Overview

SIMATIC Mobile Panel

- Mobile operator panel for direct operator control of the plant and machine from any point
- Supports an optimum view of the workpiece or process and, at the same time, direct access and visual contact with the operator panel
- Versatile use thanks to easy unplugging and replugging during normal operation (Mobile Panel 177 and Mobile Panel 277) or
- Wireless freedom (Mobile Panel 277(F) IWLAN)
- Pixel-graphics, high-luminance color display with touch screen (analog/resistive)
- PROFIBUS or PROFINET communication, PROFINET over WLAN for Mobile Panel 277(F) IWLAN
- Freely-configurable function keys with customized labels (with LED) (not for Mobile Panel 277 10")

SIMATIC Mobile Panel 177 and SIMATIC Mobile Panel 277

- Two three-stage acknowledgement buttons;
  Optional versions include:
  - STOP pushbutton
  - STOP button, handwheel, key-operated switch and illuminated pushbutton (not for Mobile Panel 277 10")
- Communication is supported via a serial link, MPI/PROFIBUS or PROFINET
- Connection point recognition for local identification of the device based on the connection point ID
- Fast system availability after plugging into the terminal boxes
- Connection to the controller and power supply is made via the terminal box and the connecting cable

SIMATIC Mobile Panel 277(F) IWLAN

- Wireless, mobile operator panel for flexible and location-independent system and machine operation
- WLAN communication in accordance with IEEE 802.11 a (b/g) and support of PROFINET
- Powerful batteries and flexible concept for changing permit battery replacement "on the fly" without interrupting operation
- Effective range limitation and the local identification of the device by using transponder technology
- Low-cost, safety-related mobile operator control and monitoring via RFID technology (MOBY D) for plants with pre-installed safety resources (e.g. robot cells)
- Optional versions with: Handwheel, key switch and illuminated pushbutton
- Fail-safe operator controls of the SIMATIC Mobile Panel 277F IWLAN using PROFIsafe:
  - Two three-stage acknowledgment buttons
  - Emergency stop button

IWLAN Access Points SCALANCE W for SIMATIC Mobile Panel 277(F) IWLAN

- The Access Points of the product line SCALANCE W-780 are ideally suited for setting up Industrial Wireless LAN (IWLAN) radio networks for 2.4 GHz and 5 GHz with data rates of up to 54 Mbit/s; they can be used for all applications that require a high degree of operational reliability, even under extremely harsh ambient conditions
- Suitable for any application:
  - SCALANCE W-788 for cabinet-free installation
  - SCALANCE W-786 for cabinet-free installation, also with integrated antennas
  - SCALANCE W-784 for installation in control cabinets or integrated into devices
- Wireless communication suitable for use in applications with high real-time and reliability requirements, such as PROFINET, PROFIsafe or video
- Standard-compliant thanks to IEEE 802.11 support, additional functional expansions especially for use with increased reliability
- Effective encryption mechanisms protect against unauthorized access, spying, tapping, and corruption
- The SINEMA E engineering tool, wizards and online help support planning, simulation, configuration and documentation; easy management with the web server and SNMP
- Fast commissioning of the Access Points thanks to the optional swap medium PRESET-PLUG and fast device replacement in the event of a fault thanks to the optional swap medium C-PLUG (Configuration Plug)
- Accessories such as antennas, connectors, cables incl. RCoax cables (leaky wave cables) that are tuned to one another for a reliable radio link

Benefits

- Versatile possibilities for connection to the process, both wired and wireless
- Increased productivity, minimum engineering overhead, reduction in life-cycle costs
- Fast and accurate set-up as well as positioning
- Reliable operation with mature security concept
- Ergonomic and compact with low weight
- Rugged for industrial use
- Integral component of Totally Integrated Automation (TIA):
- Graphic library is available with preconfigured screen objects
- The data in the message buffer is stored retentively
- Can be used worldwide:
  - 32 online languages (incl. Asian and Cyrillic character sets) can be configured
  - Switchover between up to 16 online languages is possible directly on the Mobile Panel
- Reduction of service and commissioning costs due to:
  - Backup/restore via a process interface or optionally via a standard Multi Media Card / SD Card
  - Transfer of configuration with automatic transfer detection via all device interfaces
  - Long service life of the backlit display
- Easy engineering supported through comprehensive documentation on the SIMATIC HMI Manual Collection DVD

Mobile Panels

Application

Regardless of the industry or application, if mobility is required for the on-site control and monitoring of machines and plants, SIMATIC 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.

Even for larger production facilities, complex or enclosed machines, long materials handling or production lines and conveyor systems, mobile operator panels allow fast and precise setting up and positioning during commissioning. They also ensure shorter downtimes during retooling, maintenance or repairs.

Design

- Ergonomic and compact with various holder and grip positions (suitable for right-handed and left-handed persons)
- Pixel-graphics, high-luminance color display and touch screen (analog/resistive)
- Freely configurable and inscribable function keys (with LED) (not on Mobile Panel 277 10")
- The device is resistant to various oils, greases and general cleaning agents
- Extremely shock-resistant due to the double-walled construction and the round housing
- Dust-tight and splashwater protected enclosure with IP65 all-round protection
- Slot for a standard Multi Media Card / SD Card for backing up/restoring the configuration or recipes
- Two three-stage acknowledgment buttons
- Optional device versions with
  - STOP button or
  - STOP button, handwheel, key-operated switch and illuminated pushbutton (not for Mobile Panel 277 10")
  - The STOP button is specially secured with a protective collar. If the STOP button is looped into the emergency-stop circuit, its function corresponds to that of an emergency stop button.
- Integrated serial, MPI/PROFIBUS (up to 12 Mbit/s) and/or PROFINET interface (up to 100 Mbit/s)

or

- Connection to the PLC via the rugged and reliable terminal boxes with degree of protection IP65:
  - "Basic" terminal box: Enables the STOP button to be integrated into the safety circuit
  - "Plus" terminal box: Enables the STOP button to be integrated into the safety circuit without interruption when disconnecting the device. The emergency stop circuit remains closed regardless of whether a Mobile Panel is plugged in or not. If the Mobile Panel is disconnected during operation, the emergency stop circuit in the terminal box Plus is automatically closed which prevents triggering of the emergency stop circuit.
- Fast system availability after plugging into the terminal box
  - An optional rechargeable battery pack can be used to avoid restarting of the Mobile Panel (following brief disconnection from the terminal box).
- Detection of the connection point can be used to perform machine-specific HMI authorizations or actions depending on the selected connection point

Advanced safety concept

The two acknowledgement buttons (acc. to EN 60204-1) with three switching steps each ensure the protection of personnel and machines in critical situations. They are integrated into the handle on the back.

The STOP button (acc. to EN 60204-1) is hard-wired and positively latches when pressed. It can be looped into the emergency-stop circuit of a plant in which case it takes on the functionality of an emergency stop button, but is distinct with its gray color. This ensures that it cannot be mistaken for the emergency stop equipment. This is especially important when the Mobile Panel is not connected to the machine. SIMATIC Mobile Panels offer the option of making safety functions available on a mobile basis at any point of a machine or plant.

STOP and acknowledgement buttons are implemented according to safety regulations with two circuits and comply with the requirements of Category 3 PLd according to EN ISO 13849-1:2008.

Innovative connection concept

The Mobile Panel is simply plugged into the terminal box wherever it is needed in the plant and is immediately ready for use. The terminal box can be installed anywhere, even outside the control cabinet. It ensures fault-free plugging and unplugging during normal operation and, therefore, allows the operator-control location to be easily and safely changed when several connection points are available in a plant or machine.

The location of a Mobile Panel can be clearly identified by setting an ID number on the terminal box. This identifier permits the user to configure Mobile Panels in such a way that, for example, the user interface changes according to the connection point. The Mobile Panel establishes the connection to the controllers after being plugged into the terminal boxes and following a short start-up period. An optional rechargeable battery pack can be used to avoid restarting of the Mobile Panel (following brief disconnection from the terminal box).

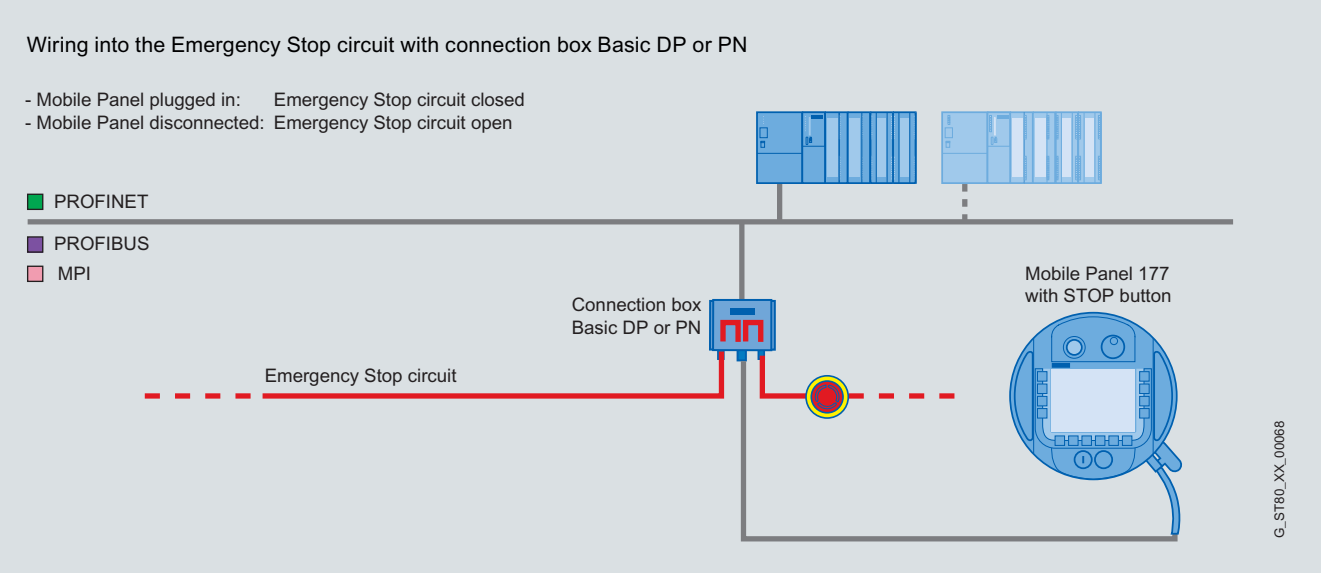
Configuration possibilities with emergency stop loop-in

Device versions with STOP button can be wired into the emergency stop circuit of a machine or plant by means of the terminal boxes. When the STOP button on the Mobile Panel is pressed, the emergency stop function is activated. The STOP button on the Mobile Panel supplements, but does not replace the emergency stop equipment installed on the machine according to EN 418. When the Mobile Panel is unplugged, "Plus" versions of the terminal box automatically close the emergency stop circuit, thereby ensuring safe and fault-free changeover (swapping).

Connection at one point on the machine

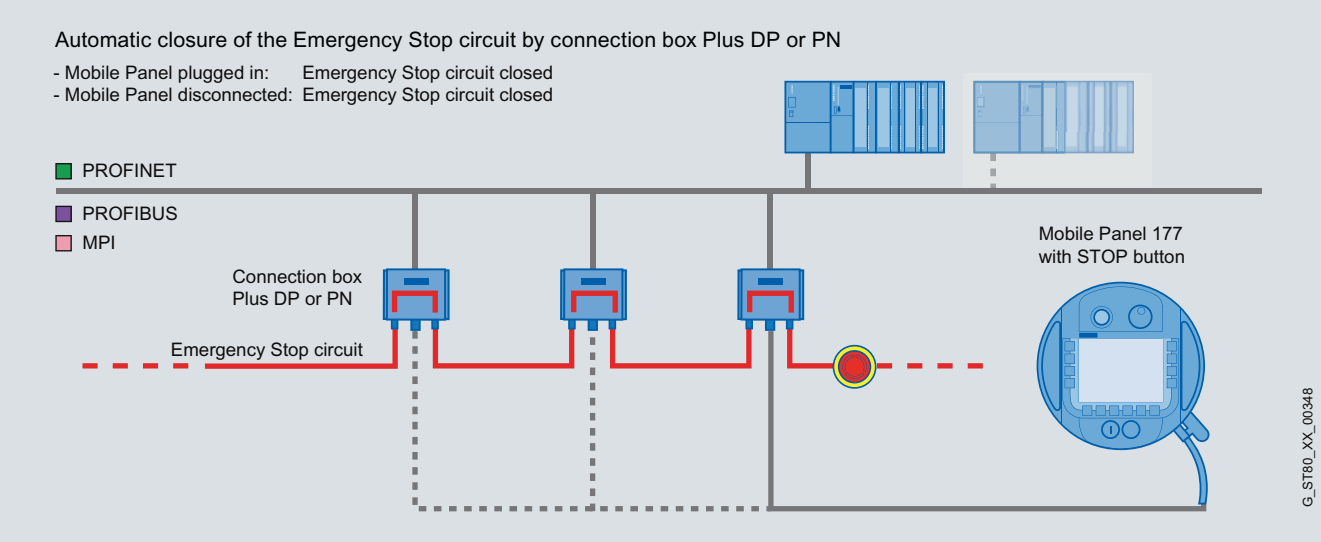
When the "Basic" terminal box version is used, unplugging the Mobile Panel interrupts the emergency stop circuit and, therefore, triggers the emergency stop function. This configuration is, therefore, best suited for applications in which the Mobile Panel is connected to a fixed point on the machine (example configuration: Mobile Panel 177).

Design (continued)



Variable connection at different points of a machine or plant

If a Mobile Panel with a STOP button is used in combination with a "Plus" terminal box, a configuration is possible in which the Mobile Panel can be used flexibly and is also looped into the emergency stop circuit. The emergency stop circuit remains closed regardless of whether a Mobile Panel is plugged into a terminal box or not. When the Mobile Panel is plugged in, the equipment is looped into the emergency stop circuit and when the STOP button is pressed, the circuit will be interrupted and the emergency stop function triggered. If the Mobile Panel is unplugged during operation, the emergency stop circuit is automatically closed in the "Plus" terminal box version (example configuration: Mobile Panel 177).



SIMATIC Mobile Panel 277(F) IWLAN

- WLAN communication in accordance with IEEE 802.11 a (b/g) and support of PROFINET
- Two versions as a simple WLAN HMI device without safety function (Mobile Panel 277 IWLAN) as well as two versions as fail-safe PROFIsafe device with emergency stop button and acknowledgement button (Mobile Panel 277F IWLAN)
- Powerful batteries and flexible concept for changing permit battery replacement "on the fly" without interrupting operation thanks to integrated backup battery
- Limited effective range (Mobile Panel 277F IWLAN) and local identification of the device (Mobile Panel 277 (F) IWLAN) due to the use of transponder technology, comparable with connection point recognition on the cabled Mobile Panels or alternatively via RFID technology for systems with existing safety mechanisms, such as robot cell
- Optional versions with: Handwheel, key switch and illuminated pushbutton
- Fail-safe control elements of the SIMATIC Mobile Panel 277F IWLAN using PROFIsafe:
  - Two three-stage acknowledgement buttons
  - Emergency stop button

2

Design (continued)

Mobile operator control and monitoring in the Industrial Wireless LAN

The SIMATIC Mobile Panel 277(F) IWLAN enables the integration as a WLAN client in wireless LAN networks. This makes it possible to implement a full-fledged mobile HMI device, which can also perform tasks that are not possible with stationary or cabled devices.

Reliable and rugged WLAN networks can be created using SCALANCE W IWLAN access points. The configuration and simulation software SINEMA E permits reliable WLAN planning ahead of time.

The device is configured – just like the cabled Mobile Panels – with WinCC flexible. The compatibility and continuity permit easy and problem-free migration of existing projects to the wireless device.

Transponders have been developed especially for the Mobile Panel 277(F) IWLAN and can be used for the local identification of the Mobile Panel in the plant. Comparable with the connection point recognition (Box-ID) for cabled Mobile Panels, these transponders can be used to configure location-dependent functions, e.g. the automatic switchover to a different display when a certain zone is accessed, or releasing/blocking of functions from the control zone.

On the fail-safe Mobile Panel with enable button and emergency stop button (Mobile Panel 277F IWLAN), the transponders perform another task: The safety-related release of the enable button for hazardous operations. Alternatively, the Mobile Panel 277F IWLAN (RFID Tag, MOBY D) for already delineated safety zones, such as robot cells, can be used. The monitoring of the protection zones is assumed by the alternative measures, not by the RFID Tag.

Full safety functionality - even wireless!

The SIMATIC Mobile Panel 277F IWLAN is integrated via PROFINET and PROFIsafe into the safety-oriented program (Distributed Safety) of a SIMATIC F-CPU. Incorporating and removing Mobile Panels is possible during runtime. Both of the safety-related functions "acknowledgement button" and "emergency stop button" comply with SIL 3 according to IEC 61508 or PLe/Cat. 4 according to EN ISO 13849-1 and are TÜV-certified. A detailed safety manual is delivered with the Mobile Panel 277F IWLAN, along with a CD containing the required F function blocks for integration in the F-program. The F-FBs are tested and certified - this enables a problem-free and simple integration of the Mobile Panel.

The emergency stop button is immediately available WLAN-wide as soon as the Mobile Panel 277F IWLAN is booted up and the PROFISAFE connection is established with the F-CPU via IWLAN. To use the acknowledgment button locally, transponders or RFID tags must be installed in the intended control stations. This allows the Mobile Panel to register for safety-related operation.

Configuration of the transponder and the effective range is also handled comfortably with WinCC flexible. After configuration and commissioning, the effective range in the system is approved to ensure the consistency of the planning and configuration. The effect that the emergency stop button and the acknowledgment button should have and which response to certain events (e.g. leaving the WLAN range) they should have is defined by configuring the F-FBs in the F-CPU – taking account of the safety-relevant properties of the machine. If the Mobile Panel is not used any longer or if the device should be removed, it is to be moved to a specified location.

The Mobile Panel 277F IWLAN offers extensive diagnostic and status information (e.g. concerning the battery charge status, WLAN functionality, and quality of the effective range) and thus provides the user – if necessary, supported by the integrated vibration alarm – with full control of the device and system operation at all times.

System components for wireless Mobile Panels

Besides the five device versions, the following system components are offered (to be ordered individually):

For charging the battery in the Mobile Panel (which can be replaced without tools), either

- the table-top power supply (incl. power cable for EU, US, UK, JP) is required (only suitable for operation under laboratory/office conditions) or
- the charging station, which enables the device to be safely put down and charged (incl. lock for securing the device in the charging station), as well as charging up to two additional batteries at the same time (IP65)

For quick and interruption-free battery replacement during operation

- Additional battery with LED indicator for indicating the charge status

To create zones (optional for all versions) and mandatory for using the enable button in the effective ranges with Mobile Panel 277F IWLAN:

- Transponder (incl. batteries for self-sufficient operation over several years, no cabling is required on the transponder).
- For the use of the Mobile Panel 277F IWLAN (RFID Tag) in robot cells, the MOBY D RFID card system:
  MOBY D MDS D 100 (6GT2600-0AD10) or MDS D 124 (6GT2600-0AC00).

Overview

SIMATIC Mobile Panel 177 PN with terminal box

Function

- Input/output fields
  for displaying and changing process values
- Function keys
  are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used as PROFIBUS DP input I/O or directly as PROFINET IO.
  The function keys can also be reconfigured as system keys. A function that is used frequently such as "Acknowledge message" can be allocated to a function key this way.
- Additional operator controls
  such as handwheel, keyswitch and illuminated pushbutton can be connected to a variable or as a direct control over PROFIBUS DP input I/O (DP direct keys) or PROFINET IO (direct keys).
- Buttons
  are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as symbols instead of text to "label" function keys or buttons. They can also be used as full-screen background images.
  In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphic editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  simple geometric basic forms (e.g. lines, circles and rectangles) can be created direct in the configuring software
- Text fields
  for labeling function keys, process images and process values in any character size
- Curve displays and bars
  are used for the display of dynamic values in graphic-based format
- Display selection from the controller
  permits operator prompting from the controller
- Language selection;
  5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
- Language-dependent texts and graphics
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user name and password
  - User-group-specific rights
- Signaling system
  - Discrete alarms and analog alarms (limit value messages) as well as the ALARM_S message frame procedure for SIMATIC S7 and SIMOTION
  - Freely definable message classes (e.g. status/fault messages) for definition of acknowledgment response and display of message events
- Message buffer
  - Non-volatile, maintenance-free and battery-free message buffer. The messages are retained even when the Mobile Panel is disconnected.

Function (continued)

- Recipe management
  - With additional data storage (on optional Multimedia Card/SD Card)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Help texts
  for process images, messages and variables
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs
- Indicator light
  for machine and plant status indication
- Scheduler
  for cyclic function execution
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window and template concept
  - Creation of screen templates:
- Simple maintenance and configuration thanks to:
  - Backup/restore of the project, operating system, recipe data records and firmware on the optional standard Multimedia Card/SD card
  - Backup and restoration (Backup/Restore) of configuration, operating system, recipe data sets and firmware on a PC using ProSave
  - Project transfer/return via MPI/PROFIBUS DP/serial or PROFINET
  - Automatic transfer identification
  - Individual contrast settings
  - Project simulation directly on the configuration computer
- WinCC flexible options
  - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
  - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data sets, passwords and information specific to the HMI system, and much more.
- Migration
  - Any existing Mobile Panel 170 terminal boxes can be used in conjunction with the Mobile Panel 177 because they are fully compatible. The function of connection-point detection can only be used in conjunction with a Mobile Panel 177 with a DP or PN terminal box.
  - Projects created with WinCC flexible for the Mobile Panel can simply continue to be used in WinCC V11

Configuration

Configuration is carried out with the SIMATIC WinCC flexible, 2005 or later, Compact, Standard or Advanced engineering software (see SIMATIC WinCC flexible HMI software/engineering software) or WinCC V11.

SIMATIC WinCC is the logical further development of the field-proven WinCC flexible family. Projects generated using WinCC flexible can be easily migrated to WinCC. If WinCC flexible is started directly from SIMATIC Manager, the data in STEP 7 can be accessed directly while configuring the panel. Duplicated data input and data management is, therefore, avoided.

Integration

In the case of the Mobile Panel 177 DP, communication with the PLC can be implemented via PROFIBUS DP at up to 12 Mbit/s, via MPI or via the serial interface. The necessary interfaces are already onboard. A variety of drivers – even for PLCs from other suppliers – are supplied as standard.

In the case of the Mobile Panel 177 PN, communication with the PLC can be implemented via PROFINET at up to 100 Mbit/s. The necessary interfaces are already onboard. These are supplied with the device.

Using the terminal boxes the Mobile Panel 177 can be connected to (see "System interfaces"):

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMOTION
- SIMATIC S5
- SIMATIC 505 (not on Mobile Panel 177 PN)
- Third-party controllers
  - Allen Bradley
  - Mitsubishi (not on Mobile Panel 177 PN)
  - Modicon Modbus
  - GE-Fanuc (not on Mobile Panel 177 PN)
  - LG GLOFA GM (not on Mobile Panel 177 PN)
  - OMRON (not on Mobile Panel 177 PN)
  - Telemechanique Uni-Telway (not on Mobile Panel 177 PN)
- SINUMERIK
  (optionally with "SINUMERIK HMI copy license WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring;
  For further details, see Catalog NC 60)

Using the DP junctions boxes the Mobile Panel 177 PN can be connected to:

- SIMATIC S7-200/-300/-400
- WinAC Software
- SIMOTION

Note:

The unwanted operation of a Mobile Panel 177 DP (PROFIBUS) on a PN (PROFINET) terminal box and vice versa is not possible and is mechanically blocked. Further information can be found under "System interfaces".

Technical specifications

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0AA01-0AX0 with integrated acknowledgment button	6AV6 645-0AB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Display			
Size	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)
Display type	STN, 256 colors	STN, 256 colors	STN, 256 colors
Resolution (pixels)			
• Resolution (WxH in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours
Control elements			
Operating options	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
Keyboard			
• System keys	0	0	0
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
Special operator controls			
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Expansions for operator control of the process			
DP direct LEDs (LEDs as S7 output I/O)	F1...F8	F1...F8	F1...F8
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F14	F1...F14	F1...F14
Supply voltage			
Input voltage			
• Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Processor			
Processor	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2048 KB of usable memory for user data / no user memory for options	2048 KB of usable memory for user data / no user memory for options	2048 KB of usable memory for user data / no user memory for options
Type of output			
LED colors	Green	Green	Green
Acoustics	No	No	No
Interfaces			
Interfaces	1 x RS422, 1 x RS485 (max. 12 Mbit/s)	1 x RS422, 1 x RS485 (max. 12 Mbit/s)	1 x RS422, 1 x RS485 (max. 12 Mbit/s)
USB port	No	No	No
PC card slot	No	No	No
CF card slot	No	No	No
Multimedia card	combined	combined	combined
Industrial Ethernet			
• Industrial Ethernet interface	No	No	No

Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0AA01-0AX0 with integrated acknowledgment button	6AV6 645-0AB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Ambient conditions			
Operating temperature			
• Operation	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage/transport temperature			
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
Relative humidity			
• max. relative humidity	80 %	80 %	80 %
Drop height	1.5 m	1.5 m	1.5 m
Degree and class of protection			
IP65 housing	Yes	Yes	Yes
Standards, approvals, certificates			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
Performance level acc. to EN ISO 13849-1	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Configuration			
Configuration software			
• Configuration tool	see "Configuration overview" from page 2/3		
Functionality under WinCC flexible/WinCC (TIA Portal)			
Applications/options	see chapter 4: HMI software/SIMATIC WinCC flexible options and SIMATIC WinCC (TIA portal) options		
Number of Visual Basic Scripts	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status/control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	2,500 text elements	2,500 text elements	2,500 text elements
• Graphic object	Bit maps, vector graphics	Bit maps, vector graphics	Bit maps, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons

Technical specifications (continued)

SIMATIC Mobile Panel 177 PN (PROFINET)	6AV6 645-0AA01-0AX0 with integrated acknowledgment button	6AV6 645-0AB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0AC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Lists			
• Text lists	300	300	300
• Graphics list	100	100	100
• Libraries	Yes	Yes	Yes
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multimedia Card	Yes	Yes	Yes
Recording			
• Recording/Printing	-	-	-
• Printer driver	-	-	-
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload/download)			
• Transfer of configuration	MPI/PROFIBUS DP, serial, automatic transfer recognition	MPI/PROFIBUS DP, serial, automatic transfer recognition	MPI/PROFIBUS DP, serial, automatic transfer recognition
Process coupling			
• Connection to controller	see "System interfaces" from page 2/178		
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
Mechanics/material			
Type of housing (front)	Plastic	Plastic	Plastic
Dimensions and weight			
Dimensions			
• Housing diameter/depth (mm)	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm
Weight			
• Weight	1.3 kg	1.3 kg	1.3 kg

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	6AV6 645-0BA01-0AX0 with integrated acknowledgment button	6AV6 645-0BB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Display			
Size	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)	5.7" (121 mm x 92 mm)
Display type	STN, 256 colors	STN, 256 colors	STN, 256 colors
Resolution (pixels)			
• Resolution (WxH in pixel)	320 x 240	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours
Control elements			
Operating options	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs	14 function keys, 8 with LEDs
Keyboard			
• System keys	0	0	0
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
Special operator controls			
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings
• Illuminated pushbutton	No	No	Yes
• Handwheel	No	No	Yes
Expansions for operator control of the process			
DP direct LEDs (LEDs as S7 output I/O)	F1...F8	F1...F8	F1...F8
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F14	F1...F14	F1...F14
Supply voltage			
Input voltage			
• Supply voltage	via connection box	via connection box	via connection box
Backup battery			
Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
Processor			
Processor	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz	RISC 32-bit, 200 MHz
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2048 KB of usable memory for user data / no user memory for options	2048 KB of usable memory for user data / no user memory for options	2048 KB of usable memory for user data / no user memory for options
Type of output			
LED colors	Green	Green	Green
Acoustics	No	No	No
Interfaces			
Interfaces	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)	1 x RS485, 1 x Ethernet (RJ45)
USB port	No	No	No
PC card slot	No	No	No
CF card slot	No	No	No
Multimedia card	combined	combined	combined
Industrial Ethernet			
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	6AV6 645-0BA01-0AX0 with integrated acknowledgment button	6AV6 645-0BB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Ambient conditions			
Operating temperature			
• Operation	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage/transport temperature			
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
Relative humidity			
• max. relative humidity	80 %	80 %	80 %
Drop height	1.5 m	1.5 m	1.5 m
Degree and class of protection			
IP65 housing	Yes	Yes	Yes
Standards, approvals, certificates			
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
Performance level acc. to EN ISO 13849-1	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
Operating systems			
Operating system	Windows CE	Windows CE	Windows CE
Configuration			
Configuration software			
• Configuration tool	see chapter 4: HMI software/SIMATIC WinCC flexible options and SIMATIC WinCC (TIA portal) options		
Functionality under WinCC flexible/WinCC (TIA Portal)			
Applications/options	Sm@rtService, Sm@rtAccess	Sm@rtService, Sm@rtAccess	Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	Not possible	Not possible	Not possible
Task planner	Yes	Yes	Yes
Help system	Yes	Yes	Yes
Status/control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)			
• Number of messages	2 000	2 000	2 000
• Bit messages	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free	Ring buffer (n x 256 entries), retentive, maintenance-free
Recipes			
• Recipes	100	100	100
• Data records per recipe	200	200	200
• Entries per data record	200	200	200
• Recipe memory	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable	32 KB integrated Flash, expandable
Number of process images			
• Process images	500	500	500
• Variables	1 024	1 024	1 024
• Limit values	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes
Image elements			
• Text objects	2,500 text elements	2,500 text elements	2,500 text elements
• Graphics object	Bit maps, vector graphics	Bit maps, vector graphics	Bit maps, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons	Diagrams, bar graphs, sliders, invisible buttons
Lists			
• Text lists	300	300	300
• Graphic list	100	100	100
• Libraries	Yes	Yes	Yes

Technical specifications (continued)

SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS)	6AV6 645-0BA01-0AX0 with integrated acknowledgment button	6AV6 645-0BB01-0AX0 with integrated acknowledgment button and STOP button	6AV6 645-0BC01-0AX0 with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multimedia Card	Yes	Yes	Yes
Recording			
• Recording/Printing	-	-	-
• Printer driver	-	-	-
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload/download)			
• Transfer of configuration	serial, Ethernet, automatic transfer recognition	serial, Ethernet, automatic transfer recognition	serial, Ethernet, automatic transfer recognition
Process coupling			
• Connection to controller	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"	S7-200, S7- 300/400, Win AC, PC (TCP/IP), SIMOTION, Modicon (Modbus), see the chapter "System interfaces"
Expandability/openness			
• Open Platform Program	Yes	Yes	Yes
I/O			
I/O devices	Printer	Printer	Printer
Mechanics/material			
Type of housing (front)	Plastic	Plastic	Plastic
Dimensions and weight			
Dimensions			
• Housing diameter/depth (mm)	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm	Dia 245 mm / D 58 mm
Weight			
• Weight	1.3 kg	1.3 kg	1.3 kg

Ordering data		Order No.
SIMATIC Mobile Panel 177 DP (MPI/PROFIBUS) [1]		
• With integrated acknowledgement button	E	**6AV6 645-0AA01-0AX0**
• With integrated acknowledgement button and STOP pushbutton	E	**6AV6 645-0AB01-0AX0**
• With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton	E	**6AV6 645-0AC01-0AX0**
SIMATIC Mobile Panel 177 PN (PROFINET) [1]		
• With integrated acknowledgement button	E	**6AV6 645-0BA01-0AX0**
• With integrated acknowledgement button and STOP pushbutton	E	**6AV6 645-0BB01-0AX0**
• With integrated acknowledgement button, STOP button, handwheel, key-operated switch and illuminated pushbutton	E	**6AV6 645-0BC01-0AX0**
Configuration		
with SIMATIC WinCC flexible		see chapter 4
Documentation (to be ordered separately)		
Operating Instructions for Mobile Panel 177		
• German		**6AV6 691-1DK01-0AA0**
• English		**6AV6 691-1DK01-0AB0**
• French		**6AV6 691-1DK01-0AC0**
• Italian		**6AV6 691-1DK01-0AD0**
• Spanish		**6AV6 691-1DK01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-3AA0**
• English		**6AV6 691-1AB01-3AB0**
• French		**6AV6 691-1AB01-3AC0**
• Italian		**6AV6 691-1AB01-3AD0**
• Spanish		**6AV6 691-1AB01-3AE0**
WinCC flexible Communication User Manual		
• German		**6AV6 691-1CA01-3AA0**
• English		**6AV6 691-1CA01-3AB0**
• French		**6AV6 691-1CA01-3AC0**
• Italian		**6AV6 691-1CA01-3AD0**
• Spanish		**6AV6 691-1CA01-3AE0**

		Order No.
SIMATIC HMI Manual Collection	B	**6AV6 691-1SA01-0AX0**
Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
System components for Mobile Panels		
DP terminal box for Mobile Panels (MPI/PROFIBUS)		
• Basic		**6AV6 671-5AE00-0AX0**
• Plus	A	**6AV6 671-5AE10-0AX0**
PN terminal box for Mobile Panel (PROFINET)		
• Basic	A	**6AV6 671-5AE01-0AX0**
• Plus	A	**6AV6 671-5AE11-0AX0**
DP connecting cable (MPI/PROFIBUS)		
Standard cables		
• 2 m		**6XV1 440-4AH20**
• 5 m		**6XV1 440-4AH50**
• 10 m		**6XV1 440-4AN10**
• 15 m		**6XV1 440-4AN15**
• 25 m		**6XV1 440-4AN25**
Intermediate lengths [2]		
• 8 m		**6XV1 440-4AH80**
• 20 m		**6XV1 440-4AN20**
PN connecting cable (PROFINET)		
Standard cables		
• 2 m		**6XV1 440-4BH20**
• 5 m		**6XV1 440-4BH50**
• 8 m		**6XV1 440-4BH80**
• 10 m		**6XV1 440-4BN10**
• 15 m		**6XV1 440-4BN15**
• 20 m		**6XV1 440-4BN20**
• 25 m		**6XV1 440-4BN25**
Accessories		see HMI accessories

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

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

E: Subject to export regulations: AL: 9I999 and ECCN: 5D002ENCU

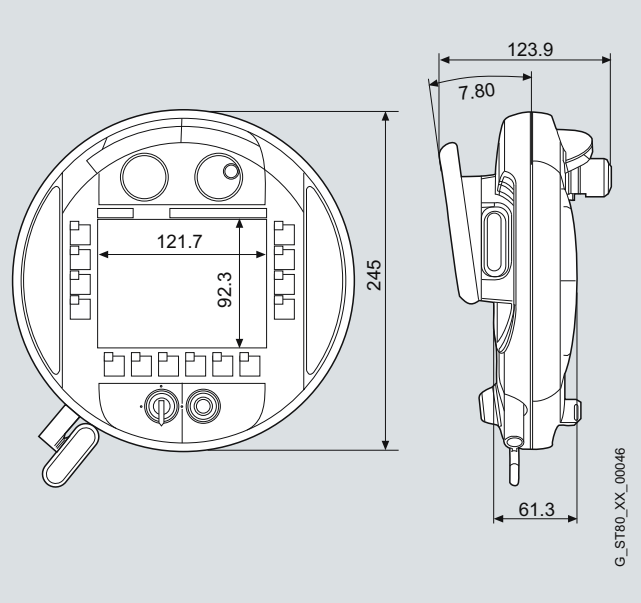
[1] The system components (connecting cables and terminal boxes) must be ordered separately.

[2] Delivery time approximately 6 weeks

SIMATIC Mobile Panel 177

Dimensional drawings

All specifications in mm. Panel cutout see technical specifications.



Mobile Panel 177 – front view and side view

More information

Additional information is available on the Internet at:

www.siemens.com/simatic-mobile-panels

Note:

Do you require a specific modification or extension to the products described here? Under "Customized products", you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

Overview

Function

- Input/output fields
  for displaying and changing of process values
- Function keys
  are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used as PROFIBUS DP input I/O or directly as PROFINET IO. The function keys can also be reconfigured as system keys. A frequently used function such as "Acknowledge alarm" can thus be assigned to a function key.
  No function keys are available on the Mobile Panel 277 10".
- Additional command components
  such as handwheel, keyswitch and illuminated pushbutton can be connected to a variable or as a direct control over PROFIBUS DP input I/O (DP direct keys) or PROFINET IO (direct keys).
  No additional operator controls are available on the Mobile Panel 277 10".
- Buttons
  are used for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as symbols instead of text for "labeling" function keys or buttons. They can also be used as full-screen background images.
  In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphic editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics
  simple geometric basic forms (e.g. lines, circles and rectangles) can be created directly in the configuration software.
- Text fields
  for labeling function keys, process displays, and process values in any font size.
- Trend views and bars
  are used for the graphic display of dynamic values.
- Display selection from the controller
  permits operator prompting from the controller.
- Presentation of HTML documents with MS Pocket Internet Explorer.
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.).
- Language switching
  16 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
  - Language-dependent texts and graphics
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user name and password
  - User-group-specific rights
- Signaling system
  - Discrete alarms and analog alarms (limit value messages) as well as the ALARM_S message frame procedure for SIMATIC S7 and SIMOTION
  - Freely definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of alarm events
- Message buffer
  - Non-volatile, maintenance-free and battery-free message buffer. The messages are retained even when the Mobile Panel is disconnected

SIMATIC Mobile Panel 277

Function (continued)

- Recipe management
  - With additional data storage (on optional Multimedia Card/SD Card)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Help texts
  for process images, messages and variables.
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs.
- Indicator light
  for machine and plant status indication.
- Scheduler
  for cyclic function processing.
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window and template concept
  - Creation of screen templates:
- Simple maintenance and configuration thanks to:
  - Backup/restore of the project, operating system, recipe data records and firmware on the optional standard Multimedia Card/SD Card
  - Backup and restoration of configuration, operating system, recipe data sets and firmware on a PC using ProSave
  - Project transfer/return over MPI/PROFIBUS DP/serial or PROFINET
  - Automatic transfer detection
  - Individual contrast settings
  - Project simulation directly on the configuration computer
- WinCC flexible options
  - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
  - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data records, passwords and HMI system-specific information, and much more.
  - OPC server: Communication with applications (e. g. MES, ERP, or applications in the office sector) from various manufacturers (see HMI Software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
  - Audit

Configuration

Configuration is carried out with the SIMATIC WinCC flexible Standard or Advanced configuration software (see SIMATIC WinCC flexible HMI software/engineering software). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly when the panel is configured. Double data entry and data storage are prevented this way.

Integration

The SIMATIC Mobile Panel 277 is generally provided for optional PROFIBUS or PROFINET communication. No distinction is made at device level.
This means the device can either be operated

- for the **communication via MPI/PROFIBUS** with the DP cables and connection to the **DP "Basic"** or **"Plus"** connection boxes or
- for the **communication via PROFINET** with the PN cables and connection to the **PN "Basic"** or **"Plus"** connection boxes.

A variety of drivers – even for PLCs from other suppliers – are supplied as standard.

Using the DP connection boxes, the Mobile Panel 277 DP can be connected to:

- SIMATIC S7-200/-300/-400
- SIMATIC WinAC Software/Slot PLC
- SIMOTION
- SIMATIC S5
- SIMATIC 505
- PLCs from other manufacturers
  - Allen Bradley
  - Mitsubishi
  - Modicon Modbus
  - GE-Fanuc
  - LG GLOFA GM
  - OMRON
- SINUMERIK
  (optionally with "SINUMERIK HMI copy licence WinCC flexible CE"; "SINUMERIK HMI engineering package WinCC flexible" is additionally required for configuring;
  For further details, see Catalog NC 60)

Using the PN connection boxes, the Mobile Panel 277 can be connected to:

- SIMATIC S7-200/-300/-400
- WinAC Software
- SIMOTION
- Over Ethernet (TCP/IP) to a higher-level PC, network printer

Note:

Further information can be found under "System interfaces".

Technical specifications

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integrated acknowledgment button	6AV6 645-0CB01-0AX0 8" with integrated acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integrated acknowledgment button and STOP button
Display				
Size	7.5"	7.5"	7.5"	10.4"
Display type	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors
Resolution (pixels)				
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	800 x 600
Backlighting				
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours
Control elements				
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	None
Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Keyboard				
• System keys				0
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Touch operation				
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive
Special operator controls				
• STOP pushbutton	No	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)	2-channel, enforced latching (can be looped into the emergency stop circuit)
• Acknowledgement button	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch	No	No	Yes, 3 switch settings	No
• Illuminated pushbutton	No	No	Yes; Two illuminated pushbuttons	No
• Handwheel	No	No	Yes	No
Expansions for operator control of the process				
DP direct LEDs (LEDs as S7 output I/O)	F1...F18	F1...F18	F1...F18	
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	Number of bytes for configurable buttons: 10
Supply voltage				
Input voltage				
• Supply voltage	via connection box	via connection box	via connection box	via connection box, DC
Backup battery				
Battery operation	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min	maximum buffer time 10 min
• Charging duration				5 h
• Number of loading cycles, min				500
Processor				
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520
Memory				
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data

SIMATIC Mobile Panel 277

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integrated acknowledgment button	6AV6 645-0CB01-0AX0 8" with integrated acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integrated acknowledgment button and STOP button
Type of output				
LED colors	Green	Green	Green	
Time of day				
Clock				
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Interfaces				
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45) (max. 12 Mbit/s)
USB port	1 x USB	1 x USB	1 x USB	1 x USB
Multi Media Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	
Multimedia card				combined
Industrial Ethernet				
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Protocols				
PROFINET				Yes
PROFINET IO				Yes
Ambient conditions				
Operating temperature				
• Operation	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage/transport temperature				
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
Relative humidity				
• max. relative humidity	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1 m
Degree and class of protection				
IP65 housing	Yes	Yes	Yes	Yes
Standards, approvals, certificates				
Certifications	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE	CE, cULus, C-TICK, SIBE
Performance level acc. to EN ISO 13849-1	d	d	d	d
Safety category according to EN954-1	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3	Safety category according to EN954-1 (enabling button, STOP button if present) 3
Operating systems				
Operating system	Windows CE	Windows CE	Windows CE	Windows CE
Configuration				
Configuration software				
• Configuration tool	see "Configuration overview" from page 2/3			

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integrated acknowledgment button	6AV6 645-0CB01-0AX0 8" with integrated acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integrated acknowledgment button and STOP button
Functionality under WinCC flexible/WinCC (TIA portal)				
Applications/options	see chapter 4: HMI software/SIMATIC WinCC flexible options and SIMATIC WinC (TIA portal) options			
Number of Visual Basic Scripts	50	50	50	50
Task planner	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes
Status/control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)				
• Number of messages	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes				
• Recipes	300	300	300	300
• Data records per recipe	500	500	500	200
• Entries per data record	1000	1000	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Number of process images				
• Process images	500	500	500	500
• Variables	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes
Image elements				
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphic object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists				
• Text lists	500	500	500	500
• Graphic list	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes
Archiving				
• Number of archives per project	20	20	20	20
• Number of measuring points per project	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card
Security				
• Number of user groups	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32
Data carrier support				
• Multimedia Card	Yes	Yes	Yes	Yes

Technical specifications (continued)

SIMATIC Mobile Panel 277	6AV6 645-0CA01-0AX0 8" with integrated acknowledgment button	6AV6 645-0CB01-0AX0 8" with integrated acknowledgment button and STOP button	6AV6 645-0CC01-0AX0 8" with integrated acknowledgment button, STOP button, handwheel, keyswitch and illuminated pushbutton	6AV6 645-0BE02-0AX0 10" with integrated acknowledgment button and STOP button
Recording				
• Recording/Printing	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), color print, hardcopy, PROFINET
Fonts				
• Keyboard fonts	US American (English)	US American (English)	US American (English)	US American (English)
Languages				
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload/download)				
• Transfer of configuration	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition	MPI/PROFIBUS DP, USB, Ethernet, automatic transfer recognition
Process coupling				
• Connection to controller	see "System interfaces" from page 2/178			
I/O				
I/O devices	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Mechanics/material				
Type of housing (front)	Plastic	Plastic	Plastic	Plastic
Dimensions and weight				
Dimensions				
• Housing diameter/ depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	
Weight				
• Weight	1.7 kg	1.7 kg	1.7 kg	2.3 kg

Ordering data		Order No.
SIMATIC Mobile Panel 277 8" [1]		
• With integrated acknowledgement button	E	**6AV6 645-0CA01-0AX0**
• With integrated acknowledgement button and STOP pushbutton	E	**6AV6 645-0CB01-0AX0**
• With integrated acknowledgement button, STOP pushbutton, handwheel, key-operated switch and two illuminated pushbuttons	E	**6AV6 645-0CC01-0AX0**
SIMATIC Mobile Panel 277 10"		
With integrated acknowledgement button and STOP pushbutton	E	**6AV6 645-0BE02-0AX0**
Configuration		
with SIMATIC WinCC flexible		see HMI software
Documentation (to be ordered separately)		
Operating Instructions for Mobile Panel 277		
• German		**6AV6 691-1DL01-0AA0**
• English		**6AV6 691-1DL01-0AB0**
• French		**6AV6 691-1DL01-0AC0**
• Italian		**6AV6 691-1DL01-0AD0**
• Spanish		**6AV6 691-1DL01-0AE0**
User Manual WinCC flexible Compact/Standard/Advanced		
• German		**6AV6 691-1AB01-3AA0**
• English		**6AV6 691-1AB01-3AB0**
• French		**6AV6 691-1AB01-3AC0**
• Italian		**6AV6 691-1AB01-3AD0**
• Spanish		**6AV6 691-1AB01-3AE0**
WinCC flexible Communication User Manual		
• German		**6AV6 691-1CA01-3AA0**
• English		**6AV6 691-1CA01-3AB0**
• French		**6AV6 691-1CA01-3AC0**
• Italian		**6AV6 691-1CA01-3AD0**
• Spanish		**6AV6 691-1CA01-3AE0**

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

E: Subject to export regulations: AL: 9I999 and ECCN: 5D002ENCU

		Order No.
SIMATIC HMI Manual Collection	B	**6AV6 691-1SA01-0AX0**
Electronic documentation, on DVD 5 languages (English, French, German, Italian and Spanish); contains: all currently available user manuals, manuals and communication manuals for SIMATIC HMI		
System components for Mobile Panels		
DP connection box for Mobile Panels (MPI/PROFIBUS)		
• Basic		**6AV6 671-5AE00-0AX0**
• Plus		**6AV6 671-5AE10-0AX0**
PN connection box for Mobile Panel (PROFINET)		
• Basic		**6AV6 671-5AE01-0AX0**
• Plus		**6AV6 671-5AE11-0AX0**
DP connecting cable (MPI/PROFIBUS)		
Standard cables		
2 m		**6XV1 440-4AH20**
5 m		**6XV1 440-4AH50**
10 m		**6XV1 440-4AN10**
15 m		**6XV1 440-4AN15**
25 m		**6XV1 440-4AN25**
Intermediate lengths [2]		
8 m		**6XV1 440-4AH80**
20 m		**6XV1 440-4AN20**
PN connecting cable (PROFINET)		
Standard cables		
2 m		**6XV1 440-4BH20**
5 m		**6XV1 440-4BH50**
8 m		**6XV1 440-4BH80**
10 m		**6XV1 440-4BN10**
15 m		**6XV1 440-4BN15**
20 m		**6XV1 440-4BN20**
25 m		**6XV1 440-4BN25**
Accessories for Mobile Panels		see HMI accessories

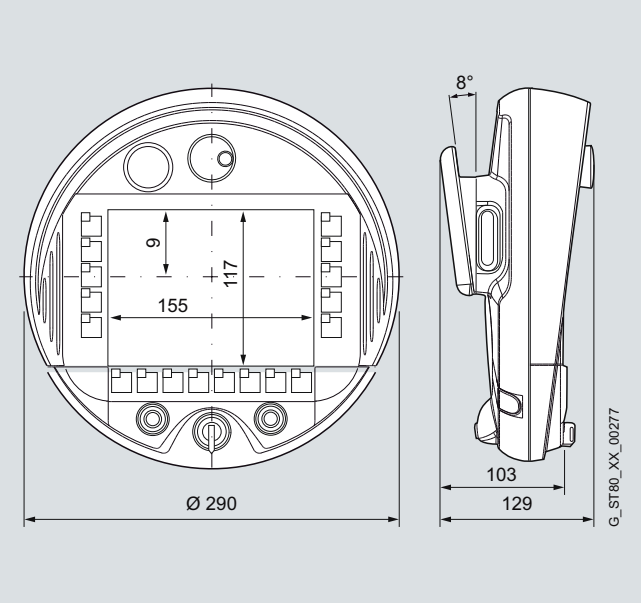
1) The system components (connecting cables and connection boxes) must be ordered separately.

2) Delivery time approximately 6 weeks

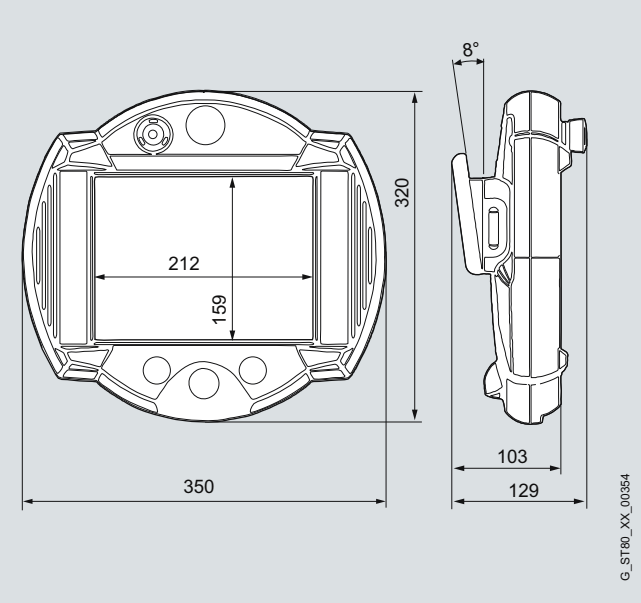
SIMATIC Mobile Panel 277

Dimensional drawings

All specifications in mm. Panel cutout see technical specifications.



Mobile Panel 277 8" – front and side view



Mobile Panel 277 10" – front and side view

More information

Additional information is available on the Internet at:

www.siemens.com/simatic-mobile-panels

Note:

Do you require a specific modification or extension to the products described here? Under "Customized products", you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

SIMATIC Mobile Panel 277(F) IWLAN

Overview

Function

- Input/output fields
  for displaying and changing of process values.
- Function keys
  are used for directly triggering functions and actions. Up to 16 functions can be configured simultaneously on function keys. The function keys can also be used directly as PROFINET IO.
  The function keys can also be reconfigured as system keys. A frequently used function such as "Acknowledge alarm" can thus be assigned to a function key.
- Auxiliary operator controls
  such as handwheels, key switches and illuminated pushbuttons can be assigned with a variable or as a direct actuation via PROFINET IO (direct keys).
- Buttons
  are used for direct triggering of functions and actions. Up to 16 functions can be configured simultaneously on buttons.
- Graphics
  can be used as symbols instead of text for "labeling" function keys or buttons. They can also be used as full-screen background images.
  In the configuration software, a comprehensive library is available containing graphics and a wide variety of objects. All editors with an OLE interface can be used as graphic editors (such as PaintShop, Designer or CorelDraw).
- Vector graphics;
  simple geometric basic forms (e. g. lines, circles and rectangles) can be created directly in the configuration software.
- Text fields
  for labeling function keys, process displays, and process values in any font size.
- Trend views and bars
  are used for the graphic display of dynamic values.
- Display selection from the controller
  permits operator prompting from the controller.
- Presentation of HTML documents with MS Pocket Internet Explorer.
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.).
- Language switching
  16 online languages, 32 configuration languages incl. Asiatic and Cyrillic character sets
  - Language-dependent texts and graphics
- User administration (security)
  - User-oriented access protection according to requirements of specific sectors
  - Authentication with user name and password
  - User-group-specific rights
- Signaling system
  - Discrete and analog alarms (edge alarms) as well as the ALARM_S message frame procedure for SIMATIC S7
  - Freely definable message classes (e. g. status/fault messages) for definition of acknowledgment response and display of alarm events
- Message buffer
  - Non-volatile, maintenance-free and battery-free message buffer. The messages remain stored when the mobile panel has the battery removed as well
- Recipe management
  - With additional data storage (on optional MultiMedia Card/SD Card)
  - Online/offline processing on the panel
  - Storage of recipe data in standard Windows format (CSV)
  - External processing using standard tools such as Excel and Access is possible
- Help texts
  for process images, messages and variables.
- Arithmetic functions
- Limit value monitoring
  for reliable process control of inputs and outputs.
- Indicator light
  for machine and plant status indication.
- Scheduler
  for cyclic function processing.
- Dynamic positioning of objects and dynamic showing/hiding of objects
- Permanent window and template concept
  - Creation of screen templates:
- Simple maintenance and configuration thanks to:
  - Backup/restore of the project, operating system, recipe data records and firmware on the optional standard multi-media card/SD card
  - Backup and restoration of configuration, operating system, recipe data sets and firmware on a PC using ProSave
  - Project transfer/return transfer via PROFINET/WLAN
  - Automatic transfer detection
  - Individual brightness setting
  - Project simulation directly on the configuration computer
- WinCC flexible options
  - Sm@rtService for remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
  - Sm@rtAccess for communication between HMI systems based on TCP/IP networks. Remote access to recipe data records, passwords and HMI system-specific information, and much more. (Mobile Panel 277F IWLAN as server: View only)
  - OPC server: Communication with applications (e. g. MES, ERP, or applications in the office sector) from various manufacturers (see HMI software/runtime software SIMATIC WinCC flexible/WinCC flexible RT options)
  - Audit

SIMATIC Mobile Panel 277(F) IWLAN

Function (continued)

Configuration

Configuration is carried out with the SIMATIC WinCC flexible Standard or Advanced configuration software (see SIMATIC WinCC flexible HMI software/engineering software). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly when the panel is configured. Duplicated data input and data management is, therefore, avoided.

IWLAN infrastructure

The required IWLAN infrastructure is set up with the IWLAN Access Points SCALANCE W-780, preferably with the version SCALANCE W786-2RR, which fully supports all possible applications of the Mobile Panel 277(F) IWLAN. For operating a plant without fail-safe communication, the version SCALANCE W786-1PRO can also be used. The iPCF functionality (rapid roaming = fast, uninterrupted switchover between several access points) is only available with V2 panels upwards.

The Access Point provides an Industrial Ethernet interface for connection to the wired network.

In addition to a reliable radio link, the SCALANCE W-780 Access Points stand out due to their optimum support of standardized IT mechanisms:

- IEEE 802.11b/ g/ a/ h for different frequency ranges
- IEEE 802.11e for multimedia, wireless multimedia (WMM) [1)]
- IEEE 802.11i for security [1)]
- Construction of redundant networks with the Rapid Spanning Tree Protocol (RSTP)
- Virtual networks (VLAN) to logically separate, for example, different user groups
- Sending the log entries of the SCALANCE W devices to a Syslog server

[1)] Not supported by Mobile Panel Wireless

Integration

The SIMATIC Mobile Panel 277(F) IWLAN communicates via the WLAN Standard IEEE 802.11 a(b/g) via PROFINET. The Mobile Panel 277F IWLAN devices also support PROFIsafe communication.

There are five device versions with V2:

For mobile operation and monitoring via WLAN:

- Mobile Panel 277 IWLAN V2
- Mobile Panel 277 IWLAN V2 with handwheel, key switch and illuminated pushbuttons

As fail-safe device for safety-oriented operation as well:

- Mobile Panel 277F IWLAN V2 with acknowledgement button and emergency stop button
- Mobile Panel 277F IWLAN V2 with acknowledgement button, emergency stop button, handwheel, key switch and illuminated pushbuttons
- Mobile Panel 277F IWLAN RFID Tag (for V2 only)

For the versions Mobile Panel 277F IWLAN (PROFIsafe), the following system prerequisites apply:

- The Mobile Panel must be connected as a safe device (PROFIsafe, Distributed Safety)
- Use of a SIMATIC F-CPU

SIMATIC Mobile Panel		5 GHz frequency band (IEEE 802.11a)	SIMATIC F-CPU (Distributed Safety)
277 IWLAN	Only WLAN utilization (HMI)	x	-
	When using transponders	!	-
	When using Profinet IO	x	-
277F IWLAN (fail-safe)	**-**	**-** !	**-** !
277F IWLAN (RFID Tag) (fail-safe)		x	!

X = Recommended
! = Requirement
- = Not required

The Mobile Panel 277(F) IWLAN can be connected to:

- SIMATIC S7-200/-300/-400 (one F-CPU required for integrating the Mobile Panel 277F IWLAN and SIMOTION (Mobile Panel 277 IWLAN V2 or higher, or Mobile Panel 277FI WLAN V2 or higher (WinCC flexible 2008 SP3 or higher))

Note:

Further information can be found under "System interfaces". The function manuals "Fail-Safe Operation of the Mobile Panel 277F IWLAN" are available for downloading in English, German, and Japanese.

http://support.automation.siemens.com/WW/view/en/31255853

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications

	6AV6 645-0DD01-0AX1	6AV6 645-0DE01-0AX1	6AV6 645-0EB01-0AX1	6AV6 645-0EC01-0AX1	6AV6 645-0EF01-0AX1
Display					
Size	7.5"	7.5"	7.5"	7.5"	7.5"
Display type	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors
Resolution (pixels)					
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting					
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours
Control elements					
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Keyboard					
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Touch operation					
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive	analog, resistive
Special operator controls					
• Emergency stop button			2-channel, positive latching	2-channel, positive latching	2-channel, positive latching
• Acknowledgement button			2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch		Yes, 3 switch settings		Yes, 3 switch settings	Yes, 3 switch settings
• Illuminated pushbutton		Yes		Yes	Yes
• Handwheel		Yes		Yes	Yes
Expansions for operator control of the process					
DP direct LEDs (LEDs as S7 output I/O)	F1...F18	F1...F18	F1...F18	F1...F18	F1...F18
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10
Supply voltage					
Via charging station	Yes	Yes	Yes	Yes	Yes
Via table power supply	Yes	Yes	Yes	Yes	Yes
Input voltage					
• Supply voltage	DC	DC	DC	DC	DC
Main battery					
Rated voltage	7.2 V	7.2 V	7.2 V	7.2 V	7.2 V
Capacity	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h
Number of loading cycles, min	500	500	500	500	500
Charging time, typ.	4 h	4 h	4 h	4 h	4 h
Operating time, typ.	4 h	4 h	4 h	4 h	4 h
Display for battery capacity	Yes	Yes	Yes	Yes	Yes
Energy-saving mode	Yes	Yes	Yes	Yes	Yes
Battery exchange in operation	Yes	Yes	Yes	Yes	Yes

Technical specifications (continued)

	6AV6 645-0DD01-0AX1	6AV6 645-0DE01-0AX1	6AV6 645-0EB01-0AX1	6AV6 645-0EC01-0AX1	6AV6 645-0EF01-0AX1
Processor					
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Memory					
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data
Type of output					
Status LEDs	Yes	Yes	Yes	Yes	Yes
• LED for safe			Yes	Yes	Yes
• LED for communication	Yes	Yes	Yes	Yes	Yes
• LED for battery	Yes	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes	Yes
Time of day					
Clock					
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Interfaces					
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
USB port	1 x USB	1 x USB	1 x USB	1 x USB	1 x USB
Multi Media Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot
Industrial Ethernet					
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Wireless LAN	Yes	Yes	Yes	Yes	Yes
• Supports standards	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a
• Supported channels (according to IEEE 802.11a)	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161
• Supported channels (according to IEEE 802.11b and IEEE 802.1g)	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14
• Country approval (radio)	Australia, Austria, Belgium, Bulgaria, Canada, China, Cyprus, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Rumania, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Korea, South Africa, Taiwan, Czech Republic, Turkey	Australia, Austria, Belgium, Bulgaria, Canada, China, Cyprus, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Rumania, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Korea, South Africa, Taiwan, Czech Republic, Turkey	Australia, Austria, Belgium, Bulgaria, Canada, China, Cyprus, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Rumania, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Korea, South Africa, Taiwan, Czech Republic, Turkey	Australia, Austria, Belgium, Bulgaria, Canada, China, Cyprus, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Rumania, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Korea, South Africa, Taiwan, Czech Republic, Turkey	Australia, Austria, Belgium, Bulgaria, Canada, China, Cyprus, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Iceland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Rumania, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Korea, South Africa, Taiwan, Czech Republic, Turkey
• Encryption	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA
• Supports rapid roaming	Yes	Yes	Yes	Yes	Yes

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

	6AV6 645-0DD01-0AX1	6AV6 645-0DE01-0AX1	6AV6 645-0EB01-0AX1	6AV6 645-0EC01-0AX1	6AV6 645-0EF01-0AX1
Protocols					
PROFINET	Yes	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes	Yes
PROFIsafe			Yes	Yes	Yes
EMC					
Emission of radio interference acc. to EN 55 011					
• Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation
Ambient conditions					
Operating temperature					
• Operation	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage/transport temperature					
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
Relative humidity					
• max. relative humidity	80 %	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1.2 m	1.2 m
Degree and class of protection					
IP65 housing	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates					
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
TÜV safety certification			Yes	Yes	Yes
Safety Integrity Level to IEC 61508			3	3	3
Performance level acc. to EN ISO 13849-1			E	E	E
Safety category according to EN954-1			Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4
Operating systems					
Operating system	Windows CE	Windows CE	Windows CE	Windows CE	Windows CE
Configuration					
Configuration software					
• Configuration tool	see "Configuration overview" from page 2/3				

Technical specifications (continued)

	6AV6 645-0DD01-0AX1	6AV6 645-0DE01-0AX1	6AV6 645-0EB01-0AX1	6AV6 645-0EC01-0AX1	6AV6 645-0EF01-0AX1
Functionality under WinCC flexible/WinCC (TIA portal)					
Applications/options	see chapter 4: HMI software/SIMATIC WinCC flexible options and SIMATIC WinCC (TIA portal) options				
Number of Visual Basic Scripts	50	50	50	50	50
Task planner	Yes	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes	Yes
Status/control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)					
• Number of messages	4 000	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes					
• Recipes	300	300	300	300	300
• Data records per recipe	500	500	500	500	500
• Entries per data record	1000	1000	1000	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Number of process images					
• Process images	500	500	500	500	500
• Variables	2 048	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes
Image elements					
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphic object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists					
• Text lists	500	500	500	500	500
• Graphic list	400	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes	Yes
Archiving					
• Number of archives per project	20	20	20	20	20
• Number of measuring points per project	20	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000	10 000
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card
Security					
• Number of user groups	50	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32	32
Data carrier support					
• Multimedia Card	Yes	Yes	Yes	Yes	Yes
Recording					
• Recording/Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

	6AV6 645-0DD01-0AX1	6AV6 645-0DE01-0AX1	6AV6 645-0EB01-0AX1	6AV6 645-0EC01-0AX1	6AV6 645-0EF01-0AX1
Languages					
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload/download)					
• Transfer of configuration	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition
• Wireless LAN	Yes	Yes	Yes	Yes	Yes
Process coupling					
• Connection to controller	see "System interfaces" from page 2/178				
• Zones	Yes	Yes	Yes	Yes	
- Number of zones per project, max.	254	254	254	254	
- Number of transponders for zones per project, max.	255	255	255	255	
• Effective range			Yes	Yes	Yes
- Number of effective ranges per project, max.			127	127	127
- Number of transponders for effective ranges per project, max.			127	127	
• Transponder	Yes	Yes	Yes	Yes	
- Number of transponders per project, max.	256	256	256	256	
- Adjustable distance range	Yes	Yes	Yes	Yes	
- Adjustable distance, min.	2 m	2 m	2 m	2 m	
- Adjustable distance, min.	8 m	8 m	8 m	8 m	
I/O					
I/O devices	Barcode reader	Barcode reader	Barcode reader	Barcode reader	Barcode reader
Mechanics/material					
Type of housing (front)	Plastic	Plastic	Plastic	Plastic	Plastic
Dimensions and weight					
Dimensions					
• Housing diameter/depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm
Weight					
• Weight	2.2 kg	2.2 kg	2.2 kg	2.2 kg	2.2 kg

Technical specifications (continued)

	6AV6 645-0FD01-0AX1	6AV6 645-0FE01-0AX1	6AV6 645-0GB01-0AX1	6AV6 645-0GC01-0AX1	6AV6 645-0GF01-0AX1
Display					
Size	7.5"	7.5"	7.5"	7.5"	7.5"
Display type	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors	TFT, 65536 colors
Resolution (pixels)					
• Resolution (WxH in pixel)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Backlighting					
• MTBF backlighting (at 25 °C)	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours	about 50,000 hours
Control elements					
Operating options	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch	Keys and Touch
Function keys, programmable	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs	18 function keys, 18 with LEDs
Connection for mouse/keyboard/barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB	USB / USB / USB
Keyboard					
• Numeric/alphabetical input	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Touch operation					
• Touch screen	analog, resistive	analog, resistive	analog, resistive	analog, resistive	analog, resistive
Special operator controls					
• Emergency stop button			2-channel, positive latching	2-channel, positive latching	2-channel, positive latching
• Acknowledgement button			2-channel, number of positions: 3	2-channel, number of positions: 3	2-channel, number of positions: 3
• Key-operated switch		Yes, 3 switch settings		Yes, 3 switch settings	Yes, 3 switch settings
• Illuminated pushbutton		Yes		Yes	Yes
• Handwheel		Yes		Yes	Yes
Expansions for operator control of the process					
DP direct LEDs (LEDs as S7 output I/O)	F1...F18	F1...F18	F1...F18	F1...F18	F1...F18
DP direct keys (screen buttons and keys as S7 input I/O)	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10	F1...F18, Number of bytes for configurable buttons: 10
Supply voltage					
Via charging station	Yes	Yes	Yes	Yes	Yes
Via table power supply	Yes	Yes	Yes	Yes	Yes
Input voltage					
• Supply voltage	DC	DC	DC	DC	DC
Main battery					
Rated voltage	7.2 V	7.2 V	7.2 V	7.2 V	7.2 V
Capacity	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h	5 100 mA·h
Number of loading cycles, min	500	500	500	500	500
Charging time, typ.	4 h	4 h	4 h	4 h	4 h
Operating time, typ.	4 h	4 h	4 h	4 h	4 h
Display for battery capacity	Yes	Yes	Yes	Yes	Yes
Energy-saving mode	Yes	Yes	Yes	Yes	Yes
Battery exchange in operation	Yes	Yes	Yes	Yes	Yes

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

	6AV6 645-0FD01-0AX1	6AV6 645-0FE01-0AX1	6AV6 645-0GB01-0AX1	6AV6 645-0GC01-0AX1	6AV6 645-0GF01-0AX1
Processor					
Processor	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz	ARM, 520 MHz
Memory					
Type	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data	6 MB usable memory for user data
Type of output					
Status LEDs	Yes	Yes	Yes	Yes	Yes
• LED for safe			Yes	Yes	Yes
• LED for communi-cation	Yes	Yes	Yes	Yes	Yes
• LED for battery	Yes	Yes	Yes	Yes	Yes
Vibrations	Yes	Yes	Yes	Yes	Yes
Time of day					
Clock					
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Interfaces					
Interfaces	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
USB port	1 x USB	1 x USB	1 x USB	1 x USB	1 x USB
Multi Media Card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot	1 MMC/SD card slot
Industrial Ethernet					
• Industrial Ethernet interface	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Wireless LAN	Yes	Yes	Yes	Yes	Yes
• Supports standards	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a	according to IEEE 802.11a
• Supported channels (according to IEEE 802.11a)	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161	Channel 34, channel 36, channel 38, channel 40, channel 42, channel 44, channel 46, channel 48, channel 52, channel 56, channel 60, channel 64, channel 149, channel 153, channel 157, channel 161
• Supported channels (according to IEEE 802.11b and IEEE 802.1g)	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14	Channels 1 to 11, channel 12, channel 13, channel 14
• Country approval (radio)	USA, Canada	USA, Canada	USA, Canada	USA, Canada	USA, Canada
• Encryption	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA	WEP, WPA
• Supports rapid roaming	Yes	Yes	Yes	Yes	Yes

Technical specifications (continued)

	6AV6 645-0FD01-0AX1	6AV6 645-0FE01-0AX1	6AV6 645-0GB01-0AX1	6AV6 645-0GC01-0AX1	6AV6 645-0GF01-0AX1
Protocols					
PROFINET	Yes	Yes	Yes	Yes	Yes
PROFINET IO	Yes	Yes	Yes	Yes	Yes
PROFIsafe			Yes	Yes	Yes
EMC					
Emission of radio interference acc. to EN 55 011					
• Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation	Yes; The product is designed for use in industrial environments. When used in residential areas, the emission of radio interference according to limit class B of EN 55011 must be ensured. For further information refer to the user documentation
Ambient conditions					
Operating temperature					
• Operation	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage/transport temperature					
• Transport, storage	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C
Relative humidity					
• max. relative humidity	80 %	80 %	80 %	80 %	80 %
Drop height	1.2 m	1.2 m	1.2 m	1.2 m	1.2 m
Degree and class of protection					
IP65 housing	Yes	Yes	Yes	Yes	Yes
Standards, approvals, certificates					
Certifications	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK	CE, cULus, C-TICK
TÜV safety certification			Yes	Yes	Yes
Safety Integrity Level to IEC 61508			3	3	3
Performance level acc. to EN ISO 13849-1			E	E	E
Safety category according to EN954-1			Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4	Safety category according to EN954-1 (enabling button, STOP button if present) 4
Operating systems					
Operating system	Windows CE	Windows CE	Windows CE	Windows CE	Windows CE
Configuration					
Configuration software					
• Configuration tool	see "Configuration overview" from page 2/3				

SIMATIC Mobile Panel 277(F) IWLAN

Technical specifications (continued)

	6AV6 645-0FD01-0AX1	6AV6 645-0FE01-0AX1	6AV6 645-0GB01-0AX1	6AV6 645-0GC01-0AX1	6AV6 645-0GF01-0AX1
Functionality under WinCC flexible/WinCC (TIA Portal)					
Applications/options	see chapter 4: HMI software/SIMATIC WinCC flexible options and SIMATIC WinCC (TIA portal) options				
Number of Visual Basic Scripts	50	50	50	50	50
Task planner	Yes	Yes	Yes	Yes	Yes
Help system	Yes	Yes	Yes	Yes	Yes
Status/control	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)					
• Number of messages	4 000	4 000	4 000	4 000	4 000
• Bit messages	Yes	Yes	Yes	Yes	Yes
• Analog messages	Yes	Yes	Yes	Yes	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes					
• Recipes	300	300	300	300	300
• Data records per recipe	500	500	500	500	500
• Entries per data record	1000	1000	1000	1000	1000
• Recipe memory	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable	64 KB integrated Flash, expandable
Number of process images					
• Process images	500	500	500	500	500
• Variables	2 048	2 048	2 048	2 048	2 048
• Limit values	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes
Image elements					
• Text objects	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements	10,000 text elements
• Graphic object	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists					
• Text lists	500	500	500	500	500
• Graphic list	400	400	400	400	400
• Libraries	Yes	Yes	Yes	Yes	Yes
Archiving					
• Number of archives per project	20	20	20	20	20
• Number of measuring points per project	20	20	20	20	20
• Number of entries per archive	10 000	10 000	10 000	10 000	10 000
• Memory location	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card	Multi Media Card
Security					
• Number of user groups	50	50	50	50	50
• Passwords exportable	Yes	Yes	Yes	Yes	Yes
• Number of user rights	32	32	32	32	32
Data carrier support					
• Multimedia Card	Yes	Yes	Yes	Yes	Yes
Recording					
• Recording/Printing	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET	Alarms, report (shift report), PROFINET

Technical specifications (continued)

	6AV6 645-0FD01-0AX1	6AV6 645-0FE01-0AX1	6AV6 645-0GB01-0AX1	6AV6 645-0GC01-0AX1	6AV6 645-0GF01-0AX1
Languages					
• Configuration languages	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H	D, GB, F, I, E, CHN "traditional", CHN "simplified", DK, FIN, GR, J, KP / ROK, NL, N, PL, P, RUS, S, CZ / SK, TR, H
• Character sets	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable	Tahoma, Arial, Courier New, WinCC flexible Standard, symbol languages, all freely scalable
Transfer (upload/download)					
• Transfer of configuration	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition	USB, Ethernet, automatic transfer recognition
• Wireless LAN	Yes	Yes	Yes	Yes	Yes
Process coupling					
• Connection to controller	see "System interfaces" from page 2/178				
• Zones	Yes	Yes	Yes	Yes	
- Number of zones per project, max.	254	254	254	254	
- Number of transponders for zones per project, max.	255	255	255	255	
• Effective range			Yes	Yes	Yes
- Number of effective ranges per project, max.			127	127	127
- Number of transponders for effective ranges per project, max.			127	127	
• Transponder	Yes	Yes	Yes	Yes	
- Number of transponders per project, max.	256	256	256	256	
- Adjustable distance range	Yes	Yes	Yes	Yes	
- Adjustable distance, min.	2 m	2 m	2 m	2 m	
- Adjustable distance, min.	8 m	8 m	8 m	8 m	
I/O					
I/O devices	Barcode reader	Barcode reader	Barcode reader	Barcode reader	Barcode reader
Mechanics/material					
Type of housing (front)	Plastic	Plastic	Plastic	Plastic	Plastic
Dimensions and weight					
Dimensions					
• Housing diameter/depth (mm)	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm	Dia 290 mm / D 103 mm
Weight					
• Weight	2.2 kg	2.2 kg	2.2 kg	2.2 kg	2.2 kg

SIMATIC Mobile Panel 277(F) IWLAN

Ordering data		Order No.
SIMATIC Mobile Panel 277 IWLAN V2 (RoW version)		
• Communication via WLAN (PROFINET)	E	**6AV6 645-0DD01-0AX1**
• Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	E	**6AV6 645-0DE01-0AX1**
SIMATIC Mobile Panel 277F IWLAN V2 PROFIsafe (RoW version)		
• Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button	E	**6AV6 645-0EB01-0AX1**
• Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	E	**6AV6 645-0EC01-0AX1**
• RFID tag version: Communication via WLAN (PROFINET) with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	E	**6AV6 645-0EF01-0AX1**
SIMATIC Mobile Panel 277 IWLAN V2 (USA version)		
• Communication via WLAN (PROFINET)	E	**6AV6 645-0FD01-0AX1**
• Communication via WLAN (PROFINET) with integrated handwheel, key-operated switch and two illuminated pushbuttons	E	**6AV6 645-0FE01-0AX1**
SIMATIC Mobile Panel 277F IWLAN V2 PROFIsafe (USA version)		
• with acknowledgement button and emergency stop button	E	**6AV6 645-0GB01-0AX1**
• with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons	E	**6AV6 645-0GC01-0AX1**
• with acknowledgement button and emergency stop button with integrated handwheel, key-operated switch, and two illuminated pushbuttons (tag version)	E	**6AV6 645-0GF01-0AX1**
Starter kit SIMATIC Mobile Panel 277(F) IWLAN (RoW version)		
for		
• Mobile Panel 277 IWLAN V2	E	**6AV6 651-5GA01-0AA1**
• Mobile Panel 277F IWLAN V2	E	**6AV6 651-5HA01-0AA1**

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

E: Subject to export regulations: AL: 9I999 and ECCN: 5D002ENCU

		Order No.
Accessories		
Note: Please order the table-top power supply or charging station as well. Required for charging the battery		
• Table-top power supply incl. power cable for EU, US, UK, JP (only suitable for operation under laboratory/office conditions)	A	**6AV6 671-5CN00-0AX2**
• Charger V2 for safe storage and charging of device incl. lock for securing the device in the charger. Charging capabilities for up to two additional batteries	A	**6AV6 671-5CE00-0AX1**
• Additional battery with LED indicator for indicating the charge status		**6AV6 671-5CL00-0AX0**
• Transponder V2 incl. batteries (3x AA)		**6AV6 671-5CM00-0AX1**
• Transponder V1 incl. batteries (3x AA) (mandatory for operation in plants with Mobile Panels 277(F) IWLAN V1)		**6AV6 671-5CM00-0AX0**
• Service pack V2 for Mobile Panel 277(F) IWLAN V2 contains accessories pack for Mobile Panel 277 (labeling strip cover), battery compartment cover (device), cover left/right (charger), power supply connector counterpart (charger), replacement key (charger)	A	**6AV6 671-5CA00-0AX2**
• Service pack V1 for Mobile Panel 277(F) IWLAN V2 contains accessories pack for Mobile Panel 277 (labeling strip cover), battery compartment cover (device), cover left/right (charger), power supply connector counterpart (charger), replacement key (charger)		**6AV6 671-5CA00-0AX1**
SCALANCE W-786 Access Points for SIMATIC Mobile Panel 277(F) IWLAN		
• IWLAN Access Points with integrated radio interfaces; radio networks; IEEE 802.11b/g/a/h at 2.4/5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-40 °C to +70 °C); scope of delivery: Mounting hardware, 48 V DC terminal block; manual on CD-ROM; German/English;		

Ordering data

	Order No.
SCALANCE W-786-2RR	
IWLAN Dual Access Point with two integrated radio interface for setting up radio links with iPCF; RJ45 connection	
Four internal antennas	
• National approvals for operation H outside the U.S.	**6GK5 786-2BA60-6AA0**
• National approvals for operation H within the U.S.	**6GK5 786-2BA60-6AB0**
SCALANCE W-786-1PRO	
IWLAN Access Points with built-in wireless interface RJ45 connection	
Two internal antennas	
• National approvals for operation H outside the U.S.	**6GK5 786-1BA60-2AA0**
• National approvals for operation H within the U.S.	**6GK5 786-1BA60-2AB0**
Further IWLAN Access Point versions:	
SCALANCE W-784 Access Points	**6GK5 784-1AA30-...**
IWLAN Access Points with integrated radio interfaces (see Catalog IK PI), radio networks IEEE 802.11b/g/a/h at 2.4/5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP30 (-20 °C to +60 °C); scope of delivery: Mounting hardware, 24 V DC terminal block; manual on CD-ROM; German/English;	(see Catalog IK PI)
SCALANCE W-786 Access Points	**6GK5 786-...**
IWLAN Access Points with integrated radio interfaces (see Catalog IK PI); radio networks IEEE 802.11b/g/a/h at 2.4/5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-40 °C to +70 °C); scope of delivery: Mounting hardware, 48 V DC terminal block; manual on CD-ROM; German/English;	(see Catalog IK PI)
SCALANCE W-788 Access Points	**6GK5 788-...**
IWLAN Access Points with integrated radio interfaces (see Catalog IK PI); radio networks IEEE 802.11b/g/a/h at 2.4/5 GHz up to 54 Mbit/s. National approvals; WPA2/AES; Power over Ethernet (PoE), degree of protection IP65 (-20 °C to +60 °C); scope of delivery: 2 ANT795-4MR antennas, IP67 hybrid plug-in connector, mounting hardware, manual on CD-ROM, German/English	(see Catalog IK PI)

H: Subject to export regulations: AL: 9I999 and ECCN: EAR99H

	Order No.
PS791-2DC power supply	**6GK5 791-2DC00-0AA0**
• 24 V DC power supply for installation in SCALANCE W-786 products; operating instructions in German/English	
PS791-2AC power supply	**6GK5 791-2AC00-0AA0**
• 110 V AC to 230 V AC power supply for installation in SCALANCE W-786 products; operating instructions in German/English	
Other compatible accessories:	
• Wall mounting bracket for Mobile Panels	see HMI accessories
• Memory card multi-media card/SD card	see HMI accessories
• Mobile Panel 277 cover membrane	see HMI accessories
• Key labeling strips for Mobile Panel 277	see HMI accessories
• Spare key for Mobile Panels	see HMI accessories
Configuration	
with SIMATIC WinCC flexible	see HMI software
Documentation (to be ordered separately)	
Mobile Panel 277F IWLAN V2 Operating Instructions	
• German	**6AV6 691-1DQ01-2AA1**
• English	**6AV6 691-1DQ01-2AB1**
• French	**6AV6 691-1DQ01-2AC1**
• Italian	**6AV6 691-1DQ01-2AD1**
• Spanish	**6AV6 691-1DQ01-2AE1**
Mobile Panel 277 IWLAN V2 Operating Instructions	
• German	**6AV6 691-1DM01-2AA1**
• English	**6AV6 691-1DM01-2AB1**
• French	**6AV6 691-1DM01-2AC1**
• Italian	**6AV6 691-1DM01-2AD1**
• Spanish	**6AV6 691-1DM01-2AE1**
User Manual WinCC flexible Compact/Standard/Advanced	
• German	**6AV6 691-1AB01-3AA0**
• English	**6AV6 691-1AB01-3AB0**
• French	**6AV6 691-1AB01-3AC0**
• Italian	**6AV6 691-1AB01-3AD0**
• Spanish	**6AV6 691-1AB01-3AE0**
WinCC flexible Communication User Manual	
• German	**6AV6 691-1CA01-3AA0**
• English	**6AV6 691-1CA01-3AB0**
• French	**6AV6 691-1CA01-3AC0**
• Italian	**6AV6 691-1CA01-3AD0**
• Spanish	**6AV6 691-1CA01-3AE0**
Accessories	see HMI accessories

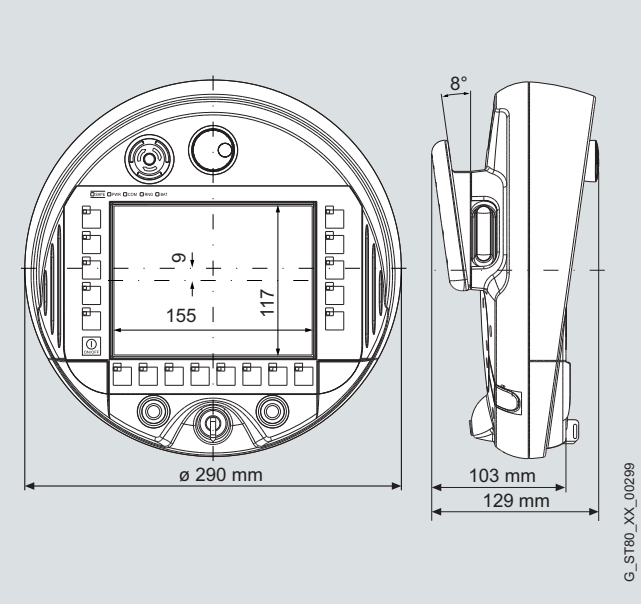
The function manuals "Fail-Safe Operation of the Mobile Panel 277F IWLAN V1" are available for downloading in English, German and Japanese.

http://support.automation.siemens.com/WW/view/en/31255853

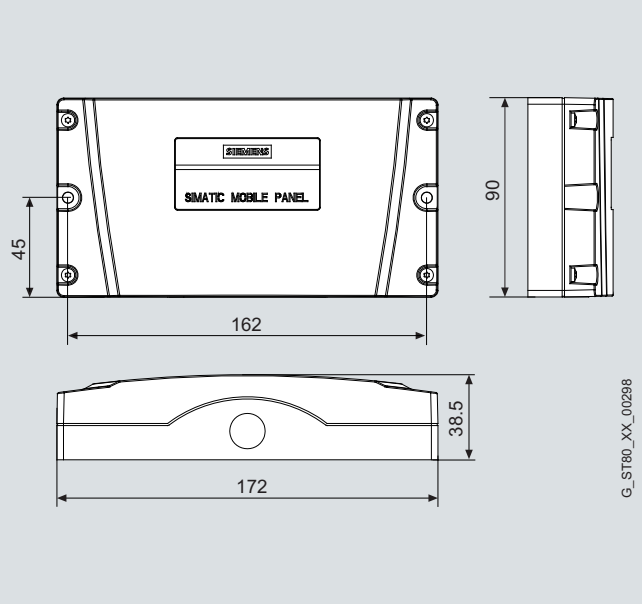
SIMATIC Mobile Panel 277(F) IWLAN

Dimensional drawings

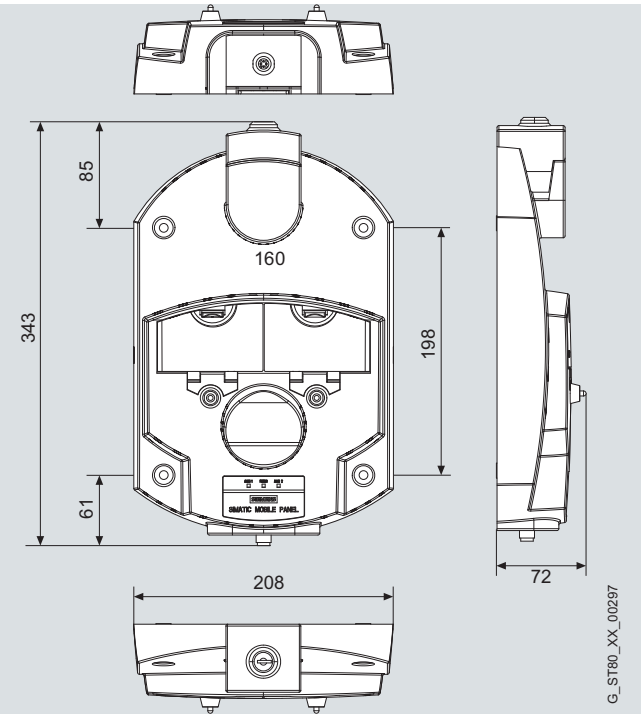
All specifications in mm. Panel cutout see technical specifications.



Mobile Panel 277(F) IWLAN – Front and side view



Transponder dimensional drawing



Charger dimensional drawing

More information

Additional information is available on the Internet at:

www.siemens.com/simatic-mobile-panels

Note:

Do you require a specific modification or extension to the products described here? Under "Customized products", you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.