

SIMATIC PC

The more Industrial PC

Brochure · April 2008



SIMATIC PC

Answers for industry.

SIEMENS

SIMATIC PC – the more Industrial PC

Automation solutions in the industrial environment place high demands on PCs: Vibration, cold, dust, heat and electromagnetic radiation are among the most important risk factors. This calls for PC platforms which are more powerful than conventional solutions.

Siemens has been developing and manufacturing rugged industrial PCs for more than 22 years. The defined target is to provide users with both innovative and long-term available products. Machine and system manufacturers benefit from the great technological experience reflected by these products, for example in the form of the patented hard disk holders. SIMATIC PC is the first integrated product range to offer the latest technology with Intel Core2 Duo processors, Windows Vista and PROFINET onboard.

More ruggedness and system availability

With SIMATIC PCs, nothing is left to chance as they come with a high degree of ruggedness and industrial standard, amongst others through

- rugged enclosure designs,
- in-house developed mainboards,
- and high-quality components, e.g. industrial compatible displays.

For maximum safety, our SIMATIC PCs offer a unique concept of additional add-on components for enhanced system availability. This prevents potential failures and actual downtimes and efficiently reduces the corresponding consequential costs in your production.

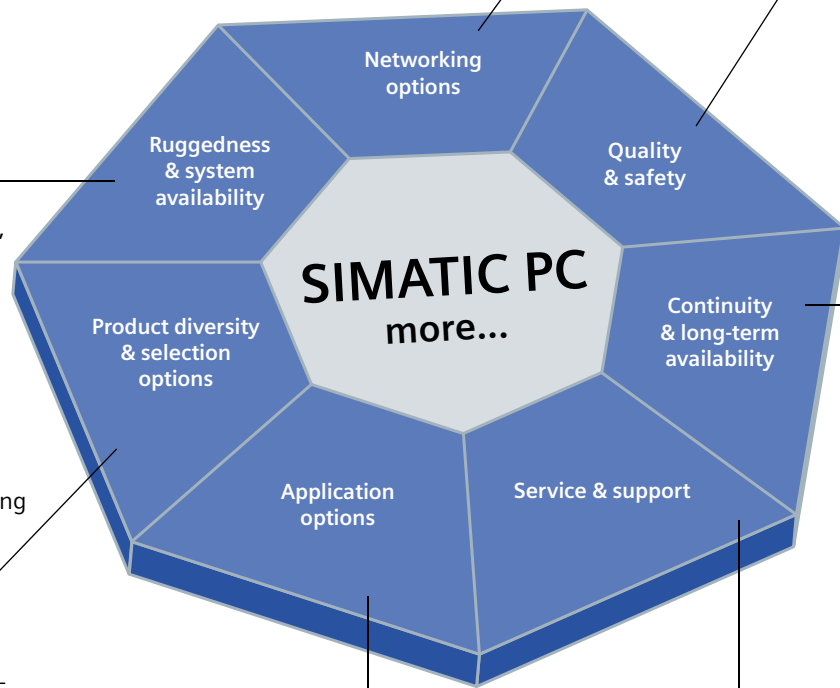
More product diversity and selection options

The integrated industrial SIMATIC PC platforms offer maximum productivity through

- flexible and powerful rack PCs in 19" design,
- compact, rugged box PCs for universal application,
- rugged, high-performance panel PCs with brilliant displays
- and products and systems from our Customization Center accurately tailored to your requirements.

Comprehensive online configuration options allow for the individual assembly of your SIMATIC PC, which minimizes the purchasing times.

SIMATIC PCs are perfectly equipped for applications in harsh industrial environments through: modern industrial design with increased ruggedness and system availability, reliable industrial PCs with improved quality and safety, enhanced continuity and long-term availability as well as more service and support. Our SIMATIC PC range thus offers "more industrial PC" for increasing your productivity and protecting your investment.



More application options

SIMATIC PCs are ideally suited for use in various applications, e.g. for

- open- and closed-loop control in mechanical engineering,
- visualization in the food industry,
- measuring and testing in the automotive industry,
- data processing and communication in the semiconductor and electronics industry,
- gateways and as network transition in stock-keeping and logistics applications.

Contents

More networking options with PROFINET onboard

With PROFINET onboard, the new SIMATIC PCs can be integrated in networks even more easily to support integrated real-time-capable communication from the corporate level right down to the field level. Realtime, IT communication as well as TCP/IP are thus possible on a single line, which saves installation and integration costs.

More quality and safety

Our SIMATIC PCs set new standards in terms of quality. They are developed and manufactured in-house and subjected to a comprehensive test system, amongst others

- development tests, e.g. thermal simulation,
- continuous production tests such as the 100 % run-in test,
- or series-accompanying type tests and trials.

This proves the reliable compliance of SIMATIC PCs with all technical specifications.

More continuity and long-term availability

Thanks to the close contact of our development experts with our certified supplier partners, we are able to develop and produce own mainboards and products featuring a high continuity and guaranteed long-term availability. SIMATIC PCs thus offer

- an availability period of 3 – 5 years with a minimum 6-month overlapping period with the new device generation,
- as well as a repair and spare parts availability period of 5 years.

This minimizes your application's adjustment expenditures and facilitates the long-term planning of concepts.

More service and support

We provide efficient and fast support for SIMATIC PCs:

- global online support – e.g. FAQs and manuals,
- online service tool PED – device equipment information,
- SIMATIC hotline – 24/h on 365 days a year,
- repair centers in 30 countries and subsidiaries in 190 countries,
- PC-based Competence Centers – project support.

SIMATIC PCs

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More ruggedness and system availability

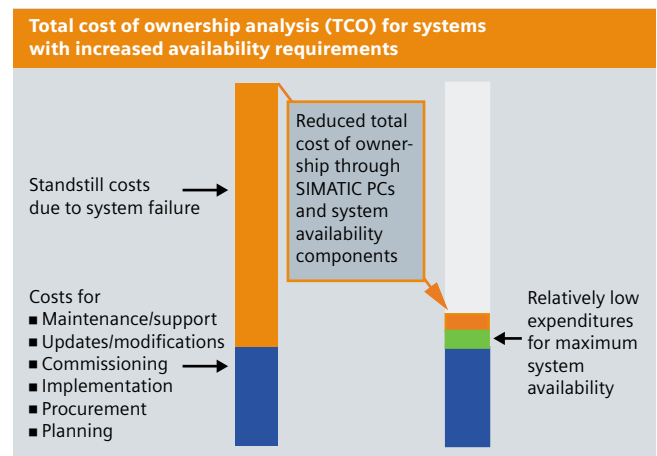
More ruggedness and industrial suitability

Already the product design meets the high demands placed on industrial compatibility. SIMATIC PCs are characterized by the following special features:

- Rugged enclosure designs with high electromagnetic compatibility (EMC) and degrees of protection up to IP65/NEMA 4
- Integrated industrial power supplies (in accordance with NAMUR)
- High-quality components with high MTBF (mean time between failures), which also facilitate 24-hour operation even in the extended temperature range
- High vibration/shock resistance thanks to special hard disk holders
- Lockable plug connectors and card retainers
- Installed and activated Microsoft operating systems for time savings during installation
- Service-friendly, modular device design for the fast replacement of defective components
- Restore CD/DVD for restoration of the delivery state

More system availability

The consequential costs of system failures and downtimes are essential aspects when assessing an automation solution's total cost of ownership (TCO). Thanks to their product characteristics and numerous optional products SIMATIC PCs sustainably ensure a high system availability and decisively contributed to the reduction of consequential costs – for maximum productivity and efficiency.



Measures for increased ruggedness and industrial suitability, instancing Rack PC 847B

Rugged housing versions
with high degree of electromagnetic compatibility (EMC)

Card retainers
secure expansion cards during high vibration/shock loads

Fan with speed monitor
for increased dust protection through positive pressure ventilation

Filter pad replacement
without tools



Industrial Power Supplies
bridge reliably voltage drops up to 20 msec (in accordance with NAMUR)

High resistance to vibration/shock
thanks to special hard disk mountings

Cable grips
ensure permanent contact of plug-in connections

More product diversity and selection options

More product diversity

SIMATIC PCs are available in various designs and with different functionalities. These include:

- Rack PCs – flexible and powerful in 19" design
- Box PCs – compact and rugged for universal applicability
- Panel PCs – rugged and powerful with brilliant displays

And whenever you need even more, our SIMATIC PC Customization Centers convert the tried-and-tested SIMATIC PCs to individualized products and systems – tailored precisely to your specific needs. This provides you with more time for your own projects while improving your profitability and thus your competitive advantage.

More individual selection options







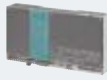

The integrated industrial SIMATIC PC platforms offer a high degree of flexibility through individual selection options. For example, the following products are available on identical mainboard basis:

- Microbox PC 427B also as a compact Panel PC 477B with brilliant display
- Box PC 627B also with higher expandability than the Box PC 827B with identical footprint
- Box PC 627B also as compact Panel PC 677B with brilliant display

You can order SIMATIC PCs in various configurations. Our on-line configurator supports you with the selection of various

- processors,
- memory configurations,
- drives,
- add-on cards and
- pre-installed, already activated operating systems:

www.siemens.com/ipc-configurator

	Rack PC	Box PC	Panel PC	
8xx-Series High Industrial Maximum expandability Rugged High performance	 Rack PC 847B	 Box PC 827B		+ Benefit from an identical mainboard design <ul style="list-style-type: none"> + Identical system software and drivers due to identical processors and chipsets + Reduced cost and effort for evaluation if using different SIMATIC PCs + Reduced supply of spare parts (e.g. RAM, hard disks)
6xx-Series High Industrial Compact Rugged High performance		 Box PC 627B	 Panel PC 677B	
5xx-Series Industrial High to maximum performance Expandable Cost-effective	 Rack PC 547B		 Panel PC 577B	+ Long-term availability and defined development <ul style="list-style-type: none"> ⌚ Siemens develops and produces mainboards in Germany¹⁾ ⌚ Long-term availability of 3 to 5 years ⌚ 5 years of Repair and spare part service 1) SIMATIC Rack PC 547B is also developed and produced in Germany.
4xx-Series Embedded Ultra-compact Highly rugged Maintenance-free		 Microbox PC 427B	 Panel PC 477B	

More application options

SIMATIC PCs are employed in many applications and sectors. They are perfectly equipped and suitable for open and closed-loop control, visualization, measuring and testing, data processing and communication tasks as well as for gateways and as network transition.

The main applications of SIMATIC PCs are manifold:

- Automotive industry (e.g. test bays, paint lines)
- Semiconductor and electronics industry (e.g. diffusion plants, wafer production)
- Chemical and pharmaceutical industry (e.g. table presses, fermenters)
- Oil, gas, water and power (e.g. water treatment/supply, wind power plants)
- Food industry (e.g. filling systems, fruit presses)
- Stock-keeping and logistics (e.g. high-bay warehouses, conveyor technology)
- Mechanical engineering (e.g. printing machines, textile machines, CD/DVD production)

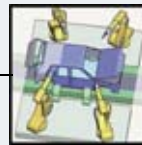
Application examples of SIMATIC PCs in the automotive industry

Press shop



Due to the high vibration/shock loads occurring during the pressing of vehicle parts, the rugged SIMATIC Rack PC 847B with WinCC is employed for system monitoring, image processing or laser measuring.

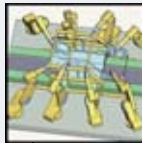
Paint shop



In paint shops, the compact and powerful SIMATIC Panel PC 677B is used as HMI station for system operation and monitoring.

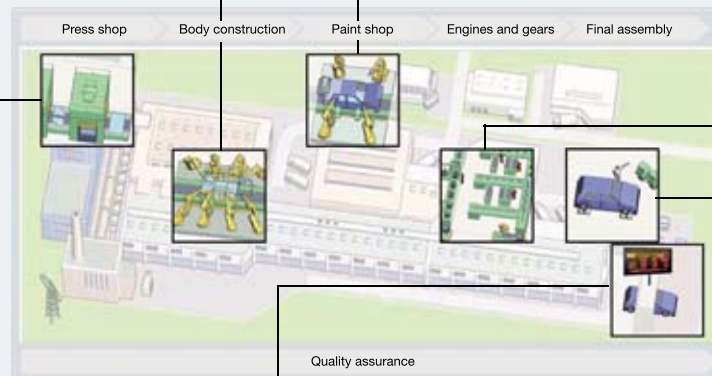
Body construction

Body construction poses high requirements in terms of EMC, dust, dirt and heat. For system monitoring, the SIMATIC Rack PC 847B with WinCC is used. Due to its high compactness and ruggedness, the embedded Panel PC 477B with WinAC RTX and WinCC flexible is used for controlling and visualization tasks performed directly on the machine.



Engines and gears

The engine and gear production poses high requirements in terms of EMC, dust, dirt and heat. For monitoring and control of the engine/gear test bays, the rugged SIMATIC Rack PC 847B is employed in the control cabinet. The maintenance-free and ultra-compact SIMATIC Microbox PC 427B realizes screw data recording and quality control on site.



Quality assurance

The information system for the large-scale display of quality data and machine states requires maximum performance and high compactness. This is where the SIMATIC Box PC 627B with SIMATIC flat-panel screens or Panel PC 677B with WinCC come in.



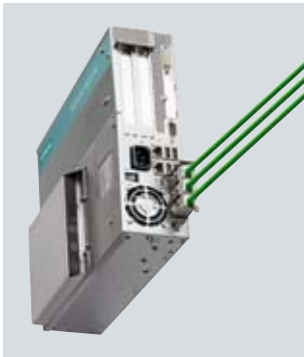
Final assembly

For the acquisition and fast processing of large data volumes collected from roller test bays, chassis adjusting test bays and quality control, the high-performance SIMATIC Rack PC 547B is employed in the control cabinet.



NEW More networking options with PROFINET onboard

Easy and comfortable integration in existing networks



For easy integration in PROFINET networks and consistently realtime-capable communication from the corporate level down to the field level, the new SIMATIC PCs optionally offer PROFINET onboard. Realtime, IT communication as well as TCP/IP are thus possible on a single line.

The intelligent controller architecture with integrated 3-port switch facilitates the flexible and easy assembly of line, tree or ring topologies. The integration of existing field bus systems, e.g. PROFIBUS, is supported.

The integrated PROFINET interface of the SIMATIC PCs can be used for:

- Direct connection of distributed I/Os and drives, for example with WinAC RTX as controller
- Use as additional standard Windows interface via the integrated switch, e.g. for TCP/IP communication or visualization applications with WinCC flexible

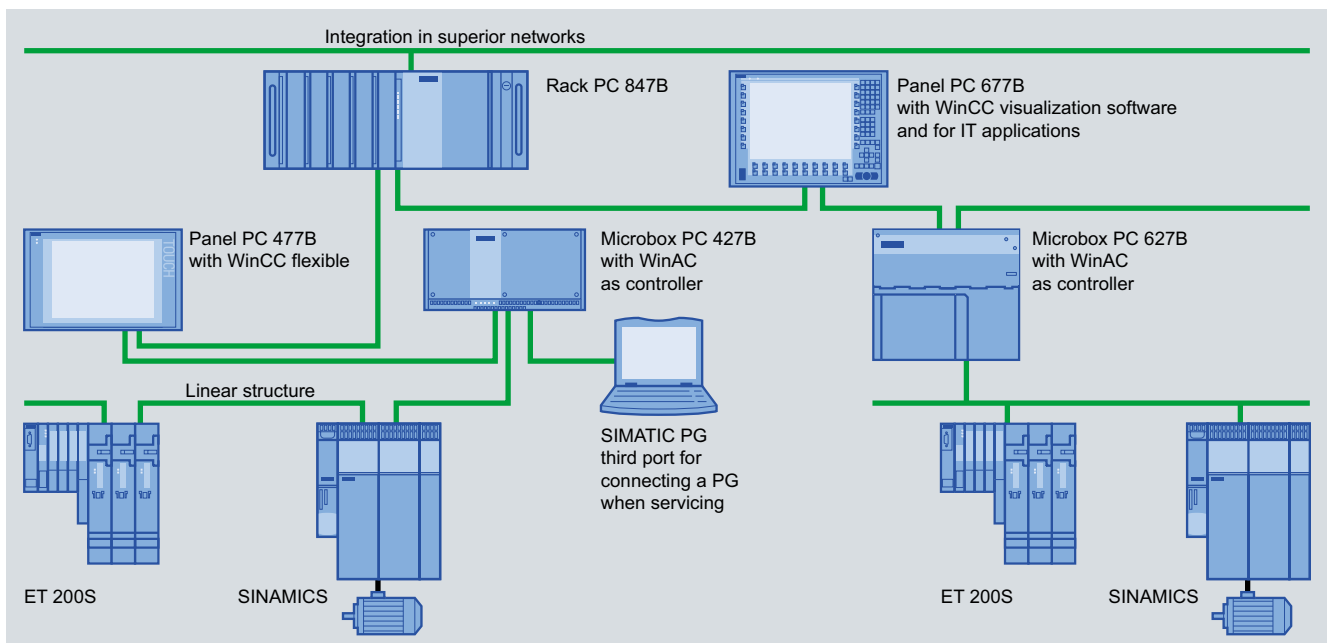
Compared to conventional solutions, PROFINET reduces costs for the installation and integration of system components by 30 to 35 %.

Advantages

- The PROFINET onboard interface saves one slot, which can be used for other PC cards
- The intelligent controller architecture (ERTEC 400) improves the PC system performance by reducing the processor load
- Full support of the software PLC WinAC RTX 2008
- Optimized integration of SIMATIC PCs in PROFINET configuration (STEP 7 and NCM-PC)
- Efficient self-diagnostics via status LEDs for eased commissioning and diagnostics

Realtime communication

PROFINET meets all realtime requirements relevant for automation applications and is used for time-critical process data, e.g. for cyclic user data or event-controlled alarms. For this purpose, PROFINET uses an optimized realtime communication channel. This minimizes throughput times and accelerates process data updates.



The SIMATIC PCs can be easily embedded in PROFINET networks via the PROFINET interface with integrated 3-port switch.

More quality and safety



SIMATIC PCs originate from our in-house development and production and set new standards with regard to quality and safety. You will therefore profit from the unique system availability and investment protection of SIMATIC PCs.

Quality seal – more safety through more than 50 tests

The quality of every SIMATIC PC is thoroughly examined. The comprehensive test system permanently guarantees that quality is not a random product. In-house test laboratories ensure a degree of quality unrivaled on the industrial PC market, guaranteeing compliance with all technical specifications and international certifications.

Test procedures

This quality work is based on the application of state-of-the-art equipment, e.g. EMC chamber, high-performance oscilloscope, climatic cabinet, thermal simulation and heat image camera.

Development tests

Already during the development phase, we implement two test runs with 40 prototypes each. These include, e.g.:

- Stress test for CPU, graphics, memory, etc.
- Measurement and validation of all important signals
- Drive qualification (vibration/shock load)

During the design phase, the thermal simulation allows for the construction of devices with an optimized heat dissipation concept. Using a CAD program, the optimum arrangement of the individual components is simulated and the heat flow within the device optimized.

Production test

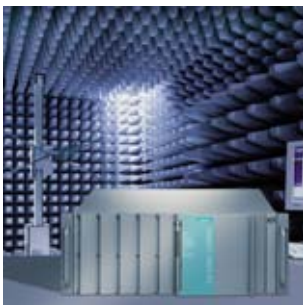
Special test procedures also guarantee maximum quality during production.

These include:

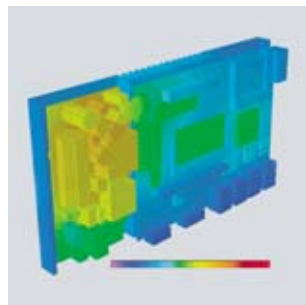
- 100 % x-ray test of the equipped PCB
- 100 % test of components and lines for functionality
- Automated comparison between customer order and device configuration
- 100 % run-in test: System test of all components, 36-hour heat test at 40 °C in the climatic cabinet. This corresponds to a 6-week continuous test to exclude early failures.
- 100 % final inspection of all manufactured devices
- Checking of packaging and transport quality

Together with the type tests which accompany series production, our customers receive exactly what we promise them: 100 % functioning and high-quality products which comply with all technical specifications.

EMC test



Thermal simulation



X-ray test



36-hour run-in test at 40 °C



More continuity and long-term availability

Through in-house development and production



Production in Germany

Experience has shown: In-house development and production have a direct influence on the quality and guarantee reliable compliance with the high SIMATIC quality standards.

SIMATIC PCs are equipped with selected, high-quality brand components with a high MTBF. The environmentally compatible devices comply with the RoHS and WEEE directives.

Ample production capacity

With a production capacity of more than 100,000 PCs per year, we are able to flexibly react to increasing demands. And you have the assurance of short delivery periods from a manufacturer with sufficient resources.

We offer you:

- Preference versions directly and rapidly ex-stock
- Various built-to-order versions from the catalog
- Customized configurations

Competence leads to security

Thanks to our in-house development, we are able to comprehensively cater to your wishes and realize customer-specific requirements. All our development departments are made up of experts for every PC component with close contact to our supplier partners.

Defined continuity

Already prior to the development of the mainboards, close coordination with the suppliers' roadmaps is ensured.

The advantages

- We can control innovation steps more effectively and adjust them to the market requirements.
- Communication of the product roadmaps specifically and actively supports you as a user with the migration of your PC solutions.

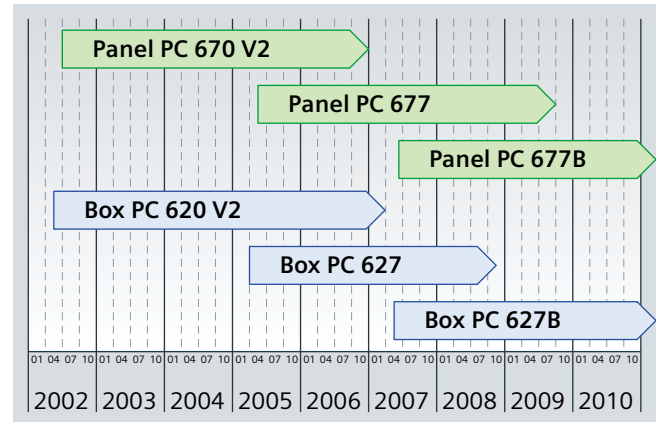
¹⁾ Identical enclosure dimensions of Box PCs PC 6xx since 1999

Long-lasting concepts

With SIMATIC PCs, you can realize long-term concepts thanks to:

- Availability of 3 – 5 years (at least 1.5 years for Rack PC 547B and Panel PC 577B)
- 5-year repair and spare parts service (Rack PC 547B and Panel PC 577B 3 years) after expiry of the active marketing period

Upon request, you can also be provided with systems permanently tailored to a specific application, so-called design freeze systems – complete and ready for operation.



Minimum overlapping period of 6 months for generation changes (example Box PC 627/Panel PC 677, 12 months)

Hardware and software compatibility

As far as reasonable, the mechanical dimensions of SIMATIC PCs are compatible with their predecessors¹⁾. Together with the high compatibility of the interfaces, e.g. PS/2, COM or LPT interfaces, this provides you with the additional advantage of easy and fast integration.

Also with regard to software, the SIMATIC PCs demonstrate a high compatibility. You can use your existing user software on a new device without program changes over several device generations. You are still provided, e.g., with operating systems such as Windows 2000, and can still even use modern software such as the SIMATIC PC DiagMonitor under Windows 2000.

Within a device generation, SIMATIC PCs offer a particularly high degree of image compatibility. This enables you to install the unchanged software image (operating system, drivers and application). This minimizes your adjustment expenditures.

More service and support

Round-the-clock

Whoever uses an industrial PC by Siemens has a system which operates reliably round-the-clock on 365 days of the year. To make sure this remains so, we have established an appropriate service and support concept for fast and efficient help – not only for fault cases.

Global online support

Whether important technical documentation, comprehensive FAQs, tools and downloads or newsletters – we provide you with rapid help and support round-the-clock via the Internet, together with comprehensive know-how covering all sectors and application areas of SIMATIC PCs.

Service tool PED – Product Equipment Data

With the PED service tool, you can identify and manage device and component data of SIMATIC PCs/programming devices online and worldwide.

Your advantages with PED

- Fast and exact determination of device data (e.g. delivery date, release version, hardware equipment, spare parts, etc.) at any time
- Support with device/system documentation (e.g. through printout of device information)
- Global use with standard Internet browsers
www.siemens.com/ped

Worldwide: 24-hour availability

The SIMATIC hotline is available 24 hours a day, 365 days a year. Our engineers offer ample experience in development, system commissioning and system tests and incorporate the development and production departments in solving your problem. They can therefore assist you even with difficult cases.



Worldwide: Always within reach

Siemens has Repair Centers in 30 countries, and subsidiaries in 190 countries. As a user, you are thus provided with the maximum of competent support – from PC repairs in our Repair Centers down to on-site servicing.

Worldwide: Project support

You require support with the dimensioning and options of a PC-based automation project or even engineering support? Specifically for this purpose, Siemens has established three PC-based Competence Centers with experts who closely cooperate with the development department and competently support you.



SIMATIC Rack PC

Flexible, powerful industrial PCs in 19" design



SIMATIC Rack PCs are flexible industrial PC systems in 19" design with high system availability for high-performance applications.

Suitable for horizontal and vertical application, they facilitate the realization of manifold tasks:

- Measuring, open- and closed-loop control of industrial processes
- Visualization of production processes
- Image processing, e.g. within the scope of quality inspections
- Data acquisition and management, e.g. for recipe management



	NEW Rack PC 547B Maximum performance at an attractive price with Intel Core2 Duo processors	Rack PC 847B Maximum expandability and industrial functionality with Intel Core2 Duo processors
Available operating systems	Windows 2000 / XP Professional / Vista Ultimate, Windows Server 2003	Windows 2000 / XP Professional / Vista Ultimate, Windows Server 2003
Available memory media	HDD 250 GB, 2 x 250 GB, RAID1 2 x 250 GB installation internal or in removable frame	HDD 80 GB, 160 GB, 2 x 160 GB, RAID1 2 x 160 GB installation internal or in removable frame
Networking options (onboard)	1 x Gigabit Ethernet	2 x Gigabit Ethernet 1 x MPI/PROFIBUS (optional) 3 x PROFINET (optional)
Expandability with cards	4 x PCI, 1 x PCI-Express x16, 2 x PCI-Express x1	7 x PCI, 1 x PCI-Express x16 or 7 x PCI, 1 x PCI-Express x16, 3 x PCI-Express x4
Long-term availability		
Availability	At least 1.5 years	3 to 5 years
Repair and spare parts service	3 years	5 years
Industrial compatibility		
Shock / vibration / dust protection	1g / 0.2g / ■	5g / 0.5g / ■
Ambient temperature during operation	5 ... 40 °C	5 ... 50 °C
Options for increased system availability		
Second hard disk	■	■
Mirror disk technology (RAID1)	■	■
Diagnostics software: DiagMonitor	■	■
Backup software: Image Creator	■	■

NEW SIMATIC Rack PC 547B

Maximum performance at an attractive price



The SIMATIC Rack PC 547B is a powerful industrial PC in 19" design (4HU). It is ideally suited to industrial applications demanding maximum PC performance, such as required for process visualization or industrial image processing.

Equipped with powerful and energy-saving Intel Core2 Duo processors with 64-bit technology, the Rack PC 547B reliably provides high computing power in 24-hour continuous operation at an extremely attractive price.

The 7 expansion slots in PCI/PCI-Express technology allow for the use of powerful expansion cards such as PCIe x16 graphics cards for the connection of two monitors.

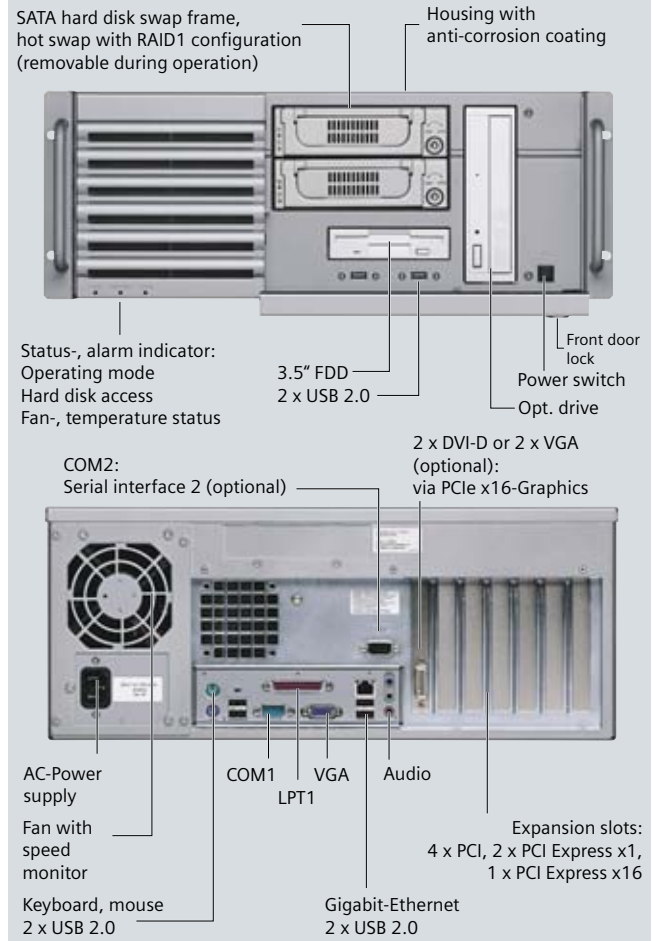
The memory configuration in the dual-channel mode and the 250 GB serial ATA hard disks significantly boost the system's processing speed. The Gigabit Ethernet interface facilitates the fast transfer of large data volumes.

Additional advantages

- Full-metal enclosure with high electromagnetic compatibility
- Increased dust protection through fan-controlled positive pressure ventilation
- Maximum computing power without throttling at ambient temperatures from 5 to 40 °C
- Effective self-diagnostics through front-side status LEDs for fan and temperature

With the optional tower kit, the Rack PC 547B can be converted for use as an industrial workstation or server in control stations and technical offices. The small device depth facilitates space-saving installation in 19" control cabinets with depths from 500 mm. ▶

SIMATIC Rack PC 547B: Connections and Expansions



SIMATIC Rack PC 847B

Maximum expandability and industrial functionality with Intel Core2 Duo processors



The SIMATIC Rack PC 847B is a rugged and maximally expandable industrial PC in 19" design (4HU). It offers high investment protection thanks to outstanding long-term availability and ensures reliable operation in particularly harsh industrial environments, e.g. with

high dust, temperature and shock loads.

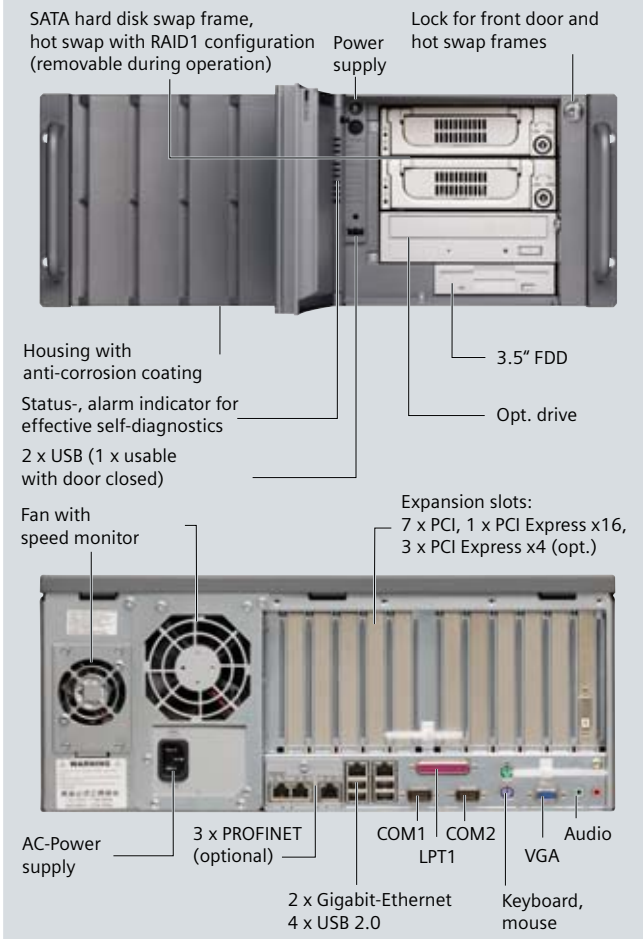
The 19" SIMATIC Rack PC 847B is equipped with powerful and energy-saving Intel Core2 Duo processors as well as the latest generation of chipset and memory technology. The high computing power combined with the PCI-Express technology makes it the perfect platform for high-performance applications, for example in measuring systems, test bays or industrial image processing applications.

The SIMATIC Rack PC 847B offers maximum flexibility and expandability thanks to its 8 or optionally 11 free PCI/PCI Express slots for the installation of long expansion cards and thanks to a multitude of integrated interfaces for communication with the field or control level:

- 2 x Gigabit Ethernet for high data transfer rates
- Optional PROFIBUS/MPI interface or PROFINET interface with three ports for the cost-favorable connection of distributed field devices or to couplings with SIMATIC S7
- 3 x PCI Express x4 interfaces (optional) for up to 7 times the bandwidth of the PCI architecture and faster access to I/O devices
- Dual monitoring via a PCI-Express x16 graphics card (optional) for high graphics performance
- ADD card: DVI-D connection for monitor (optional)
- 6 x high-speed USB 2.0 ports, two of which are arranged on the front. One plugged USB flash drive can also be operated with the front door closed and is thus protected against misuse in the same way as the drives and the ON/OFF or reset button accessible from the front.
- Efficient self-diagnostics through integral diagnostics/signaling functions (temperature, fan, watchdog) and a front LED display, e.g. for Ethernet, PROFIBUS or PROFINET communication status.

SIMATIC Rack PC 847B with optional tower kit. The small enclosure depth facilitates space-saving installation in 19" control cabinets with depths from 500 mm. ▶

SIMATIC Rack PC 847B: Connections and Expansions



Front LED display for efficient self-diagnostics, e.g. of the PROFINET communication

SIMATIC Box PC

Compact and rugged industrial PCs for universal applicability

SIMATIC Box PCs are particularly rugged and reliable industrial PCs in compact design for universal installation in machines, control enclosures and control cabinets. They are characterized by high performance with minimum space requirements as well as their modular design with high service friendliness.

From the ultra-compact and maintenance-free version for DIN rails, down to the PC with high expandability and maximum performance, the compact Box PCs leave almost nothing to be desired. Manifold tasks can be realized with the SIMATIC Box PCs:

- Measuring, open- and closed-loop control of process and machine data
- Industrial image processing with data acquisition and processing
- Decentralised visualization with SIMATIC flat panels



	Microbox PC 427B Ultra-compact and maintenance-free: the flexible embedded industrial PC	Box PC 627B Maximum performance in minimum space with Intel Core2 Duo processors	NEW Box PC 827B Maximum performance and high flexibility with Intel Core2 Duo processors
Available operating systems	Windows XP Embedded / XP Professional / Vista Ultimate	Windows 2000 Professional / XP Embedded / XP Professional / Vista Ultimate	
Available memory media	HDD 80 GB or higher; flash drive 256...512 MB or 1...4 GB (replaceable from the outside), optional 1...4 GB internal	HDD 80, 160 GB; 2 x 80 GB; RAID1, 2 x 80 GB; 1 x flash drive up to 2 GB, second flash drive up to 4 GB optional	
Networking options (onboard)	2 x Gigabit Ethernet ¹⁾ 1 x MPI/PROFIBUS (optional) 3 x PROFINET (optional)	2 x Gigabit Ethernet 1 x MPI/PROFIBUS (optional) 3 x PROFINET (optional)	
Expandability with cards	Up to 3 x PCI-104 (with expansion frame)	2 x PCI or 1 x PCI and 1 x PCIe x4	4 x PCI and 1 x PCIe x4 or 2 x PCI and 3 x PCIe
Integrated retentive memory	Battery-buffered SRAM 2 MB, 128 KB of which usable for WinAC		
Long-term availability			
Availability	3 to 5 years		
Repair and spare parts service	5 years		
Industrial compatibility			
Shock/vibration	15g / 1g	5g / 1g	
Ambient temperature during operation	0 ... 55 °C	5 ... 55 °C	
Options for increased system availability			
Second hard disk	–	■	
Mirror disk technology (RAID1)	–	■	
Diagnostics software: DiagMonitor	■	■	
Backup software: Image Creator	■	■	



¹⁾ With PROFINET onboard 1 x Ethernet

SIMATIC Microbox PC 427B

Ultra-compact and maintenance-free



The SIMATIC Microbox PC 427B is the ultra-compact and rugged embedded PC for DIN rail mounting, wall mounting or portrait assembly and application in the machine.

It features a service-friendly design and a scalable computing power. Thanks to its

fan-free design and use of CompactFlash cards, it is particularly suitable for maintenance-free 24-hour continuous operation – at ambient temperatures of up to 55 °C. The Microbox PC 427B is equipped with powerful and energy-saving Intel Celeron M and Pentium M processors. The integrated Intel GMA900 accelerator ensures increased graphics performance.

Three PCI-104 expansion slots and a multitude of interfaces make the Microbox PC 427B universally applicable.

- Two Gigabit Ethernet connections (teaming-capable) for flexible communication with the control and field level.
- Four USB 2.0 interfaces and an optional PROFIBUS connection for high adjustability and flexibility for measuring and open- and closed-loop control tasks.

Its components such as PCI-104 modules, battery, RAM or CompactFlash card can be replaced when installed. It offers increased system availability through:

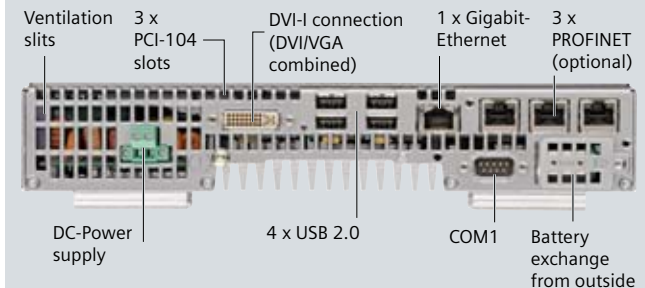
- Integrated monitoring functions for voltage, temperature and program execution.
- Front-side LED solution for efficient self-diagnostics, e.g. for the status display of critical operating states.
- Integrated power supply with electrical isolation and mains failure bridging.

Process data can be reliably saved in the event of a power failure thanks to a battery-buffered SRAM.

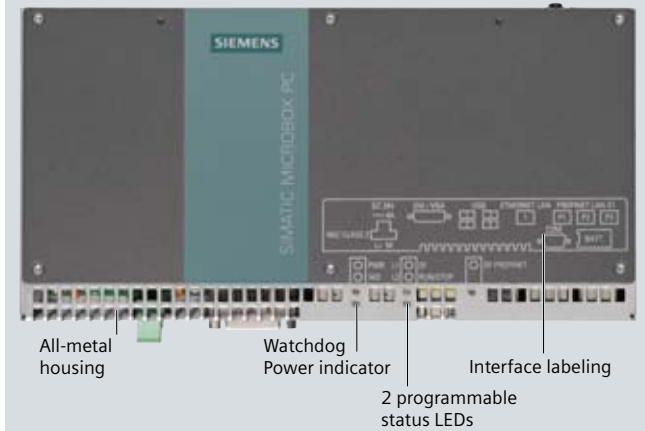


The SIMATIC Microbox PC 427B can be easily snapped onto DIN rail, e.g. in combination with an ET 2005

SIMATIC Microbox PC 427B: Connections and Expansions



Drive options: ≥ 80 GB, Flash-Drive, others via USB



The Microbox PC is also available as a compact Panel PC 477B with brilliant display.

→ [More details on page 19](#)

The SIMATIC Microbox PC can be easily and flexibly expanded with a central I/O.

→ [More details on page 34](#)



With the new front portrait assembly kit, the SIMATIC Microbox PC is attached to the mounting wall with its smallest surface to save valuable mounting space. When using the kit, the user interfaces are arranged on the front for improved user-friendliness.

Further mounting options:

- Portrait assembly with interfaces arranged on the bottom/top
- and wall mounting with brackets

SIMATIC Box PC 627B

Maximum performance in minimum space with Intel Core2 Duo processors



The SIMATIC Box PC 627B stands out due to its high performance for the processing of large data volumes and demanding visualization solutions at ambient temperatures of up to 55 °C.

It forms part of the scalable SIMATIC Box PC range with identical performance characteristics and the same footprint as the Box PC 827B.

Furthermore, it is equipped with powerful and energy-saving Intel Core2 Duo processors as well as the latest generation of chipset and memory technology.

A front portrait assembly kit and mounting bracket allow for the flexible and space-saving installation in control cabinets with a high level of user friendliness as all interfaces are accessible from the front.

In addition, the SIMATIC Box PC 627B is equipped with:

- Main memory expandable up to 4 GB,
- High data transfer rates thanks to two teaming-capable Gigabit Ethernet connections,
- CompactFlash drive slot, easily accessible from the outside, for the assembly of low-maintenance, diskless systems, and
- Externally accessible battery compartment for fast replacement of the CMOS battery even when installed.

For fast diagnostics of the operating state and display of the BIOS start-up, the Box PC 627B offers two freely programmable 7-segment displays with two additional status LEDs, e.g. for acknowledging data transfer.

The Box PC 627B is also available as a compact Panel PC 677B with brilliant display.



→ More details on page 21

SIMATIC Box PC 627B: Connections and Expansions

All-metal housing, built-in unit, also suitable for portrait assembly

Expansion slots:
2 x PCI (1 x short, 1 x long)
optional 1 x PCI and 1 x PCIe x4

Power Supply
120 / 230 V AC

On-/Off switch

Optical drive:
DVD +/-R/RW

Power supply fan



1 x internal LVDS
for connecting an LCD monitor

1 x DVI-I (VGA via adapter)

Installation slot for Compact Flash Card
(accessible from outside)

COM1: Serial interface 1

4 x USB 2.0 interfaces

2 x Gigabit Ethernet connection
for 10/100/1000 Mbit/s

3 x PROFINET connection
for 10/100 Mbit/s (optional)

Externally accessible battery
compartment for fast replacement of the CMOS battery



On rear:
Freely programmable
2 x 7-segment display, 2 x LEDs

NEW SIMATIC Box PC 827B

Maximum performance and high flexibility with Intel Core2 Duo processors



The new SIMATIC Box PC 827B is a rugged and flexibly expandable control cabinet PC for machine-level applications in 24-hour continuous operation at ambient temperatures of up to 55 °C.

It forms part of the scalable SIMATIC Box PC range and features the following consistencies with the Box PC 627B:

- identical performance characteristics,
- identical footprint,
- image compatibility.

For maximum performance and high flexibility, the Box PC 827B is equipped with powerful and energy-saving Intel Core2 Duo processors as well as the latest generation of chipset and memory technology.

In addition, the SIMATIC Box PC 827B is equipped with:

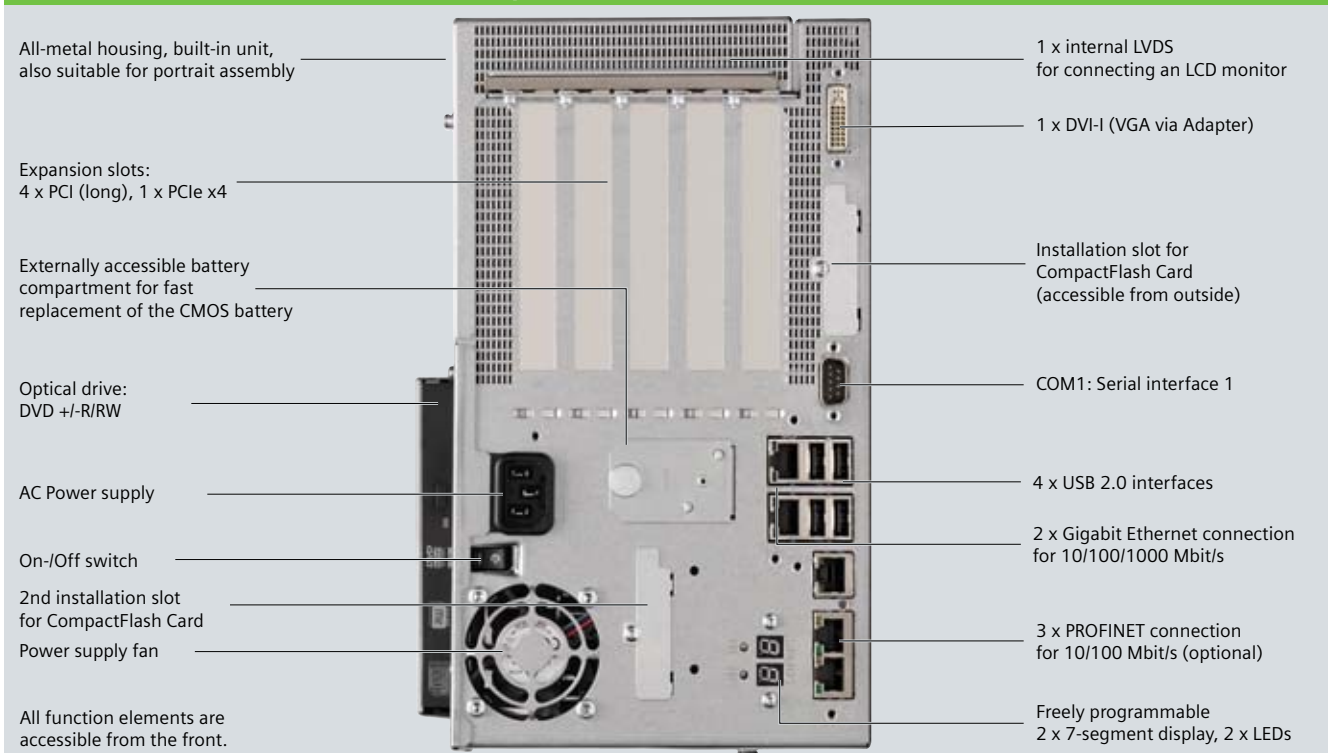
- Main memory expandable up to 4 GB,
- High data transfer rates thanks to two teaming-capable Gigabit Ethernet connections,
- Two CompactFlash drive slots, easily accessible from the outside, for the assembly of low-maintenance, diskless systems, and
- Externally accessible battery compartment for fast replacement of the CMOS battery even when installed.

For fast diagnostics of the operating state and display of the BIOS start-up, the Box PC 827B offers two freely programmable 7-segment displays with two additional status LEDs, e.g. for acknowledging data transfer.

A front portrait assembly kit and mounting bracket allow for the flexible installation in control cabinets with a high level of user friendliness as all function elements and interfaces are accessible from the front.



SIMATIC Box PC 827B: Connections and expansions



SIMATIC Panel PC

Rugged and powerful industrial PCs with brilliant displays

SIMATIC Panel PCs demonstrate their great strengths in machine-level operation and monitoring applications and master further tasks as powerful industrial PCs: Open- and closed-loop control, data processing and motion control are just a few examples.

Thanks to their rugged design, SIMATIC Panel PCs are ideally suited for production processes in harsh industrial environments. Operation via the touch screen or membrane keyboard meets all requirements in this application area. The rugged fronts (IP65) are equipped with luminous displays in different sizes (12", 15", 19" touch, 12" and 15" keys). USB interfaces on the front facilitate start-up and service.

Panel PCs of different performance classes feature the same installation dimensions, which enables you to respond flexibly to changing requirements anytime.



	Panel PC 477B Very compact, rugged and maintenance-free in embedded technology	Panel PC 577B Industrial functionality at an attractive price	Panel PC 677B ¹⁾ Maximum performance – compact and highly communicative
Available operating systems	Windows XP embedded	Windows XP Professional (MUI)	Windows 2000 (MUI), XP Professional (MUI), XP Embedded, Vista Ultimate (MUI)
Available memory media	Flash drive with 1...4 GB internal; optional 1...4 GB, replaceable from the outside	HDD 80 GB or higher; 1 slot for CompactFlash card	HDD 80, 160 GB; 2 x 80 GB; RAID1, 2 x 80 GB; 1 x flash drive up to 4 GB, second flash drive up to 4 GB optional
Networking options (onboard)	2 x Gigabit-Ethernet ²⁾ 1 x MPI/PROFIBUS (optional) 3 x PROFINET (optional)	2 x Gigabit Ethernet	2 x Gigabit Ethernet 1 x MPI/PROFIBUS (optional) 3 x PROFINET (optional)
Expandability with cards	Up to 3 x PCI-104 (with expansion frame)	2 x PCI	2 x PCI or 1 x PCI and 1 x PCI-Express x4
Integrated retentive memory	2 MB (128 KB can be used for WinAC)		2 MB (128 KB can be used for WinAC) (only 24 V DC)
Installation depth	from 75 mm	121 mm	104 mm
Long-term availability			
Availability	3 to 5 years	At least 2 years	3 to 5 years
Repair and spare parts service	5 years	3 years	5 years
Industrial compatibility			
Shock/vibration	5g / 1g	1g / 0.25g	5g / 1g
Ambient temperature	5 ... 45 °C (or 5 ... 50 °C in installation room if max. 40 °C at front)		
Options for increased system availability			
Second hard disk	–	–	■
Mirror disk technology (RAID1)	–	–	■
Diagnostics SW: DiagMonitor	■	■	■
Backup software: Image Creator	■	■	■



¹⁾ The predecessor product Panel PC 677 is still available.

²⁾ With PROFINET onboard 1 x Ethernet

SIMATIC Panel PC 477B

Compact, rugged and maintenance-free in embedded technology

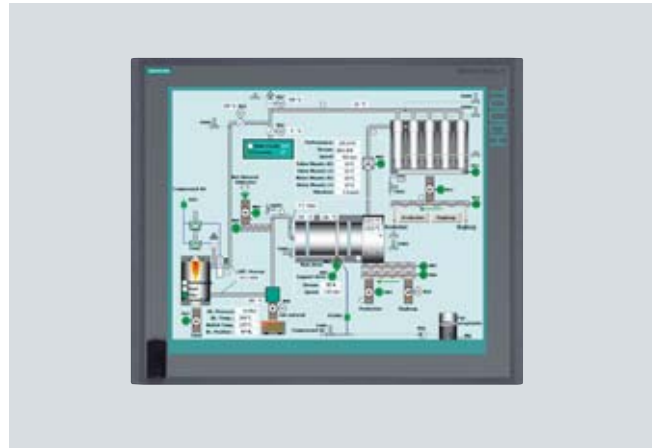


The SIMATIC Panel PC 477B in powerful Pentium M technology with high-performance graphics perfectly meets the requirements placed upon a rugged, maintenance-free and safe system: With its small installation depth and display sizes of 12", 15", or

19", the operating panel of a machine can be accurately adjusted to the requirements of the respective solution.

The Windows XP embedded operating system, installed on a CF card, offers the openness of a PC while at the same time ensuring the ruggedness of an embedded system. By doing away with hard disk and fan, the Panel PC 477B is service-friendly and maintenance-free. A retentive data memory ensures that process data are retained in the event of a power failure. A second CF card slot is accessible from the outside and, for example, facilitates individual data archiving. Availability is increased by enhanced protection against viruses and unauthorized program modifications.

- 2 Gigabit Ethernet interfaces (teaming-capable) and
- 1 PROFIBUS interface onboard, or optionally
- 1 PROFINET interface (3 x RJ45, CP 1616 compatible) onboard.



Brilliant 19" display

- Expandable via 3 PCI-104 card slots and 5 USB ports, one of which is arranged on the front.
- Second CF card slot, externally accessible.

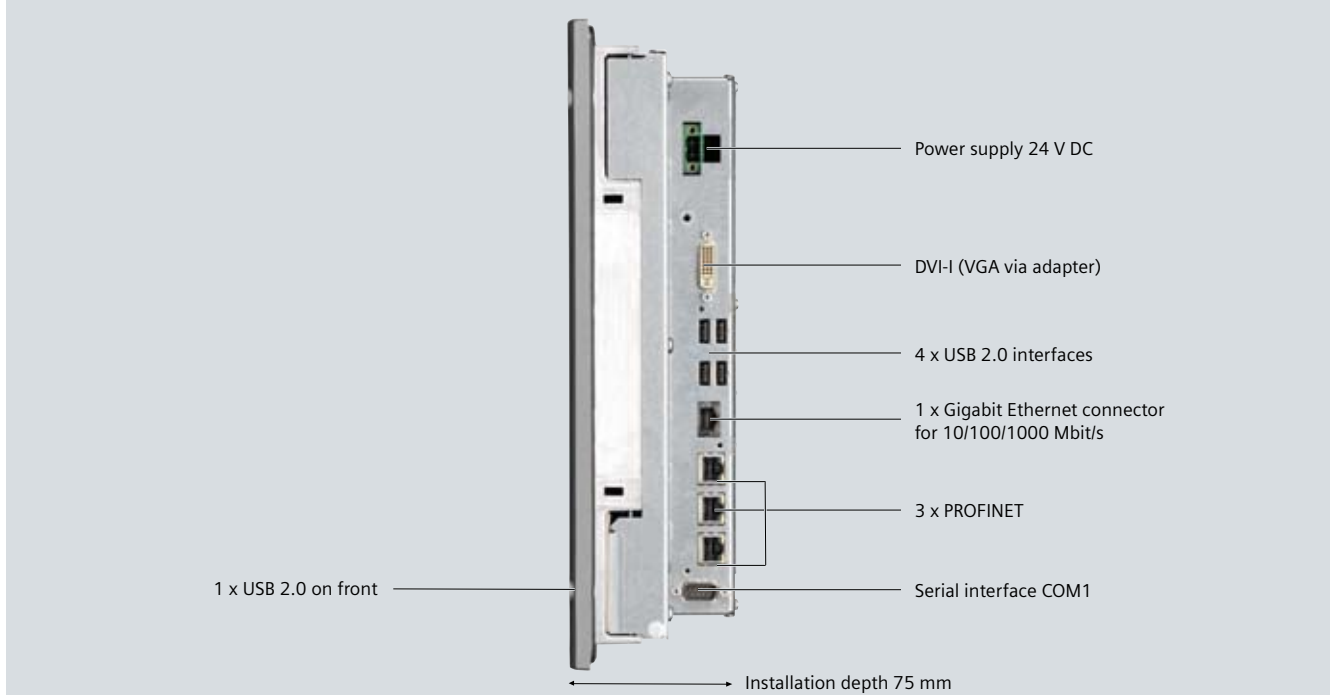
A version without display is available as Microbox PC 427B.

→ [More details on page 15](#)

Turnkey systems with pre-installed software are available for embedded automation.

→ [More details on page 33](#)

SIMATIC Panel PC 477B: Connections of the PROFINET version



SIMATIC Panel PC 577B

Industrial functionality at an attractive price



With its attractive price and tried-and-tested functionality, the SIMATIC Panel PC 577B is the ideal entry product into the class of industrial panel PCs.

With the powerful 1.86 GHz Intel Mobile processor, the Panel PC 577B produces a

high computing power for industrial applications.

The compact device is supplied with a main memory of 512 MB as a standard. This can be upgraded to 4 GB.

The versatile basic configuration of the Panel PC 577B includes:

- 80 GB hard disk,
- CF card drive,
- 2 Gigabit Ethernet interfaces for fast transfer even of large data volumes,
- DVD burner and
- 5 high-speed USB ports (one on the front) for the connection of external devices such as drives for data backup.

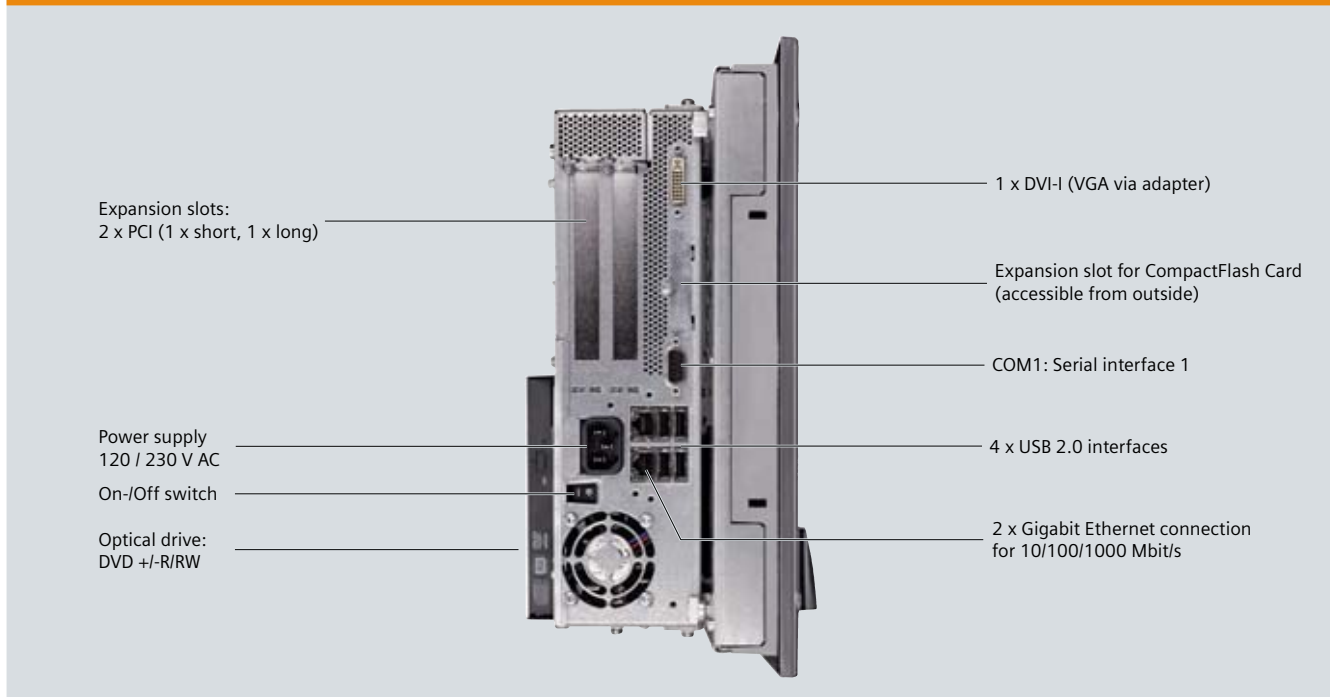


15" touch version

Thanks to their compact design with 2 PCI slots, the devices can even be employed in confined space conditions in the control cabinet or control panel.

Due to the high level of electromagnetic compatibility, the Panel PC 577B is also suitable for machine-level applications. Operation is realized via touch screen. Devices with 12", 15" and 19" displays are available. All versions are available ex-stock for fast delivery.

SIMATIC Panel PC 577B: Connections



SIMATIC Panel PC 677B

Maximum performance, compact and highly communicative



The SIMATIC Panel PC 677B is a convincing open PC platform for harsh industrial applications. Equipped with powerful processors, it is suitable for demanding visualization tasks and for the processing of large data volumes.

The SIMATIC Panel PC 677B is available in numerous versions with 12", 15", 17" or 19" display and attractive front design. Operation is realized via touch screen or keys. A new 15" touch INOX version is optimized for application in the food and beverages industry (also see page 25). The operator panel can be detached from the computer unit by up to 30 m using the remote kit. Higher system availability and data security can be achieved with the optional RAID1 mirror disk system (RAID1 controller onboard). The vibration- and shock-absorbing suspension of all hard disk modules further increases the ruggedness of the system.

A retentive data memory ensures that process data are retained in the event of a power failure. Alternatively to the PROFIBUS interface, also a CP 1616-compatible PROFINET interface (3 x RJ45) is available.

Panel PC 677B – maximum performance in minimum space with Intel Core2 Duo processors

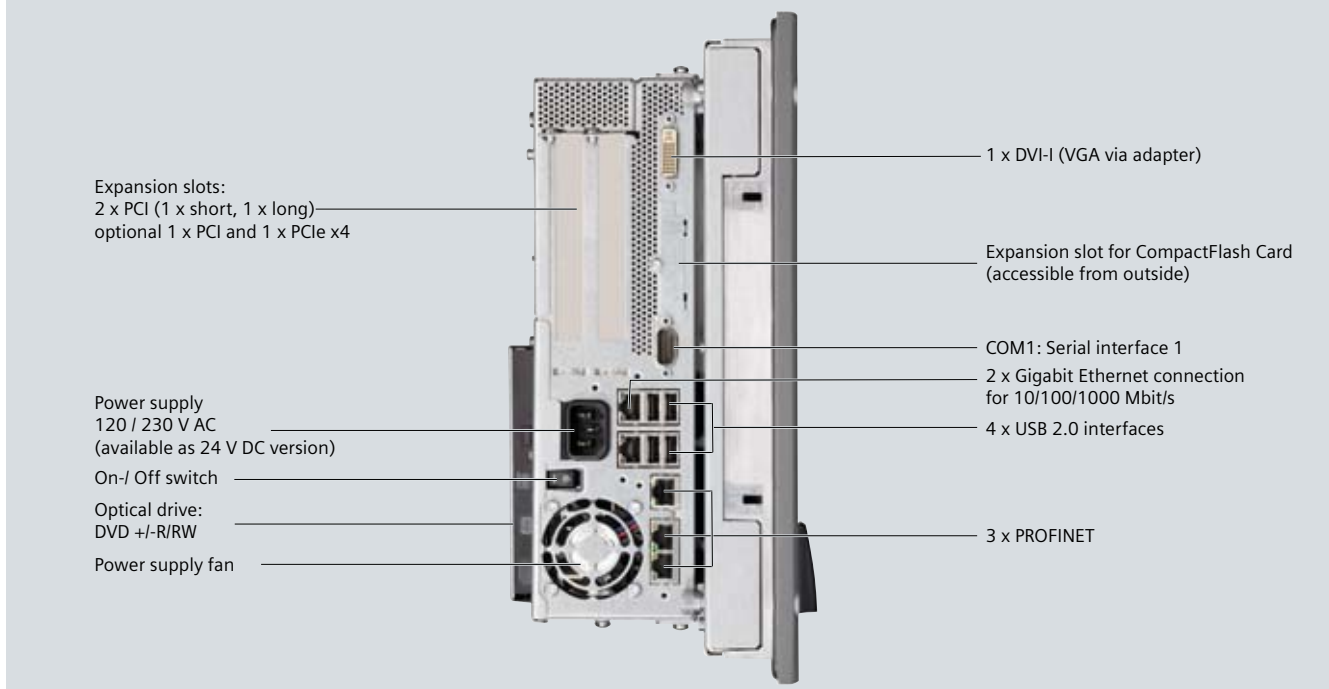
The SIMATIC Panel PC 677B is equipped with the currently most powerful processors (Intel Core2 Duo). 24-hour continuous operation on 365 days a year is also possible at high ambient temperatures thanks to the use of mobile processors with low power loss. The main memory can be expanded up to 4 GB.

Two Gigabit Ethernet interfaces (teaming-capable) ensure high data transfer rates.

A version without display is available as Box PC 627B.

→ [More details on page 16](#)

SIMATIC Panel PC 677B: Connections of the PROFINET version



Distributed assembly of computer and operator panel

SIMATIC offers various assembly variants for PC-based visualization and control solutions requiring a separate operation of the operator panel and the computer. For example, the operator panel of the Panel PC 677/677B can be detached from the computer unit by up to 30 m. Also flat-panel monitors can be operated in a distance of up to 30 m from the computer.

Thin clients communicate via Industrial Ethernet. Distributed configurations can bridge long distances in this case.

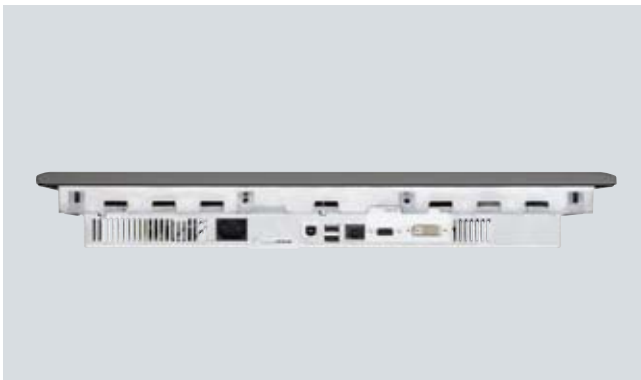
Flat-panel monitors Brilliant LCD monitors for industrial applications

The SIMATIC flat-panel monitors are characterized by their fail-safe concept, long service life and industrial-standard design. They are fully suitable for industrial use even with vibration loads up to 1g and shock loads up to 5g. Dust and humidity are no problem thanks to degree of protection IP65/NEMA4.

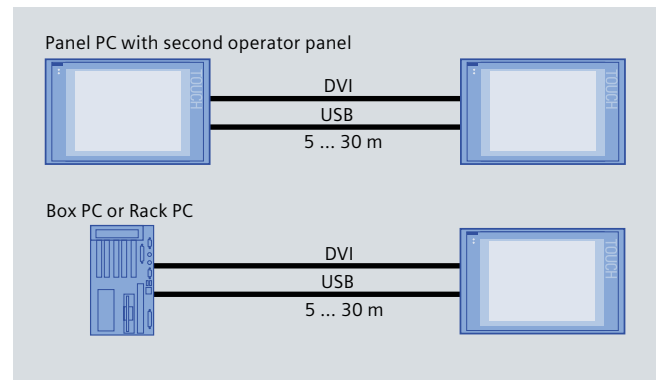
The flat-panel monitors are equipped with a mineral glass pane which offers a high mechanical protection against pressures and scratches and ensures an increased service life with brilliant readability. SIMATIC flat-panel monitors are available in display sizes 12", 15", 17" and 19", with touch operation, or as a display-only unit. They are suitable for the same installation cutouts as the corresponding panel PCs.

Improved working quality results from even brightness, high picture resolution, outstanding anti-reflective properties and reading angles greater than 170° horizontal and vertical. The flat-panel monitors are therefore even superior to conventional CRT monitors and LCD monitors. They facilitate fatigue-free working and reduce the probability of mistakes.

The flat-panel monitors are both equipped with the modern DVI-D digital interface and the analog VGA interface and can therefore be connected to current as well as future PCs. Flat-panel monitors can also be operated in operator consoles which are detached by up to 30 m from the computer unit. Versions with shipbuilding certification are available. An Ex certification will be available soon.



Flat-panel monitors



Configuration example with flat-panel monitor

Distributed assembly of computer and operator panel for the Panel PC 677B



Panel PC with remote kit

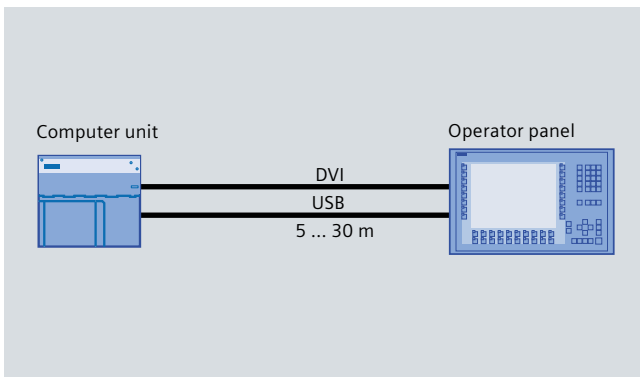
With the SIMATIC Panel PC 677B, the operator panel can be installed in a distance of up to 30 m from the computer unit. For this purpose, the optional SIMATIC Panel PC remote kit is required. This facilitates the spatial separation of operator panel and computer unit – also subsequently. You simply have to decouple the opera-

tor panel from the computer unit, attach the remote kit to the operator panel and connect it to the computer unit with the supplied cables. A driver need not be installed.

The distributed design of a panel PC is always recommendable if all options of a central solution are to be offered on the operator panel side. Compared to the use of an additional monitor, the distributed operator panel offers the benefits of status LEDs, USB interfaces and various keyboard versions.

Visualization and control solutions with the Panel PC 677B can also be realized if the ambient conditions necessitate a separation of the operator panel and the computer unit. This is, for example, the case with protruding booms, which may involve extreme acceleration rates while necessitating weight restrictions.

The remote kit can be used with all available PC 677B versions and is available for solutions with a distance between 5 and 30 meters and a power supply of 24 V DC or 110/220 V AC.



Configuration with Panel PC 677B and remote kit

SIMATIC thin clients Cost-favorable local operator stations



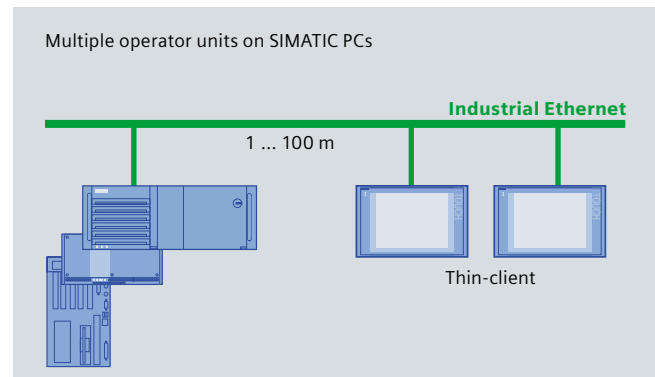
SIMATIC thin client

SIMATIC thin clients are cost-favorable operator stations which can be used in larger systems in addition to SIMATIC PCs. As remote operator terminals, they also allow for the use of SCADA, office or IT functionalities directly on site at the machine in addition to HMI connection.

SIMATIC thin clients always communicate with a host (SIMATIC Panel, Panel PC or server) via Sm@rtAccess (screen copy of panel on the client) or the Microsoft standard RDP (Remote Desktop Protocol) and therefore do not require installation, licenses or additional software on the device itself.

The SIMATIC thin clients have a color resolution of 64K colors and are available in versions with a 10" or 15" TFT display. Operation of the SIMATIC thin clients is realized via the touch screen or an external keyboard or mouse connected to the USB interface.

SIMATIC thin clients can be integrated in PROFINET/Ethernet networks. Alternatively, a point-to-point connection to the host is possible with an Ethernet cable. This allows for the bridging of distances of 100 m (or even more with a switch).



Configuration example with thin clients

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 hood for optimum service friendliness.
- Highest compactness and low weight for easy mounting
- Easy adjustability to changing requirements thanks to modular expansions



Panel PCs and HMI operator stations with stainless-steel fronts



Panel PCs with stainless-steel front are designed for application in the food, beverages and tobacco industry for the operation and monitoring of food-processing machines. They are characterized by easy cleaning and disinfection, resistance, splitter protection of the display and high degree of protection.

They are characterized by easy cleaning and disinfection, resistance, splitter protection of the display and high degree of protection.

Advantages at a glance

- Resistant and rugged stainless-steel fronts with polished surface for easy cleaning
- Optimized frame design with slight projections to the cabinet and for allowing liquids to run off
- Minimized grooves and gaps as well as increased resistance to cleaning and disinfection agents
- Non-migrating, food-safe sealing material (flat sealing in accordance with FDA 21 CFR 177.2006) and display splitter protection for the prevention of food contaminations
- The device front is based on DIN EN 1672-2
- Decorative film tested against chemicals according to DIN 42115, Part 2
- Proven functionality of the SIMATIC HMI standard products

Stainless-steel HMI operator stations

The ergonomic and functional HMI operator stations (up to degree of protection IP66k overall) are accommodated in stainless-steel control cabinets and feature tested thermal parameters.

The equipped and wired turnkey solutions are based on the hygienic design requirements of the food, beverages and tobacco industry and other hygienic and wet environments, as well as the pharmaceutical and fine chemical industries.

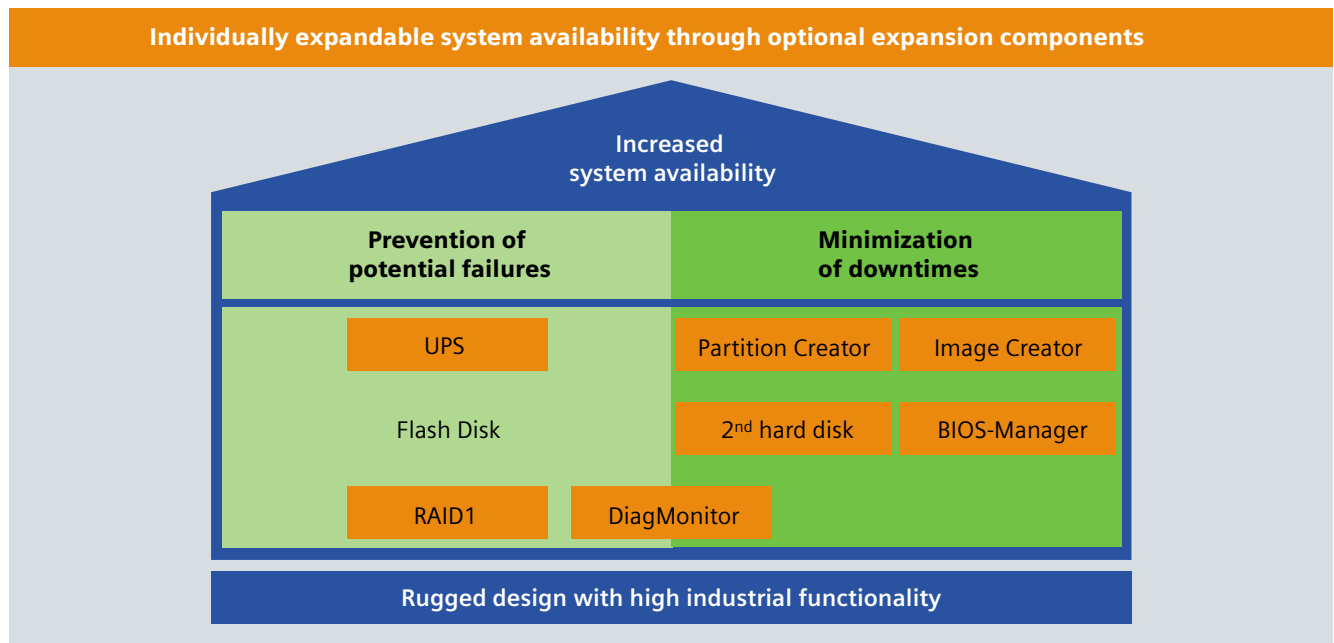
SIMATIC Panel PC 677B with 15" touch screen

Front	Panel PC 677B
Material / surface	Stainless-steel 1.4301, polyester foil / polished, grain size 240
Sealing	EPDM
Special features	Optimized frame profile, angled surfaces
Ambient conditions	
Degree of protection	Front: IP66k, Rear: IP20
Ambient temperature during operation	5 ... 45 °C in maximum configuration
Relative humidity	5 ... 80 % at 25 °C (no condensation)
Transport and storage temperature	-20 ... +60 °C
Certification	cULus, CE
Dimensions	
Front panel (W x H) in mm	483 x 310
External dimensions of the clamping frame (W x H) in mm	495 x 322
Weight, approx.	15 kg

Individually configurable system availability

The rugged design and high industrial suitability make SIMATIC industrial PCs highly available. For applications with individual system availability requirements, we offer

a matched range of optional expansion components. This enables you to detect potential failures early and to effectively minimize actual downtimes.



Prevention of potential failures – to exclude damage right from the start!

- Options for the prevention of potential failures include:
- Uninterruptible power supplies (UPS)
 - Flash disk as safe bulk memory
 - RAID1 configuration (automatic mirror disk system)
 - SIMATIC PC DiagMonitor diagnostics and signaling software

Minimization of downtimes – to get your system up and running again quickly!

Once a system has come to a standstill due to a fault, it is of the essence to minimize such downtimes and the respective costs. SIMATIC PCs therefore offer expansion options to rapidly restore your system's operability.

- These include:
- Second hard disk
 - Back-up software: SIMATIC PC Image Creator
 - Software for partition management: SIMATIC PC Partition Creator
 - BIOS data management software: SIMATIC PC BIOS Manager

Prevention of potential failures

To exclude damage right from the start!

SIMATIC PCs offer expansion options for the prevention of potential failures. They offer protection against unnecessary consequential costs, e.g. caused by data loss, and ensure the continuously high availability of your system.

Uninterruptible power supplies (UPS)



The rugged industrial PC power supply units of SIMATIC PCs bridge voltage drops of up to 20 msec (in accordance with NAMUR requirements). The uninterruptible SITOP and Masterguard power supplies with 24 V DC or 115/230 V AC or customized UPSs are available for non-

stop use during longer power failures. Advantage: The system can reliably save important data and shut down in a controlled manner.

Further information is available at:
www.siemens.com/sitop-ups
www.masterguard.com

Flash disk as safe bulk memory



System availability can be further increased with a CompactFlash drive (flash disk) instead of a hard disk. This rugged bulk memory is approved for higher vibration, shock and temperature values and offers an availability which is significantly higher than that of a hard disk. Furthermore, the flash

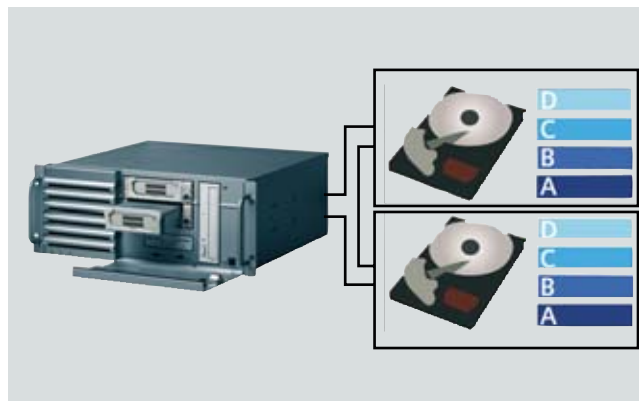
disk is an electronic bulk memory medium in which the data are retained even after the disconnection of the power supply. It thus represents a safe protection of your operating system and application.

The SIMATIC PC CompactFlash cards with up to 4 GB capacity are system-tested with SIMATIC PCs.

RAID1 configuration (automatic mirror disk system)

SIMATIC PCs with RAID1 configuration save all data through automatic parallel mirroring on two hard disks. If one of the two drives fails, all data are nevertheless retained. The redundant architecture offers the following advantages:

- Reliable prevention of data losses in case of hard disk failure as a simultaneous failure of both disks is highly improbable.
- The system remains executable after failure of one hard disk.
- Automatic data security without intervention by the user.
- After replacement of a defective hard disk, the mirror system is automatically restored by means of "Auto Rebuild".



Increased data security thanks to RAID1 configuration

Diagnostics and signaling functions

Detection and prevention of potential failures

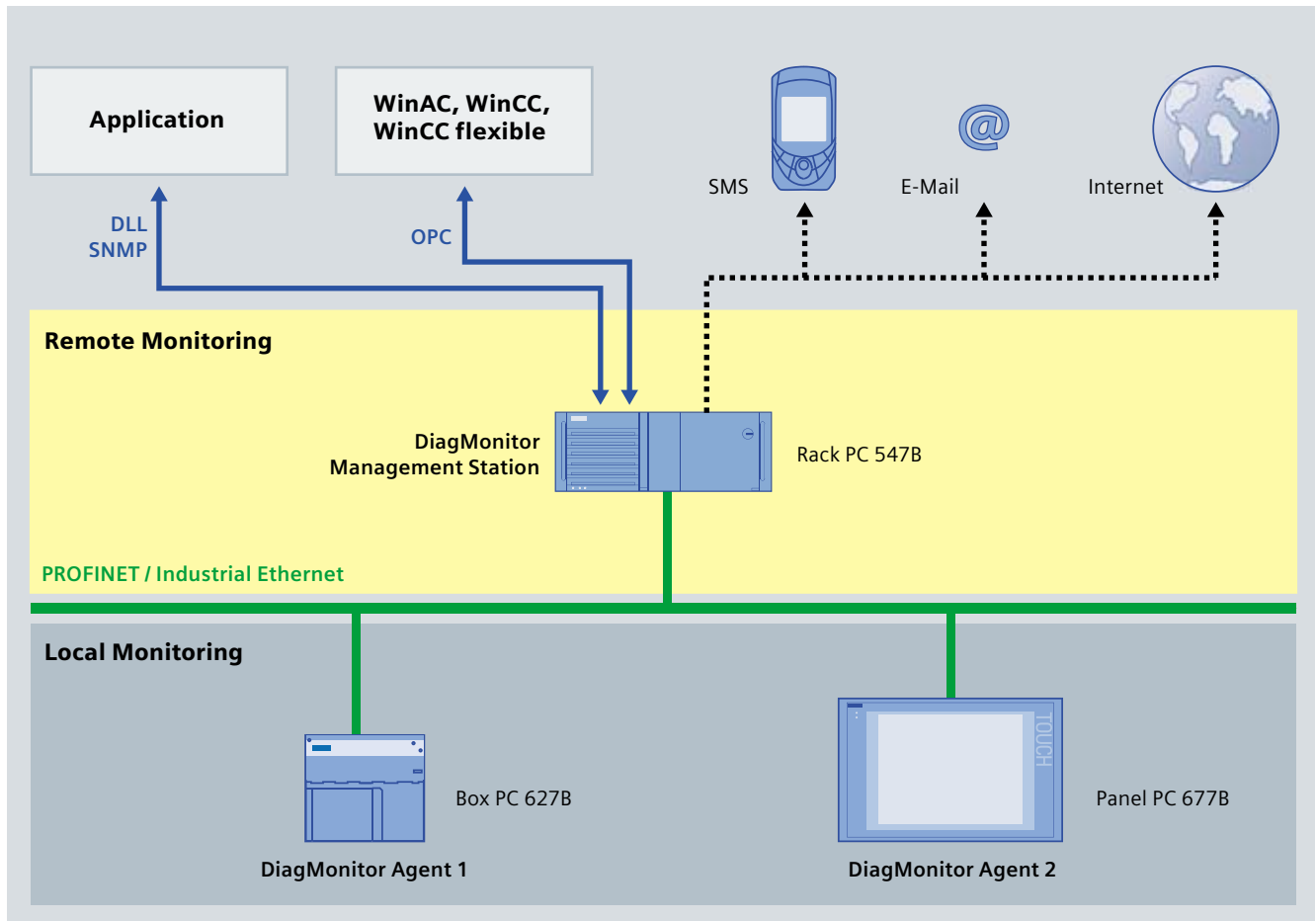
The SIMATIC PC DiagMonitor detects possible hardware and software faults. It monitors, signals and visualizes the operating states of SIMATIC PCs both locally and remotely. You are thus able to prevent downtimes and reduce the respective costs by taking preventive measures at an early stage.

DiagMonitor alerts the user, automatically executes programs and logs all events. This way, faults are rapidly detected and potential system failures efficiently prevented. The diagnostics messages are automatically forwarded to the user via LAN, e-mail or text message, or via OPC for direct alarm infeed in the software application (e.g. WinCC flexible, WinCC, WinAC and other OPC-capable software).

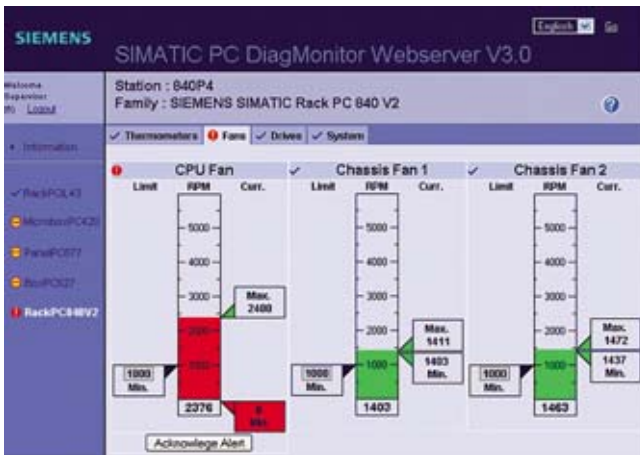
With the integrated web server, diagnostics data can be viewed and managed with an Internet browser via http or https connection, irrespective of location, PC architecture and operating system.

Access rights to the monitoring data can be individually assigned and managed for the users.

The time synchronization function integrated in DiagMonitor facilitates operation of the industrial PCs without CMOS battery. This additionally reduces the maintenance costs.



SIMATIC PC DiagMonitor monitors, signals and visualizes the operating states of SIMATIC PCs both locally and remotely.



Web server display: Online monitoring of all fan speeds (CPU and enclosure fans) as well as signaling and visualization of exceedance/shortfall or fan failure via Internet browser.

Advantages of SIMATIC PC DiagMonitor at a glance

Productivity increase – through the prevention of potential failures

- Diagnostics and signaling functions for PC temperature, fan, hard disks (SMART), system status (watchdog)
- Hour meter for preventive maintenance
- Operating data recording and evaluation option
- Integrated log function, comprehensive text messages and online help in German and English

Cost reductions – through minimization of downtimes

- Fast information via e-mail, text message or http/https via web server
- Fast response through communication with the application via OPC and SNMP

Example: Hour meter

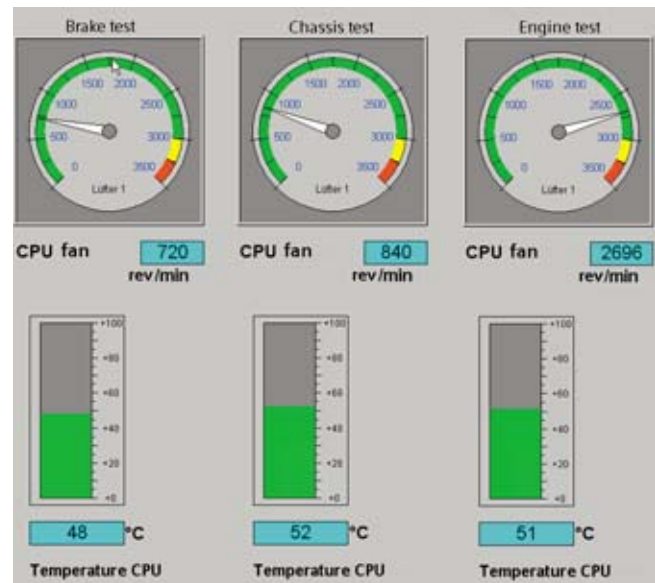
Using the hour meter, you cannot only define the maintenance intervals for your SIMATIC PC, but also for further devices in your plant. You are thus informed on the dates for preventive maintenance measures in due time, e.g. replacement of the CMOS battery of the industrial PC or filter change of a pump.

Example: Text message and alarm functions

The SIMATIC PC DiagMonitor automatically signals, amongst others, exceedance/shortfall of the permissible operating temperature. For example, an alarm via text message informs the servicing personnel of an exceedance of the permissible processor temperature caused by contaminated filter mats.

Example: Visualization, logging and archiving functions

Thanks to the automatic recording and graphical output/analysis option, the operating data of the SIMATIC PC can be documented, evaluated and archived for plant/machine quality assurance.



The monitoring data of the DiagMonitor can be visualized and logged in a SCADA system such as SIMATIC WinCC.

Minimization of downtimes

To get your system up and running again quickly!

Once a system has come to a standstill due to a fault, it is of the essence to minimize such downtimes and the respective costs. SIMATIC PCs therefore offer expansion options to rapidly restore your system's operability.

Second hard disk

The use of a second hard disk offers the following benefits to the user:

- Easy and fast data back-up of the entire installation and the user data in combination with the SIMATIC PC Image Creator.
- After destruction of a software installation or in case of hard disk defects, the system can be immediately put back into operation by booting the back-up disk.
- Fast download of the last saved hard disk image to the working disk.

SIMATIC PC Image Creator

With the SIMATIC PC Image Creator, the preventive back-up and restoration of partitions and complete hard disk contents can be organized efficiently:

- Flexibly applicable through direct start from the original CD via mouse click on desktop icon (1ClickImage) or bootable SIMATIC PC USB FlashDrive.
- Hard disk contents and partitions can be backed up easily via menu-driven operation.
- Fast, bit-accurate restoration of the last saved database makes new installation unnecessary.
- Comfortable duplication of complete software fillings (images) of devices with the same equipment and application purpose allows for the fast replacement of complete devices in service cases.
- Back-up of the hard disk image on an additional storage medium (2nd hard disk, integrated burner, external USB drive) or restoration from this drive to the hard disk.



Easy start of the back-up process via desktop icon

SIMATIC PC Partition Creator

In addition to the functionality of the Image Creator, the Partition Creator contains functions for the targeted modification of the hard disk partitioning:

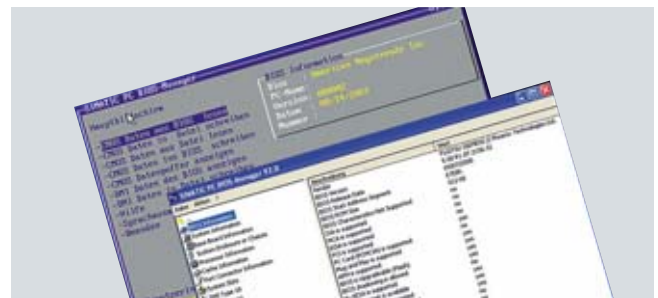
- Expansion and reduction of existing system and data partitions as well as creation of new and deletion of existing partitions
- Optional installation of a boot manager
- Existing installations are retained
- CD autostart menu under Windows:
 - Easy, menu-based installation and creation of a boot disk or a bootable USB stick.
 - Multimedia support through "Virtual Manual" and optimized "Getting Started" for faster start-up.

Current CD/DVD writers and USB storage media can be used. For example, booting from CD is also possible with optical USB drives. The optimized operating menus work without a return to the DOS level.

SIMATIC PC BIOS Manager – for easy and safe BIOS data management

With the SIMATIC PC BIOS Manager software tool, BIOS data of SIMATIC PCs can be processed under DOS/Windows. The functionality includes the reading of data from the BIOS, saving of the data to a file with specification of a user text and copying back of the saved BIOS setup (CMOS) data to the BIOS.

- Easy and safe duplication of configured CMOS data on further SIMATIC PCs of the same design
- Uncomplicated on-site BIOS setup restoration without re-booting, directly under Windows
- Easy archiving of PC system data for quality management requirements.



Processing of BIOS data under DOS and Windows

Control, operation and monitoring options

A range of hardware and software options is available for PC-based automation. Optimum interaction of these options and SIMATIC PCs is guaranteed as a result of joint development and comprehensive system tests. Packages consisting of hardware and software offer special advantages.



WinAC RTX – realtime and deterministic control

The WinAC RTX software PLC is used when high performance, strict realtime and deterministic behavior are required for the automation

task or when large data volumes are involved.

The performance of WinAC RTX can be scaled across the PC platform. Applications range from machine-level control tasks with rugged embedded PCs to high-end applications on PCs with the latest technology. Especially in combination with the SIMATIC PCs of the 4xx and 6x series, that are equipped with a remanence memory that is fail-safe in case of power failures, WinAC RTX obtains an operational reliability similar to that of conventional SPS solutions.

WinAC slot PLC – for enhanced availability and operational reliability

The WinAC slot PLCs provide enhanced availability and operational reliability. Regarding performance and instruction set, they are based on the powerful S7-400 CPUs and facilitate Windows-independent control.

The slot PLCs are capable of instruction-accurate restart and continue the user program directly at the point of interruption. In conjunction with an external 24 V power supply, the user program can be processed independently of the PC.

Communication over all levels

SIMATIC WinAC offers the complete performance range of S7 communication via PROFIBUS and Industrial Ethernet.

SIMATIC WinCC flexible – innovative HMI software

The engineering software facilitates the consistent configuration of all Windows-based SIMATIC HMI operator panels, from the smallest micro-panel to the solution on the PC. WinCC flexible Runtime contains a signaling and logging system and can be specifically expanded by options if required.

Maximum configuration efficiency

The WinCC flexible engineering software is based on the latest software technologies. It is available in five languages (including ASIA version with four Asian languages) and, in addition to a simple user interface, provides the configuration engineer with:

- Libraries with preconfigured objects and reusable faceplates
- Intelligent tools for the easy creation of projects, graphical configuration of an image hierarchy and motion paths as well as configuration of bulk data
- Support of multilingual configurations with automatic text translation and text export/import function

Innovative HMI and automation concepts

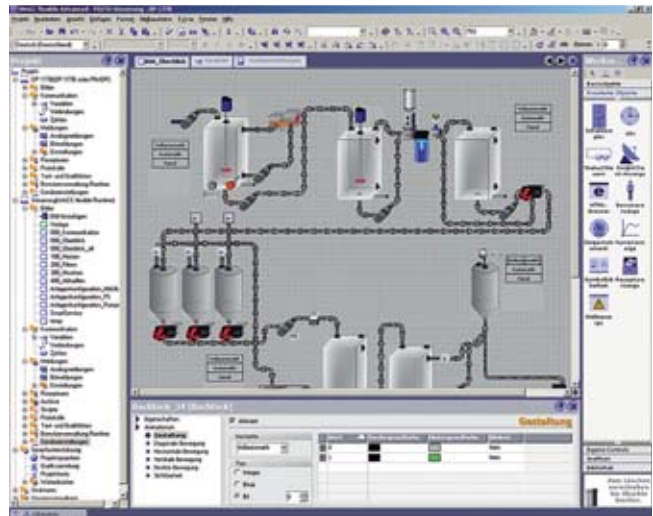
With the WinCC flexible/**Sm@rtAccess** option, operating stations can access each others' variables and images on the basis of TCP/IP communication.

Service and diagnostics via the Internet

The WinCC flexible/**Sm@rtService** option facilitates new service concepts such as remote operation of on-site stations via the Internet, download of projects or download/upload of recipes.

Traceability and easy validation

The WinCC flexible *Audit* and *ChangeControl* options offer a high degree of support to machine and system manufacturers who must meet high quality requirements both with regard to the products to be manufactured as well as with regard to compliance with legal requirements in terms of traceability in accordance with EU 178/2002 and 21 CFR Part 11.



Configuration software WinCC flexible

Control, operation and monitoring options

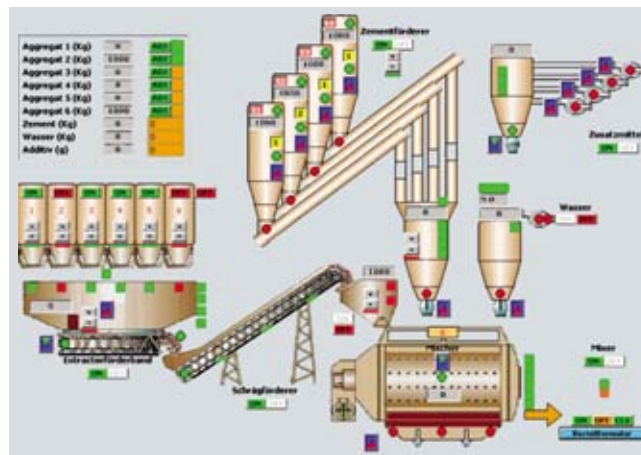
SIMATIC WinCC – scalable process visualization with plant intelligence

SIMATIC WinCC is a price- and performance-graded process visualization system for all sectors, even down to the pharmaceutical industry, where respective options comply with the requirements of 21 CFR Part 11.

WinCC offers SCADA functionality – from single-user down to distributed multi-user systems with redundant servers and cross-location solutions with web clients. In particular, WinCC is characterized by absolute openness. Via open interfaces, system houses can develop individual applications and install system expansions on WinCC. With the integrated process database, WinCC forms the information hub for company-wide, vertical integration.

The advantages at a glance

- Universally applicable
 - Solutions for all sectors
 - Meets requirements in accordance with 21 CFR Part 11
 - Multi-lingual for world-wide use
 - Can be integrated in all automation and IT solutions
- All operating and monitoring functions onboard
- Easily and efficiently programmable
- Continuously scalable – also online
- Open standards for easy integration
- Integrated MS SQL server for archiving data as information hub
- More transparency for production through plant intelligence
- Expandable via options and add-ons
- Part of Totally Integrated Automation



WinCC application example in cement production

SIMATIC Panel PC packages

The SIMATIC Panel PC packages with the runtime software of WinCC and WinCC flexible offer all advantages of operation and monitoring on an optimally matched panel PC hardware and provide cost savings compared to the purchase of individual products.

SIMATIC embedded automation

Turnkey automation products

Embedded automation represents the combination of hardware and software which is ready-to-use and pre-configured for specific automation tasks.

Typical tasks for embedded automation:

- Control
- Visualization
- Technology and motion control functions
- Data processing
- Communication

Embedded automation combines the openness of PCs with the ruggedness of PLC-based controllers. Thanks to the fan-free and diskless design, SIMATIC embedded PCs and multi-panels can be used in harsh environments directly on the machine. The pre-configured Microsoft Windows XP Embedded or Windows CE operating system is optimally adjusted to automation tasks.

Display, operation elements, HMI, technology and motion control functions can already be integrated along with interfaces to field buses and Industrial Ethernet. This provides rugged, compact, and cost-favorable devices for data-intensive tasks.



Embedded automation – the portfolio

- The open embedded solution with focus on control: SIMATIC Microbox 427B-RTX
- The open embedded solution with focus on technology and motion control: SIMATIC Microbox PC 420T
- The open embedded solution with focus on visualization: SIMATIC Panel PC 477B-HMI/RTX
- The embedded solution with focus on compactness and cost efficiency: SIMATIC Multi Panels 277 and 377 with WinAC MP 2007

Advantages

- Turnkey embedded automation products with pre-installed software for PLC, HMI, and motion control functions
- Open, flexible, and expandable thanks to Windows XP Embedded or Windows CE and PC interfaces
- Extremely rugged thanks to fan-free and diskless design
- High-performance thanks to realtime and deterministic software PLC
- Data remanence through integrated SRAM/MRAM

Functions of the embedded automation products

Product	Control	Visualization	Technology and motion control	Openness and expandability
Versions based on embedded PCs				
SIMATIC Microbox 427B-RTX	■ ■	□	□	■ ■
SIMATIC Microbox 427B-HMI/RTX	■ ■	■	□	■ ■
SIMATIC Microbox 420-T	■	□	■ ■	■ ■
SIMATIC Panel PC 477B-HMI	□	■ ■	□	■ ■
SIMATIC Panel PC 477B-HMI/RTX	■ ■	■ ■	□	■ ■
Versions based on multi-panel				
SIMATIC WinAC MP 277/377	■	■ ■	□	■

■ ■ = Main functionality ■ = Secondary functionality □ = Optional retrofit

Original accessories for SIMATIC PCs

More than standard – perfectly suited for industrial applications

SIMATIC original accessories ensure the reliability of your automation solution. They are system-tested with SIMATIC PCs as well as SIMATIC programming devices and meet the high quality requirements with regard to EMC and functional application in industrial environments.

SIMATIC PC USB FlashDrive



With the 1 GB SIMATIC PC USB flash drive (USB 2.0), we offer a reliable memory medium for mobile data transport in a rugged metal enclosure. Thanks to effortless handling through plug & play, the USB flash drive is flexibly and immediately applicable – also as boot

medium or in low-maintenance applications which have to do without floppy or optical drives.

SIMATIC PC CompactFlash



Compared to hard disk drives, the application of the SIMATIC PC CompactFlash (256 MB to 4 GB) ensures safe data storage particularly with higher temperatures and vibration and shock loads. The long-term availability of the SIMATIC PC CompactFlash makes you

more independent from the market.

Central PC I/O



For especially high-speed and realtime-capable measuring, open- and closed-loop control tasks, the SIMATIC Microbox PC can be easily and flexibly expanded with central I/O. Via PCI-104 expansion slots, sensors/counters as well as digital and analog I/O modules are

integrated in a very compact manner with the help of expansion frames. In maximum configuration, this allows for the integration of up to 120 analog I/O, 320 digital I/O and 12 sensor/counter interfaces.

SIMATIC PC keyboards / mouse / touch pen



Whether 19" slide-in, full-stroke or IP65 membrane keyboard: SIMATIC PC keyboards are the ideal input devices. Optical wheel mouse on USB or PS/2 interface.

Our rugged, ergonomic touch pen ideally supplements our panel PCs by touch functionality. It ensures optimum operating comfort thanks to its simple undetachable mounting in the special holder beside the panel PC.

Printers



Whether printing of labels, large fonts and barcodes or the processing of continuous paper and single sheets – the industrial-standard matrix needle printers convince with their high printing speed and low noise level.

The printing volume reaches up to 26000 pages / month with up to 6 multiple-ups (1 original and 5 copies).

Front portrait installation kit



With the new portrait assembly kits, the SIMATIC Box PCs are attached to the mounting wall with their smallest surface to save valuable mounting space. This way, the interfaces are accessible on the front of the mounted Box PC for maximum user-friendliness. The already

existing mounting options (portrait assembly with interfaces on the bottom/top and wall mounting with brackets) are thus supplemented by a further practical option.

Technical data

Brochure · April 2008



SIMATIC PC

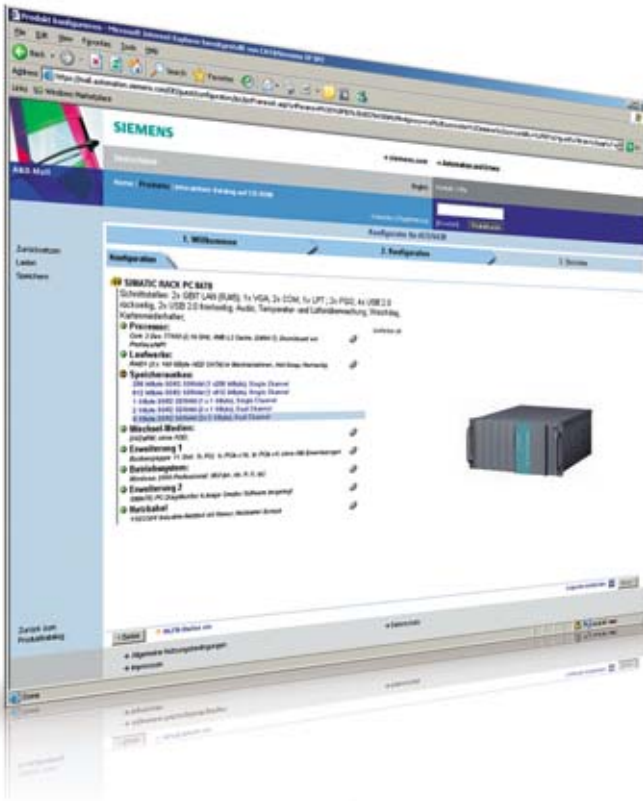
Answers for industry.

SIEMENS

Online configuration and ordering made easy!

With the SIMATIC PC online configurator, you can easily and individually assemble your industrial PC online in accordance with your requirements.

Configuration faults are excluded thanks to the automatic plausibility check. The connection to the Siemens Mall ensures the comfortable transfer of your data to the ordering process. The status indication provides information on the processing state of your order.



Advantages at a glance

- Complete and up-to-date SIMATIC PC product overview
- Easy selection and configuration – configuration faults are excluded
- All options at a glance
- Easy order placement via the Mall

SIMATIC PCs are available with already installed and activated Microsoft operating systems, e.g.

- Windows 2000
- Windows Server 2003
- Windows XP Professional
- Windows XP Embedded
- Windows Vista Ultimate



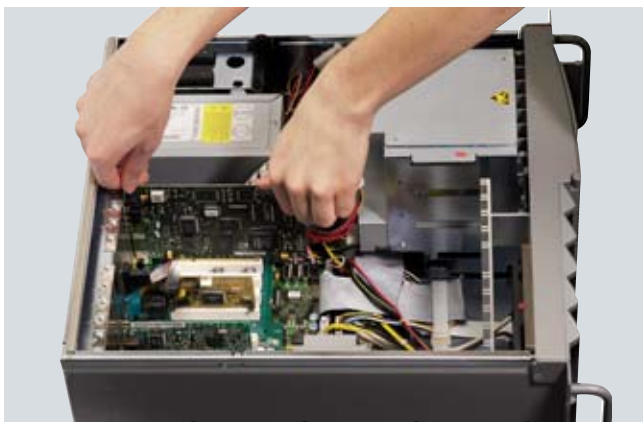
Customized adjustments

The SIMATIC PC Customization Centers convert the proven SIMATIC PCs into individual products and systems – exactly tailored to your specific requirements.



The portfolio comprises hardware modifications, software adjustments, individual service and support as well as logistics concepts. By benefiting from our long-standing and comprehensive customization know-how,

you gain more time to concentrate on your core competences. You profit from the quality, long-term availability, logistics and service and support of the SIMATIC PCs.



SIMATIC PCs are completely system-tested and supplied with plugged function cards.



SIMATIC PCs are available in customized versions, from special front designs to complete operator stations

Customized hardware and software adjustments

- **Customized design** with optical modification of SIMATIC PCs for adjustment to your individual machine and system design, e.g. by modification of the company logo or enclosure color.
- **Customized product modification** refers to the modification of the hardware and software functionality. For this purpose, you can select the SIMATIC PC standard components, the customized components and any additionally required software function expansions from a modular system.
 - e.g. additional modules, interfaces, drives or memory media, as well as various operating systems and drivers. Numerous function cards have already been evaluated for you, e.g. serial interface card, LAN card or graphics card. The system-tested expansions save commissioning time.
 - Turnkey products, e.g. HMI operator panels, comprise the complete wiring, all connections, enclosure solutions and suitable automation devices, including the required software. These solutions only have to be installed and connected to the power supply and data networks. All product modifications are specified, quoted, developed and supplied individually for the respective automation solution.

Customized service and support

Our customized service and support offers pre-sales and after-sales support concepts, such as:

- Individual repair agreements on site,
- Certifications and approvals in in-house type test laboratory

Customized logistics solutions

These, for example, include individually specified availability agreements for unchanged hardware and software versions of the products (design freeze). Furthermore, we offer our customers individual forms of delivery such as just-in-time or kanban.

Detailed information is available at:
www.siemens.com/customized-pc

SIMATIC PC – the more Industrial PC

More information on SIMATIC PC is available at:
www.siemens.com/simatic-pc

The optimum configuration for your application:
www.siemens.com/ipc-configurator

Online Service Tool PED – for fast information on the equipment of your SIMATIC PC and the management of your field inventory:
www.siemens.com/ped

After-sales support for SIMATIC PC:
www.siemens.com/ipc-asis

Information material for download:
www.siemens.com/simatic/printmaterial

Electronic ordering via the Internet with the A&D Mall:
www.siemens.com/automation/mall

Your personal contact partner is listed at:
www.siemens.com/automation/partner

Siemens AG
Industry Sector
Industry Automation
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90026 NUREMBERG
GERMANY

Subject to changes
Order No.: 6ZB5370-1BF02-0BB4
Dispo 26100
BS 0408 5.0 ROT 36 En / 822 226
Printed in Germany
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SIMATIC PC

Technical Data






Brochure · April 2008



SIMATIC PC

Answers for industry.

SIEMENS

	SIMATIC Rack PC 547B	SIMATIC Rack PC 847B	SIMATIC Microbox PC 427B	SIMATIC Box PC 627B	SIMATIC Box PC 827B
					
Design	19" rack, 4 HU		Embedded industrial PC	Box PC, built-in unit	
Installation	Prepared for telescopic rails, for horizontal and vertical installation, 19" mounting bracket can be removed from the outside; tower kit (optional) for conversion to tower PC		DIN rail, wall mounting	Wall mounting and portrait assembly	
General features					
Processor	Intel Core 2 Duo E6600 (2.4 GHz, 1066 MHz FSB, 4 MB L2 cache, EM64T, VT) Intel Core 2 Duo E4300 (1.8 GHz, 800 MHz FSB, 2 MB L2 cache, EM64T) Intel Celeron 440 (2.0 GHz, 800 MHz FSB, 512 KB L2 cache)	Intel Core 2 Duo T7400 (2.16 GHz, 667 MHz FSB, 4 MB L2 cache, EM64T, VT) Intel Core 2 Duo T5500 (1.66 GHz, 667 MHz FSB, 2 MB L2 cache, EM64T) Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1 MB L2 cache)	Intel Pentium M (1.4 GHz, 400 MHz FSB, 2 MB L2 cache, low-voltage CPU) Intel Celeron M (1 GHz, 400 MHz FSB, 512 KB L2 cache, ultra low-voltage CPU) Intel Celeron M (900 MHz, 400 MHz FSB, 0 KB L2 cache, ultra low-voltage CPU)	Intel Core 2 Duo T7400 (2.16 GHz, 667 MHz FSB, 4 MB L2 cache, EM64T) Intel Core 2 Duo T5500 (1.66 GHz, 667 MHz FSB, 2 MB L2 cache, EM64T) Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1 MB L2 cache)	
Main memory	From 512 MB DDR2 667 SDRAM (dual-channel support); DIMM; upgradeable to 4 GB	From 256 MB DDR2 667 SDRAM (dual-channel support); SODIMM; upgradeable to 4 GB	256 MB DDR2 SDRAM; 512 MB, 1 GB or 2 GB optional; retentive memory: Static RAM 2 MB	From 256 MB DDR2 667 SDRAM (dual-channel support); SODIMM; upgradeable to 4 GB; retentive memory: Static RAM 2 MB	
Free expansion slots	4 x PCI, 1 x PCIe x16, 2 x PCIe x1 (all long)	7 x PCI, 1 x PCIe x16 (PEG); optional plus 3 x PCIe x4 (all long)	Up to 3 x PCI-104 (with expansion frame)	1 x PCI (265 mm) and 1 x PCI (175 mm) or 1 x PCI (265 mm) and 1 x PCIe x4 (175 mm)	4 x PCI (265 mm) and 1 x PCIe x4 (175 mm) or 2 x PCI (265 mm) and 3 x PCIe x4 (175 mm)
Graphics	Onboard: Intel GMA950 graphics controller integrated in chip set; Dynamic video memory up to 128 MB; up to 2048 x 1536 pixels/16 bit/75 Hz Graphics card: NVIDIA Quadro NVS 285 (dual-head: 2 x VGA or 2 x DVI-D), PCIe x16; 128 MB; up to 2048 x 1536 pixels/32 bit/75 Hz (optional)		Onboard: Intel GMA900 graphics controller integrated in chip set; dynamic video memory up to 128 MB; CRT: 1600 x 1200/32 bit/up to 120 Hz DVI: 1600 x 1200 / 32 bit colors	Onboard: Intel GMA950 graphics controller integrated in chip set; dynamic video memory up to 128 MB VGA: 1600 x 1200 / 32 bit / 85 Hz DVI-I: 1600 x 1200 / 32 bit / 60 Hz LCD: 1280 x 1024 / 18 bit	
Operating system	Without				
■ Preinstalled and supplied on restore DVD	Microsoft Windows 2000/XP Pro ¹⁾ Microsoft Windows Server 2003, incl. 5 clients ¹⁾ Microsoft Vista Ultimate		Microsoft Windows XP Embedded (pre-installed on CompactFlash ≥ 512 MB without HDD) or Windows XP Pro, Vista Ultimate	Microsoft Windows XP Embedded (preinstalled on CompactFlash 2 GB), Windows 2000/XP Pro ¹⁾ Microsoft Vista Ultimate	
■ Others	Can be ordered separately: SICOMP RMOS3 V3.30 realtime operating system (not for Rack PC 547B); project-specific: Linux ²⁾ , others upon request				
Power supply / short-term voltage interr.	AC: 100-240 V, 50-60 Hz/ max. 16 msec	AC: 100-240 V, 50-60 Hz/max. 20 msec (in accordance with NAMUR)	24 V DC; 20.4 ... 28.8 V, isolated / max. 15 msec (in accordance with NAMUR)	AC: 120/230 V, 50/60 Hz/max. 20 msec (in accordance with NAMUR); 24 V DC; 20.4 V ... 28.8 V	
Drives					
Hard disks (3.5" serial ATA with NCQ technology)	Installation internal or in removable frame: 250 GB; 2 x 250 GB; RAID1, 2 x 250 GB (RAID controller onboard) ²⁾	Installation internal (also in shock- and vibration-damped drive holder) or in removable frame: 80 or 160 GB; 2 x 160 GB; RAID1, 2 x 160 GB (RAID contr. onboard) ²⁾	Without; ≥ 80 GB	Without; 80 GB; 160 GB; 2 x 80 GB, 2.5"; RAID1, 2 x 80 GB, 2.5" (RAID controller onboard)	
CompactFlash card (CFC)			Slot for CFC 256 MB to 2 GB (externally accessible) CFC internal (1 or 2 GB optional)	Slot for CFC (externally accessible); CFC internal (instead of DVD, HDD)	2 x slot for CFC 256 MB to 4 GB (externally accessible); one of which is optional
Optical drives	DVD-ROM or DVD ± R/RW		Connection via USB interface	DVD ± R/RW	
Floppy drive	1.44 MB		Connection via USB interface		
Slots	6 (internal: 2 x 3.5", front: 3 x 5.25", 1 x 3.5")				

Interfaces				
PROFIBUS/MPI		1 x 12 Mbit/sec (isolated, compatible with CP 5611), optional		
PROFINET		3 x 10/100 Mbit/sec (with integrated 3-port switch) optional		
Ethernet	1 x 10/100/1000 Mbit/sec (RJ 45)	2 x 10/100/1000 Mbit/sec (RJ45), teaming-capable ⁸⁾		
USB 2.0 high-current	2 x USB front, 4 x USB rear	2 x USB front (one of which is usable with the door locked) 4 x USB rear	4 x USB	
Serial / parallel	COM1; COM2 (optional) / LPT1	COM1, COM2 / LPT1	COM1; COM2 (optional)	COM1
VGA / DVI	1 x VGA; 2 x VGA or 2 x DVI-D via PCIe x16 graphics card, optional	1 x VGA / 1 x DVI-D via adapter (ADD card), opt.; 2 x VGA or 2 x DVI-D via PCIe graphics card, optional	1 x DVI-I (VGA via adapter), dual-head (VGA/DVI-D) via Y cable	
Keyboard, mouse	2 x PS/2		Connection via USB interface	
Audio	1 x line in; 1 x line out; 1 x micro	1 x micro; 1 x line out		
Monitoring / diagnostics functions				
Basic functionality	Temperature, fan, watchdog (local alarm via SystemGuard software or SOM (Safecard on Motherboard))			
Advanced functions	Temperature, fan, watchdog, hard disks (SMART) • system/Ethernet monitoring • hour meter • communication via Ethernet; SNMP and OPC interface (optionally via SIMATIC PC DiagMonitor software)			
Front LEDs	POWER, HARD DISK; STATUS (fan and temperature monitoring)	POWER, HARD DISK; ETHERNET 1/2, PROFIBUS/MPI; WATCHDOG, TEMP, FAN, HDD1/2 ALARM	POWER, WATCHDOG; two LEDs, bi-colored, freely programmable	Two LEDs, bi-colored; two 7-segment displays; freely programmable
Ambient conditions				
Degree of protection in accordance with EN 60529	IP30 front, IP20 rear	IP41 front, IP20 rear	IP20	
Protection class	Protection class I in accordance with IEC 61140		Protection class I in accordance with VDE 0106 Part 1 (IEC 536)	
Vibration during operation ^{3) 4)}	20 ... 58 Hz: 0.015 mm; 58 ... 200 Hz: 2 m/sec ² (approx. 0.2 g) in accordance with IEC 60068-2-6	10 ... 58 Hz: 0.0375 mm; 58 ... 500 Hz: 5 m/sec ² (approx. 0.5 g) in accordance with IEC 60068-2-6	10 ... 58 Hz, 0.075 mm; 58 ... 500 Hz, 9.8 m/sec ² with CompactFlash memory	10 ... 58 Hz, 0.075 mm; 58 ... 500 Hz, 9.8 m/sec ² (approx. 1 g)
Shock during operation ^{3) 4)}	9.8 m/sec ² , 20 msec (approx. 1 g) in accordance with IEC 60068-2-27	50 m/sec ² , 30 msec (approx. 5 g) in accordance with IEC 60068-2-27	150 m/sec ² , 11 msec (approx. 15 g) for operation with CompactFlash memory	50 m/sec ² , 30 msec (approx. 5 g), with optical drives: 50 m/sec ² , 11 msec (approx. 5 g)
Ambient temperature during operation ⁵⁾	5 ... 40 °C, with full processor performance (without power loss, throttling)	5 ... 50 °C, with full processor performance (without power loss, throttling)	0 ... 55 °C (with CompactFlash memory), 5 ... 40 °C (with hard disk)	55 °C/50 °C / 5 ... 45 °C (10 W on PCI / 20 W on PCI / maximum configuration)
Humidity	5 ... 80 % at 25 °C (no condensation)		5 ... 80 % at 30 °C (no condensation)	
Electromagnetic compatibility (EMC):				
Interference emission	EN 55022 Class B, FCC Class A	EN 55022 Class A, FCC Class A	EN 55022 Class B	EN 55022 Class B, FCC Class A
Immunity				
■ against conducted interference on the supply lines	± 2 kV (IEC 61000-4-4, burst), ± 1 kV (IEC 61000-4-5, surge symm.), ± 2 kV (IEC 61000-4-5, surge asymm.)			
■ on signal cables	± 1 kV (IEC 61000-4-4, burst, length < 10 m) ± 2 kV (IEC 61000-4-5, surge, length > 30 m)			
■ against discharge of static electricity	± 4 kV contact discharge (IEC 61000-4-2) ± 8 kV air discharge (IEC 61000-4-2)			
■ against high-freq. interfer.	10 V/m 80 % AM, 80-1000 MHz and 1.4 - 2 GHz (IEC 61000-4-3); 1 V/m 80 % AM, 2.0-2.7 GHz (IEC 61000-4-3); 10 V, 10 kHz ... 80 MHz (IEC 61000-4-6)			
■ against magnetic fields	100 A/m, 50/60 Hz (IEC 61000-4-8)			
System-tested SIMATIC Industrial Software ⁶⁾	STEP 7, WinAC, WinCC, SOFTNET	STEP 7, WinAC, WinCC flexible, WinCC, SOFTNET	WinAC, WinCC flexible, SOFTNET	STEP 7, WinAC, WinCC flexible, WinCC, SOFTNET
Certifications / directives				
Safety	EN 60950, UL 60950	EN 60950, UL 60950	IEC 60950-1	IEC 60950-1
CE mark / EU directives, certifications	For use in industrial and office areas/ cULus (UL 60950), WEEE/RoHS	For use in industrial areas/ cULus (UL 60950), WEEE/RoHS	For use in industrial and office areas/ cULus (UL 508 and UL 60950), WEEE/RoHS	For use in industrial and office areas/ cULus (UL 508 and UL 60950), RoHS
Dimensions and weight				
Installation dimensions (W x H x D)	434 x 177 x 446 mm	430 x 177 x 448 mm	Basic unit: Approx. 262 x 134 x 47 mm; Depth starting from DIN rail: 52 mm Additional depth per expansion (1-3): +17 mm	298 x 100 x 301 mm (incl. mounting rail); 298 x 80 x 301 mm (incl. mounting rail, without optical drives)
Weight	Approx. 19 kg		Approx. 2 kg	Approx. 7 kg
				298 x 170 x 301 mm (incl. mounting rail); 298 x 150 x 301 mm (incl. mounting rail, without optical drives)

5) With full processor performance (without throttling)
6) In consideration of the permitted system configuration
7) In accordance with the specifications of the Siemens manufacturer declaration "Suitable for Linux"
8) Microbox PC with PROFINET onboard only 1 x Ethernet

1) MUI (multi-language user interface); 5 languages (ENG, GER, FR, SP, IT)
2) Hot-swap removable frame
3) Restrictions with operation of optical drives and removable frames
4) Specification for complete unit

Panel PC 477B – Compact, rugged and maintenance-free in embedded technology



Display	12" touch	15" touch	19" touch	12" key
Size in inches / resolution in pixels	12" / SVGA (800 x 600)	15" / XGA (1024 x 768)	19" / SXGA (1280 x 1024)	12" / SVGA (800 x 600)
Central / distributed assembly	■ / –	■ / –	■ / –	■ / –
Control elements				
Keyboard				■
Function keys				36
Touch screen (analog/resistive)	■	■	■	
Mouse, front				■
General features				
Processor	Intel Celeron M (1 GHz, 400 MHz FSB, 512 KB L2 cache, ultra-low voltage CPU) Intel Celeron M (900 MHz, 400 MHz FSB, 0 KB L2 cache, ultra-low voltage CPU)			
Main memory	512 MB (with Celeron 900 MHz), 1 GB (with Celeron 1.0 GHz); retentive memory: Static RAM 2 MB			
Free slots for expansions	Up to 3 x PCI-104 (via expansion frame) 1 x slot for CompactFlash card			
Operating system	Microsoft Windows XP Embedded (preinstalled on CompactFlash)			
Power supply	24 V DC			
MTBF background illumination	Typically 50,000 h (with 24-h continuous operation, temperature-dependent)			
Drives				
Bulk memory	2 x CompactFlash drive with 1, 2 or 4 GB (hard disk only as customized product)			
DVD-R/W				
Floppy drive	Optional via USB, available as accessory: 1.44 MB 3.5"			
Interfaces				
PROFIBUS/MPI PROFINET	Onboard, isolated, max. 12 Mbit/sec, compatible with CP 5611 Onboard, 3 x RJ45, compatible with CP 1616 (ERTEC 400)			
Ethernet	Onboard 2 x 10/100/1000 Mbit/sec, RJ45			
USB (universal serial bus)	1 x front (USB 2.0 high-current); 4 x rear (USB 2.0 high-current)			
Serial, parallel interfaces	COM1: 1 x V.24 (RS232)			
Graphics interface	DVI-I for additional display unit (VGA via adapter)			
Keyboard; mouse	USB; USB			
Monitoring functions				
Temperature, watchdog	Onboard			
Ambient conditions				
Degree of protection	IP65 (front) tested in accordance with EN 60529, NEMA 4			
Vibration load during operation	Tested in accordance with DIN IEC 68-2-6: 10 ... 58 Hz: 0.075 mm, 58 ... 200 Hz: 9.8 m/sec ² (1g)			
Shock load during operation	Tested in accordance with DIN IEC 68-2-29: 50 m/sec ² (5 g), 30 ms, 100 shock loads			
EMC	CE; EN 55011/61000-6-4/61000-6-2			
Ambient temperature in maximum configuration	5 ... 45 °C or 5 ... 50 °C in installation room, if max. 40 °C at the front			
Relative humidity	Tested in accordance with IEC 60068-2-78, IEC 60068-2-30: 5 ... 80 % at 25 °C (no condensation)			
Certification / EU directives	CE, UL 60950-1, UL 508, CSA C 22.2 No. 142 / WEEE / RoHS			
Packages				
Dimensions				
Operator panel (W x H) in mm	400 x 310	483 x 311	483 x 400	483 x 310
Installation dimensions (W x H x D) in mm without opt. drives	368 x 290 x 75	450 x 290 x 75	450 x 380 x 98	450 x 290 x 75
Power loss in maximum configuration	24 V DC: max. 80 W ³⁾	24 V DC: max. 80 W ³⁾	24 V DC: max. 90 W	24 V DC: max. 80 W ³⁾

¹⁾ Contains 15 W per slot

²⁾ GER, ENG, IT, FR, SP, KOR, CHN (traditional), CHN (simplified), JPN

³⁾ 3 W per slot

Panel PC 577B – Industrial functionality at an attractive price



15" key	12" touch	15" touch	19" touch
15" / XGA (1024 x 768)	12" / SVGA (800 x 600)	15" / XGA (1024 x 768)	19" / SXGA (1280 x 1024)
■ / -	■ / -	■ / -	■ / -
■			
36			
■	■	■	■
	Mobile Intel 945 chip set; Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1024 KB SLC)		
	512 MB (upgradeable to 4 GB)		
	2 free slots for expansions: 2 x PCI (all slots with card retainers); 1 x slot for CompactFlash card		
	Windows XP Prof. (multi-language ²⁾); optionally without operating system		
	110 / 230 V AC (wide-range) 50/60 Hz		
	Typically 50,000 h (with 24-h continuous operation, temperature-dependent)		
	3.5" SATA hard disk drive ≥ 80 GB		
	■		
	Optional via USB; available as accessory: 1.44 MB 3.5"		
	-		
	2 x onboard, 10/100/1000 Mbit/sec, RJ45		
	1 x front (USB 2.0 high-current), 4 x rear (USB 2.0, 2 of which high-current)		
	COM1: 1 x V.24 (9-pole) , LPT 1: Optional via PCI plug-in card		
	DVI-I for additional display unit (VGA via adapter)		
	USB; USB		
	Onboard		
	IP65 (front) tested in accordance with EN 60529, NEMA 4		
	Tested in accordance with DIN IEC 68-2-6: 10 ... 58 Hz: 0.075 mm, 58 ... 200 Hz: 2.5 m/sec ² (0.25g)		
	Tested in accordance with DIN IEC 68-2-29: 10 m/sec ² (1 g), 30 msec, 100 shock loads		
	CE, EN 55011, EN 61000-6-2, EN 61000-6-4		
	5 ... 45 °C or 5 ... 50 °C in installation room, if max. 40 °C at the front		
	Tested in accordance with DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5 ... 80 % at 25 °C (no condensation)		
	CE, cULus (508), RoHS		
	-		
483 x 355	400 x 310	483 x 310	483 x 400
450 x 321 x 75	368 x 290 x 123	450 x 290 x 121	450 x 380 x 151
24 V DC: max. 80 W ³⁾	max. 140 W ¹⁾	max. 140 W ¹⁾	max. 163 W ¹⁾

Panel PC 677B – Maximum performance, compact and high data transfer rate




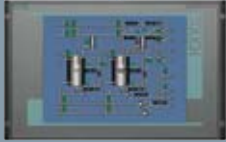
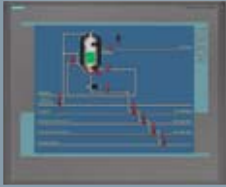

12" touch	15" touch	15" touch INOX	17" touch	19" touch
12" / SVGA (800 x 600)	15" / XGA (1024 x 768)	15" / XGA (1024 x 768)	17" / SXGA (1280 x 1024)	19" / SXGA (1280 x 1024)
■ / via remote kit	■ / via remote kit	■ / via remote kit	■ / via remote kit	■ / via remote kit
■	■	■	■	■
Mobile Intel 945 chip set; Intel Core 2 Duo (2.16 GHz T7400, 667 MHz FSB, 4096 KB SLC); Intel Core 2 Duo (1.66 GHz T5500, 667 MHz FSB, 2084 KB SLC); Intel Celeron M 440 (1.86 GHz, 533 MHz FSB, 1024 KB SLC)				
512 MB, 1 GB, 2 GB, 3 GB, 4 GB; retentive memory: Static RAM 2 MB				
2 free slots for expansions: 2 x PCI or 1 x PCI and 1 x PCIe x 4 (all slots with card retainers); 1 x slot for CompactFlash card				
Windows XP Prof. (multi-language ²⁾), Windows XPe (ENG) on 2 GB CF card, Windows 2000 Prof. (multi-language ²⁾); Windows Vista Ultimate (multi-language, 32 bit ⁴⁾) optionally without operating system				
110 / 230 V AC (wide-range), 50/60 Hz; or 24 V DC				
Typically 50,000 h (with 24-h continuous operation, temperature-dependent)				
3.5" SATA hard disk drive ≥ 80 GB. Optional: 3.5" SATA hard disk drive (≥ 160 GB), 2 x 2.5" SATA hard disk module (≥ 80 GB), single-disk configuration or RAID1 set pre-configured; RAID 1 controller onboard; all hard disks: vibration- and oscillation-damped. Optional: 2nd internal CF card holder (instead of hard disk and optical drive)				
-				
Optional via USB; available as accessory: 1.44 MB 3.5"				
Onboard, isolated, max. 12 Mbit/sec, compatible with CP 5611				
Onboard, 3 x RJ45, compatible with CP 1616 (ERTEC 400)				
2 x onboard, 10/100/1000 Mbit/sec, RJ45				
1 x front (USB 2.0 high-current) ⁵⁾ , 4 x rear (USB 2.0, 2 of which high-current)				
COM1: 1 x V.24 (9-pole) , LPT 1: Optional via PCI plug-in card				
USB; USB				
Onboard				
IP65 (front) tested in accordance with EN 60529, NEMA 4; 15" touch INOX: IP66k (front)				
Tested in accordance with DIN IEC 68-2-6: 10 ... 58 Hz: 0.075 mm, 58 ... 200 Hz: 9.8 m/sec ² (1g)				
Tested in accordance with DIN IEC 68-2-29: 50 m/sec ² (5 g), 30 msec, 100 shock loads				
CE, EN 55011, EN 61000-6-2, EN 61000-6-4				
5 ... 45 °C or 5 ... 50 °C in installation room, if max. 40 °C at the front				
Tested in accordance with DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5 ... 80 % at 25 °C (no condensation)				
CE, cULus (508), RoHS				
Optional with SIMATIC WinCC flexible, SIMATIC WinCC				
400 x 310	483 x 310	483 x 310	483 x 400	483 x 400
368 x 290 x 123	450 x 290 x 121	450 x 290 x 121	450 x 380 x 129	450 x 380 x 129
max. 140 W ¹⁾	max. 140 W ¹⁾	max. 140 W ¹⁾	max. 160 W ¹⁾	max. 163 W ¹⁾

⁴⁾ GER, ENG, IT, FR, SP

⁵⁾ not with 15" touch INOX



12" key	15" key	Display
12" / SVGA (800 x 600)	15" / XGA (1024 x 768)	Size in inches / resolution in pixels
■ / via remote kit	■ / via remote kit	Central / distributed assembly
Control elements		
■	■	Keyboard
36 with LEDs	36 with LEDs	Function keys
		Touch screen (analog/resistive)
■	■	Mouse, front
General features		
		Processor
		Main memory
		Free slots for expansions
		Operating system
		Power supply
		MTBF background illumination
Drives		
		Bulk memory
		DVD-R/W
		Floppy drive
Interfaces		
		PROFIBUS/MPI PROFINET
		Ethernet
		USB (universal serial bus)
		Serial, parallel interfaces
		Graphics interface
		Keyboard; mouse
Monitoring functions		
		Temperature, watchdog
Ambient conditions		
		Degree of protection
		Vibration load during operation
		Shock load during operation
		EMC
		Ambient temperature in maximum configuration
		Relative humidity
Certification / EU directives		
Packages		
Dimensions		
483 x 310	483 x 355	Operator panel (W x H) in mm
450 x 290 x 104	450 x 321 x 123	Installation dimensions (W x H x D) in mm without opt. drives
max. 140 W ¹⁾	max. 140 W ¹⁾	Power loss in maximum configuration

Flat-panel monitors	12"	15"	17"	19"
				
Resolution in pixels	SVGA (800 x 600)	XGA (1024 x 768)	SXGA (1280 x 1024)	
Touch screen (analog/resistive)	Optional			
Max. distance to computer unit	30 m			
Power supply	24 V DC / 110/230 V AC			
MTBF background illumination	Typically 50,000 h (with 24-h continuous operation, temperature-dependent)			
USB (universal serial bus)	Up to 2 x for additional I/O devices			
Graphics interface	DVI-D, VGA			
Degree of protection	IP65 (front) in accordance with EN 60529, NEMA 4			
Vibration load during operation	Tested in accordance with DIN IEC 68-2-6: 10 ... 58 Hz: 0.075mm, 58 ... 200 Hz: 9.8 m/sec ² (1g)			
Shock load during operation	Tested in accordance with DIN IEC 68-2-29: 50 m/sec ² (5 g), 30 msec, 100 shock loads			
EMC	CE, EN 55011, EN 61000-6-2, EN 61000-6-4			
Ambient temperature during operation with maximum configuration	5 ... 45 °C, 5 ... 50 °C in installation room, if max. 40 °C at the front			
Relative humidity	Tested in accordance with DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56: 5 ... 80 % at 25 °C (no condensation)			
Certification	CE, cULus (508)			
Operator panel (W x H) in mm	400 x 310	483 x 310	483 x 400	483 x 400
Installation dimensions (W x H x D) in mm	368 x 290 x 51	450 x 290 x 55	450 x 380 x 57	450 x 380 x 57
Maximum power consumption	35 W	40 W	55 W	55 W

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GERMANY

Subject to changes
Order No.: 6ZB5370-1BF02-0BB4
Dispo 26100
BS 0408 5.0 ROT 8/36 En / 822 226
Printed in Germany
© Siemens AG 2008

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