SIMATIC HMI Panels

Operator panels to suit all demands

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SIMATIC HMI

Answers for industry.

SIEMENS

SIMATIC HMI Panels

Operator panels to suit all demands

SIMATIC Panels have been proving their value in many different applications in all industrial sectors for many years now. Their innovative power is undiminished here. The most recent example of this are the SIMATIC HMI Comfort Panels for demanding visualization tasks. These new operator panels do not only have an innovative design and provide high performance. The configuration via SIMATIC WinCC V11 is unique. The software is part of the new Engineering Framework "Totally Integrated Automation Portal" and provides previously unheard of energy efficiency.

Integrated functionality across all display sizes

The portfolio of the SIMATIC Panels is clearly structured: Two families of devices cover the majority of HMI applications:

- SIMATIC HMI Basic Panels are suitable for simple HMI applications.
- SIMATIC HMI Comfort Panels are suitable for complex applications.

The functionality of the hardware is identical within a family of devices. You select the optimal display size for your application and decide whether to operate it via touch screen and/or keys.
The software is scalable for optimally adapting your HMI or SCADA solution to your respective automation task. This has the advantage that you can start out small but are able to increase the number of tags, for example, at any time and without problems.

SIMATIC HMI Key Panels – The innovative operator panels

They are pre-assembled and ready-to-install. In this way, time-consuming individual assembly and wiring, as required for conventional operator panels, is not necessary. Compared to conventional wiring, this results in time savings of up to 60%.

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

For plants that are very extensive or are difficult to observe visually, portable operator panels bring important advantages: The commissioning engineers, machine operators or service employees are able to work exactly where they have the best view of the workpiece or process.
SIMATIC HMI Mobile Panels can be wired or wireless. Complete safety functionality via IWLAN, which was previously only available for SIMATIC HMI Mobile Panels.

Unique energy efficiency

SIMATIC Panels can be intuitively configured with SIMATIC WinCC V11. Increased energy efficiency can be achieved by integrating WinCC V11 into the Totally Integrated Automation Portal, the shared Engineering Framework for Totally Integrated Automation, if additional Totally Integrated Automation components such as SIMATIC Controllers are used. The perfect interaction with STEP 7 prevents multiple entries and guarantees consistent data management at all times.

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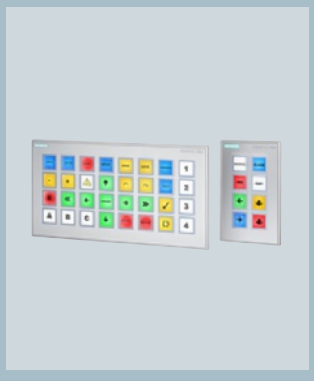

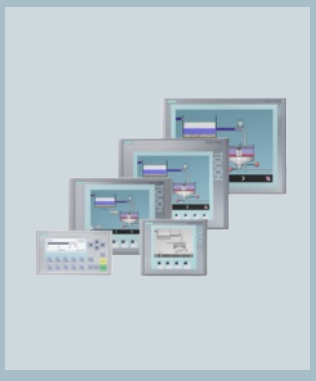

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- Different display sizes both for simple and for complex HMI tasks
- Mobile operator control and monitoring – even wireless and with complete safety functionality
- Intuitive configuring
- Increased engineering efficiency with the simultaneous use of additional Totally Integrated Automation components
- Customer-specific solutions with same quality standard are available

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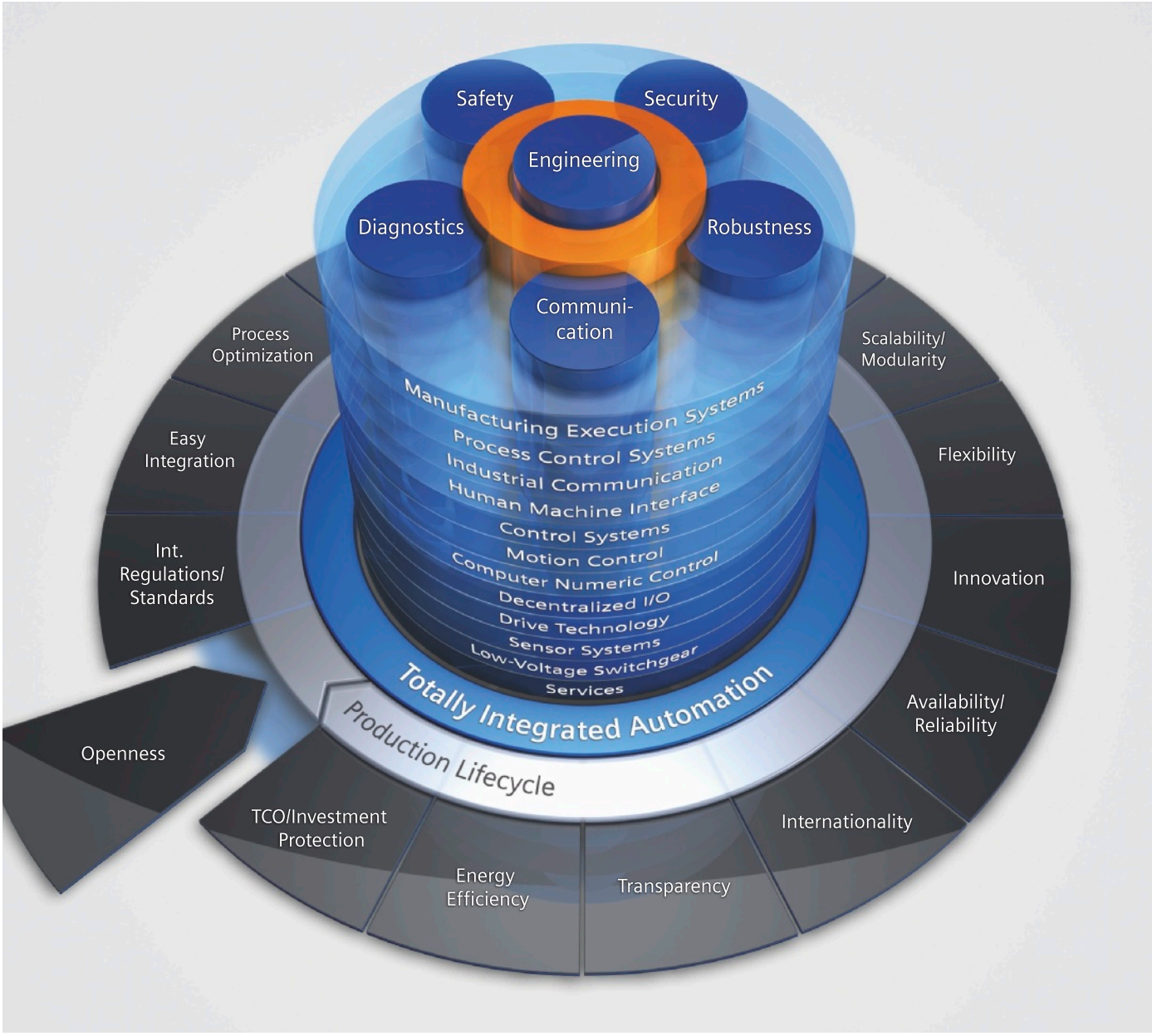
Totally Integrated Automation

Rely on new productivity standards for sustained competitive advantages



To be able to respond to the increasing international competitive pressure, it is more important than ever to consistently make full use of the potential for optimization – over the complete lifecycle of a machine or plant.

Optimized processes reduce the total cost of ownership, shorten the time to market, and improve quality. This perfect balance between quality, time, and costs is now, more than ever, the decisive success factor in industry.

Totally Integrated Automation is optimally aligned to all requirements and open for international standards and third-party systems. With its six characteristic system features, Totally Integrated Automation supports the complete lifecycle of a machine or plant. The complete system architecture offers holistic solutions for every automation segment on the basis of a comprehensive range of products.

SIMATIC: more efficient and systematic automation

SIMATIC, a core component of Totally Integrated Automation, includes a variety of standardized, flexible, and scalable products – such as SIMATIC Panels presented in this brochure.

SIMATIC is currently considered to be the global number one in automation. One of the decisive reasons for this is that SIMATIC exhibits the six system features of Totally Integrated Automation:

- Engineering
- Communication
- Diagnostics
- Safety
- Security
- Robustness

In addition, SIMATIC features two additional system features:

- Technology
- High availability

You can find more about the system features and the resulting advantages in the following chapter “System features“.

System features

Engineering

Maximum engineering efficiency –
in all phases of the lifecycle of the machine and plant
With SIMATIC you rely on an integrated engineering environment. Efficient software supports you over the complete lifecycle of your machine or plant – from the planning and design stages through configuring and programming as far as commissioning, operation and upgrading.
With its integration capability and harmonized interfaces, SIMATIC software supports a high degree of data consistency – throughout the entire engineering process.
Siemens has redefined engineering with its Totally Integrated Automation Portal (TIA Portal). The new TIA Portal engineering framework combines the SIMATIC STEP 7, SIMATIC WinCC and SINAMICS StartDrive automation software tools in a unique development environment.

Communications

Maximum data transparency on all automation levels –
based on proven standards
SIMATIC creates the foundations for unlimited integration in communication – and thus for maximum transparency on all levels, from the field and control level to the operations management level all they way up to the corporate management level. SIMATIC relies on international, cross-vendor standards which can be combined flexibly: PROFINET, the leading Industrial Ethernet standard and PROFIBUS, the global No. 1 fieldbus.

Diagnostics

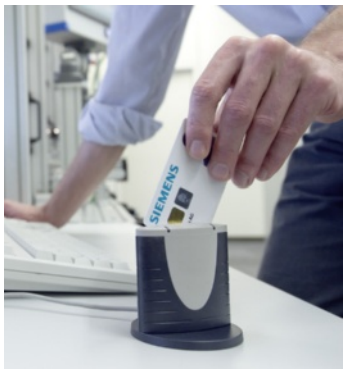
Minimization of downtimes –
through efficient diagnostic concepts
All SIMATIC products feature integrated diagnostic functions with which a fault can be identified and eliminated to provide increased system availability.
Even with larger plants, the Maintenance Station provides you with a uniform view of the maintenance-relevant information of all automation components.

Safety

Protection of personnel and machines –
within the framework of an integrated complete system
SIMATIC Safety Integrated offers TÜV-certified products, which facilitate compliance with relevant standards: IEC 62061 up to SIL 3, EN ISO 13849-1 up to PL e, as well as EN 954-1.
Due to the integration of safety technology in standard technology, only one controller, one I/O, one engineering, and one bus system are required. Thus the system advantages and comprehensive functionality of SIMATIC are also available for fail-safe applications.

Data security in the networked world – through harmonized, scalable security systems
Due to the increased use of Ethernet connections penetrating the field level, security issues are gaining in importance in industry. For comprehensive protection of a plant, a variety of suitable measures must be implemented. These range from the company organization and its guidelines regarding protective measures for PC and control systems through to protection of automation cells by segmenting the network. Siemens follows the cell protection concept and, with the modules of the SCALANCE series and the Security modules, offers components for building up protected cells.

www.siemens.com/industrialsecurity



Security

Maximum industrial suitability – through increased robustness
Each standard product from the SIMATIC range is characterized by the highest quality and robustness and is perfect for use in industrial environments. Specific system tests ensure the planned and required quality. SIMATIC components meet all relevant international standards and are certified accordingly. Temperature and shock resistance are defined in the SIMATIC quality guidelines, as are vibration resistance or electromagnetic compatibility. For demanding to extreme rated conditions, special versions such as SIPLUS extreme or special versions of SIMATIC ET200 are available. These include an increased degree of protection, extended temperature ranges, and exceptional environmental stress.

Robustness

More possibilities, less complexity – through integrated technology functionality
Counting and measuring, cam control, closed-loop control, or motion control: You can integrate technological tasks in many different combinations and with various degrees of complexity without a system changeover into the world of SIMATIC – easily, conveniently, consistently. Parameter assignment and programming are implemented in the familiar STEP 7 environment.

Technology

Maximum availability – with integrated high availability concepts
Siemens offers a comprehensive high availability concept to ensure high availability for the entire plant: from the field level to the control level all the way up to the management level. For example, field-tested controllers ensure high availability through bumpless switching with automatic event synchronization.

High availability

www.siemens.com/simatic-system-features

SIMATIC HMI Panels

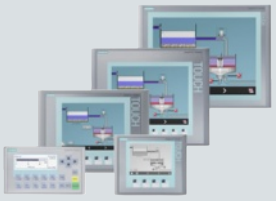
Operator panels to suit all demands

When simple operator panels will suffice

Design operator panels for the simple and direct operation of machines with ready-to-install and pre-assembled SIMATIC HMI Key Panels.
This results in time savings of up to 60% compared to conventional wiring.
Also available as fail-safe version.

For low-cost operator control and monitoring of simple applications

Compact or simple applications are no reason for doing without the advantages of a full-graphics operator panel. SIMATIC HMI Basic Panels offer basic HMI functionality at an attractive price. The series includes devices with displays sizes of 3" to 15".
For operator control, you can select either a touch screen or keys, or use a combination of the two.



For demanding HMI tasks

Complex processes place high demands on the functionality of operator panels – integrated diagnostic functions and options for efficient energy management are examples of this. SIMATIC HMI Comfort Panels provide you with this and much more due to integrated high-end functionality for all display sizes (4" to 22"). Brilliant widescreen displays permit up to 40% more visualization area and thus expanded display capabilities for complex operating screens.

When mobility matters

Whether during commissioning, maintenance, or production: With mobile operator panels, you always have visual contact with the process and, at the same time, access to the relevant process information on your panel. Whether wired or for wireless, fail-safe operation via IWLAN – SIMATIC HMI Mobile Panels give you the mobility that you need for operating and monitoring your plant.

When a process is to be visualized at several locations

In extensive machines and plants, SIMATIC Thin Clients can be used as distributed, cost-effective operating terminals. They allow plant-wide access to current process values and local screens of all participating stations and communicate via PROFINET/Ethernet. Thus, the functionality of machine-level panels also becomes available in the control room or office, or they can bring SIMATIC WinCC, office or IT functionality directly to the machine on site.

When special requirements must be met

Fully enclosed HMI devices with IP65 degree of protection are specifically designed to be mounted to a support arm or stand. Thanks to their extremely rugged design, the devices are ideal for industrial applications even in extremely harsh industrial environments.

Rugged for use at the machine level

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

Selection of possible operating modes

SIMATIC Panels are available with keys and with touch screen operation. Some even offer both at the same time.

Everything at a glance on brilliant displays

All SIMATIC Panels have bright and high-contrast displays for optimal operator control and monitoring.
Displays can be selected in sizes from 3" to 22" depending on your requirements. Devices with widescreen displays give you up to 40 % more visualization area. The long service life of the backlit display is exemplary in any case.

Diverse connection options

As standard, SIMATIC Panels communicate over PROFINET/ Ethernet and PROFIBUS. Other I/O devices, such as printers, can be connected through additional interfaces such as USB ports.

Perfectly suited for worldwide use

Approvals for the most important export countries are available. In addition to the standard version of SIMATIC WinCC V11 with five configuration languages (German, English, French, Spanish, and Italian), there is also a version for Asia with four Asian languages.

Multi-language configuration is supported by text export and text import functions. Up to 32 languages can be administered in one project.

Open for a wide variety of automation systems

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

Always the right choice

If you are looking for exactly the right operator panel for your application, we recommend you use the SIMATIC HMI selection guide.
You can find it at: **www.siemens.com/simatic-hmi**
with the most up-to-date product range.

Highlights of SIMATIC HMI Panels

- Integrated configuration, data management, and communication
- Designed for harsh industrial environments
  - Rugged and compact
  - Reliable and ergonomic operation by means of touch screens or keypads
  - Brilliant displays for excellent readability – also in widescreen format
- Open and easy to extend
  - Cross-manufacturer OPC communication
  - Controllers from the most diverse manufacturers can be connected
  - TCP/IP via PROFINET/Ethernet
  - Innovative HMI concepts: Traceability/easy validation, service, and diagnostics via the Internet
  - Worldwide application with extensive language support, including Asian languages
- Most devices are also available as SIPLUS extreme components for an extended temperature range and corrosive atmosphere/condensation. **www.siemens.com/siplus-extreme**
- Maximum energy efficiency due to integration in the Totally Integrated Automation Portal (TIA Portal)

WinCC engineering software

Maximum configuration efficiency for all HMI applications – WinCC V11 engineering software in the Totally Integrated Automation Portal

The WinCC engineering software allows integrated configuring of all SIMATIC Operator Panels right up to PC-based visualization workstations.
The integration into the Totally Integrated Automation Portal results in a clear increase in configuration efficiency compared to the predecessor product WinCC flexible, particularly if SIMATIC Controller applications are being operated and monitored.

Totally Integrated Automation Portal – Engineering Framework for more efficient engineering

Uniform look and feel

The shared Engineering Framework into which the software products are integrated standardizes all shared functions – also in their on-screen representation.
Uniform operation of different editors saves on training costs and makes it easy for users to concentrate on essentials.

Integrated intelligence

Intelligent editors are context-sensitive and show precisely what operators require for the task at hand: Functions, properties, libraries. Split-screen technology makes it possible to open several editors simultaneously and to exchange data between them. Data is exchanged using drag and drop.

Maximum data transparency

All data only has to be entered once, even when it is used in different editors. Transparency is also gained from an object-oriented approach. Thus, archives and alarms are directly configured with the tags.
The shared database ensures absolute consistency throughout the entire automation project. This reduces the probability of error, and compact and transparent projects are created.

Reusable solutions

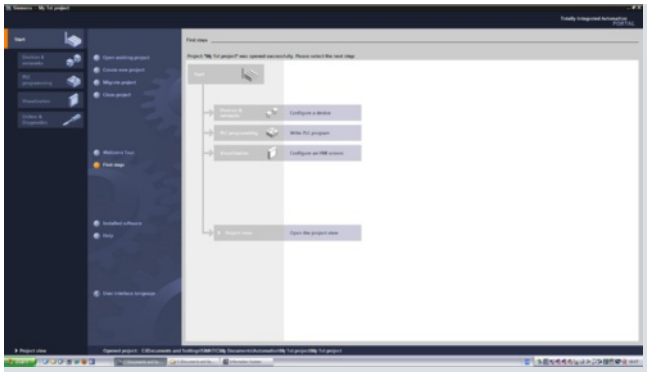
Supplied and proprietary program blocks and faceplates, as well as off-the-shelf modules and devices, are managed in structured libraries. These blocks can be re-used or centrally modified at any time – project-wide or for individual machines. The central modifiability of the blocks ensures consistency.
Blocks or entire projects created with predecessor versions of the software products integrated into the TIA Portal can also be reused in the TIA Portal.
Reuse saves on engineering costs and simultaneously increases the quality of the solution.

SIMATIC WinCC – Uniform configuration of all SIMATIC Operator Panels

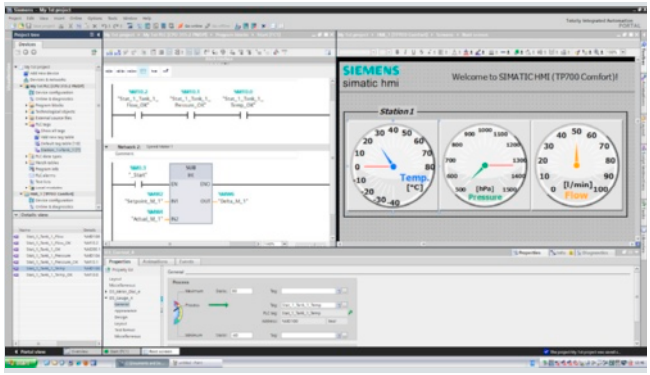
SIMATIC WinCC V11 stands for maximum configuration efficiency: Libraries with off-the-shelf objects, re-usable faceplates, intelligent tools right up to multi-language projects. WinCC V11 is available in different versions graded according to price and performance. They are based on each other and are optimally tailored to the individual classes of operator panel. The larger software package always includes the configuration options of the smaller package. Existing projects can simply continue to be used after a changeover to a more powerful SIMATIC HMI operator panel.

Minimizing configuration costs by means of function block technology

Reusable objects can be centrally stored in a structured format in libraries. Part of the makeup of WinCC V11 is a large number of scalable, dynamizable objects from which faceplates can be compiled.
Changes to the faceplates only have to be performed at one central location. They then become effective wherever the faceplate is used. This not only saves time, but also ensures data consistency.



Start screen with clear operator prompting



Shared user interface for WinCC and STEP 7

Intelligent tools for efficient configuration

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

SIMATIC WinCC – operating and display options in runtime mode

The Windows-compliant user interface is made up of parameterizable screen objects and project-specifically created faceplates.

Alarms

Alarms can be generated as discrete alarms, analog alarms, and alarms via the event-controlled Alarm_S procedure with SIMATIC S7. User-defined alarm classes can be used to define acknowledgement functions and the visualization of the respective alarm.

Logs and reports

Time and event-driven output of logs and reports.

Password protection

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

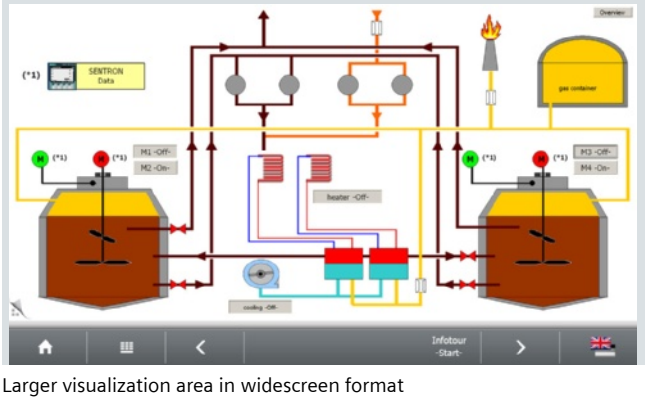
Logging of process data and alarms

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

Management of recipes

WinCC Recipes is used to manage recipes that contain associated machine or production data.

NEW Recipe data can be imported into the engineering system.



Larger visualization area in widescreen format

Highlights of SIMATIC WinCC V11

- Component of the Totally Integrated Automation Portal
- Innovative configuration interface based on the latest software technologies
- Function block libraries: Variable blocks are freely definable and reusable, and they can be modified centrally
- Intelligent tools, such as configuration in layers and graphical configuration of object movements
- User-friendly creation and administration of mass data
- Access protection with user ID and password
- Recipe management
- Report system
- Language support for worldwide use:
  - Manage 32 languages in one project
  - Simple import/export of texts for translation

OPC for vendor-independent communication

An OPC client and OPC server are part of WinCC V11. OPC-capable applications such as MES, ERP or office applications can access the data and SIMATIC HMI Panels are capable of communicating with any OPC-compatible application via Ethernet using TCP/IP.

Remote maintenance simplifies service and support

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

Traceability and easy validation

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

SIMATIC HMI Key Panels

The innovative operator panels for up to 60% time savings during installation

SIMATIC HMI Key Panels replace conventional operator panels. They are compact and pre-assembled ready-to-install, but significantly more cost-effective. Thus up to 60% time savings can be achieved during installation.

Key Panels KP8, KP8F, and KP32F

Key Panels are operator panels with large keys with LED backlighting. The user can set five colors (blue, green, red, yellow, white) and the brightness of the keys via the STEP 7 hardware configuration. The keys can be easily and individually labeled using slide-in labels and feature tactile feedback. Thus they can be reliably operated even when wearing gloves.

The KP8 is available in two versions: The standard version KP8 and the device with failsafe functionality (KP8F). Both devices have 8 digital inputs/outputs for the direct connection of sensors and actuators. The KP32F has 32 keys and provides 16 digital inputs/outputs and an additional 16 digital outputs, non-isolated.

Communication options

The connection to the controller is made via PROFINET.
A 2-port Ethernet switch permits the configuration of linear and ring topologies.

The SIMATIC HMI Key Panels have a redundancy mechanism, which allows you to bridge any faults that may occur. By means of the Media Redundancy Protocol (MRP) for networks in a ring topology, a cable break or component failure is compensated for by means of a switch that opens a second communication path through the network. In the event of a data cable failure, the communication is diverted to this alternative path in real time, thus guaranteeing continuous and reliable communication among the components.

Ideal expansion for fully enclosed HMI devices

The format of the KP8/KP8F is selected so that it is also ideally suited for installation into the expansion units of the fully enclosed HMI devices (see page 20). On the front, the Key Panels achieve degree of protection IP65.

Fail-safe versions

With the help of the integrated PROFIsafe communication, the KP8F and the KP32F can be used for fail-safe operation with SIMATIC S7-300F/400F for simple emergency stop applications. The two additional fail-safe, 24 V-capable digital inputs of the KP8F can be used for sensors with isolated contacts, e.g. an SIL 3 emergency stop button.
The KP32F has 4 fail-safe, 24 V-capable digital inputs for sensors with isolated contacts.

Highlights of the Key Panels

- Large, freely configurable keys with tactile feedback for reliable working – even with gloves
- LED backlight with five selectable colors for displaying the machine status
- Integrated Ethernet switch for the setup of linear and ring topologies
- Space-saving alternatives to operator panels with a time savings of up to 60% for the wiring
- A fail-safe version is available for the connection of one to four emergency stop buttons or other fail-safe signals

The family of SIMATIC HMI Key Panels

SIMATIC HMI IPC477C PRO with KP8

SIMATIC HMI Basic Panels

Low-cost operator control and monitoring for simple HMI applications

The process quality can be significantly improved with visualization even in the case of compact machines or smaller applications. The human machine interface option has until now frequently remained unused for cost reasons. SIMATIC HMI Basic Panels offer HMI basic functions at an attractive price and open up new possibilities for mechanical engineering.

Brilliant displays in different sizes

SIMATIC HMI Basic Panels are available with display sizes from 3" to 15". They can thus be optimally adapted to the individually required visualization area and the available space on site. The 4" and 6" devices can also be configured for upright mounting, which results in even greater flexibility.

Operator control via touch display and/or keys

The 4", 6" and 10" devices have touch screens and additional, freely configurable control keys.

NEW The 4" devices with high-resolution widescreen color displays and keys or combined touch and key operation are new.

The 15" device is suitable for displaying large or especially detailed process screens. In this case, the application is exclusively controlled via the touch screen.

The KP300 Basic mono PN rounds off the portfolio of the Basic Panels at the lower end with a 3" display.

Robust design for harsh environments

With an IP65 degree of protection (on the front), SIMATIC HMI Basic Panels are also suitable for use in harsh environments.

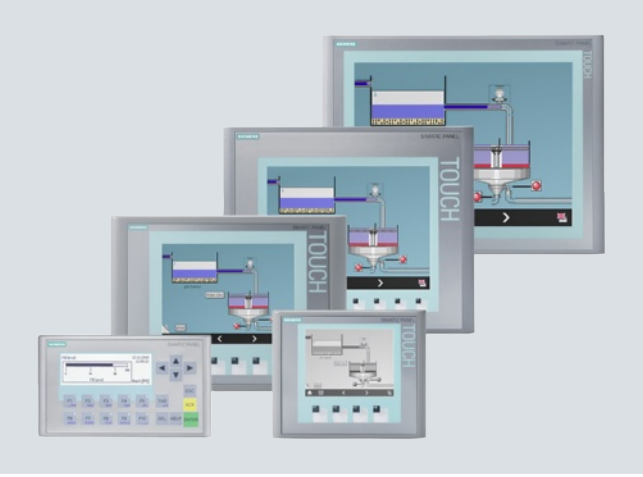
The keys provide tactile feedback and can also be operated easily while wearing gloves.

Integrated functionality – universal for all display sizes

Regardless of the display size, all of the Basic Panels provide the same functions: The signaling system, recipe management, trend curve functionality, and trend and language selection can be used with any device.

Highlights of the Basic Panels

- Ideal for less complex visualization tasks
- Integrated, uniform functionality for all display sizes
- Displays with touch functionality for intuitive operator control
- Freely configurable keys with tactile feedback
- Versions for connecting to PROFINET or PROFIBUS
- Projects are upward-compatible and can be transferred to SIMATIC HMI Comfort Panels



Different display sizes – identical functionality

Different communication options

As standard, Basic Panels communicate over PROFINET. The 6" and 10" devices are also available as a PROFIBUS version.

A large number of drivers support the communication with controllers from other manufacturers.

Upgradability is ensured

Projects that were created with WinCC V11 for a Basic Panel can easily be transferred to a higher-performance Comfort Panel, Mobile Panel or PC. Thus, you can continue to use and supplement existing projects after an upgrade.

Perfect interaction with SIMATIC S7-1200

Basic Panels can be used in a variety of ways. An especially high added value results from the visualization of applications of a modular compact S7-1200 controller. The new SIMATIC STEP 7 Basic engineering system automatically includes WinCC Basic V11 in its scope of delivery.

The shared Engineering Framework "Totally Integrated Automation Portal" allows integrated engineering for Basic Panels and S7-1200 controllers. Task-oriented and intuitive editors ensure maximum user-friendliness and energy efficiency.

SIMATIC HMI KP400 Basic color PN and KTP400 Basic color PN

Pixel-graphics widescreen color displays

The high-resolution widescreen color displays complete the range of Basic Panels in the 4" segment.

KP400 Basic color PN key device

In addition to 8 function keys, the KP400 Basic color PN features a numerical keypad with innovative alphanumerical data entry mechanism.

SIMATIC HMI KP400 Basic color PN and KTP400 Basic color PN

SIMATIC HMI KP300 Basic mono PN

Fast and intuitive process control via keys

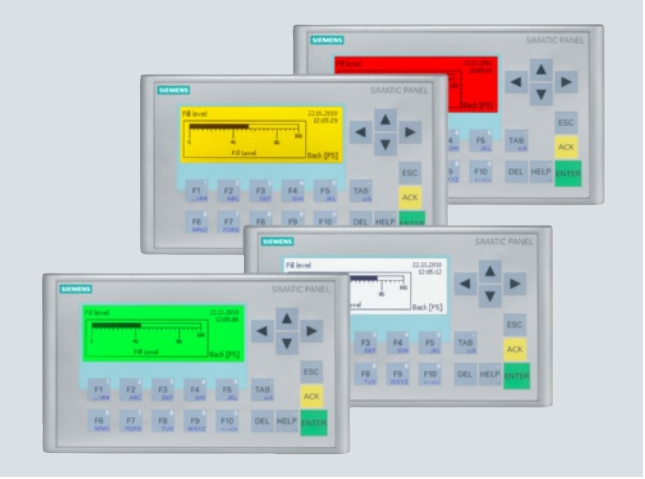
If a small display is sufficient and the process is only to be controlled via keys, the KP300 Basic mono PN is the perfect choice.

In addition to a high-resolution monochrome 3" display, it has 10 freely configurable function keys.
The keypad with the design of a mobile telephone keypad allows intuitive and fast entry of numbers and words.

The color of the backlight is freely selectable

The choices for the color of the LED backlight are white, green, red, and yellow.

The colors can be assigned to individual alarms. This KP300 Basic can thus also be used as an alternative to an alarm indicator lamp.



SIMATIC HMI KP300 Basic mono PN with colored LED backlighting

SIMATIC HMI Comfort Panels

for demanding HMI tasks

All SIMATIC HMI Comfort Panels universally provide the same high-end functionality.
With high-resolution widescreen displays from 4" to 22", optionally available with touch operation or control keys, they can be optimally adapted to any application.
One of the numerous innovations compared to previous SIMATIC Panels is the capability of coordinating and centrally shutting down the device displays via PROFIenergy during break times in order to reduce energy consumption.

Brilliant displays in widescreen format

The widescreen format provides up to 40% more visualization area and thus expanded display capabilities for complex operating screens. This format also allows a clear division between the sections for application monitoring and application operation. SIMATIC HMI Comfort Panels are available with 4", 7", 9", 12", 15", 19", and 22" widescreen displays.

NEW The range of SIMATIC Comfort Panels is expanded with the 15" key panel and 15", 19", and 22" touch panels.

The high resolution with 16 million colors allows a detailed process display and optimal readability. This is also supported by the wide viewing angle of 170°.

The brightness of the displays can be dimmed 100% and can therefore be optimally adapted to the requirements of the respective application – this is, for example, important for use on ships and reduces the energy consumption.

Integrated high-end functionality

SIMATIC HMI Comfort Panels are characterized by high performance. This means, for example, a short display generation time. Regardless of the size of the display, all of the Comfort Panels have archives, VB scripts and various viewers for displaying plant documentation (e.g. as PDFs) and Internet pages.

The system diagnostic capabilities in interaction with SIMATIC Controllers are a new feature. Diagnostic information, which previously required a programming device, can be read via the Comfort Panel.

Efficient energy management

The standardized PROFIenergy protocol enables loads that are no longer required to be switched off centrally and in a coordinated manner, and measured energy values can be recorded. Thus, the displays of the Comfort Panels can be shut down for short break periods in order to reduce energy consumption. PROFINET as standard allows easy integration into existing plant structures and provides reliable investment protection.

Optimum selection

SIMATIC HMI Comfort Panels can be optimally adapted to the available space on-site and to the required visualization area. Widescreen displays are available in sizes of 4" to 22". Depending on the application or available space, the touch devices can also be operated upright. As an alternative to touch screen operation, devices with freely configurable keys are available.

Widescreen display with touch operation

100 percent data security in the event of a power failure

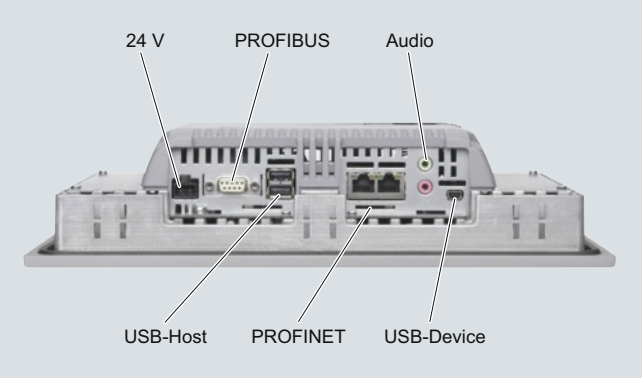
The integrated protection against voltage failure of the Comfort Panels cost-effectively safeguards all data in the event of a power failure – no additional uninterruptible power supply is required. It is also guaranteed for recipes and archives in RDB format if they are stored on a SIMATIC HMI Memory Card.

Wide range of communication options

Integrated interfaces

SIMATIC HMI Comfort Panels are suitable for integration into PROFINET and PROFIBUS networks and they offer interfaces for connecting USB peripherals.

A 2-port Ethernet switch is available for devices with 7" displays or larger. For devices with 15" displays or larger, a Gigabit PROFINET interface is also available.



Connection options for the 7" to 12" devices

Simplified project transfer

Standard cables can be used for loading HMI projects via PROFINET/Ethernet or USB – no special cables are needed. Device settings are set during configuration. Additional settings on the device itself are not required. This simplifies commissioning.

The project data and device settings are saved and automatically updated on a system card in the device. This system card can be used for transferring a project to another device.

Suitable for harsh environments

SIMATIC HMI Comfort Panels are robust and have several approvals for international usage and for use in sectors with increased requirements.

As standard, the Comfort Panels feature durable aluminum die-cast fronts starting with the 7-inch model. They are certified according to ATEX for Ex zones 2 and 22 and can therefore be used in hazardous areas. Marine approvals will be available soon for all Comfort Panels.

Ergonomic key operation

The intuitive operator control of the key devices corresponds to that of the tried and tested mobile telephone keypads and permits easy, quick entries. All function keys are equipped with LEDs.

Visual signals for the respective keys to be operated facilitate the operator guidance. For additional reliability, all of the keys provide tactile feedback when pressed.

Highlights of the Comfort Panels

- All panels with the same integrated high-end functionality
- Widescreen displays from 4" to 22", optionally available with touch operation or control keys
- 4" ... 15" as touch or key panels
  19" and 22" as touch panel
- Efficient energy management
  – The brightness of the displays can be dimmed 100%
  – Displays can be switched off even during short breaks
- 100 percent data security in the event of a power failure
- Wide range of communication options
- Simplified project transfer using a system card
- Can be used in hazardous areas

SIMATIC HMI Mobile Panels

Maximum mobility for operator control and monitoring

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

Device with 10" touch display for clear representation of complex process pictures

Compact and ergonomic design

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

Rugged design for industrial use

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

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

Highlights of the Mobile Panels

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

Reliable and secure operation

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

For time-critical operation and control processes with very short response times the membrane keys and touch screen can also be connected directly to the distributed I/O. Even the additional operator controls can be configured as direct keys.

With the optional wall bracket, the Mobile Panel can be securely stored or used as a stationary terminal.

Innovative connection solutions

The Mobile Panel is simply plugged into the connection box wherever it is needed on the machine and is immediately ready for use. The rugged and safe connection box with IP65 degree of protection can be mounted anywhere, even outside the control cabinet. The Connection Box Plus ensures fault-free hot-swapping.

Fast device startup

The Mobile Panels are characterized by a fast device startup after plugging them into the connection boxes. By using an optional bridging battery, the startup time of the Mobile Panel – after a short period of separation from the connection box – can again be significantly reduced.

Connection point detection

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

Integrated interfaces

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

Sophisticated safety concept

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

Device versions with an additional STOP button can be integrated into the emergency stop circuit of a machine or plant by means of the connection boxes.

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

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

Connection at one point of the machine

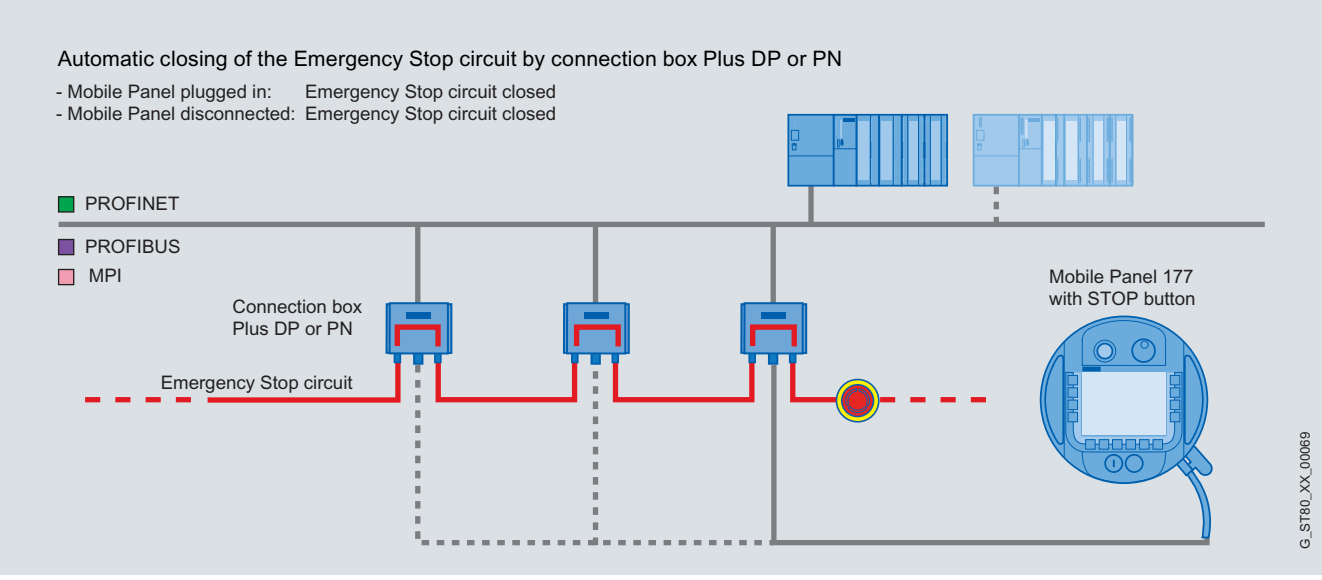
The "Basic" connection box is used for connecting SIMATIC HMI Mobile Panels with STOP button to one point of the plant. The disconnection of the device in this case causes an opening of the emergency stop circuit and thus triggers the emergency stop.

Variable connection to different stations of a machine or plant

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

When the Mobile Panel is connected, the device is looped into the emergency stop circuit. The emergency stop circuit remains closed regardless of whether the Mobile Panel is plugged in or disconnected. If the Mobile Panel is disconnected during operation, the emergency stop circuit in the Plus connection box is automatically closed which prevents triggering of the emergency stop circuit.

The Plus connection box is also available in a SIPLUS extreme version for extreme environmental conditions (e.g. use in corrosive atmosphere/with condensation).
Further information: **www.siemens.com/siplus-extreme**



Variable connection to different stations, using the Mobile Panel 177 on the PROFIBUS as an example

Maximum mobility in operator control and monitoring – wireless and with complete safety functionality

The SIMATIC HMI Mobile Panel 277(F) IWLAN is a worldwide novelty in the field of operator control and monitoring: a wireless operator panel with full HMI functionality. Two versions are available: one device for wireless operator control and monitoring without safety functionality and one with safety functionality. in addition there is the option of using the SIMATIC HMI Mobile Panel 277 (F) IWLAN for SIMOTION applications as well.

Certified safety

The SIMATIC HMI Mobile Panel 277F IWLAN has two acknowledgement buttons and one emergency stop button. A fail-safe SIMATIC F-CPU must be used to be able to utilize the safety functions. For industrial plants, the use of SIMATIC Industrial Wireless LAN is recommended. The suitability of the device for particularly high safety requirements was tested and certified by TÜV (SIL 3). The necessary radio approvals already exist for worldwide use.

Definite effective ranges

The SIMATIC WinCC V11 engineering software can be used to define ranges from which the machine can be operated with acknowledgement buttons. Within these "effective ranges", the device is identified by means of transponders or in an additional version by means of economical RFID tags (MOBY D Smart Cards). This ensures reliable operation and the clear assignment of suitable operating screens and operator authorizations from any point in the plant.

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

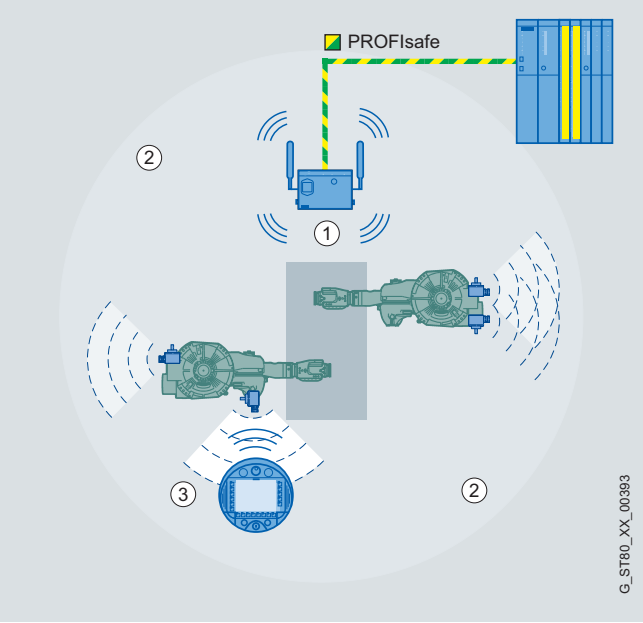
Rugged for tough industrial environments

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

WLAN area and effective range

The WLAN area is the area in the plant where the operator panel communicates with an access point over a wireless local area network.

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



1 Access point as network gateway from WLAN to the PROFINET
2 WLAN area in which communication with the SCALANCE W access point is possible
3 Mobile Panel in the effective range/zone

Fail-safe operation of the plant with the acknowledgement buttons only becomes possible when the operator panel is logged on in an effective range (defined by transponders or RFID tags) within the WLAN area. Due to its high safety standard, the device satisfies safety category SIL 3.

Rapid Roaming

The Mobile Panel 277F IWLAN communicates by means of the extended WLAN access procedure iPCF-MC (industrial point coordination function with management channel). This procedure – also known as "rapid roaming" – ensures almost uninterrupted handover of the wireless signals between the individual access points.

Mobile Panel 277F IWLAN (left) and 277 IWLAN (right)

Device versions for special requirements

Fully enclosed SIMATIC HMI devices

The fully enclosed SIMATIC HMI devices supplement the portfolio of the tried and tested built-in units with especially rugged operator panels in an attractive design. The devices are dimensioned for support bracket or stand assembly and offer complete IP65 protection.

The series is technically based on available built-in devices:
- SIMATIC HMI IPC477C PRO 15" and 19"
- SIMATIC Flat Panel Monitor PRO 15" and 19"
- SIMATIC Thin Client PRO 15"
- SIMATIC MP 377 15" PRO

The devices can be mounted on various support bracket and stand systems via a flexible mechanical system. Thus they can be optimally used on machines without requiring a control cabinet. This facilitates ergonomic operation at various locations in plants or production lines. The devices are connected to support bracket systems from different manufacturers by means of adapters, optionally on the top or bottom of the device. Both options are provided as standard.

Due to their low weight, the fully enclosed SIMATIC HMI devices can be mounted easily and quickly. The backplane can be removed easily – e.g. for subsequent installation of cables or replacing memory cards – and thus ensures a high degree of service friendliness even when the device is already mounted on the machine.

The fully enclosed SIMATIC HMI devices offer modular expansion capability. The corresponding expansion units can be attached on the left or right side of the operator panels.

This way, the system can be easily expanded with plant-specific mechanical buttons or other add-on units (e.g. emergency stop) and thus adjusted to many different requirements. The IP65 degree of protection is retained for the entire system even after installation.

Expansion via Key Panels

The new SIMATIC HMI Key Panels KP8 and KP8F are ideally suited for installing into the expansion units. With their colored backlit keys (5 configurable colors), they are especially well suited for displaying machine statuses.

Advantages at a glance

- Operator panels with complete IP65 protection for mounting on support brackets or stands
- Removable backplane hood for optimum service friendliness
- Maximum compactness and low weight for easy mounting
- Easy adjustability to changing requirements thanks to modular expansions

SIMATIC Flat Panel Monitor PRO 19" and HMI IPC477C PRO 15" with expansion units including SIMATIC HMI Key Panels

SIMATIC Multi Panel 377 15"" PRO on the support arm

SIMATIC Thin Clients

for distributed operator control and monitoring

If long distances are required between the operating unit and, for example, a Comfort Panel, SIMATIC Thin Clients are recommended. These economical and flexible operating units can also be used to access different HMI devices or PCs over PROFINET/ Ethernet.
Operation of the SIMATIC Thin Clients is realized via the touch screen or an external keyboard or mouse connected to the USB interface.

Economical operator stations

Client-server architectures have become a permanent feature of the classical IT environment. The advantage lies in the fact that the "expensive" computing performance is only required on the servers. The low-cost clients are provided for their applications in the network. The thin client is only used to input and output data. The actual data processing is performed by the server. The software itself only executes on the server, so maintenance and update costs are reduced.

High degree of ruggedness

As remote operator terminal without hard disk and fan, the SIMATIC Thin Client can be operated on machines with particularly high mechanical ruggedness requirements (e.g. vibration resistance). You can find information on a version with complete IP65 protection on page 20.

Integrated communication

Branched structures that cover large areas can be created and several operator stations can be connected to one server through direct connection of the thin clients to PROFINET/ Ethernet.

Thin clients usually communicate over standard protocols such as Remote Desktop (RDP), Virtual Network Computing (VNC), or Citrix.

RDP is currently included in every Microsoft operating system and only needs to be activated. A thin client can access the desktop of the server via RDP and carry out remote operation. The main difference between VNC and RDP is that VNC displays a "cloned" desktop if two or more operating units panels are connected.

Via RDP – and with a non-server operating system – only one operating unit can be active at a time and operate the server. In this case, all other stations display the log-in window. Citrix is frequently used with highly complex client/server architectures.

The principle: The applications which can be accessed by the clients are defined on the server. The clients can then connect themselves automatically to the applications released on the server.
Access to the visualization software SIMATIC WinCC is possible in the industrial environment with a SIMATIC Thin Client through protocols such as Sm@rtServer.

The server can be, for example, a SIMATIC HMI Comfort Panel or a PC. Two or more thin clients can be operated depending on the server's performance. The advantage: If the HMI project is changed, the modification need only be carried out once centrally on the server. Low-cost and flexible structures can also be produced for SCADA applications using thin clients. For example, the thin client can communicate as an HMI client with the WinCC SCADA software via RDP. A completely new feature is that a SINUMERIK CNC for a machine tool can now also be directly operated via a SIMATIC Thin Client.

SIMATIC Thin Client Ex

The SIMATIC Thin Client Ex can be connected as a thin client or monitor over Ethernet at an unlimited distance from the associated computer unit.

The SIMATIC Thin Client Ex can be implemented without special measures such as costly enclosures or additional certification procedures, directly in hazardous areas of Zones 1/21 and 2/22.

SIMATIC Thin Clients with 10" and 15" touch screen

Customized Automation

Perfectly tailored to individual requirements

Customer-specific products from the SIMATIC portfolio provide you with the individual adaptations and add-ons in the quality that you know from our standard products.

For the proven standard SIMATIC products (e.g. HMI, IPC, and S7), we carry out the modifications that are necessary in order to meet your requirements. This ranges from minor design modifications, hardware modifications, customer-specific tests and certifications, to changes in the service, support and logistics. Depending on the extent of the modifications, we distinguish between customer-specific design, OEM solutions, and turn-key products.

Customized products – individual in design and functionality

Customized design
with visual adaptation of SIMATIC products for integration into your individual machine and system design, e.g. by modifying the company logo, membrane color, or enclosure color. The design products are exactly the same as the standard products in terms of technology and functionality.

NEW With the aid of the new digital Express Design, all of the SIMATIC HMI Touch Panels can be provided with photo-realistic front design. If at least three units are ordered, the devices will be available with your own corporate design at short notice.

Multi Panel with individual front design

Product modifications for OEM customers
go beyond a design change. OEM products are individual solutions based on SIMATIC standard products.

The adaptations of the scope of delivery and the functionality of the OEM products are coordinated, specified, and implemented with the customer on an individual basis. They range from minor supplementations of the products to a completely individually designed device with TIA integration. Adaptations can be implemented by combining standard SIMATIC components all the way to individual components and software adaptations.

Customer-specific turnkey products
are ready-to-install and ready-to-use products, which you can obtain from us as the single-source supplier. They are combined, assembled, wired and pre-installed, ready-to-use according to your specifications and corresponding to the specific technical requirements of the standard products.

Sector products

For use in special sectors, customer-specific SIMATIC products are optimally equipped with additional features. We can offer customized products for the following sectors:

- Renewable energies such as solar/photovoltaic plants and wind turbines
- General mechanical engineering, e.g. printing machines, drilling, milling and honing machines, brake test stands, injection molding machines, or bakery ovens
- Automotive industry, e.g. body construction, robot stations, operator stations at the production line, paint shops, or in the warehousing and logistics sector
- Food and beverage industry, pharmaceutical industry, e.g. stainless steel operating stations in the hygiene sector or quality control for production and packaging
- Oil & Gas, chemical industry and shipbuilding, e.g. operator stations in hazardous areas, in control centers of drilling towers, or outdoors.

Examples of sector products

SIMATIC HMI Panels with stainless steel front

Panels with touch screen and stainless steel front are designed for operator control and monitoring with the highest safety and hygiene requirements, e.g. for food processing machines in the food and beverage industry.
They are based on DIN EN 1672-2 "Food processing machinery – Safety and hygiene requirements".

Available with stainless steel front:
- TP 177B color PN/DP INOX
- MP 277 10" Touch INOX
- MP 377 15" Touch INOX
- Panel PC 677B INOX, HMI IPC677C INOX

SIMATIC Multi Panel 377 15" Touch daylight readable

The SIMATIC Multi Panel 377 15" Touch daylight readable features a special display and touch technology. This allows operator control and monitoring even in very bright environments.

This means you can use the panel in control cabins for drilling rigs and in control stations onboard ships. You can even operate the operator panel outdoors if it is installed in a suitable control cabinet. The necessary, extended ambient temperature range during operation can be created with the help of active heating and cooling in the control cabinet.
The Temperature Extension Kit is available for this purpose.

High quality standards

Customer-specific products are developed and produced like our standard products in accordance with the highest quality standards based on an individual product agreement with you. Further information:
www.siemens.com/customized-automation
E-mail: customized.automation@siemens.com

Customer-specific software products

Individual software packages may include:
- Remote-Operate solutions with HMI software for industrial telecontrol based on Ethernet
- Special KNXnet/IP interfaces for the communication between different automation levels, e.g. SIMATIC S7 and building automation components

Service for customized products

With special service and support concepts we provide you with comprehensive support from A to Z. The portfolio covers the entire product lifecycle and includes pre-sales and after-sales support, such as:
- Requirements analysis, concept creation, solution generation
- Competent project support from the offer through to delivery and beyond
- Individual repair concepts and a global service network
- 24-hour product support over the SIMATIC Hotline.

Logistics for customized products

With individual logistics solutions for customer-specific products, you will receive agreements that are ideally tailored to your needs and which provide you with maximum planning security.

Examples of individual customer-specific services

- Customer-specific certification and approval
- Configuration and design freeze: individual availability agreements for unchanged hardware and software versions of the products with image compatibility
- Individual labeling: On the device and/or product packaging, e.g. customized item/device/inventory numbers, warehouse barcodes or packing and safety instructions
- Rolling planning with the customer allows the needs-based production and stocking of warehouses so that the products can be requested at the precise moment when they are needed in the production sequence or in the logistics chain.
- Set creation allows the delivery of a customer-specific combination (package) of customer-specific and standard products in one packaging unit, e.g. suitable for the respective machine type.

SIMATIC Operator Panels at an introductory price

Starter kits for SIMATIC HMI Panels

KTP400 Basic starter kit with S7-1200

Easy entry at a minimum price:
You can save up to 40% compared to purchasing the products individually.

More Information on starter kits:
www.siemens.com/comfort-panels-starter-kits
www.siemens.com/basic-panels-starter-kits

Starter kits consisting of			
Panel	**Engineering software**	**Cable**	**Other**
SIMATIC HMI Basic Panels			
KP300 Basic mono PN	WinCC Comfort V11	PROFINET (10 m)	SIMATIC CPU S7-1200
KTP400 Basic mono PN	WinCC Comfort V11	PROFINET (10 m)	SIMATIC CPU S7-1200
KTP600 Basic color PN	WinCC Comfort V11	PROFINET (10 m)	SIMATIC CPU S7-1200
SIMATIC HMI Comfort Panels			
KTP400 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB, 10 protective membranes
TP700 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB, 10 protective membranes
TP900 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB, 10 protective membranes
TP1200 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB, 10 protective membranes
KP400 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB
KP700 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB
KP900 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB
KP1200 Comfort	WinCC Comfort V11	PROFINET (2 m)	1 SIMATIC HMI Memory Card 2 GB
SIMATIC HMI Mobile Panels			
Mobile Panel 277 IWLAN 8", Touch + Key	WinCC Comfort V11	–	1 charging station, 1 additional battery
Mobile Panel 277F IWLAN 8", Touch + Key	WinCC Comfort V11	–	3 transponders, 1 charging station, 1 additional battery

The documentation is supplied on CD-ROM.

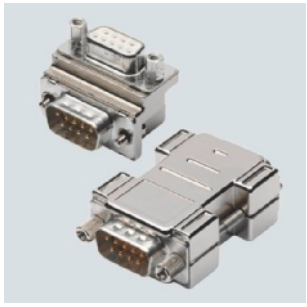
Accessories for SIMATIC Operator Panels

Memory media

Data such as image updates, projects, license keys, etc. can be saved and transferred via various types of standard storage media.

The selection of storage media for SIMATIC HMI ranges from CompactFlash Cards and Multi Media Cards to the SD Card. Standard USB flash drives are approved for all Multi Panels, Comfort Panels, and Mobile Panels with Windows CE 5.0 or higher.

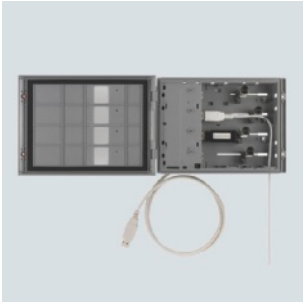
Converters/adapters



Converters and adapters expand the physical possibilities for connecting SIMATIC Operator Panels.

This makes it possible, for example, to externally convert from RS422 to RS232. Furthermore, this allows SIMATIC S5 controllers and non-Siemens controllers to be connected. Using angled adapters, the connector outlet can be rotated by 90°.

Industrial Hub 4



The active industrial USB Hub 4 has 4 USB V1.1 ports. These are arranged such that up to four standard USB flash drives, for example, can be securely attached. When installed, the four ports can be accessed simultaneously from the front via an IP65 flap and from the control cabinet at the back.

The USB Hub 4 can also be optionally mounted direct on a standard mounting rail. All USB products approved for panels or PCs can be connected.

Protective covers, cover foils

With protective covers, installed SIMATIC Operator Panels can be protected against scratching and dirt on the front side.

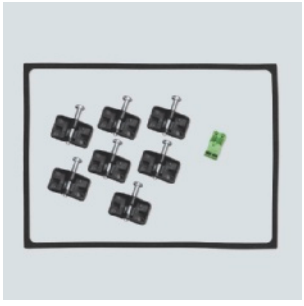
The degree of protection of the panel is retained or even improved. In addition to protective covers, there are also protective films for touch displays available.

Connector

For PROFIBUS and PROFINET, there is a comprehensive range of connection plugs and plug-in connectors with various connection methods available.

The bus connector is available in several versions for various cable outlets. Integrated terminating resistors can easily be connected from outside.
24 V DC power supply connectors can also be ordered.

Service packs/labeling strips



Service packs for SIMATIC Operator Panels are available for all loose parts for the respective panel, e.g. mounting wrench, mounting seal, and connection plug.

You can easily create your own labeling strips using an inkjet or laser printer. A Word template is provided for this purpose on the Internet.

Tried and tested technology continues to be offered

SIMATIC Micro Panels

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

SIMATIC Panels – 70 series

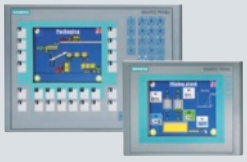
The SIMATIC Panels of the 70 series are low-cost entry-level devices in the range of graphics-capable operator panels. Their 3" or 4.5" pixel graphics display also supports bitmap and bar displays. They are suited to small-scale HMI tasks.

SIMATIC Panels – 170 series

The Touch Panels and Operator Panels of the 170 series have proved themselves for operator control and monitoring of small applications. The performance capability of the devices is scalable. These higher-quality devices have a retentive message buffer, and the color devices have a PROFINET/Ethernet interface in addition to the PROFIBUS interface.

SIMATIC Panels – 270 series

Based on the Windows CE operating system for more flexibility and openness, the SIMATIC Panels of the 270 series offer innovative operator control and monitoring combined with the tried and tested advantages of the Operator Panels and Touch Panels: ruggedness, stability, and simple handling.



SIMATIC Multi Panels – 170/270/370 series

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

You can find technical data to aid in selecting individual products on the enclosed datasheet.

Step into the world of SIMATIC

This brochure has given you an initial overview of the extensive SIMATIC portfolio for factory automation – and of the advantages for you as a machine builder and plant operator. Further information on the individual families of systems can be found in the Internet sites listed below.

S I M A T I C

SIMATIC is a principal component of Totally Integrated Automation, the comprehensive and integrated range of products and systems for automation:
www.siemens.com/tia

SIMATIC – the leading automation system for industry:
www.siemens.com/simatic

Get to know the SIMATIC consistency through its system features:
www.siemens.com/simatic-system-features

SIMATIC PCS 7	SIMATIC Controller	SIMATIC ET 200
The powerful, scalable process control system for all sectors	Powerful controller based on various hardware platforms	The distributed, modular I/O system for all requirements
www.siemens.com/simatic-pcs7	**www.siemens.com/simatic-controller**	**www.siemens.com/simatic-et200**

SIMATIC Software	SIMATIC Technology	SIMATIC HMI
Industrial software for maximum efficiency in every phase of an automation project	The comprehensive range of products for performing technological tasks	The complete range for operator control and monitoring
www.siemens.com/simatic-software	**www.siemens.com/simatic-technology**	**www.siemens.com/simatic-hmi**

SIMATIC PC-based Automation	SIMATIC IT	SIMATIC NET
Comprehensive range of hardware and software products for PC-based Automation	The basis for customer-specific, integrated MES solutions	The extensive range of products and systems for industrial communication
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SIMATIC HMI Panels

Operator panels to suit all demands

Technical specifications · November 2011

SIMATIC HMI

Answers for industry.

SIEMENS

Technology at a glance

Key Panels

The innovative operator panels



	KP8 PN	KP8F PN	KP32F PN
Type of operation			
Function keys (programmable)	8	8	32
Output type			
LED color modes	5 (green, red, yellow, blue, white)		
Typical service life			
Short-stroke keys (in number of switching cycles)	1 000 000		
Light emitting diodes (ON period in %)	100%		
Interfaces			
Digital inputs/outputs[1)]	8	8	16
Additional digital inputs	–	2 fail-safe	16 + 4 fail-safe
PROFINET	2	2	2
Functionality			
Pushbutton and lamp test	•		
Type of protection			
Front / rear	IP65 / IP20		
Connection to controller			
SIMATIC S7, WinAC	S7-1200, S7-300, S7-400	S7-300 (F), S7-400 (F)	
SIMATIC S5	–		
SINUMERIK	•		
SIMOTION	•		
Engineering software			
Configuration	STEP 7 Basic V11		
Environmental conditions			
Mounting position	Vertical in portrait or landscape format		
Max. permissible angle of inclination without forced ventilation (in °)	+/- 30		
Max. relative humidity (in %)	90		
Temperature			
Operation (vertical installation) in °C	0...+55		
Operation (max. angle of inclination) in °C	0...+45		
Dimensions			
Enclosure front (W x H in mm)	98 x 155	98 x 155	295 x 155
Installation cutout/device depth (W x H / D in mm)	68 x 129 / 49	68 x 129 / 49	275 x 135 / 39
Order No.*)	**6AV3688-3AY36-0AX0**	**6AV3688-3AF37-0AX0**	**6AV3688-3EH47-0AX0**

Basic Panels

Low-cost operator control and monitoring of simple applications








	KP300 Basic mono PN	KTP400 Basic mono PN	KTP400 Basic color PN	KP400 Basic color PN	KTP600 Basic mono PN	KTP600 Basic color DP / PN	KTP1000 Basic color DP / PN	TP1500 Basic color PN
	3.6" Key	**4" Touch+Key**	**4" Touch+Key**	**4" Key**	**6" Touch+Key**	**6" Touch+Key**	**10" Touch+Key**	**15" Touch**
Display	FSTN LCD monochrome	STN liquid crystal display (LCD), 4 gray levels	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors
Size (in inches)	3.6"	3.8"	4.3"	4.3"	5.7"	5.7"	10.4"	15.1"
Resolution (W x H in pixels)	240 x 80	320 x 240	480 x 272	480 x 272	320 x 240	320 x 240	640 x 480	1024 x 768
MTBF[10)] of backlighting (in h)	50,000	30,000	50,000	50,000	50,000	50,000	50,000	50,000
Front dimensions (in mm)	165 x 97	140 x 116	140 x 116	150 x 186	214 x 158	214 x 158	335 x 275	400 x 310
Operator controls	Membrane keypad	Touch screen and 4 tactile keys	Touch screen and 4 tactile keys	Membrane keypad and 8 tactile keys	Touch screen and 6 tactile keys	Touch screen and 6 tactile keys	Touch screen and 8 tactile keys	Touch screen
Function keys (programmable) / System keyboard	10 / •	4 / –	4 / –	8 / 26	6 / –	6 / –	8 / –	– / –
Usable memory								
User memory	512 KB	512 KB	512 KB	512 KB	512 KB	512 KB	1024 KB	1024 KB
Memory for options / recipes [7)]	– / 40 KB	– / 40 KB	– / 40 KB	– / 40 KB	– / 40 KB	– / 40 KB	– / 40 KB	– / 40 KB
Message buffer	•	•	•	•	•	•	•	•
Interfaces								
Serial / MPI / PROFIBUS DP/ PROFINET (Ethernet)	– / – / –/ •	– / – / –/ •	– / – / –/ •	– / – / –/ •	– / – / –/ •	– / – / • / – or – / – / – / •	– / – / • / – or – / – / – / •	– / – / – / •
USB host / USB device	–	–	–	–	–	–	–	–
Slot for CF / Multi Media / SD	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –
Functionality (if configured with WinCC V11)								
Signaling system (number of messages/message classes)	200 / 32	200 / 32	200 / 32	200 / 32	200 / 32	200 / 32	200 / 32	200 / 32
Process pictures	50	50	500	500	50	50	50	50
Variables	250	250	500	500	500	500	500	500
Vector graphics	•	•	•	•	•	•	•	•
Bar graphs / curve diagrams	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Faceplates	–	–	–	–	–	–	–	–
Recipes	5	5	5	5	5	5	5	5
Archiving / Visual Basic Scripts	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
Programming device functions	–	–	–	–	–	–	–	–
Connection to controller								
SIMATIC S7 / SIMATIC WinAC	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •
SIMATIC S5 / SIMATIC 505	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
SINUMERIK / SIMOTION	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
Allen Bradley / Mitsubishi	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Modicon/Omron	• / –	• / –	• / –	• / –	• / –	• / • or • / –	• / • or • / –	• / –
Engineering software								
Configuration	WinCC Basic V11 or higher	WinCC Basic V10.5 or higher, WinCC flex. Compact	WinCC Basic V11 or higher	WinCC Basic V11 or higher	WinCC Basic V10.5 or higher, WinCC flex. Compact	WinCC Basic V11 or higher, WinCC flex. Compact	WinCC Basic V11 or higher, WinCC flex. Compact	WinCC Basic V10.5 or higher, WinCC flex. Compact
Options, application								
Sm@rtServer / Audit / Logon	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –
OPC server / Internet Explorer	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
Order No.*)	**6AV6647-0AH11-3AX0**	**6AV6647-0AA11-3AX0**	**6AV6647...**	**6AV6647...**	**6AV6647-0AB11-3AX0**	**6AV6647-0AC11-3AX0 6AV6647-0AD11-3AX0**	**6AV6647-0AE11-3AX0 6AV6647-0AF11-3AX0**	**6AV6647-0AG11-3AX0**

*) *You will find up-to-date ordering data and prices as well as our terms of sale and delivery in the Catalog ST 80 / ST PC and on the Internet at* ***www.siemens.com/industrymall***

1) user-configurable 2) Device version 3) Device version DP 4) PN/DP version 5) RS232 with adapter 6) Only via PROFIBUS DP 7) Integrated Flash, expandable via memory card

Comfort Panels							Mobile Panels				
High-end functionality for demanding HMI tasks							Maximum mobility for operator control and monitoring				
											
KTP400 Comfort KP400 Comfort	**TP700 Comfort KP700 Comfort**	**TP900 Comfort KP 900 Comfort**	**TP1200 Comfort KP1200 Comfort**	**TP1500 Comfort KP1500 Comfort**	**TP1900 Comfort**	**TP2200 Comfort**	**Mobile Panel 177**	**Mobile Panel 277**	**Mobile Panel 277 (F) IWLAN V2**	**Mobile Panel 277**	
4" Touch+Key 4" Key	**7" Touch 7" Key**	**9" Touch 9" Key**	**12" Touch 12" Key**	**15" Touch 15" Key**	**19" Touch**	**22" Touch**	**6" Touch+Key**	**8" Touch+Key**	**8" Touch+Key**	**10" Touch**	
Widescreen TFT, 16 million colors, LED backlighting							STN liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD) 64K colors	TFT liquid crystal display (LCD) 64K colors	TFT liquid crystal display (LCD) 64K colors	**Display**
4.3"	7.0"	9.0"	12.1"	15.4"	18.5"	21.5"	5.7"	7.5"	7.5"	10.4"	Size (in inches)
480 x 272	800 x 480	800 x 480	1280 x 800	1280 x 800	1366 x 768	1920 x 1080	320 x 240	640 x 480	640 x 480	800 x 600	Resolution (W x H in pixels)
80,000	80,000	80,000	80,000	80,000	50,000	30,000	50,000	50,000	50,000	50,000	MTBF[10] of backlighting (in h)
140 x 116 152 x 188	214 x 158 308 x 204	274 x 190 362 x 230	330 x 241 454 x 289	415 x 310 483 x 310	483 x 337	560 x 380	Diameter 245	Diameter 290	Diameter 290	Diameter 350	Front dimensions (in mm)
Touch screen and membrane keypad or membrane keypad	Touch screen or membrane keypad	Touch screen or membrane keypad	Touch screen or membrane keypad	Touch screen or membrane keypad	Touch screen	Touch screen	Membrane keypad and touch screen	Membrane keypad and touch screen	Membrane keypad and touch screen	Touch screen	**Operator controls**
4 (w. LED) / – 8 (w. LED) / •	– / – 24 (w. LED) / •	– / – 26 (w. LED) / •	– / – 34 (w. LED) / •	– / – 36 (w. LED) / •	– / –	– / –	14 / –	18 / –	18 / –	– / –	Function keys (programmable) / System keyboard
											Usable memory
4 MB	12 MB	12 MB	12 MB	24 MB	24 MB	24 MB	2 MB	6 MB	6 MB	6 MB	User memory
4 MB / 512 KB	12 MB / 2 MB	12 MB / 2 MB	12 MB / 2 MB	24 MB / 4 MB	24 MB / 4 MB	24 MB / 4 MB	– / 32 KB	1024 KB / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	Memory for options / recipes [7]
•	•	•	•	•	•	•	•	•	•	•	Message buffer
											Interfaces
• [5] / • / • / 1	• [5] / • / • / 2	• [5] / • / • / 2	• [5] / • / • / 2	• [5] / • / • / 3	• [5] / • / • / 3	• [5] / • / • / 3	• / •[3] / •[3] / •[2]	• / • / • / •	– / – / – / (• via IWLAN)	• / • / • / •	Serial / MPI / PROFIBUS DP/ PROFINET (Ethernet)
1 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	– / –	• / –	• / –	• / –	USB host / USB device
– / – / 2	– / – / 2	– / – / 2	– / – / 2	– / – / 2	– / – / 2	– / – / 2	– / • / –	– / • / •	– / • / •	– / • / •	Slot for CF / Multi Media / SD
											Functionality (if configured with WinCC V11)
2000 / 32	4000 / 32	4000 / 32	4000 / 32	6000 / 32	6000 / 32	6000 / 32	2000 / 32	4000 / 32	4000 / 32	4000 / 32	Signaling system (number of messages/message classes)
500	500	500	500	750	750	750	500	500	500	500	Process pictures
1024	2048	2048	2048	4096	4096	4096	1024	2048	2048	2048	Variables
•	•	•	•	•	•	•	•	•	•	•	Vector graphics
• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / f (*t*), f (*x*)	• / • f(t)	• / • f(t)	• / • f(t)	• / • f(t)	Bar graphs / curve diagrams
•	•	•	•	•	•	•	–	•	•	•	Faceplates
100	300	300	300	500	500	500	100	300	300	300	Recipes
10 / 50	50 / 100	50 / 100	50 / 100	200 / 200	200 / 200	200 / 200	– / –	• / •	• / •	• / •	Archiving / Visual Basic Scripts
STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL, diagnostics viewer	STATUS/CONTROL	STATUS/CONTROL	STATUS/CONTROL	STATUS/CONTROL	Programming device functions
											Connection to controller
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	SIMATIC S7 / SIMATIC WinAC
– / –	– / –	– / –	– / –	– / –	– / –	– / –	•[3][6] / •[3]	•[6] / •	–	•[6] / •	SIMATIC S5 / SIMATIC 505
– / –	– / –	– / –	– / –	– / –	– / –	– / –	• / •	• / •	– / • (not Safety version)	• / •	SINUMERIK / SIMOTION
• / •	• / •	• / •	• / •	• / •	• / •	• / •	•[3] / •[3]	• / •	– / –	• / •	Allen Bradley / Mitsubishi
• / •	• / •	• / •	• / •	• / •	• / •	• / •	•[3] / •[3]	• / •	– / –	• / •	Modicon/Omron
											Engineering software
WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher, WinCC flexible Compact, Standard, Advanced	WinCC Comfort V11 or higher, WinCC flexible Standard, Advanced	WinCC Comfort V11 or higher, WinCC flexible Standard, Advanced	WinCC Comfort V11 or higher, WinCC flexible Standard	Configuration
											Options, application
• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	• / • / •	•[2] / – / •	• / • / •	• / • / – [9]	• / – / –	Sm@rtServer / Audit / Logon
• / •	• / •	• / •	• / •	• / •	• / •	• / •	– / –	• / •	• / •	• / •	OPC server / Internet Explorer
6AV2124-1DC01-0AX0 6AV2124-2DC01-0AX0	**6AV2124-0GC01-0AX0 6AV2124-1GC01-0AX0**	**6AV2124-0JC01-0AX0 6AV2124-1JC01-0AX0**	**6AV2124-0MC01-0AX0 6AV2124-1MC01-0AX0**	**6AV2124...**	**6AV2124...**	**6AV2124...**	**6AV6645-0AA01-0AX0 6AV6645-0BA01-0AX0**	**6AV6645-0CA01-0AX0**	**6AV6645-0DD01-0AX1**	**6AV6645-0BE02-0AX0**	**Order No. *)**

[8] Configuration with WinCC flexible 2008 or higher *[9] Only monitoring mode for Mobile Panel 277F IWLAN* *[10] Reduction of brightness by 50%, can be extended by dimming and ProfiEnergy.*

Technology at a glance

	Micro Panels				Panels								
	Low-cost operator control and monitoring of simple applications				70 series Low-cost operator control using rugged keys			170 series The all-rounder with comprehensive basic functionality				270 series The universal devices with high-contrast TFT displays	
													
	TD 200	**TD 400C**	**OP 73micro**	**TP 177micro**	**OP 73**	**OP 77A**	**OP 77B**	**TP 177A**	**TP 177B**	**TP 177B**	**OP 177B**	**TP 277**	**OP 277**
	Keys	**Keys**	**3" Key**	**6" Touch**	**3" Key**	**4.5" Key**	**4.5" Key**	**6" Touch**	**4" Touch + Key**	**6" Touch**	**6" Touch + Key**	**6" Touch**	**6" Key**
Display	STN display, (with backlighting)	STN display, (with backlighting)	STN liquid crystal display (LCD), monochrome	STN liquid crystal display (LCD), 4 blue levels	STN liquid crystal display (LCD), monochrome	STN liquid crystal display (LCD), monochrome	STN liquid crystal display (LCD), monochrome	STN liquid crystal display (LCD), 4 blue levels	TFT widescreen display (LCD), 256 colors	STN liquid crystal display (LCD), 4 blue levels or 256 colors	STN liquid crystal display (LCD), 4 blue levels or 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors
Size (in inches)	2 lines	4 lines	3"	5.7"	3"	4.5"	4.5"	5.7"	4.3"	5.7"	5.7"	5.7"	5.7"
Resolution (W x H in pixels)	Max. 20 characters/line Character height 5 mm	16 or 24 characters/ line	160 x 48	320 x 240	160 x 48	160 x 64	160 x 64	320 x 240	480 x 272	320 x 240	320 x 240	320 x 240	320 x 240
MTBF[10] of backlighting (in h)	50,000	50,000	100,000	50,000	100,000	100,000	100,000	50,000	30,000	50,000	50,000	50,000	50,000
Front dimensions (in mm)	148 x 76	174 x 102	154 x 84	212 x 156	154 x 84	150 x 186	150 x 186	212 x 156	140 x 116	212 x 156	243 x 212.5	212 x 156	308 x 204
Operator controls	Membrane keypad	Membrane keypad	Membrane keypad	Touch screen	Membrane keypad	Membrane keypad	Membrane keypad	Touch screen	Touch screen, membrane keypad	Touch screen	Touch screen, membrane keypad	Touch screen	Membrane keypad
Function keys (programmable) / System keyboard	8 / 5	15 are freely configurable	4 / 8	– / –	4 / 8	8 / 23	8 / 23	– / –	4 / –	– / –	32 / –	– / –	24 / 36
Usable memory													
User memory	User data on CPU	User data on CPU	128 KB	256 KB	256 KB	256 KB	1024 KB	512 KB	2 MB	2 MB	2 MB	4 MB	4 MB
Memory for options / recipes	– / –	– / –	– / –	– / –	– / –	– / 32 KB	– / 32 KB	– / 32 KB	– / 32 KB	– / 32 KB	– / 32 KB	– / 64 KB	– / 64 KB
Message buffer	–	–	•	•	•	•	•	•	•	•	•	•	•
Interfaces													
Serial / MPI / PROFIBUS DP/ PROFINET (Ethernet)	PPI	PPI	PPI	PPI	– / • / • / –	– / • / • / –	• / • / • / –	– / • / • / –	•[5] / • / • / •[4]	•[5] / • / • / •[4]	•[5] / • / • / •[4]	•[5] / • / • / •	•[4] / • / • / •
USB	–	–	–	–	–	–	•	–	•	•	•	•	•
Slot for CF / Multi Media / SD	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / – / –	– / • / –	– / – / –	– / • / •	– / • / –	– / • / –	– / • / –	– / • / –
Functionality	Configuration by means of Micro/WIN				Configuration with WinCC flexible			Configuration with WinCC flexible					
Signaling system (number of messages/message classes)	80	80	250 / 32	500 / 32	500 / 32	1000 / 32	1000 / 32	1000 / 32	2000 / 32	2000 / 32	2000 / 32	4000 / 32	4000 / 32
Process pictures	64	64	250	250	500	500	500	250	500	500	500	500	500
Variables	864	864	500	250	1000	1000	1000	500	1000	1000	1000	2048	2048
Vector graphics	–	–	–	•	–	–	–	•	•	•	•	•	•
Bar graphs / curve diagrams	– / –	– / –	• / –	• / •	• / –	• / –	• / –	• / •	• / •	• / •	• / •	• / •	• / •
Faceplates	–	–	–	–	–	–	–	–	–	–	–	–	–
Recipes	–	–	–	–	–	5	100	5	100	100	100	300	300
Archiving	–	–	–	–	–	–	–	–	–	–	–	•	•
Visual Basic Scripts	–	–	–	–	–	–	–	–	–	–	–	•	•
Programming device functions	–	–	–	–	–	–	–	–	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7
Connection to controller													
SIMATIC S7 / SIMATIC WinAC	S7-200	S7-200	S7-200	S7-200	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •
SIMATIC S5 / SIMATIC 505	–	–	–	–	– / –	– / –	• / •	– / –	•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •
SINUMERIK / SIMOTION	–	–	–	–	– / –	– / –	– / –	– / –	• / •	• / •	• / •	• / •	• / •
Allen Bradley / Mitsubishi	–	–	–	–	– / –	• / –	• / •	• / –	• / •	• / •	• / •	• / •	• / •
Modicon/Omron	–	–	–	–	–	–	• / •	–	• / •	• / •	• / •	• / •	• / •
Engineering software	Micro/WIN V4.0	Micro/WIN V4.0 SP 6	WinCC flexible Micro, Compact, Standard, Advanced		WinCC Comfort V11 or higher, WinCC flexible Compact, Standard, Advanced			WinCC Comfort V11 or higher, WinCC flexible Compact, Standard, Advanced				WinCC Comfort V11 or higher, WinCC flexible Standard, Advanced	
Options, application													
Sm@rtService / Sm@rtAccess / Audit / Logon	– / – / – / –	– / – / – / –	– / – / – / –	– / – / – / –	– / – / – / –	– / – / – / –	– / – / – / –	– / – / – / –	•[4] / •[4] / – / •	•[4] / •[4] / – / •	•[4] / •[4] / – / •	• / • / • / •	• / • / • / •
OPC server / Internet Explorer	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
Order No. *)	**6ES7272-0AA30-0YA1**	**6AV6640-0AA00-0AX1**	**6AV6640-0BA11-0AX0**	**6AV6640-0CA11-0AX1**	**6AV6641-0AA11-0AX0**	**6AV6641-0BA11-0AX1**	**6AV6641-0CA01-0AX1**	**6AV6642-0AA11-0AX1**	**6AV6642-0BD01-3AX0**	**6AV6642-0BA01-1AX1 6AV6642-0BC01-1AX1**	**6AV6642-0DA01-1AX1 6AV6642-0DC01-1AX1**	**6AV6643-0AA01-1AX0**	**6AV6643-0BA01-1AX0**

) You will find up-to-date ordering data and prices as well as our terms of sale and delivery in the Catalog ST 80 / ST PC and on the Internet at* ***www.siemens.com/industrymall*

1) user-configurable 2) Device version 3) Device version DP 4) PN/DP version 5) RS232 with adapter 6) Only via PROFIBUS DP 7) Integrated Flash, expandable via memory card

Multi Panels									Thin Clients		
170 series Entry-level MP Class	**270 series** Convincing performance, openness, and expandability				**370 series** Meeting the toughest demands on performance, openness and expandability						
											
MP 177	**MP 277**				**MP 377**						
6" Touch	**8" Touch**	**10" Touch**	**8" Key**	**10" Key**	**12" Touch**	**12" Key**	**15" Touch**	**19" Touch**	**10" Touch**	**15" Touch**	
TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT, 64K colors	TFT, 64K colors	**Display**
5.7"	7.5"	10.4"	7.5"	10.4"	12.1"	12.1"	15"	19"	10"	15"	Size (in inches)
320 x 240	640 x 480	640 x 480	640 x 480	640 x 480	800 x 600	800 x 600	1024 x 768	1280 x 1024	325 x 263	400 x 310	Resolution (W x H in pixels)
50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	MTBF[10] of backlighting (in h)
212 x 156	250 x 190	335 x 275	362 x 231	483 x 310	335 x 275	483 x 310	400 x 310	483 x 400	–	–	Front dimensions (in mm)
Touch screen	Touch screen	Touch screen	Membrane keypad	Membrane keypad	Touch screen	Membrane keypad	Touch screen	Touch screen	Touch screen	Touch screen	**Operator controls**
– / –	– / –	– / –	26 / 38	36 / 38	– / –	36 / 38	– / –	– / –	– / –	– / –	Function keys (programmable) / System keyboard
											Usable memory
2 MB	6 MB	6 MB	6 MB	6 MB	12 MB	12 MB	12 MB	12 MB	–	–	User memory
– / 32 KB	1024 KB / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	1024 KB / 64 KB	12 MB / 128 KB	12 MB / 128 KB	12 MB / 128 KB	12 MB / 128 KB	–	–	Memory for options / recipes
•	•	•	•	•	•	•	•	•	–	–	Message buffer
											Interfaces
•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	•[5] / • / • / •	– / – / – / 1 x Ethernet (RJ45)	– / – / – / 1 x Ethernet (RJ45)	Serial / MPI / PROFIBUS DP/ PROFINET (Ethernet)
•	•	•	•	•	•	•	•	•	1 x	1 x	USB
– /• / •	– /• / •	– / • / •	– / • / •	– / • / •	• / • / •	• / • / •	• / • / •	• / • / •	– / – / –	– / – / –	Slot for CF / Multi Media / SD
Configuration with WinCC flexible									Configuration with Sm@rt Access		**Functionality**
2000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	4000 / 32	**SIMATIC Thin Clients – Low-cost on-site operator stations** • WinCC, installed on server systems, can be displayed and operated by means of the Remote Desktop Protocol (RDP). Thin clients with complete IP65 protection permit operator control and monitoring outside of the control cabinet. • WinCC flexible, installed on SIMATIC Multi Panels or SIMATIC PCs, can be displayed and operated on site on thin clients by means of the Sm@rtAccess option. • Access to HTML pages on the web is possible by means of the integrated browser. Thin clients can thus be used as additional web terminals for Intranet/Internet applications.		Signaling system (number of messages/message classes)
500	500	500	500	500	500	500	500	500			Process pictures
1000	2048	2048	2048	2048	4096[8]	4096[8]	4096[8]	4096[8]			Variables
•	•	•	•	•	•	•	•	•			Vector graphics
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •			Bar graphs / curve diagrams
–	•	•	•	•	•	•	•	•			Faceplates
100	300	300	300	300	500	500	500	500			Recipes
–	•	•	•	•	•	•	•	•			Archiving
–	•	•	•	•	•	•	•	•			Visual Basic Scripts
with SIMATIC S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7	with SIMATIC S5/S7			Programming device functions
											Connection to controller
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	S7 modular embedded Controller		SIMATIC S7 / SIMATIC WinAC
•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •	•[6] / •	–	–	SIMATIC S5 / SIMATIC 505
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	SINUMERIK / SIMOTION
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	–	–	Allen Bradley / Mitsubishi
• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	–	–	Modicon/Omron
WinCC Comfort V11 or higher, WinCC flexible, Compact, Standard, Advanced	WinCC Comfort V11 or higher, WinCC flexible Standard, Advanced				WinCC Comfort V11 or higher, WinCC flexible Standard, Advanced				–	–	Engineering software
											Options, application
• / • / – / •	• / • / • / •	• / • / • / •	• / • / • / •	• / • / • / •	• / • / • / •	• / • / • / •	• / • / • / •	• / • / • / •	–	–	Sm@rtService / Sm@rtAccess / Audit / Logon
– / –	• / •	• / •	• / •	• / •	• / •	• / •	• / •	• / •	–	–	OPC server / Internet Explorer
6AV6642-0EA01-3AX0	**6AV6643-0CB01-1AX1**	**6AV6643-0CD01-1AX1**	**6AV6643-0DB01-1AX1**	**6AV6643-0DD01-1AX1**	**6AV6644-0AA01-2AX0**	**6AV6644-0BA01-2AX1**	**6AV6644-0AB01-2AX0**	**6AV6644-0AC01-2AX1**	**6AV6646-0AA21-2AX0**	**6AV6646-0AB21-2AX0**	**Order No.** *)

8) Configuration with WinCC flexible 2008 or higher *9) Only monitoring mode for Mobile Panel 277F IWLAN* *10) Reduction of brightness by 50%, can be extended by dimming and ProfiEnergy.*

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