocks for SIMATIC S5	
• Connecting cable between PG/PC (9-core, RS 232C) and OP, 3.2 m long (6XV1 440-2KH32)	
Documentation (to be ordered separately)	
Manual OP27/OP37	
• German	**6AV3 991-1AK01-0AA0**
• English	**6AV3 991-1AK01-0AB0**
• French	**6AV3 991-1AK01-0AC0**
• Italian	**6AV3 991-1AK01-0AD0**
• Spanish	**6AV3 991-1AK01-0AE0**
Communications Manual	
Instructions for connecting the TD/OP/TP to the PLC	
• German	**6AV3 991-1BC05-1AA0**
• English	**6AV3 991-1BC05-1AB0**
• French	**6AV3 991-1BC05-1AC0**
• Italian	**6AV3 991-1BC05-1AD0**
• Spanish	**6AV3 991-1BC05-1AE0**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

	Order No.
Options/expansion components	
Control panel interface (CPI)	
Interface module for connecting external buttons/indicator lights as I/O for the OP/TP to PROFIBUS DP (for SIMATIC S7), incl. mounting accessories, plugged-in to the rear	
• With 16 DO and 16 DI	**6AV3 672-1CA11**
• With 32 DO and 32 DI	**6AV3 673-1CA31**
24 V DC direct control key module	
Module with 24 V DC outputs that can be controlled via OP softkeys or TP buttons, incl. mounting accessories, plugged in to the rear	
• With 8 digital outputs	**6AV3 672-1CA01**
Accessories for reordering	
Labeling strips for keys	**6AV3 672-1CB00**
for softkeys and function keys, blank (plastic), 2 sets of each	
Service packet for OP27	**6AV3 672-1CC00**
Comprising:	
• Mounting seal	
• 1 set of labeling strips	
• 6 x clamping terminals	
• 2 x clip with screws for additional clamping terminals	
• 1 x key with M 2.5 hexagonal recessed hole	
• 1 x plug-in terminal block (block of four)	
• 2 x plug-in terminal block (block of five)	
• 4 x plug-in terminal block (block of nine)	
Memory cards	
(PCMCIA/Jeida)	
Flash EPROM	
• 2 MB	**6ES7 952-1KL00-0AA0**
• 4 MB	**6ES7 952-1KM00-0AA0**
• 8 MB	**6ES7 952-1KP00-0AA0**
• 16 MB	**6ES7 952-1KS00-0AA0**
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 and MP 370	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/85**

SIMATIC OP27

Dimension drawings

Dimensions in mm



1) Depth without options; with 24 V DC direkt control key module or control panel interface D= 92 mm, incl. cable connectors or + 15 mm for cable connection for 24 V DC direkt control key module

Panel cutout (W x H x D) in mm: 282 x 178 x 59

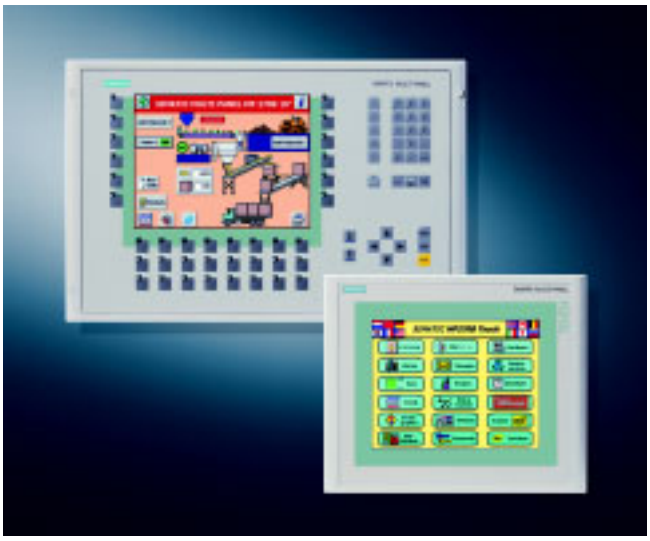
G_ST80_XX_00054

Further Information

For further information, visit our website at

http://www.siemens.com/panels

Overview



- Multi panels (MPs) can be used just like the operator panels for operating and monitoring machines on site.
- Their functions can be expanded by installing additional Windows CE applications (multi panel options)
- The SIMATIC MP 270B units based on Windows CE combine the ruggedness of operator panels with the flexibility of PCs
- Pixel graphics 10.4" TFT display, color (256 colors)
- *MP 270B Keys:*
  38 system keys, 36 freely-configurable and freely-inscribable function keys (28 with LEDs)
  MP 270B 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 overhead, reduces the lifecycle costs
- Modular expansion with multi panel options
  - ThinClient/MP for use as a terminal client
  - 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, PC/CF card, MPI, PROFIBUS DP, RS 232 (serial)
  - 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
  - Standard Windows storage format (CSV) for archives and recipes enables further processing using standard tools (e.g. MS Excel)

Area of 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

- 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
- IP 65/NEMA 4x/NEMA 12 degree of protection (front) or IP 20 (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

Functions

- Displaying and changing process parameters
- Function keys (only with MP 270B 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:
  - 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 a historical trend
  - Pre-configured message display, message window and message line
- Archiving messages and process values
  (on PC/CF card or network drive through Ethernet)
  - Various archive types: re-circulating 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 "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 editing on the panel
  - Storing of recipe data in standard Windows format (CSV)
  - External processing with standard MS Excel and MS Access tools
- STATUS VAR/CONTROL VAR PG functionality in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Representation of HTML documents with MS Pocket Internet Explorer
- Visual Basic Script, flexibility through implementation of new functions incl. interfacing with ProTool variables (relational 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 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/RS 232/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 with standard word processors

Configuration

Configuring is performed using the configuration software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration Version 6.0 upwards (see configuration or visualization software)

Multi panel options

SIMATIC ProAgent/MP
Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/ SIMATIC ProAgent process diagnostics software).

SIMATIC ThinClient/MP
use of the Multi Panel Touch versions as MS Windows terminal client and therefore use of the MS terminal services (see multi panel options/SIMATIC ThinClient/MP).

Integration

The MP 270B can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Other third-party controllers
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron
- Via Ethernet (TCP/IP) to the higher-level PC, network printer

Note:
For further information see "System interfaces"

Technical specifications

Type	MP 270B Keys	MP 270B Touch
Display	TFT liquid crystal display (LCD)	
• Size	10.4"	
• Resolution (pixels)	640 x 480	
• Colors	256 colors	
• MTBF of backlighting (at 25°C)	Approx. 50,000 hours	
Control elements	Membrane keyboard	Touch screen
• Function keys, programmable	36 function keys, 28 with LED	-
• System keys	38 system keys	-
• Alpha/numeric input	Yes/yes	
• External mouse, keyboard, bar-code reader	USB / USB / USB	
Processor	AMD	
Operating system	Win CE	
Memory		
• Type	Flash / RAM	
• Usable memory for user data	4096 KB	
Interfaces	2 x RS232, 1 x RS422, 1 x RS485	
• PC card slot	1 x PC card slot	
• CF card slot	1 x CF card slot	
• USB (Universal Serial Bus)	1 x USB	
• Ethernet	1 x Ethernet	
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST) Modicon (Modbus), other third-party PLCs	
Supply voltage	24 V DC	
• Rated voltage	24 V	
• Permitted range	+18 to +30 V DC	
• Current consumption, typ.	0.9 A	
Backup battery	Optional, 3.6 V	
Clock	Hardware clock, backed up and synchronized	
Degree of protection		
• Front	IP 65, NEMA 12, NEMA 4x, NEMA 4	
• Rear	IP 20	
Certification	FM, cULus, Ex zone 2, Ex zone 22, CE, C-TICK	
Dimensions		
• Front W x H (mm)	483 x 310	335 x 275
• Mounting cutout/depth W x H x D (mm)	436 x 295 x 55	310 x 248 x 59
Weight (kg)	6	4.5
Ambient conditions		
• Mounting position		
- 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	
• Relative humidity, max.	90%	

SIMATIC MP 270B

Technical specifications (cont.)

Type	MP 270B Keys	MP 270B Touch
Expansion for operator control of the process		
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	F1 to F12, K1 to K16	None
• DP direct keys/LEDs (TP buttons as I/O peripherals)	F1 to F20, K1 to K16	5-byte or encoded
Peripherals	Printer, barcode reader	
Applications	Internet Explorer, ProAgent	ThinClient, Internet Explorer, ProAgent
Functions		
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	Cyclic buffer, 512 entries each	
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	
• Entries per diagram	200	
• Graphics objects	Bitmaps, icons, background images, vector graphics	
• Dynamic objects	Diagrams, bars, slides, hidden buttons	
- Directories	Yes	
Variables	2048	
Archiving		
• Number of archives per project	20	
• Number of process tags per project	20	
• Archive types	Short-term archive, sequence archive, message archive, process value archive	
• Storage location	CF card, PC card, Ethernet	
• Data storage format	CSV	
• External evaluation	Can be read, e.g. by Excel, Access	
• Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network	
• Online evaluation	Using trend curves	
Password protection (levels)	10	
Visual Basic Scripts		
• Number	50	
• No. 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, ideographic languages freely scalable	
Help text	Yes	
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	
Timer	Yes	
Configuration tool	ProTool Version 6.0 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	
• Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	

Ordering Data

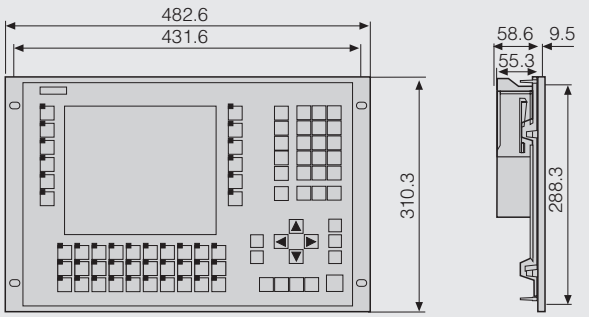
	Order No.
SIMATIC MP 270B	
Multi panel with	
• 10“ color TFT display, Touch	**6AV6 545-0AG10-0AX0**
• 10“ color TFT display, Key	**6AV6 542-0AG10-0AX0**
incl. mounting accessories	
Starter kit MP 270B with	
• Multi Panel MP 270B, Touch	**6AV6 575-1AH56-0CX0**
• Multi Panel MP 270B, Keys	**6AV6 575-1AH46-0CX0**
Comprising:	
• Multi Panel MP 270B	
• SIMATIC ProTool	
• Documentation CD, 5-language (English, French, German, 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**
Options	
SIMATIC ProAgent/MP	**see Section 4**
SIMATIC ThinClient/MP	**see page 2/81**
Documentation (to be ordered separately)	
Manual TP/OP 270 and MP 270B	
• 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**
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**
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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

	Order No.
Accessories for reordering	
Backup battery	**W79084-E1001-B2**
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	
Memory cards	
• CF card, 16 MB	**6AV6 574-2AC00-2AA0**
• PC card (ATA Flash), 64 MB	**6AV6 574-2AC00-2AF0**
Protective membrane	**6AV6 574-1AD00-4CX0**
for TP 270 10“, MP 270B Touch and MP 370 Touch, to protect the touch front from dirt and scratches (pack of 10)	
Service package for MP 270B Touch	**6AV6 574-1AA00-2CX0**
Comprising:	
• Mounting seal	
• 10 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
Service packet for MP 270B Keys	**6AV6 574-1AA00-2DX0**
Comprising:	
• Mounting seal	
• 2 sets of labeling strips	
• 10 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
TTY-to-RS 232 converter	**6ES5 734-1BD20**
for connection to S5 CPUs; length 3.2 m; Canon 15-pin – 25-pin	
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

SIMATIC MP 270B

Dimension drawings

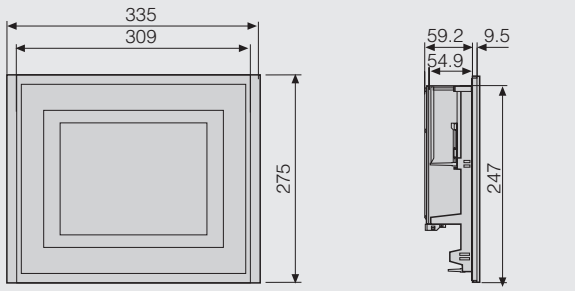
Dimensions in mm



Panel cutout (W x H x D) in mm: 436 x 295 x 55

MP 270B Keys

Dimensions in mm



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

MP 270B Touch

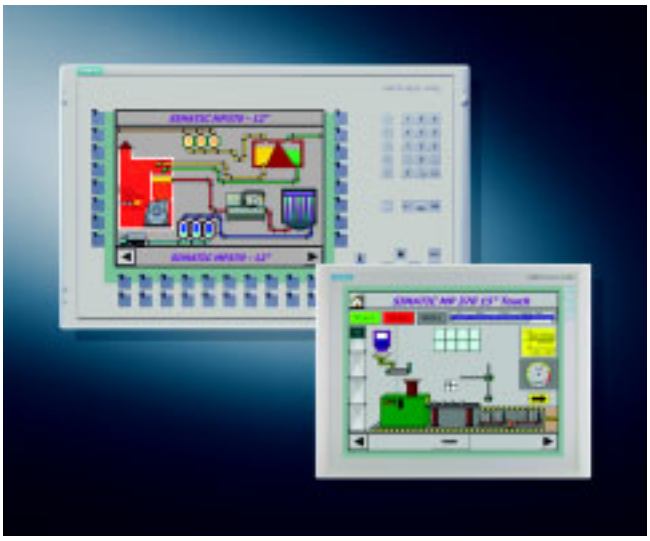
Further Information

For further information, visit our website at

http://www.siemens.com/mp

SIMATIC MP 370

Overview



- Multi panels (MPs) can be used just like the operator panels for operating and monitoring machines on site.
- Their functional scope can be expanded by installing additional Windows CE applications (multi panel options)
- The SIMATIC MP 370 units based on Windows CE combine the ruggedness of operator panels with the flexibility of PCs
- Pixel graphics 12.1" or 15.1" TFT display, color (256 colors)
- *MP 370 12" Keys:*
  38 system keys, 36 freely-configurable and freely-inscribable function keys (36 with LEDs)
  MP 370 12" and 15" Touch:
  Touch screen (analog/resistive)
- All interfaces on board, e.g MPI, PROFIBUS DP, USB, Ethernet, serial
- SIMATIC MP 370 Keys and MP 370 Touch are the innovated successors of the SIMATIC OP37 Operator Panels and SIMATIC TP37 Touch Panels.

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering overhead, reduces the lifecycle costs
- Modular expansion with multi panel options
  - Software PLC SIMATIC WinAC MP
  - ThinClient/MP for use as a terminal client
  - 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, PC/CF card, MPI, PROFIBUS DP, RS 232 (serial)
  - 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
  - Standard Windows storage format (CSV) for archives and recipes enables further processing using standard tools (e.g. MS Excel)

Area of 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.
- IP 65/NEMA 4x/NEMA 12 degree of protection (front) or IP 20 (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

SIMATIC MP 370

Functions

- Displaying and changing process parameters
- Function keys (only with MP 370B 12“ 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 370 12“:*
    SVGA resolution (800 x 600 pixels)
    MP 370 15“ Touch:
    XGA resolution (1024 x 768 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
  - Pre-configured 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 "Recommended 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 functionality in conjunction with SIMATIC S5 and SIMATIC S7
- Display selection from the PLC
  supports operator prompting from the PLC
- Representation of HTML documents 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 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/RS 232/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 with standard word processors

Configuration

Configuring is performed using the configuration software SIMATIC ProTool or SIMATIC ProTool/Pro Configuration (see configuration or visualization software). For the MP 370 15" Version 6.0 + SP2 upwards.

Multi panel options

SIMATIC ProAgent/MP
Specific and fast process fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI (see HMI software/ SIMATIC ProAgent process diagnostics software).

SIMATIC WinAC MP
Software PLC under Windows CE, executable on the SIMATIC MP 370 12“ Multifunctional Platform (see multi panel options/ SIMATIC WinAC MP).

SIMATIC ThinClient/MP
use of the Multi Panel Touch versions as MS Windows terminal client and therefore use of the MS terminal services (see multi panel options/SIMATIC ThinClient/MP).

Integration

The MP 370 can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMATIC S5
- SIMATIC 505
- SINUMERIK
- SIMOTION
- Third-party PLCs
  - Allen Bradley
  - Mitsubishi
  - Telemecanique
  - Lucky Goldstar GLOFA
  - Modicon
  - GE-Fanuc
  - Omron
- Via Ethernet (TCP/IP) to the higher-level PC, network printer

Note:
For further information see "System interfaces"

Technical specifications

Type	MP 370 12" Keys	MP 370 12" Touch	MP 370 15" Touch
Display	TFT liquid crystal display (LCD)		
• Size	12.1"	12.1"	15.1"
• Resolution (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 system keys	-	-
• Numeric/alphanumeric input	Yes/yes		
• External mouse, keyboard, bar-code reader	USB / USB / USB		
Processor	64-bit RISC CPU		
Operating system	Win CE		
Memory			
• Type	Flash / RAM		
• Usable memory for user data	12 MB (of which 7.1 MB for configuration)		
Interfaces	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485		
• PC card slot	1 x PC card slot		
• CF card slot	1 x CF card slot		
• USB (Universal Serial Bus)	1 x USB		
• Ethernet	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), Modicon (Modbus), OMRON (Link/MultiLink), other third-party PLCs		
Supply voltage	24 V DC		
• Rated voltage	24 V		
• Permitted range	+ 18 to + 30 V DC		
• Current input, normally	1.15 A	1,15 A	1,8 A
Backup battery	Optional, 3.6 V		
Clock	Hardware clock, backed up and synchronized		
Degree of protection			
• Front	IP 65, NEMA 12, NEMA 4x, NEMA 4		
• Rear	IP 20		
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, CE, C-TICK, EX Zone 2/22 (av. soon)
Dimensions			
• Front (W x H in mm)	483 x 310	335 x 275	400 x 310
• Mounting cutout/depth W x H x D (mm)	450 x 290 x 65	310 x 248 x 59	368 x 290 x 69
Weight (kg)	6	5	5.7
Ambient conditions			
• Mounting position			
- Max. permissible angle of inclination without forced ventilation	35°		
• Temperature			
- Operation (vertical installation)	0 to +50 °C		
- Operation (max. angle of inclination)	0 to +35 °C		
- Transport, storage	-20 to +60 °C		
• Relative humidity, max.	85 %	85 %	85 %
Expansion for operator control of the process			
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	S1 ... S16 F1 ... F20	None	None
• DP direct keys/LEDs (TP buttons as I/O peripherals)	None	5-byte or encoded	5-byte or encoded

SIMATIC MP 370

Technical specifications (cont.)

Type	MP 370 12" Keys	MP 370 12" Touch	MP 370 15" Touch
Peripherals	Printer, barcode reader, mouse, keyboard		
Applications	Soft PLC, Internet Explorer, ProAgent	Thin Client, Soft PLC, Internet Explorer, ProAgent	Thin Client, Internet Explorer, ProAgent
Functions			
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, 1024 entries each		
Recipes	500		
• Data records per recipe	1000		
• Entries per data record	1000		
• Recipe memory	128 KB integrated flash, expandable		
Process diagrams	300		
• Text objects	30,000 text elements		
• Variables per diagram	400		
• Entries per diagram	400		
• Graphics objects	Bitmaps, icons, background images, vector graphics		
• Dynamic objects	Diagrams, bars, sliders, hidden buttons		
- Libraries	Yes		
Variables	2048		
Archiving			
• Number of archives per project	50		
• Number of process tags per project	50		
• Number of sequence archives	40		
• Entries per archive	50,000		
• Archive types	Short-term archive, sequence archive, message archive, process value archive		
• Storage location	CF card, PC card, Ethernet		
• Data storage format	CSV		
• External evaluation	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		
• Online evaluation	Using trend curves		
Password protection (levels)	10		
Visual Basic Scripts			
• Number	50		
• No. of lines per script	100		
Printer functions	Color printout, hardcopy, messages, shift log		
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, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable		
Help text	Yes		
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7		
Timer	Yes		
Configuration tool	ProTool Version 5.2 SP3 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	ProTool Version 5.2 SP3 upwards, executable under Windows 98/SE/ME/NT/2000 operating system (to be ordered separately)	ProTool Version 6.0 SP2 upwards, executable under Windows 98/SE/ME/NT/2000/XP operating system (to be ordered separately)
• Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet		

Ordering Data

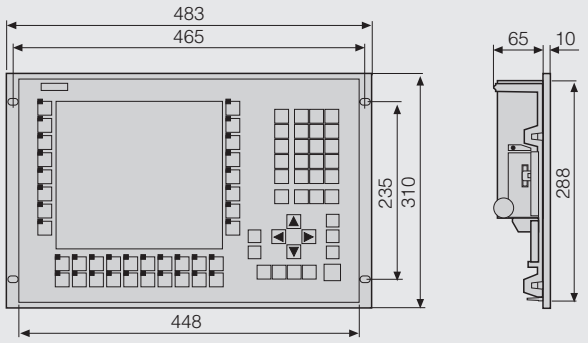
	Order No.
SIMATIC MP 370	
Multi panel with	
• 12“ color TFT display, Touch	**6AV6 545-0DA10-0AX0**
• 12“ color TFT display, Key	**6AV6 542-0DA10-0AX0**
• 15“ color TFT display, Touch	**6AV6 545-0DB10-0AX0**
incl. mounting accessories	
Configuration	
with SIMATIC ProTool and ProTool/Pro	**see Section 4**
Options	
SIMATIC ProAgent/MP	**see Section 4**
SIMATIC WinAC MP	**see page 2/79**
SIMATIC ThinClient/MP	**see page 2/81**
Configuration set for MP 370	**6AV6 573-1EB06-0CX0**
Comprising:	
• ProTool configuration software with user manual	
• Documentation CD, 5-language (English, French, German, Italian, Spanish)	
• Configuration cable between PG/PC and MP 370, 5.0 m long	
Documentation (to be ordered separately)	
Manual MP 370	
• 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**
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**
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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communication manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards), ProAgent and documentation for the multi panel options	

	Order No.
Accessories for reordering	
Backup battery	**W79084-E1001-B2**
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	
Memory cards	
• CF cards, 16 MB	**6AV6 574-2AC00-2AA0**
• PC card (ATA Flash), 64 MB	**6AV6 574-2AC00-2AF0**
Key labeling strips for MP 370 Keys	**6AV6 574-1AB00-2BA0**
for function keys, blank, 2 sets of each (plastic)	
Protective membrane	**6AV6 574-1AD00-4CX0**
for TP 270 10“, MP 270B Touch and MP 370 Touch, to protect the touch front from dirt and scratches (pack of 10)	
Protective membrane	**6AV6 574-1AD00-4EX0**
for MP 370 15" Touch, for protecting the touch front from dirt/scratches (pack of 10)	
Service package for MP 370 Touch	**6AV6 574-1AA00-2CX0**
Comprising:	
• Mounting seal	
• 10 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
Service packet for MP 370 Keys	**6AV6 574-1AA00-2BX0**
Comprising:	
• 2 sets of labeling strips	
• 6 clamping terminals	
• Plug-in terminal block (dual block)	
• In-bus key	
Configuring cable	**6ES7 901-1BF00-0XA0**
between PG/PC and MP, RS 232 cable (5 m)	
RS 485 bus connector with axial cable outlet (180°)	**6GK1 500-0EA02**
Connecting cables	**see page 2/103**
System interfaces	**see page 2/94**

SIMATIC MP 370

Dimension drawings

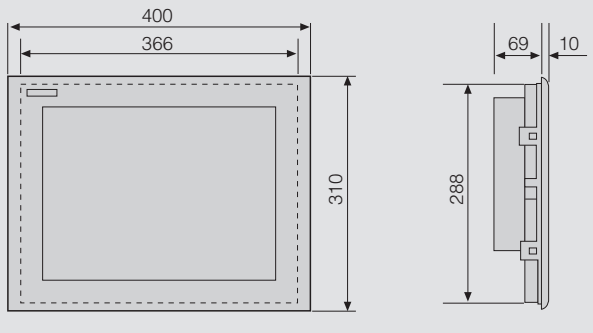
Dimensions in mm



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

MP 370 12“ Keys

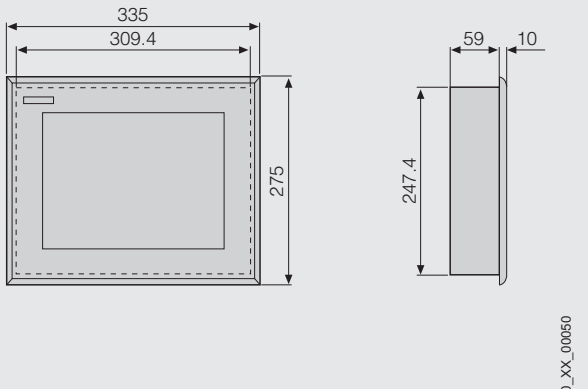
Dimensions in mm



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

MP 370 15“ Touch

Dimensions in mm



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

MP 370 12“ Touch

Further Information

For further information, visit our website at

http://www.siemens.com/mp

Overview

- The Software PLC for Windows CE, executable on the multi-functional platform MP 370 12"
- The cost-optimized solution for deterministic processes in conjunction with a rugged hardware platform. At the same time it is ideal for applications in which large amounts of data are processed.
- Ideal for tasks directly at the machine when a user-friendly user interface is extremely important or the control task demands large programs and extensive data memory

Area of 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 installation directly at the machine in a harsh industrial environment. SIMATIC MP 370 12" constitutes a rugged hardware platform without fan and without rotating mass storage.

SIMATIC WinAC MP, ProTool and the MP 370 12" are designed for perfect interaction. This increases the operational reliability in every situation over the service life.

The Windows CE V3.0 operating system on which they are based ensures real-time operation for WinAC MP. The high computing performance of the MP 370 12" permits a high processing rate for the PLC user program, and simultaneously enables high image updating rates for the visualization function.

Design

Compact design

All the components required for an automation task – control and visualization – are installed in a compact, easily installed 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.

Connection of the I/O

The distributed I/O is connected via the integrated MPI/PROFIBUS interface of the MP 370. WinAC MP configures this interface automatically when it is loaded on the MP 370 and then started. The I/O connection is set up and configured exclusively in the associated STEP 7 project.

Mode of operation

Visualization and operation with ProTool

Visualization on the MP 370 is performed with ProTool. WinAC MP and ProTool are automatically interconnected on installation without any special configuration. The complete TIA functionality therefore 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. For this purpose, special ProTool displays are integrated into the ProTool project which can be used by the operating 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 MP370 12", everything you need is "on board"; additional hardware or software components are not necessary. The MP 370 also has an integrated PROFIBUS interface, an Ethernet interface and RS232 and USB 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 installed on the MP 370 at the factory.

Loading user programs and ProTool projects

The integrated Ethernet interface of the MP370 is an important means for loading user programs and ProTool projects. When this interface is used, all communication functions are available, for example, 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.

SIMATIC 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 tailored to specific features of a SIMATIC S7 CPU.

Processing ProTool projects

ProTool projects for MP 370 are processed with ProTool CS. ProTool CS and STEP 7 work closely together and offer a common database which guarantees optimal integration in the creation of your application.

Technical specifications

SIMATIC WinAC MP V3.0	
User memory	
• Flash memory (integrated)	3 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 Mbit/s (MP 370 on board)
• Number of PROFIBUS DP slaves	32
Execution times	
• Bit operations (typ.)	0.4 µs
• Mathematical operations (typ.)	0.3 µs
Technology	
• SIMATIC FMs	FM350, FM351
• Easy Motion Control	Yes
System requirements	SIMATIC MP 370 Touch 12" or MP 370 Keys 12"
• Hardware	MP 370 Touch 12" or MP 370 Keys 12"
• Operating system	Windows CE 3.0
• PLC programming software	STEP 7, Version 5.1 SP2 and higher
• Configuration software for visualization	ProTool Version 6.0, SP1 and higher
• Communication software for Industrial Ethernet (only required on the programming device)	SOFTNET PG for IE

Ordering Data

	Order No.
SIMATIC WinAC MP V3.0	**6ES7 671-0EC01-0YX0**
Single license for 1 installation: R-SW, SW and docu on CD-ROM, license key on FD, Class A, 3 languages (G, E, F), executable under WinCE-Hardware SIMATIC MP 370 12"	

Further Information

For further information, visit our website at

http://www.siemens.com/mp

Overview

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

Benefits

- PC functionality on rugged, compact, cost-effective Windows CE platform
- Implementation of exclusive Thin Client solutions as well as Thin Client functionality in parallel with visualization with ProTool
- Low administration and maintenance costs, because these are usually incurred by the central terminal server and not by each terminal client
- Easy operation
- The opportunity for invalid command input is prevented with automatic connection to the terminal server during startup of the multi panel (Auto start)
- Uncomplicated connection build-up to the terminal server by means of pre-configured buttons
- Increased security due to individual release of the operating possibilities for the user on the server side

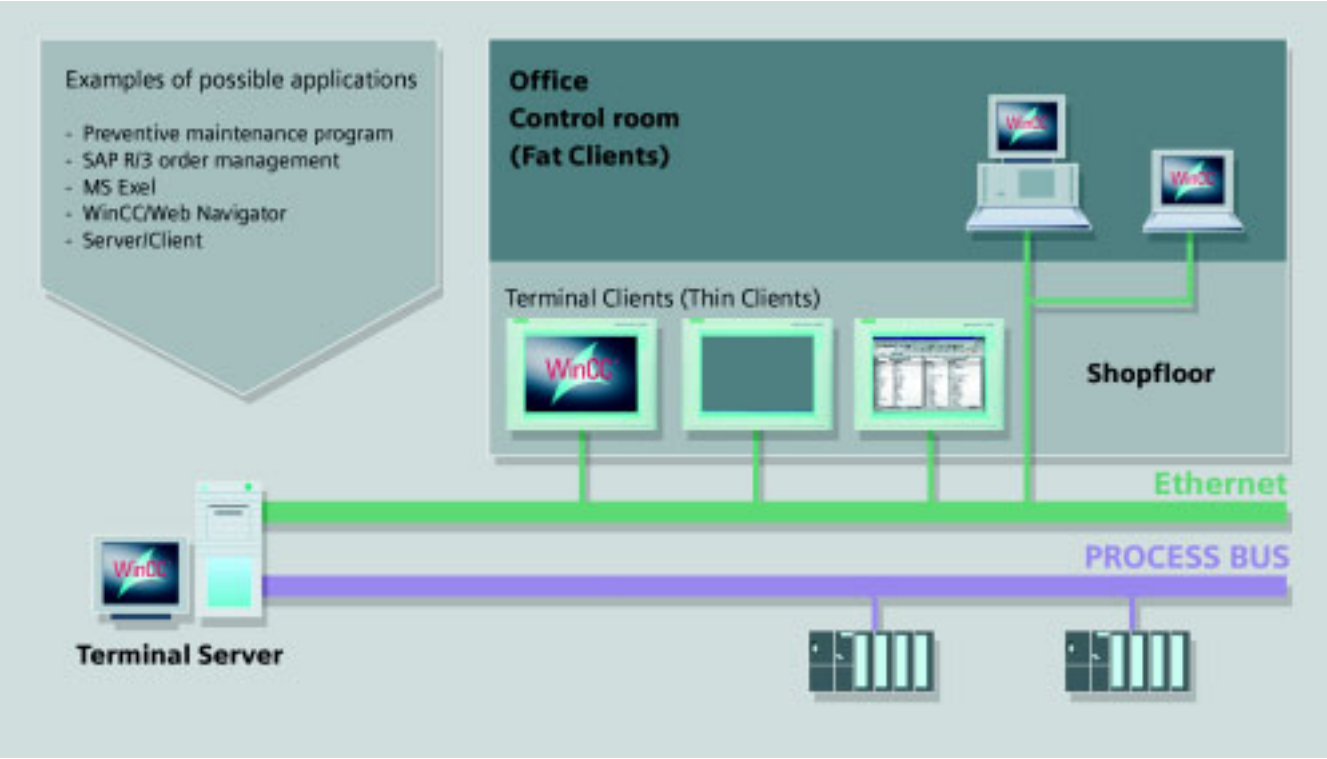
SIMATIC ThinClient/MP

Area of 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.

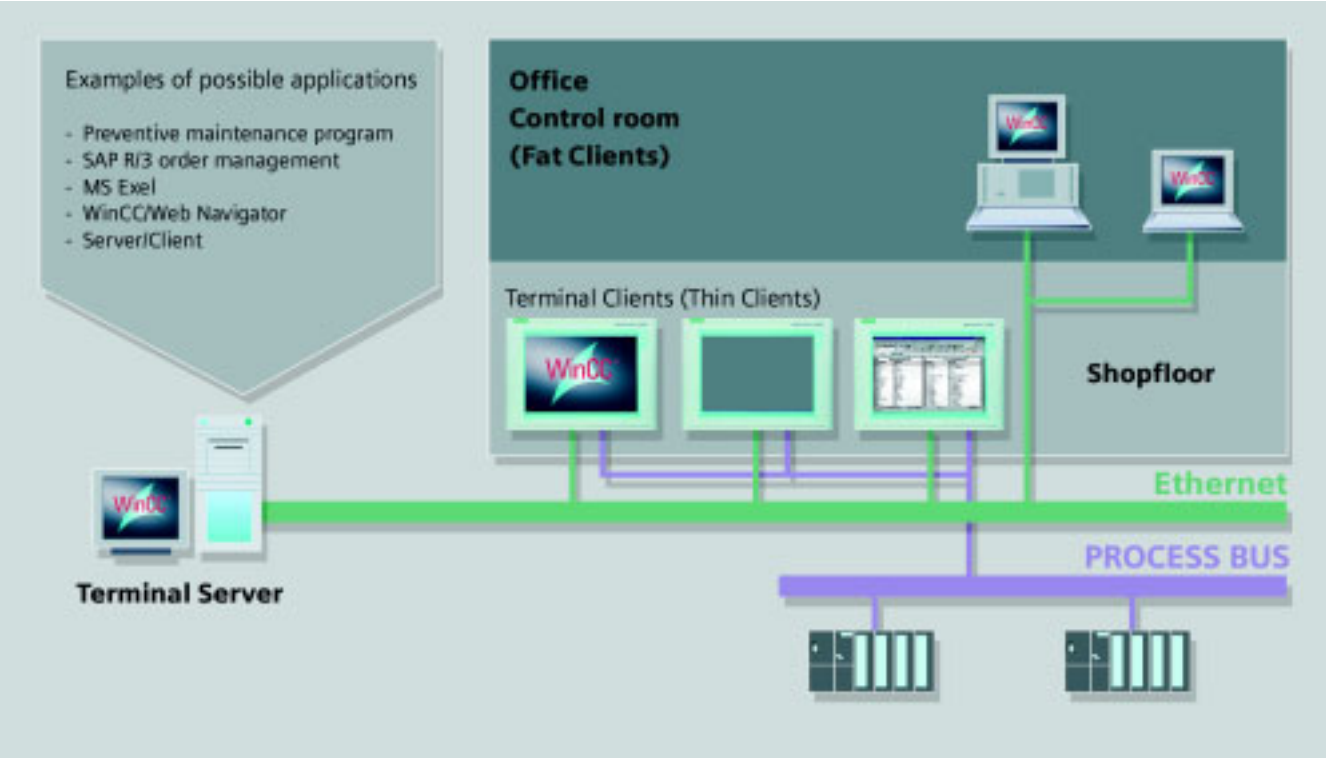
Multi panel simply as a Thin Client

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. HMI at machine level with ProTool and direct connection to the PLC are not available. All applications – visualization, maintenance management, quality assurance or office applications – are implemented on the terminal server which can also connect to the process.



Visualization and Thin Client in parallel

When the multi panel is used in parallel operation, in addition to local process visualization with ProTool 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 SIMATC 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.



Functions

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 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

- Auto start 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 the connection settings ensures quick and reliable connection setup

ThinClient/MP is executable on:

- SIMATIC MP 270B 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.

SIMATIC ThinClient/MP

Integration

Communication to the terminal server is performed via the Ethernet interface integrated into the multi panel using Microsoft RDP (Remote Desktop Protocol), making the complicated installation of additional interface cards superfluous.

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

The option is delivered complete with 3 licenses. This allows the option to be installed on up to three MP 370 Touch or MP 270B Touch.

The licenses required for the terminal server from Microsoft are not included in the scope of supply of this package.

Technical specifications

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

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

Ordering Data

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

Further Information

For further information, visit our website at

http://www.siemens.de/mp

Overview

The SIMATIC Text Displays (TD) TD17 and Operator Panels (OP) [1] OP3, OP7, OP17, OP27, provide HMI functionality in conjunction with

- SIMATIC S5
- SIMATIC S7
- SIMATIC 505
- SINUMERIK [2]
- Third-party 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(UNI-TELWAY protocol)

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 certain functions, this will be stated explicitly in the text.

2) For further information, see Catalog NC 60

SIMATIC S5

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 second CPU interface (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 (OP27 not through CP 521). In ET 200, 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 connected 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.

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 including versions /PP	/DP	/DP-12	OP27	Connected via
SIMATIC S5 (AS511)							
S5-90U to S5-135U *(1st/2nd PG interface)* except CPU 945, except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11) (15-pin socket/TTY)	●	—	●	—	●	●	**6XV1 440-2A...** (max. 1000 m)
SIMATIC S5 (FAP)							
S5-115U/CPU 943B, CPU 944A/B *(2nd interface)* (15-pin socket/TTY)	●	—	●	—	●	●	**6XV1 440-2A...** (max. 1000 m)
S5-115U/CPU 945B, -135U/CPU 928B *(2nd interface)* (25-pin socket/TTY)	●	—	●	—	●	●	**6XV1 440-2J...** (max. 1000 m)
S5-115U/CPU 945B, -135U/CPU 928B *(2nd interface)* (25-pin socket/RS 232)	●	—	●	—	●	●	**6XV1 440-2J...** (max. 16 m)
S5-95U, -100U/CPU 103 with *CP 521SI* (25-pin socket/TTY)	●	—	●	—	●	—	**6XV1 440-2G...** (max. 1000 m)
S5-95U, -100U/CPU 103 with *CP 521SI* (25-pin socket/RS 232)	●	—	●	—	●	—	**6XV1 418-0C...** (max. 16 m) + **6XV1 440-2DE32** (max. 0.32 m)
S5-115U, -135U, -155U with *CP 523* except CPU 945, except CPU 922 < Version 9, except CPU 928 (6ES5 928-3UA11) (25-pin socket/TTY)	●	—	●	—	●	●	**6XV1 440-2F...** (max. 1000 m)
SIMATIC S5 (PROFIBUS DP + FAP)							
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 Mbits/s; OP/DP and OP17/DP max. 1.5 Mbit/s
2) Bus connector for OP: **6GK1 500-0EA02**

SIMATIC S7

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 back plane 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
- OP27: 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.

PLC **Target hardware (PROTOCOL)** (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 including versions /PP	/DP	/DP-12	OP27	Connected via
SIMATIC S7 (PPI/MPI)							
S7-200 via *PPI*, **S7-300/400** via *MPI* **(PG/OP communication)** (9-pin socket/RS 485)	–	●	–	–	–	–	**6ES7 705-0AA00-7BA0** [1] (2.5 m)
PPI network via **connecting cable** **6ES7 705-0AA00-7BA0** (bus connector with PG interface) to max. 2 x **S7-200**	–	●	–	–	–	–	**PPI network** (see Catalog ST 70)
MPI network via **connecting cable** **6ES7 705-0AA00-7BA0** (bus connector with PG interface) to max. 2 x **S7-300/400**	–	●	–	–	–	–	**MPI network** (see Catalog ST 70)
S7-200 via *PPI* **S7-200** via *MPI* **(PG/OP communication),** **S7-300/400** via *MPI* **(PG/OP communication)** **S7-300/400** via *PROFIBUS* **(PG/OP communication)** (9-pin socket/RS 485)	●	–	–	●	●	●	**6ES7 901-0BF00-0AA0** [2] (5 m)
via *PPI network* to max. 2 x **S7-200**	●	–	–	●	●	●	**PPI network** [3] (see Catalog ST 70)
via *MPI network* **(PG/OP communication)** to max. 4 x **S7-200, S7-300, -400, WinAC**	●	–	–	●	●	●	**MPI network** [3] (see Catalog ST 70)
via *PROFIBUS network* **(PG/OP communication)** to max. 4 x **S7-300, S7-400, WinAC**	●	–	–	●	●	●	**PROFIBUS** [3] [4] (see Catalog ST 70/IK PI)

● System coupling is possible
– System coupling is 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

SIMATIC 505

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	SIMATIC HMI						
Target hardware (PROTOCOL) (connector/physical characteristics)	**TD17**	**OP3**	**OP7 / OP17 including versions**			**OP27**	**Connected via**
			/PP	**/DP**	**/DP-12**		
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 is not possible

Overview

Allen Bradley (not OP3)

Two communication protocols are available for connecting SIMATIC OPs to Allen Bradley.

DF1 interface

This communication method between SIMATIC OPs and Allen Bradley is based on the DF1 protocol (logical point-to-point relationship). The following have been tested and approved:

- Direct connection of an OP to the programming device interface of an Allen Bradley PLC5
- Direct connection of an OP to the DF1 interface of an Allen Bradley SLC 500

SIMATIC OPs are not approved for integration into the Allen Bradley DH+ or DH485 network using Allen Bradley "communication adaptors" (which are actually gateways).

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 programming device interface of an Allen Bradley SLC 500 or MicroLogix (point-to-point relationship)
- Integration of OPs in an Allen Bradley DH485 network and communication between OPs and one or more SLC 500 or MicroLogix in the network (multipoint relationship from the viewpoint of the OP)
  Regarding the maximum number of OP connections, the same values as for the SIMATIC S7 apply

GE-Fanuc (not OP3)

Communication between SIMATIC OP and GE-Fanuc is based on the SNP/SNPX protocol. The following have been tested and approved:

- Direct connection of an OP to the programming device interface of a GE-Fanuc 90-30 or 90-70 (logical point-to-point relationship)
- Integration of OPs in a GE-Fanuc network and communication between OPs (SNP/master) and one or more GE-Fanuc 90-30 or 90-70(s) (SNP slave) in the network (multipoint relationship as seen from the OP)
  Regarding the maximum number of OP connections, the same values as for the SIMATIC S7 apply

Mitsubishi (not OP3)

Communication between SIMATIC OP and Mitsubishi is based on the FX protocol. Direct connection of an OP to the programming device interface of a Mitsubishi FX or FX0 (logical point-to-point relationship).

Modicon (not OP3)

Communication between SIMATIC OP and Modicon is based on the MODBUS protocol. The following are 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) through MODBUS with both parties using the Modicon MODBUS J878 modem with a maximum distance of 4,000 m (logical point-to-point relationship)
- Integration of an OP through Modicon MODBUS PLUS bridge BM85-000 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)
- Integration of an OP through the bridge function of a Modicon 984-145 or TSX Quantum in a MODBUS PLUS network and communication between the OP (MODBUS master) and a Modicon 984 or TSX Quantum (MODBUS slave) in the network (logical point-to-point relationship)

Omron (not OP3)

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

Telemecanique (not OP3)

Two communication protocols are available for connecting SIMATIC OP to Telemecanique.

ADJUST interface

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

UNI-TELWAY interface

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

- Connection of an OP (UNI-T slave) through a Telemecanique TSX SCA62 connection socket to a Telemecanique TSX 17 or TSX 47/67/87/107 (UNI-T master) (logic point-to-point relationship)
- Connection of an OP (UNI-T slave) through Telemecanique TSX SCA62 and ACC01 connection sockets to a Telemecanique TSX 37 or TS X57 (UNI-T master) (logical point-to-point relationship)
- Integration of an OP through a Telemecanique TSX SCA62 connection socket in a UNI-TELWAY network and communication between OP (UNI-T slave) to 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)

Third-party PLCs

PLC Target hardware (PROTOCOL) (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 including versions /PP	/DP	/DP-12	OP27	Connected via
Allen Bradley (DF1)							
SLC 500/03,04,05 (9-pin male/RS 232)	●	—	●	—	●	●	**6XV1 440-2K...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (25-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-2L...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (25-pin female/RS 422)	●	—	●	—	●	●	**6XV1 440-2V...** (max. 60 m)
Allen Bradley (DH485)							
SLC 500/03,04,05 or **MicroLogix** (9-pin male/RS 232)	●	—	●	—	●	●	**6XV1 440-2K...** (max. 15 m)
Via *DH485 network* to max. 4 x **SLC 500/00,01,02,03,04** or **MicroLogix**	●	—	●	—	●	●	**DH485 network** (see online Help)
Mitsubishi (FX)							
Via **Mitsubishi programming device cable SC-07** to **FX0** (9-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-2UE32** (0.32 m)
Via **Mitsubishi programming device cable SC-08** to **FX** (9-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-2UE32** (0,32 m)
FX0 (Mini-DIN 8-pin socket/RS 422)	●	—	●	—	●	●	**6XV1 440-2P...** (max. 500 m)
FX (Mini-DIN 8-pin female/RS 422)	●	—	●	—	●	●	**6XV1 440-2R...** (max. 500 m)
GE-Fanuc (SNP/SNPX)							
Via *SNP network* to max. 4 x **GEF 90-30, 70**	●	—	●	—	●	●	**SNP network** (see online Help)
Modicon (MODBUS)							
984-120, 130, 131, 141, 145, 380, 381, 185, 480, 485, 680, 685, 780, 785 or **TSX Quantum – CPU 113, 213, 424, 434, 534** (9-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-1K...** (max. 15 m)
Via **Modem J878/***MODBUS*to **984-120, ...** or **TSX Quantum – CPU 113, ...** (25-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-2L...** (max. 15 m)
Via **Bridge BM85-000** or PLC with Bridge functionality / *MODBUS PLUS – network* to **984-120, ...** or **TSX Quantum – CPU 113, ...** (9-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-1K...** (max. 15 m)
Omron (LINK)							
• SYSMAC C (except CPU CQM1 – CPU 11/21) • SYSMAC α • SYSMAC CV (9-pin female/RS 232)	●	—	●	—	●	●	**6XV1 440-1X...** (max. 15 m)

● System coupling is possible
— System coupling is not possible

PLC Target hardware (PROTOCOL) (connector/physical characteristics)	SIMATIC HMI TD17	OP3	OP7 / OP17 including versions /PP	/DP	/DP-12	OP27	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 connection socket TSX SCA62 + ACC01 to TSX 37/57 (15-pin female/RS 485)	●	–	●	–	●	●	**6XV1 440-1E...** (max. 20 m)
Via connection socket TSX SCA62 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 is not possible

Overview

Overview

The SIMATIC Touch Panels (TP) TP 070, TP 170A, TP 170B, TP 270, Operator Panels (OP) OP 170B, OP 270, Mobile Panel 170, Multifunctional Platforms (MP)[1] MP 270B, MP 370 as well as the SIMATIC HMI software for PC ProTool/Pro Runtime provide HMI functionality in combination with:

- SIMATIC S5
- SIMATIC S7
- SIMATIC 505
- SINUMERIK [2]
- SIMOTION [2]
- Third-party 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 SLC 500/00, 01, 02, 03, 04 and MicroLogix (DH485 protocol)
  - GE Fanuc 90-Micro, 90-30 and 90-70 (SNP/SNPX protocol)
  - Lucky Goldstar 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)

You will find more detailed information in the ProTool User's Guide, the Windows-Based Systems Communications Manual and the online Help.

1) For simplicity, the abbreviation "MP" is used in the text below. This does not imply any constraints; the statements are applicable to all the above-mentioned Windows-based systems. If there are any restrictions, this is stated explicitly in the text.

2) For further information, see Catalog NC 60 or PM 10

Overview

A range of interfaces of varying types and capacities are available for connecting SIMATIC MP (not TP 070) to SIMATIC S5 (not S5-150U). The one common feature is that, as far as the connected MP is concerned, the link is always a logical point-to-point connection, i.e. an 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 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 MPs 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 MPs can be connected as slaves through one PROFIBUS network to one SIMATIC S5 with separate PROFIBUS DP/IM 308C master interface, or CP 5431 FMS/DP.

Communication between 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 MP (this FB is included with ProTool).

PLC	**SIMATIC HMI**						
Target hardware (PROTOCOL) (physical characteristics)	**TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime**	**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 is 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 S7

Overview

Three different types of interface are used for communication between SIMATIC MP and SIMATIC S7:

- PPI interface:
  For linking the SIMATIC MP to SIMATIC S7-200 via PPI
- MPI interface:
  For linking the SIMATIC MP to SIMATIC S7 via MPI or PROFIBUS. In this case, the SIMATIC MP uses the "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 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 back plane bus to the SIMATIC S7 CPU.

The PROFIBUS interface and MPI interface are functionally identical (SIMATIC MPs 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 MP, the following limitations apply:

- TP 070, TP 170A: 1 connection [1)]
- TP 170B, OP 170B, Mobile Panel 170: max. 4 connections
- TP 270, OP 270, MP 270B, MP 370: max. 6 connections
- PC with ProTool/Pro Runtime: max. 8 connections

PPI interface (not TP 070)

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

One 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).

MPI Interface/PROFIBUS Interface

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

- One MP (MPI master) to one or more S7-300/400(s) (MPI master)
- One MP (MPI master) to one or more S7-300/400(s) (MPI master)
- One MP (MPI master) to one or more S7-200(s) (MPI slave)[2)]
- Several MPs (MPI master) to one or more S7-200(s) (MPI slave)[2)]

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 CPU 212) to be integrated in MPI or PROFIBUS networks.[2)]

The method of exchanging information between SIMATIC MP and SIMATIC S7 is independent of whether an MPI or PROFIBUSnetwork is used: The SIMATIC MPs are S7 clients and the SIMATIC S7 CPUs are S7 servers.

1) TP 070 can only be connected to S7-200 point-to-point; network operation (parallel programming device, etc.) is not possible.

2) For transmission rate limitations for the S7-200, see Catalog ST 70.

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime**	**Connected via**
SIMATIC S7 (PPI/MPI)							
via *PPI* to **S7-200**	● 1)	—	● 2)	● 2) 3)	● 2)	● 2) 4)	**6XV1 830-1CH30** 5) (3.2 m)
via *MPI* (**PG/OP communication**) to **S7-200**	—	● 6)	● 7)	● 3)	●	● 4)	**6XV1 830-1CH30** 5) (3.2 m)
via *MPI* (**PG/OP communication**) to **S7-300, -400**	—	—	● 7)	● 3)	●	● 4)	**6XV1 830-1CH30** 5) (3.2 m)
via *PPI* network to max. 1 x **S7-200**	—	—	●	● 3)	●	● 4)	**PPI network** 8) (see Catalog ST 70)
via *MPI* network (**PG/OP communication**) to max. 4 x **S7-200, -300, -400, WinAC**	—	—	● 7)	● 3) 9)	● 9)	● 4) 9)	**MPI network** 8) (see Catalog ST 70)
via *PROFIBUS* network (**PG/OP communication**) to max. 4 x **S7-300, -400, WinAC**	—	—	● 7)	● 3) 9)	● 9)	● 4) 9)	**PROFIBUS network** 8) (see Catalog ST 70)

● System coupling is possible
— System coupling is not possible

1) Max. 187.5 kbit/s; cable included in scope of supply
2) Only for connecting 1 x S7-200; network operation (parallel programming device, etc) is possible
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) MPI cable 6ES7 901-0BF00-0AA0 (max. 187.5 kbit/s) included in scope of supply of the programming device
6) Max. 19.2 kbit/s, only for connecting point-to-point to S7-200; network operation (parallel programming device, etc.) is not possible
7) Max. 1.5 Mbit/s, only for connecting to 1 x S7-200, S7-300/-400 or WinAC; network operation (parallel programming device, etc.) is possible
8) Bus connector 6GK1 500-0EA02
9) Depending on the scope of configuration (communication), up to 8 S7 connections are possible (not Mobile Panel 170, TP 170B and OP 170B)

SIMATIC 505

Overview

A range of interfaces of varying types and capacities are available for connecting SIMATIC MPs (not TP 070) to SIMATIC 505. The one common feature is that, as far as the connected MP is concerned, the link is always a logical point-to-point connection, i.e. an MP is always permanently assigned to one programmable controller.

NITP interface

The NITP interface operates through the PG interface of the SIMATIC 505 and uses the respective CPU resources, i.e. the performance of the 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 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.

The MP (DP slave) and SIMATIC 505 (DP master) communicate with PROFIBUS DP messages according to EN 50170 with superimposed “HMI profile". The programmable controller must contain an application ladder, which is called up for each connected MP (an application ladder example is included with ProTool).

PLC	**SIMATIC HMI**						
Target hardware (PROTOCOL) (physical characteristics)	**TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro 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 Catalog ST 50/IK PI)

● System coupling is possible
— System coupling is 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 communication protocols are available for connecting SIMATIC MPs (not TP 070) to Allen Bradley.

DF1 interface

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

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

DH485 interface

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

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

Lucky Goldstar

SIMATIC MPs (not TP 070) and Lucky Goldstar GLOFA GM use the dedicated protocol to communicate with each other; The following have been tested and approved:

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

Mitsubishi

Two communication protocols are available for connecting SIMATIC MPs (not TP 070) to Mitsubishi.

FX protocol

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

MP4 protocol

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

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

Modicon

Communication between SIMATIC MPs (not TP 070) and Modicon is based on the MODBUS protocol. The following have been tested and approved:

- Direct connection of an MP to the MODBUS interface of a Modicon 984, a TSX Quantum or a TSX Compact (point-to-point relationship).
- The integration of an MP through Modicon MODBUS PLUS BM85-000 bridge or the bridge function of a MODICON 984-145 or TSX Quantum in a MODBUS PLUS network and communication between MP (MODBUS master) and up to four Modicon 984 or TSX Quantum PLCs (MODBUS slaves) within the network (multipoint relationship from the viewpoint of the MP; only one connection is possible with TP 170A)

Omron

Communication between SIMATIC MPs (not TP 070) and Omron is based on the Link/MultiLink protocol. The following have been tested and approved:

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

Telemecanique

Data exchange between SIMATIC MPs (not TP 070) and Telemecanique is based on the UNI-TELWAY protocol. The following have been tested and approved:

- Connection of an MP (UNI-T slave) through a Telemecanique TSX SCA62 connection socket to a Telemecanique TSX 17 or TSX 47/67/87/107 (UNI-T master) (logical point-to-point relationship)
- Connection of an MP (UNI-T slave) through Telemecanique connection sockets TSX SCA62 + ACC01 to a Telemecanique TSX 37 or TSX 57 (UNI-T master) (logical point-to-point connection)
- Integration of an MP through the Telemecanique TSX SCA62 port in a UNI-TELWAY network and communication between MP (UNI-T slave) and up to four 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 MP; only one connection is possible with TP 170A)

Third-party PLCs

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime**	**Connected via**
Allen Bradley (DF1)							
SLC 500/03,04,05 or MicroLogix (RS 232)	–	–	●	●	– ●	●	**1747 CP3** [1] **6XV1 440-2K...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 232)	–	–	●	●	– ●	●	**1784 CP10** [1] **6XV1 440-2L...** (max. 15 m)
PLC 5/11,20,30,40,60,80 (RS 422)	–	–	●	●	●	●	**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)	–	–	● 5)	●	– ●	●	**1784 CP10** [1) 2)] **6XV1 440-2L...** [2)] (max. 15 m)
Via **Gateway KF3** and *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 232)	–	–	● 5)	●	– ●	●	**1784 CP10** [1) 2)] **6XV1 440-2L...** [2)] (max. 15 m)
Allen Bradley (DH485)							
SLC 500/03,04,05 or **MicroLogix** (RS 232)	–	–	●	●	●	●	See online Help [3)]
Via **Adapter AIC** and *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 232)	–	–	● 5)	●	●	●	See online Help [3)]
Via *DH485 network* to max. 4 x **SLC 500** or **MicroLogix** (RS 232)	–	–	● 5)	●	●	–	See online Help [3)]
GE-Fanuc (SNP/SNPX)							
GEF 90-Micro, 90-30, 90-70 (RS 232)	–	–	●	●	●	●	See online Help [3)]
Via **Adapter** to max. 4 x **GEF 90-Micro, 90-30, 90-70** (RS 232)	–	–	● 5)	●	●	●	See online Help [3)]
To max. 4 x **GEF 90-Micro, 90-30, 90-70** (RS 422)	–	–	● 5)	●	●	–	See online Help [3)]
Lucky Goldstar GLOFA (Dedicated)							
GLOFA-GM with Cnet module (RS 232)	–	–	●	●	●	●	See online Help [3)]
To max. 4 x **GLOFA-GM with Cnet module** (RS 422)	–	–	● 5)	●	●	–	See online Help [3)]

● System coupling is possible
– System coupling is not possible

1) Allen Bradley PC cable
2) Cable for connecting to KF2/KF3 gateway; at the gateway end, a Gander changer 25-pin female/25-pin female is required
3) For detailed information (cable assignment), see the ProTool online Help or the "Communication User's Guide for Windows-Based Systems"
4) Mitsubishi PC cable with integrated level converter RS 232/RS422; for connection to MP 270, a 15-pin male/9-pin male adapter 6XV1 440-2UE32 is required
5) TP 170A can only be connected to one PLC

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime**	**Connection using**
Mitsubishi (FX)							
FX0 (RS 422)	–	–	●	●	●	●	**SC-07** [1]
			●	●	●	–	**6XV1 440-2P...** (max. 20 m)
FX (RS 422)	–	–	●	●	●	●	**SC-08** [1]
			●	●	●	–	**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)	–	–	●	●	●	●	See online Help [2]
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)	–	–	● [3]	●	●	●	See online Help [2]
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)	–	–	● [3]	●	●	–	See online Help [2]
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)	–	–	●	●	●	●	See online Help [2]
Via **BM85-000 bridge** or **PLC with bridge functionalits** / *MODBUS PLUS network* to max. 4 x **984-120, ...** or **TSX Quantum – CPU 113, ...** (RS 232)	–	–	● [3]	●	●	●	See online Help [2]
TSX Compact (RS 232)	–	–	●	●	●	●	See online Help [2]

● System coupling is possible
– System coupling is not possible

1) Mitsubishi PC cable with integrated level converter RS 232/RS422; for connection to MP 270, a 15-pin male/9-pin male adapter 6XV1 440-2UE32 is required

2) For detailed information (cable assignment), see the ProTool online Help or the "Communication User's Guide for Windows-Based Systems"

3) TP 170A can only be connected to one PLC

Third-party PLCs

PLC **Target hardware (PROTOCOL)** (physical characteristics)	SIMATIC HMI **TD 200**	**TP 070**	**TP 170A**	**Mobile Panel 170 TP 170B OP 170B TP 270 OP 270 MP 270B**	**MP 370**	**ProTool/Pro Runtime**	**Connected via**
Omron (Link/Multi Link)							
• **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	—	—	●	●	●	●	See online Help [1]
Via **NT-AL001 converter** to max. 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	—	—	● [2]	●	●	●	See online Help [1]
To max. 4 PLCs • **SYSMAC C** (except CPU CQM1 – CPU 11/21) • **SYSMAC a** • **SYSMAC CV** (RS 232)	—	—	● [2]	●	●	—	See online Help [1]
Telemecanique (UNI-TELWAY)							
Via **TSX SCA62 connection socket** to **TSX 17** or **TSX 47/67/87/107** (RS 485)	—	—	●	●	●	● [3]	**6XV1 440-1E...** (max. 20 m)
Via **TSX SCA62 + ACC01 connection sockets** to **TSX 37/57** (RS 485)	—	—	●	●	●	● [3]	**6XV1 440-1E...** (max. 20 m)
Via **TSX SCA62 connection socket** and *UNI-TELWAY network* to **4 x TSX 17** or **TSX 37/57** or **TSX 47/67/87/107** (RS 485)	—	—	● [2]	●	●	● [3]	**6XV1 440-1E...** (max. 20 m)

● System coupling is possible
— System coupling is not possible

1) For detailed information (cable assignment), see the ProTool online Help or the "Communication User's Guide for Windows-Based Systems"
2) TP 170A can only be connected to one PLC
3) At the PC end, one RS 485 interface card and an adapted cable are required. For detailed information (tested board, cable assignments), see the online Help for ProTool or the User's Guide

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	**6ES5 731-6AG00**
required for connecting the programming device to the connecting cable	
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 6ES5 705-...	
Standard length:	
• 2.5 m [1]	**6ES7 705-0AA00-7BA0**
Connecting cables 6ES5 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...	
Standard length:	
• 5.0 m	**6XV1 440-1EH50**
Special lengths up to 20.0 m	**6XV1 440-1E■■■**
Connecting cables 6XV1 440-1F...	
Standard length:	
• 5.0 m	**6XV1 440-1FH50**
Special lengths up to 1000.0 m	**6XV1 440-1F■■■**
Connecting cables 6XV1 440-1K...	
Standard length:	
• 3.2 m	**6XV1 440-1KH32**
Special lengths up to 15.0 m	**6XV1 440-1K■■■**
Connecting cables 6XV1 440-1L...	
• Special lengths up to 16.0 m	**6XV1 440-1L■■■**
Connecting cables 6XV1 440-1M...	
Standard length:	
• 5.0 m	**6XV1 440-1MH50**
Special 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■■■**
For length key see Appendix	↑↑↑

	Order No.
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■■■**
Connecting cables 6XV1 440-2F...	
Standard lengths:	
• 3.2 m	**6XV1 440-2FH32**
• 10.0 m	**6XV1 440-2FN10**
Special lengths up to 1000.0 m	**6XV1 440-2F■■■**
Connecting cables 6XV1 440-2G...	
Standard lengths:	
• 3.2 m	**6XV1 440-2GH32**
• 10.0 m	**6XV1 440-2GN10**
Special lengths up to 1000.0 m	**6XV1 440-2G■■■**
Connecting cables 6XV1 440-2J...	
Standard lengths:	
• 3.2 m	**6XV1 440-2JH32**
• 10.0 m	**6XV1 440-2JN10**
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...	
Standard length:	
• 3.2 m	**6XV1 440-2LH32**
Special lengths up to 16.0 m	**6XV1 440-2L■■■**
Connecting cables 6XV1 440-2M...	
Standard length:	
• 5.0 m	**6XV1 440-2MH50**
Special lengths up to 16.0 m	**6XV1 440-2M■■■**
Connecting cables 6XV1 440-2P...	
• Special lengths up to 500.0 m	**6XV1 440-2P■■■**
Connecting cables 6XV1 440-2R...	
• Special lengths up to 500.0 m	**6XV1 440-2R■■■**
Connecting cables 6XV1 440-2V...	
Standard length:	
• 5.0 m	**6XV1 440-2VH50**
Special lengths up to 60.0 m	**6XV1 440-2V■■■**
For length key see Appendix	↑↑↑

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

Connecting cables

Ordering Data (cont.)

	Order No.
Configuring cable	
To PC/PG 7xx (serial) (9-pin male/RS 232) for OP3 [1]	
To PC/PG 7xx with CP 5611	
• for OP3 [1]	**6ES7 705-0AA00-7BA0**
• for OP27 [2]	**6ES7 901-0BF00-0AA0**
To 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 ■■■0**
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 ■■■0**
PC 16-20 interface adapter	**6ES5 731-6AG00**
required for connecting the programming device to the connecting cable	
To 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 ■■■**
To PC (serial) [4] (25-pin female/RS 232)	
Standard length:	
• 3.2 m	**6XV1 440-2LH32**
Special lengths up to 16.0 m	**6XV1 440-2L ■■■**
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	
To 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 ■■■**
To 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 reordering	
RS 485 PROFIBUS bus connector with axial cable outlet	**6GK1 500-0EA02**
SIMATIC S7 RS 485 bus connector with vertical cable outlet	**6ES7 972-0BB12-0XA0**
with PG interface	
Additional bus connectors/bus terminals	**see Catalog IK PI**
Y cable (adapter)	**6XV1 440-2HE20**
0.20 m long	
Adapter cable	**6XV1 440-2DE32**
0.32 m long	
between TD/OP and connecting cable 6ES5 735-...	
Adapter cable	**6XV1 440-2UE32**
between TD/OP and PC cable (third-party manufacturer)	

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	Prin list [2]	Print report	Alarm log On/Off	Print alarm mes-sage buffer	Status mes-sage buffer	Print alarms with fil-ter	Print all dia-grams	Dia-gram con-tents list	Print data set	Print all data sets	Recipe con-tents list	Header/ footer
TD17 [1]	–	–	–	–	–	–	–	–	–	–	–	–	–
OP3 [1]	–	–	–	–	–	–	–	–	–	–	–	–	–
OP7	●	–	–	●	●	●	–	●	●	●	●	●	●
OP17	●	–	–	●	●	●	–	●	●	●	●	●	●
OP 170B	●	–	–	●	–	–	–	–	–	–	–	–	–
OP 270	●	–	●	●	–	–	–	–	–	–	–	–	–
OP27	●	●	–	●	●	●	●	–	–	–	–	–	–
OP37	●	●	–	●	●	●	●	–	–	–	–	–	–
TP 070 [1]	–	–	–	–	–	–	–	–	–	–	–	–	–
TP 170A [1]	–	–	–	–	–	–	–	–	–	–	–	–	–
TP 170B	●	–	–	●	–	–	–	–	–	–	–	–	–
TP 270	●	–	●	●	–	–	–	–	–	–	–	–	–
TP27	●	●	–	●	●	●	●	–	–	–	–	–	–
TP37	●	●	–	●	●	●	●	–	–	–	–	–	–

● Possible functions
– Not possible functions

1) The device does not have a printer port
2) Print the diagram list

Released printers

	Brother HL1450	EPSON LQ580 / LQ300+	HP Deskjet 6127	ITT IPP 144-40	EPSON TM-T88II (Thermo)	Tally T 2024	Siemens DR 2030
OP7	–	Serial	–	Serial	Serial	Serial	Serial
OP17	–	Serial	–	Serial	Serial	Serial	Serial
OP 170B	–	Serial	–	–	Serial [1]	Serial	Serial
OP 270	USB	Serial	USB	–	Serial [1]	Serial	Serial
OP27	–	Serial	–	Serial [1]	Serial [1]	Serial	Serial
OP37	–	Serial or parallel	–	Serial [1]	Serial [1]	Serial or parallel	Serial or parallel
TP 170B	–	Serial	–	–	Serial [1]	Serial	Serial
TP 270	USB	Serial	USB	–	Serial [1]	Serial	Serial
TP27	–	Serial	–	Serial [1]	Serial [1]	Serial	Serial
TP37	–	Serial or parallel	–	Serial [1]	Serial [1]	Serial or parallel	Serial or parallel

1) "Hardcopy" and "Print log" not possible

Recommended printers

for Micro Panels and Panels

Supply sources

Manufacturer	Printer name	Printer type	Physical characteristics	Field of application	Supplier address for printer
Brother	**HL1450**	Laser	Parallel / USB	Workplace printer	http://www.hp.com
EPSON	**LQ580**	24-pin B/W	Serial [1] / parallel	Workplace printer	http://www.epson.de
EPSON	**LQ300+**	24-pin B/W	Serial / parallel	Workplace printer	http://www.epson.de
Hewlett-Packard	**Deskjet 6127**	Color inkjet	USB	Workplace printer	http://www.hewlett-packard.de
EPSON	**TN T88II**	Thermal S/W	Serial	Built-in printer	http://www.epson.de
ITT	**IPP 144-40**	Thermal S/W	Serial	Built-in printer	http://www.mueller-weigert.de
Tally	**T 2024/9; T 2024/24**	9-pin or 24-pin	Serial / parallel	Workplace printer	http://www.tally.de
Siemens	**DR 2030/9; DR 2030/24**	9-pin or 24-pin	Serial [1] / parallel	Workplace printer	http://www.siemens.de

1) For serial printing, a module is available as an option.

Note:
For up-to-date information about printers and printer settings, visit:
http://www4.ad.siemens.de:8080/news/csi/de/11376409

Overview

Print functions

	Hardcopy	Print report	Alarm log On/Off
MP 270	●	●	●
MP 270B	●	●	●
MP 370	●	●	●

● Functionality possible

Released printers

	Brother HL1450	EPSON LQ580 LQ300+	HP Deskjet 6127	EPSON TM-T88II	Tally T 2024	Siemens DR 2030
MP 270	USB	Serial	USB	Serial [1]	Serial	Serial
MP 270B	USB	Serial	USB	Serial [1]	Serial	Serial
MP 370	USB	Serial	USB	Serial [1]	Serial	Serial

1) "Hardcopy" and "Print log" not possible

Supply sources

Manufacturer	Printer name	Printer type	Physical characteristics	Field of application	Supplier address for printer
Brother	**HL1450**	Laser	Parallel / USB	Workplace printer	http://www.hp.com
EPSON	**LQ580**	24-pin B/W	Serial [1] / parallel	Workplace printer	http://www.epson.de
EPSON	**LQ300+**	24-pin B/W	Serial / parallel	Workplace printer	http://www.epson.de
Hewlett Packard	**Deskjet 6127**	Color inkjet	USB	Workplace printer	http://www.hewlett-packard.de
EPSON	**TN T88II**	Thermal S/W	Serial	Built-in printer	http://www.epson.de
Tally	**T 2024/9; T 2024/24**	9-pin or 24-pin	Serial / parallel	Workplace printer	http://www.tally.de
Siemens	**DR 2030/9; DR 2030/24**	9-pin or 24-pin	Serial [1] / parallel	Workplace printer	http://www.siemens.de

1) For serial printing, a module is available as an option.

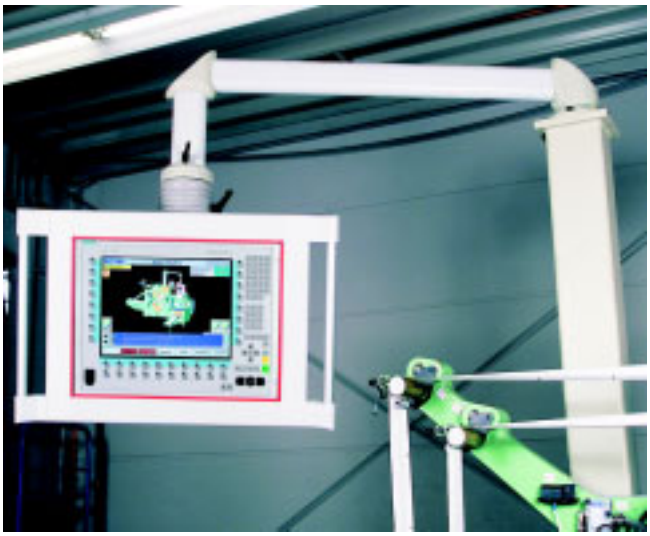
Note:
For up-to-date information about printers and printer settings, visit:
http://www4.ad.siemens.de:8080/news/csi/de/11376409

SIMATIC Panel PC

3

SIMATIC Panel PC at a Glance

Overview



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

Two device categories are available for varying requirements:

- SIMATIC Panel PCs 670 and 870
- SIMATIC Panel PC Industrial Lite 70 (IL 70)

Common industrial functionality

- Degree of protection IP 65
- High EMC: CE mark for industrial environments
- Designed for continuous duty
- MTBF of backlighting: 50,000 h and 60,000 h respectively
- Ethernet on-board
- Up to 45°C ambient temperature during operation

SIMATIC Panel PC Industrial Lite 70

Basic industrial compatibility
- Vibration resistance during operation: 0.25 g
- Shock resistance during operation: 1.0 g

Basic investment protection
- Spare parts availability guaranteed for at least 3 years
- The latest PC technology

Innovative components
- Fast processors
- PCI slots

Inexpensive
- Cost-effective entry

SIMATIC Panel PC 670 and 870

High industrial compatibility
- Vibration resistance during 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)
- Remote configuration
- Direct key module (optional)

Benefits

SIMATIC Panel PC Industrial Lite 70 (IL 70)

High-performance, low budget and basic industrial compatibility

A SIMATIC Panel PC Industrial Lite 70 is the first choice for applications that require a high-performance IPC platform and the Industrial PC must comply with basic requirements for industrial compatibility (e.g. vibration, shock).

The performance

The Panel PC IL 70 is well-suited to the standard PC world.
In addition to the high pace of innovation, with this product family you can expect a range of high-performance processors in the industrial PC range.

The integrated interfaces

The integrated Ethernet interface can be used for communication in the office environment or at the management level. With the integrated USB interfaces on the rear, connecting peripherals from the PC environment is child's play.
With an application running, an external mouse, keyboard, CD-ROM drive or ZIP drive as well as a printer, chip card reader, barcode reader and many other devices can be easily installed and operated. The PCI slots offer plenty of scope for installing PC expansion cards such as communication cards for connection to the process.

The price

The Panel PC Industrial Lite 70 offers you a low-cost entry point in the SIMATIC Panel PC series. It is extremely attractive in a low-budget environment.

SIMATIC Panel PCs 670 and 870

Compact, rugged and powerful

The Panel PCs 670/870 are panel PCs with complete industrial functionality. With display sizes of 10" (PC 670 only), 12" and 15" and operation via a membrane keyboard or touch screen, you can satisfy the widest range of demands with regard to the operating concept.

The rugged construction

The entire construction is designed for maximum reliability under vibration or shock. For example, a special suspension for the hard disk that absorbs vibration ensures absolutely reliable operation, even in the case of high mechanical loads.

Benefits (cont.)

The continuity

The continuity offered by the availability of identical components, such as mother boards from our own manufacturing plant, means that SIMATIC Panel PC 670 and 870 provide an extremely high PCs level of investment security.

The service-friendly construction

Excellent service-friendliness was a special requirement in the design of the Panel PC 670 and 870 product families. Components can be rapidly replaced by simply hinging the processor unit and front panel apart. The inside of the device containing the processor and slots is easily accessed for future expansions.

The integrated interfaces

In the SIMATIC Panel PC 670 and 870, the PROFIBUS DP/MPI interface is already integrated on the mother board – at no extra charge. This also applies to the Ethernet interface for connecting to the management level or the Internet.

The modern service/startup interface

The standard PC I/O interface USB (Universal Serial Bus) allows components to be connected easily, on both the front and the rear.

The compactness

With its maximum mounting depth of 100 or 130 mm, the SIMATIC Panel PC 670 is also ideal where space is at a premium.

The expansion capability

With its five free expansion slots, the SIMATIC Panel PC 870 provides plenty of scope for expansion.

The options

The SIMATIC Panel PC 670 and 870 offer a high degree of industrial functionality that extends beyond standard PC features. In the so-called remote configuration, the processor unit and operator unit can be operated at a distance from each other. A further building block in plant safety is the optional direct control key module. The process can be directly operated via PROFIBUS DP without delay independently of the operating system.

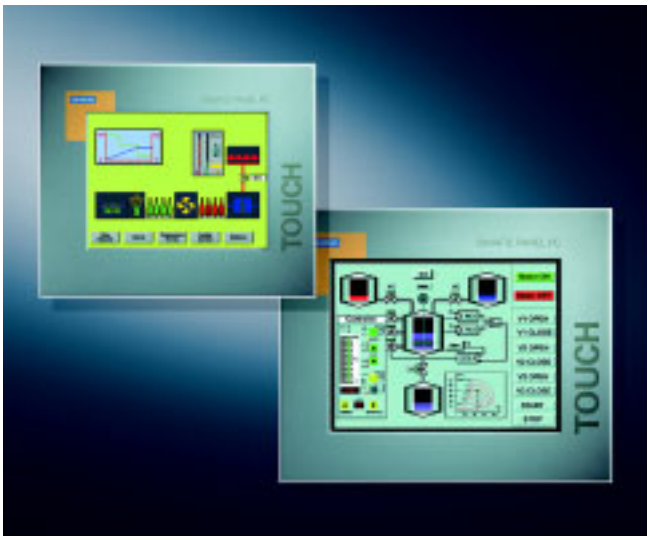
SIMATIC Panel PC at a Glance

	SIMATIC Panel PC IL70	SIMATIC Panel PC 670	SIMATIC Panel PC 870
Design			
• Centralized configuration	●	●	●
• Remote configuration	–	●	●
Display			
• Size	12.1"/15.1" TFT	10.4"/12.1"/15.1" TFT	12.1"/15.1" TFT
• Resolution	800x600 / 1024x768	640x480 / 800x600 / 1024x768	800x600 / 1024x768
Control elements			
• Membrane keyboard	–	●	●
• Touch screen	●	●	●
General features			
• Processor	Intel Celeron 1.7 GHz or Intel Pentium 4 2.0 GHz	Intel Celeron 1.2 GHz or Intel Pentium III 1.26 GHz	Intel Celeron 1.2 GHz or Intel Pentium III 1.26 GHz
• RAM	128 MB / 256 MB	128 MB, expandable to 256 or 512 MB	128 MB, expandable to 256 or 512 MB
• Free slots for expansion	3 x PCI, 1 x AGP	1 x PCI, 1 x ISA/PCI shared, 1 x Type III Cardbus slot (PCMCIA)	2 x PCI, 2 x PCI/ISA shared, 1 x ISA
• Operating system	Without, Windows NT 4.0 (Eng, Ger), 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 NT 4.0 (Eng, Ger), Windows 2000 Professional Multi-Language, Windows XP Professional Multi-Language
Interfaces			
• PROFIBUS/MPI	–	●	●
• 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

● possible
– not possible

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

- Industrial compatibility under vibration and shock
- Investment security due to guaranteed availability of spare parts
- Continuity of components for long-term machine concepts without the need for further engineering outlay
- USB interface for quick and easy connection of the required components
- Integrated Ethernet interface
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Area of application

The SIMATIC Panel PC IL 70 is used both in production and process automation and can be installed in control cabinets and switchboards.

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

- PC-based, on-site visualization at machine level with SIMATIC ProTool/Pro®,
- 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 harmoniously matched to one another.

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

Design

The Panel PC IL 70 comprises a processor unit (PC box) and operator unit (front panel).

Components of the processor unit:

- Metal housing, resistant to vibration and shock, with high electromagnetic compatibility
- Processor:
  - Intel Celeron 1.7 GHz with 128 MB main memory
  - Intel Pentium 4 2.0 GHz with 256 MB main memory
- 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
- 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

Functions

- Monitoring functions, such as temperature and watchdog, onboard

Technical specifications

Type	Panel PC IL 70
General features	
• Processor	Intel Pentium 4 technology; Intel Celeron 1.7 GHz, Intel Pentium 4 2.0 GHz
• RAM	128 MB or 256 MB, maximum expansion to 2 GB
• Free slots for expansion	3x PCI, 1x AGP (slots with card holder)
• 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, operation from side
• Diskette drive	1.44 MB, on rear, operation 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)	2x on rear (USB 2.0)
• Serial interface	COM1: 1x V.24 (RS 232 C)
• 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	Onboard
Ambient conditions	
• Degree of protection	IP 65 (on front) according to EN 60529
• 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 (0.25 g)
• 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 or SIMATIC WinAC

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 in centralized configuration (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 communication modules	

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

SIMATIC Panel PC IL 70

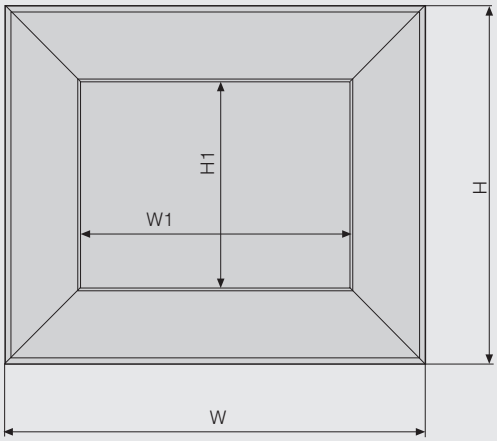
Ordering Data

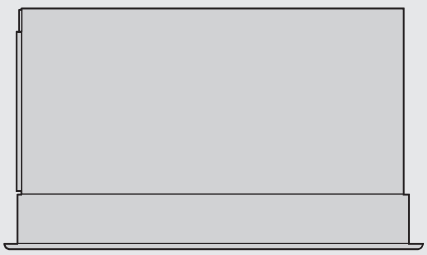
	Order No.
Panel PC configuration	
SIMATIC Panel PC IL 70	**6AG7 01■-■■A00-0A■0**
Front panels:	
• 12“ TFT Touch display	**0**
• 15“ TFT Touch display	**1**
Processor/main memory:	
• Celeron 1.7 GHz/ 128 MB SDRAM	**0 A**
• Pentium 4 2.0 GHz/ 256 MB SDRAM	**1 B**
Operating system:	
• Without operating system	**A**
• Windows NT 4.0, German	**B**
• Windows NT 4.0, English	**C**
• Windows 2000 Professional Multi-Language	**D**
• Windows XP Professional Multi-Language	**E**

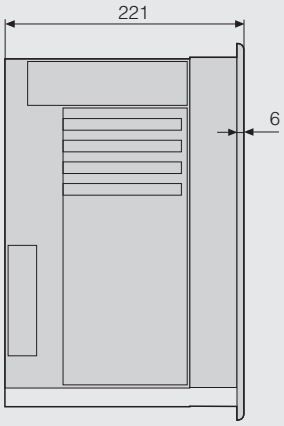
	Order No.
Additional components	
Memory submodule	
• 128 MB DDR333	**6AV7570-0JA00-1AA0**
• 256 MB DDR333	**6AV7570-0JA10-1AA0**
Communication components	
CP 1613	**6GK1 161-3AA00**
PCI card (32-bit) for connecting the PG/PC to Industrial Ethernet	
CP 5613	**6GK1 561-3AA00**
PCI card (32-bit) for connecting a PC to PROFIBUS	

Dimension drawings

Dimensions in mm







[1] with CD-ROM

Panel cutout	W	H	D
12.1" TFT Touch	367	305	213[1]
15.1" TFT Touch	425	349	213[1]
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

Further Information

For further information, visit our website at

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

SIMATIC Panel PC 670

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
- Compact construction
- High investment protection
- Fast integration capability
- Remote configuration:
  Additional applications are possible thanks to the separation of the operating unit and processor unit
- Design of the front panels:
  - 10“, 12“ or 15“ TFT color display
  - Membrane keyboard or touch screen

Benefits

- Highly industry-compatible due to rugged construction, even in the case of extreme levels of vibration and shock
- High degree of investment security due to guaranteed availability of spare parts (for 5 years)
- High degree of continuity of components for long-term machine concepts without the need for further engineering outlay
- Savings in time and costs due to service-friendly unit design:
  - Operator unit and processor unit simply hinge apart for fast component replacement or for future expansion
  - Front and rear USB interfaces for quick and easy connection to additional hardware components
- High level of industrial functionality thanks to integrated PROFIBUS DP/MPI and Ethernet interfaces
- Operational reliability:
  - With the optional direct control key module, the process can be operated without any delays via PROFIBUS DP independently of the operating system
- Integral component of Totally Integrated Automation (TIA):
  Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Area of application

The SIMATIC Panel PC 670 is designed for use on site directly at the machine. Its low mounting depth of only 100/130 mm allows it to be used in confined spaces.

The PC is used in production automation as well as in process automation, built into control cabinets and control desks, 19“ cabinets/racks and movable booms.

The SIMATIC Panel PCs are the ideal platform for PC-based Automation:

- PC-based, local machine visualization with SIMATIC ProTool/Pro®,
- 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 range of automation components which are perfectly matched to one another.

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

Design

The Panel PC 670 comprises a processor unit (Box PC) and operator unit (front panel).

Components of the processor 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: ≥ 20 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:
  - 1x PCI, 1x ISA/PCI shared (slots for card holder),
  - 1x Cardbus slot Type III (PCMCIA)
- Power supply: 110 V/230 V AC (autorange), 50/60 Hz or 24 V DC

Optional extras:

- Main memory expansion to 256 or 512 MB
- Hard disk ≥ 40 GB
- CD-ROM drive
- CD-R/W, DVD drive
- Direct control key module

Design (cont.)

Components of the operator unit:

The front panels are available in the following designs:

10"

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

12"

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

12" TOUCH

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

15"

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

15" TOUCH

- 15” 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 versions are optionally available without a USB connection. In this case, they comply with NEMA 4.

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

Side-view of the SIMATIC Panel PC 670

Types of configuration

- Centralized configuration: Processor unit and operator unit are integrated
- Remote configuration: Processor unit and operator unit are physically separated

Remote configuration:

In the case of the remote configuration, the operator unit and the processor unit can be operated separated by a distance of up to 20 m whereby the look and 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 movable boom
- Additional installation possibilities (e.g. in control desks), because the distributed operator unit can be installed at up to 70 ° from the vertical
- Extremely resistant to interference
- Quick and easy start-up

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

- 10 million bending operations
- Silicone and FCKW 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

Functions

- Monitoring functions, such as temperature and watchdog, onboard
- Status LEDs on the front for power and temperature

SIMATIC Panel PC 670

Technical specifications

Type	Panel PC 670 - centralized configuration	Panel PC 670 - remote configuration
General features		
• Processor	Intel Pentium III technology, Intel Celeron 1.2 GHz, Intel Pentium III 1.26 GHz	
• RAM	128 MB to 512 MB	
• Free slots for expansion	1x PCI, 1x PCI/ISA shared, (all slots with card holder) 1x type III Cardbus slot (PCMCIA)	
• Operating system	Windows 2000 Prof. (multi language[1]), Windows 98 SE (Eng, Ger), Windows NT4.0 (Eng, Ger) [2], Windows XP Prof. (multi language[1]), opt. without operating system	
• Power supply	110 V / 230 V AC (auto range) 50/60 Hz; or 24 V DC	
• MTBF of backlighting	Typically 60,000 h (at 24 h continuous operation, depending on temperature)	
Drives		
• Hard disk	3.5" hard disk drive >= 20 GB, with isolation mounts against vibration	
• CD-ROM	Optional, on rear	Optional, in processor unit
• DVD/CD-R/RW	Optional, on rear	Optional, in processor unit
• Diskette drive	1.44 MB, on rear, for side operation	1.44 MB in processor unit
Interfaces		
• 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)	1x on front [4], 2x on rear	Front: 1x on front [4], 1x on rear, processor unit: 2x
• Serial interface	COM1: 1x V.24 (RS 232), COM2: 1x V.24 (RS 232 C)/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	Onboard	
• Status LEDs	Power, temperature (on front)	
Ambient conditions		
• Degree of protection	IP 65 (front) acc. to EN 60529, NEMA 4 [3]	IP 65 (front) acc. to EN 60529, NEMA 4 [3], IP 20 (processor unit) acc. to EN60529
• Vibration resistance in operation	Tested to DIN IEC 68-2-6: - 10 to 58 Hz: 0.075mm - 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, EN61000-6-4 [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 Class1 Div.2 [3]	CE, cULus
Packages	Optional with SIMATIC ProTool/Pro, SIMATIC WinCC or SIMATIC WinAC	

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

Technical specifications (cont.)

Front panels	10"	12" Touch	12"	15" Touch	15"
Design					
• Centralized configuration	Yes	Yes	Yes	Yes	Yes
• Remote 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	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 296 x 125	450 x 296 x 100	450 x 296 x 130	450 x 327 x 130
• Mounting dimensions of operator unit in remote configuration (W x H x D) in mm	-	368 x 296 x 85	450 x 296 x 69	450 x 296 x 91	450 x 327 x 91
• Mounting dimensions of processor unit in remote 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 remote configuration	-	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg
• Processor unit in remote 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 modules				
Accessories	Keyboard slide-in labels, direct key module	Touch protection membranes	Keyboard slide-in labels, direct key module	Touch protection membranes	Keyboard slide-in labels, direct key module

SIMATIC Panel PC 670

Ordering Data

Panel PC Configurator (order-specific manufacturing and delivery)

SIMATIC Panel PC 670	Order No. 6AV7 7■■-■■■■■-0A■0
Design:	
• Centralized configuration	2
• Remote configuration	3
Front panels:	
• 10“ TFT	2 1
• 12“ TFT Touch	2
• 12“ TFT	3
• 15“ TFT Touch	4
• 15“ TFT	5
• 12“ TFT Touch without front USB interface	6
• 15“ TFT Touch without front USB interface	7
Main memory configuration:	
• 128 MB	1
• 256 MB	2
• 512 MB	3
Processor	
• Celeron 1.2 GHz	A
• Intel Pentium III 1.26 GHz	B
Country-specific design/power supply:	
• Processor unit and operator unit 24 V DC	A
• Processor unit and operator unit 110 /230 V US	B
• Processor unit and operator unit 110 V/230 V Europe	C
• Processor unit 110 V/230 V US, operator unit 24 V DC	3 D
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	3 E
• Processor unit 24 V DC, operator unit 110 V/230 V US	3 F
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	3 G
Drives:	
• 20 GB hard disk	0
• 20 GB hard disk + CD-ROM	1
• 40 GB hard disk	2
• 40 GB hard disk + CD-ROM	3
• 40 GB hard disk + CD-RW/DVD	4
Distance between processor unit and operator unit/cable length:	
• 0 m (centralized configuration)	2 0
• 2 m	3 1
• 5m	3 2
• 10m	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	E
• Windows 98 English	F
• Windows XP Professional Multi-Language	G

Delivery versions (from stock)

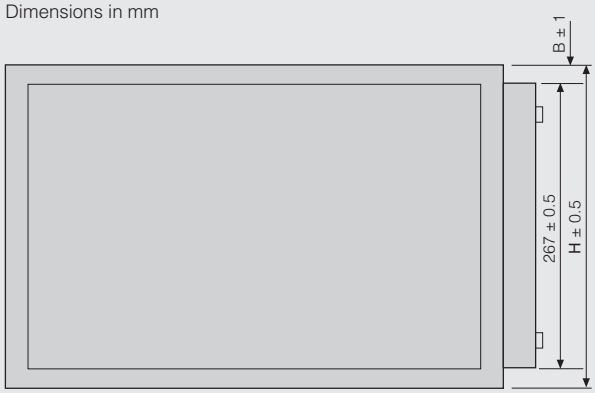
	Order No.
Panel PC 670, 10“ TFT display	
Celeron 1.2 GHz, 20 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
• Without operating system	**6AV7 721-1AC10-0AA0**
• Windows NT 4.0, German	**6AV7 721-1AC10-0AB0**
• Windows NT 4.0, English	**6AV7 721-1AC10-0AC0**
Panel PC 670, 12“ TFT display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
• Without operating system	**6AV7 723-1BC10-0AA0**
• Windows NT 4.0, German	**6AV7 723-1BC10-0AB0**
• Windows NT 4.0, English	**6AV7 723-1BC10-0AC0**
• Windows 2000 Professional Multi-Language	**6AV7 723-1BC10-0AD0**
Panel PC 670, 12“ TFT Touch display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
• Without operating system	**6AV7 722-1BC10-0AA0**
• Windows NT 4.0, German	**6AV7 722-1BC10-0AB0**
• Windows NT 4.0, English	**6AV7 722-1BC10-0AC0**
• Windows 2000 Professional Multi-Language	**6AV7 722-1BC10-0AD0**
Panel PC 670, 15“ TFT display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
• Without operating system	**6AV7 725-1BC10-0AA0**
• Windows NT 4.0, German	**6AV7 725-1BC10-0AB0**
• Windows NT 4.0, English	**6AV7 725-1BC10-0AC0**
• Windows 2000 Professional Multi-Language	**6AV7 725-1BC10-0AD0**
Panel PC 670, 15“ TFT Touch display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 128 MB RAM, 110 V/230 V, Europe	
• Without operating system	**6AV7 724-1BC10-0AA0**
• Windows NT 4.0, German	**6AV7 724-1BC10-0AB0**
• Windows NT 4.0, English	**6AV7 724-1BC10-0AC0**
• Windows 2000 Professional Multi-Language	**6AV7 724-1BC10-0AD0**

Ordering Data (cont.)

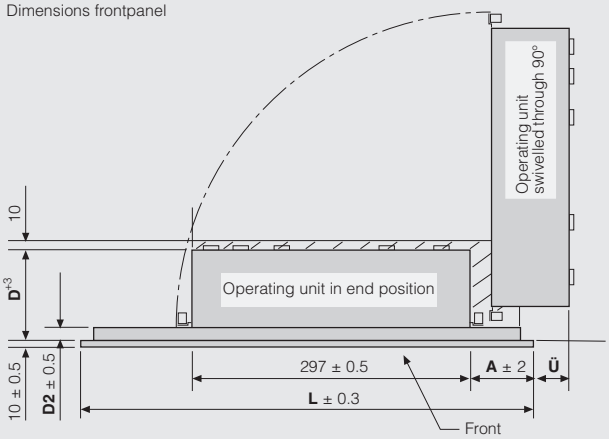
	Order No.
Additional components	
Memory expansion	
• 128 MB	**6ES7 648-2AC10-0CA0**
• 256 MB	**6ES7 648-2AC20-0CA0**
Direct control key module for Panel PC 670/870	**6AV7 671-7DA00-0AA0**
Option package for direct control key module	**6ES7 648-0AA00-0XA0**
• Transfer module for interface connection to 16 I/O	
Protective membrane for Panel PC 670/870	
for protecting the touch front against dirt and scratches (pack of 10)	
• For 12" Touch	**6AV7 671-2BA00-0AA0**
• For 15" Touch	**6AV7 671-4BA00-0AA0**
Key labeling strips for Panel PC 670/870	
for labeling softkeys and function keys, blank, 3 sets of each (plastic), for	
• 10" panel	**6AV7 671-0CA00-0AA0**
• 12" panel	**6AV7 671-3CA00-0AA0**
• 15" panel	**6AV7 671-5CA00-0AA0**
Uninterruptible power supplies	
SITOP power, DC UPS module 15 A with RS 232 interface	**6EP1 931-2EC11**
with charger for 24 V lead rechargeable batteries, input 24 V DC/16 A, output 24 V DC/15 A	
SITOP power, battery module 24 V/3.2 Ah	**6EP1 935-6MD11**
for DC UPS module 15 A	
Communication components	
CP 1613	**6GK1 161-3AA00**
PCI card (32-bit) for connecting the PG/PC to Industrial Ethernet	
CP 5613	**6GK1 561-3AA00**
PCI card (32-bit) for connecting a PC to PROFIBUS	

Dimension drawings

Dimensions in mm



Dimensions frontpanel



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

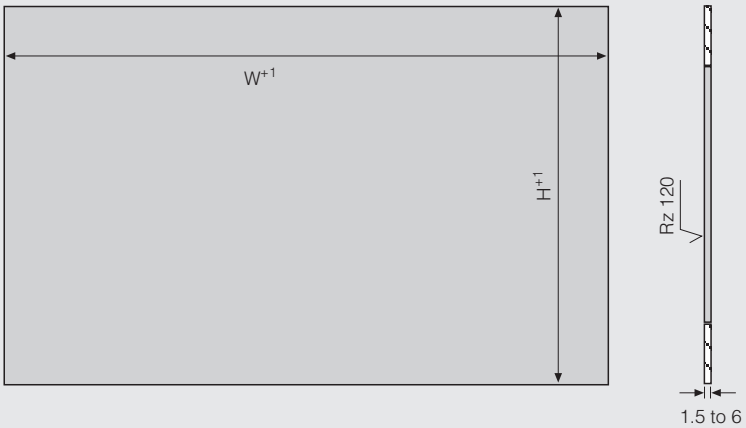
Operator unit in centralized configuration

3

SIMATIC Panel PC 670

Dimension drawings (cont.)

Dimensions in mm



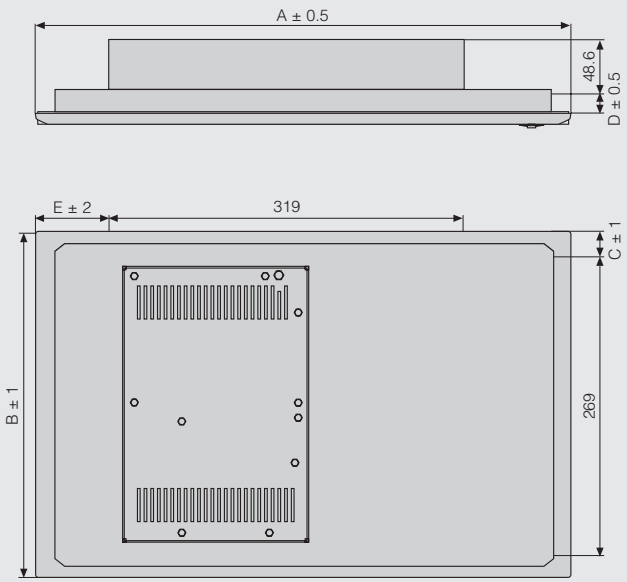
Operating units PC 670	W	H
(a) with key fronts:		
10.4"-TFT	450	296
12.1"-TFT	450	296
15.1"-TFT	450	327
(b) with touch screen fronts:		
12.1"-TFT	368	296
15.1"-TFT	450	296

G_ST80_XX_00035

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

Panel cutout

Dimensions in mm



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

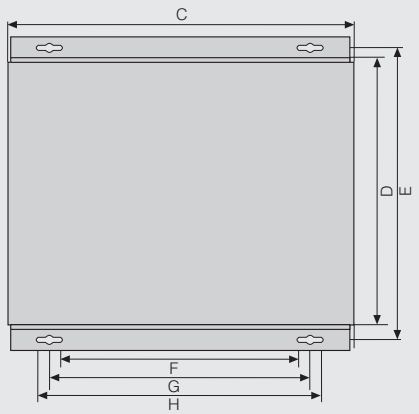
G_ST80_XX_00034

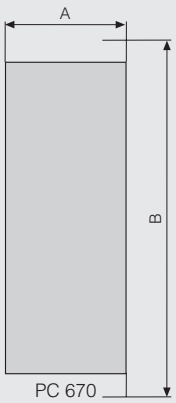
All dimensions exclude screw projections

Operator unit in remote configuration

Dimension drawings (cont.)

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

Processor unit in remote configuration

Further Information

For further information, visit our website at

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 processor unit
- Design of the front panels:
  - 12“ or 15“ TFT color display
  - Membrane keyboard or touch screen

Benefits

- Highly industry compatible due to rugged construction, even in the case of extreme levels of vibration and shock
- High degree of investment security due to guaranteed availability of spare parts (for 5 years)
- High degree of continuity of components for long-term machine concepts without the need for further engineering outlay
- Savings in time and costs due to service-friendly unit construction:
  - Operator unit and processor unit simply hinge apart for fast component replacement or for future expansion
  - Front and rear USB interfaces for quick and easy connection to additional hardware components
- High level of industrial functionality thanks to integrated PROFIBUS DP/MPI and Ethernet interfaces
- Plant safety:
  - With the optional direct control key module, the process can be operated without any delays via PROFIBUS DP independently of the operating system
- Integral component of Totally Integrated Automation (TIA):
  Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs

Area of application

The SIMATIC Panel PC 870 is designed for use on site directly at the machine.

It is used in production automation as well as in process automation, built into control cabinets and control desks, 19“ cabinets/racks and movable booms.

The SIMATIC Panel PCs are the ideal platform for PC-based Automation:

- PC-based, on-site visualization at machine level with SIMATIC ProTool/Pro®,
- 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 range of automation components, which are perfectly matched to one another.

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

Design

The Panel PC 870 comprises a processor unit (PC box) and operator unit (front panel).

Components of the processor 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: ≥ 20 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:
  - 2x PCI, 2x ISA/PCI shared, 1x ISA (slots for card holder),
- Power supply: 110 V/230 V AC (auto range) 50/60 Hz or 24 V DC

Optional extras:

- Main memory expansion to 256 or 512 MB
- Hard disk ≥ 40 GB
- CD-ROM drive
- CD-R/W, DVD drive
- Direct control key module

Design (cont.)

Components of the operator unit:

The front panels are available in the following designs:

12"

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

12" TOUCH

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

15"

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

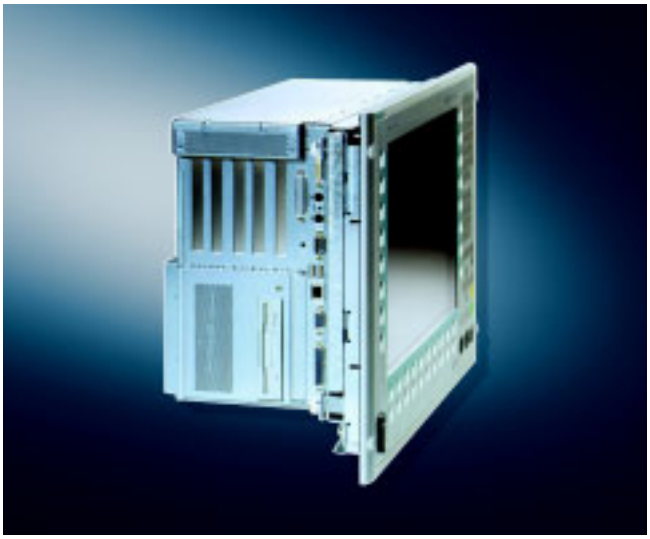
15" TOUCH

- 15” 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 versions are optionally available without a USB connection. In this case, they comply with NEMA 4.

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

Side-view of the SIMATIC Panel PC 870



Types of configuration

- Centralized configuration: Processor unit and operator unit are integrated
- Remote configuration: Processor unit and operator unit are physically separated

Remote configuration:

In the case of the remote configuration, the operator unit and the processor 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 boom
- Additional installation possibilities (e.g. in control desks), because the distributed operator unit can be installed at up to 70° from the vertical
- Extremely resistant to interference
- Quick and easy start-up

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

- 10 million bending operations
- Silicone and FCKW 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

Functions

- Monitoring functions, such as temperature and watchdog, onboard
- Status LEDs on the front for power and temperature

SIMATIC Panel PC 870

Technical specifications

Type	Panel PC 870 - centralized configuration	Panel PC 870 - remote configuration
General features		
• Processor	Intel Pentium III technology, Intel Celeron 1.2 GHz, Intel Pentium III 1.26 GHz	
• RAM	128 MB to 512 MB	
• Free slots for expansion	2x PCI, 2x PCI/ISA shared, 1x ISA (all slots with card holder)	
• Operating system	Windows 2000 Prof. (multi language[1)]), Windows NT4.0 (Eng, Ger) [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 h (at 24 h continuous operation, depending on temperature)	
Drives		
• Hard disk	3.5" hard disk drive >= 20 GB, with isolation mounts against vibration	
• CD-ROM	Optional, on rear	Optional, in processor unit
• DVD/CD-R/RW	Optional, on rear	Optional, in processor unit
• Diskette drive	1.44 MB, on rear, side operation	1.44 MB in processor unit
Interfaces		
• 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)	1x on front [3)], 2x on rear	Front: 1x on front [3)], 1x on rear, processor unit: 2x
• Serial interface	COM1: 1x V.24 (RS 232 C), COM2: 1x V.24 (RS 232 C)/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, fan and watchdog	Onboard	
• Status LEDs	Power, temperature (on front)	
Ambient conditions		
• Degree of protection	IP 65 (front) acc. to EN 60529, NEMA 4 [4)]	IP 65 (front) acc. to EN 60529, NEMA 4 [4)], IP 20 (processor 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 or SIMATIC WinAC	

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

Technical specifications (cont.)

Front panels	12" Touch	12"	15" Touch	15"
Design				
• Centralized configuration	No	Yes	Yes	Yes
• Remote 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	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 HE)
• Mounting dimensions of centralized model (W x H x D, without CD-ROM) in mm	-	450 x 296 x 187	450 x 296 x 212	450 x 327 x 212
• Mounting dimensions of distributed model operator unit (W x H x D) in mm	368 x 296 x 85	450 x 296 x 69	450 x 296 x 91	450 x 327 x 91
• Mounting dimensions of distributed model processor unit (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 PC in centralized configuration	-	Approx. 16 kg	Approx. 17 kg	Approx. 17 kg
• Operator unit in remote configuration	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg	Approx. 8.5 kg
• Processor unit in remote 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			
Accessories	Touch protection foil	Keyboard slide-in strips, direct control key module	Touch protection foil	Keyboard slide-in strips, direct control key module

SIMATIC Panel PC 870

Ordering Data

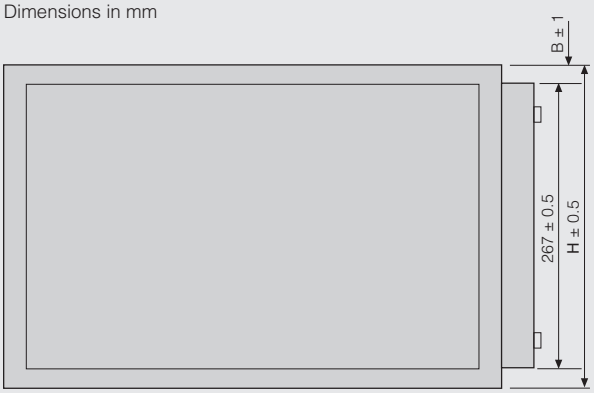
Panel PC configurator (order-specific manufacturing and delivery)

	Order No.
SIMATIC Panel PC 870	**6AV7 7■■-■■■■■-0A■0**
Design:	
• Centralized configuration	0
• Remote configuration	1
Front panels:	
• 12" TFT Touch	1 2
• 12" TFT	3
• 15" TFT Touch	4
• 15" TFT	5
• 12" TFT Touch without front USB interface	1 6
• 15" TFT Touch without front USB interface	7
Main memory configuration:	
• 128 MB	1
• 256 MB	2
• 512 MB	3
Processor	
• Celeron 1.2 GHz	C
• Intel Pentium III 1.26 GHz	D
Country-specific design/power supply:	
• Processor unit and operator unit 24 V DC	A
• Processor unit and operator unit 110 V/230 V US	B
• Processor unit and operator unit 110 V/230 V Europe	C
• Processor unit 110 V/230 V US, operator unit 24 V DC	1 D
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	1 E
• Processor unit 24 V DC, operator unit 110 V/230 V US	1 F
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	1 G
Drives:	
• 20 GB hard disk	0
• 20 GB hard disk + CD-ROM	1
• 40 GB hard disk	2
• 40 GB hard disk + CD-ROM	3
• 40 GB hard disk + CD-RW/DVD	4
Distance between processor unit and operator unit/cable length:	
• 0 m (centralized configuration)	0 0
• 2 m	1 1
• 5 m	1 2
• 10 m	1 3
• 20 m	1 4
Operating system:	
• Without operating system	A
• Windows NT 4.0, German	0 B
• Windows NT 4.0, English	0 C
• Windows 2000 Professional Multi-Language	D
• Windows XP Professional Multi-Language	E

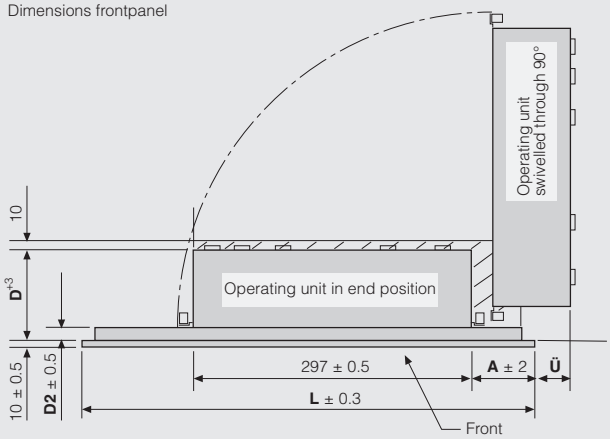
	Order No.
Delivery versions (from stock)	
Panel PC 870, 15" TFT Touch display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 256 MB RAM, centralized configuration, 110 V/230 V, Europe	
• Windows 2000 Professional Multi-Language	**6AV7 704-2DC10-0AD0**
Panel PC 870, 15" TFT Touch display	
Pentium III 1.26 GHz, 20 GB hard disk + CD-ROM, 256 MB RAM, centralized configuration, 110 V/230 V, Europe	
• Windows 2000 Professional Multi-Language	**6AV7 705-2DC10-0AD0**
Additional components	
Memory expansion	
• 128 MB	**6ES7 791-0LS00-0XA0**
• 256 MB	**6ES7 791-0LT00-0XA0**
Direct control key module for Panel PC 670/870	**6AV7 671-7DA00-0AA0**
Option package for direct control key module	**6ES7 648-0AA00-0XA0**
• Transfer module for interface connection to 16 I/O	
Protective membrane for Panel PC 670/870	
for protecting the touch front against dirt and scratches (pack of 10)	
• For 12" Touch	**6AV7 671-2BA00-0AA0**
• For 15" Touch	**6AV7 671-4BA00-0AA0**
Key labeling strips for Panel PC 670/870	
for labeling softkeys and function keys, blank, 3 sets of each (plastic), for	
• 12" panel	**6AV7 671-3CA00-0AA0**
• 15" panel	**6AV7 671-5CA00-0AA0**
Uninterruptible power supplies	
SITOP power, DC UPS module 15 A with RS 232 interface	**6EP1 931-2EC11**
with charger for 24 V lead rechargeable batteries, input 24 V DC/16 A, output 24 V DC/15 A	
SITOP power, battery module 24 V/3.2 Ah	**6EP1 935-6MD11**
for DC UPS module 15 A	
Communication components	
CP 1613	**6GK1 161-3AA00**
PCI card (32-bit) for connecting the PG/PC to Industrial Ethernet	
CP 5613	**6GK1 561-3AA00**
PCI card (32-bit) for connecting a PC to PROFIBUS	

Dimension drawings

Dimensions in mm



Dimensions frontpanel



All dimensions exclude screw projections

Operating units PC 870	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

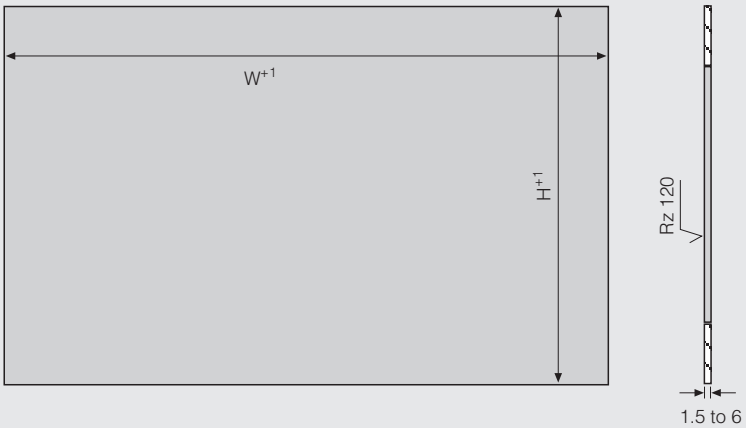
G_ST80_XX_00038

Operator unit in centralized configuration

SIMATIC Panel PC 870

Dimension drawings (cont.)

Dimensions in mm



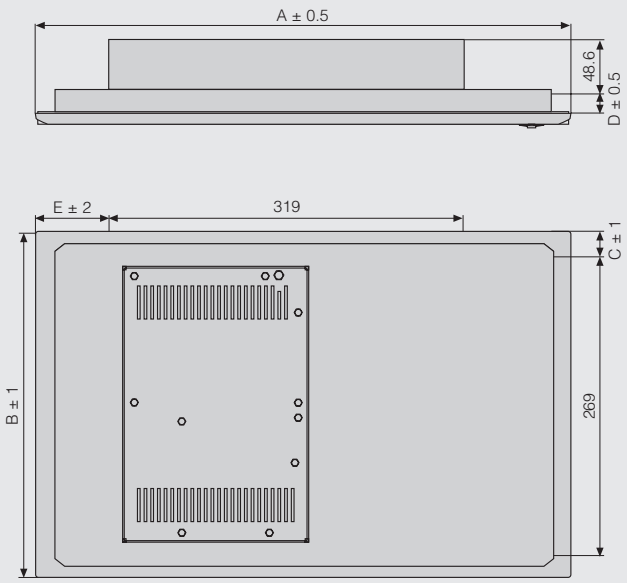
Operating units PC 870	W	H
(a) with key fronts:		
12.1"-TFT	450	296
15.1"-TFT	450	327
(b) with touch screen fronts:		
15.1"-TFT	450	296

G_ST80_XX_00037

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

Panel cutout

Dimensions in mm



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

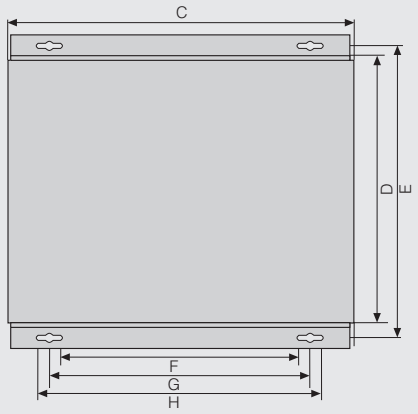
G_ST80_XX_00034

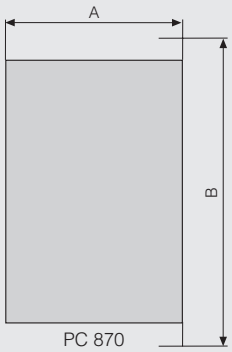
All dimensions exclude screw projections

Operator unit in remote configuration

Dimension drawings (cont.)

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

Processor unit in remote configuration

Further Information

For further information, visit our website at

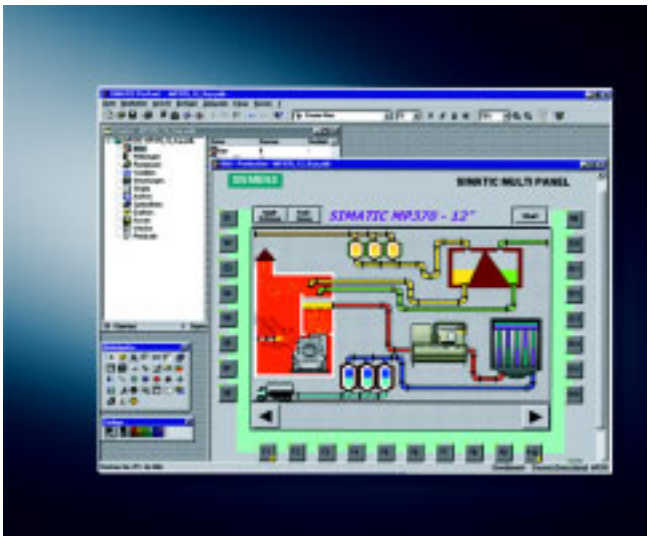
http://www.siemens.com/panel-pc

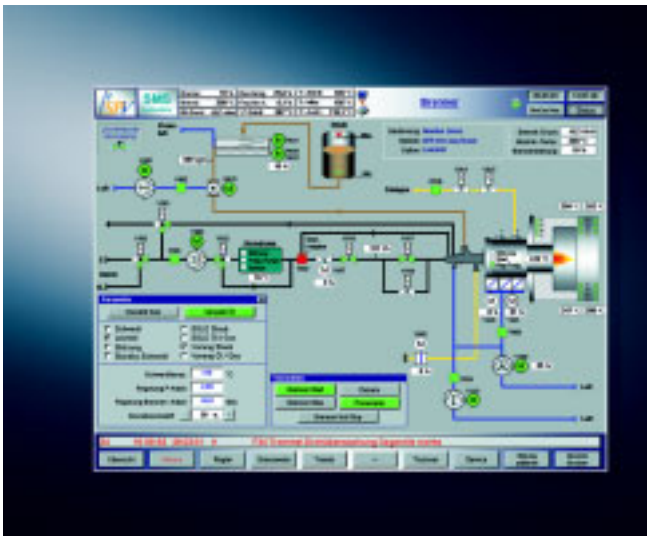
HMI Software

4

HMI Software at a Glance

Overview





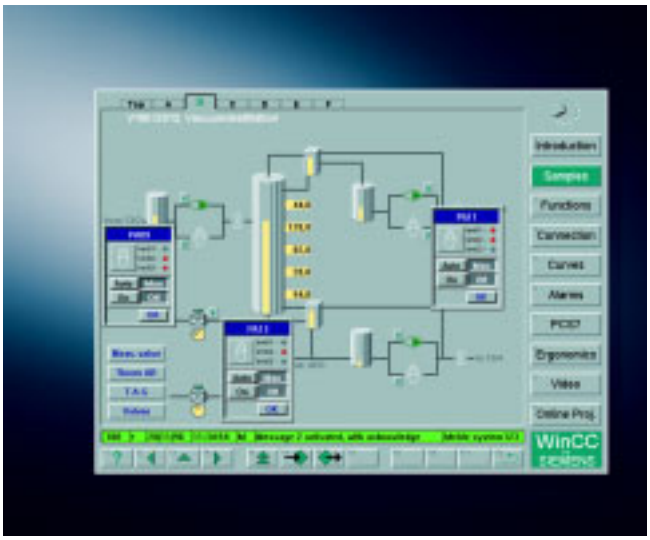
SIMATIC ProTool configuring software

- Standard configuring software for all 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
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering costs, reduces the lifecycle costs through integration in STEP 7; i.e. administration of HMI projects by means of SIMATIC manager within STEP 7 projects and shared use of the STEP 7 data, such as symbol lists, communication parameters and messaging systems
- Configurations, once created, can be easily reused within the product family.
  Projects can be scaled up or down for conversion to different HMI platforms. The benefits are reduced maintenance and service costs and future orientation.
- Short familiarization times and efficient configuration;
  For example through standard Windows operator input mechanisms, validity controls, integrated online Help with direct help and cross-project copying of configuration data
- Configurations that are easily understood and easy to modify thanks to object-oriented symbolic data management and cross-reference lists with direct data access at the click of the mouse button.
- Display editor with comprehensive possibilities for fast and efficient configuring of displays
- Graphics libraries containing a large selection of ready-to-use display objects
- Library management for structured storage of reusable graphics objects
- Complete simulation of the project including variable simulation on the configuring PC –also without a PLC and panel.
- Export/import of all the texts of a project for easy translation.
- Worldwide implementation is possible thanks to comprehensive language support, also Asian ideographic languages

SIMATIC ProTool/Pro visualization software

- 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
  - SIMATIC ProTool/Pro Configuration (CS) software for configuring PC-based systems as well as for configuring all SIMATIC Operator Panels and the HMI part of the SIMATIC C7
- Runs under Windows 98 SE/ME and Windows NT4.0/2000/XP
- 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, curve displays, messaging system, logging system, recipe management through to comprehensive controller drivers.

Overview (cont.)



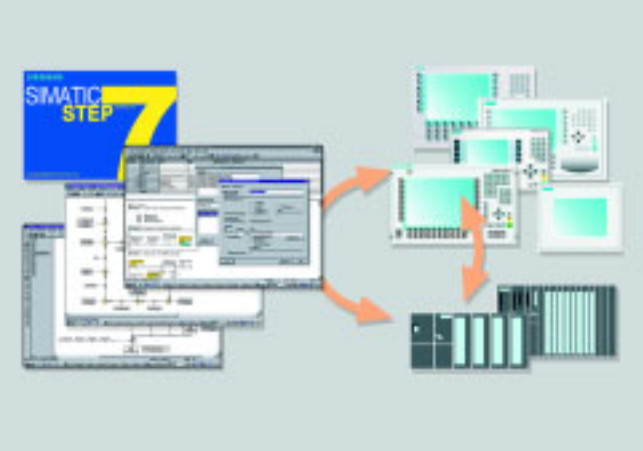
SIMATIC WinCC process visualization system

- 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 multi-site solutions with Web clients. WinCC is the information junction for corporation-wide vertical integration.
- The basic configuration of the system (WinCC basic software) includes industry-compatible functions for signaling and acknowledging events, archiving messages and measured values, logging all process and configuration data, user administration and visualization).
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- All HMI functions are onboard (user administration, operating possibilities, graphical system, messaging system, archiving, reporting and logging system, diagnostics)
- Easy and efficient configuration: convenient, object-oriented graphics editor, comprehensive libraries, modular techniques, fast modification due to online configuration, configuration tool for mass data, cross-reference lists
- Integration platform in the corporation 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 standardized interfaces such as OPC (OLE for Process Control), OLE-DB, VBA (Visual Basic for applications), VBScript, C-API (ODK)
- For universal use thanks to solutions 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 ProTool/Pro Runtime	SIMATIC WinCC
Field of application	HMI software designed for use in the field of (series) machine construction in the process environment	Process visualization software for operator control and monitoring of complex automation solutions
Configurations	Single-user system, commonly based on a panel PC	Single- and multi-user system and remote systems Integrated Historian functionality Data integrity through redundant solutions Internet-capable due to the WinCC/Web Navigator option
Philosophy/strategic focus	Company-wide solution concept • From operator panels through to PC-based operator stations on the basis of ProTool/Pro Runtime • A uniform configuration tool (ProTool) makes uniform solutions possible	Processing of large signal quantities Integration platform for ERP/MES solutions based on the integrated Historian functionality
Configuration	High-speed configuration thanks to pre-configured objects	Flexible due to individual dynamization, efficient when configuring mass data
Functional scope	HMI functional scope is tuned to the machine application • Inching mode capable • The standard functions can be quickly and easily expanded by means of VB scripts	Comprehensive, quality SCADA functionality • Integral component of the PCS 7 process control system • The standard functions can be quickly and easily expanded by means of VB and C scripts
Openness/Expandable	Customized solutions available on the basis of ActiveX controls	Expandable through open Windows interfaces for integration in an intra-factory/company information system • Standard SQL database • C-APIs (ODK) • Comprehensive range of options and add-ons

HMI Software at a Glance

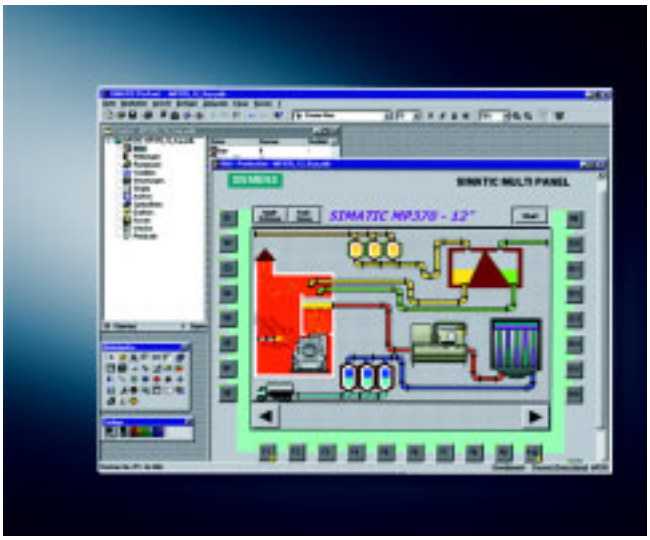
Overview



SIMATIC ProAgent process diagnostics software

- Process diagnostics software for quick, focused fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:
  optimum interaction of STEP 7, STEP 7 engineering tools, and the ProTool or WinCC operating and monitoring system
- Standard user interface
- 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 for diagnostics functionality
- Reduces PLC memory and processor usage
- No special user know-how required due to intuitive display of the cause of the fault

Overview



- Standard **configuring software** for all 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
- Current versions:
  - SIMATIC ProTool/Lite V6.0 + SP2
  - SIMATIC ProTool V6.0 + SP2

New features for V6.0 + SP2:

- New operator panels can be configured:
  - Mobile Panel 170
  - MP 370 15" Touch
- Runs under Windows XP Professional
- New communication drivers:
  - Allen Bradley DH485 - without additional hardware (KF modules)
  - for CE Panels Windows CE-based Panels of the 170, 270 and 370 series
  - for PC systems with ProTool/Pro RT based on Windows NT 4.0/2000/XP

Service tool ProSave in Version V6.0 + SP2 expanded with:

- Operating system transfer for Windows CE-based devices
- Language changeover of 9 languages incl. Asian ideographic languages
- Can also be used with the following operating devices:
  - Windows CE-based devices: Mobile Panel 170, MP 370 15“ Touch, C7-635 Touch, C7-635 Keys
  - Line-display units: TD17, OP7, OP17, C7-633, C7-634
  - Graphics devices: OP27, TP27, OP37, TP37

Benefits

- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering costs, reduces the lifecycle costs through integration in STEP 7; i.e. administration of HMI projects by means of SIMATIC Manager within STEP 7 projects and shared use of the STEP 7 data, such as symbol lists, communication parameters and messaging systems
- Projects once created can easily be reused within the family. Projects can be scaled up or down for transfer to different HMI platforms. The benefits are reduced maintenance and service costs and future orientation
- Short familiarization times and efficient configuration; For example through standard Windows operator input mechanisms, validity controls, integrated online Help with direct help and cross-project copying of configuration data
- Configurations that are easily understood and easy to modify thanks to object-oriented symbolic data management and cross-reference lists with direct data access at the click of the mouse button
- Display editor with comprehensive possibilities for fast and efficient configuring of displays
- Graphics libraries containing a large selection of ready-to-use display objects
- Library management for structured storage of reusable graphics objects
- Total simulation of the project including variable simulation on the configuring PC – also without a PLC and panel
- Export/import of all the texts of a project for easy translation
- Worldwide implementation is possible thanks to comprehensive language support, also Asian ideographic languages

Area of application

All SIMATIC Operator Panels can be configured using SIMATIC ProTool. SIMATIC ProTool/Lite on the other hand 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.

SIMATIC ProTool/Lite and SIMATIC ProTool

Functions

Function expansions in ProTool V6.0 or V6.0 + SP2 (ProTool/Lite and ProTool)

Configuration of additional operator panels:

- Mobile Panel 170
- OP 270 6" and 10"
- TP 270 6" and 10"
- MP 270B Touch and Key
- MP 370 15" Touch
- SIMATIC C7-635 Touch and Key

Extended integration of ProTool in STEP 7

- Support for long variable names, including special characters
- Fast access to STEP 7 symbol list
- Automatic synchronization with the STEP 7 symbol list; references are retained in STEP 7 even when the PLC is replaced and are automatically resynchronized
- Integration/disintegration of ProTool in STEP 7 via the File menu in ProTool
- Loading and generating ProTool projects through STEP 7 Manager

Interfacing ProTool with STEP 7 Lite

Integrating ProTool in the SIMOTION SCOUT engineering tool

Increased configuration efficiency

- Simple selection of superimposed objects
- Copying function keys and softkeys
- Viewing and hiding hidden buttons
- Expanded quantity framework, especially for TP/OP 170B, e.g. to max. 3,500 entries
- Vertical text alignment of input/output fields and buttons

Importing/exporting all project texts (static texts, text lists, messages, information texts, etc.) for a simple translation of HMI projects using standard text editors

Converting projects with different resolutions

A project can be converted for another HMI system in just a few steps, even in the case of higher or lower resolution of the display (e.g. from OP37 10" to MP 370 12"). All display contents are automatically zoomed to the new resolution. The function comprises all the graphic devices configured in ProTool.

Converting OP27/37, TP27/37 projects for Windows CE-based devices

- Matching of the "ProTool fonts" to Windows fonts
- Optimized alignment of the converted fields
- Optimized conversion of pictograms
- System keys (ESC, ACK, HELP, Enter, Home and End) expandable with additional functions
- No conversion of character graphics, instead vector graphics and graphical libraries can be used
- For easy conversion, see the short guide "Configuration support for new users"

Replacing project parts

An existing project can be updated for a new project using the "Replace" function with just a few steps. The objects – such as pictures, picture components, variables and scripts – of the existing project (for example one which is used on the machine) are simply overwritten with the corresponding objects in the revised project.

Complete simulation of the ProTool configuration (Windows CE-based systems)

A complete configuration can be simulated quickly and efficiently on the configuration computer: The complete HMI target system is presented on the configuration computer and the device's softkeys and function keys can be simply operated by mouse. The SIMATIC S7-PLCSIM engineering tool simulates the PLC hardware and animates the variables.

Optimized online Help

ProTool/Pro Version 6.0 upwards offers convenient online Help via the information system. In addition to its table of contents, the new help system can also be searched using an index and with a full-text function. All documents and help files can be searched.

Project download via

- Modem (analog/ISDN),
- Ethernet, USB (depending on the available device interfaces)

New service tool ProSave V6.0 + SP2

- Complete service tool under Windows for all panels and multi panels
- Interfacing through serial, MPI, Ethernet or USB interface
- For use integrated in ProTool or stand-alone
- Language selection of 9 languages incl. Asian ideographic languages

Used for

- Backup/restore

Additionally, with the Windows CE-based devices:

- Installation of options
- License transfer
- Operating system update

Can be used with following operating devices:

- Line-display units: 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 Keys, MP 270, MP 270B, MP 370

Functions (cont.)

Function expansions in ProTool, ProTool/Lite with V6.0 or V6.0 + SP2 (Windows CE-based devices from TP 170B/OP 170B onwards)

- Read-off line for curve display
  Trend curves and archive curves can now be analyzed using the read-off lines. The values at the crossover point of the read-off line on the curve can be output in a table.
- Graphical selection field
  This display object offers a convenient input possibility. The user can select from a list of symbols. A project can therefore be executed as far as possible language independently.
- 5 runtime languages
  The Panels and Multipanels now support up to 5 languages that can be switched over online on the unit. Up to 32 languages can be used in a project. This reduces the handling and configuration costs.
- DP direct keys
  When keys or buttons on the panels and multi panels are configured as DP direct keys, they are transferred as I/O signals via PROFIBUS DP to SIMATIC S7. This supports time-critical operations with extremely short response times.
- User name login and logout through system messages archivable
- Online changeover of link to S7 control on the operator panel
- Number of fonts that can be used has been increased:
  - Two additional fonts for MP 270B
  - Four additional fonts for MP 370
- Support for two-key operation for panels with key operation
- Support for USB printers (from TP 270/OP 270/MP 270B)
- Expansion of the recipe functions
  - Support for arrays
  - Return values for record functions in a variable, selected via record names
  - Export/import function for data records
  - Recipe field with password protection
  - System messages to recipe functions can be switched off
- Expanded signaling system
  - Optional archiving of message texts (from TP 270/OP 270)
  - Output of fault location and timestamp in ms
- Enhanced logging system
  - Printing of message archives and recipe data records
- Transaction security via UPS (option to support a SITOP UPS in the scope of supply of ProTool) (from TP 270/OP 270/MP 270B)
- Additional functions for multifunctional platforms (MP 270B/MP 370)
  - Optional installation of MS Pocket Internet Explorer (included with ProTool)
  - Optional installation of the Soft-PLC SIMATIC WinAC MP (MP 370 12“)

System requirements

Operating system	
• Minimum	Windows 98 SE, Windows ME
• Recommended	Windows NT 4.0 SP 6a, Windows 2000 SP3, Windows XP Professional, for multilingual configuration 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 for diagnostics functionality
- Reduces PLC memory and processor usage

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
  - Mobile Panels 170
- HMI part of the SIMATIC C7 control systems
  - C7-621, -623, -624, -626, -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
  - Mobile Panels 170
- 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, MP 370
- HMI part of the SIMATIC C7 control systems
  - C7-621, -623, -624, -626, -633, -634, -635

New communications drivers (V6.0 or V6.0 + SP2 and higher)

- MPI to 12 Mbit/s (from TP170B/ OP170B)
- CP342-5/Mux
- PPI drivers for Windows CE devices as well
- SIMOTION
- SINUMERIK (SIMATIC S7-NC, from TP 170B/OP 170B)
- Allen Bradley DH485 (for CE devices without additional hardware (KF modules))
- GE Fanuc (PLC 90-70/ 90-30 using SNP/SNPX protocol)
- Omron SYSMAC C
- Mitsubishi Protocol 4 (Host-Link-Multi-Link protocol)
- Supports all available drivers for Windows CD devices
  - Exception: SIMATIC S5 and SIMATIC 500/505 using PROFIBUS DP

Ordering Data

	Order No.
Configuring software SIMATIC ProTool V6.0 + SP2 including ProAgent V6.0 + SP2 [1] (ProAgent for OP; ProAgent/MP) including native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	**6AV6 581-3BX06-0CX0**
Configuring software SIMATIC ProTool/Lite V6.0 + SP2 including native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	**6AV6 580-3BX06-0CX0**
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]	**6AV6 581-3AX00-0AX2**
• SIMATIC ProTool/Lite [2]	**6AV6 580-3AX00-0AX2**
Powerpack	
• ProTool/Lite to ProTool V6.0 + SP2	**6AV6 571-3AB06-0CX0**
Upgrade	
• ProTool/Lite to ProTool/Lite V6.0 + SP2	**6AV6 580-3BX06-0CX4**
• ProTool to ProTool V6.0 + SP2	**6AV6 581-3BX06-0CX4**

1) Runtime licenses for ProAgent must be ordered separately

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

Ordering Data (cont.)

	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**
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

Further Information

Note on creating Asian configurations

ProTool offers comprehensive language support including Asian characters (simplified Chinese, traditional Chinese, Korean and Japanese). The prerequisite for configuring Asian characters with ProTool V6.0+SP2 is a corresponding Asian version of Windows (98 SE /NT4 SP6/2000/XP) or a multilingual Win2000/XP version with Asian language support installed and an Asian language set as the system language. The configuration user-interface supports 5 languages (English, German, French, Italian and Spanish)

If configuration in ProTool is performed under an Asian user-interface, i.e. the menus, dialog and online Help are in Chinese for example, you will need the ProTool/Pro Configuration V6.0+SP2 ASIA visualization software. This package supports the configuration user-interfaces English, simplified Chinese, traditional Chinese, Korean and Japanese. (see Visualization software)

Notes on configuration support:

For TP 170A, TP 170B, OP 170B, Mobile Panel 170, OP27/37, TP27/37, TP/OP 270, MP 270B and MP 370, texts can be configured with Chinese (simplified/ traditional) or Korean characters.

In addition, texts with Japanese characters can be configured for TP 170A, TP 170B, OP 170B, Mobile Panel 170, TP/OP 270, MP 270B and MP 370 texts. For OP27/37 and TP27/37 support for Japanese characters is not available.

All other panels (TD17, OP3, OP7, OP17, OP25, OP35 and C7 devices) can only be configured with Latin characters.

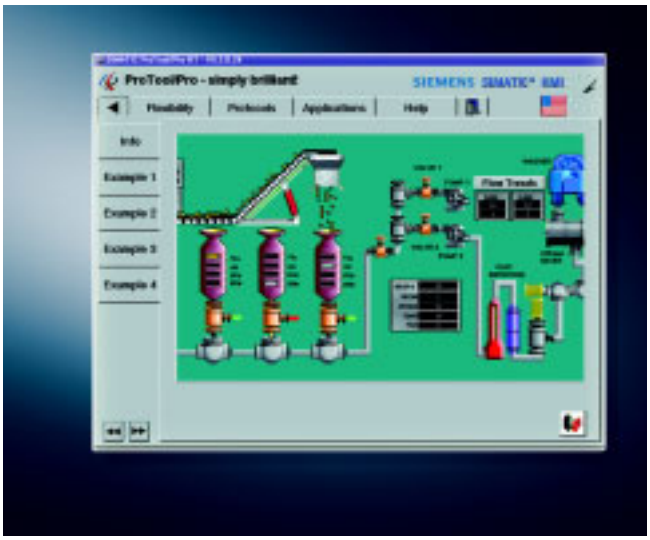
For further information, visit our website at

http://www.siemens.com/protool

4

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 for configuring the SIMATIC Operator Panels
- Runs under Windows 98 SE/ME and Windows NT4.0/2000/XP
- **Current version:**
  - SIMATIC ProTool/Pro Configuration V6.0 + SP2
  - SIMATIC ProTool/Pro Runtime V6.0 + SP2

New features for V6.0 + SP2:

- New operator panels can be configured:
  - Mobile Panel 170
  - MP 370 15" Touch
- Runs under Windows XP Professional
- New communication drivers:
  - SIMATIC S7/SIMOTION via Ethernet (TCP/IP) for ProTool/Pro Runtime systems
  - Allen Bradley DH485 - without additional hardware (KF modules)
  - for CE Panels Windows CE-based Panels of the 170, 270 and 370 series
  - for PC systems with ProTool/Pro RT based on Windows NT 4.0/2000/XP

Service tool ProSave in Version V6.0 + SP2 expanded with:

- Operating system transfer for Windows CE-based devices
- Language changeover of 9 languages incl. Asian ideographic languages
- Can also be used with the following operating devices:
  - Windows CE-based devices: Mobile Panel 170, MP 370 15“ Touch, C7-635 Touch, C7-635 Keys
  - Line-display units: TD17, OP7, OP17, C7-633, C7-634
  - Graphics devices: OP27, TP27, OP37, TP37

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, curve displays, messaging system, logging system, recipe management through to comprehensive controller drivers

Area of 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 all SIMATIC Operator Panels, but also enables implementation of machine visualization tasks with PC-based systems.

Design

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.

Functions

- Process visualization via Windows-compatible user-interface with predefined display objects, such as:
  - Numeric 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, list fields as process operation examples
  - Editing fields for process values (signals)
  - Analog indication and sliders as examples of further graphics objects
- Alarms and messages
  - System messages, event messages and fault messages
  - Bit signaling method or Alarm S (SIMATIC S7)
- Message and process value archiving
  - Various archive types
  - Online evaluation of process value archives through trend curve graphics
  - External evaluation through standard Microsoft tools
  - Archiving in CSV files or ODBC databases
- Logging with log editor for time and event-controlled project documentation with user-definable layout
- Recipes
  - Compiling data records using a configurable graphics object or distributed within the project through process diagrams
  - Transmission of data records from or to the PLC
  - Import/export of CSV files
- Flexibility through Visual Basic Script and OLE automation
- Library for predefined or user-defined diagram elements
- Simulation of process data and messages
- OPC (client/server)

Function expansions in ProTool/Pro Configuration V6.0 or V6.0 + SP2

Configuration of additional operator panels:

- SIMATIC Panels with graphics capability
  - Mobile Panel 170
  - OP 270 6" and 10"
  - TP 270 6" and 10"
  - MP 270B Touch and Key
  - MP 370 15" Touch
  - SIMATIC C7-635 Touch and Key
- SIMATIC Panel PCs
  - Panel PC 870 (12" Touch/Key and 15" Touch/Key)
  - Panel PC IL 70 (12" Touch and 15" Touch)
- SIMOTION Panel PCs
  - P012K, P015K, P012T, P015T
  - PCR, PCR-Touch
- SINUMERIK Panel PCs
  - OP010, OP012, OP015
  - TP012, TP015, OP015A
- Standard PCs with new resolutions
  - 1280 x 1024 pixels, 1600 x 1200 pixels

Extended integration of ProTool/Pro Configuration in STEP 7

- Support for long variable names, including special characters
- Fast access to STEP 7 symbol list
- Automatic synchronization with the STEP 7 symbol list; references are retained in STEP 7 even when the PLC is replaced and are automatically resynchronized
- Integration/disintegration of ProTool in STEP 7 via the File menu in ProTool
- Loading, generating and starting ProTool projects through STEP 7 Manager
- Support of the SIMATIC PC station (SOFTBUS)
  - ProTool/Pro Runtime configurable as HMI software for a PC station
  - Visualization of external SIMATIC PLCs possible

Interfacing ProTool/Pro Configuration with STEP 7 Lite

Integrating ProTool/Pro Configuration in the SIMOTION SCOUT engineering tool

Increased configuration efficiency

- Simple selection of superimposed objects
- Copying function keys and softkeys
- Viewing and hiding hidden buttons
- Expanded quantity framework, especially for TP/OP 170B, e.g. to max. 3,500 entries
- Vertical text alignment of input/output fields and buttons
- ... and more

Importing/exporting all project texts (static texts, text lists, messages, information texts, etc.) for a simple translation of HMI projects using standard text editors

Converting projects with different resolutions

Converting OP27/37, TP27/37 projects for Windows CE-based devices

- Matching of the "ProTool fonts" to Windows fonts
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Complete simulation of the ProTool/Pro configuration (Windows CE-based systems)

A complete configuration can be simulated quickly and efficiently on the configuration computer: The complete HMI target system is presented on the configuration computer and the device's softkeys and function keys can be simply operated by mouse. The SIMATIC S7-PLCSIM engineering tool simulates the PLC hardware and animates the variables.

Optimized online Help

ProTool/Pro Version 6.0 upwards offers convenient online Help via the information system. In addition to its table of contents, the new help system can also be searched using an index and with a full-text function. All documents and help files can be searched.

SIMATIC ProTool/Pro

Functions (cont.)

Project download:

- Analog/ISDN
- Ethernet, USB (depending on the available device interfaces)

PC systems based on ProTool/Pro Runtime:

- Serial
- MPI
- PROFIBUS DP
- Ethernet
- USB download

New service tool ProSave V6.0 + SP2

- A complete service tool under Windows for all panels and multi panels
- Interfacing through serial, MPI, Ethernet or USB interface
- Integrated in ProTool/Pro or as stand-alone tool
- Language changeover with new languages incl. Asian ideographic languages

Used for:

- Backup/restore

Additionally, with the Windows CE-based devices:

- Installation of options
- License transfer
- Operating system update

Can be used with following operator panels:

- Line-display units: 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 TP, C7-635 OP, MP 270, MP 270B, MP 370

Function expansions in ProTool/Pro Runtime V6.0 or V6.0 + SP2

- Read-off line for curve display
  Trend curves and archive curves can now be analyzed using the read-off lines. The values at the crossover point of the read-off line on the curve can be output in a table.
- Graphical selection field
  This display object offers a convenient input possibility. The user can select from a list of symbols. A project can therefore be executed as far as possible language independently.
- 5 runtime languages
  The panels and multi panels now support up to 5 languages that can be switched over online on the unit. Up to 32 languages can be used in a project. This reduces the handling and configuration costs.
- User name login and logout through system messages archivable
- Online controller change possible
- Expansion of the recipe functions
  - Support for arrays
  - Return values for data record functions in a variable
  - Selection possible through record names
  - Export/import function for data records
  - Recipe field with password protection
  - System messages to recipe functions can be disabled
- Expanded message system
  - Optional archiving of message texts
  - Output of fault location and timestamp in ms
- Enhanced logging system
  - Printing of message archives and recipe data records

System requirements for	ProTool/Pro Runtime software	ProTool configuring software
Operating system		
• Minimum	Windows 98 SE, Windows ME (ME not for ASIA version)	
• Recommended	Windows NT 4.0 SP 6a, Windows 2000 SP3, Windows XP Professional, for multilingual configuration 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 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.
3) For authorization of the runtime software.

Options

SIMATIC IT WinBDE machine data management

With the SIMATIC IT 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.

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 for diagnostics functionality
- Reduces PLC memory and processor usage

Note:
For further details, see "SIMATIC ProTool/Pro options" or "SIMATIC ProAgent process diagnostics software"

Integration

New communications drivers (V6.0 or V6.0 + SP2 and higher)

- MPI up to 12 Mbit/s
- CP342-5/Mux
- SIMOTION
- SIMATIC S7/SIMOTION via Ethernet (TCP/IP)
- SIMATIC S7-NC via "SINUMERIK for ProTool/Pro option package"
- Online connection through Teleservice (analog/ISDN, ProTool/Pro RT)
- Allen Bradley DH485 – without additional hardware (KF modules)
  - For Windows CE-based panels
  - For PC systems with ProTool/Pro RT (only those based on Windows NT 4.0/2000/XP)
- GE Fanuc (PLC 90-70/90-30 through SNP/SNPX protocol)
- Omron SYSMAC C
- Mitsubishi Protocol 4 (Host-Link-Multi-Link protocol)

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 5611 [2]
SIMATIC S7 via PPI	
S7-200	CP 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5614 [2] PC/PPI adapter [3]
SIMATIC S7 via MPI	
S7-200 (except CPU 212) [4] S7-300 S7-400 WinAC Basic (V3.0 and higher) WinAC RTX	CP 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [2] CP 5614 [2] PC/MPI adapter [8] Teleservice V5.1
SIMATIC S7 via PROFIBUS DP [5]	
S7-215 [4] S7-300 CPUs with integrated PROFIBUS interfaces S7-300 with CP 342-5 S7-400 CPUs with integrated PROFIBUS interfaces S7-400 with CP 443-5 or IM 467 WinAC Basic (V3.0 and higher) WinAC RTX	CP 5511 [2] CP 5512 [2] CP 5611 [2] CP 5613 [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 Basic (V3.0 and higher) WinAC RTX	CP 1512 [9] [10] CP 1612 [9] [10] CP 1613 [11]
SIMATIC S7 via integrated interface	
WinAC Basic (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 5611 [2]
Third-party PLCs	
Allen Bradley (DF1/DH485)	COM1/COM2
GE Fanuc (SNP/SNPX)	COM1/COM2
Lucky Goldstar GLOFA GM	COM1/COM2
Mitsubishi (FX/MP4)	COM1/COM2
Modicon (Modbus)	COM1/COM2
OMRON (Link/Multilink)	COM1/COM2
Telemecanique (Uni-Telway)	RS 485 interface board [7]

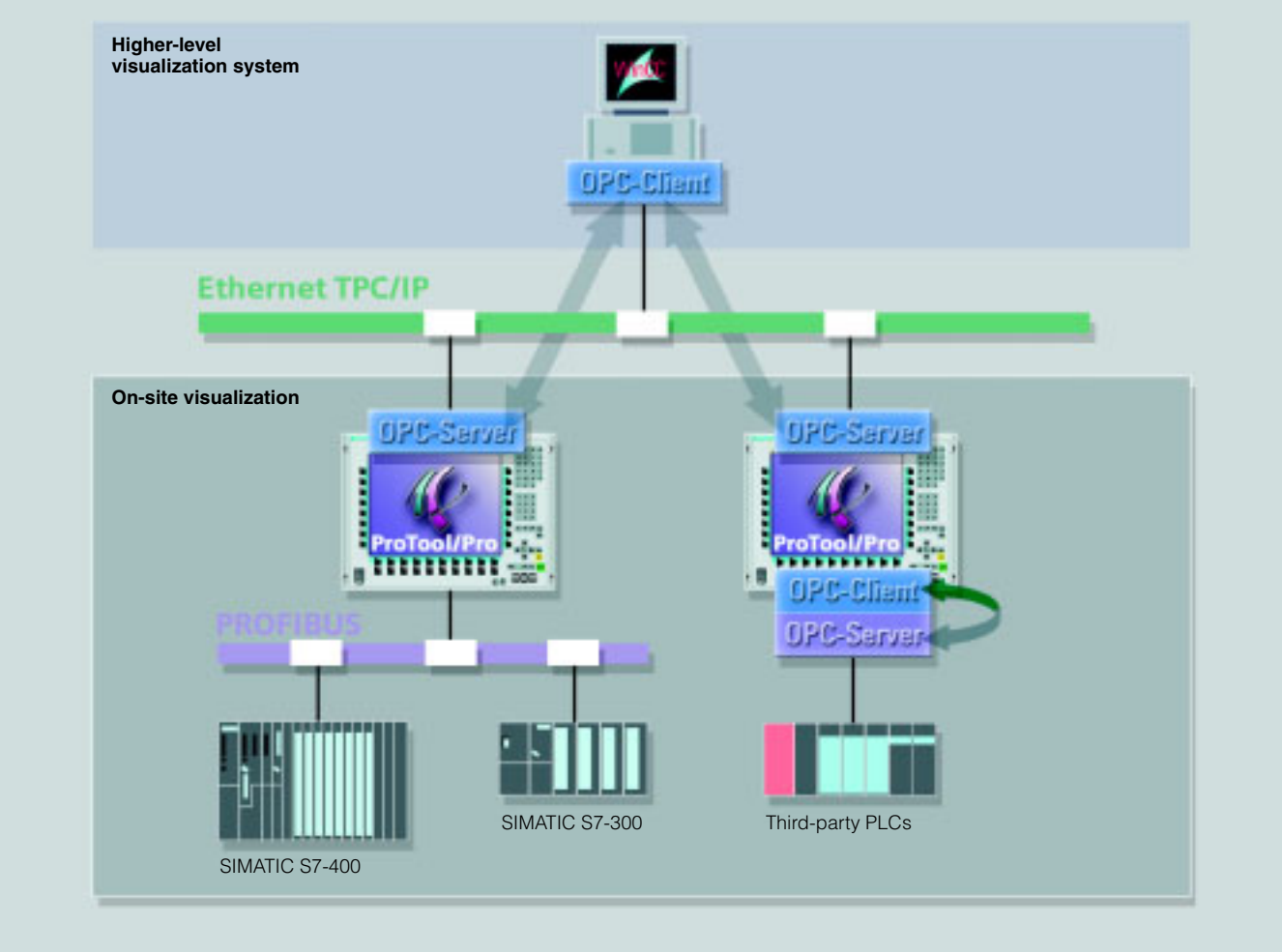
1) ProTool/Pro RT is a passive station (DP slave); the function block required for interfacing is included in the scope of supply of ProTool/Pro.
2) For PC FI45 V2 and Panel PC 670/870 via internal MPI interface.
3) Only point-to-point to S7-200; no configuration download; operating systems: Windows 98/ME/2000/XP; Order No. 6ES7 901-3BF21-0AX0.
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 online Help of ProTool.
8) Only point-to-point to S7-200/-300/-400 (except S7-212); no configuration download; operating systems: 98/ME/2000/XP; Order No. 6ES7 972-0CA23-0XA0.
9) For PC FI45 V2 and Panel PC670/870 via internal Ethernet interface
10) Additionally required: SOFTNET-S7/Windows V6.0 for Industrial Ethernet (6GK1704-1CW60-3AA0)
11) Additionally required: S7-1613/Windows V6.0 (6GK1716-1CB60-3AA0)

Note:
For further information, see "System interfaces"

4

SIMATIC ProTool/Pro

Examples



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**ari-able) 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.

4

SIMATIC ProTool/Pro

Ordering Data

	Order No.
SIMATIC ProTool/Pro Configuration V6.0 + SP2 incl. ProAgent V6.0 + SP2 [3]	**6AV6 582-2BX06-0CX0**
on CD-ROM, comprising:	
• ProTool/Pro Configuration (CS) V6.0 + SP2	
• Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B, MP 370 and ProTool/Pro Runtime	
• Native drivers	
• Electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian	
SIMATIC ProTool/Pro Runtime V6.0 + SP2 for PC systems incl. ProAgent V6.0 + SP2 [3]	
on CD-ROM with license (single license) for	
• 128 PowerTags (RT 128)	**6AV6 584-1AB06-0CX0**
• 256 PowerTags (RT 256)	**6AV6 584-1AC06-0CX0**
• 512 PowerTags (RT 512)	**6AV6 584-1AD06-0CX0**
• 2048 PowerTags (RT 2048)	**6AV6 584-1AF06-0CX0**
Upgrade	
ProTool/Pro to ProTool/Pro V6.0 + SP2 [1]	**6AV6 582-2BX06-0CX4**
ProTool/Pro RT to ProTool/Pro RT V6.0 + SP2	**6AV6 584-3AX06-0CX4**
Powerpacks	
SIMATIC ProTool/Pro RT PowerTags from	
• 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 + SP2	**6AV6 571-2AC06-0CX0**
SIMATIC ProTool to ProTool/Pro V6.0 + SP2	**6AV6 571-2BC06-0CX0**
Software update service [2]	
Software Update Service SIMATIC ProTool/Pro	**6AV6 582-3AX00-0AX2**

	Order No.
Versions for China/Taiwan/Korea/Japan	
SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA	**6AV6 582-2BX06-0CV0**
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, MP 370 and ProTool/Pro Runtime	
• Electronic documentation (.pdf/.chm) in: English, Chinese (traditional and simplified), Korean and Japanese	
SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems	
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**
ProTool/Pro communication via Industrial Ethernet	
CP 1613	**6GK1 161-3AA00**
PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	
S7-1613/Windows V6.1	**6GK1 716-1CB61-3AA0**
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	
CP 1612	**6GK1 161-2AA00**
PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	
CP 1512	**6GK1 151-2AA00**
PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	
SOFTNET-S7/Windows V6.1	**6GK1 704-1CW61-3AA0**
Software for S5-compatible communication (SEND/RECEIVE) and S7-communication for Windows NT4.0 / 2000 / XP	

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 12 weeks prior to expiry.

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

Ordering Data (cont.)

	Order No.
ProTool/Pro communication via PROFIBUS	
CP 5613 PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA00**
S7-5613/Windows NT 4.0, 2000 Pro/Server Software for S7 communication incl. PG/OP communication, FDL, S7 OPC server, for Windows NT4.0 / 2000 / XP	**6GK1 713-5CB60-3AA0**
CP 5511 PCMCIA card (16-bit) for connecting a PG/PC to PROFIBUS or MPI (communication software included in ProTool/Pro)	**6GK1 551-1AA00**
CP 5512 PCMCIA card (CARDBUS 32 bit) for connecting a PG/Notebook 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 RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 Kbit/s	**6ES7 901-3BF21-0XA0**
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, 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**
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**
Documentation CD 5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	**6AV6 594-1SA06-0CX0**

Further Information

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

For the Asian market, ProTool/Pro V6.0 + SP2 is also available in simplified Chinese, traditional Chinese, Korean, Japanese as well as English language versions. For this, a Chinese (simplified or traditional), Korean or Japanese Windows 98 SE or Windows NT 4.0/2000/XP is required. ProTool/Pro V6.0 + SP2 ASIA offers a local-language configuration user-interface.

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

In addition, texts with Japanese characters can be configured for TP 170A, TP 170B, OP 170B, Mobile Panel, TP/OP 270, MP 270B, MP 370 as well as ProTool/Pro Runtime for PC texts. For these systems, the online Help is also available in Japanese.

For OP27/37 and TP27/37, Japanese characters are not supported.
Configuration of these devices under the Japanese configuration user-interface is only possible using Latin characters.

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

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

For further information, contact the following e-mail address:
simatichmi.asiasupport@khe.siemens.de

The configuration software ProTool/Pro Configuration V6.0 + SP2 ASIA as well as the runtime software ProTool/Pro Runtime V6.0 + SP2 ASIA are stand-alone products (CD-ROM) that contain the language versions English and simplified and traditional Chinese, Korean and Japanese.

The runtime licenses are not language-dependent; the English data handling program (AuthorsW) also runs under the Chinese, Korean and Japanese Windows versions listed earlier.

The documentation in Chinese, Japanese and Korean can be obtained from the relevant national Siemens company in China, Korea, Taiwan or Japan.

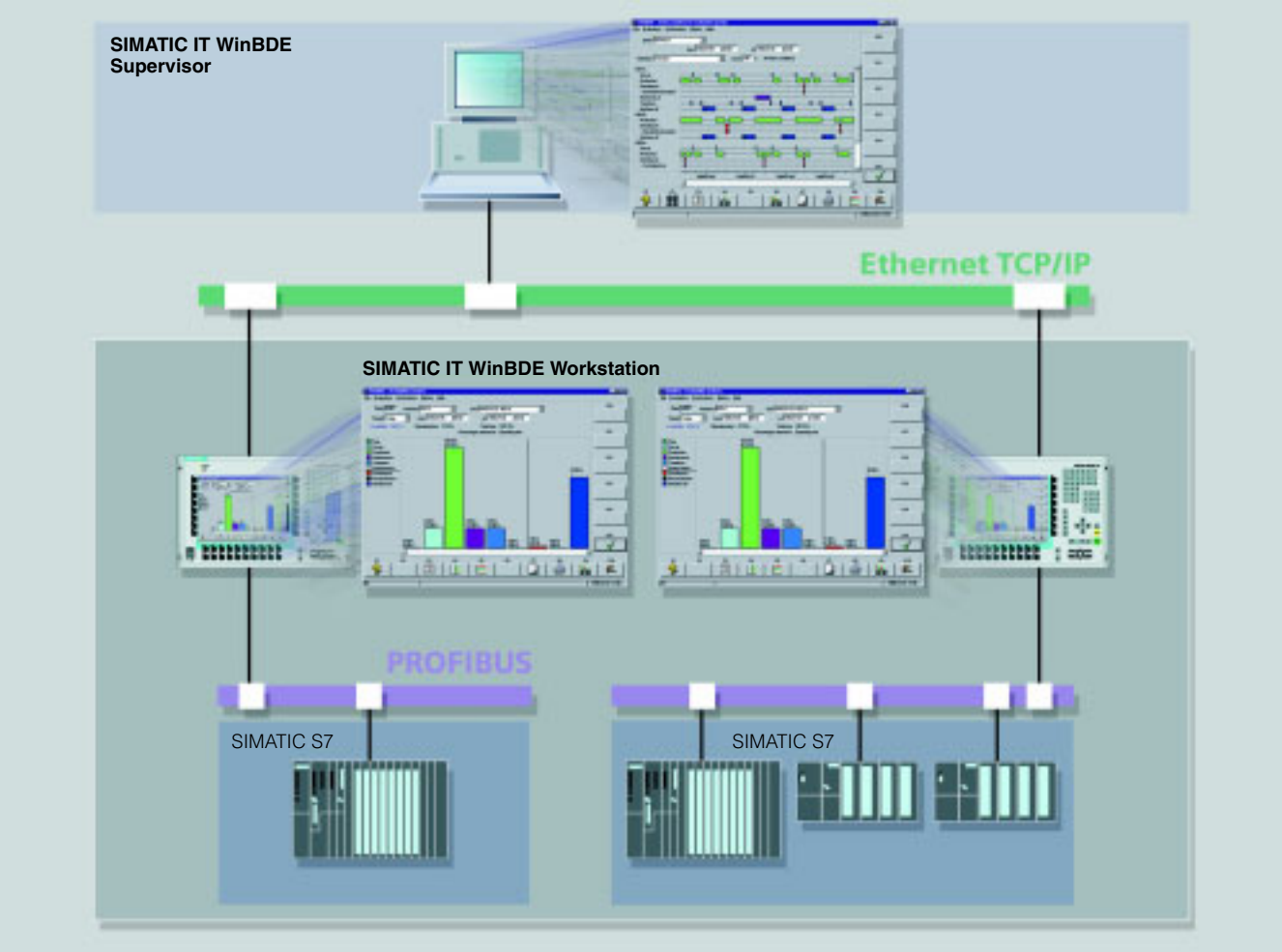
Contact

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

For further information, visit our website at

http://www.siemens.com/protoolpro

Overview



- SIMATIC® IT WinBDE is the machine data management software for the 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 IT WinBDE Workstation V7.1
  - SIMATIC IT WinBDE Supervisor V7.1

New features of V7.0 and V7.1:

- SIMATIC IT WinBDE can now also run under Windows 2000
- Continuous monitoring of machine counters and component-type-specific counters directly from the PLC
- Based on quantities of "Good" parts, "Rejects" and "Repair" parts, these counters can be used to generate new evaluations concerning, for example, the quantity trend or processing quality and over all time periods ranging from the shift and day through to the calendar year
- Expansion of the evaluations for availablity and capacity utilization with the following features:
  - OEE figure
  - Machine performance
  - Processing quality
  - Mean time between failures (MTBF)
  - Mean time to repair (MTTR)
- The expanded online customizing features permit user-friendly access to a multitude of parameters and filters which enable evaluations to be carried out with even more detail and customization
- Also supports the databases MS SQL Server 2000 and Oracle, Version 9
- Can be integrated into SIMATIC S7

Benefits

- Used for individual machines through to complete production plants
- Detailed graphical machine and production data evaluations can be used to prevent faults and bottlenecks to increase availability and to optimize the processes
- Increases transparency:
  - Supports fast counter-measures in the event of a fault
  - Increases machine runtimes
  - Provides proof of availability for production equipment and manufacturing units
- Exports operational data for more detailed evaluations

SIMATIC ProTool/Pro Options

Design

SIMATIC IT WinBDE Workstation

- Direct acquisition and evaluation of machine data on operator panel or standard PC
- Several units can be implemented per machine
- Scaleability for connecting one to 32 machines/units

SIMATIC IT WinBDE Supervisor

- With operator panel or standard PC
- Central evaluations and comparison of individual machines
- Works calendar, day types, shifts, working time models
- License for connection of up to 64 machines/units through lower-level WinBDE Workstation

Functions

Data input

- Automatic recording through OPC server
- 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 objective determination of availability
- Quantity evaluations using machine counters
- 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 OEE figures (availability, performance, quality, OEE)
- Calculation of the mean time between failures (MTBF)
- Calculation of the mean time to repair (MTTR)

Integration

Workstation connection

- Up to 32 machines/units, depending on bus load
- SIMATIC S7-300 and S7-400, as well as C7-6xx through MPI or PROFIBUS DP
- Connections through Industrial Ethernet, digital inputs, DDE interface and other PLCs on request

Supervisor connection

- Depending on the performance of the PC, up to 64 machines/units can be connected through lower-level SIMATIC IT WinBDE Workstation or WinBDE for SINUMERIK

Requirements

SIMATIC IT WinBDE Workstation:

- SIMATIC Panel PC 670 with keyboard, SIMATIC PC FI45, standard PC (Pentium II or higher)
- 128 MB RAM
- PROFIBUS DP/MPI interface for standard PC (with SIMATIC PC on-board)
- Ethernet connection (for operation with WinBDE Supervisor)
- Windows NT 4.0, Windows 2000
- ProTool/Pro V5.2 + SP3 or V6.0, WinCC V5.1

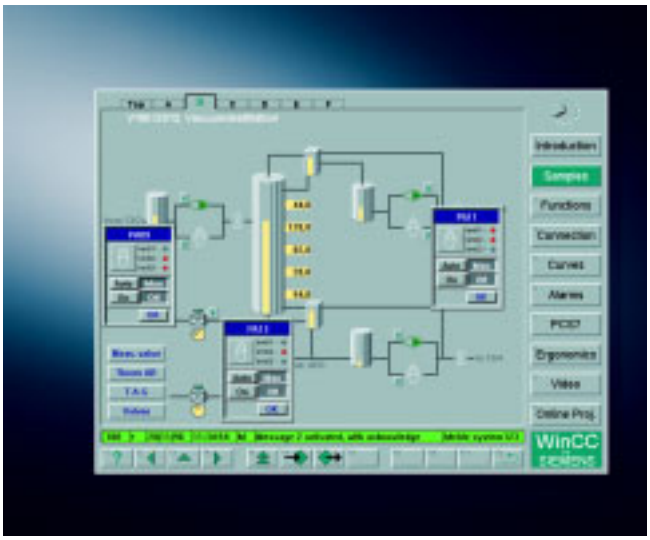
SIMATIC IT WinBDE Supervisor:

- SIMATIC Panel PC 670 with keyboard, SIMATIC PC FI45, standard PC (Pentium II or higher)
- 128 MB RAM (ProTool/Pro), 256 MB RAM (WinCC)
- Ethernet connection
- Windows NT 4.0, Windows 2000

Ordering Data

	Order No.
SIMATIC IT WinBDE V7.1	
Option for WinCC V5.1; for WinCC V6.0 on request	
Machine data management workstation	
License for connection of:	
• 1 machine / equipment unit	**6BQ3 090-2AB10-0CA0**
• 8 machines / equipment units	**6BQ3 090-2AB20-0CA0**
• 32 machines / equipment units	**6BQ3 090-2AB30-0CA0**
Machine data management supervisor	
License for connection of:	
• 64 machines / equipment units	**6BQ3 090-2AB80-0CA0**

Overview



- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and systems in all sectors - with the simple single-user station through to distributed multi-user systems with redundant servers and multi-site solutions with Web clients. WinCC is the information hub for corporation-wide vertical integration.
- The basic system configuration (WinCC basic software) includes functions meeting industrial requirements 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:
    Executes under Windows 2000 / XP
  - SIMATIC WinCC V5.1:
    Executes under Windows NT 4.0 / 2000

New features of V6.0:

- Historian concept in the basic 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, system-wide scalability by increasing the number of servers (12) and clients (32) with enhanced functionality
- Extended Web functionality with WinCC clients as Web servers with access to all lower-level WinCC servers
- Further functional adaptation to the WebNavigator client on a WinCC client
- Enhancement of the reporting and logging system thanks to higher flexibility, greater openness and simple operation
- Executable under Windows XP (single-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, SIMATIC Logon and SIMATIC Electronic Signature
  - WinCC/Client Access License (required for systems on which there is no WinCC license/installation. Licensing the access to WinCC data via the optional WinCC interfaces WinCC/ConnectivityPack and WinCC/Industrial DataBridge)

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- All HMI functions are onboard (user administration, operating possibilities, graphical system, messaging system, archiving, reporting and logging system, diagnostics)
- Integration platform in the corporation thanks to the Historian functionality integrated into WinCC based on the Microsoft SQL Server and tools and clients for evaluation
- System-wide, scalable client/server structures with operator stations on the Web, distributed servers and data integrity due to redundancy
- Easily integrated thanks to standardized interfaces such as OPC (OLE for Process Control), OLE-DB, VBA, VBScript, C-API (ODK)
- For universal use thanks to solutions 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

Area of 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). The term PowerTags is applied only to process variables that have a process connection to the PLC. Up to 32 signals can be derived from one process variable. Furthermore, internal variables without a connection to the process are available as additional system performance.

Licenses for a multi-user configuration

The system software must be installed on the server with the required number of variables 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.

Functions

The powerful configuration functions of SIMATIC WinCC contribute to reducing the engineering and training costs 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 base 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

Interfaces

	Task/configurable runtime functionality
Communications channels	For the communication to 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, 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)

Compatibility

WinCC version	Windows NT4.0	Windows 2000 Professional		Windows XP Professional		Internet Explorer
	SP6a	SP2; Server SP2; Advanced Server SP2	SP3; Server SP3; Advanced Server SP3		SP1	
V5.1	●	●	●	–	–	IE V5.5; IE V6.0
V6.0	–	●	●	●	●	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 customized 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.

WinCC V6 has integrated, for the first time, a powerful, flexible Historian based on the Microsoft SQL Server 2000 into the basic system. The user therefore has all the options open: 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 Licences) 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 or upgrade.

Number of PLCs that can be connected

The following numbers of PLCs can be connected through 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 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 a CP 1613 for Industrial Ethernet® CP 1613 or PROFIBUS CP 5613, a CP 5511 or CP 5611 can each be used for communicating 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 Industrial Ethernet with SIMATIC S7-400H. This connects the SIMATIC S7-400H with applications on the PC, e.g. SIMATIC WinCC. Communications redundancy can normally not 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 third-party PLCs:

OPC (OLE for Process Control) is recommended for interfacing to third-party PLCs.

For the latest information about OPC servers from a wide range of different manufacturers, see:
www.opcfoundation.org/05_man.asp

WinCC supports the standards:

- Data Access 1.1
- Data Access 2.0

For further information, visit our website at

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

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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	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

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 Communication software for S7 functions • For Windows NT4.0/2000/XP				●			**6GK1 704-1CW61-3AA0**
CP 1613 PCI card for connecting the PG/PC to Industrial Ethernet (communications software must be ordered separately)	●	●	●	●	●	●	**6GK1 161-3AA00**
S7-1613 Communications software for S7 functions and S5/505 Layer 4 communication with TCP/IP • For Windows NT4.0/2000/XP		●	●	●	●		**6GK1 716-1CB61-3AA0**
TF-1613 Communications software for TF functions and S5/505 Layer 4 communication with TCP/IP • For Windows NT4.0/2000	●	●	●		●		**6GK1 716-1TB60-3AA0**

● System coupling is possible

1) Via any interface board with NDIS 3.0 interface; separate communications software is not necessary

For further information, visit our website at

http://www4.ad.siemens.de:8080/view/cs/de/14627901

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SIMATIC WinCC

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 the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		●			Included in the basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			●		Included in the basic package
PROFIBUS FMS Channel DLL for PROFIBUS FMS				●	Included in the basic package
Communication components for 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**
S7-5613 Communications software for S7 functions + FDL • For Windows NT4.0/2000/XP	●	●			**6GK1 713-5CB61-3AA0**
DP-5613 Communications software for DP master + FDL • For Windows NT4.0/2000/XP	●		●		**6GK1 713-5DB61-3AA0**
FMS-5613 Communications software for PROFIBUS-FMS + FDL • For Windows NT4.0/2000/XP	●			●	**6GK1 713-5FB61-3AA0**

● System coupling is possible

For further information, visit our website at

http://www4.ad.siemens.de:8080/view/cs/de/14628484

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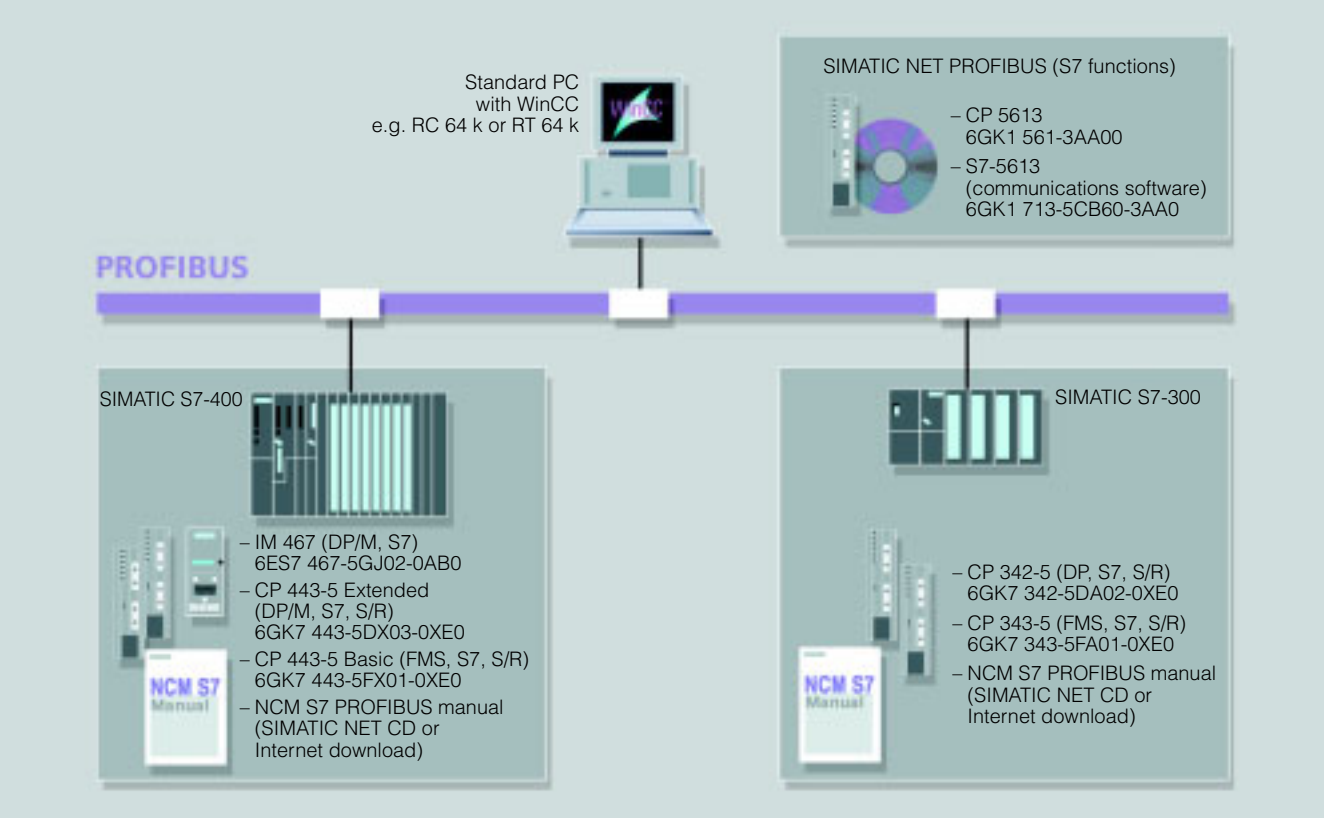
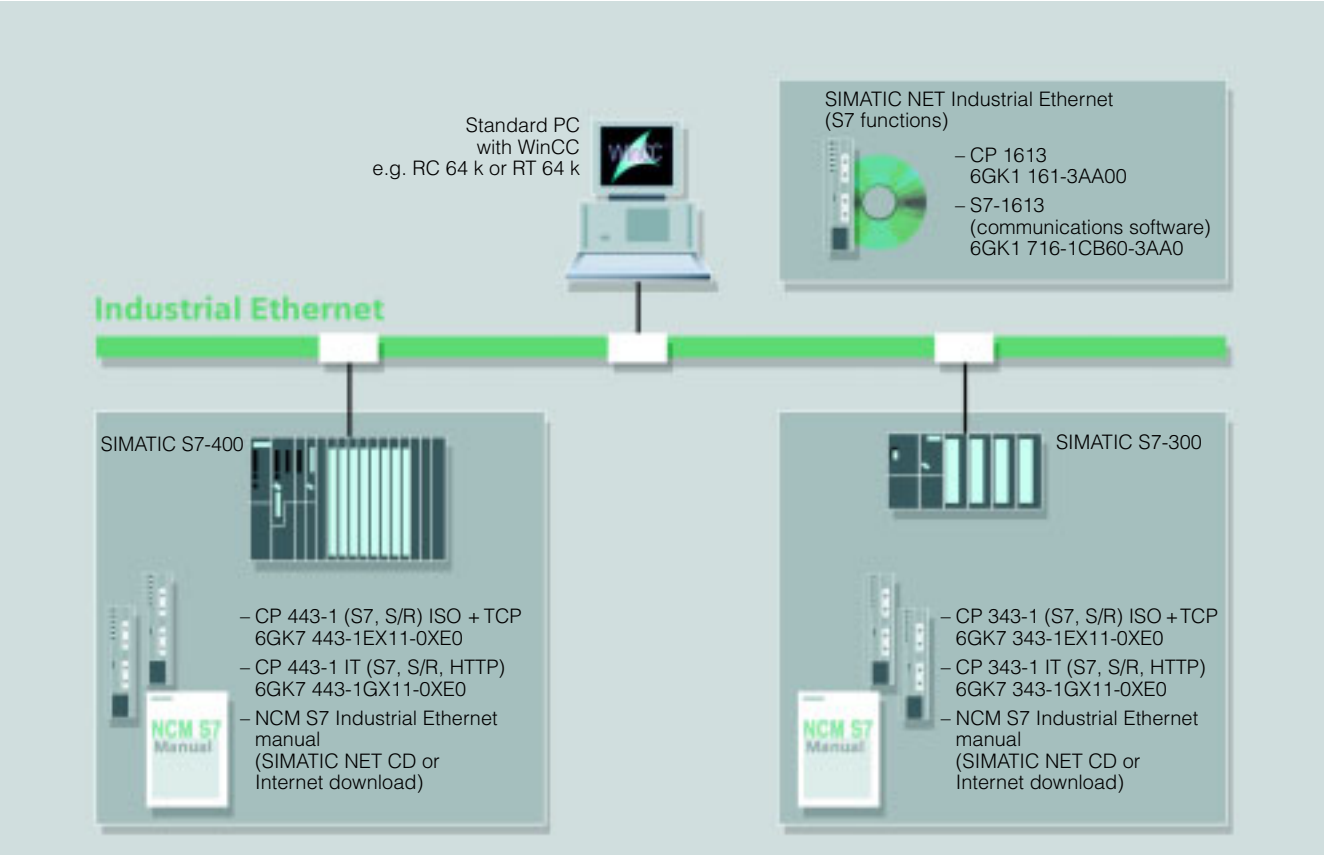
Communication examples

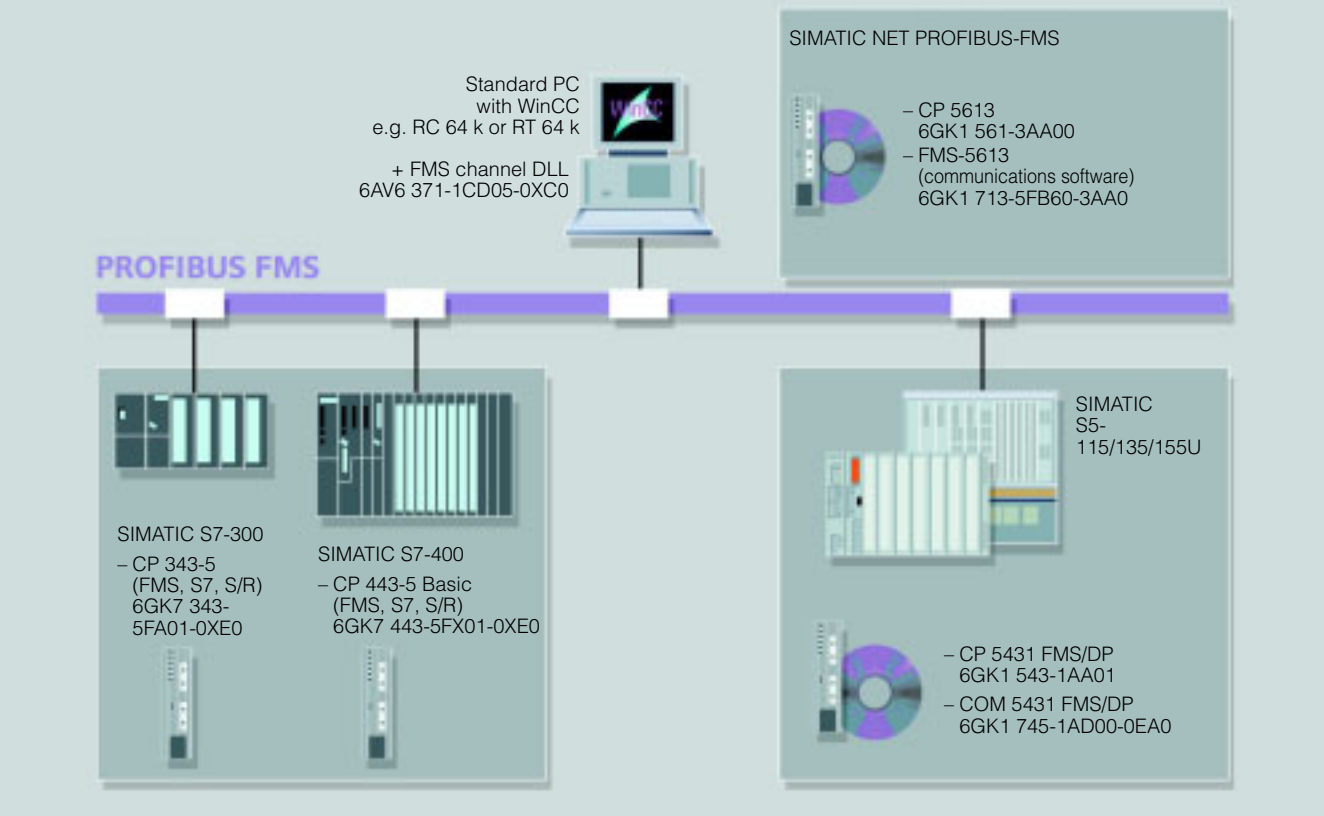


WinCC single-user system: PROFIBUS with S7 communication

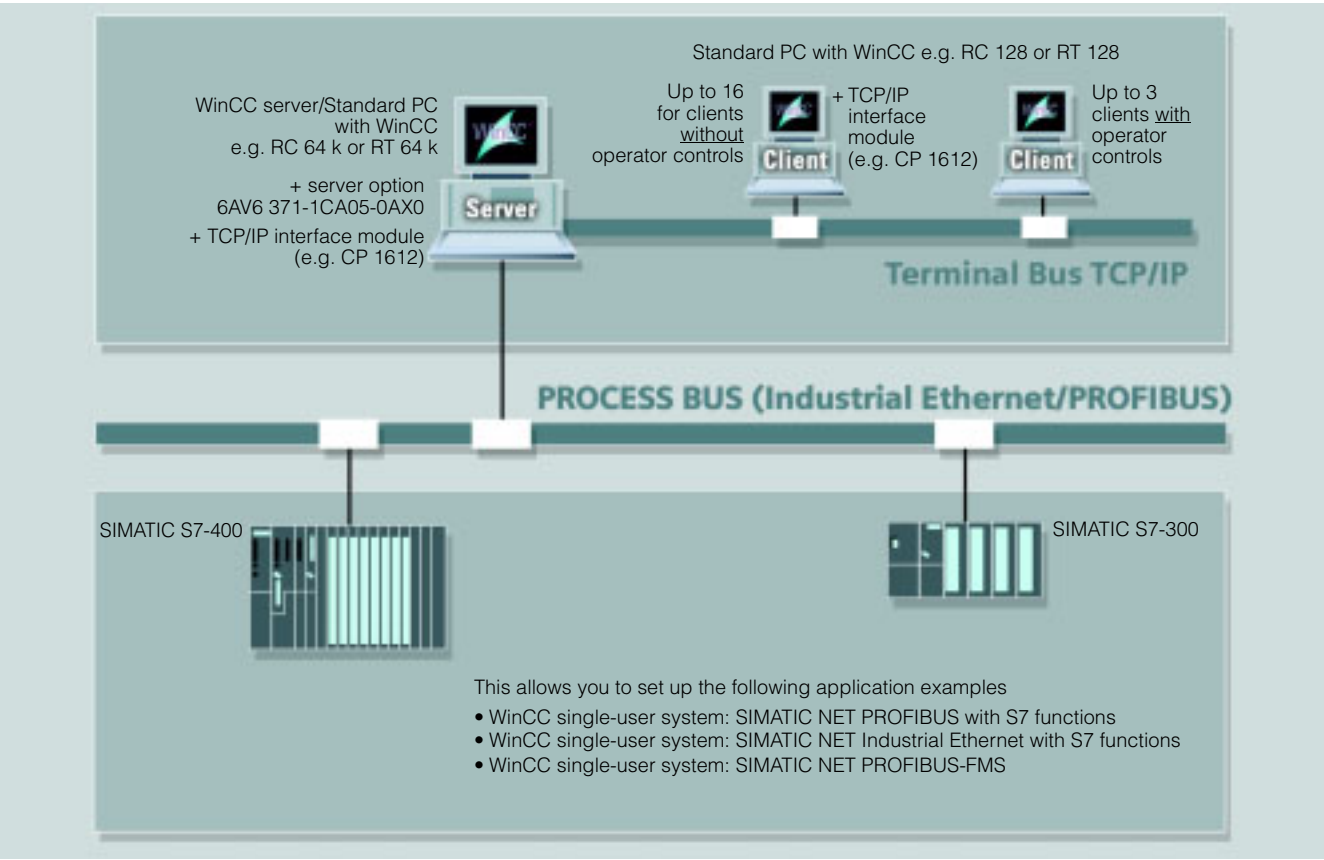


WinCC single-user system: Industrial Ethernet with S7 communication

Communication examples (cont.)

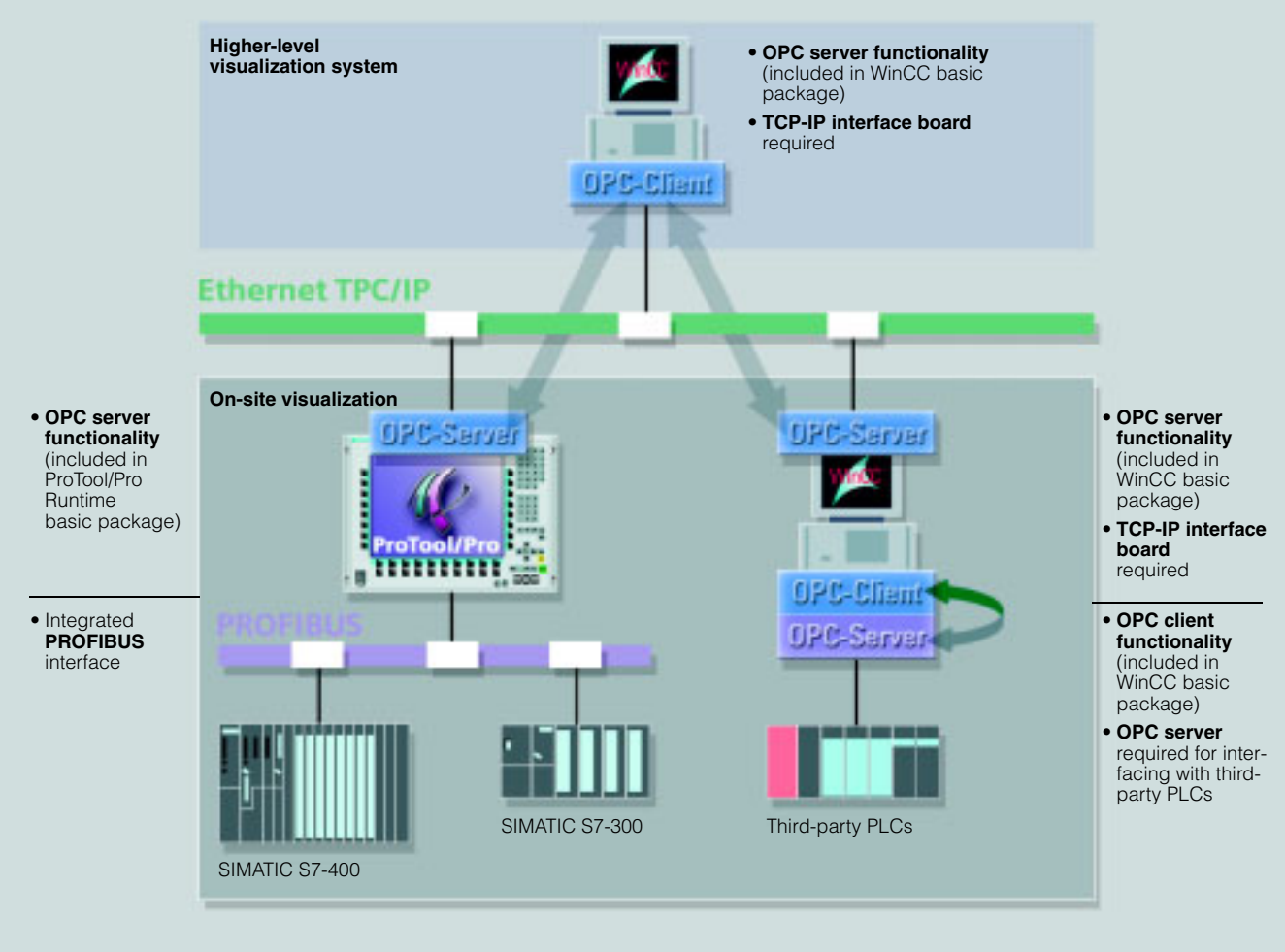


WinCC single-user system: PROFIBUS FMS



WinCC multi-user system with operator-controllable server

Communication examples (cont.)



OPC interface

SIMATIC WinCC

Technical specifications

Type	SIMATIC WinCC V5.1	SIMATIC WinCC V6.0
Operating system	Windows NT4.0/ Windows 2000	Windows XP Professional/ Windows 2000
	WebClient, additionally: Windows 98, Windows ME, Windows 2000 terminal services	WebClient/Dat@Monitor Client, additionally: Windows NT4.0/ Windows XP Home, Windows 2000 terminal services
Hardware requirements for PC		
Processor type		
• 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) [1]	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) [1]	Single-user system/server: 1 GB
		Central archive server: >= 1 GB
		Client: 512 MB
		WebClient/Dat@Monitor client: 256 MB
Graphics controller		
• 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	For software installation	For software installation

1) At least 32 MB more when using online configuration

Technical specifications (cont.)

Type	SIMATIC WinCC V5.1	SIMATIC WinCC V6.0
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 [2]	> 500,000 messages [2]
• Process values per message	10	10
• Continuous loading, max. messages	2/s	Central archive server 100/s
• Message surge, max.	2000 in 10 min.	Central archive server 15,000/10 sec. every 5 min.
Archive		
• Archive data points	Max. 30,000 per server	Max. 80,000 per server [4]
• Archive types	Polling 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 [2]
• Data records per user archive	65,536	65,536 [5]
• No. of fields per user archive	500	500 [5]
Graphics system		
• No. of diagrams	Determined by system [2]	Determined by system [2]
• No. of objects per picture	Determined by system [2]	Determined by system [2]
• No. of operator-controllable fields per picture	Determined by system [2]	Determined by system [2]
Process variables	64 K [1]	64 K [1]
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. Chinese / Korean / Japanese)	5 European (Ger., Eng., Fr., Ita., Sp.), 4 Asian (simpl.+trad. Chinese / Korean / Japanese)
Protocols		
• Signal sequence protocols (simultaneous)	1 per server/single-user station	1 per server/single-user station
• Message archive reports (simultaneous)	1	3
• Application reports	Determined by system [2]	Determined by system [2]
• 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) Depends on the number of licensed PowerTags.
2) Dependent on available memory
3) Dbase III only with TagLogging short-term archives
4) Dependent on the number of licensed archive variables; 80,000 archive variables available with the first ServicePack
5) The product of number of fields and number of data records must not exceed 320,000
6) The number of variables per report depend on the performance of the process communication

Ordering Data

	Order No.
SIMATIC WinCC system software V5.1	
Runtime packages on CD-ROM	
Language versions: G/E/F/I/S; with license for:	
• 128 PowerTags (RT 128)	**6AV6 381-1BC05-1AX0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD05-1AX0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE05-1AX0**
• 64K PowerTags (RT Max)	**6AV6 381-1BF05-1AX0**
Complete packages on CD-ROM	
Language versions: G/E/F/I/S; with license for:	
• 128 PowerTags (RC 128)	**6AV6 381-1BM05-1AX0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN05-1AX0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP05-1AX0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ05-1AX0**
SIMATIC WinCC system software V5.1 ASIA (versions for China / Taiwan / Korea / Japan)	
Runtime packages on CD-ROM	
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	
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	
Runtime packages on CD-ROM	
Language versions: German/ English/French/Spanish/Italian; with license for:	
• 128 PowerTags (RT 128)	**6AV6 381-1BC06-0AX0**
• 256 PowerTags (RT 256)	**6AV6 381-1BD06-0AX0**
• 1024 PowerTags (RT 1024)	**6AV6 381-1BE06-0AX0**
• 8 K PowerTags (RT 8K)	**6AV6 381-1BH06-0AX0**
• 64K PowerTags (RT Max)	**6AV6 381-1BF06-0AX0**
Incl. 512 archive variables each	
Complete packages on CD-ROM	
Language versions: German/ English/French/Spanish/Italian; with license for:	
• 128 PowerTags (RC 128)	**6AV6 381-1BM06-0AX0**
• 256 PowerTags (RC 256)	**6AV6 381-1BN06-0AX0**
• 1024 PowerTags (RC 1024)	**6AV6 381-1BP06-0AX0**
• 8 K PowerTags (RT 8K)	**6AV6 381-1BS06-0AX0**
• 64 K PowerTags (RC Max)	**6AV6 381-1BQ06-0AX0**
Incl. 512 archive variables each	
SIMATIC WinCC Powerpacks 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**
• 1500 to 5000 archive variables	**6AV6 371-1DQ06-0AB0**
• 1500 to 30000 archive variables	**6AV6 371-1DQ06-0AE0**
• 5000 to 30000 archive variables	**6AV6 371-1DQ06-0BE0**

Ordering Data

	Order No.
SIMATIC WinCC Upgrade / Comprehensive Support [1]	
WinCC V5 Upgrade	
For upgrading of RT and RC software packages and stations to the newest version	
• V4.x to V5.1	**6AV6 381-1AA05-1AX4**
• V5.x to V5.1	**6AV6 381-1AA05-1AX3**
• V4.x /V5.x ASIA to V5.1 ASIA	**6AV6 381-1AA05-1AV3**
WinCC V6 Upgrade	
• For upgrading the RT version from V5.x to V6.0	**6AV6 381-1AA06-0AX4**
• For upgrading the RC version from V5.x to V6.0	**6AV6 381-1AB06-0AX4**
WinCC Comprehensive Support [2]	
Contains current updates/upgrades for WinCC basic software and options and the WinCC Knowledge Base CD	
• 1 license	**6AV6 381-1AA00-0AX5**
• 3 licenses	**6AV6 381-1AA00-0BX5**
• 10 licenses	**6AV6 381-1AA00-0CX5**
SIMATIC WinCC documentation (to be ordered separately)	
SIMATIC WinCC V5 basic documentation in a slipcase	
Containing 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) According to the license conditions, 1 Upgrade or 1 Comprehensive Support 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 expiration.

SIMATIC WinCC communication

	Order No.
Communication via Industrial Ethernet	
CP 1612	**6GK1 161-2AA00**
PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	
CP 1512	**6GK1 151-2AA00**
PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	
SOFTNET-S7/Windows V6.1	**6GK1 704-1CW61-3AA0**
Software for S5-compatible communication (SEND/RECEIVE) and S7-communication for Windows NT4.0 / 2000 / XP	
CP 1613	**6GK1 161-3AA00**
PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	
S7-1613/Windows V6.1	**6GK1 716-1CB61-3AA0**
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	
TF-1613/Windows V6.1	**6GK1 716-1TB60-3AA0**
Software for TF protocol, S5-compatible communication incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows NT4.0 / 2000	
Channel DLL SIMATIC S5 PMC Ethernet Layer 4	**6AV6 371-1CD05-0PX0**
(only for WinCC V5.1)	
Additional software packages required for S5-PMC	
• 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**

4

SIMATIC WinCC communication (cont.)

	Order No.
Communication via PROFIBUS	
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 PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	**6GK1 561-3AA00**
S7-5613/Windows V6.1 Software for S7 communication incl. PG/OP communication, FDL, S7 OPC server, for Windows NT4.0 / 2000 / XP	**6GK1 713-5CB61-3AA0**
DP-5613/Windows V6.1 Software for DP protocol incl. PG/OP communication, FDL, DP OPC server, for Windows NT 4.0 / 2000 / XP	**6GK1 713-5DB61-3AA0**
FMS-5613/Windows V6.1 Software for FMS protocol incl. PG/OP communication, FDL, FMS OPC server, for Windows NT 4.0 / 2000 / XP	**6GK1 713-5FB61-3AA0**
Channel DLL SIMATIC S5 PMC PROFIBUS (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**

	Order No.
Communication with third-party PLCs (only for WinCC V5.1)	
WinCC/Applicom Multi Protocol Interface	**6AV6 371-1CD05-0AX0**
WinCC/Allen Bradley Serial DF1	**6AV6 371-1CD05-0BX0**
WinCC/Allen Bradley DH/DH+/DH485	**6AV6 371-1CD05-0GX0**
WinCC/GE Fanuc SNP/SNPX	**6AV6 371-1CD05-0EX0**
WinCC/Modbus Serial	**6AV6 371-1CD05-0DX0**
WinCC/Modbus Protocol Suite	**6AV6 371-1CD05-0JX0**
Communication to Siemens systems (only for WinCC V5.1)	
WinCC/SIPART	**6DR1 127-1AA00**

Further 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.

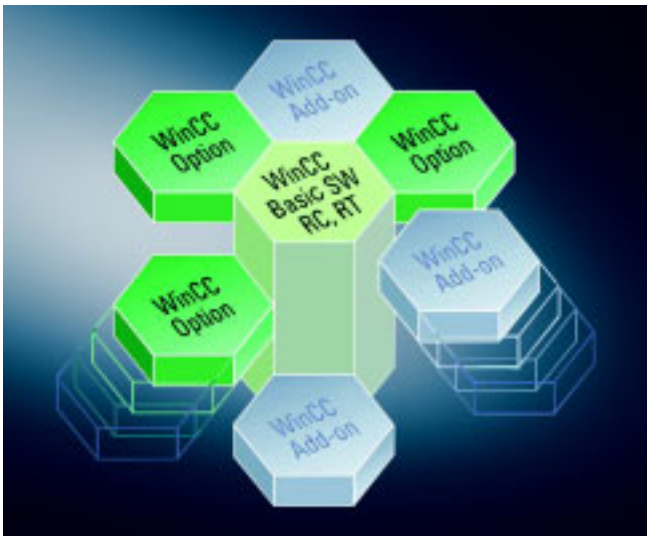
WinCC ASIA is supplied on a stand-alone CD-ROM that contains all the above-mentioned language versions. The corresponding documentation can be obtained from the regional companies in China, Korea, Taiwan and Japan.

Runtime licenses are language-independent. The English data handling program (AuthorsW) can also run under the Chinese, Korean and Japanese versions of Windows.

For further information, visit our website at

http://www.siemens.com/wincc

Overview



- The universally usable WinCC basic software provides the basis for modular expansion. These function expansions can be obtained in the form of WinCC options and WinCC add-ons.
- WinCC options are developed together with WinCC and are supplied by Siemens Automation & Drives. They are supported by the technical consulting services and the central hotline.
- WinCC add-ons are developed and sold by other Siemens service centers (for example the WinCC Competence Center) and external providers (such as WinCC professionals, system houses). Support for WinCC add-ons is provided by the respective product suppliers who are also the contacts for integrating the product in an automation and IT solution.

WinCC options

Options for flexible system configurations

- WinCC/Server
  - For setting up a high-performance client/server system
- WinCC/Web Navigator
  - For operator control and monitoring of systems via the Internet, the company-internal intranet or LAN

Options for enhancing 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, speech 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/Client access license (only for WinCC V6.0)
  - Access from (office) computers to WinCC archive data
- WinCC/Connectivity Pack (only for WinCC V6.0)
  - Access to WinCC archive via OPC and OLE-DB
- WinCC/IndustrialDataBridge (only for WinCC V6.0)
  - Interfacing to databases and IT systems
- SIMATIC IT PDA (only for WinCC V5.1; included in the basic system for WinCC V6.0)
  - Fast, file-based archiving
- SIMATIC IT PPA
  - Archiving and analyzing process data via Microsoft SQL server database
- SIMATIC IT 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 WinCC V5.1; included in the basic system for WinCC V6.0)
  - 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 (for WinCC V6.0)
  - Central management of WinCC users, plant-wide (according to CFR 21 Part 11)
- SIMATIC Electronic Signature (for WinCC V6.0)
  - Support for electronic signatures
- WinCC/Audit (for WinCC V6.0)
  - Creation of Audit Trails during engineering and runtime

Options for individual system expansions

- WinCC/IndustrialX®
  - For configuring using standardized ActiveX objects
- 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

WinCC options and add-ons

Overview (cont.)

WinCC add-ons

WinCC add-ons can be used for solving numerous tasks, such as maintenance management (MES software), energy management, import filters, communication with third-party PLCs or automatic transmission of radio signals in the event of particular alarms during in production.

WinCC add-ons® are available in various forms:

- DLL communication channel to WinCC
- ActiveX control
- Graphics object
- Stand-alone software package

Add-on categories

- SCADA expansions
- Configuration tools
- Software for MES and ERP integration
- Industrial solutions
- Technological solutions
- Communications channels
  - For connecting to Siemens PLCs
  - For connecting to third-party PLCs
  - For connecting to field bus systems
  - Other solutions

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 in the use of 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
  - Customer specific database connections
- Barcelona, key areas production automation and logistics
  - Solutions for integrating WinCC into MES and ERP
  - Development of WinCC add-ons

Contact: WinCC Competence Center

- Mannheim

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lvalls@scm.siemens.es

For further information, visit our website at

http://www.siemens.com/wincc/competencecenter

Further Information

For further information, visit our website at

http://www.siemens.com/wincc/options

http://www.siemens.com/wincc/addons

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.

For further information, visit our website at

http://www3.ad.siemens.de/solpro

WinCC Professionals

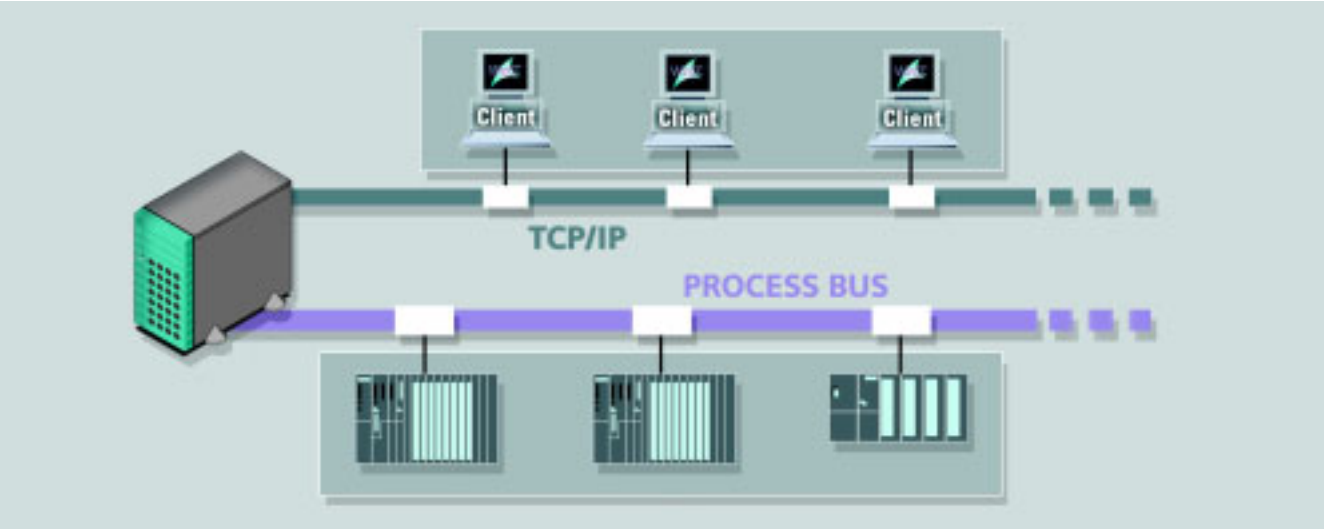
WinCC Professionals are external system integrators who have established themselves in the field of process visualization and thanks to numerous projects implemented with WinCC have built up a corresponding pool of expertise. They often also market their software solutions as add-ons for WinCC.

For further information, visit our website at

http://www1.ad.siemens.de/hmi/html_76/partner/professionals.htm

WinCC/Server

Overview



- Option for SIMATIC WinCC that enables a powerful client/server system to be established
- Several coordinated operator stations can be operated together with networked PLCs.
- Client/server solution:
  - The server supplies up to 32 connected clients with process and archive data, messages, pictures and reports
  - Depending on the size of the plant, up to 12 servers and 32 clients can be implemented
- Requirement: Network connection (TCP/IP) between the server and the connected clients.
- Each server requires one server license

New features of V6:

- The server can now supply up to 32 clients
- In a plant configuration, up to 12 WinCC servers can be configured (also as redundant server pairs)
- Identical functionality of standard and multi-clients
- WinCC clients can also be used as WinCC Web Navigator servers (see also the WinCC/Web Navigator option and WinCC/Dat@Monitor WebEdition)

Note concerning V5.1

For WinCC V5.1, up to 16 clients on 6 servers are possible. WinCC clients cannot be configured as Web servers, but require a WinCC server (or single-user system).

Benefits

- Plant-wide scalability from the single-user system to the client/server solution
- Significantly higher quantity framework, relieving the individual servers and better performance due to distributing the complete application or tasks over several servers
- Low-cost configuration on the client is possible (the minimum RC license is sufficient)

Area of application

In a complex plant, WinCC can also be configured as a distributed system according to requirements:

- functional distribution (e.g. message servers, archive servers, etc.) or
- distribution according to the physical plant structure (e.g. body-in-white, paintshop, etc.)

Functions

Each client can access several servers simultaneously. Clients can also be used for configuration on the server.

The configuration of WinCC clients as central Web servers – if required, as a distributed system – with a view of all server projects in the plant is also possible.

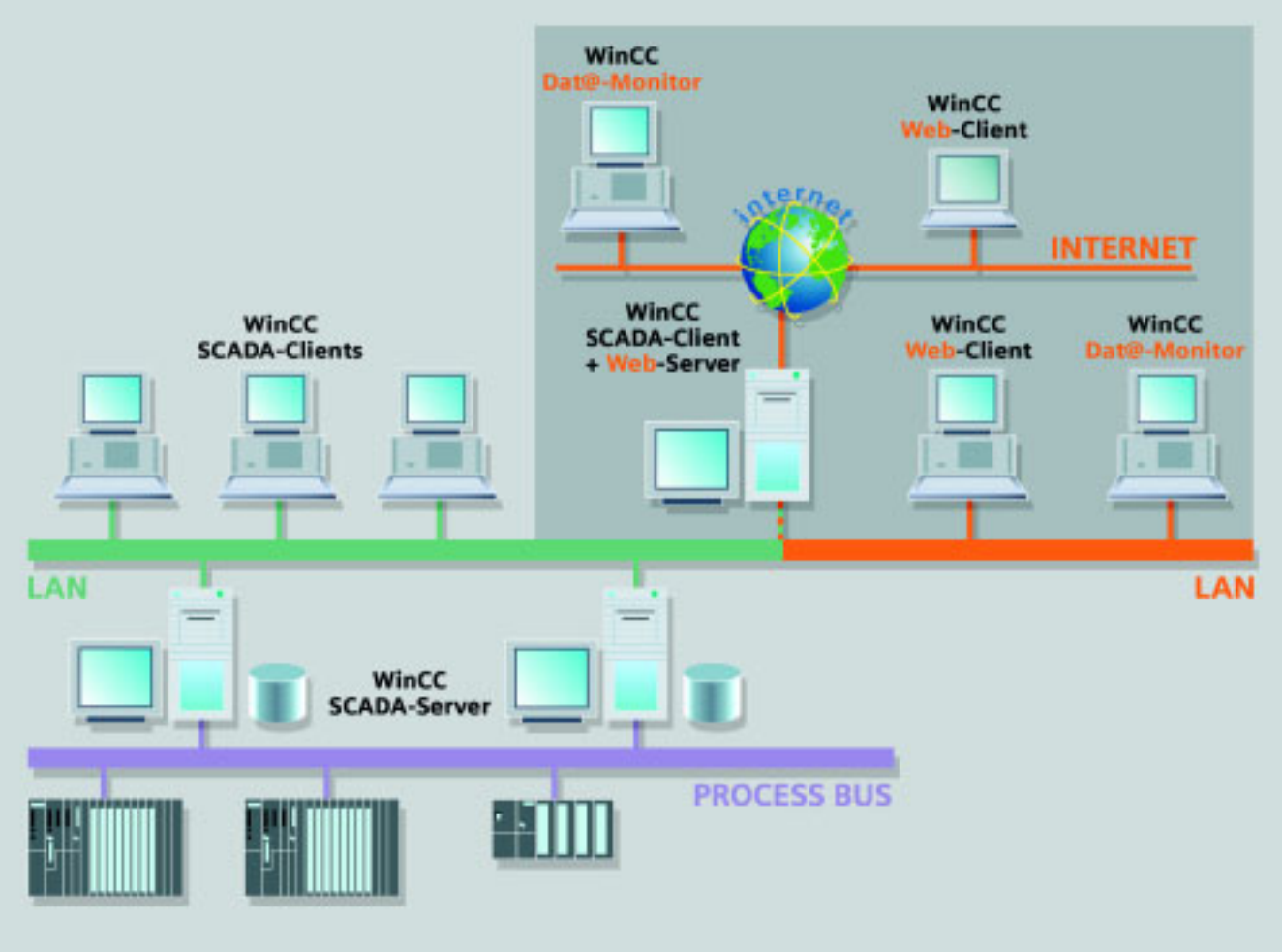
For the clients, you need only the smallest runtime license, RT128. If you also want to use the client for configuring your system, you will need the smallest full license, RC128. This makes it possible to configure low-cost operating and configuration stations in a network. The configuration can be performed online without any detrimental affect on the functions of the server and operating stations.

Ordering Data

	Order No.
WinCC/Server	
• For WinCC V5.1	**6AV6 371-1CA05-0AX0**
• For WinCC V6.0	**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**

WinCC/Web Navigator

Overview



- Option for SIMATIC WinCC for operation and monitoring of plants via the Internet or the company-internal intranet or LAN
- Configuration comprises:
  - One Web server with SIMATIC WinCC software as a single-user, client or server version and
  - A Web client that supports operation and monitoring of a running WinCC project via an Internet browser with ActiveX support. The WinCC basic system is not required on the computer
- Licensing:
  - To use the Web server, however, you need a license.
  - Licenses are available for access by 3, 10 , 25 or 50 clients on the Web server.
  - Special licenses are available for diagnostic purposes

New features of V6:

- Installation of the Web server – in distributed systems – also on a WinCC client;
  - Access to up to 12 subordinate WinCC stations (servers or single-user systems are possible
  - Web clients offer a common view of the data of different WinCC servers
  - When WinCC/Redundancy is used, the Web clients switch over via the lower-level WinCC server (prerequisite: WinCC client is functioning as a Web server)
  - By separating the Web functionality from the WinCC data servers, the complete system is more reliable and more flexible with regard to system loading.
- Integrated user management with WinCC V6:
  On the Web client, the configured WinCC operator authorizations are taken into account.
- Access to user archives
- VB scripts are supported as well as the objects and RT functions included in WinCC V6
- When it is used as an integration platform, easy-to-use services and tools are offered for distributing customized objects (controls, files) to the Web clients. These components can then be integrated into a navigation system that spans various Web servers.

Note concerning V5.1

In combination with WinCC V5.1, the Web Navigator server must be installed on a WinCC single-user system or server.

Benefits

- Operator control and monitoring over large distances on different platforms (PC, on-site panel, mobile PDA)
- Large configurations with up to 50 operator stations
- Fast updating thanks to event-driven communication
- Optimally dimensioned clients for HMI, evaluation, service & diagnostics
- Loading configuration data for the Web 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

Area of 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 (building 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.

Typical applications:

- Remote diagnostics (DEC)/operation by 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;
  to use the Web Navigator server, an appropriate license is required. Licenses are available for simultaneous access of 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.

The Web Navigator can also be used with the Windows 2000 terminal services. 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.

WinCC/Web Navigator licenses and WinCC/Dot@Monitor licenses can be used mixed on one server.

Typical applications:

- Mobile devices
- Hand-held devices
- Rugged local visualization devices

Functions

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.

WinCC/Web Navigator

Ordering Data

	Order No.
WinCC/Web Navigator	
V1.2; For WinCC V5.1	
• Base Pack (3 client licenses)	**6AV6 371-1DH05-1AX0**
• 10 client licenses	**6AV6 371-1DH05-1BX0**
• 25 client licenses	**6AV6 371-1DH05-1CX0**
• 50 client licenses	**6AV6 371-1DH05-1DX0**
V6.0; For WinCC V6.0 [2]	
• Base Pack (3 client licenses)	**6AV6 371-1DH06-0AX0**
• 10 client licenses	**6AV6 371-1DH06-0BX0**
• 25 client licenses	**6AV6 371-1DH06-0CX0**
• 50 client licenses	**6AV6 371-1DH06-0DX0**
WinCC/Web Navigator China/Taiwan	
V1.2; for WinCC V5.1 [1]	
• Base Pack (3 client licenses)	**6AV6 371-1DH05-1AV0**
• 10 client licenses	**6AV6 371-1DH05-1BV0**
• 25 client licenses	**6AV6 371-1DH05-1CV0**
• 50 client licenses	**6AV6 371-1DH05-1DV0**
WinCC/Web Navigator Power packs	
V1.2; For WinCC V5.1	
• 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**
V6.0; For WinCC V6.0	
• 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**
WinCC/Web Navigator diagnostics client	
• For WinCC V5.1	**6AV6 371-1DH05-1EX0**
• For WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1EV0**
• For WinCC V6.0	**6AV6 371-1DH06-0EX0**
WinCC/Web Navigator diagnostics server	
• For WinCC V5.1	**6AV6 371-1DH05-1FX0**
• For WinCC V5.1 China/Taiwan	**6AV6 371-1DH05-1FV0**
• For WinCC V6.0	**6AV6 371-1DH06-0FX0**
WinCC/Web Navigator upgrade	
V1.x to V6.0	
• For 3 clients	**6AV6 371-1DH06-0AX4**
• For 10 clients	**6AV6 371-1DH06-0BX4**
• For 25 clients	**6AV6 371-1DH06-0CX4**
• For 50 clients	**6AV6 371-1DH06-0DX4**

	Order No.
Documentation (to be ordered separately)	
WinCC/Web Navigator V1.2 Manual	
• 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 higher in German, English, French, Italian, Spanish

Further Information

System requirements – Web server

For WinCC/Web Navigator V6

- Operating system:
  - Windows 2000 Professional with SP2 or SP3, with up to 3 WebClients
    Windows 2000 Server with SP2 or SP3, for up to 50 WebClients
  - Windows XP Professional with or without SP1, for up to 3 Web clients
- 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
- SIMATIC WinCC optional Web Navigator server installation

For WinCC/Web Navigator V1.2

- Operating system:
  - Windows 2000 Professional with SP2 or SP3, with up to 3 WebClients
    Windows 2000 Server with SP2 or SP3, for up to 50 WebClients
  - Windows NT 4.0 Workstation with SP6a, with up to 3 WebClients;
    Windows NT 4.0 Server with SP6a, with up to 50 WebClients, the Windows NT 4.0 OptionPack is required
- 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 NT4.0, it can be installed with the supplied OptionPack.
- Internet Explorer V5.01 or higher
- SIMATIC WinCC V5.1
- SIMATIC WinCC/WebNavigator server installation

System requirements – Web client

For WinCC/Web Navigator V6

- Windows NT4.0, Windows 2000/XP (also XP Home) or Windows 2000 terminal services
- Internet Explorer V6.0 or higher
- Web Navigator Client/Diagnostics Client Installation;
  This installation contains the OCX objects for displaying the WinCC displays/objects in Internet Explorer

For WinCC/Web Navigator V1.2

- Windows 98/ME/NT 4.0 or Windows 2000
- 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

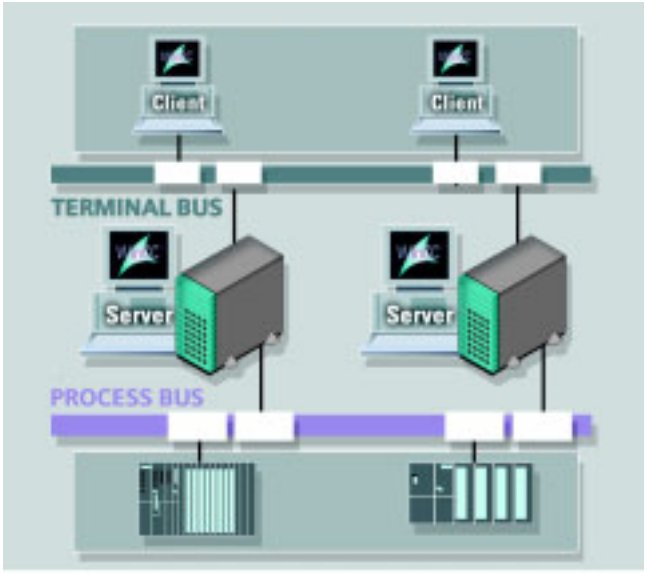
(Requirement: SIMATIC WinCC V5.1 China/Taiwan/Korea/Japan)

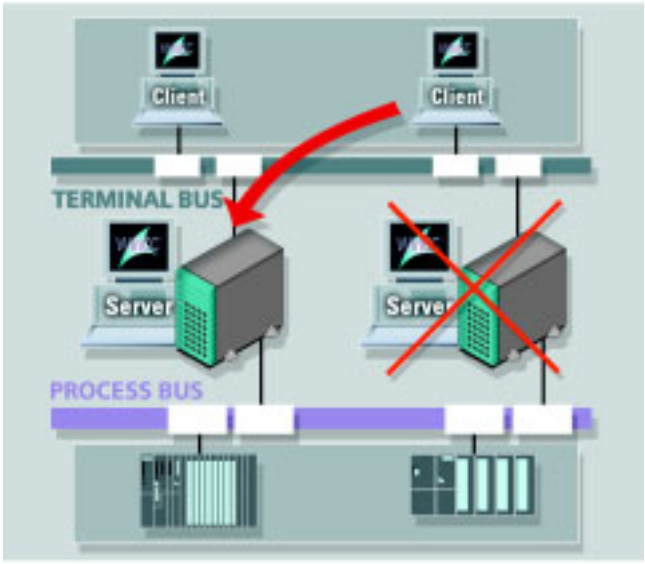
This version contains the following functional differences as compared with the standard version of WinCC/Web Navigator V1.2:

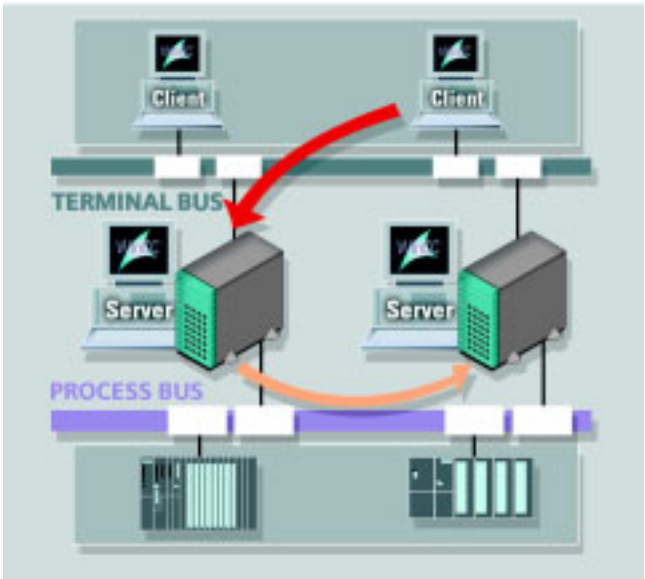
- The server and the client execute on Windows 2000 MUI (Multi-lingual User Interface) and with the respective local language versions of simplified and traditional Chinese
- The client executes on Windows ME simplified Chinese and traditional Chinese
- Operation under the Microsoft terminal services (available soon)
- Access from a Chinese Web Navigator client to a non-Chinese server and vice-versa is not permitted in this version

WinCC/Redundancy

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 computers 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 Redundancy license is required for each of the redundant partner servers

Benefits

- Increased system availability with continuous data integrity
- Automatic changeover in the event of failure of a server or failure of the communication to a server
- Continuous operation and visualization thanks to automatic client changeover to the intact server
- Automatic updating of all archives in the background after rectification of the fault

Functions

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 terminal.

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.

In a WinCC application, you can also use WinCC/Redundancy to create redundant communications channels to the SIMATIC S7 controller by installing two communications processors and implementing duplicate communication paths (this requires the S7-REDCONNECT communications software). By using the H-series SIMATIC S7 fail-safe controllers, you can also increase availability at control level if required.

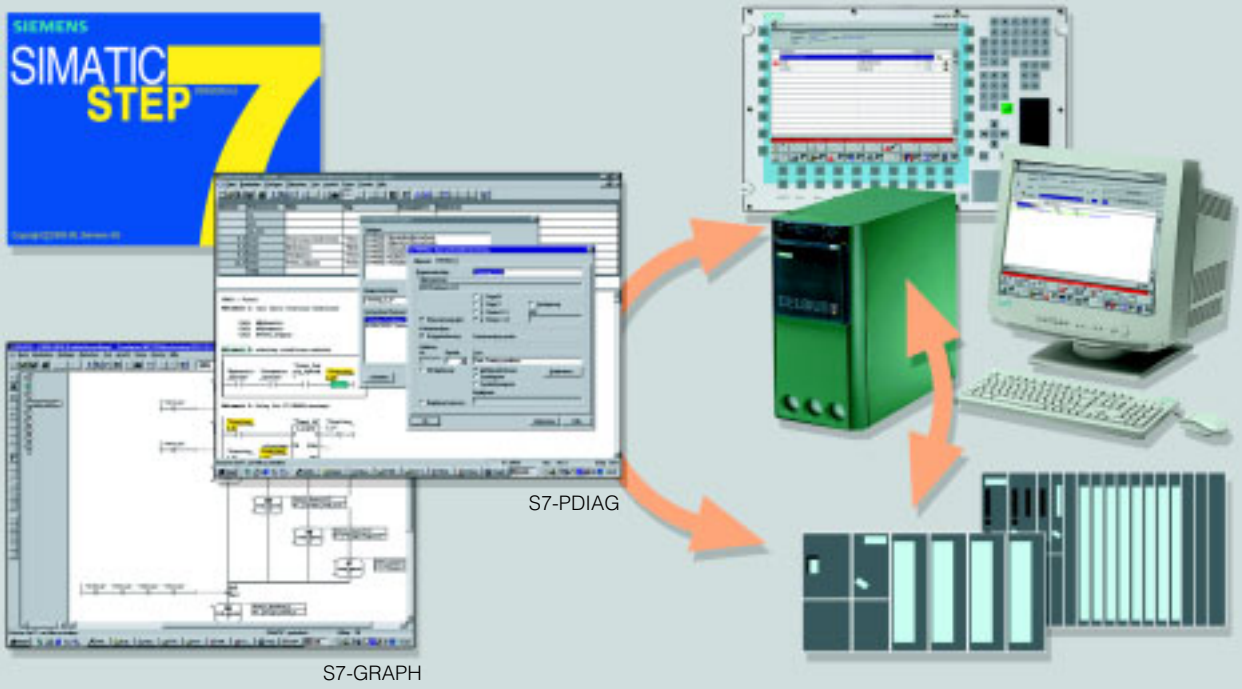
Ordering Data

	Order No.
WinCC/Redundancy	
• 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**

WinCC/ProAgent

Overview

SIMATIC WinCC and WinCC/ProAgent at Panel PC and Standard PC



- Process diagnostics software for fast, focused fault diagnosis in plants and machines for the SIMATIC S7/WinAC control systems and SIMATIC HMI systems
- A standardized diagnostics concept for various SIMATIC components:
  optimum interaction of STEP 7, STEP 7 engineering tools and the SIMATIC WinCC operating and monitoring system
- In the event of a fault in the process, ProAgent in cooperation with the engineering tools obtains information about the location and cause of the fault and supports its rectification
- A license is required for each target hardware

Benefits

- Integral component of Totally Integrated Automation (TIA): increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Precise and fast process fault diagnostics in plants and machines that are controlled and monitored with SIMATIC S7/WinAC and SIMATIC WinCC
- Reductions in downtimes, increases in machine and plant availability
- A universal and standardized diagnostics concept for different SIMATIC components with diagnostics via standard displays
- No additional configuration outlay for the diagnostic functions thanks to automatic generation of the components relevant to diagnosis for the PLC and HMI
- Reduces the PLC's memory requirements and program run times

Area of application

Global competition forces the industry to increase the productivity of its machines and plants. Availability is, however, compromised by the increasing degree of automation and the rising plant complexity that accompanies it. To prevent long downtimes, an effective tool must be at hand for the maintenance personnel. This is where ProAgent supports the operating personnel with fast fault identification especially in the automobile industry and machine tool construction sector.

SIMATIC® ProAgent® supports focussed process fault diagnosis for machines and plants. Thanks to complete integration in the world of SIMATIC process diagnostics, ProAgent offers a user-friendly solution based on STEP 7®, the engineering tools S7-PDIAG, S7-GRAPH and S7-HiGraph

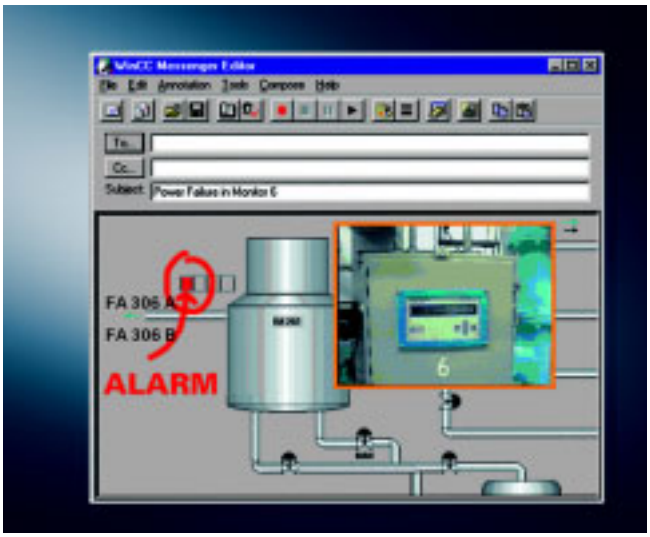
Note:
For further information, see "Process diagnostics software/ SIMATIC ProAgent"

Ordering Data

	Order No.
SIMATIC WinCC/ProAgent	
Software option package for process diagnostics on basis of S7-GRAPH V5 or later and S7-PDIAG V5 or later, executes with SIMATIC WinCC; functional expansion for 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:	
• V5.02 (ProAgent V5.6)	**6AV6 371-1DG05-6AX0**
• V6.0 (ProAgent V6.0)	**6AV6 371-1DG06-0AX0**
Upgrade	
• to SIMATIC WinCC/ProAgent V5.6	**6AV6 371-1DG05-6AX4**
• to SIMATIC WinCC/ProAgent V6.0	**6AV6 371-1DG06-0AX4**

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

Functions

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

	Order No.
WinCC/Messenger V2.0 + SP1 Option only for WinCC V5.1	**6AV6 371-1EJ05-0DX0**

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 versions:
  - *Guardian Single User Edition*
    Video data management system with built-in monitoring functions. Integration of this functionality in WinCC pictures is achieved using the supplied ActiveX controls
  - *Guardian Network Edition*
    Also supports video data streaming to up to 15 further stations in the network. The video images can be viewed on the destination client (i.e. a WinCC station or a Web Navigator client) with a freely distributable, license-free camera viewer
- Option only for WinCC V5.1
- Only servers (or single-user systems) require individual licenses

Benefits

- Always in the picture worldwide thanks to event-driven embedding of live camera pictures
- Video-supported automation of process operations
- Cost savings due to the integration of separate monitoring screens in the WinCC process visualization
- Subsequent process diagnostics and process evaluation due to the storage of video sequences in the database

Functions

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 is already built into the video board.

1) Video cards are not included in the delivery.

Ordering Data

	Order No.
WinCC/Guardian V2.0 + SP1	
Option only for WinCC V5.1	
• Single User Edition	**6AV6 371-1EJ05-0EX0**
• Network Edition	**6AV6 371-1EJ05-0FX0**

WinCC/Dat@Monitor

Overview

- WinCC/Dat@Monitor is used to display and evaluate current process states and historical data on Office PCs with standard tools such as the Microsoft Internet Explorer or Microsoft Excel. In this case, it is supplied by a Web server with current and historical process data.
- The Dat@Monitor Web Edition is a suite of tools with Internet capability:
  - Dat@Symphony - Tool for monitoring and navigating only via WinCC displays by means of Internet Explorer (view only)
  - Dat@View - Internet Explorer-based display tool (tables and curves) for WinCC archives as well as for swapped data
  - Dat@Workbook - Logging tool that integrates WinCC archive 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, but instead it loads the necessary components from the Web server. No additional administration is required.
- Licenses for simultaneous access of 3, 10, 25 or 50 Dat@Monitor-Clients. Dat@Monitor and Web Navigator licenses can be mixed as required in an application.

Benefits

- Display and evaluation of current process states and historical data on office PCs with standard tools such as the Microsoft Internet Explorer or Excel.
- No additional configuring work thanks to direct use of displays from the WinCC project
- Evaluation via preconfigured templates for special analyses of the corporate processes (e.g. reports, statistics)
- Historical data can be assembled online as required.

Functions

- All tools are completely Internet-capable and therefore allow access via any type of connection (LAN, GSM, radio, modem, Internet, ...)
- All generally used security mechanisms such as login/password, firewalls, encryption, etc. are supported
- The user can mix the available tools as required. The license only applies to simultaneous access to a Web server
- For indication purposes, displays from the WinCC project can be used or special overview displays can be used. Animations, scripts, navigation and access rights all remain valid
- The WinCC/Dat@Monitor only functions as a display; intervention in the operation of the process on site is not possible
- Evaluation possibilities:
  Prepared Excel templates for special analyses of the corporate processes can be used (e.g. reports, statistics) or on the other hand, historical or current data can be assembled individually online. This is also possible for data that has already been exported
- Higher-level navigation provides the different tools of the Web server suite with a common framework and allows further components to be integrated

Ordering Data

	Order No.
WinCC/Dat@Monitor WebEdition	
• 3 client licenses	**6AV6 371-1DN06-0AX0**
• 10 client licenses	**6AV6 371-1DN06-0BX0**
• 25 client licenses	**6AV6 371-1DN06-0CX0**
• 50 client licenses	**6AV6 371-1DN06-0DX0**
WinCC/Dat@Monitor WebEdition Powerpack	
• 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**

Overview

- With WinCC/CAL, WinCC data (e.g. curves, messages) of one or more WinCC computers can be accessed from any office computer (without a WinCC installation) and subjected to any type of further processing.
- The WinCC/CAL contains a Microsoft license for remote access to the MS SQL server 2000 database. These licenses are always permanently assigned to a specific client computer and are non-transferable.
- The WinCC/CAL for each processor permits access to any number of office computers (without WinCC installations) to a WinCC system.
- All WinCC products and option packages (Web Navigator, Dat@Monitor) already contain one or more WinCC/CALs. For other applications, the WinCC option Client Access License (CAL) is available as a separate product.
- Option only for WinCC V6.0

Functions

WinCC V6 offers with the integrated MS SQL Server an excellent basis for integrated data management and flexible integration possibilities in modern IT structures. The data available in WinCC can be accessed provided that an appropriate license, the WinCC client access license, exists on all accessing computers. Users can then process WinCC data with separate tools and make them available to other users and applications. Each computer that uses the WinCC data must be equipped with a WinCC/CAL. If the "per processor license" is used, the WinCC system can be accessed by any number of computers.

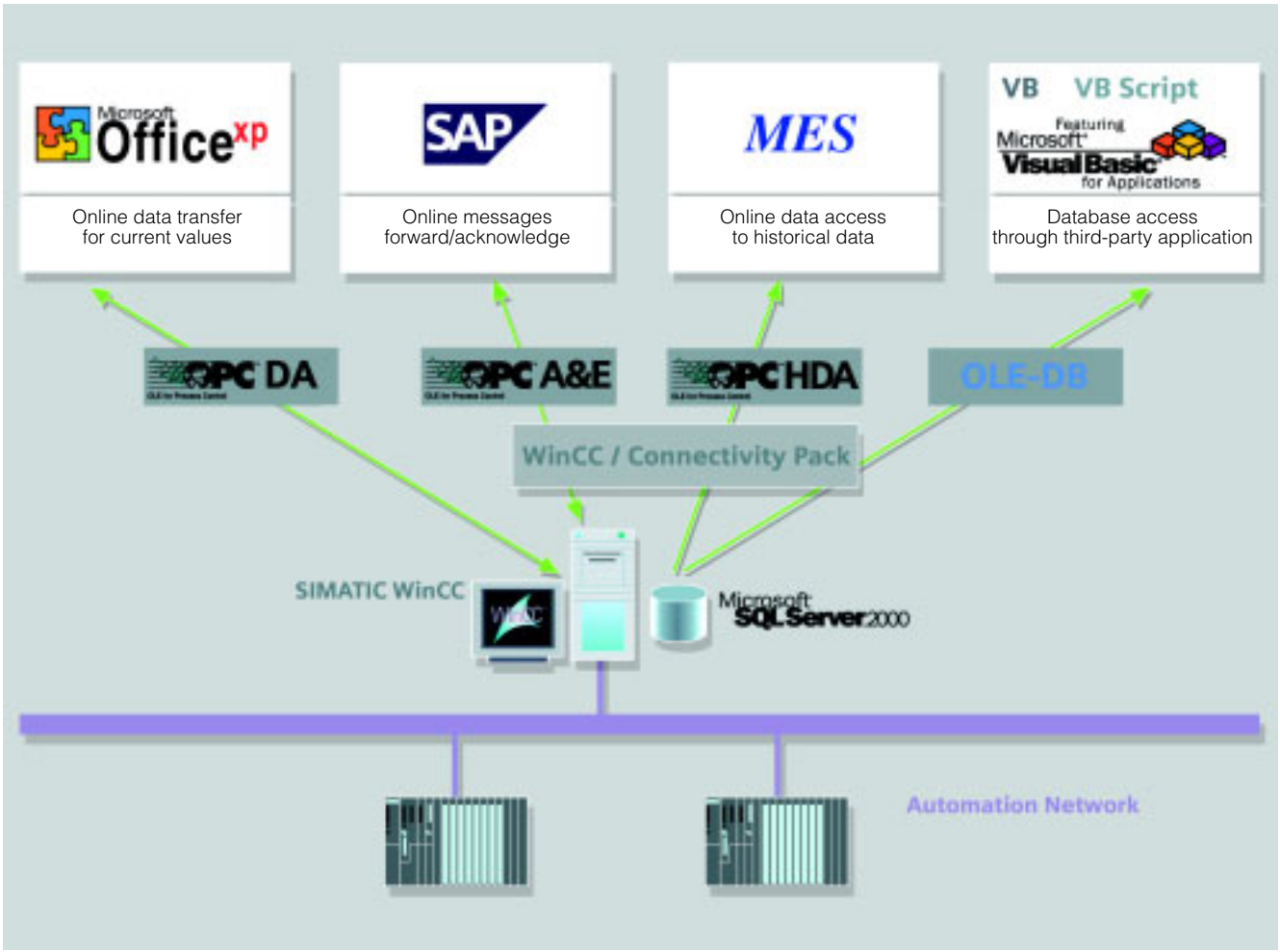
Ordering Data

	Order No.
WinCC/Client Access License For client access to the WinCC interface	**6AV6 371-1ES06-0AX0**
WinCC/Client access license per processor For access to the WinCC interface; any number of clients per processor	**6AV6 371-1ES06-0CX0**

4

WinCC/Connectivity Pack

Overview



Overview

Cross-vendor communication in the field of automation has always been extremely important for WinCC. It has been even more important to release pre-processed production data for higher-level automation systems (e.g. MES = Management Execution System, ERP = Enterprise Resource Planning or Office packages = MS Excel, MS Access etc.). WinCC has an integrated OPC Data Access Server that provides access to all the online values in the system and provides open interfaces for access to historical WinCC data

- The new features of WinCC V6 include OPC HDA 1.0 (Historical Data Access), OPC A&E 1.02 (Alarm & Events), as well as a WinCC OLE-DB interface that provides distant computers without a WinCC installation with access to the WinCC archive data and alarm data
- The function of the two new OPC servers (HDA and A&E), as well as the WinCC OLE-DB provider is guaranteed by the WinCC/Connectivity Pack
- Access to WinCC archive data and alarm data via the interfaces of the Connectivity Pack requires a WinCC/Client Access License on the client side. (See also WinCC/Client Access License)
- One license is necessary for each server

Benefits

- Access to historical WinCC data from any computers.
- The ability to analyse and evaluate process data with specialized tools or applications created by the customer (e.g. with VisualBasic)

Functions

As an HDA server, WinCC provides other applications with historical data from the WinCC archive system. By entering the start time and end time, the OPC HDA client (e.g. a reporting tool) can define the time interval for the requested data. 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 complete 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 are transferred. Acknowledgment is of course also possible at this level.

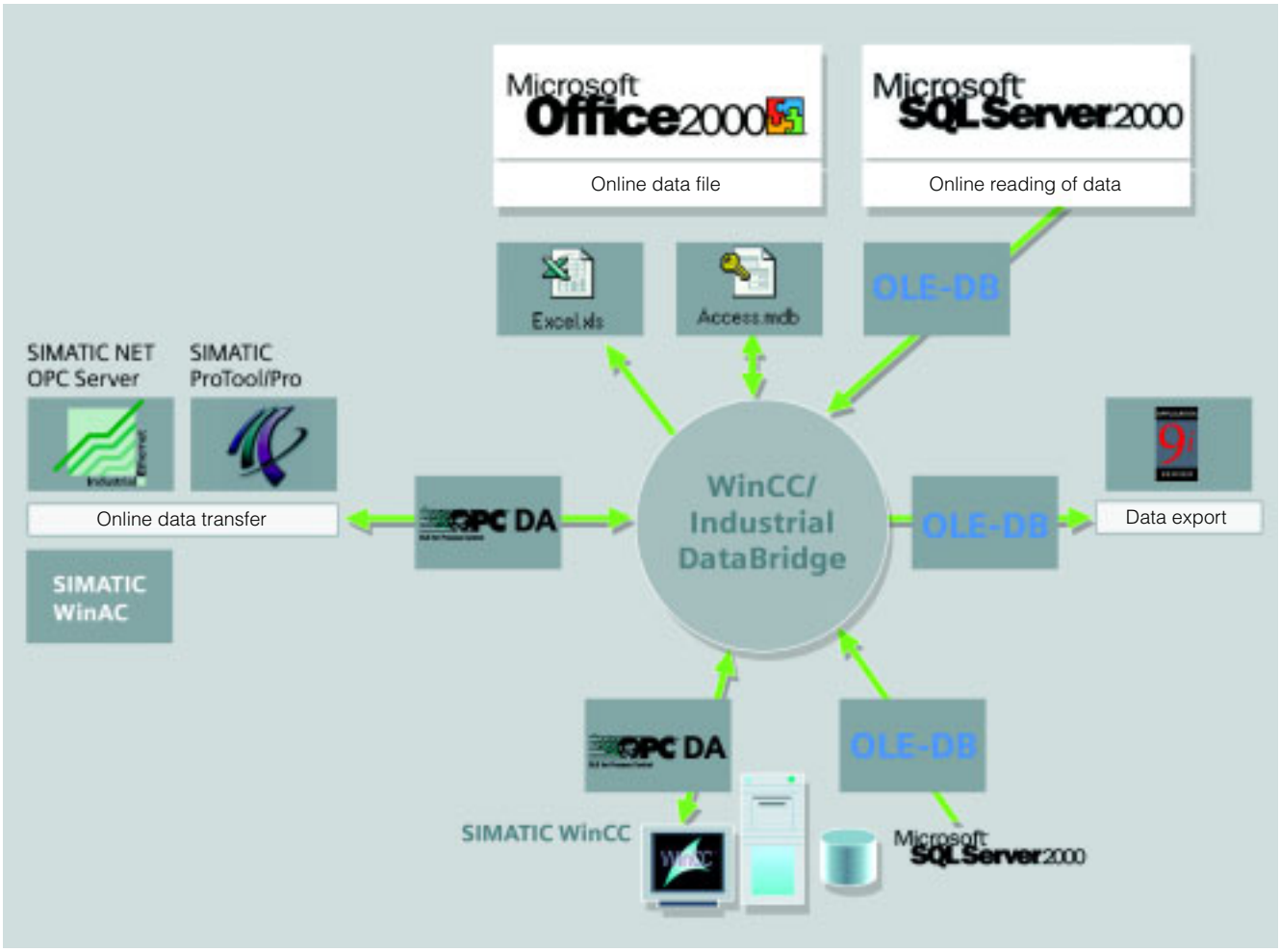
WinCC OLE-DB enables the standardized and easy access to the archive data of WinCC (MS SQL Server 2000). In the same manner as the OPC HDA and OPC A&E interfaces, access via the WinCC OLE-DB provider supplies all the WinCC archive data with the accompanying process values as well as messages and user texts.

Ordering Data

	Order No.
WinCC/Connectivity Pack	**6AV6 371-1DR06-0AX0**

WinCC/IndustrialDataBridge

Overview



- The option WinCC/IndustrialDataBridge uses standard interfaces to connect the automation world with the IT world and to protect the flow of information in both directions. Typical examples for interfaces of this type are OPC in the field of automation and SQL databases in the IT world
- Typically, WinCC with its OPC DA server interface is the data source and an external database is the data destination
- WinCC/IndustrialDataBridge with its standard interfaces such as OPC DA and OLE-DB can for example also be used as stand-alone application in combination with ProTool/Pro, WinCC V5.1, SIMATIC NET and SIMATIC WinAC
- For access to WinCC via the WinCC/IndustrialDataBridge option, WinCC Client Access are required on computers that do not have a valid WinCC license (see also WinCC/Client Access License)
- Option only for WinCC V6.0

Benefits

- Connecting the automation level with the IT world
- Integration of systems from different manufacturers via a wide range of standard interfaces (incl. OPC, SQL, OLE-DB, Office formats)
- Easy and therefore low-cost configuration with standard software (without programming)
- High-performance data transfer between several systems simultaneously

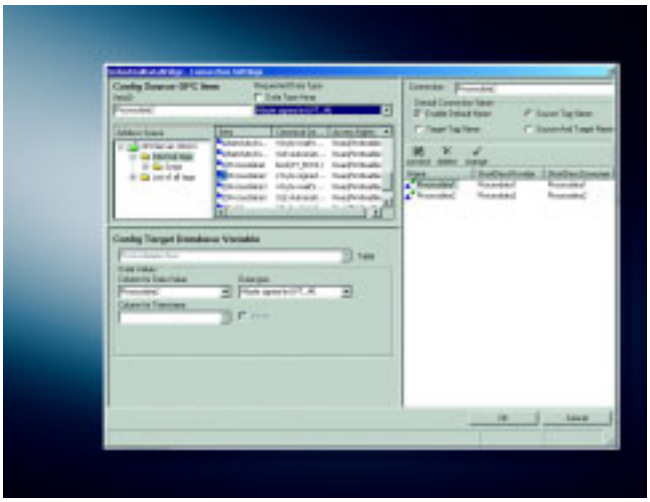
Design

The software comprises a configuration and a runtime environment. The various different data interfaces are integrated via software modules. In each case one module is required as a data source and one module is required as a data destination. The different modules can be combined as required.

The connections between the data source and data destination are created in the configuration environment. In the runtime environment, the IndustrialDataBridge establishes the configured connection autonomously and transfers the data of the linked variables.

WinCC/IndustrialDataBridge

Functions



- IndustrialDataBridge establishes 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 are transferred between automation systems of different manufacturers, e.g. via OPC. By connecting OPC servers via the Industrial DataBridge, 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. For archiving large quantities of data, databases can also be integrated.
- IndustrialDataBridge also has a Send/Receive interface that can be used for transferring data to SIMATIC S5 or S7 stations or other Send/Receive-capable devices.
- 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

Ordering Data

	Order No.
WinCC/IndustrialDataBridge	
Option only for WinCC V6.0	
For data transfer with databases and OPC servers	
• With 128 tags	**6AV6 371-1DX06-0AX0**
• With 512 tags	**6AV6 371-1DX06-0BX0**
• With 2048 tags	**6AV6 371-1DX06-0CX0**
• With 10000 tags	**6AV6 371-1DX06-0DX0**
WinCC/IndustrialDataBridge Power pack	
• 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**

SIMATIC IT PDA / SIMATIC IT PPA

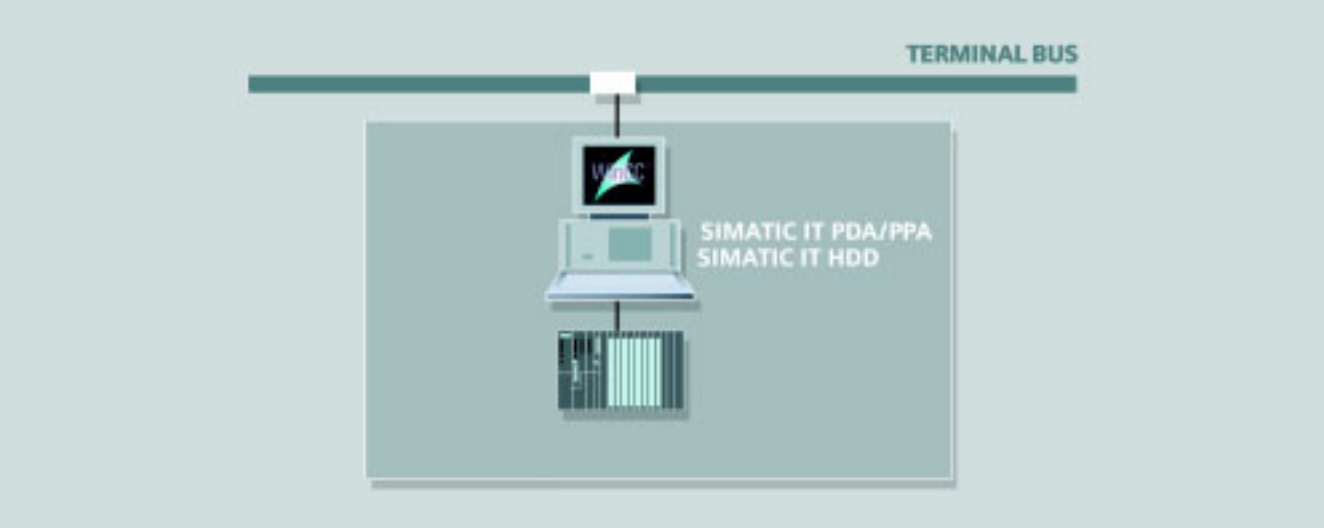
Overview

SIMATIC IT PDA (Plant Data Archive)

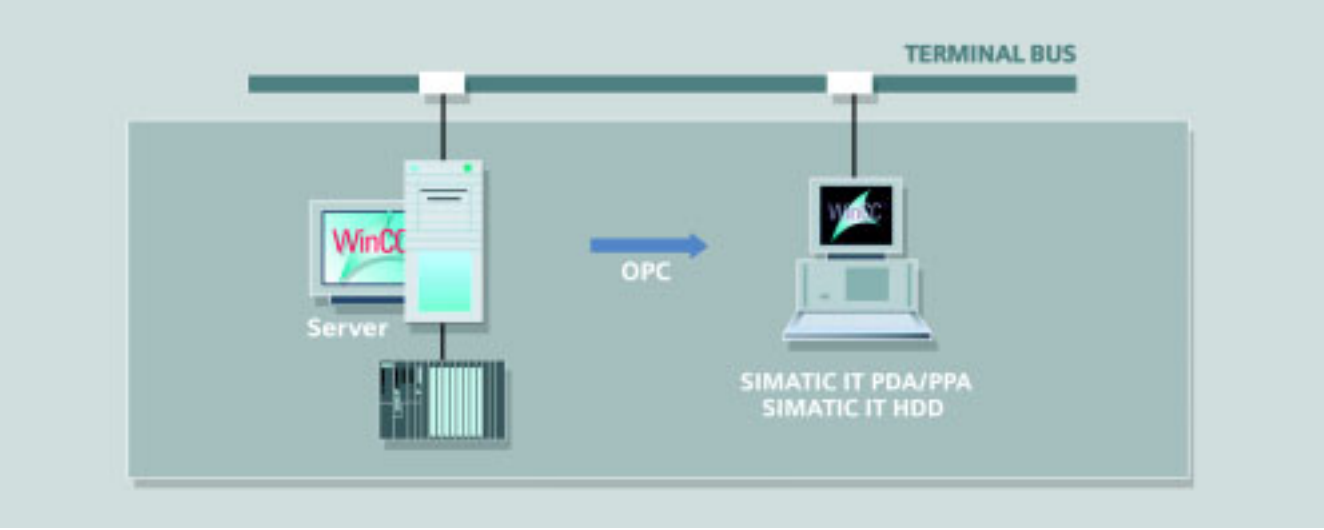
- The SIMATIC IT PDA option is a file-based archive which can process the measured values at a rate of up to 1,500 tags per second.
- Only for WinCC V5.1; for WinCC V6.0, this functionality is included in the basic system

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

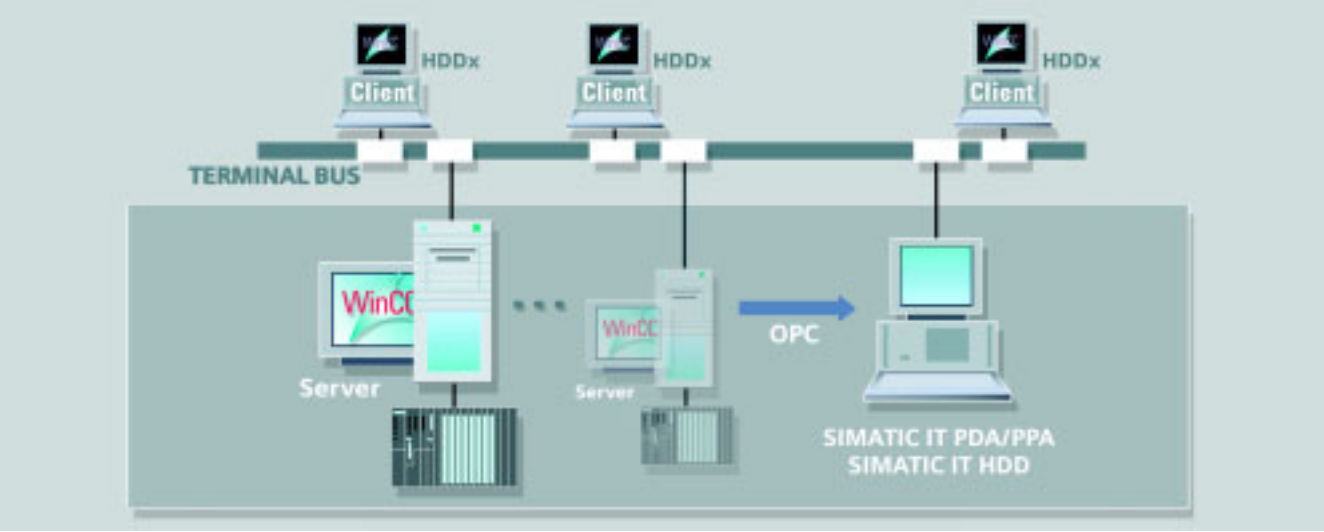


SIMATIC IT PDA and SIMATIC WinCC used on a single-user system



SIMATIC IT PDA/PPA used in connection with a WinCC single-user system

Overview



SIMATIC IT PDA/PPA used in connection with a distributed server system with multi clients

Benefits

SIMATIC IT PPA

- Long-term data archiving in the standard database MS SQL server with connection. The prerequisite under WinCC V5.1 is the SIMATIC IT PDA option
- Data compression and compressed storage of measured values
- Data compression with WinCC Archive and archive 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
- Connection of the WinCC Process data archives to the IT framework

Functions

SIMATIC IT PPA

- Measured values can be read either 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 WinCC 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.

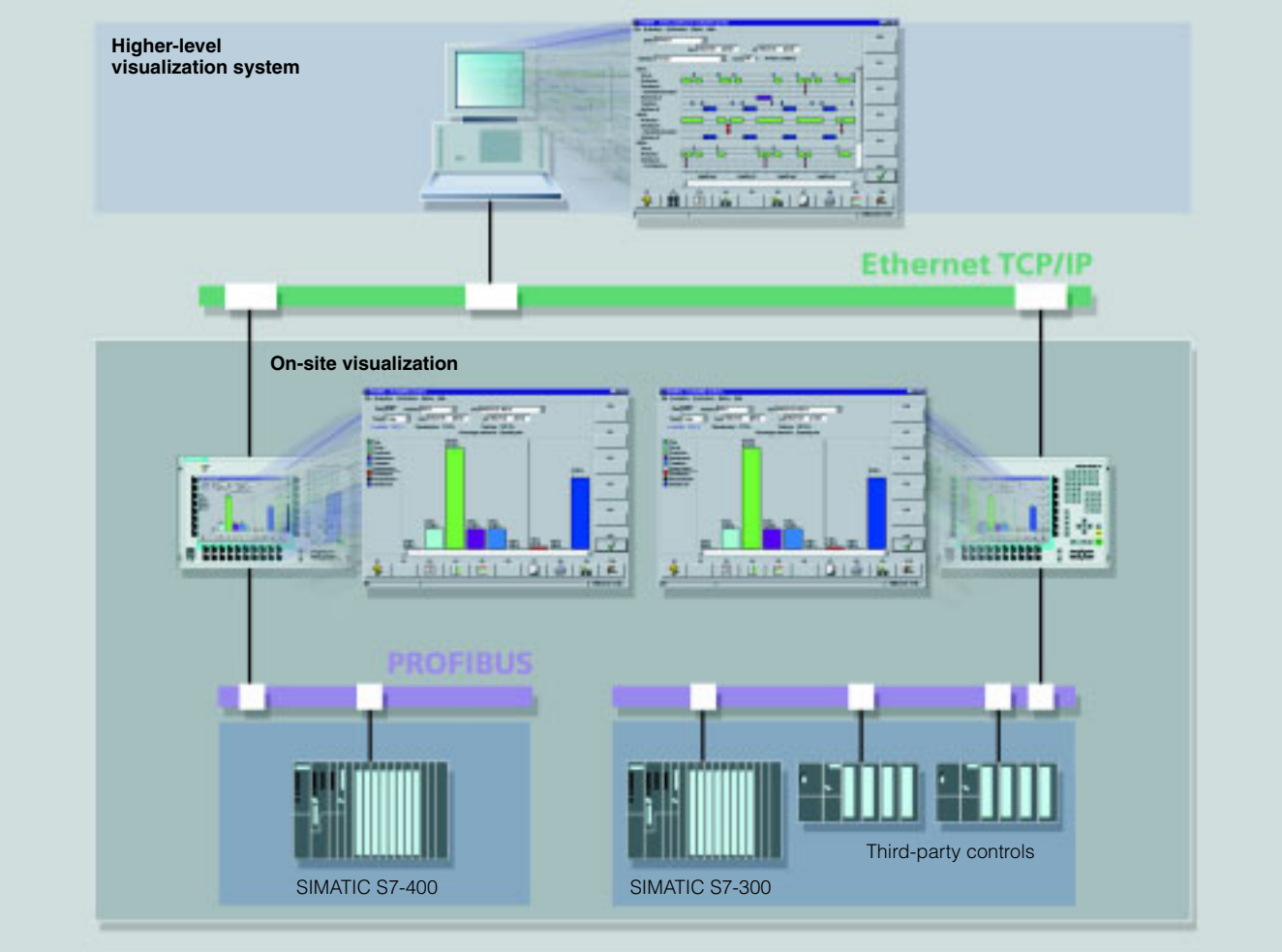
SIMATIC IT HDD (Historical Data Display) is an application for viewing and visually analyzing archived measured values. This enables both the data from the PDA archive (under WinCC V5.1) as well as the data from any OLE DB sources to be displayed. On the SIMATIC IT PPA server, the HDD runs as a FAT client 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.

Ordering Data

	Order No.
SIMATIC IT PDA	
• V4.4; incl. 1 fat client	**6BQ3 073-2NA10-0AA0**
• Expansion by 5 PDA lean clients	**6BQ3 073-2NA20-0AA0**
SIMATIC IT PPA	
For WinCC V5.1	
• V4.4; incl. 1 fat client	**6BQ3 073-2NA30-0AA0**
• Expansion by 5 PPA lean clients	**6BQ3 073-2NA40-0AA0**
For WinCC V6.0	
• V4.4; incl. 1 fat client	**6BQ3 074-2AZ00-0AA1**
• Expansion by 5 PPA lean clients	**6BQ3 074-2AZ10-1AA5**

SIMATIC IT WinBDE

Overview



- SIMATIC® IT 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)
- Option for WinCC V5.1; for WinCC V6.0 on request
- **Current version:**
  - SIMATIC IT WinBDE Workstation V7.1
  - SIMATIC IT WinBDE Supervisor V7.1

New features of V7.0 and V7.1:

- SIMATIC IT WinBDE can now also run under Windows 2000
- Continuous monitoring of machine counters and component-type-specific counters directly from the PLC
- Based on quantities of "Good" parts, "Rejects" and "Repair" parts, these counters can be used to generate new evaluations concerning, for example, the quantity trend or processing quality and over all time periods ranging from the shift and day through to the calendar year
- Expansion of the evaluations for availablity and capacity utilization with the following features:
  - OEE figure
  - Machine performance
  - Processing quality
  - Mean time between failures (MTBF)
  - Mean time to repair (MTTR)
- The expanded online customizing features permit user-friendly access to a multitude of parameters and filters which enable evaluations to be carried out with even more detail and customization
- Also supports the databases MS SQL Server 2000 and Oracle, Version 9
- Can be integrated into SIMATIC S7

Benefits

- Used for individual machines through to complete production plants
- Detailed graphical machine and production data evaluations can be used to prevent faults and bottlenecks, to increase availability and to optimize the processes
- Increases transparency:
  - Supports fast counter-measures in the event of a fault
  - Increases machine runtimes
  - Provides proof of availability for production equipment and manufacturing units
- Exports operational data for more detailed evaluations

Ordering Data

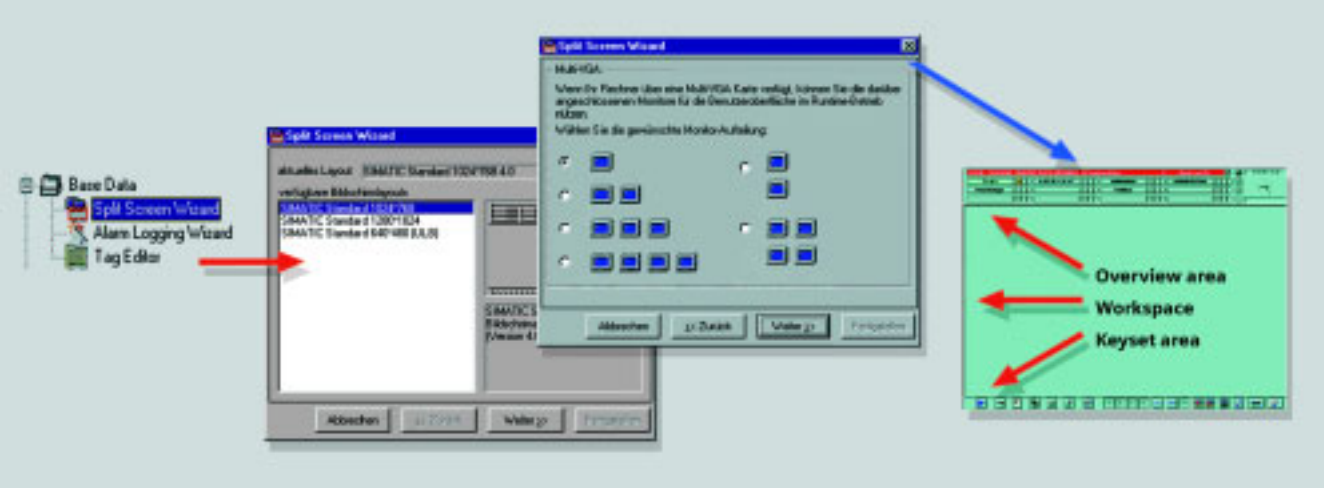
	Order No.
SIMATIC IT WinBDE V7.1	
Option for WinCC V5.1; for WinCC V6.0 on request	
Machine data management workstation	
License for connection of:	
• 1 machine / equipment unit	**6BQ3 090-2AB10-0CA0**
• 8 machines / equipment units	**6BQ3 090-2AB20-0CA0**
• 32 machines / equipment units	**6BQ3 090-2AB30-0CA0**
Machine data management supervisor	
License for connection of:	
• 64 machines / equipment units	**6BQ3 090-2AB80-0CA0**

Further Information

Note:
For further information about SIMATIC IT WinBDE, see "SIMATIC ProTool/Pro visualization software/ SIMATIC ProTool/Pro options"

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

Functions

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:

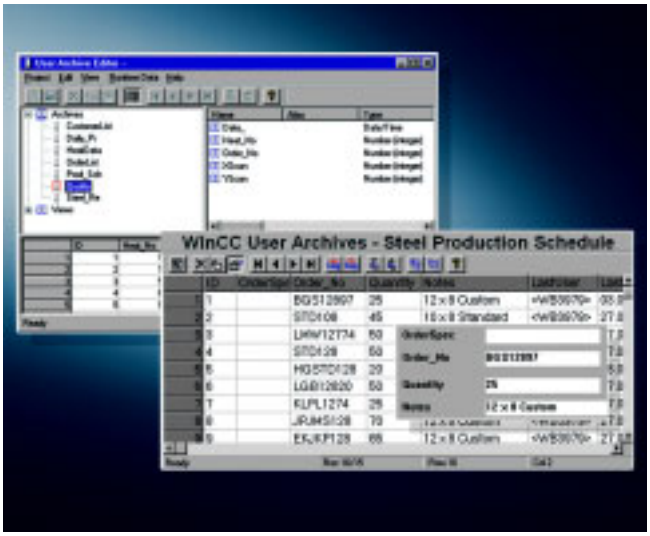
- Scrolling through the picture hierarchy
- Saving/recalling user-specific screen compositions
- Selection of process pictures and measuring points by name
- Online composition of trend curves
- Group displays for operator prompting in the picture hierarchy
- Sign-of-life monitoring for process links 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	
• 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)	**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 (pack of 10)	**6ES7 652-0XX05-1XD1**
For further information on I&C options, see Catalog ST PCS 7	

Overview



- Option for SIMATIC WinCC for managing records in user archives that contain related data
- WinCC and its automation partners (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 controls, either in table or formula view
- Easy interfacing of record fields to the process via direct variable interfacing
- Import/export functions for further processing with other tools (e.g. MS Excel)

Functions

- Entry of parameter sets (e.g. operating parameters for a machine) in WinCC, storage in the user archive and transfer to the automation level
- Continuous acquisition of production parameters by the automation system and their transfer to WinCC at the end of a shift
- Acquisition of batch data
- Entry of production parameters
- Management of stock-keeping data

Using a special editor, WinCC user archives can be simply created and filled with data. Special ActiveX controls (table view and formula view) are used to display data from the user archives at runtime.

Data records and fields from the user archives are linked to the process with direct tag linking.

Import and export functions support the import and export of data from and to external applications (for example MS Excel). Freely selectable filter criteria support the clearly comprehensible display of records. The view can be switched between a table view and a formula view.

WinCC provides functions for the user-defined organization of data storage in the user archives, which influence the archive, data records and fields. Archives can thus be created, opened, closed or reset and records or field contents can be read, written or overwritten.

Sequential archives can record batch data, shift production or product quality data and fulfill statutory documentation requirements by recording on a continuous basis.

Ordering Data

	Order No.
WinCC/User Archives	
• For WinCC 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**

4

WinCC/Storage

Overview

- Option for SIMATIC WinCC for the long-term archiving of process data, messages and logs
- Only for WinCC V5.1; for WinCC V6.0, this functionality is 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 the need for a license

Benefits

- Manual or time-driven swapping of process values, messages and reports to the long-term archiving
- Reading swapped data for subsequent analysis with WinCC
- Export in CSV format for further processing with external tools (e.g. MS Excel)

Functions

- Swapping of process values, messages and reports to external archiving media supported by Windows
- Reading swapped data and selectively analyzing it with WinCC tools (e.g. message or trend windows)
- Management of swapped data by log book

Ordering Data

	Order No.
WinCC/Storage V5.2 Option for WinCC V5.1	**6ES7 652-0XX05-2YC0**

Overview

- WinCC/Advanced User Administrator and SIMATIC Logon are software option packages with which all WinCC users in the plant can be centrally managed.
  - The basic package of the Advanced User Administrator supports operation of a user management system that is connected to the database as well as runtime linking of a local WinCC to it. A runtime license must be purchased for each additional HMI station.
  - With SIMATIC Logon, a distinction is made between Logon Admin, the configuration tool and Logon Service, the runtime component. Logon Admin only has to exist once in a plant. The central user management utilizes the Windows mechanisms. Logon Service must be installed on all participating WinCC machines.
- WinCC/Audit RT is used to record all the relevant operations in a long-term audit trail that cannot be falsified.
  WinCC/Audit PC is used for configuring Audit Trails and producing Audit Trails in RT and CS.
  For configuring audit trails in RT, the WinCC/Audit RC package is required. This package also offers a function for logging all the configuration changes implemented in WinCC with no possibility of falsification. It is required for each configuring station.
- SIMATIC Electronic Signature supports electronic signatures SIMATIC Electronic Signature must be loaded on all WinCC operator stations on which electronic records are to be signed.
- The FDA options support conformity according to FDA CFR21 Part 11 and enable WinCC applications to be created that can be validated (in combination with corresponding measures in the configuration that are described in a White Paper)
- For WinCC V5.1: WinCC/Advanced User Administrator
  For WinCC V6.0: SIMATIC Logon, WinCC/Audit and SIMATIC Electronic Signature

Benefits

- Central, plant-wide user administration
- Greater security due to measures on both the administrator and user sides
- Conforms to the requirements of the Food and Drug Administration (FDA) for the pharmaceutical and food processing industry

Design

In a SIMATIC WinCC environment, the Advanced User Administrator and SIMATIC Logon can be run in a variety of structures, such as single-user stations or client–server architectures.
To further increase security, with AUA, the database for user administration can be installed on a separate file server.

SIMATIC Logon ALWAYS requires a domain controller for coordinating several WinCC stations. The high availability can be guaranteed by using a primary/secondary domain controller. It does not execute under Windows for Workgroups. In order to make up different combinations of configurations for applications where validation is mandatory, low-cost FDA packs can be ordered, which contain all the necessary functionalities:

- FDA Pack RT for each operator station
- FDA Pack RC for configuring stations, which can also operate in RT mode

Functions

WinCC/Advanced User Administrator and SIMATIC Logon

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 (for AUA in a separate database, for SIMATIC Logon in Windows user management). Functions such as aging of the password, automatic log-off after a predefined time and blocking after several unsuccessful attempts to enter the password guarantee maximum operating security.

In the case of SIMATIC Logon, the user administration is integrated into the security system and the user administration of 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 logging in, logging 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.

With the Advanced User Administrator and SIMATIC Logon, administrators can set up new users online across the whole system and for all applications and block existing users.

FDA Options

Functions (cont.)

SIMATIC Electronic Signature

This option can be integrated into SIMATIC Logon and supports electronic signatures and allows records to be signed.
These actions are stored such that falsification is prevented.

WinCC/Audit

WinCC/Audit is used for easy configuration of audit trails for operator actions. Any user-interface elements can be incorporated in the audit as well as comment requests by the user. In contrast to the conventional configuration of operator input messages, the settings necessary for the audit trail can be made at a later time also after the WinCC project has been completed. Configuration is performed as a mass operation over all operator controls and displays as a simple selection. WinCC/Audit RC can also be used for tracing changes during configuration ("What changes were made to the project?") and offers functions for version management, version comparison and document management. The audit trail is stored in the WinCC database and cannot be falsified (MS SQL Server). Both single-user and client/server systems are supported.

Ordering Data

	Order No.
WinCC/Advanced User Administrator	
Expanded user administration for WinCC V5.1	
• Engineering license for 1 project incl. 1 runtime license for an operator station, electronic documentation (G/E) on CD-ROM	**6DL5 401-8AX00-0XX0**
• Runtime license for an operator station	**6DL5 401-8AX00-0XX1**
SIMATIC Logon	
Central user management for WinCC V6.0	
• Admin (engineering license)	**6ES7 658-7AX01-2YA0**
• Service (Runtime license for an operator station)	**6ES7 658-7BX01-2YA0**
SIMATIC Electronic Signature	**6ES7 658-7CX01-2YA0**
Support for electronic signatures	
WinCC/Audit	
• 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**
WinCC/FDA Pack RT	**6AV6 371-1DT06-0AX0**
Comprising: SIMATIC Logon Service, Electronic Signature, WinCC/Audit RT	
WinCC/FDA Pack RC	**6AV6 371-1DT16-0AX0**
Comprising: SIMATIC Logon Service, Logon Admin, Electronic Signature, WinCC/Audit RC	

Further Information

Further information about FDA can be found in a White Paper: Declaration of conformity of SIMATIC WinCC to FDA21 CFR Part 11 at:
http://www.ad.siemens.de/hmi/html_76/products/software/wincc/fda01.htm

Overview

- WinCC/IndustrialX® further simplifies the solution of a visualization task through the standardization of customized objects
- A license must be installed on each development computer (the current version of Visual Basic is required on development computer)

Benefits

- Easy creation with configuration assistants (Wizards)
- Rapid familiarization due to the use of standards: ActiveX technique, creation with the aid of Visual Basic
- Central creation and modification of object representations of a similar type (typing) saves time and money
- Configuration of intelligent, sector-specific objects (graphical display and logical processing) with know-how protection
- Flexible implementation: in WinCC displays and in other Windows applications (e.g. Internet Explorer, Excel)

Area of 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.

Functions

- Configuration of intelligent, sector-specific objects (graphical display and logical processing) with know-how protection
- Data structures supply objects (templates)
- By active process data supply, customized ActiveX components compliant to Web Navigator can be created
- Integration in WinCC through structure names

Ordering Data

	Order No.
WinCC/IndustrialX	
• V1.1	**6AV6 371-1EL15-0AX0**
WinCC/IndustrialX Upgrade	
• V1 to V1.1	**6AV6 371-1EL15-0AX4**

WinCC/ODK and WinCC/Comprehensive Support

Overview

WinCC/ODK (Open Development Kit)

- WinCC option for using the open programming interfaces that can be used to access the data and functions of WinCC configuration and the WinCC runtime system
- The interfaces are designed as "C application programming interfaces" (C-APIs).
- Scope of supply:
  - CD-ROM with examples
  - Voucher for a one-day intensive seminar

Benefits

- Individual system expansions via an open, standard programming language
- Access to data and functions of the WinCC configuration and runtime system
- Development of customer's own applications and add-ons for the WinCC basic system

Functions

The API functions are configuration and runtime functions, and include:

- MSRTCreateMsg: Creates a message
- DMGetValue: Gets the value of a variable
- PDLRTSetProp: Sets the object properties in a display
- DBExport: Exports the database table

They can be used in the following places:

- within WinCC, for example in global scripts or as part of C actions in the Graphics Designer,
- in Windows applications in the programming language C (the current version of Microsoft Visual C++ is necessary as a development environment for WinCC).

Ordering Data

	Order No.
WinCC/ODK	
• V5 SP1; for WinCC V5.1	**6AV6 371-1CC05-0AX0**
• V6; for WinCC V6.0	**6AV6 371-1CC06-0AX0**
WinCC/ODK upgrade to V6	**6AV6 371-1CC06-0AX4**
WinCC/CDK	
• For WinCC V5.1	**6AV6 371-1EE05-0AX0**
• For WinCC V6.0	**on request**

Overview

WinCC/Comprehensive Support

- 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)
  - WinCC Comprehensive Support offers access to its special, password-protected Internet pages containing the latest information as well as the current WinCC Knowledge Base
- The WinCC user receives a welcome 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 expiration.
- The prerequisite for an upgrade to WinCC V6 within the framework of Comprehensive Support is an existing Comprehensive Support contract for WinCC V5.
- WinCC Comprehensive Support must be obtained for each WinCC system (single-user, server, client). Several systems can be equipped cheaply 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

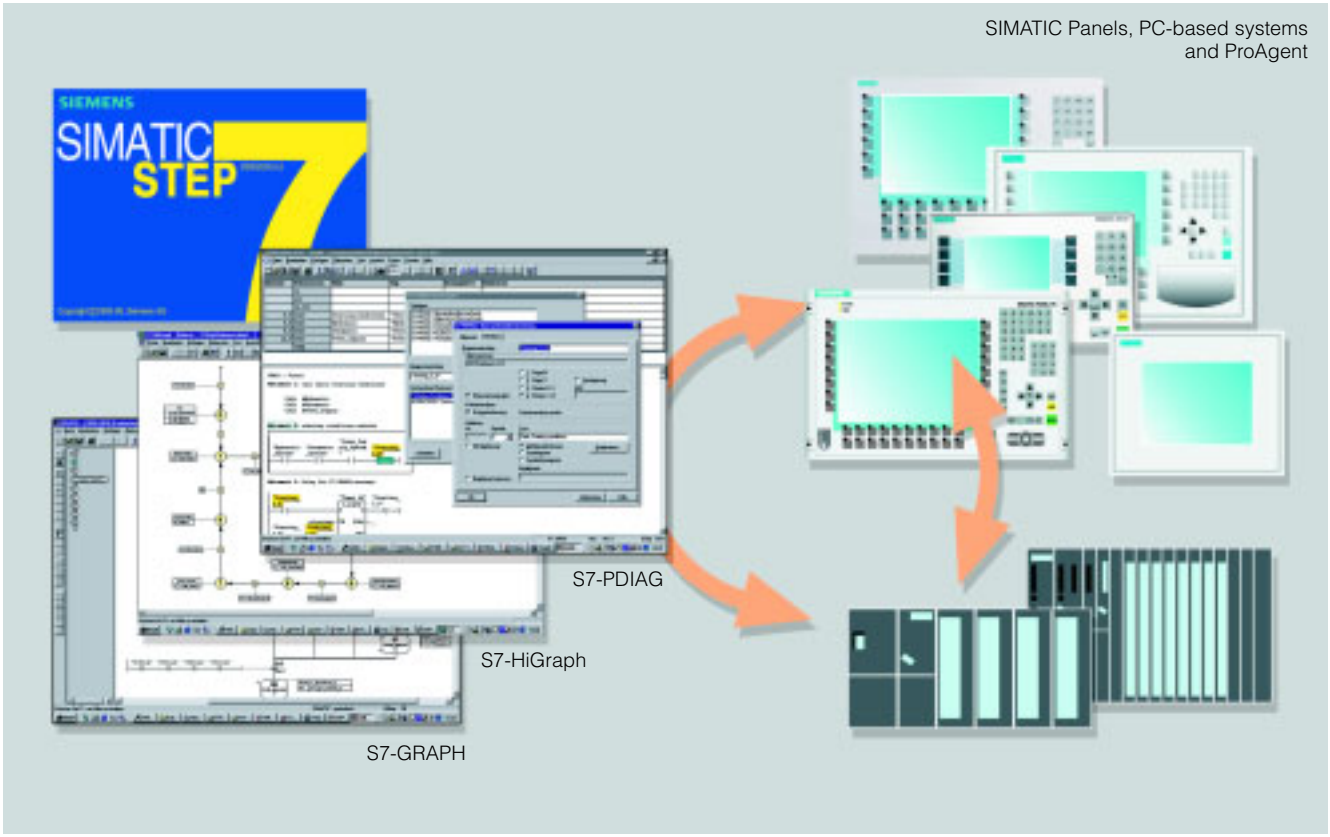
- Efficient support reduces configuration times and answers any questions that arise quickly and cost-effectively
- The automatic supply of current updates and Service Packs for WinCC ensures that the latest WinCC version is always available

Ordering Data

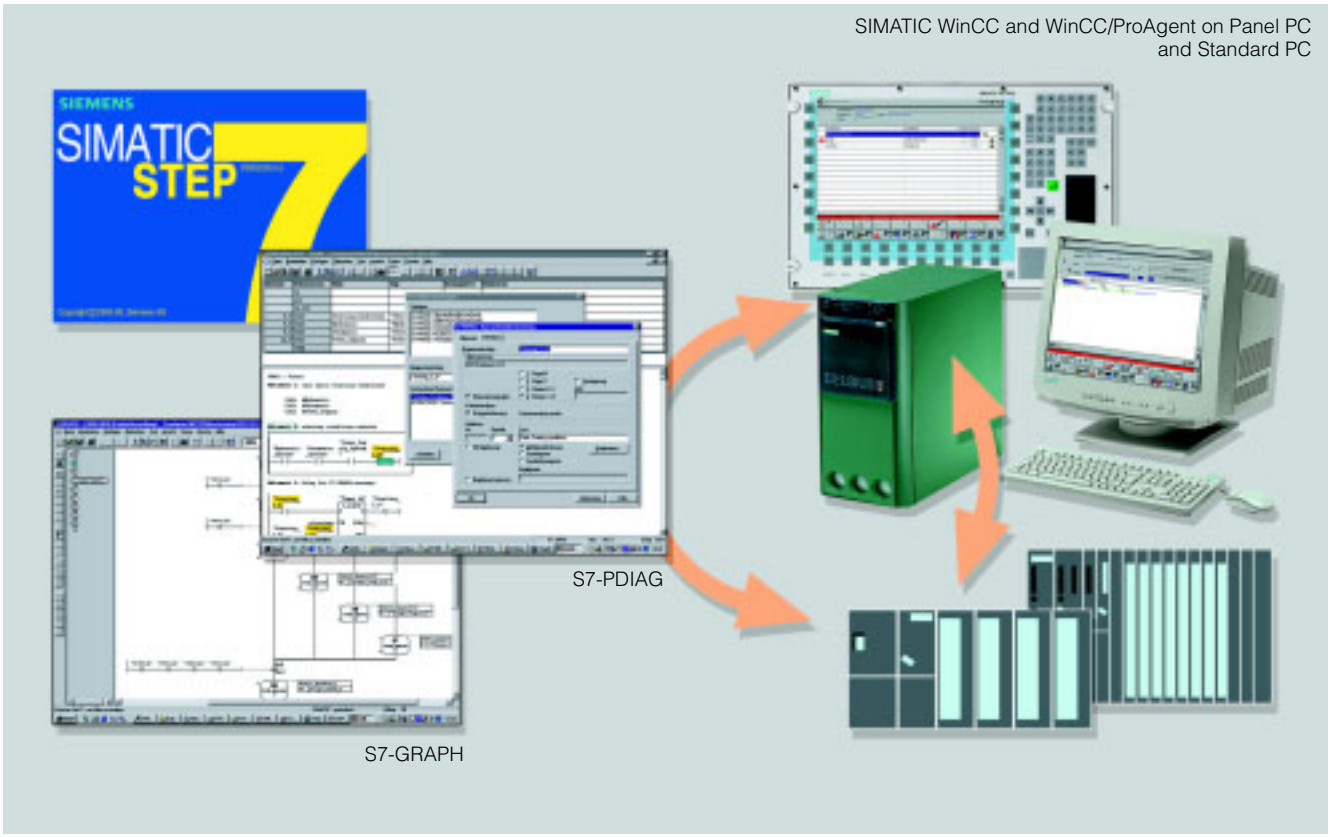
	Order No.
WinCC/Comprehensive Support [1]	
Automatic supply of the latest updates/upgrades for WinCC basic software and options as well as the Knowledge Base CD valid for	
• 1 license	**6AV6 381-1AA00-0AX5**
• 3 licenses	**6AV6 381-1AA00-0BX5**
• 10 licenses	**6AV6 381-1AA00-0CX5**

1) Comprehensive Support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiration.

Overview



Process fault diagnostics with ProAgent for ProTool and the STEP 7 engineering tools



Process fault diagnostics with WinCC/ProAgent and the STEP 7 engineering tools

SIMATIC ProAgent

Overview

- Process diagnostics software for quick, selective fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:
  optimum interaction of STEP 7, STEP 7 engineering tools and the ProTool or WinCC HMI system
- Standard user interface
- Versions:
  - **ProAgent/MP**
    for TP 270, OP 270, MP 270B and MP 370
  - **ProAgent/PC**
    for SIMATIC ProTool/Pro Runtime in combination with the standard PC or Panel PC 670/870, Panel PC IL 70, PC FI45
  - **WinCC/ProAgent**
    for SIMATIC WinCC in combination with the standard PC or Panel PC 670/870, Panel PC IL 70, PC FI45
  - **ProAgent for OP**
    for OP27, OP37, TP27, TP37 and C7-626

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 for diagnostics functionality
- Reduces PLC memory and processor usage
- No special user know-how required due to comprehensible display of the error cause

Area of application

Global competition forces the industry to increase the productivity of its machines and plants. Availability is, however, compromised by the increasing degree of automation and the rising plant complexity that accompanies it. To prevent long downtimes, an effective tool must be at hand for the maintenance personnel. 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 displays that are updated during runtime with process-specific data.

1) Process diagnostics with S7-HiGraph only with TP 270/OP 270, MP 270/MP 370 and ProTool/Pro RT

Functions

- 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
- Automatic generation of the diagnostic-relevant components for controllers and HMI
- Automatically generated screen contents for the diagnostics and control of the plant/machine
- Direct process access using the motion diagram, which also supports fault correction
- Output of the incorrect operand directly in the message, complete with address, symbol and comment[1)]
- Consistency check with 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 pictures for each unit through the use of ProAgent functions
- Context-sensitive switching to STEP 7 (LAD/STL/FBD 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 and WinCC/ProAgent V6.0 upwards
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 displays

- Message diagram
- Unit overview diagram
- Diagnostic detail diagram
- Motion diagram
- Sequencer operating diagram

The standard diagrams of ProAgent can be easily adapted to customer requirements, such as a specific background color or a corporate header.

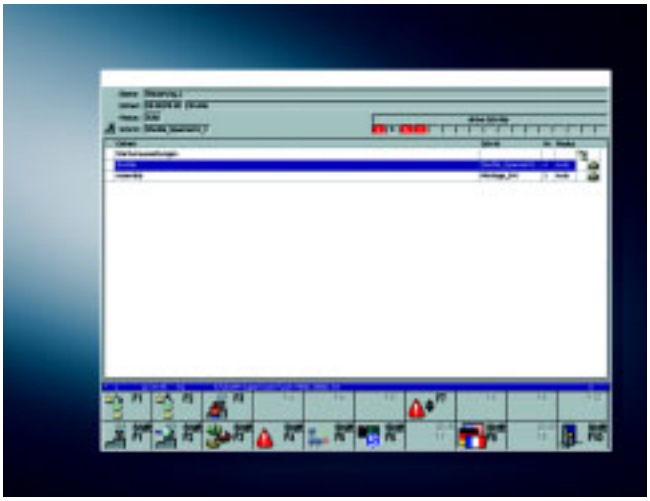
The displayed diagram contents refer to the previously selected units or messages. This enables the calling up of a context-sensitive diagnostics diagram, depending on the message or selected technological unit.

Message diagram

All pending process messages are displayed in the message diagram. Using a selected message in the message diagram, you can make a context-sensitive jump to other diagnostics diagrams. 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 ProTool/Pro RT). For WinCC/ProAgent it is available from Version 6.0 upwards.

Functions (cont.)

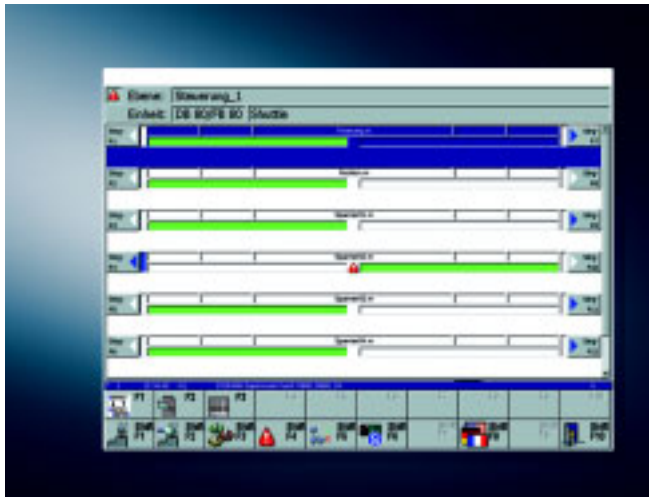
Unit overview diagram



The unit overview diagram sets out all technological units and their subunits (plant/machine parts) in the form of a table. In this diagram, 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. The diagnostic detail diagram or motion diagram is called up depending on the currently selected unit.

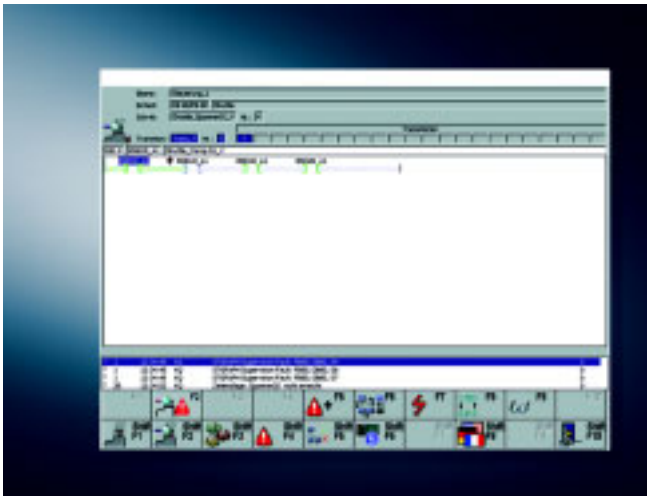
Motion diagram



The motion diagram supports fault correction. 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).

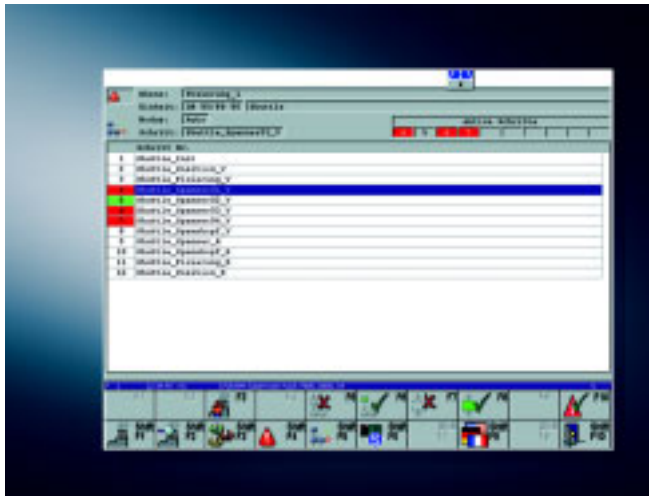
The motion itself is controlled with the softkeys at the side of the SIMATIC Panels and Multi Panels. Time-critical motion can be controlled directly via the inputs of the PLC (depending on the target hardware: 24 V direct keys, DP direct keys via PROFIBUS).

Diagnostic detail diagram



The diagnostic detail diagram 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 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 diagram



The sequencer operating diagram provides support for controlling sequencers. Like Status/Control in S7-GRAPH, it makes functions available such as initializing and acknowledging sequencers, activating, deactivating and incrementing 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

Type	ProAgent for OP	ProAgent/MP	ProAgent/PC	ProAgent/WinCC
Interfaces				
• Can be used in conjunction with the following automation equipment:	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
• Interface types	SIMATIC S7 Protocol Suite: MPI, PROFIBUS DP	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
Displays				
Standard diagrams for:				
• Device/resolution in pixels/representation	OP27/320 x 240/mono-chrome	TP 270/OP 270, 6"	PC/1024 x 768	PC/1024 x 768
	OP27/320 x 240/color	MP 270B, 10" keys/touch	PC/800 x 600	
	OP37/640 x 480/color	MP 370, keys/touch	Panel PC 670/870 15"/1024 x 768, Keys/Touch	Panel PC 670/870 15"/1024 x 768, Keys/Touch
	TP27-6/320 x 240/mono-chrome		Panel PC 670/870 12"/800 x 600, Keys/Touch	
	TP27-6/320 x 240/color		Panel PC 670, 10"/640 x 480	
	TP27-10/640 x 480/ color		Panel PC IL70 12"/15" Touch	Panel PC IL70 15" Touch
	TP37/640 x 480/color		FI45/1024 x 768	FI45/1024 x 768
	C7-626/320 x 240/mono-chrome			
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 (D/E/F)
Functions				
Changing the HMI diagnostics data storage in RT	No	No	No	WinCC/ProAgent V6.0 upwards
Overview diagram	Yes	Yes	Yes	Yes
Message diagram	Yes	Yes	Yes	Yes
Sequencer operating diagram	No	Yes	Yes	Yes
Diagnostic detail diagram	Yes	Yes	Yes	Yes
• Display STL/LAD/signal list	Yes/yes/yes	Yes/yes/yes	Yes/yes/yes	Yes/yes/yes
• Display with operands with symbol and comment	OP27, C7-626, TP27-6: standard setting for symbols	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 / archivable
Motion diagram				
• No. of representable motions	OP27, C7-626, TP27-6: 4; OP37, TP27-10, TP37: 5	6	6	6
• Directions of motion	2	2	2	2
• No. of representable end postions per movement	8	16	16	16
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

Technical specifications (cont.)

Type	ProAgent for OP	ProAgent/MP	ProAgent/PC	ProAgent/WinCC
Prerequisites				
HMI software	ProTool V6.0	ProTool V6.0	ProTool/Pro V6.0	WinCC V5.1 (ProAgent V5.6) / WinCC V6.0 (ProAgent V6.0)
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
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
STEP 7	V5.0 upwards	V5.0 upwards	V5.0 upwards	*WinCC/ProAgent V5.6:* V5.1 + SP2 upwards *WinCC/ProAgent V6.0:* V5.2 upwards
• S7-GRAPH	V5.0 upwards	V5.0 upwards	V5.0 upwards	V5.1 upwards
• 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
• S7-HiGraph	No	V5.0 upwards	V5.0 upwards	No
Type of delivery (a license is required for each target hardware)	License verification	Runtime license	Runtime license	CD-ROM/ Runtime license

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** 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** 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** 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 Pixel) in English, German, French, Italian and Spanish, runtime license (single license)	**6AV3 681-1BB06-0AX0**

	Order No.
SIMATIC WinCC/ProAgent	
Software option package for process diagnostics on basis of S7-GRAPH V5 or later and S7-PDIAG V5 or later, executes with SIMATIC WinCC; functional expansion for 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)	**6AV6 371-1DG06-0AX0**
Upgrade	
• to V5.6	**6AV6 371-1DG05-6AX4**
• to V6.0	**6AV6 371-1DG06-0AX4**
Documentation (must be ordered separately)	
Documentation CD	**6AV6 594-1SA06-0CX0**
5 languages (English, French, German, Italian and Spanish); comprising: product manuals, communications manuals and configuration manuals for panels, panel PCs, ProTool, ProTool/Pro (V6.0 + SP2 upwards) and ProAgent	

1) Only in combination with ProAgent/MP and ProAgent/PC
2) Configuration software included on ProTool CD V6

HMI Complete Systems

5

SIMATIC Panel PC with SIMATIC ProTool/Pro

Overview

- 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 Panel PC together with the ProTool/Pro Runtime software.

Benefits

- Easy to order
- Cost savings as compared with purchasing individual components
- Hardware perfectly matched to the SIMATIC HMI software
- System-tested solution

Area of application

In combination with the Panel PC IL 70:

- If your PCs must be suitable for industrial environments (for example impact- and vibration-resistant)
- If you need a high-performance IPC platform

The Panel PC IL 70 is available with touch screen displays of 12“ and 15“. They are cost-effective entry-level SIMATIC Panel PCs.

In combination with the Panel PC 670/870:

- If you need industrial PCs with an exceptional level of impact- and vibration-resistance
- If the continued availability of components plays an important role (high investment security).

All the devices of the Panel PC 670/870 have a uniform look. The front panels are available with displays in the following types: 10”, 12”, 12” Touch, 15” as well as 15” Touch.

Design

With the order configurator, you can select the Panel PC hardware to meet your specific display and system capacity requirements.

The customer has to install the desired ProTool/Pro Runtime software and the communications hardware and software.
The ProTool/Pro Runtime software is supplied with the hardware.

Runtime licenses are required for ProTool/Pro Runtime.
You can select from the following:

- License for 128 PowerTags
- License for 256 PowerTags
- License for 512 PowerTags
- License for 2048 PowerTags

The term PowerTags is applied only to process variables that have an external process connection to the PLC.

In addition, variables without process integration, constant limits of variables and messages are also available as additional system features.

Ordering Data

Panel PC configuration

SIMATIC Panel PC 670 — Order No. **6AV7 7■■-■■■■■-0A■0**

Design:	
• Centralized configuration	2
• Remote configuration	3
Front panels:	
• 10“ TFT	2 1
• 12“ TFT Touch	2
• 12“ TFT	3
• 15“ TFT Touch	4
• 15“ TFT	5
• 12“ TFT Touch without front USB interface	6
• 15“ TFT Touch without front USB interface	7
Main memory configuration:	
• 128 MB	1
• 256 MB	2
• 512 MB	3
Processor	
• Celeron 1.2 GHz	A
• Intel Pentium III 1.26 GHz	B
Country-specific design/power supply:	
• Processor unit and operator unit 24 V DC	A
• Processor unit and operator unit 110 V/230 V US	B
• Processor unit and operator unit 110 V/230 V Europe	C
• Processor unit 110 V/230 V US, operator unit 24 V DC	3 D
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	3 E
• Processor unit 24 V DC, operator unit 110 V/230 V US	3 F
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	3 G
Drives:	
• 20 GB hard disk + CD-ROM	1
• 40 GB hard disk + CD-ROM	3
• 40 GB hard disk + CD-RW/DVD	4
Distance between processor unit and operator unit/cable length:	
• 0 m (centralized configuration)	2 0
• 2 m	3 1
• 5 m	3 2
• 10 m	3 3
• 20 m	3 4
Operating system:	
• Windows NT 4.0, German	2 B
• Windows NT 4.0, English	2 C
• Windows 2000 Professional Multi-Language	D
• Windows 98 German	E
• Windows 98 English	F
• Windows XP Professional Multi-Language	G

Stocked variants of the Panel PC 670 — see page 3/12

Accessories for Panel PC 670 — see page 3/13

Panel PC configuration

SIMATIC Panel PC 870 — Order No. **6AV7 7■■-■■■■■-0A■0**

Design:	
• Centralized configuration	0
• Remote configuration	1
Front panels:	
• 12“ TFT Touch	1 2
• 12“ TFT	3
• 15“ TFT Touch	4
• 15“ TFT	5
• 12“ TFT Touch without front USB interface	1 6
• 15“ TFT Touch without front USB interface	7
Main memory configuration:	
• 128 MB	1
• 256 MB	2
• 512 MB	3
Processor	
• Celeron 1.2 GHz	C
• Intel Pentium III 1.26 GHz	D
Country-specific design/power supply:	
• Processor unit and operator unit 24 V DC	A
• Processor unit and operator unit 110 V/230 V US	B
• Processor unit and operator unit 110 V/230 V Europe	C
• Processor unit 110 V/230 V US, operator unit 24 V DC	1 D
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	1 E
• Processor unit 24 V DC, operator unit 110 V/230 V US	1 F
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	1 G
Drives:	
• 20 GB hard disk + CD-ROM	1
• 40 GB hard disk + CD-ROM	3
• 40 GB hard disk + CD-RW/DVD	4
Distance between processor unit and operator unit/cable length:	
• 0 m (centralized configuration)	0 0
• 2 m	1 1
• 5 m	1 2
• 10 m	1 3
• 20 m	1 4
Operating system:	
• Windows NT 4.0, German	0 B
• Windows NT 4.0, English	0 C
• Windows 2000 Professional Multi-Language	D
• Windows XP Professional Multi-Language	E

Stocked variants of the Panel PC 870 — see page 3/20

Accessories for Panel PC 870 — see page 3/20

SIMATIC Panel PC with SIMATIC ProTool/Pro

Ordering Data (cont.)

	Order No.
Panel PC configuration	
SIMATIC Panel PC IL 70	**6AG7 01■-■■A00-0A■0**
Front panels:	
• 12“ TFT Touch display	**0**
• 15“ TFT Touch display	**1**
Processor/main memory:	
• Celeron 1.7 GHz/128 MB SDRAM	**0 A**
• Pentium IV 2.0 GHz/256 MB SDRAM	**1 B**
Operating system:	
• Windows NT 4.0, German	**B**
• Windows NT 4.0, English	**C**
• Windows 2000 Professional Multi-Language	**D**
• Windows XP Professional Multi-Language	**E**

	Order No.
SIMATIC ProTool/Pro Package	**6AV6 584-4A■00-0AX0**
Runtime license included	
• 128 power tags	**B**
• 256 power tags	**C**
• 512 power tags	**D**
• 2048 power tags	**F**

Further Information

For further information, visit our website at

http://www.siemens.com/simatichmi

5

SIMATIC Panel PC with SIMATIC WinCC

Overview

- The SIMATIC Panel PC packages with WinCC support the easy ordering of all components for a Panel PC-based HMI solution.
- This package can be supplied only when you order a Panel PC together with the WinCC software.

Benefits

- Easy to order
- Cost savings as compared with purchasing individual components
- Hardware perfectly matched to the SIMATIC HMI software
- System-tested solution

Design

With the order configurator, you can select the Panel PC hardware depending on your specific display and system capacity requirements, whereby you need to take into account only the minimum requirements that WinCC makes on the basic hardware:

Minimum equipment

- Processors from 500 MHz Pentium III or 566 MHz Celeron
- 12" or 15" monitor (at least 600 x 800 pixel resolution)
- RAM > 128 MB
- At least 10 GB with CD-ROM
- Windows NT 4.0 English, German, Windows 2000 multilingual or Windows XP Professional multilingual

For process communication, you can choose between the onboard, CP 5611-compatible PROFIBUS interface or the powerful CP 1613 module for Industrial Ethernet or CP 5613 for PROFIBUS.

In the WinCC package configurator, you can select an additional order item, which then contains the respective WinCC software package and the communications module.

The two order items are supplied together, and the customer must install the communication hardware and the WinCC software in that case.

Licenses are required for the runtime version of WinCC.
You can select from the following:

- License for 128 PowerTags
- License for 512 PowerTags
- License for 1024 PowerTags
- License for 8 k PowerTags (for WinCC V6.0)
- License for 64 k PowerTags

The term PowerTags is applied only to process variables that have an external process connection to the PLC. In addition, variables without process integration, constant limit values of variables and messages are also available as additional system features.

SIMATIC Panel PC with SIMATIC WinCC

Ordering Data

Panel PC configuration	Order No.							
SIMATIC Panel PC 670	**6AV7 7■■-■■■■■-0A■0**							
	1st ■	2nd ■	3rd ■	4th ■	5th ■	6th ■	7th ■	8th ■
Design:								
• Centralized configuration	2							
• Distributed configuration	3							
Front panels:								
• 12" TFT Touch		2						
• 12" TFT		3						
• 15" TFT Touch		4						
• 15" TFT		5						
• 12" TFT Touch without front USB interface		6						
• 15" TFT Touch without front USB interface		7						
Main memory configuration:								
• 128 MB			1					
• 256 MB			2					
• 512 MB			3					
Processor								
• Celeron 1.2 GHz				A				
• Intel Pentium III 1.26 GHz				B				
Country-specific design/power supply:								
• Processor unit and operator unit 24 V DC					A			
• Processor unit and operator unit 110 V/230 V US					B			
• Processor unit and operator unit 110 V/230 V Europe					C			
• Processor unit 110 V/230 V US, operator unit 24 V DC	3				D			
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	3				E			
• Processor unit 24 V DC, operator unit 110 V/230 V US	3				F			
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	3				G			
Drives:								
• 20 GB hard disk + CD-ROM						1		
• 40 GB hard disk + CD-ROM						3		
• 40 GB hard disk + CD-RW/DVD						4		
Distance between processor unit and operator unit /cable length:								
• 0 m (centralized configuration)	2						0	
• 2 m	3						1	
• 5 m	3						2	
• 10 m	3						3	
• 20 m	3						4	
Operating system:								
• Windows NT 4.0, German	2							B
• Windows NT 4.0, English	2							C
• Windows 2000 Professional Multi-Language								D
• Windows XP Professional Multi-Language								G
Stocked variants of the Panel PC 670	see page 3/12							
Accessories for Panel PC 670	see page 3/13							

Panel PC configuration	Order No.							
SIMATIC Panel PC 870	**6AV7 7■■-■■■■■-0A■0**							
	1st ■	2nd ■	3rd ■	4th ■	5th ■	6th ■	7th ■	8th ■
Design:								
• Centralized configuration	0							
• Distributed configuration	1							
Front panels:								
• 12" TFT Touch	1	2						
• 12" TFT		3						
• 15" TFT Touch		4						
• 15" TFT		5						
• 12" TFT Touch without front USB interface	1	6						
• 15" TFT Touch without front USB interface		7						
Main memory configuration:								
• 128 MB			1					
• 256 MB			2					
• 512 MB			3					
Processor								
• Celeron 1.2 GHz				C				
• Intel Pentium III 1.26 GHz				D				
Country-specific design/power supply:								
• Processor unit and operator unit 24 V DC					A			
• Processor unit and operator unit 110 V/230 V US					B			
• Processor unit and operator unit 110 V/230 V Europe					C			
• Processor unit 110 V/230 V US, operator unit 24 V DC	1				D			
• Processor unit 110 V/230 V Europe, operator unit 24 V DC	1				E			
• Processor unit 24 V DC, operator unit 110 V/230 V US	1				F			
• Processor unit 24 V DC, operator unit 110 V/230 V Europe	1				G			
Drives:								
• 20 GB hard disk + CD-ROM						1		
• 40 GB hard disk + CD-ROM						3		
• 40 GB hard disk + CD-RW/DVD						4		
Distance between processor unit and operator unit /cable length:								
• 0 m (centralized configuration)	0						0	
• 2 m	1						1	
• 5 m	1						2	
• 10 m	1						3	
• 20 m	1						4	
Operating system:								
• Windows NT 4.0, German	0							B
• Windows NT 4.0, English	0							C
• Windows 2000 Professional Multi-Language								D
• Windows XP Professional Multi-Language								E
Stocked variants of the Panel PC 870	see page 3/20							
Accessories for Panel PC 870	see page 3/20							

Ordering Data (cont.)

	Order No.
Panel PC configuration	
SIMATIC Panel PC IL 70	**6AG7 01■-■■A00-0A■0**
Front panels:	
• 12“ TFT Touch display	**0**
• 15“ TFT Touch display	**1**
Processor/main memory:	
• Celeron 1.7 GHz/ 128 MB SDRAM	**0 A**
• Pentium IV 2.0 GHz/ 256 MB SDRAM	**1 B**
Operating system:	
• Windows NT 4.0, German	**B**
• Windows NT 4.0, English	**C**
• Windows 2000 Professional Multi-Language	**D**
• Windows XP Professional Multi-Language	**E**

	Order No.
SIMATIC WinCC Package	**6AV6 382-1■■00-0AX0**
WinCC V5.1 Runtime	
• 128 power tags	**C**
• 256 power tags	**D**
• 1024 power tags	**E**
• 64K power tags	**F**
Communications processor	
• With/without onboard interfaces	**A**
• Industrial Ethernet (with CP 1613)	**B**
• PROFIBUS (with CP 5613)	**C**
SIMATIC WinCC Package	**6AV6 382-1■■06-0AX0**
WinCC V6.0 Runtime	
• 128 power tags	**C**
• 256 power tags	**D**
• 1024 power tags	**E**
• 8K power tags	**H**
• 64K power tags	**F**
Communications processor	
• With/without onboard interfaces	**A**
• Industrial Ethernet (with CP 1613)	**B**
• PROFIBUS (with CP 5613)	**C**
Communications software for CP 1613/CP 5613	**see page 4/33 and 4/34**

Further Information

For further information, visit our website at

http://www.siemens.com/simatichmi

Customized Products

6

Customized Products

Overview

Overview

Customized design

- SIMATIC HMI products in customized design are standard units without any technical changes that have been modified in terms of their design.
  - Seamless adaptation to system design and special operating concept of the customer
  - No compromises in ergonomics with regard to the standard products
  - Fully compatible with the standard devices in terms of functions and interfaces, configuration, housing and assembly dimensions and logistics and service as well
- Thanks to the flexible manufacture of the SIMATIC HMI panels, devices with customized designs based on standard products can be supplied cost-effectively even at small order quantities. Equipment in customized design are finished in the manufacturing plant and are subject to the same quality requirements as standard units.
- The following modifications are possible separately or in combination:
  - Replacement of the Siemens logo with the company name and alteration of the type designation
  - Change in keyboard colors, key labeling, key symbols and background color
  - Change in frame color

OEM (Original Equipment Manufacturer) products

- Solutions for OEM customers are suited to demanding industrial automation tasks that cannot be solved using standard HMI products.
- Users in the automobile industry, food , beverages and tobacco industries as well as the plastics industry profit from the experience gained from a number of previously implemented OEM versions and sector standards
- OEM products are available in all performance categories – from OEM Push Button Panels, through 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
  - Display technologies, sizes and resolutions
  - Options such as direct control keys or CPI cards
  - Remote configuration of the panel PCs: up to 500 m
  - Housing for desktop or supporting arm mounting
  - Additional modules or interfaces, including of course the necessary device drivers
  - Selectable Windows operating systems
  - Pre-installed SIMATIC HMI software package

Open Platform Program

- The Open Platform Program offers a wide range of possibilities for developing flexible software solutions efficiently and cost-effectively
- Based on the Windows CE products from the TP 170 B upwards, customized software solutions can be developed, software products from other manufacturers can be used or ProTool can be used to add functions and objects. The flexibility and versatility of the PC environment is then opened up to panels and multi panels.
- The Software Development Kits (SDKs) contain all the software tools, documents, examples, workshops and support you will need.

Customized Design

Overview

- SIMATIC HMI products in customized design are standard units without any technical changes that have been modified in terms of their design. Equipment in customized design are finished in the manufacturing plant and are subject to the same quality requirements as standard units.
- The following modifications are possible separately or in combination:
  Version A:
  Replacement of the Siemens logo with the company name and alteration of the type designation
  Version B:
  Change in keyboard colors, key labeling, key symbols and background color
  Version C:
  Change in frame color
- The customized design is developed by the HMI Design Center.
  The Design Center offers:
  - Experience in the ergonomics of human–machine interfaces
  - Expertise in graphics and design tools, color tables and character sets
  - Experience in the selection of the suitable fonts and the standardized symbols for machine operation
  - Short response times

Benefits

- Seamless adaptation to system design and special operating concept of the customer
- No compromises in ergonomics with regard to the standard products
- Thanks to the flexible manufacture of the SIMATIC HMI panels, devices with customized designs based on standard products can be supplied cost-effectively even at small order quantities.
- Fully compatible with the standard devices in terms of:
  - Functions and interfaces
  - Configuration
  - Housing and assembly dimensions
  - Logistics and service

Customized Products

Customized Design

Selection and Ordering Data

Device type	Order No. of the associated standard device	Design version	Order No. of the design unit [1]	Minimum order quantity per annum	Minimum order quantity per order	Design Center [3] Units [2]	Start of production [3] Order No.
Text Display TD17	**6AV3 017-1NE30-0AX0**	A	**6AV3 017-5AA00-XXXX**	25	20	3	**6AV3 678-1FY10**
		B	**6AV3 017-5AB00-XXXX**	25	20	3	**6AV3 678-1FY20**
		C	**6AV3 017-5AC00-XXXX**	25	20	3	**6AV3 678-1FY30**
Operator Panel OP3	**6AV3 503-1DB10**	A	on request	100	on req.	3	on request
		B	on request	100	on req.	3	on request
		C	on request	on req.	on req.	3	on request
Operator Panel OP7/PP	**6AV3 607-1JC00-0AX1**	A	**6AV3 607-5AA00-XXXX**	50	20 [4]	3	**6AV3 678-1FY10**
		B	**6AV3 607-5AB00-XXXX**	50	20 [4]	3	**6AV3 678-1FY20**
		C	**6AV3 607-5AC00-XXXX**	250	20 [4]	3	**6AV3 678-1FY30**
Operator Panel OP7/DP	**6AV3 607-1JC20-0AX1**	A	**6AV3 607-5BA00-XXXX**	50	20 [4]	3	**6AV3 678-1FY10**
		B	**6AV3 607-5BB00-XXXX**	50	20 [4]	3	**6AV3 678-1FY20**
		C	**6AV3 607-5BC00-XXXX**	250	20 [4]	3	**6AV3 678-1FY30**
Operator Panel OP7/DP12	**6AV3 607-1JC30-0AX1**	A	**6AV3 607-5CA00-XXXX**	50	20 [4]	3	**6AV3 678-1FY10**
		B	**6AV3 607-5CB00-XXXX**	50	20	3	**6AV3 678-1FY20**
		C	**6AV3 607-5CC00-XXXX**	250	20	3	**6AV3 678-1FY30**
Operator Panel OP17/PP	**6AV3 617-1JC00-0AX1**	A	**6AV3 617-5AA00-XXXX**	25	20	3	**6AV3 678-1FY10**
		B	**6AV3 617-5AB00-XXXX**	25	20	4	**6AV3 678-1FY20**
		C	**6AV3 617-5AC00-XXXX**	100	20	4	**6AV3 678-1FY30**
Operator Panel OP17/DP	**6AV3 617-1JC20-0AX0**	A	**6AV3 617-5BA00-XXXX**	25	20	3	**6AV3 678-1FY10**
		B	**6AV3 617-5BB00-XXXX**	25	20	4	**6AV3 678-1FY20**
		C	**6AV3 617-5BC00-XXXX**	100	20	4	**6AV3 678-1FY30**
Operator Panel OP17/DP12	**6AV3 617-1JC30-0AX1**	A	**6AV3 617-5CA00-XXXX**	25	20	3	**6AV3 678-1FY10**
		B	**6AV3 617-5CB00-XXXX**	25	20	4	**6AV3 678-1FY20**
		C	**6AV3 617-5CC00-XXXX**	100	20	4	**6AV3 678-1FY30**
Operator Panel OP 170B	**6AV6 542-0BB15-2AX0**	A	**6AV6 542-5BB00-XXXX**	50	25	3	**6AV3 678-1GY10**
		B	**6AV6 542-5BB10-XXXX**	50	25	4	**6AV3 678-1GY20**
		C [5]	**6AV6 542-5BB20-XXXX**	on req.	25	4	**6AV3 678-1GY30**
Operator Panel OP 270 6“	**6AV6 542-0CA10-0AX0**	A	**6AV6 542-5FA00-XXXX**	20	10	3	**6AV6 578-1FY10**
		B	**6AV6 542-5FA10-XXXX**	20	10	6	**6AV6 578-1FY20**
		C	**6AV6 542-5FA20-XXXX**	50	10	6	**6AV6 578-1FY30**
Operator Panel OP 270 10“	**6AV6 542-0CC10-0AX0**	A	**6AV6 542-5FB00-XXXX**	20	10	3	**6AV6 578-1FY10**
		B	**6AV6 542-5FB10-XXXX**	20	10	6	**6AV6 578-1FY20**
		C	**6AV6 542-5FB20-XXXX**	50	10	6	**6AV6 578-1FY30**
Operator Panel OP27 STN MONO	**6AV3 627-1JK00-0AX0**	A	**6AV3 627-5AA00-XXXX**	10	10	3	**6AV3 678-1GY10**
		B	**6AV3 627-5AB00-XXXX**	10	10	4	**6AV3 678-1GY20**
		C	**6AV3 627-5AC00-XXXX**	10	10	4	**6AV3 678-1GY30**

1) XXXX represents customer identification; assigned on ordering
2) Design Center unit: Order No.: 6AV9 804-0AA00-0AA0
3) The costs for the Design Center and for start of production are incurred once only at project kick-off
4) Only even numbers
5) Possible color versions on request; when the plastic frame is colored, the UL/CSA certification must be checked in each case

Selection and Ordering Data

Device type	Order No. of the associated standard device	Design version	Order No. of the design unit [1]	Minimum order quantity per annum	Minimum order quantity per order	Design Center [3] Units [2]	Start of production [3] Order No.
Touch Panel TP 070	**6AV6 545-0AA15-2AX0**	A	**6AV6 545-5AA00-XXXX**	50	25	3	**6AV3 678-1JY10**
		C [4]	**6AV6 545-5AC00-XXXX**	on req.	25	4	**6AV3 678-1JY30**
Touch Panel TP 170 A	**6AV6 545-0BA15-2AX0**	A	**6AV6 545-5BA00-XXXX**	50	25	3	**6AV3 678-1JY10**
		C [4]	**6AV6 545-5BC00-XXXX**	on req.	25	4	**6AV3 678-1JY30**
Touch Panel TP 170 B mono	**6AV6 545-0BB15-2AX0**	A	**6AV6 545-5CA00-XXXX**	50	25	3	**6AV3 678-1JY10**
		C [4]	**6AV6 545-5CC00-XXXX**	on req.	25	4	**6AV3 678-1JY30**
Touch Panel TP 170 B color	**6AV6 545-0BC15-2AX0**	A	**6AV6 545-5DA00-XXXX**	50	25	3	**6AV3 678-1JY10**
		C [4]	**6AV6 545-5DC00-XXXX**	on req.	25	4	**6AV3 678-1JY30**
Touch Panel TP 270 6“	**6AV6 545-0CA10-0AX0**	A	**6AV6 545-5FA00-XXXX**	20	10	3	**6AV6 578-1FY10**
		B	**6AV6 545-5FA10-XXXX**	20	10	3	**6AV6 578-1FY20**
		C	**6AV6 545-5FA20-XXXX**	50	10	3	**6AV6 578-1FY30**
Touch Panel TP 270 10“	**6AV6 545-0CC10-0AX0**	A	**6AV6 545-5FB00-XXXX**	20	10	3	**6AV6 578-1FY10**
		B	**6AV6 545-5FB10-XXXX**	20	10	3	**6AV6 578-1FY20**
		C	**6AV6 545-5FB20-XXXX**	50	10	3	**6AV6 578-1FY30**
Multi Panel MP 270B Touch	**6AV6 545-0AG10-0AX0**	A	**6AV6 545-5FC10-XXXX**	10	10	3	**6AV6 578-1FY10**
		B	**6AV6 545-5FC10-XXXX**	10	10	3	**6AV6 578-1FY20**
		C	**6AV6 545-5FC20-XXXX**	50	10	3	**6AV6 578-1FY30**
Multi Panel MP 270B Keys	**6AV6 542-0AG10-0AX0**	A	**6AV6 542-5FC10-XXXX**	10	10	3	**6AV6 578-1FY10**
		B	**6AV6 542-5FC10-XXXX**	10	10	6	**6AV6 578-1FY20**
		C	**6AV6 542-5FC20-XXXX**	50	10	6	**6AV6 578-1FY30**
Multi Panel MP 370 Touch	**6AV6 545-0DA10-0AX0**	A	**6AV6 545-5EA00-XXXX**	20	10	3	**6AV6 578-1GY10**
		B	**6AV6 545-5EA10-XXXX**	20	10	3	**6AV6 578-1GY20**
		C	**6AV6 545-5EA20-XXXX**	50	10	3	**6AV6 578-1GY30**
Multi Panel MP 370 Keys	**6AV6 542-0DA10-0AX0**	A	**6AV6 542-5EA00-XXXX**	20	10	3	**6AV6 578-1GY10**
		B	**6AV6 542-5EA10-XXXX**	20	10	6	**6AV6 578-1GY20**
		C	**6AV6 542-5EA20-XXXX**	50	10	6	**6AV6 578-1GY30**
Multi Panel MP 370 15“ Touch	**6AV6 545-0DB10-0AX0**	A	**6AV6 545-0EB00-XXXX**	on req.	on req.	on req.	on request
		B	**6AV6 545-0EB10-XXXX**	on req.	on req.	on req.	on request
		C	**6AV6 545-0EB20-XXXX**	on req.	on req.	on req.	on request

1) XXXX represents customer identification; assigned on ordering
2) Design Center unit: Order No.: 6AV9 804-0AA00-0AA0
3) The costs for the Design Center and for start of production are incurred once only at project kick-off
4) Possible color versions on request; when the plastic frame is colored, the UL/CSA certification must be checked in each case

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Customized Products

Customized Design

Selection and Ordering Data

Device type	Order No. of the associated standard device	Design version	Order No. of the design unit [1]	Minimum order quantity per annum	Minimum order quantity per order	Design Center [3] Units [2]	Start of production [3] Order No.
Panel PC 670 10" Keys	**depending on configuration**	A	**6AV7 651-0AA00-XXXX**	10	3	3	**6AV7 681-1FY10**
		B	**6AV7 651-0AB00-XXXX**	10	3	6	**6AV7 681-1FY20**
		C [5]	**6AV7 651-0AC00-XXXX**	on req.	10	6	**6AV7 681-1FY30**
Panel PC 670 12" Keys	**depending on configuration**	A	**6AV7 651-1AA00-XXXX**	10	3	3	**6AV7 681-1FY10**
		B	**6AV7 651-1AB00-XXXX**	10	3	6	**6AV7 681-1FY20**
		C [5]	**6AV7 651-1AC00-XXXX**	on req.	10	6	**6AV7 681-1FY30**
Panel PC 670 15" Keys	**depending on configuration**	A	**6AV7 651-2AA00-XXXX**	10	3	3	**6AV7 681-1FY10**
		B	**6AV7 651-2AB00-XXXX**	10	3	6	**6AV7 681-1FY20**
		C [5]	**6AV7 651-2AC00-XXXX**	on req.	10	6	**6AV7 681-1FY30**
Panel PC 670 12" Touch	**depending on configuration**	A	**6AV7 651-3AA00-XXXX**	10	3	3	**6AV7 681-1GY10**
		B	**6AV7 651-3AB00-XXXX**	10	3	3	**6AV7 681-1GY20**
		C [5]	**6AV7 651-3AC00-XXXX**	on req.	10	3	**6AV7 681-1GY30**
Panel PC 670 15" Touch	**depending on configuration**	A	**6AV7 651-4AA00-XXXX**	10	3	3	**6AV7 681-1GY10**
		B	**6AV7 651-4AB00-XXXX**	10	3	3	**6AV7 681-1GY20**
		C [5]	**6AV7 651-4AC00-XXXX**	on req.	10	3	**6AV7 681-1GY30**
Panel PC 870 12" Keys	**depending on configuration**	A	**6AV7 703-5AA00-XXXX**	10	3	3	**6AV7 681-1FY10**
		B	**6AV7 703-5AB00-XXXX**	10	3	6	**6AV7 681-1FY20**
		C [5]	**6AV7 703-5AC00-XXXX**	on req.	10	6	**6AV7 681-1FY30**
Panel PC 870 12" Touch	**depending on configuration**	A	**6AV7 704-5AA00-XXXX**	10	3	3	**6AV7 681-1GY10**
		B	**6AV7 704-5AB00-XXXX**	10	3	6	**6AV7 681-1GY20**
		C [5]	**6AV7 704-5AC00-XXXX**	on req.	10	6	**6AV7 681-1GY30**
Panel PC 870 15" Keys	**depending on configuration**	A	**6AV7 705-5AA00-XXXX**	10	3	3	**6AV7 681-1FY10**
		B	**6AV7 705-5AB00-XXXX**	10	3	6	**6AV7 681-1FY20**
		C [5]	**6AV7 705-5AC00-XXXX**	on req.	10	6	**6AV7 681-1FY30**
Panel PC 870 15" Touch NEMA	**depending on configuration**	A	**6AV7 707-5AA00-XXXX**	10	3	3	**6AV7 681-1GY10**
		B	**6AV7 707-5AB00-XXXX**	10	3	3	**6AV7 681-1GY20**
		C [5]	**6AV7 707-5AC00-XXXX**	on req.	10	3	**6AV7 681-1GY30**

1) XXXX represents customer identification; assigned on ordering
2) Add-on price for selected configuration
3) Design Center unit: Order No.: 6AV9 804-0AA00-0AA0
4) The costs for the Design Center and for start of production are incurred once only at project kick-off
5) Possible color versions on request; when the plastic frame is colored, the UL/CSA certification must be checked in each case

Further Information

Costs/discounts

The customized devices are available for an additional fee.

In addition to the unit-price for the individually designed items, there is a one-off charge for the design and introduction of the customer-specific version. This charge depends on the device and on the design.

Minimum order quantity

To offer high-quality products at internationally competitive prices, it is necessary to set lower limits for the annual unit quantities and the minimum order quantity.

The overview tables clearly show all applicable costs and minimum order quantities for each of the devices.

Order processing

A special ordering procedure is used for customized designs. The customer has two opportunities to review and authorize the design. This ensures that the final product fully meets all requirements.

Repairs/Stocking of spare parts

Repairs are carried out only on identified equipment.

The required customized spare parts (device fronts) must be ordered and stored by the customer following delivery.

Order notes

You can directly order the standard services offered by the Design Center in units. In the case of more extensive requirements, an offer will be generated by our business partner "designafairs".

Contact

Please contact your HMI representative at your nearest Siemens sales office/regional company (see Internet) or the responsible contact person at the HMI Design Center.

E-mail:
hmi.design@designafairs.com

For further information, visit our website at

http://www.siemens.com/hmi-oem

Customized Products

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, through 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 control keys or CPI cards
  - Remote configuration of the panel PCs: up to 500 m
  - Housing for desktop or supporting arm mounting
  - 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 for demanding industrial automation tasks that cannot be solved by means of standard products
- The customized OEM products are 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
- Users in the automobile industry, food , beverages and tobacco industries as well as the plastics industry profit from the experience gained from a number of previously implemented OEM versions and sector standards

Further Information

Product specifications and quotes

- Product specifications in accordance with customer demands
- Preparation of quote by SIMATIC HMI specialists, determination of
  - One-off costs
  - Costs for sample devices
  - Series device prices
  - General conditions (project agreement)
- A minimum annual production/order volume limit must be specified (minimum order quantity). This is agreed with the customer within the framework of the project.

Note:
Customized products can only be ordered in connection with a project declaration.

The customized OEM products are developed and manufactured in various stages in accordance with quality standards. Prototypes are created for the purpose of testing the products. Once the products have been approved by the customer, they are certified and prepared for production.

The devices are manufactured in close cooperation with the customer's planning department at the factory where the standard products are manufactured. Individual project declarations for disposition, manufacturing and logistics are agreed with the customer.

Our SIMATIC Customer Support is available around the clock and throughout the world to answer questions and assist with problems. A special OEM After Sales Support also exists.

Contact

Please contact the HMI specialist at your nearest Siemens sales office or regional company.

For further information, visit our website at

http://www.siemens.com/hmi-oem

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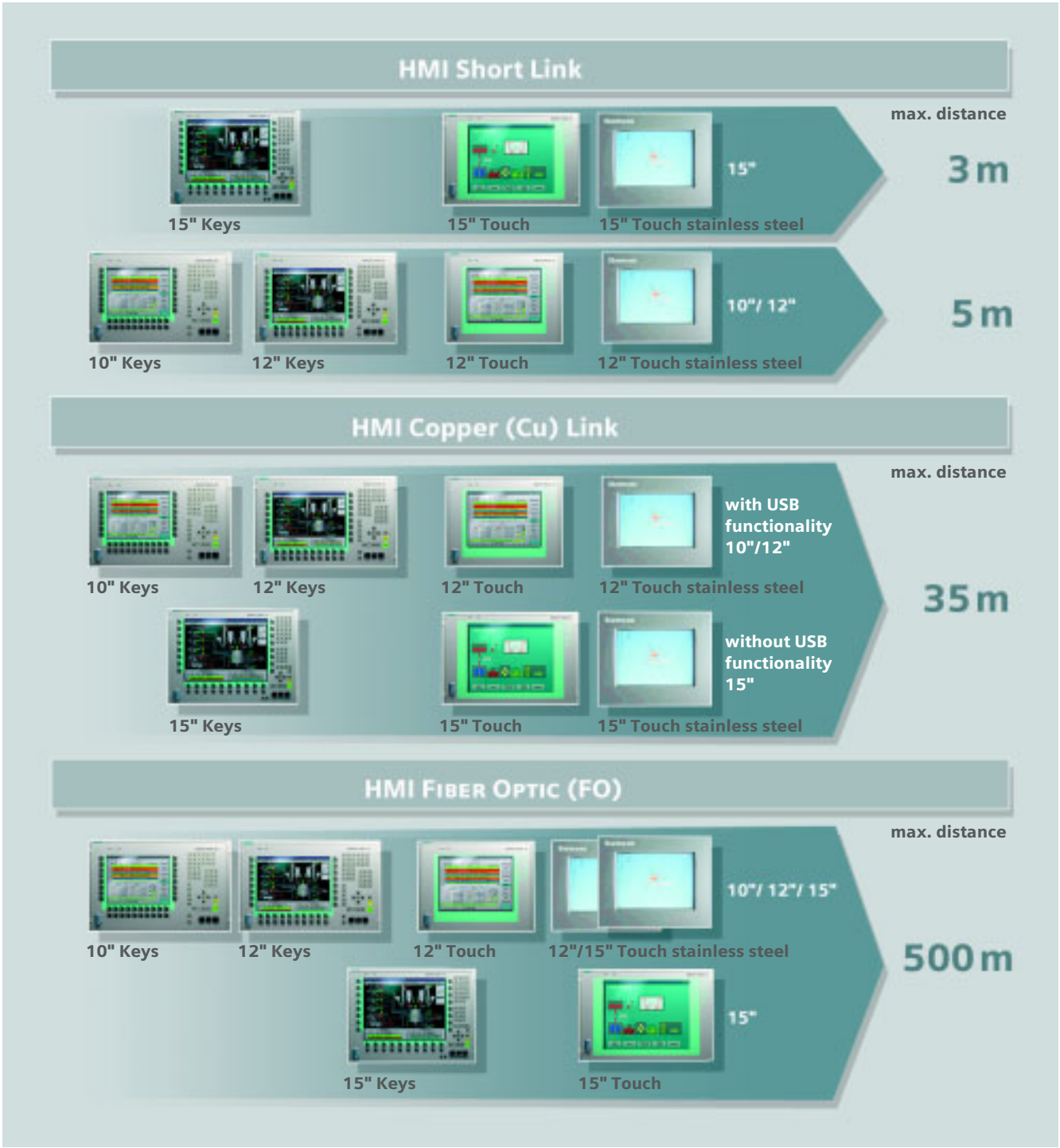
HMI link applications



Distance of different HMI links

Customized Products

Open Platform Program

Overview

- The Open Platform Program offers a wide range of possibilities for developing flexible software solutions efficiently and cost-effectively
- Based on the Windows CE products from the TP 170 B upwards, customized software solutions can be developed, software products from other manufacturers can be used or ProTool can be used to add functions and objects. The flexibility and versatility of the PC environment is then opened up to panels and multi panels.
- With SIMATIC ProTool, the standard configuration software, the open operating system Windows CE and a finely graded spectrum of hardware platforms, a large potential is available for the implementation of customized software solutions.

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

Area of application

The use of the open Windows CE operating system opens up a wide range of options for the integration of functionalities, such as:

- Easy data interchange with other Windows-based systems
- Connection to central databases
- Multimedia extensions
- Access to central documents through Internet/intranet
- Communication with special I/O devices (e.g. barcode scanners)

All Windows CE-based SIMATIC Panels offer a cost-effective platform for customized OEM software solutions based on reliable, industry-standard hardware.

Functions

Specific requirements can be met by building on ProTool, on third-party products or on your own applications.

SIMATIC ProTool, the standard configuration software for the SIMATIC HMI Panel family, offers several opportunities for implementing additional functionality. Depending on complexity and requirements, the following can be added:

- New project functions
- Own ActiveX objects
- Additional applications that run in parallel with ProTool
- Porting own or third-party software to the panel hardware

For developing customized software solutions for target PC platforms, within the framework of the Open Platform program, a software development kit for SIMATIC ProTool/Pro is also available.

Further Information

For further information, visit our website at

http://www.siemens.com/hmi-oem

Industrial LCD Monitors

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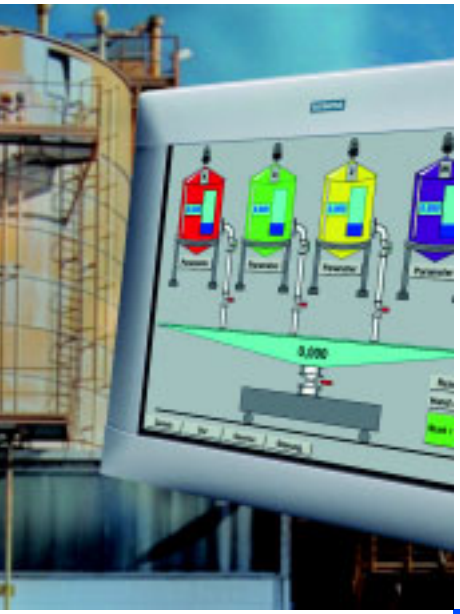


Industrial LCD Monitors at a Glance

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
- Rack-mounted models (for control cabinets, consoles and booms)
- 19" rack-mounted models

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:

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 versions 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 processor 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 outshine 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
Versions			
• Desktop units	–	●	●
• Built-in units (for control cabinets, consoles and booms)	●	●	●
• 19" rack-mounted models	●	●	●
Display	12" TFT	15" TFT	18" TFT
• Resolution	800 x 600	1024 x 768	1280 x 1024
• Colors	256 k	256 k	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	IP 65 (built-in unit), IP 54 (19"-rack unit)	IP 20 (desktop unit), IP 65 (built-in unit), IP 54 (19"-rack unit)	IP 20 (desktop unit), IP 65 (built-in unit), IP 54 (19"-rack 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 applications in which picture tube monitors (CRT monitors) are used
- Built-in versions:
  - Rack-mounted models (for control cabinets, consoles and booms)
  - 19" rack-mounted models
- 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 degree of protection IP 65, 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 versions
- 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

Area of 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 plastic housing
- 12" TFT display
- Resolution 800 x 600 pixels, 256k colors
- Non-reflective, hardened mineral glass screen
- Touch screen or membrane keyboard (with 36 function keys)
- Line frequency 30-80 kHz
- Image refresh frequency 50-72 Hz
- 110/230 V AC power supply, 24 V DC optional for built-in and rack-mounted units
- Can be positioned up to 20 m from the processor unit

Two rack-mounted versions of the SCD 1297 12" industrial LCD monitors are available:

- Rack-mounted models
  (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 units
  (for 19" racks)
  - SCD 1297-R display device
  - SCD 1297-RT with analog resistive touch screen

Included in the delivery are:

- Power cable for versions with 230 V AC power supply
- Connection cables 1.8 m, 5 m, 10 m or 20 m
- Instruction manual, 2 languages

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 processor unit	1.8 to 20 m		
• On-screen display (OSD) configuration	Yes		
• Anti-glare and hardened mineral glass sheet	Yes		
• Presentation	1:1, full screen, zoom		
• Power switch	No		
• Power supply	110/230 V AC, optionally 24 V DC		
• Frequency/power input	47 – 63 Hz/30 VA		
Ambient conditions			
• Degree of protection to EN 60 529	IP 65	IP 65	IP 54
• Vibration resistance in operation	1 g (10 m/s^2)		
• Shock resistance in operation	5 g (50 m/s^2)		
• EMC	CE		
• Ambient temperature in operation	0 to +40 °C		
Certification	UL 1950, CE	UL 1950, CE	UL 1950, CE
Display			
• Viewable area in inches	12" TFT		
• Resolution (pixels) optimally	800 x 600		
• Brightness/contrast (typ.)	300 cd/m^2 / 300:1		
• Viewing angle (H x V)	120° x 100°		
• Shadow mask (H x V) (mm)	0.31 x 0.31		
• Viewable area (H x V) (mm)	246 x 184		
• No. of colors	256 k		
• MTBF of background lighting (at 25°C)	50,000 h		
• Image refresh rate	50 – 72 Hz		
• Line frequency	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	No	Optional
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes	Yes	Yes
• Serial interface for touch screen	Optional	No	Optional
• 2*PS/2 interfaces for keyboard & mouse	No	Yes	No
Dimensions			
• External dimensions W x H x D (mm)	364 x 284 x 80	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	334.4 x 252 x 76
Weight (kg)	5	5	5

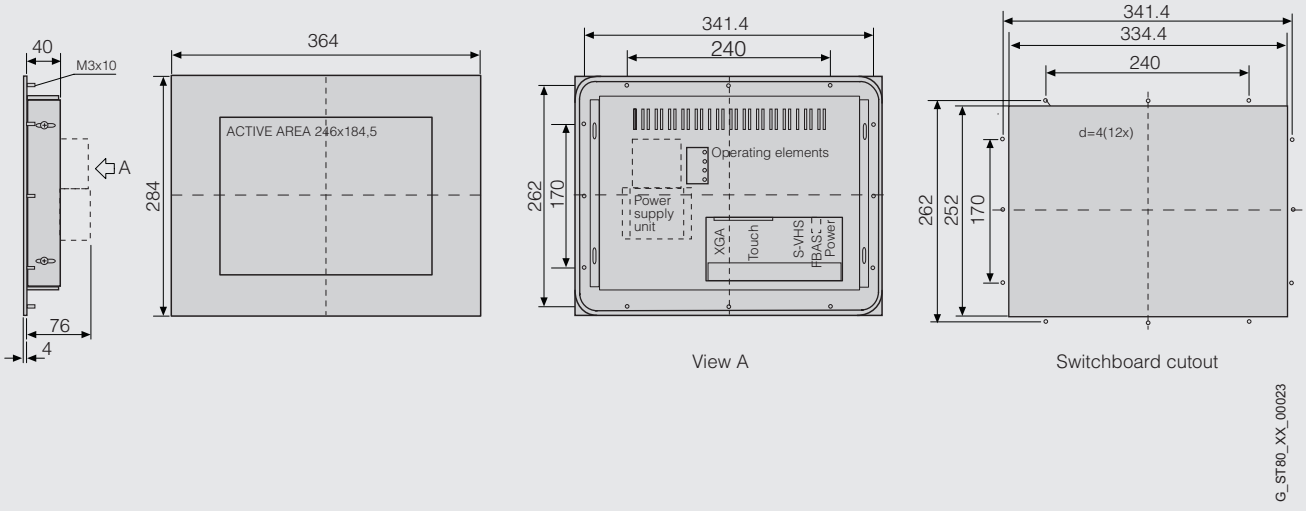
Ordering Data

	Order No.
Standard configuration	
LCD-Monitore 12“	**6AV8 101-0■■00-■■A1**
Built-in versions:	
• Built-in unit	**B**
• 19“-rack unit	**C**
Operating functions:	
• Display device without operating functions	**A**
• Touch	**B**
• Keyboard (only with built-in device)	**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	
• 1.8 m Video + Touch	**6AV8 107 0BA00-0AA0**
• 1.8 m Video + 2*PS/2	**6AV8 107 0BC00-0AA0**
• 5.0 m Video + Touch	**6AV8 107 0DA00-0AA0**
• 5.0 m Video + 2*PS/2	**6AV8 107 0DC00-0AA0**
• 10.0 m Video + Touch	**6AV8 107 0FA00-0AA0**
• 10.0 m Video + X27	**6AV8 107 0FC00-0AA0**
• 20.0 m Video	**6AV8 107 0HB00-0AA0**
• 20.0 m Video + Touch	**6AV8 107 0HA00-0AA0**
• 20.0 m Video + X27	**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

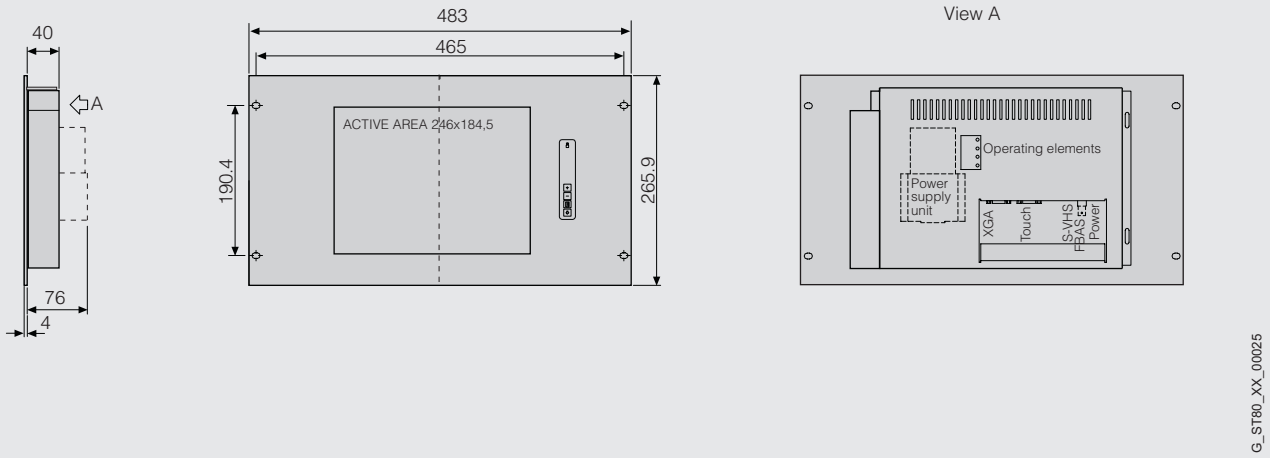


SCD 1297-E, SCD 1297-ET

12" devices

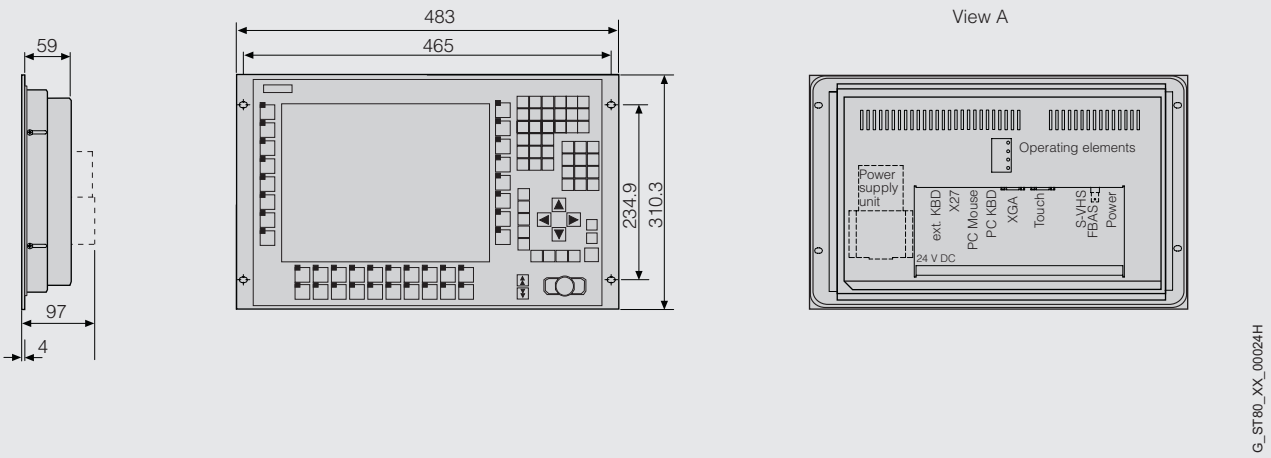
Dimension drawings (cont.)

Dimensions in mm



SCD 1297-R, SCD 1297-RT

Dimensions in mm



SCD 1297-K

Further information

For further information, visit our website at

http://www.siemens.com/industrial-lcd

Overview

- The SCD 1597 Monitors are rugged, industry standard LCD monitors
- They can be used in any applications in which picture tube monitors (CRT monitors) are used
- Built-in versions:
  - Desktop units
  - Rack-mounted models (for control cabinets, consoles and booms)
  - 19" rack-mounted models
- 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 degree of protection IP 65 (desktop unit IP 20), 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 versions
- 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

Area of 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 plastic housing
- 15" TFT display
- Resolution 1024 x 768 pixels, 256k colors
- Non-reflective, hardened mineral glass screen
- Touchscreen or membrane keyboard (with 36 function keys)
- Line frequency 30-80 kHz
- Image refresh frequency 50-72 Hz
- 110/230 V AC power supply, 24 V DC optional for built-in and rack-mounted units
- Can be positioned up to 20 m from the processor unit

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
- Rack-mounted models
  (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 models
  - SCD 1597-R – for display only
  - SCD 1597-RT with analog resistive touch screen

Included in the delivery are:

- Power cable for versions with 230 V AC power supply
- Connection cables 1.8 m, 5 m, 10 m or 20 m
- Instruction manual, 2 languages

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 processor 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	1:1, full screen, zoom	1:1, full screen, zoom	1:1, full screen, zoom	1:1, full screen, zoom
• 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	IP 65	IP 65	IP 54	IP 20
• 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	UL1950, CE	UL1950, CE	UL1950, CE	UL1950, 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	256 k	256 k	256 k	256 k
• MTBF of background lighting (at 25°C)	50,000 h	50,000 h	50,000 h	50,000 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)	328 x 336 x 80	483 x 355 x 98	483 x 311 x 86,5	370 x 373 x 62 (base depth 205)
• Mounting cutout/depth W x H x D (mm)	396 x 304 x 82.5	448 x 333 x 95	396 x 304 x 82.5	370 x 373 x 62 (base depth 205)
Weight (kg)	5.5	5.5	5.5	5.5

Ordering Data

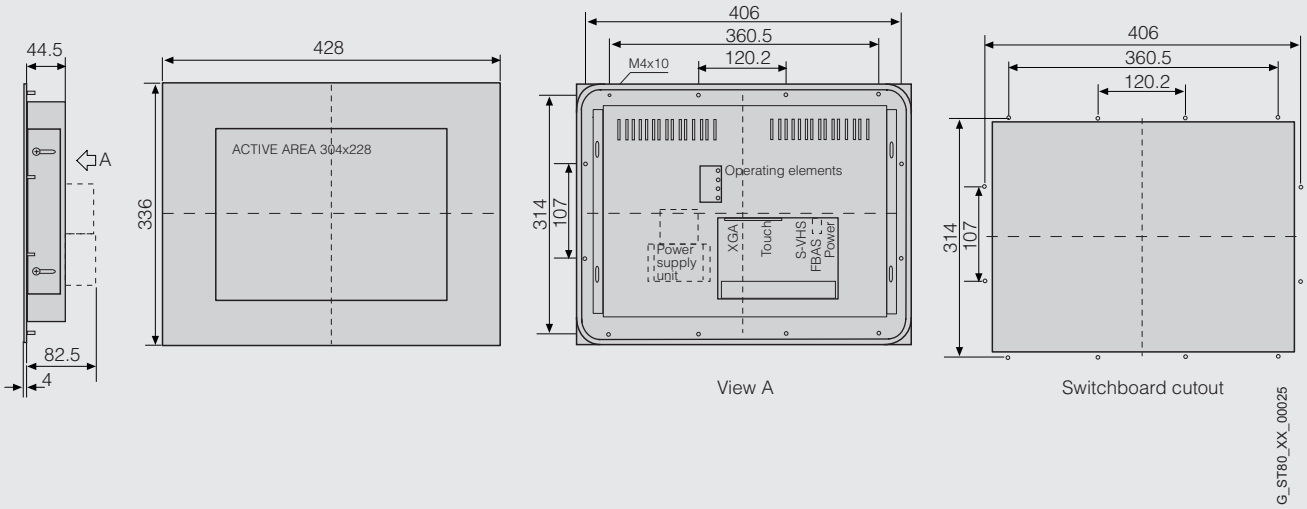
	Order No.
Standard configuration	
15" LCD monitors	**6AV8 101-1■■00-■■A1**
Built-in versions:	
• Desktop unit (only for 230 V)	**A**
• Built-in unit	**B**
• 19“-rack unit	**C**
Operating functions:	
• Display device without operating functions	**A**
• Touch	**B**
• Keyboard (only with built-in device)	**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	
• 1.8 m Video + Touch	**6AV8 107-0BA00-0AA0**
• 1.8 m Video + 2*PS/2	**6AV8 107-0BC00-0AA0**
• 5.0 m Video + Touch	**6AV8 107-0DA00-0AA0**
• 5.0 m Video + 2*PS/2	**6AV8 107-0DC00-0AA0**
• 10.0 m Video + Touch	**6AV8 107-0FA00-0AA0**
• 10.0 m Video + X27	**6AV8 107-0FC00-0AA0**
• 20.0 m Video	**6AV8 107-0HB00-0AA0**
• 20.0 m Video + Touch	**6AV8 107-0HA00-0AA0**
• 20.0 m Video + X27	**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**

15" devices

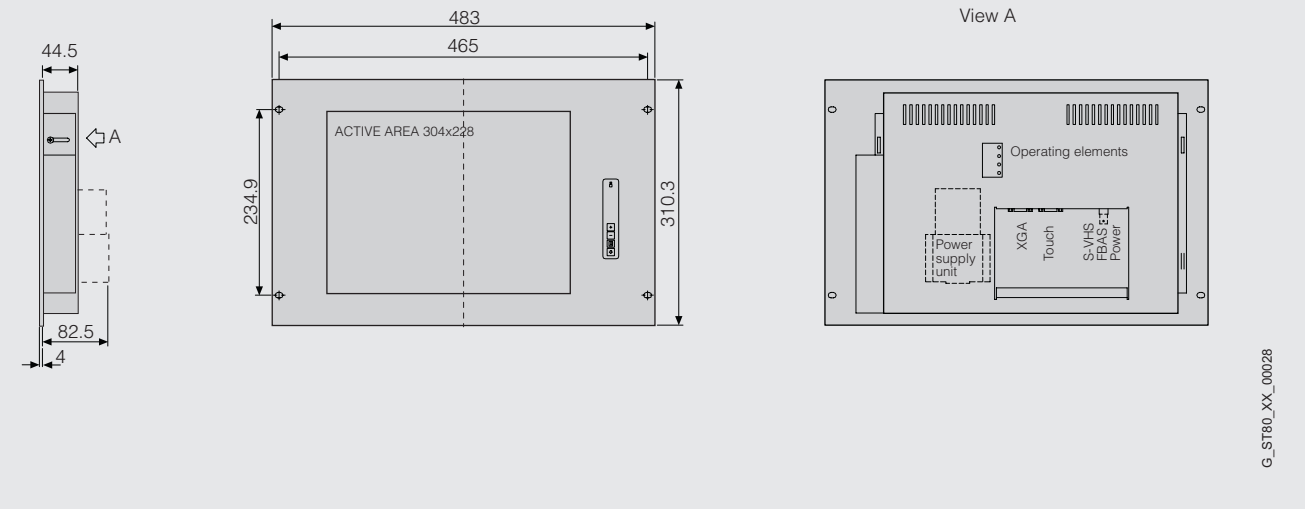
Dimension drawings

Dimensions in mm



SCD 1597-E, SCD 1597-ET

Dimensions in mm

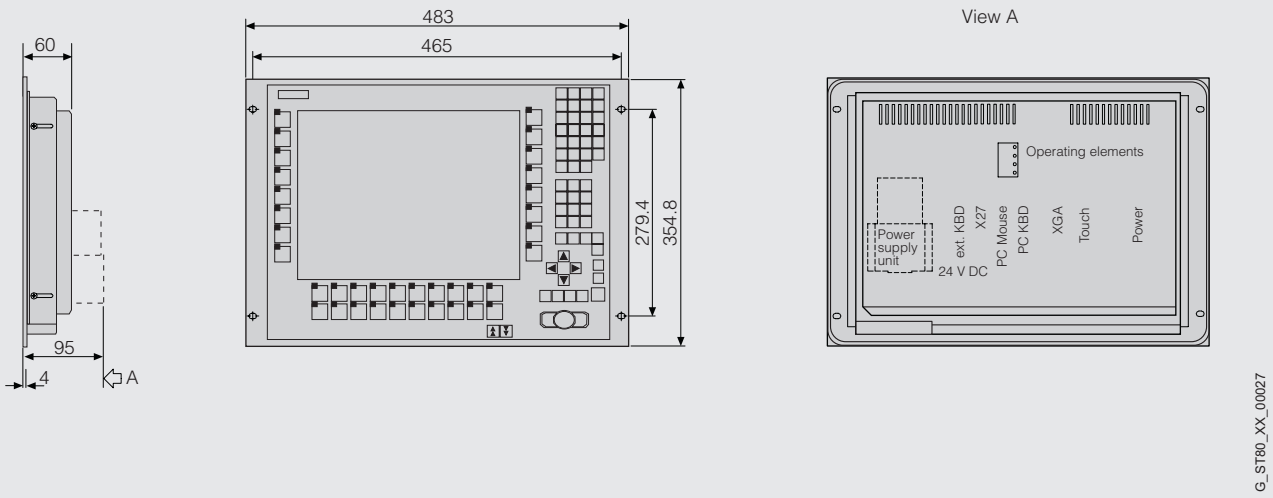


SCD 1597-R, SCD 1597-RT

7

Dimension drawings (cont.)

Dimensions in mm



SCD 1597-K

Further information

For further information, visit our website at

http://www.siemens.com/industrial-lcd

18" devices

Overview

Overview

- The SCD 1897 and SCD 1898 Monitors are rugged, industry standard LCD monitors
- They can be used in any application in which picture tube monitors (CRT monitors) are used
- Built-in versions:
  - Desktop units
  - Rack-mounted models (for control cabinets, consoles and booms)
  - 19" rack-mounted models
- 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 degree of protection IP 65 (desktop unit IP 20), 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 versions
- 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

Area of 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 plastic housing
- 18" TFT display
- Resolution 1280 x 1024 pixels, 16 million colors
- Non-reflective, hardened mineral glass screen
- 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 processor 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
- Rack-mounted models (for control cabinets, consoles and booms)
  - SCD 1897-E – for display only
  - SCD 1897-ET with analog resistive touch screen
- 19-rack units
  - SCD 1897-R – for display only
  - SCD 1897-RT with analog resistive touch screen

Included in the delivery are:

- Power cable for versions with 230 V AC power supply
- Connection cables 1.8 m, 5 m, 10 m or 20 m
- Instruction manual, 2 languages

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

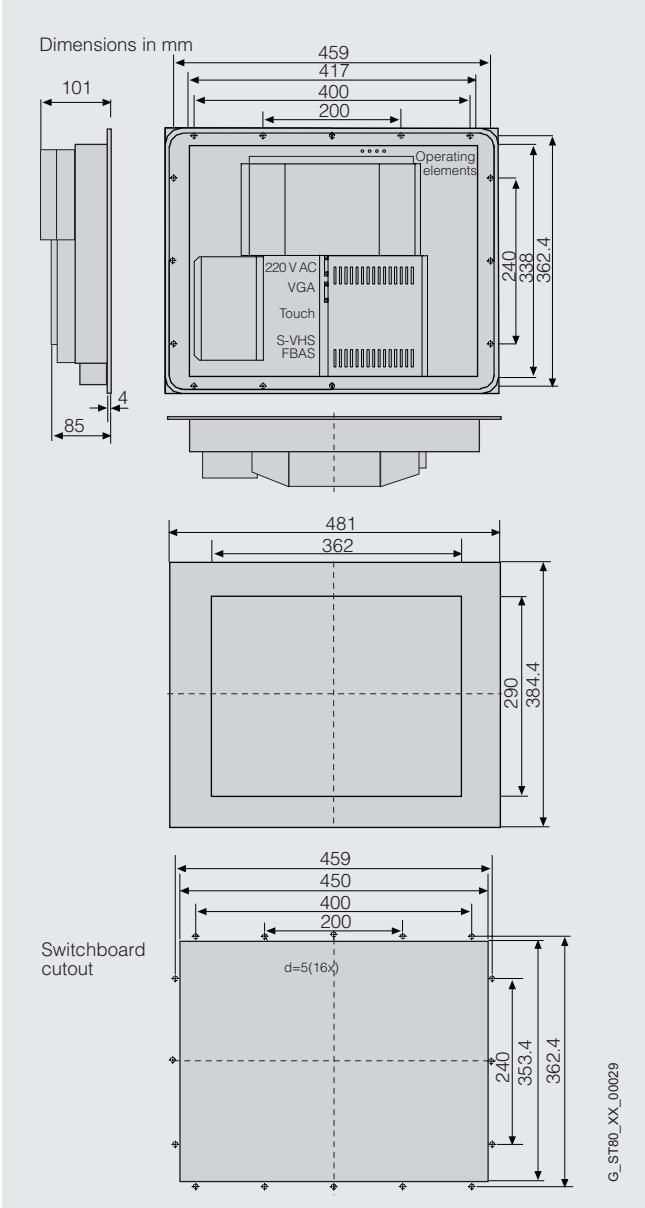
Type	SCD 1897-E / 1897-ET	SCD 1897-R / 1897-RT	SCD 1898-I / 1898-IT
General features			
• Can be separated from processor unit	1.8 to 20 m		
• On-screen display (OSD) configuration	Yes		
• Anti-glare and hardened mineral glass sheet	Yes		
• Presentation	1:1, full screen, zoom		
• Power switch	At the rear		
• Power supply	110/230 V AC		
• Frequency/power input	47 to 63 Hz/60 VA		
Ambient conditions			
• Degree of protection to EN 60 529	IP 65	IP 54	IP 20
• Vibration resistance in operation	1g (10m/s^2)		
• Shock resistance in operation	5g (50m/s^2)		
• EMC	CE		
• Ambient temperature in operation	0 to +40 °C		
Certification	UL 1950, CE		
Display			
• Viewable area in inches	18" TFT		
• Resolution (pixels) optimally	1280 x 1024		
• Brightness/contrast (typ.)	270 cd/m^2 / 400:1		
• Viewing angle (H x V)	170° x 170°		
• Shadow mask (H x V) (mm)	0.28 x 0.28		
• Viewable area (H x V) (mm)	359 x 287		
• No. of colors	16 million		
• MTBF of background lighting (at 25°C)	50,000 h		
• Image refresh rate	30 to 100 Hz		
• Line frequency	50 to 97 kHz		
Control elements			
• Membrane keyboard & Piezo mouse	No		
• Function keys	No		
• Alpha and numeric keypads	No		
• Touch screen	Optional		
Interfaces			
• Standard VGA interface 15-pin SUB-D	Yes		
• Serial interface for touch screen	Optional		
• 2*PS/2 interfaces for keyboard & mouse	No		
Dimensions			
• External dimensions W x H x D (mm)	481 x 385 x 101	483 x 400 x 101	465 x 444 x 91 (base depth 240)
• Mounting cutout/depth W x H x D (mm)	450 x 353.4 x 97	450 x 353.4 x 97	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 versions:	
• Built-in unit 1897	**B**
• 19"-rack 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	
• 1.8 m Video + Touch	**6AV8 107-0BA00-0AA0**
• 1.8 m Video + 2*PS/2	**6AV8 107-0BC00-0AA0**
• 5.0 m Video + Touch	**6AV8 107-0DA00-0AA0**
• 5.0 m Video + 2*PS/2	**6AV8 107-0DC00-0AA0**
• 10.0 m Video + Touch	**6AV8 107-0FA00-0AA0**
• 10.0 m Video + X27	**6AV8 107-0FC00-0AA0**
• 20.0 m Video	**6AV8 107-0HB00-0AA0**
• 20.0 m Video + Touch	**6AV8 107-0HA00-0AA0**
• 20.0 m Video + X27	**6AV8 107-0HC00-0AA0**

Dimension drawings

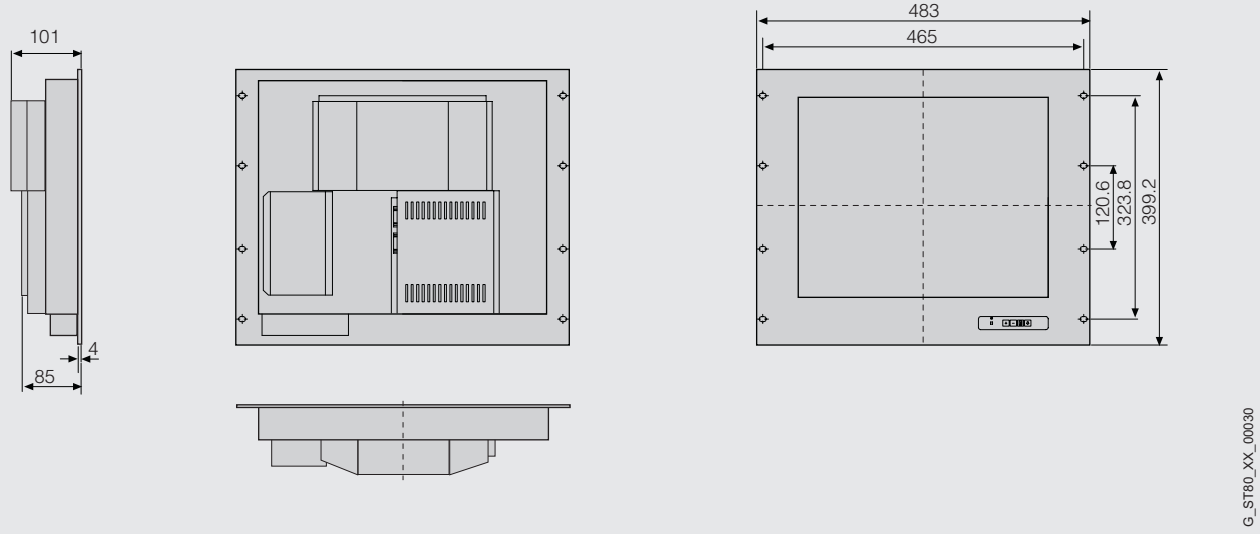


SCD 1897-E, SCD 1897-ET

7

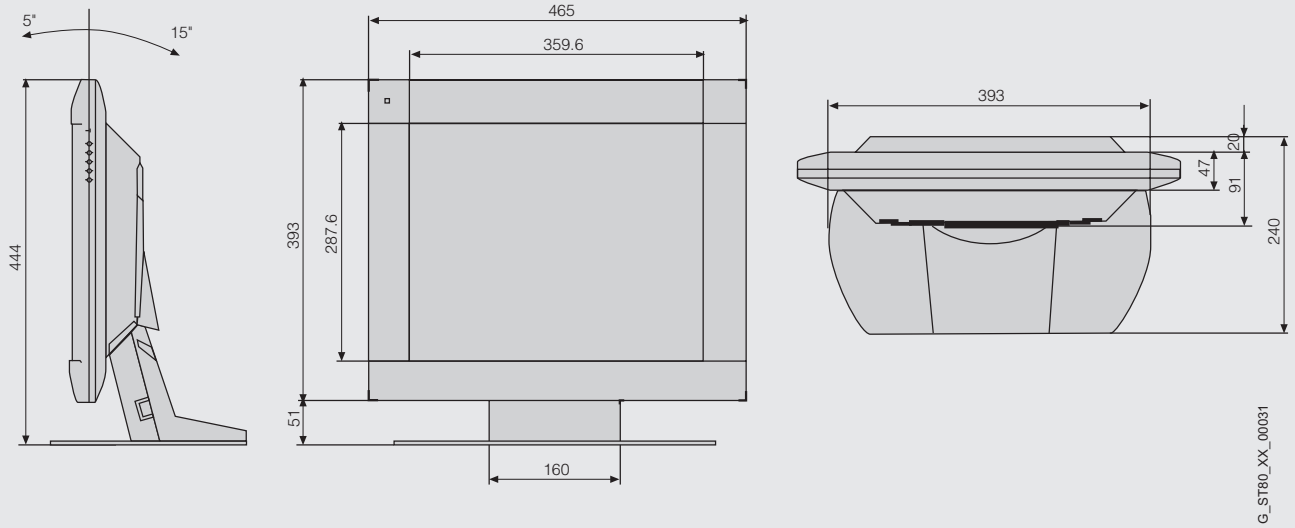
Dimension drawings (cont.)

Dimensions in mm



SCD 1897-R, SCD 1897-RT

Dimensions in mm



SCD 1898-I, SCD 1898-IT

Further information

For further information, visit our website at

http://www.siemens.com/industrial-lcd

Appendix

Training for Automation and Drives

Up-to-date first-hand information

There is one major advantage to having knowledge and information from the market leader: You receive directly and first hand the latest trends and innovations on all aspects of automation and drive technology.

At the same time we naturally know as an innovative trendsetter what the future demands of industry are and can tune our range of training courses to suit the requirements exactly. This means that you receive today the solution concepts of tomorrow.

Thanks to our customized range of training courses you quickly become master of the latest operating systems, application programs and methods – and will thus be able to respond quickly and constructively.

Whether you are an administrator or service technician, planner, developer, configuring engineer, decision-maker or manager – SITRAIN, the comprehensive training course system for automation and drives from Siemens, has something to offer everyone.

You learn in small groups without any stress exactly the things you need to know for your everyday job.

SITRAIN opens up a new world of learning.

In the Siemens virtual Training Center you will find your individual package from the A&D training portfolio at any time time from any place in the world.

From the classical seminar or attendance course to the current online learning module.

From the comfort of your own PC you can determine your individual path to maximum learning success from the wide range of services and offerings and process it “online”.

Courses for SIMATIC HMI

Course name	Target group: Program.	Target group: Service	Duration (days)	Course code
SIMATIC HMI (**H**uman **M**achine **I**nterface)				
SIMATIC OPX5er/X7er, ProTool/ProTool-Lite	■	■	2	BB-OPSYS
SIMATIC ProTool/Pro System course	■	■	3	ST-BPROPRS
SIMATIC WinCC, System course	■	■	5	ST-BWINCCS
SIMATIC WinCC, Advanced course	■	■	5	ST-BWINCCV
SIMATIC WinCC, Openness E	■		2	ST-BWINCCE
SIMATIC WinCC, Openness N	■		1	ST-BWINCCN
	Configuring/Programming/Startup	Installation/Maintenance		

You can find detailed information at

http://www.sitrain.com

or call us on:

Infoline: +49 (0)1805 / 23 56 11

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)

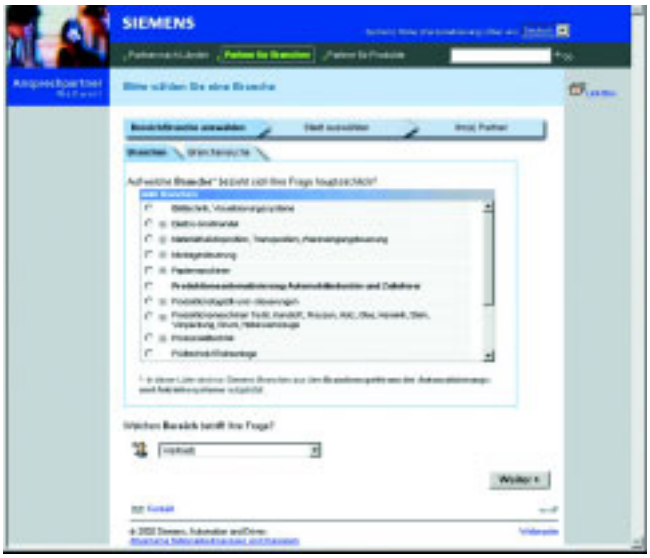
The EU conformity declarartion is available for examination by the appropriate authorites at:

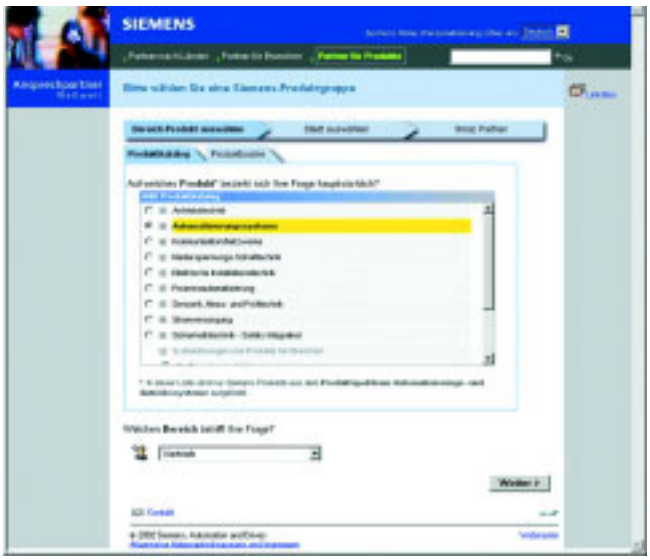
SIMATIC HMI:
Siemens AG
Automation and Drives Group
Dept. A&D PT 1 BD
P.O. Box 4848
D-90475 Nuremberg
Federal Republic of Germany

SIMATIC, SIMATIC NET,
SIMATIC PC:
Siemens AG,
Automation and Drives Group,
Dept. A&D AS RD4
P.O. Box 1963
D-92209 Amberg
Federal Republic of Germany

Siemens contact partners

Siemens contacts worldwide





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,
- Spares/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:

Need more Information?

Then fax us!
Under the fax no.
0 08 00-74 62 84 27
you will find further information.

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, communi-cations 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 respect to speed, efficiency and locality
- Solution provider has special knowledge of sector
- Guaranteed state-of-the-art technology and knowledge of latest developments

Certification

The solution providers are continuously being trained in order to remain completely up-to-date. They are subjected to a special certification program where they have to prove their high competence using Siemens' automation tools. We can therefore guarantee a special standard of quality which is successively achieved by training on new components and during special solution provider workshops.

Internet:
www.siemens.de/automation/solution-provider
E-Mail:
SSPinfo@nbgm.siemens.de

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.

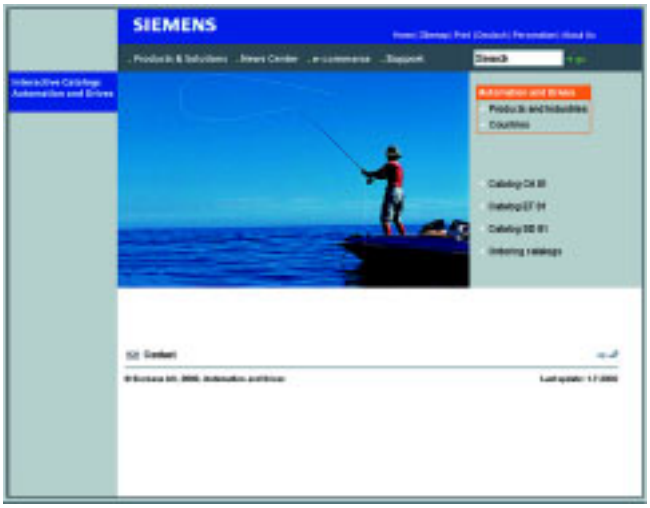
The Siemens Automation and Drives Group (A&D) has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

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 Catalogs



Detailed information together with convenient interactive functions:
The interactive catalogs CA 01 and SD 01 cover more than 80,000 products and thus provide 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 catalogs can be found in the Internet under

http://www.siemens.com/automation/ca01

or on CD-ROM:

- Automation & Drives CA 01,
  Order No.: E86060-D4001-A100-B8-7600
- Standard Drives SD 01,
  Order No.: E86060-D5201-A100-A3-7600

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 2)

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 2)

Optimization and Upgrading

To enhance productivity and save costs in your project we offer high-quality services in optimization and upgrading. 1)

1) Get in touch with the sales contact in your region for questions about these services. Our Helpline (tel.: +49 (0) 180 50 50 111) will also put you through to the right contact or just visit our Internet site.

2) For country-specific telephone numbers go to our Internet site at: *http://www.siemens.com/automation/service&support*

Customer Support

Knowledge Base on CD-ROM

For locations without online connections to the Internet there are excerpts of the free part of the information sources available on CD-ROM (Service & Support Knowledge Base).
This CD-ROM contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service and Technical Support.

The CD-ROM also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The CD-ROM will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on CD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** CD from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

Orders via the Internet
(with Automation Value Card or credit card) at:

http://www.siemens.com/automation/service&support

in the Shop domain.

Automation Value Card

Small card – great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Automation and Drives will accompany you in each phase of your automation project.

It doesn't matter whether you want just specific services from our Technical Support or want to purchase high-quality Support Tools in our Online Shop, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

Automation Value Card Order Nos.	
Credits	Order No.
200	**6ES7 997-0BA00-0XA0**
500	**6ES7 997-0BB00-0XA0**
1000	**6ES7 997-0BC00-0XA0**
10000	**6ES7 997-0BG00-0XA0**

Detailed information on the services offered is available on our Internet site at:

http://www.siemens.com/automation/service&support

Service & Support à la Card: Examples

Technical Support	
"Priority"	Priority processing for urgent cases
"24 h"	Availability round the clock
„Extended"	Technical consulting for complex questions
Support Tools in the Support Shop	
"System Utilities"	Tools that can be used directly for configuration, analysis and testing
"Applications"	Complete topic solutions including ready-tested software
"Functions & Samples"	Adaptable blocks for accelerating your developments

Length codes for 6XV ... and 6ES5 ... connecting cables

For connecting cables whose length can be selected according to the following list, complete the empty positions (■■■) of the Order No. according to the specified length code.

Note the different length codes! Other lengths on request.

Connecting cables 6XV. ...

Length of the connecting cable		Order No. extension for the connecting cable
	►	6XV. ... -■■■
Multiplier:	0.01 m	E
	0.1 m	H
	1 m	N
	10 m	T
	100 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 m	B B 0
1.6 m	B B 6
2 m	B C 0
2.5 m	B C 5
3 m	B D 0
3.2 m	B D 2
5 m	B F 0
8 m	B J 0
10 m	C B 0
12 m	C B 2
16 m	C B 6
20 m	C C 0
25 m	C C 5
32 m	C D 2
40 m	C E 0
50 m	C F 0
63 m	C G 3
80 m	C J 0
100 m	D B 0
120 m	D B 2
150 m	D B 5
160 m	D B 6
200 m	D C 0
250 m	D C 5
320 m	D D 2
400 m	D E 0
500 m	D F 0
600 m	D G 0
630 m	D G 3
800 m	D J 0
1000 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-scale integrated circuits, (such as processors and memory);
- measures to prevent static charge 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 multi-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:

TP 070	50,000 h
Mobile Panel 170	50,000 h
TP 170A/B	50,000 h
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
OP27 monochrome	50,000 h
MP 270B	50,000 h
MP 370	50,000 h
Panel PC IL 70	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)

Subject index

Subject index

Order No. index

Order No. index

Suggestions for improving the catalog

Fax form

To

Siemens AG, A&D PT1
ST 80 • 2003
Ms. B. Gottsauner
Gleiwitzer Straße 555
D-90475 Nuremberg
Federal Republic of Germany
Fax: +49 91 18 95 30 09

Your address

Name

Capacity

Company, Dept.

Street address

Postal code, City

Tel., Fax

Your opinion matters to us!

We hope that our catalog will become an important and widely used source of reference and are constantly striving to improve it.

So please take just a few minutes of your time to fill in this form and fax it to us.

Please grade our catalog on a points system from 1 (= good) to 6 (= poor):

1. Do the contents of the catalog meet your requirements? ☐
2. Did you find it easy to find the information you needed? ☐
3. Did you find the text easy to understand? ☐
4. Is there enough technical detail? ☐
5. What do you think of the quality of the graphics and tables? ☐

Did you find any printing errors?

Notes

Notes

Notes

Notes

Copyright

Warning

WARNING

Hazardous voltage
Can cause loss of life, severe personal injury, or substantial property damage

Information contained in this catalog is for reference purposes only. Consult your technical manual for specific connection and other technical requirements.

Only qualified personnel should install or maintain the products described in this catalog after becoming thoroughly familiar with all warnings, safety notices, and maintenance procedures contained in the appropriate technical manual.

The successful and safe operation of this equipment is dependent upon proper handling, installation, operation and maintenance.

Definitions of the terms as applicable in our appropriate technical documentation:

Qualified person

One who is familiar with the installation, construction, and operation of the products described in this catalog and the hazards involved. In addition, the person should have the following qualifications:

- Be trained and authorized to use and tag circuits and equipment in accordance with established safety practices.
- Be trained in the proper care and use of protective equipment in accordance with established safety practices.
- Be trained in rendering first aid.

DANGER

Indicates loss of life, severe personal injury, or substantial property damage will result if proper precautions are not taken.

WARNING

Indicates loss of life, severe personal injury, or substantial property damage can result if proper precautions are not taken.

CAUTION

Indicates minor personal injury or property damage can result if proper precautions are not taken.

Conditions of sale and delivery
Export regulations

Terms and Conditions of Sale and Delivery

in the Federal Republic of Germany

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 the Federal Republic of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity.

for customers based in the Federal Republic of Germany

The General Terms of Payment as well as the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry shall apply.

For software products, the General License Conditions for Software Products for Automation and Drives for Customers with Seat or registered Office in Germany shall apply.

for customers with a seat or registered office outside the Federal Republic of Germany

The General Terms of Payment as well as the General Conditions for Supplies of Siemens, Automation and Drives for Customers with a Seat or registered Office outside of Germany shall apply.

For software products, the General License Conditions for Software Products for Automation and Drives for Customers with Seat or registered Office outside of Germany shall apply.

General

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

In addition to the prices of products which include silver 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
(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.

Subject to change and errors excepted without prior notice.

Published by Siemens AG
Automation and Drives
Human Machine Interface
Postfach 48 48, 90327 Nürnberg
Federal Republic of Germany

Order No.: E86060-K4680-A101-B1-7600
KG K 0503 25.0 NIE 272 En/301446 / **IWI: TSTE**
Printed in the Federal Republic of Germany

Catalogs of the Automation and Drives Group (A&D)

Further information can be obtained from our branch offices listed in the appendix of this catalog

Automation & Drives	*Catalog*
Interactive catalogs on CD-ROM	
• Components for Automation & Drives	CA 01

Automation Systems for Machine Tools	
SINUMERIK & SIMODRIVE	NC 60
Cables, Connectors and System Components	NC Z

Drive Systems	
Variable-Speed Drives	
DC Motors	DA 12
DC Drives Preferred Series up to 500 kW	DA 12.1
DC Drives Preferred Series 215 kW to 1500 kW	DA 12.2
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2
SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	DA 22
SIMOVERT PM Modular Converter Systems	DA 45
SIEMOSYN Motors	DA 48
MICROMASTER 410/420/430/440 Inverters	DA 51.2
MICROMASTER 411/COMBIMASTER 411	DA 51.3
SIMOVERT MV Medium-Voltage Drives	DA 63
SIMOVERT MASTERDRIVES Vector Control	DA 65.10
SIMOVERT MASTERDRIVES Motion Control	DA 65.11
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3
SIMODRIVE 611 universal and POSMO	DA 65.4
Automation Systems for Machine Tools SIMODRIVE	NC 60
• AC Main Spindle Motors 1PM, 1FE, 1PH	
• AC Servomotors 1FT, 1FK	
• AC Linear motors 1FN	
• Converter System SIMODRIVE 611	
• Converter Systems SIMODRIVE POSMO A/CD/CA/SI	
Low-Voltage Three-Phase-Motors	
Project Manual	M 10
Squirrel-Cage Motors, Totally Enclosed, Fan-Cooled	M 11
Drive and Control Components for Hoisting Equipment	HE 1

Electrical Installation Technology	
PDF: ALPHA Small Distribution Boards and Distribution Boards	*ET A1*
PDF: ALPHA Side-by-Side Switchgear Cabinets	*ET A3*
PDF: BETA Modular Installation Devices	*ET B1*
PDF: DELTA Switches and Outlets	*ET D1*
PDF: GAMMA Building Management Systems	*ET G1*

Human Machine Interface Systems SIMATIC HMI	ST 80

Industrial Communication and Field Devices	IK PI

Low-Voltage Controls and Distribution	*Catalog*
Low-Voltage Controlgear, Switchgear and Systems	NS K
Communication-Capable Controlgear, Controlgear with SIRIUS, SIGUARD Safety Systems, Control and Signalling Devices, Switchgear, Transformers and DC Power Supplies, Main- and EMERGENCY-STOP Switches, Control Switches, Terminal Blocks	
BERO - Sensors for Automation	NS BERO
Products and Systems for Low-Voltage Power Distribution	NS PS
SENTRON WL	NS WL

Motion Control System SIMOTION	PM 10

Process Instrumentation and Analytics	
Field Instruments for Process Automation Measuring Instruments for Pressure, Differential Pressure, Flow, Level and Temperature, Positioners and Liquid Meters	FI 01
Process Recorders and Accessories	MP 20
SIPART, Controllers and Software	MP 31
SIWAREX Weighing Systems	WT 01
Gas Analysis Equipment for the Process Industry	PA 10
PDF: Process Analytics, Components for Sample Preparation	*PA 11*
SIPAN Liquid Analysis	PA 20

SIMATIC Industrial Automation Systems	
SIMATIC PCS Process Control System	ST 45
SIMATIC S5/505 Automation Systems	ST 50
Components for Totally Integrated Automation	ST 70
SIMATIC PCS 7 Process Control System	ST PCS 7
PDF: Add-ons for the SIMATIC PCS 7 Process Control System	*ST PCS 7.A*
SIMATIC Control Systems	ST DA

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Power supplies SITOP power	KT 10.1
System cabling SIMATIC TOP connect	KT 10.2
MOBY Identification Systems	KT 21
Industrial Microcomputers SICOMP	KT 51

System Solutions
Applications and Products for Industry are part of the interactive catalog CA 01

TELEPERM M Process Control System	
AS 235, AS 235H and AS 235K automation systems	PLT 111
PDF: AS 488/TM automation systems	*PLT 112*
Operating and monitoring with WinCC/TM	PLT 123
CS 275 bus system	PLT 130

PDF: These catalogs are only available as pdf files.

The information provided in this catalog contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

Siemens AG

Automation and Drives
Human Machine Interface
Postfach 4848, D-90327 Nürnberg
Federal Republic of Germany

www.siemens.com/automation

Order No.: E86060-K4680-A101-B1-7600