SIMATIC Panels

Operator panels to suit every requirement

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SIMATIC HMI

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SIEMENS

SIMATIC Panels

Operator panels to suit every requirement

SIMATIC Panels have been proving their value in many different applications in all industrial sectors for many years now. And they have not lost their innovative strength during all this time. The latest example: As worldwide novelty we present a wireless Mobile Panel in this brochure. The special feature: Safety functionality over Wireless LAN. Only SIMATIC products can offer such a high degree of flexibility and ease of operation, combined with operational safety.

Using SIMATIC HMI, our comprehensive solution for operator control and monitoring, you can master the process and keep your machines and plants running optimally.

Regardless of the industry or application: SIMATIC Operator Panels provide the interface between man and machine and offer maximum transparency. Rugged, compact, and versatile – they may be integrated into any production and automation system at any time.
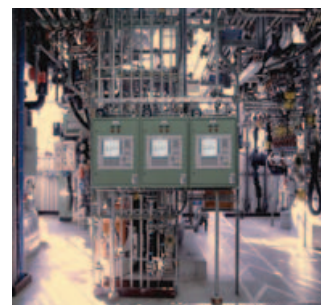
SIMATIC Operator Panels are ideally designed for global use. You can switch between five languages during operation at the push of a button. Even Asian and Cyrillic characters can be displayed.

The innovative configuring and visualization software SIMATIC WinCC flexible enables easy configuration of several languages. What's more, SIMATIC Operator Panels can be connected to nearly every commercially available controller.

The product range includes all versions: from a simple operator keypad to mobile and stationary panels and all the way to the flexible Multi Panel. Devices with PROFINET connection are used for solutions that utilize the Industrial Ethernet standard for automation.

SIMATIC Operator Panels are a part of Totally Integrated Automation (TIA), the globally unique, comprehensive range of products and systems for company-wide automation in all industries. Thanks to the unique integration of TIA, you benefit from clearly reduced engineering overhead and therefore also from considerably lower total costs.

So put your trust in SIMATIC Operator Panels! They provide you with the right solution for any application so you can take control of the most complex processes and increase the availability and therefore the productivity of your plants.

Contents

SIMATIC Panels - Highlights

Operator panels which fulfill many different requirements

Rugged for use at the machine level

With IP65/NEMA 4 degree of protection on the front side, high EMC and extreme vibration resistance, the SIMATIC Operator Panels are ideally suited for the use at machine level in rough industrial environments. Approvals for many different sectors/applications are the proof.
(www.siemens.com/simatic/certificates)

Selection of possible operating modes

SIMATIC Panels are available as Key or Touch panels. OP 177B even offers both at the same time.

Everything at a glance on brilliant displays

All SIMATIC Operator Panels have large, bright and high-contrast displays for optimal operator control and monitoring. Text-based or with pixel graphics, in color or monochrome, with display sizes from 3 to 15 inches. The long service life of the backlighting is exemplary.

Different connection options for controllers and I/O devices

As standard, SIMATIC Panels communicate over PROFIBUS. PROFINET/Ethernet are gaining importance. Many SIMATIC Panels are already prepared for this. Other devices, such as printers, can be connected through additional interfaces such as USB.

The software: integrated and scalable

SIMATIC Panels are configured with a system-wide software tool: SIMATIC WinCC flexible. WinCC flexible is scalable to match the different performance levels of the panels.

Perfectly suited for worldwide use

Approvals for the most important export countries are available. In addition to the standard version of WinCC flexible with five configuration languages (German, English, French, Spanish and Italian), there is also a version for Asia with four Asian languages. Multiple language configuration is supported by automated text translation and text export and text import functions. Up to 32 languages can be administered in one project.

Open for a wide variety of automation systems

Different interfacing options for SIMATIC S7, drivers for non-Siemens controllers, and vendor-independent communication over OPC ensure correct connection for many different automation solutions.

Embedded Automation on the basis of SIMATIC Multi Panels
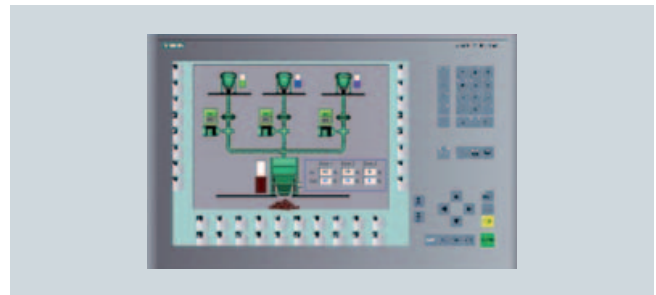
Embedded Automation stands for control solutions specially tailored to embedded operating systems, which as hardware utilize rugged diskless devices without fans. SIMATIC Multi Panels support Embedded Automation in a special way. The innovative hardware platform offers a number of functions and special features that support even the most complex HMI applications. The integrated Microsoft Media Player, for example, permits the display of videos. Internet Explorer and Microsoft Viewer permit the display of many different documents that are stored locally or are downloaded from the Internet.

With the PLC SIMATIC WinAC MP 2007 software, Multi Panels can also be used for controlling. Thus a low-cost alternative to automation solutions with controller and panel is created. Remanent storage of process data in case of a power failure is possible and this is an important feature for Embedded Automation.

Read more about SIMATIC Multi Panels and the software PLC on page 13.

Benefits of Totally Integrated Automation

With Totally Integrated Automation (TIA), Siemens is the only supplier who offers a system-wide, integrated product and system range for automating the complete production workflow. The distinguishing feature of TIA is that it is completely integrated. The reduced number of interfaces results in very clear structures. This reduces time and costs required for engineering the automation solution and increases the availability of the plant.

SIMATIC WinCC flexible, the integrated engineering tool for the SIMATIC HMI Operator Panels, is part of TIA and uses the same database as STEP 7, the programming software for the SIMATIC Controllers. This saves time spent on inputting data and ensures data consistency. The higher software quality that results is also found in a simplified and particularly effective system diagnostics.

The integration of WinCC flexible into the SIMOTION SCOUT engineering system offers the same benefits as the integration into SIMATIC STEP 7.

SIMATIC Operator Panels – Highlights

- Integrated configuration, data management, and communication
- Designed for tough industrial environments
  - Rugged and compact
  - Safe and ergonomic operation by means of keypads or touch screens
  - Brilliant displays for best readability
- Open and easy to extend
  - Cross-manufacturer OPC communication (OPC server) for multi panels
  - Controls from many different manufacturers can be connected
  - TCP/IP via PROFINET/Ethernet
  - Innovative HMI concepts: Traceability/easy validation, service and diagnostics via the Internet
- Worldwide application with extensive language support, including Asian languages

The SIMATIC Operator Panel series at a glance

	Push Button Panels	Micro Panels			Panels			Multi Panels		Mobile Panel	
		TD	70	170	70	170	270	270	370	170	270
mobile										■	■
stationary	■	■	■	■	■	■	■	■	■		
Operator control											
Touch				■		■ 1)	■ 1)	■ 1)	■ 1)		
Key	■	■	■		■	■ 1)	■ 1)	■ 1)	■ 1)		
Touch and Key						■				■	■
Display											
TFT							■	■	■		■
STN		■	■	■	■	■				■	
Interfaces											
PPI	■	■	■	■	■	■	■	■	■	■	■ 3)
PROFIBUS	■				■	■	■	■	■	■ 1)	■ 3)
PROFINET/Ethernet	■					■	■	■	■	■ 1)	■ 4)
USB					■	■	■	■	■		■
HMI functionality											
Signaling system	■ 2)	■	■	■	■	■	■	■	■	■	■
Recipes					■	■	■	■	■	■	■
Archives							■	■	■		■
Visual Basic scripts							■	■	■		■
Software options						■	■	■	■	■	■

If you are looking for exactly the right operator panel for your application, we recommend you use the SIMATIC HMI selection guide.

You can find it at: www.siemens.com/hmi-selection-tool – with the most up-to-date product range.

- ■ Feature always available
- ■ Feature available in the devices of the upper performance range

1) As device variant
2) Through integrated LEDs
3) Only Mobile Panel 277
4) Mobile Panel 277 IWLAN over WLAN

WinCC flexible

Maximum configuration efficiency for all applications

The WinCC flexible engineering software allows integrated configuring of all SIMATIC Operator Panels right up to PC-based visualization workstations.

WinCC flexible is the logical further development of the tried and tested ProTool and ProTool/Pro. Existing ProTool projects can simply be taken over and used for a project with WinCC flexible, thereby ensuring investment protection.

WinCC flexible is available in different variants graded according to price and performance. They are based on each other and are optimally tailored to the individual classes of operator panel. The larger software package always includes the configuration options of the smaller package. Existing projects can simply be reused.

Minimizing configuration costs by means of function block technology

Reusable objects can be centrally stored in a structured format in libraries. Part of WinCC flexible is a large number of scalable and dynamically variable objects for creating variable blocks. Changes to the image blocks only have to be performed at one central location. They then become effective wherever the block is used. This not only saves time, but also ensures data consistency.

Intelligent tools for efficient configuration

Table-based editors simplify the generation and processing of similar types of object, e.g. for variables, texts, or messages. Complex configuration tasks such as the definition of paths of motion or the creation of the fundamental operator prompting are simplified by means of graphical configuration.

Real-time operation through PROFINET IO

The new SIMATIC HMI Operator Panels of the 170 and 270 series now also support PROFINET IO. Thus time-critical operator inputs, e.g. as implemented over PROFIBUS by means of the DP direct keys, are now also possible based on Industrial Ethernet.

Operating and display options

Visualization for WinCC flexible is performed using a Windows-compliant user interface with parameterizable variable objects as well as technological variable blocks.

Alarms

Alarms can be generated in WinCC flexible as discrete alarms, analog alarms, and alarms by means of the Alarm_S message frame alarm procedure with SIMATIC S7.
User-defined alarm classes can be used to define acknowledgement functions and the visualization of alarm classes.

Highlights WinCC flexible

- Innovative configuration interface based on the latest software technologies
- Function block libraries: Variable blocks are freely definable and reusable, and they can be modified centrally
- Dynamic faceplates
- You can configure intelligent tools such as graphic navigation and motion objects graphically, and configure bulk data conveniently (e.g. variable editor) etc.
- Access protection with user ID and password
- Recipe management
- Report system
- Language support for worldwide use:
  - Manage 32 languages in one project
  - Text library for multilingual texts and automatic translation
  - Simple import/export of texts for translation
- Complete configuration from ProTool can be utilized
- Individually expandable with options:
  - Sm@rt Client/Server concepts
  - Service and diagnostics over the Internet
  - OPC server communication
  - Process diagnostics
  - Logging and tracing of operator actions and configurations

Logs and reports

WinCC flexible permits time and event-driven output of logs and reports. The layout can be freely selected.

Access security

Access protection can be activated, if required. Administrators can create user groups who have specific privileges.

Logging of process data and alarms

Process value and alarm archiving with WinCC flexible/Archives is used to record and evaluate process data. Process sequences are documented, the capacity utilization or the quality of products is monitored and recurring fault conditions are logged.

Management of recipes

WinCC flexible/Recipes is used to manage recipes which contain associated machine or production data.

Flexibly expandable via options

Remote maintenance simplifies service and support

The option WinCC flexible/Sm@rtService permits access to the PROFINET/Ethernet-compatible panels and multi panels from a PC via Internet Explorer.
An e-mail can also be sent automatically from the operator panel to the maintenance personnel via an SMTP (Simple Mail Transfer Protocol) server. When using an e-mail/text message gateway, access is gained to standard networks, and in critical situations a text message can be sent to a mobile phone.

OPC for vendor-independent communication

With the WinCC flexible/OPC server option, the Multi Panels are capable of communicating with every OPC-compatible application (e.g. MES, ERP, or office applications) via Ethernet using TCP/IP.

Client/server functionality and plant-wide data exchange

With the WinCC flexible/Sm@rtAccess option, PROFINET-compatible panels and multi panels communicate with each other over PROFINET/Ethernet or the intranet/Internet.

Increased availability

WinCC flexible/ProAgent permits specific process diagnostics for machines and plants which are controlled by SIMATIC S7. In the case of a process fault, ProAgent acquires information about the location and cause of the fault and supports troubleshooting.

Traceability and simple validation

The WinCC flexible/Audit option covers essential requirements outlined by GMP (Good Manufacturing Practice) and the FDA (Food and Drug Administration) in accordance with 21 CFR (Code of Federal Regulations), Part 11, for applications subject to validation in the pharmaceutical industry.

The creation of new versions and tracking of changes

Any change to the configuration can be recorded and assigned a version number with the WinCC flexible/Change Control option. This fulfills the GMP requirements with respect to change control.
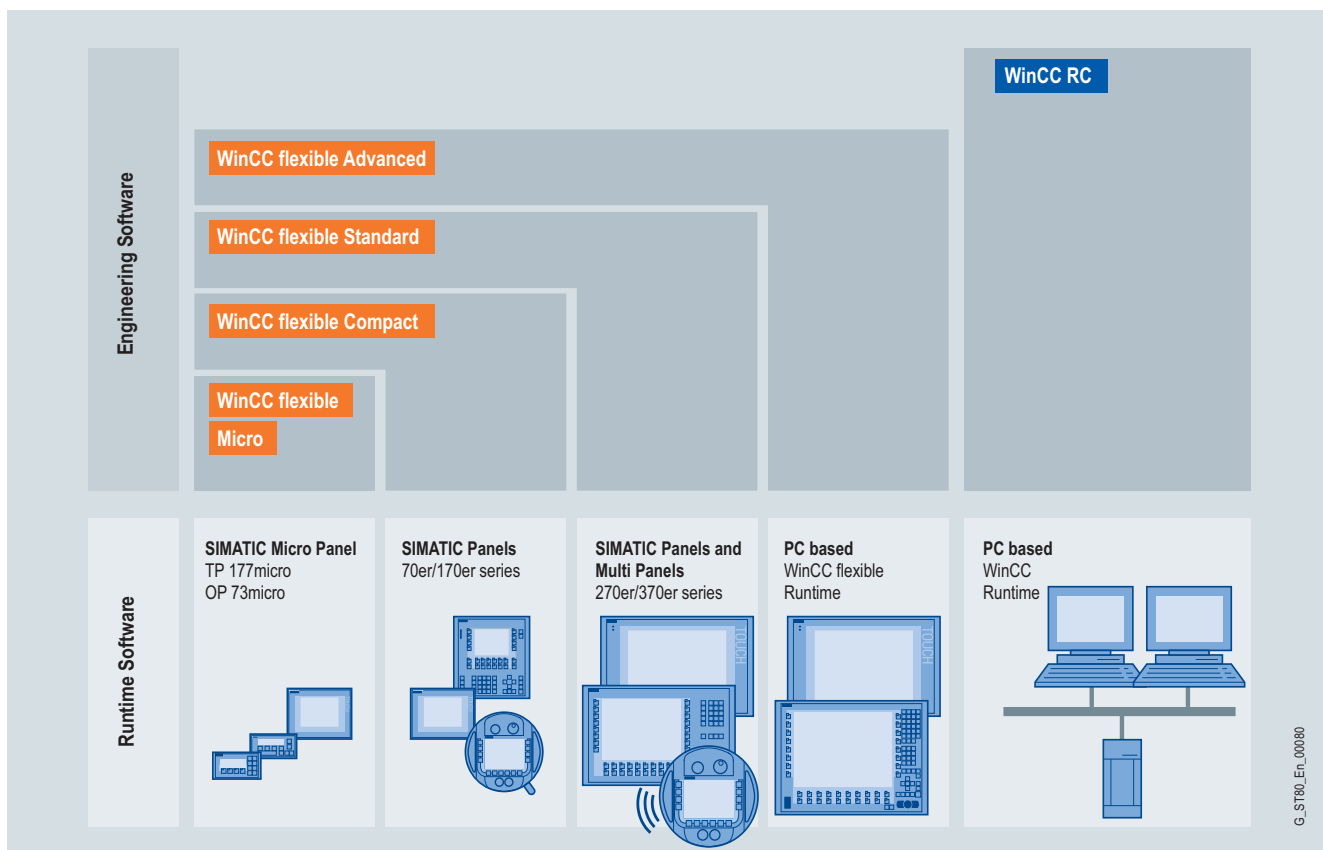
WinCC flexible – Scalable engineering software, optimally adapted to target systems

SIMATIC Push Button Panels

The innovative operator panels

SIMATIC Push Button Panels can be used to design conventional operator panels according to the motto "plug and control": They are ready for installation and pre-assembled. All that is required is the corresponding installation cutout and a bus cable (PROFIBUS DP or MPI) for connection to the controller. In this way, time-consuming individual assembly and wiring, as required for conventional operator panels, is not necessary. This reduces the time required for wiring by up to 90% compared to conventional wiring. All that is required is the corresponding installation cutout and the bus cable (PROFINET, PROFIBUS DP, or MPI) for connection to the controller.

SIMATIC Push Button Panels can be connected via:

- PROFINET
- PROFIBUS DP as standard slave with up to 12 Mbit/s to any DP master (including third-party masters)
- MPI to SIMATIC S7-200/-300/-400 (does not apply to PP17-I PROFIsafe).

PP17-I PROFIsafe

Push Button panel with 16 illuminated short-stroke keys and free, digital inputs and outputs, supplemented with fail-safe input channels (F-DI) for simple emergency stop applications.

With the help of the integrated PROFIsafe communication, the operator panel can be used for fail-safe operation with SIMATIC S7-F-CPU 300/400 for simple emergency stop applications. Up to 2/4 two-channel emergency stop buttons can be connected. The safety-relevant signals can achieve SIL3/Category 4 (with PROFIBUS) or SIL3/PL e, Category 3 (with PROFINET). The external dimensions and installation cut-out are the same as for the PP17-I.

Push Button Panels, PP17-I and PP17-II

PP17-I PROFIsafe – installed in the operator station

Highlights Push Button Panels

- Preassembled short-stroke keys with durable multicolored surface LEDs
- All keys can also be used as individual switches
- Integrated flashing frequencies and adjustable signal extension
- Up to 16 DI/16 DO onboard for flexible expansions, e.g. for keys or lamps
- Perforated 22.5 mm cutouts for integrating standard elements, e.g. buttons, lamps, emergency stop or key switches
- Slide-in labels for individual labeling
- Can be installed next to and combined with SIMATIC Panels
- Central enable input
- Service-friendly
  - Maintenance-free, because it needs no battery
  - Permanently integrated test functions, such as the lamp test

additionally with PP17-I PROFIsafe

- 1 to 4 F channels for emergency stop with PROFIBUS, 1 to 2 F channels for emergency stop with PROFINET
- Up to 14 free digital inputs (depends on the number of connected emergency stop buttons) with PROFIBUS, 16 free digital inputs with PROFINET
- Up to 14 free digital outputs (depends on the number of connected emergency stop buttons) with PROFIBUS, 8 free digital outputs with PROFINET

SIMATIC Micro Panels

Simple and affordable – ideal for the SIMATIC S7-200

The S7-200 Micro PLC is compact, modular, and has different communication ports. For this reason, it is suitable for diverse automation tasks. The micro panels are optimally adapted to the performance and applications of the S7-200.

They are available as text displays which are configured with SIMATIC Micro/WIN, but also as operator panels and touch panels with graphic displays configurable with WinCC flexible.

The Touch Panel TP 177micro has a 5.7" STN display with 4 blue levels and a touch screen. Since it can also be installed vertically, it can be used in places where there is little space.

Coupling options

The SIMATIC Micro Panels are connected to the S7-200 with a standard MPI or PROFIBUS cable. In addition, multi-master communication, for example, for connection to networks, is possible.

The device range at a glance

SIMATIC TD 100C

- FSTN-Display, 4 lines
- 14 freely configurable keys
- The layout of the user interface is freely configurable
- Display of message texts

SIMATIC TD 200

- LC-display, 2 rows
- 8 freely configurable keys, 5 system keys
- Display of message texts

SIMATIC TD 200C

- LC display, 2 rows
- 20 freely configurable keys
- The layout of the user interface is freely configurable
- Display of message texts

Devices configurable with WinCC flexible

SIMATIC OP 73micro

- Pixel graphics 3" display
- 4 freely configurable keys, 8 system keys
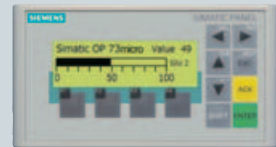
SIMATIC TP 177micro

- Pixel graphics 5.7" display
- Touch screen
- Vertical installation possible
- Further graphics options through vector graphics
- Trend display

TD 400C

- LC display with 4 lines of 24 characters each
- 15 keys user-programmable
- Operator interface user-programmable
- Keystroke with tactile, audible or visual feedback
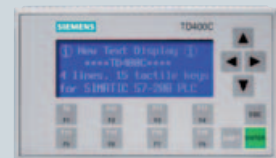
Detailed information on micro panels can be found at:
www.siemens.com/micropanels

SIMATIC Panels – the 70 series

The entry level for graphics-capable HMI

The SIMATIC Panels of the 70 series are the low-cost entry-level devices in the range of graphics-capable operator panels. They are ideally suited to small-scale HMI tasks.

The pixel-graphics display can be used for the graphical display of the processes using, for example, bit maps or bar graphs. The font size can be varied to achieve excellent readability even from a distance. Graphics can be used instead of text for labeling the function keys. This enables intuitive user interfaces to be created and saves translation work.

Connection to controller

The OP 73 and OP 77A can be connected to SIMATIC S7-200/-300/-400. The OP 73micro variant has been specially designed for SIMATIC S7-200. Drivers for interfacing to a range of different controllers are available for the OP 77B. The necessary interfaces are already onboard.

Three devices are available:

* SIMATIC OP 73 Operator Panel with 3" graphics display (160 x 48 pixels)
* SIMATIC OP 77A and OP 77B Operator Panel with 4.5" graphics display (160 x 64 pixels)

As the most powerful panel in the 70 series, the OP 77B includes simplified data handling and more communication options than the OP 73 and OP 77A.

Simple data handling for OP 77B

Using a generally available multimedia card, the memory available for recipe data and project back-up can be expanded significantly with the OP 77B. The recipes can be stored in

Highlights of the SIMATIC Panels of the 70 series

■ 3" or 4.5" pixel-graphics display also supports bitmap and bar displays
■ Compact, space-saving design (installation cut-out as for the predecessor versions OP3 or OP7)
■ MPI and PROFIBUS onboard
■ 5 online languages, also Asian and Cyrillic characters
■ Graphical labeling of softkeys possible
■ New powerful functions, e.g. comprehensive alarm concept with freely-definable alarm classes

standard format (CSV) for further processing in the PC using, for example, Excel. Back-up and restore functions for the complete project allow panels to be replaced easily in the event of a fault, for example.

Additional communication options for OP 77B

The OP 77B features a USB interface for connecting a printer or downloading a project.

The project can also be loaded to the device over the RS 232 interface or from a central location via MPI or PROFIBUS. Remote download of the configuration, for example, with a modem or SIMATIC TeleService saves money and time during servicing.
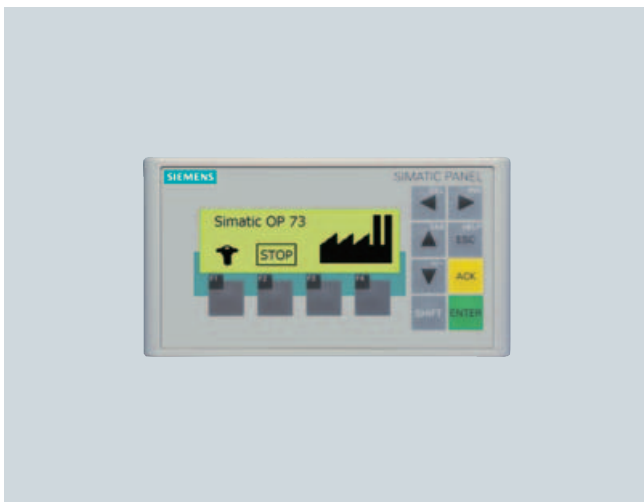
SIMATIC Panels – the 170 series

The right solution for small applications

The text panels, touch panels and operator panels of the 170 series have proved themselves for operator control and monitoring of small applications. The 177 devices provide universal units with higher performance, increased memory and higher resolution. The performance capability of the device is scalable. The higher order devices have a retentive message buffer, and the color devices also have a PROFINET/Ethernet interface.

SIMATIC TP 177A - Operator control and monitoring at a favorable price

The Touch Panel TP 177A has an especially favorable price/performance ratio. It facilitates the use of graphics devices with intuitive touch operation, even for small projects and on low budgets.

SIMATIC TP 177B and OP 177B – Intuitive and innovative

The TP 177B and OP 177B are available with 4 blue mode or 256-color STN displays. The OP 177B with additional membrane keyboard has been designed for applications that cannot do without mechanical keys. It has a rugged design and is therefore appropriate for industrial use. The special feature of the OP 177B is that the keys have been supplemented by a touch display. The function keys of the OP 177B can additionally be configured as system keys as desired.

It is therefore possible to provide operators with the keys specifically required for a certain picture in addition, or as alternative, to the virtual keyboard. The mounting dimensions of the OP 177B are compatible with those of the OP 17, thus providing the optimum preconditions for the innovative replacement of the successful text panels.

Highlights TP 177A

- Pixel-graphics 5.7" STN display, blue mode (4 levels)
- Vertical (portrait) mount possible (resolution 240 x 320)
- Signaling system with freely definable signal classes (status/fault signals) for defining acknowledgment behavior and presentation of the signal events
- Further graphics options through vector graphics
- Trend display
- Functions for switches, indicator lamps, password protection, displays, bar charts, input and output fields, predefined texts, etc.
- Recipes
- Easy servicing thanks to maintenance-free design and long service life of the backlighting

Highlights TP 177B and OP 177B

- Choice between Touch and Key versions possible. OP 177B combines Touch and Key
- Non-volatile message buffer (without battery, therefore maintenance-free)
- Function keys can be assigned system functions and configured as direct keys
- 2 MB user memory plus additional integral recipe memory
- 12 MB onboard PROFIBUS interface
- Color variants with additional PROFINET/Ethernet interface
- Interface for standard multimedia card for saving recipe data, configurations, and system data
- USB port, e.g. for printer connection, external keyboard

SIMATIC Panels – the 270 series

The flexible all-rounder

Based on the Windows CE operating system, the devices of the 270 series offer innovative operator control and monitoring combined with the tried and tested advantages of the operator and touch panels: Ruggedness, stability and simple handling.

A number of options for innovative automation and operator concepts can be utilized during configuration with WinCC flexible. Standard hardware and software interfaces ensure more flexibility and openness and access to the office world. Archive data, for example, can be loaded directly into Excel and then processed further.

SIMATIC TP 277

The SIMATIC Touch Panel TP 277 for operator control and monitoring at the machine level is available with a brilliant 6" TFT display in a new industrial design. In addition to its optimized performance, the devices also features USB, MPI/DP, and PROFINET/Ethernet interfaces. The 4-MB user memory can be expanded for archives and recipe data by means of the Multi Media Card Slot.

SIMATIC OP 277

Das SIMATIC OP 277 Operator Panel is operated by means of a membrane keyboard, otherwise it has the same functionality as the TP 277.

Highlights TP/OP 277

- Standard interfaces for more flexibility
  – Multi Media Card Slot for memory expansion or additional interfaces
  – PROFINET/Ethernet interface
  – Integrated USB port for connection of I/O devices which are approved for Windows CE (keyboard, mouse, printer)
- Retentive data memory
- Standard Windows CSV file format for further processing of the data with standard tools
- Visual Basic Scripts

SIMATIC Multi Panels – 270 and 370 series

More than just human-machine interface functionality

Thanks to Windows CE, the multifunctional platforms offer PC-like openness and flexibility combined with rugged, compact, and cost-optimized hardware. Without hard disk and fan, the SIMATIC Multi Panels can be used for visualization even where high vibrations or dust-laden atmospheres restrict the use of a PC.

Multi Panels are distinguished by their high performance, openness and expandability and permit integration of additional software applications based on standard Windows CE. This means the multi panels can combine several automation functions on a single platform. HTML documents for operating or work instructions, for example, can be displayed with the help of the Microsoft Internet Explorer (preinstalled). It can be configured which Internet/intranet pages are accessible.

Individual function expansions

- Additional functions can be configured with Visual Basic scripts. Logic operations, loops, and decisions, for example, can also be executed outside the controller. More complex functional expansions for customer-specific requirements can be implemented via ActiveX components.
- The WinAC MP 2007 option is a software PLC under Windows CE. WinAC MP runs simultaneously with WinCC flexible. Thus the multi panel becomes a cost effective solution for visualization and control tasks. The ruggedness is ensured due to the fanless and diskless hardware of the multi panels. Process data are backed up automatically in case of a power failure. The WinAC MP 2007 is available in two variants optimized for the performance of the Multi Panels MP 277 or MP 377. Their functional scope is similar to the one of the CPU 315 (WinAC MP 277) or CPU 317 (WinAC MP 377) of the SIMATIC S7 and they are configured and programmed in STEP7. The I/O is connected to the controller over PROFIBUS DP. WinAC MP 2007 can be purchased individually or even more cost-effectively together with a multi panel.

SIMATIC Multi Panels – 270 and 370 series

Central data management or project management

Access to the office world is opened up by networking the multi panels using PROFINET/Ethernet. Archives and recipes can be stored and managed centrally on the higher-level computer, and data can be exchanged without problems. For printer functions, the multi panels can use printers integrated into the network.

Highlights of the Multi Panels

■ Rugged design with no rotating media

■ HTML documents can be accessed from HMI applications with Internet Explorer

■ High memory capacity. In addition, memory expansions are possible by means of card slots, e.g. for archives or recipes, backup/restore

■ Onboard MPI, PROFIBUS, PROFINET/Ethernet, and USB interfaces

■ Brilliant TFT display with 64 K colors

■ Modular expansion possible with options such as
  – Software PLC SIMATIC WinAC MP 2007
  – OPC server for vendor-independent communication
  – Sm@rtService for remote maintenance and service over the intranet/Internet
  – Sm@rtAccess for getting started with client/server functionality
  – ProAgent for visualizing process diagnostics messages
  – Audit for traceability and simple validation

SIMATIC MP 277

The MP 277 are the entry-level multi panels. They are already equipped with the innovative Windows CE 5.0 operating system. Compared to the predecessor version MP 270, a considerable increase in performance was achieved. The retentive message buffer offers benefits to both operators and service personnel.

MP 277 Multi Panels are available in the following variants:

• 7.5" touch display,
• 7.5" display and membrane keyboard,
• 10.4" touch display,
• 10.4" display and membrane keyboard.

The high-resolution TFT displays display 64 K colors.
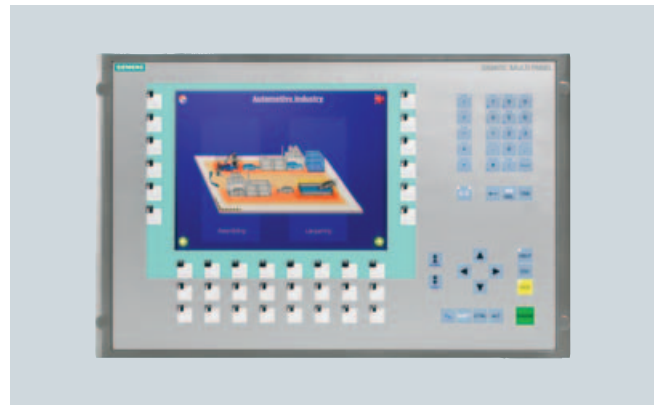
SIMATIC Multi Panels – 270 and 370 series

SIMATIC MP 377

The MP 377 Multi Panels fulfill the highest performance requirements for complex applications. They are equipped with the innovative Windows CE 5.0 operating system. Compared to the predecessor version MP 370, an increase in performance could be achieved. The retentive message buffer offers benefits to both operators and service personnel. Since the latest technologies are utilized for the interfaces (PROFINET, 2 x USB 2.0, MMC/SD card slot), a maximum degree of investment protection is ensured.

MP 377 Multi Panels are available in the following variants:

- 12" touch display
- 12" display and membrane keyboard
- 15" touch display
- 19" touch display

The high-resolution TFT displays display 64 K colors.
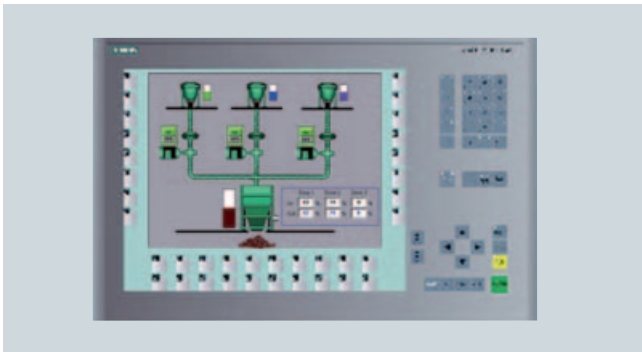
The integrated Microsoft Media Player provides multimedia functionality and permits the display of videos. In addition to an expanded Internet Explorer, Word documents, Excel tables, and PDF documents can be displayed in the Microsoft Viewers.

Accessories for SIMATIC MP 277 and MP 377

A rugged USB hub with IP65 degree of protection with 4 interfaces that can be accessed at the front or rear is now available for the new multi panels. This hub permits the quick connection of I/O devices such as USB sticks and printers without having to open the control cabinet door and possibly interrupting the plant operation.

SIMATIC Mobile Panels

Mobile operator control and monitoring

Regardless of industry or application, if mobility is required for the on-site control and monitoring of machines and plants, mobile panels offer some crucial advantages: The machine operators or commissioning engineers are able to work exactly where they have the best view of the workpiece or process.

SIMATIC Mobile Panels are compact and ergonomically designed, while at the same time being rugged enough for industrial use. They are operated by means of touch screens and membrane keyboards. Additional control elements (e.g. handwheels, key switches, illuminated pushbuttons) increase user-friendliness and permit direct access to the I/O over PROFIBUS and PROFINET/Ethernet. As part of the sophisticated safety concept, the STOP pushbutton can be used for stopping the machine in critical situations.

Compact and ergonomic design

With its low weight and handy, compact structure, the mobile panel is easy to handle. It permits different holding and gripping positions and can be easily operated for longer periods both by right-handed and left-handed people.

Rugged design for industrial use

Thanks to the double-walled structure and the rounded casing, SIMATIC Mobile Panels are extremely shock-resistant. For example, they can survive a fall from a height of more than one meter without damage. The STOP pushbutton in particular is protected with a "protective collar". This minimizes the possibility of unintentional triggering of the safety function or the risk of damage when the device is dropped. SIMATIC Mobile Panels are completely dust and splashwater-proof (IP65 degree of protection). The high requirement for ruggedness also comprises the terminal box and cable.

Mobile Panel 177 (left) or 277 (right) – the right model for every application – also with PROFINET/Ethernet connection

Highlights of the Mobile Panels

- Rugged design for industrial use
- Ergonomic, compact and light-weight
- Flexible thanks to hot swapping
- Insertion and removal without interrupting the emergency stop circuit (with connection box Plus)
- Reliable operation with sophisticated safety concept
- Connection point recognition
- Integrated interfaces: Serial, MPI, PROFIBUS or PROFINET/Ethernet
- Short device ramp-up time after docking

Reliable and secure operation

SIMATIC Mobile Panels are easy and reliable to use and ensure short response times.

Operation takes place intuitively via the touch screen or membrane keyboard, which provide perceptible and thus reliable feed-back – even when the operator is wearing gloves.

For time-critical operation and control processes with very short response times the membrane keyboard and touch screen can also be connected directly to the distributed I/O. Even the additional control elements can be configured as direct keys. With the optional wall bracket, the mobile panel can be securely stored or used as a stationary terminal.

Innovative connection solutions

The mobile panel is simply plugged into the connection box wherever it is needed on the machine and is immediately ready for use. The rugged and safe connection box with IP65 protection can be mounted anywhere, even outside the control cabinet. It ensures fault-free hot-swapping.

Fast device ramp-up

The mobile panels are characterized by a fast device ramp-up after plugging them into the connection boxes. By using an optional battery pack, the ramp-up time of the mobile panel – after a short period of separation from the connection box – can again be significantly reduced.

SIMATIC Mobile Panels

Connection point recognition

The SIMATIC Mobile Panel can be configured such that the user interface changes according to the connection point. The connection point is clearly detected when the mobile panel is plugged into the connection box. This enables machine-specific HMI calculations or actions to be performed depending on the selected connection point.

Integrated interfaces

Mobile panels are available with PROFIBUS and PROFINET/Ethernet connection. The connecting cable can be up to 25 meters long. The interfaces are already integrated and a variety of drivers – even for non-Siemens PLCs – are also included in the scope of supply. The PROFINET connection boxes can be connected in series with integrated switches.

Sophisticated safety concept

SIMATIC Mobile Panels offer the option of making safety functions available on a mobile basis at any point of a machine or plant. It has two enabling buttons which ensure the protection of personnel and machines in critical situations (dead man's switch). The enabling buttons are integrated into the handle on the back.

Device models with an additional STOP pushbutton can be wired into the emergency shutdown circuit of a machine or plant by means of the connection boxes.

In this way, the STOP pushbutton offers the functionality of an emergency stop pushbutton, but differs visually from conventional emergency stop devices due to its gray color to avoid confusion.

STOP and enabling pushbuttons are designed with dual circuits according to the safety regulations (EN 60204-1). This means it is possible to achieve Safety Category 3 to EN 954-1.

Connection at one point of the machine

The "Basic" connection box is used for connecting SIMATIC Mobile Panels with STOP pushbutton to one point of the plant. The disconnection of the device in this case causes an opening of the emergency STOP circuit and thus triggers the emergency stop.

Variable connection to different stations of a machine or plant

If you use a mobile panel with STOP pushbutton together with a connection box "Plus", a configuration can be set up in which the mobile panel can be used at different connection points.

When the mobile panel is connected, the device is looped into the emergency stop circuit. The emergency stop circuit remains closed regardless of whether the mobile panel is plugged in or disconnected. If the mobile panel is disconnected during operation, the emergency stop circuit in the connection box Plus is automatically closed which prevents triggering of the emergency stop circuit.
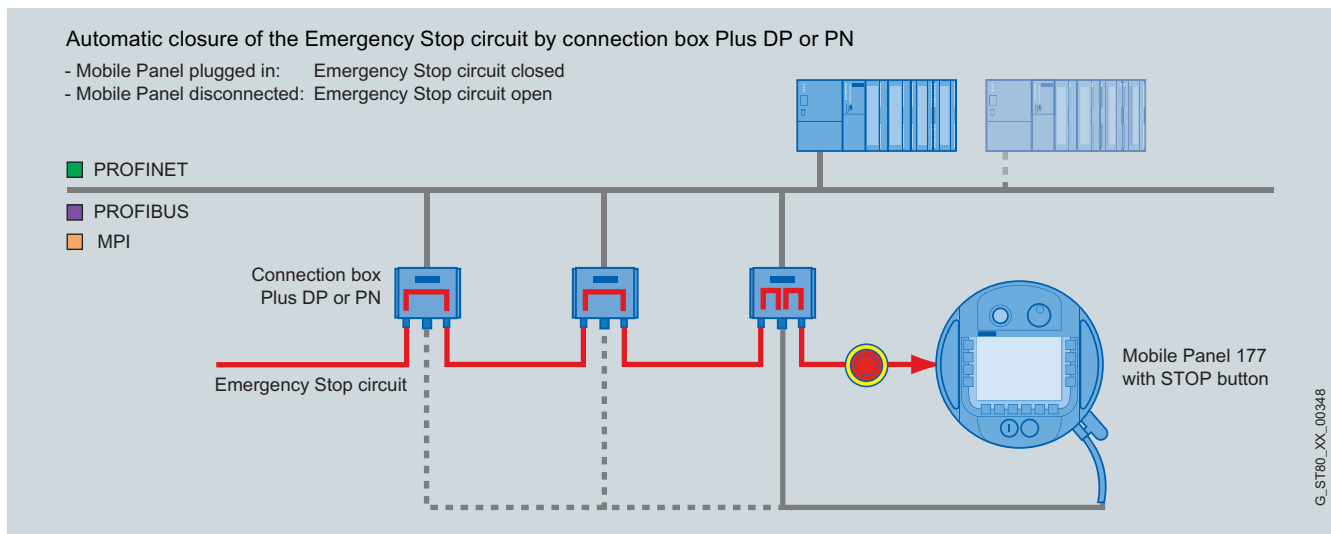
Variable connection to different stations, using the Mobile Panel 177 as example

SIMATIC Mobile Panels

Mobile operator control and monitoring – wireless and with complete safety functionality

The SIMATIC Mobile Panel 277 IWLAN is a worldwide novelty in the field of operator control and monitoring: a wireless operator panel with full HMI functionality. Two variants are available: one device for wireless operator control and monitoring without safety functionality and one with safety functionality.

Certified safety

The SIMATIC Mobile Panel 277F IWLAN has two enabling buttons and one emergency stop button. A fail-safe SIMATIC F-CPU must be used to be able to utilize the safety functions.

The suitability of the device for particularly high safety requirements was tested and certified by BGIA and TÜV.

Definite effective ranges

The SIMATIC WinCC flexible engineering software can be used to define areas from where the machine with enabling buttons can be operated. Within these "effective ranges", the device is identified through transponders. This ensures reliable operation and the clear assignment of suitable operating screens and operator authorizations from any point in the plant.

Location-dependent behavior can also be defined for the SIMATIC Mobile Panel 277 IWLAN (without safety function). Here the transponder can generate zones where specific function are configured, e.g. an automatic screen display or operator authorizations for specific persons.

Rugged for tough industrial environments

With its IP65 degree of protection and a drop height of over one meter, the device can be optimally used in tough industrial environments. The powerful batteries can be replaced without interrupting operation. This ensures trouble-free operation.

WLAN area and effective range

The WLAN area is the area in the plant where the operator panel communicates with further communication stations over a wireless local area network.
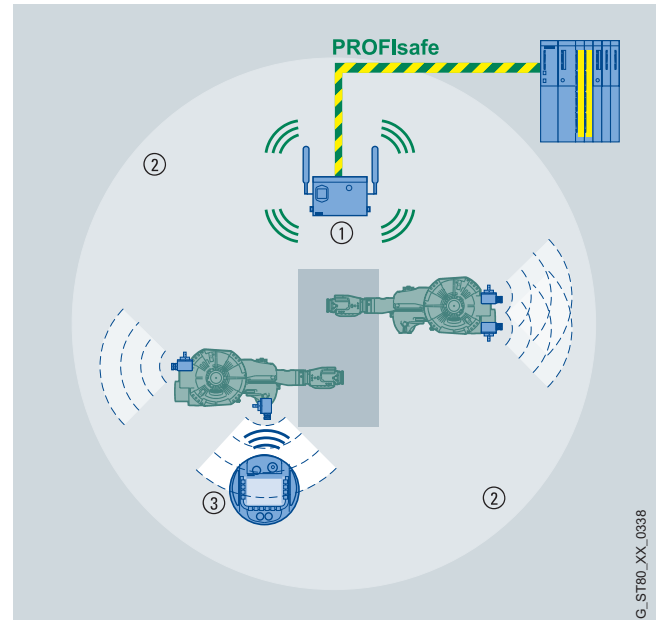
1 Access Point as network transition from WLAN to PROFINET
2 WLAN area in which communication with the Access Point is possible
3 Mobile panel in the effective range

As soon as the PROFIsafe communication between the controller and operator panel is established in the WLAN area, the emergency stop button on the operator panel becomes active.

Fail-safe operation of the plant with the enabling buttons only becomes possible when the operator panel is logged on in an effective range (defined by transponders) within the WLAN area.

SIMATIC Thin Clients

Low-cost operator panels on site

Thin Clients are low-cost operator terminals that provide panel functionality on site in large or extensive systems and thus they contribute to an enhanced overview, operability, and productivity of the plant.

SIMATIC Thin Clients are low-cost operator stations that can be used in large plants in addition to SIMATIC Panels or Panel PCs. As remote operator terminals they permit the utilization of SCADA, office, or IT functionality direct at the machine in addition to the HMI connection.

SIMATIC Thin Clients always communicate by means of Sm@rtAccess (screen copy of the panel on the client) or the standard Microsoft RDP (Remote Desktop Protocol) with a host (SIMATIC Panel, Panel PC or server), and therefore they do not require any installation, licenses, or additional software on the device itself. Even larger distances to the host can be bridged over Ethernet.

SIMATIC Thin Clients are supplied with 10" or 15" TFT display with 64 K colors. The SIMATIC Thin Clients cutout and design are compatible with multi panels of the corresponding size. Operation with SIMATIC Thin Clients is possible by means of the touch screen, or by means of an external keyboard or mouse connected to the USB port.

Easy commissioning

SIMATIC Thin Clients require only one IP address. Local software installation or configuring are not required. The display and operator interface is provided by the host. Therefore the client also does not have to implement backup, restore, or update actions. The total costs of ownership are correspondingly low.

High degree of ruggedness

As remote operator terminal without hard disk and fan, the device can be operated on machines with particularly high mechanical ruggedness requirements (e.g. vibration resistance).

On-site host functionality

HMI applications such as WinCC or WinCC flexible as well as Office applications such as MS-Excel or SAP can be operated direct at the SIMATIC Thin Client on the machine on site over the RDP connection. Unlike with Microsoft CE Office Viewers, the data can be written. RDP is a standard protocol that is supported by all Windows operating systems.

Consistent communication

SIMATIC Thin Clients can be integrated into PROFINET/Ethernet networks. Alternatively, a point-to-point connection with the host is possible using Ethernet cables. Distances of up to 100 m (even more with switches) can be bridged. This is considerably more that with conventional operator panels connected over USB-DVI.

|	SIMATIC Thin Client 10"	SIMATIC Thin Client 15"
Display	TFT, 64 K colors	TFT, 64 K colors
Resolution	640x480 (VGA)	1024x768 (XGA)
Can be installed with	MP 277 (10"), MP 370 (12")	MP 370 (15")
Interfaces	USB (on the rear), PROFINET/Ethernet, 24 V power supply	
Terminal connection	Sm@rtAccess, RDP (Microsoft)	
Web connection	HTML, HTTP	
Degree of protection	IP54, IP65 (optional)	

SIMATIC Panels with stainless steel front

for the food and beverages industry

Panels with touch screens and stainless steel fronts are designed for use in the food and beverages industry for operator control and monitoring at food processing machines. They are based on DIN EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

The external dimensions and installation cut-out are the same as for standard products. The optimized frame is almost flush with the control cabinet.
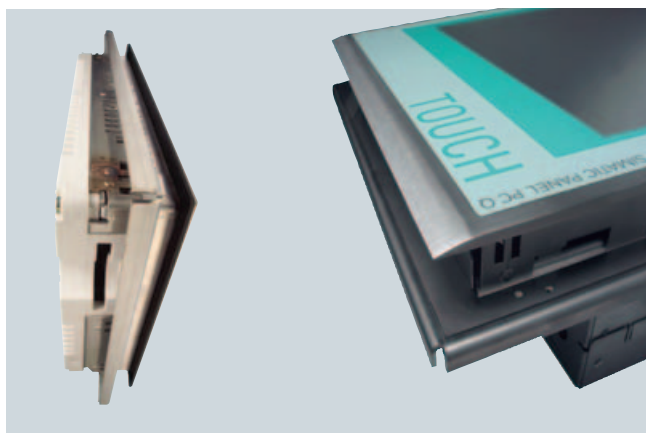
Highlights Panels with stainless steel front

■ Resistant and rugged stainless steel fronts with smoothed surface to permit easy cleaning

■ Optimized frame design, almost flush with the control cabinet so that liquids can run off

■ Minimized grooves and joints as well as increased resistance against cleaning and disinfection agents

■ Non-migrating, food-grade sealing material (flat gasket according to FDA 21 CFR 177.2006) and display splitter protection to prevent the contamination of food

■ The device front is based on DIN EN 1672-2

■ Decoration foil, resistance against chemicals tested according to DIN 42115, Part 2

■ IP66 degree of protection (IP66K in part)

Special features of the SIMATIC Panels with stainless steel front	TP 177B color PN/DP INOX	MP 277 10" Touch INOX	MP 370 15" Touch INOX	Panel PC 677 INOX
Front				
Material/surface	Stainless steel 1.4301, polyester foil/polished finish, grain 240			
Gasket	EPDM			
Special features	Optimized frame design, inclined surfaces			
Ambient conditions				
Degree of protection	On the front: IP66K, NEMA 4, 4 x and 12, on the rear: IP20	On the front: IP66K, NEMA 4, 4 x and 12, on the rear: IP20	On the front: IP66, NEMA 4, 4 x and 12, on the rear: IP20	On the front: IP66, on the rear: IP20
Ambient temperature during operation	Vertical mounting: 0 °C to 50 °C; max. angle of inclination: +/- 35°: 0 °C to 40 °C			+5 °C to 45 °C with maximum configuration
Relative atmospheric humidity	Max. 85% (no condensation)			5% to 80% at 25 °C (no condensation)
Transport/storage temperature	-20 °C to +60 °C			
Approvals	FM Class 1 Div 2 cULus, CE, C-Tick, Ex Zone 2/22	FM Class 1 Div 2 cULus, CE, C-Tick, Ex Zone 22	FM Class 1 Div 2 cULus, CE, C-Tick, Ex Zone 2/22	cULus, CE
Dimensions				
Front plate W x H (in mm)	212 x 156	335 x 275	400 x 310	483 x 310
External dimensions of the clamping frame W x H (in mm)	230 x 174	343 x 283	412 x 322	495 x 322
Weight	Approx. 1.5 kg	Approx. 4.4 kg	Approx. 7 kg	Approx. 15 kg
Special features	Clamping frame on the rear side			

Completely protected HMI devices

The new completely protected HMI devices supplement the portfolio of the tried-and-tested built-in devices by rugged operator panels featuring a narrow and appealing design. The devices are dimensioned for support bracket or support foot assembly and offer an overall IP65 protection.

The series is technically based on available built-in devices:

- SIMATIC flat-panel monitor 15" PRO –
  the brilliant and rugged industrial display at an attractive price; up to 30 m from the PC
- SIMATIC thin client 15" PRO –
  ideal as second operator station for cost-optimized automation concepts with thin client technology
- SIMATIC MP 377 15" PRO –
  with maximum performance, optimized for application of the software PLC SIMATIC WinAC MP 2007 and expandable via software options.

All devices are equipped with a brilliant 15" touch display and can be mounted to various support bracket and support foot systems via a flexible mechanical system. They are thus optimally suitable for any application and can be employed independently of control cabinets on machines. This facilitates ergonomic operation at various positions in systems or production lines. Connection to the support bracket system of various manufacturers via adapter is either realized via the device's top or bottom. The compact design of the devices is maintained even after system assembly.

Thanks to their low weight, the completely protected HMI devices can be easily and swiftly mounted. The backplane can be easily removed – e.g. for the subsequent mounting of cables or replacement of memory cards – and thus ensures a particularly high service friendliness also after the machine has been installed.

The completely protected HMI devices can be modularly expanded. This way, the system can be easily equipped with system-specific mechanical buttons or other expansions and thus adjusted to various requirements.

Highlights

- Overall IP65-protected operator panels for support bracket or support foot assembly
- Removable backplane for optimum service friendliness.
- Highest compactness and low weight for easy mounting
- Easy adjustability to changing requirements thanks to modular expansions

Customer-specific solutions

The technical design of SIMATIC Panels is tailored to the requirements of all sectors. Individual SIMATIC Panels meet specific requirements.

There are also SIMATIC Panels based on standard products which are tailored to individual customer requirements. Panels can be adapted to the machine design as follows:

- Customized design
- Use of the company name instead of the Siemens logo and modification of the type designation
- Different housing color
- Customer-specific hardware modifications such as the design and dimensions of the front plate, selection of the display, memory configuration, drives, options
- Customer-specific panel PC configuration as a rugged embedded hardware and software system, without hard disk and with tailor-made software
- Customer-specific software suite with choice of Windows operating systems
- Customer-specific applications for Windows CE-based panels (Open Platform Program)
- Device mounted in a stainless steel cabinet as a ready-to-install and ready-to-connect terminal which is ergonomic, functional, with high degree of protection as well as tested heat dissipation (e.g. with complete IP66 degree of protection)
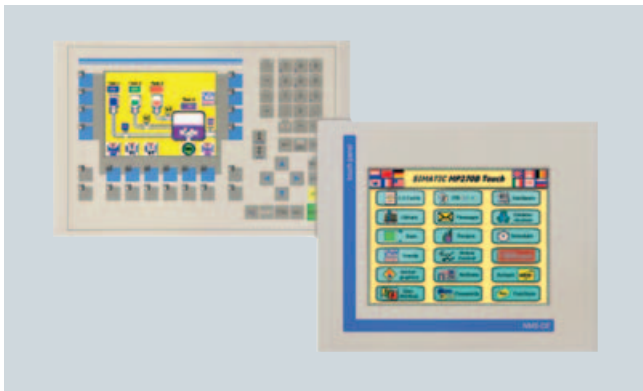
HMI operator stations

Complete HMI operator stations can be used wherever HMI devices cannot be installed in a control cabinet or directly at the machine.

The HMI operator station concept is based on a modular design where HMI devices can be installed according to function in selected housings.

- HMI device encapsulation for all-round protection (IP65)
- Can be mounted on a stand or support arm.
  Can be rotated with the help of adjusting elements.
- Possible connection of external keyboard and mouse
- Installation option for specific hardware components.

SIMATIC Panels starter packages

Maximum effciency at minimum price: This is the motto of the starter packages for the operator panels of the powerful SIMATIC HMI Panel family. In addition to the new features of the WinCC flexible Engineering Software, you profit from the extra large display, extra interfaces, extra functions, and extra-efficient configuring.

Save up to 40 % compared to the price of individually purchased products!

Starter packages						
consisting of	Panel	Engineering Software	Documentation	Cable	Update Service	Miscellaneous
Micro Panels						
OP 73micro	Operator Panel OP 73micro 3", Keys	WinCC flexible Micro	on CD-ROM	MPI (5m)		
TP 177micro	Touch Panel TP 177micro 6", Touch	WinCC flexible Micro	on CD-ROM	MPI (5m)		
Mobile Panels						
177 (DP Plus/PN Plus)	Mobile Panel 177 DP or PN 6", Touch + Keys	WinCC flexible Compact	on CD-ROM	DP or PN (10m)	for 1 year	Wall holder, DP-Box or PN Plus-Box
277 (DP Plus/PN Plus)	Mobile Panel 277 8", Touch + Keys	WinCC flexible Standard	on CD-ROM	DP or PN (10m)	for 1 year	Wall holder, PN Plus-Box
277 IWLAN	Mobile Panel 277 IWLAN 8", Touch + Keys	WinCC flexible Standard	on CD-ROM		for 1 year	1 x charging station, 1 x additional battery
277F IWLAN	Mobile Panel 277F IWLAN 8", Touch + Keys	WinCC flexible Standard	on CD-ROM		for 1 year	3 x transponder, 1 x charging station, 1 x additional battery
Panels						
OP 73	Operator Panel OP 73 3", Keys	WinCC flexible Compact	on CD-ROM	MPI (5m), PC/PPI Multimaster	for 1 year	
OP 77A	Operator Panel OP 77A 4.5", Keys	WinCC flexible Compact	on CD-ROM	MPI (5m), PC/PPI Multimaster	for 1 year	
OP 77B	Operator Panel OP 77B 4.5", Keys	WinCC flexible Compact	on CD-ROM	MPI (5m), RS 232 (5m)	for 1 year	
TP 177A	Touch Panel TP 177A 6", Touch	WinCC flexible Compact	on CD-ROM	MPI (5m), PC/PPI Multimaster	for 1 year	
TP 177B	Touch Panel TP 177B PN/DP 6", Touch	WinCC flexible Compact	on CD-ROM	MPI (5m), PC/PPI Multimaster	for 1 year	
OP 177B	Operator Panel OP 177B PN/DP 6", Touch + Keys	WinCC flexible Compact	on CD-ROM	MPI (5m), PC/PPI Multimaster	for 1 year	
Multi Panels						
MP 277 8", Touch	Multi Panel MP 277 8", Touch	WinCC flexible Standard	on CD-ROM	MPI (5m), PC/PPI (RS 232)	for 1 year	
MP 277 10", Touch	Multi Panel MP 277 10", Touch	WinCC flexible Standard	on CD-ROM	MPI (5m), PC/PPI (RS 232)	for 1 year	
MP 377 12", Touch	Multi Panel 12", Touch	WinCC flexible Standard	on CD-ROM	MPI (5m)	for 1 year	
MP 377 15", Touch	Multi Panel 15", Touch	WinCC flexible Standard	on CD-ROM	MPI (5m)	for 1 year	

Get more information

www.siemens.com/simatic-panels

You can find more detailed information in the SIMATIC Guide manuals:
www.siemens.com/simatic-docu

You can order further documents on the topic of SIMATIC at:
www.siemens.com/simatic/printmaterial

More detailed technical documentation can be found at our
Service & Support Portal:
www.siemens.com/automation/support

For a personal discussion, you can locate your nearest contact at:
www.siemens.com/automation/partners

In the A&D Mall you can place orders electronically via the Internet:
www.siemens.com/automation/mall

SIMATIC Panels

Operator panels to suit every requirement

Technical specifications · April 2008

SIMATIC HMI

www.siemens.com/simatic-panels

SIEMENS

SIMATIC Panels

A comprehensive and integrated range of operator panels for any requirements

SIMATIC Panels have been proving their value in many different applications in all industrial sectors for many years now. And they have not lost their innovative strength during all this time. The latest example: As worldwide novelty we present a wireless Mobile Panel in this brochure. The special feature: Safety functionality over Wireless LAN. Only SIMATIC products can offer such a high degree of flexibility and ease of operation, combined with operational safety.

Using SIMATIC HMI, our comprehensive solution for operator control and monitoring, you can master the process and keep your machines and plants running optimally.

Regardless of the industry or application: SIMATIC Operator Panels provide the interface between man and machine and offer maximum transparency. Rugged, compact, and versatile – they may be integrated into any production and automation system at any time.
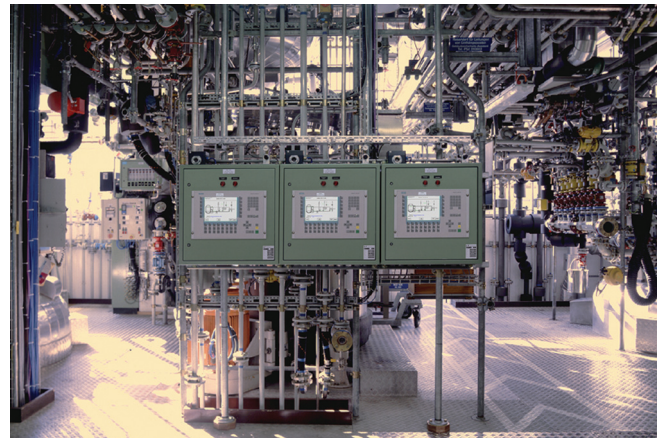
SIMATIC Operator Panels are ideally designed for global use. You can switch between five languages during operation at the push of a button. Even Asian and Cyrillic characters can be displayed.

The innovative configuring and visualization software SIMATIC WinCC flexible enables easy configuration of several languages. What's more, SIMATIC Operator Panels can be connected to nearly every commercially available controller.

The product range includes all versions: from a simple operator keypad to mobile and stationary panels and all the way to the flexible Multi Panel. Devices with PROFINET connection are used for solutions that utilize the Industrial Ethernet standard for automation.

SIMATIC Operator Panels are a part of Totally Integrated Automation (TIA), the globally unique, comprehensive range of products and systems for company-wide automation in all industries. Thanks to the unique integration of TIA, you benefit from clearly reduced engineering overhead and therefore also from considerably lower total costs.

So put your trust in SIMATIC Operator Panels! They provide you with the right solution for any application so you can take control of the most complex processes and increase the availability and therefore the productivity of your plants.

Push Button Panels

The bus-compatible alternative to conventional keypad operator panels.
They are preassembled and ready for use. Configuring software is
not required.

Micro Panels

Operator panels, tailored to applications with the SIMATIC S7-200
Microsystem PLC for automation tasks in the lower performance range.

Panels

For the efficient operation and monitoring of machines in
various performance classes – either as Touch Panels (TP) with touch-
sensitive displays4 or as Operator Panels (OP) with membrane keyboards.
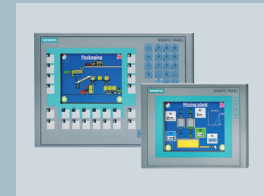
Multi Panels

The main characteristcs of Multi Panels (MP) are their performance, openess,
and expandability. They also allow the integration of several automation tasks
on one platform.

Mobile Panels

The portable operator panels facilitate operator control and monitoring at
the actual location of the event. Safety Wireless provides safety functions
(emergency stop and enabling button) at any point at a machine
or in a system – wirelessly.

Technology overview

Micro Panels — Perfect for the S7-200 – Simple and economical
70 series Panels — Graphics in a new dimension – small and smart
170 series Panels — The universal panels – Simple and economical
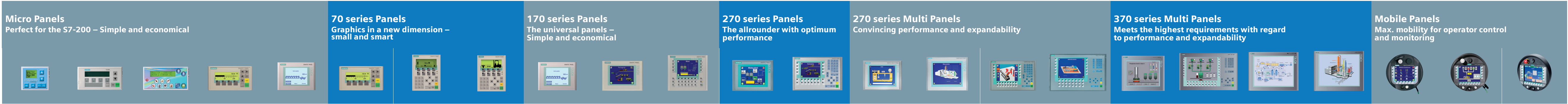**270 series Panels** — The allrounder with optimum performance
270 series Multi Panels — Convincing performance and expandability
370 series Multi Panels — Meets the highest requirements with regard to performance and expandability
Mobile Panels — Max. mobility for operator control and monitoring

	TD 100C (Keys)	TD 200 (Keys)	TD 200C (Keys)	OP 73micro (3″ keys)	TP 177micro (6″ Touch)	OP 73 (3″ keys)	OP 77A (4.5″ keys)	OP 77B (4.5″ keys)	TP 177A (6″ Touch)	TP 177B (6″ Touch)	OP 177B (6″ Touch + keys)	TP 277 (6″ Touch)	OP 277 (6″ keys)	MP 277 8″ Touch	MP 277 10″ Touch	MP 277 8″ keys	MP 277 10″ keys	MP 377 12″ Touch	MP 377 12″ keys	MP 377 15″ Touch	MP 377 19″ Touch	177 (6″ Touch + keys)	277 (8″ Touch + keys)	277(F) IWLAN (8″ Touch + keys)
Display	FTSN display (reflective – no backlight)	STN display (including backlight)	STN display (including backlight)	STN liquid crystal display (LCD), 4 blue levels	STN liquid crystal display (LCD), 4 blue levels	STN liquid crystal display (LCD), black/white	STN liquid crystal display (LCD), black/white	STN liquid crystal display (LCD), black/white	STN liquid crystal display (LCD), 4 blue levels	STN liquid crystal display (LCD), 4 blue levels or 256 colors	STN liquid crystal display (LCD), 4 blue levels or 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	STN liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors
Size (inches)	4 lines	2 lines	2 lines	3″	5.7″	4.5″	4.5″	4.5″	5.7″	5.7″	5.7″	5.7″	5.7″	7.5″	10.4″	7.5″	10.4″	12.1″	12.1″	15.1″	19″	5.7″	7.5″	7.5″
Resolution (W x H in pixels)	Max. 16 characters/line Font size: 3.34 mm	Max. 20 characters Font size: 5 mm	Max. 20 characters/line Font size: 5 mm	160 x 48	320 x 240	160 x 48	160 x 64	160 x 64	320 x 240	320 x 240	320 x 240	320 x 240	320 x 240	640 x 480	640 x 480	640 x 480	640 x 480	800 x 600	800 x 600	1024 x 768	1280 x 1024	320 x 240	640 x 480	640 x 480
MTBF (at 25 °C)	50,000 h	50,000 h	50,000 h	100,000 h	50,000 h	100,000 h	100,000 h	100,000 h	50,000 h	50,000 h	50,000 h	40,000 h	40,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h	50,000 h
Faceplate panel	90 x 76 mm	148 x 76 mm	148 x 76 mm	154 x 84 mm	212 x 156 mm	154 x 84 mm	150 x 186 mm	150 x 186 mm	212 x 156 mm	212 x 156 mm	243 x 212,5 mm	212 x 156 mm	308 x 204 mm	240 x 180 mm	325 x 263 mm	352 x 221 mm	483 x 310 mm	335 x 275 mm	483 x 310 mm	483 x 400 mm	—	245 mm diameter	290 mm diameter	290 mm diameter
Control elements	Membran keyboard	Membran keyboard	Membran keyboard	Membran keyboard	Touchscreen	Membran keyboard	Membran keyboard	Membran keyboard	Touchscreen	Touchscreen	Membran keyboard, Touchscreen	Touchscreen	Membran keyboard	Touchscreen	Touchscreen	Membran keyboard	Membran keyboard	Touchscreen	Membran keyboard	Touchscreen	Touchscreen	Membran keyboard, Touchscreen	Membran keyboard, Touchscreen	Membran keyboard, Touchscreen
Function keys (programmable) / system keys	14 user configurable	8 / 5	20 user configurable	4 / 8	– / –	4 / 8	8 / 23	8 / 23	– / –	– / –	32 / –	– / –	24 / 36	– / –	– / –	26 / 38	36 / 38	– / –	36 / 38	– / –	– / –	14 / 14	18 / 18	18 / 18
External keyboard / mouse / barcode reader	– / – / –	– / – / –	– / – / –	– / – / –	– / mouse / –	– / – / –	– / – / –	– / • / •	– / – / –	• / • / •	• / • / •	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB

Available memory

User memory	User data on CPU	User data on CPU	User data on CPU	128 KB	256 KB	256 KB	256 KB	1024 KB	512 KB	2 MB	2 MB	4 MB	4 MB	6 MB	6 MB	6 MB	6 MB	12 MB	12 MB	12 MB	12 MB	2 MB	6 MB	6 MB
Memory for options / recipes [6]	–	–	–	– / –	– / –	– / –	– / 32 KB	– / 32 KB	– / 32 KB	– / 32 KB	– / 64 KB	– / 64 KB	– / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	12 MB / 128 KB	12 MB / 128 KB	12 MB / 128 KB	12 MB / 128 KB	– / 32 KB	1024 KB / 64 KB	1024 KB / 64 KB
Alarm buffer	–	–	–	•	•	•	•	•	–	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Interfaces

Serial / MPI / PROFIBUS DP	PPI	PPI	PPI	PPI	PPI	– / • / •	– / • / •	• / • / •	– / • / •	•[4] / • / •	•[4] / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	– / • / •	•[2] / •[2]	– / – / –
PROFINET (Ethernet)	–	–	–	–	–	–	–	–	–	•[3]	•[3]	•	•	•	•	•	•	•	•	•	•	•	•[2]	(•) / (• over WLAN)
USB	–	–	–	–	–	–	–	•	–	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Slot for CF / Multi Media / Secure Digital Cards	– / – / –	– / – / –	– / – / –	– / – / –	– / • / –	– / • / –	– / • / –	– / • / –	– / • / –	– / • / –	– / • / –	– / • / –	– / • / –	• / • / –	• / • / –	• / • / –	• / • / –	• / • / –	• / • / –	• / • / –	• / • / –	– / • / –	• / • / –	• / • / –

Funktionality (when configuring with WinCC flexible)

Micro Panels: MicroWIN is used for the configuration

Alarm system (Number of alarms / alarm classes)	40	80	80	250 / 32	500 / 32	500 / 32	1000 / 32	1000 / 32	1000 / 32	2000 / 32	2000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	2000 / 32	4000 / 32	4000 / 32
Process screens	32	64	64	250	250	500	500	500	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Tags	288	864	864	500	250	1000	1000	1000	500	1000	1000	2048	2048	2048	2048	2048	2048	2048	2048	2048	2048	1000	2048	2048
Verktor graphics	–	–	–	–	–	–	–	•	–	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bar graphs / trend curves	–	–	–	–	• / •	• / •	• / •	• / •	• / –	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Screen blocks	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•	•	•	•	•	•	•	•	•	•
Recipes	–	–	–	–	–	–	5	100	5	100	100	300	300	300	300	300	300	500	500	500	500	100	300	300
Archiving	–	–	–	–	–	–	–	•	–	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Visual Basic scripts	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•	•	•	•	•	•	•	•	•	•
PG funktions (STATUS/CONTROL)	–	–	–	–	–	–	–	–	–	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S5/S7	With SIMATIC S7

Connection to PLC

SIMATIC S7 / SIMATIC WinAC	S7-200	S7-200	S7-200	S7-200	S7-200	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	•[2] / •[2]	•[2] / •[2]
SIMATIC S5 / SIMATIC 505	–	–	–	–	–	–	–	•[5] / •	–	•[5] / •	•[5] / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	–	•[2] / •[2]	•[2] / •[2]
SINUMERIK / SIMOTION	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•	•	•	•	•	•	•	–	–	–
Allen Bradley / Mitsubishi	–	–	–	–	–	–	–	• / •	–	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	–	•[2] / •[2]	•[2] / •[2]
Modicon / Omron / GE-Fanuc / LG Glofa GM	–	–	–	–	–	–	–	• / • / •	–	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	–	•[2] / •[2] / •[2]	•[2] / •[2] / •[2]
Engineering software	MicroWIN V4.0 SP2	MicroWIN V4.0	MicroWIN V4.0	WinCC flexible Micro, Compact, Standard, Advanced	WinCC flexible Micro, Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Compact, Standard, Advanced	WinCC flexible Standard, Advanced	WinCC flexible Standard, Advanced

Options, applications

Sm@rtService / Sm@rtAccess / ProAgent / Audit / Logon	–	–	–	–	–	–	–	–	–	•[3] / •[3] / – / – / –	•[3] / •[3] / – / – / –	•	•	•	•	•	•	•	•	•	•	–	•	•
OPC Server / Pocket Internet Explorer	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•	•	•	•	•	•	•	–	•	•
WinAC MP 2007	–	–	–	–	–	–	–	–	–	–	–	–	–	•	•	•	•	•	•	•	•	–	•	•

[1] PN design [2] DP design [3] PN/DP design [4] optional [5] Only via PROFIBUS DP [6] integral Flash, expandable

Get more information

Find more detailed information in the SIMATIC Guide manuals:
www.siemens.com/simatic-docu

Further documents on the topic of SIMATIC at:
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More detailed technical documentation found at our
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