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Overview

- Touch Panel with comprehensive functions for operator control and monitoring of machines and plants
- Content of message buffer is retained even when panel is disconnected, without batteries
- Pixel graphics TFT display with 256 colors and touchscreen
- Interfaces for communication with Siemens SIMATIC S7 (e.g. MPI, PROFIBUS DP) are on-board
- Ethernet on-board
- Use of scripts and archives
- Drivers are also available for non-Siemens PLCs
- Installation-compatible with TP 270 6" and MP 270B 6"

Benefits

- Reduction of service and commissioning costs through:
  - Backup / restoration via a process interface or optionally via a Multi Media Card
  - Remote downloading of the configuration with automatic transfer recognition via all device interfaces
  - Maintenance-free design (no battery) and long service life of the backlighting
- Maintenance-free message buffer
- Use of scripts and archives
- Can be used all over the world:
  - 32 offline languages can be configured (incl. Asian and Cyrillic character sets)
  - 16 online languages can be selected directly on the device
- Graphics library available with off-the-shelf picture objects
- Standard interfaces for increasing the flexibility:
  - External multimedia card, used for recipe data sets, archive and for backup of configuration / system data
- Integrated USB interface for connecting, for example, standard printers
- Simple engineering supported by comprehensive documentation on the SIMATIC HMI Manual Collection DVD
- Integral component of Totally Integrated Automation (TIA): Increases productivity, minimizes engineering outlay, reduces lifecycle costs

Application

Thanks to their practical functions and large user memory, the TP 277 6" Touch Panels can be used wherever operator control and monitoring of machines and plants is necessary on site – whether in production automation, process automation or building-services automation.

The TP 277 6" offers a 256-color TFT display. The unit has an integral PROFINET I/O interface for even greater flexibility. A further highlight is the non-volatile message buffer included as standard that stores messages permanently without battery backup.

Operator control and process monitoring devices

Panels – 270 series

SIMATIC TP 277 6"

■ Design

- 256-color TFT display
- CCFL[1] long-life backlighting
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- Scripts and archives
- High performance thanks to RISC processor and 4 MB user memory, plus additional integrated recipe memory
- The data in the message buffer is retained even when the panel is disconnected from the supply, without battery backup
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- Ethernet (PROFINET I/O capable)
- Integral USB interface
- Can be configured using SIMATIC WinCC flexible 2005 Standard SP1
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- 32 languages (e.g., Cyrillic, traditional Chinese, simplified Chinese) and online switching between up to 16 languages
- Multi Media Card slot, can be used for standard Multi Media Cards (for backing up archives and recipe data sets, the configuration and system data)
- Remote downloading of the configuration via all interfaces with automatic transfer recognition
- Options for SINUMERIK, Sm@rtAccess and Sm@rtService can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

[1] **C**old **C**athode **F**luorescent **L**amps

■ Function

- Permanent window and template concept for creating screen templates
- Input / output fields
  for visualizing and editing process parameters
- Configurable buttons
  with up to 16 functions are also used to directly trigger functions and actions
- Indicator light
  for machine and plant status indication
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Help texts
  for process displays, messages, and variables
- Vector graphics, graphics
  can be used as icons instead of text for "labeling" buttons. They can also be used as full-screen background images. The configuration tool contains a library with extensive graphics and diverse objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Curve functions and bars
  are used for the display of dynamic values in graphics-based format
- Dynamic positioning of objects and dynamic showing / hiding of objects
- Arithmetic functions, limit value monitoring
  for reliable process control with inputs and outputs
- Online language selection (16 selectable languages), incl. Asian and Cyrillic languages
  This also applies to language-specific graphics

- Timer
  for cyclic function processing
- Password protection (security)
  User management – Authentication by means of user ID and password plus privileges specific to user groups, which is an integral part of SIMATIC
- Signaling system;
  Freely definable message classes (acknowledgement behavior and display can be configured), administration of status, fault and system alarms. The message history is retained even if the device is switched off.
  Analog alarms (limit value messages) in addition to bit messages
- Visual Basic Script, flexibility thanks to the implementation of new functions including linking to variables (comparison operations, loops, etc.)
- Archiving of messages and process values (on MultiMedia card or network drives over Ethernet)
  - Various archive types: Circulating and sequence archive
  - Storage of archive data in standard Windows format (CSV)
  - Online evaluation of process value archives through trend curves
  - External processing using standard tools (MS Excel and MS Access) is possible
- Recipe management
  - With additional data storage (on ext. storage medium)
  - 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
- Multi Media Card slot
  for external standard data carrier, can be used for backup / restoration or for transporting recipe data records
- User-friendly maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Option to download / upload the configuration via all device interfaces (with automatic transfer detection)
  - Individual contrast setting and calibration
  - Configuration simulation directly on the configuration computer

Configuring

The equipment is configured using the innovative engineering tool SIMATIC WinCC flexible 2005 SP1 (Standard version or higher). SIMATIC WinCC flexible is the logical further development of the field-proven ProTool family. Projects generated using ProTool can be easily migrated to WinCC.

TP 270 6" projects can be transferred. If WinCC flexible is started directly from SIMATIC Manager, data in STEP 7 can be accessed directly at the click of a mouse button when the panel is configured. Duplicated data input and data management is, therefore, avoided.

Additional options

- SINUMERIK
  Optionally with "SINUMERIK HMI copy license WinCC flexible CE". For configuring, a "SINUMERIK HMI engineering package WinCC flexible" is also necessary.
  For further information, see Catalog NC 60.
- Sm@rtService
  Remote operator control and monitoring of SIMATIC HMI systems based on TCP/IP networks
- Sm@rtAccess
  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.

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SIMATIC TP 277 6"

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◾ Technical specifications

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V ... +28.8 V DC
Memory	
Type	Flash / RAM
Usable memory for user data	4 Mbyte usable memory for user data
Time of day	
Clock	
• Type	software clock, battery backup, synchronizable
Configuring	
Configuring tool	WinCC flexible Standard Version 2005 SP1 or higher (to be ordered separately)
Display	
Display type	TFT, 256 colors
Size	5.7"
Resolution (WxH in pixel)	320 x 240
Backlighting	
• MTBF backlighting (at 25 °C)	about 60 000 hours
Operating mode	
Control elements	Touch screen
Connection for mouse / keyboard / barcode reader	USB / USB / USB
Touch operation	
• Touch screen	analog, resistive
• Numeric / alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
max. relative humidity (in %)	80 %
Temperature	
• Operation	0 °C ... +50 °C
• Transport, storage	-20 °C ... +60 °C
Degree of protection	
Front	IP65, NEMA 4x, (when installed)
Rear	IP20
Certifications & standards	
Certifications	CE, UL, NEMA 4x
I/O	
I/O devices	Printer, barcode reader
Interfaces	
Interfaces	1 x RS422, 1 x RS485, 1 x Ethernet (RJ45)
Multi Media Card slot	1 x Multi Media Card slot
USB port	1 x USB
Industrial Ethernet interface	1 x Ethernet (RJ45)
Operating systems	
Operating system	Windows CE
Processor	
Processor	RISC 32-bit

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Functionality under WinCC flexible	
Applications / options	ProAgent, Sm@rtService, Sm@rtAccess
Number of Visual Basic Scripts	50
Task planner	Yes
Help system	Yes
Status / control	with SIMATIC S7
With alarm logging system (incl. buffer and acknowledgment)	
• Number of messages	4 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 512 entries), retentive, maintenance-free
Recipes	
• Recipes	300
• Data records per recipe	500
• Entries per data record	1000
• Recipe memory	64 KByte integrated Flash, expandable (using optional memory card)
Number of process images	
• Process images	500
• Variables	2 048
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	10,000 text elements
• Graphics object	Bit maps, icons, vector graphics
• dynamic objects	Diagrams, bar graphs, sliders, analog display, invisible buttons
Lists	
• Text lists	500
• Graphics list	400
• Libraries	Yes
Archiving	
• Number of archives per project	20
• Number of measuring points per project	20
• Number of entries per archive	10 000
• Memory location	Multi Media Card
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Data carrier support	
• Multi Media Card	Yes
Recording	
• Recording / Printing	Alarms, report (shift report), color print, hardcopy

Operator control and process monitoring devices
Panels – 270 series

SIMATIC TP 277 6"

■ **Technical specifications** (continued)

SIMATIC TP 277 6"	6AV6 643-0AA01-1AX0
Functionality under WinCC flexible (continued)	
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	16
• 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
• Character sets	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
Process coupling	
• Connection to controller	S5, S7-200, S7- 300 / 400, TI 505, SINUMERIK, SIMOTION, Allen Bradley (DF1), Allen Bradley (DF485), Mitsubishi (FX), Telemecanique (ADJUST), OMRON (LINK / Multilink), Modicon (Modbus), see section on "System interfaces"
Expandability / openness	
• Open Platform Program	Yes
Dimensions	
Front of enclosure (W x H)	212 mm x 156 mm
Mounting cutout / device depth (W x H)	197 mm x 141 mm / 45 mm device depth
Weight	
Weight	0.78 kg

■ **Ordering data** — Order No.

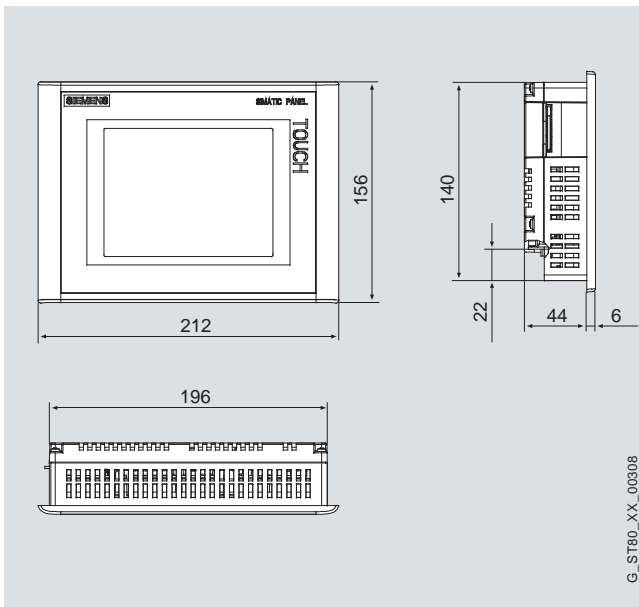|		
SIMATIC TP 277 6"	H	**6AV6 643-0AA01-1AX0**
Touch Panel with 5.7" TFT display, color (256 colors), incl. mounting accessories		
Configuring		
with SIMATIC WinCC flexible		see HMI software chapter 4
Configuration set	G	**6AV6 622-0BA01-0AA0**
Consisting of:		
• WinCC flexible Standard engineering software		
• Documentation DVD, 5 languages (En, Fr, Ger, It, Sp)		
• RS 232 cable (5 m)		
• MPI cable, 5 m (for download and test purposes only)		
Applications / Options		
When configuration with WinCC flexible		see HMI software chapter 4
• WinCC flexible /Sm@rtAccess		
• WinCC flexible /Sm@rtService		
• WinCC flexible /ProAgent		
Documentation (to be ordered separately)		
TP 277 / OP 277 Operating Instructions		
• German		**6AV6 691-1DH01-0AA0**
• English		**6AV6 691-1DH01-0AB0**
• French		**6AV6 691-1DH01-0AC0**
• Italian		**6AV6 691-1DH01-0AD0**
• Spanish		**6AV6 691-1DH01-0AE0**
WinCC flexible Compact / Standard / Advanced User Manual		
• 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**
SIMATIC HMI Manual Collection	A	**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		
Accessories for supplementary ordering		see HMI Accessories page 2/160 onwards

A: Subject to export regulations: AL: N and ECCN: EAR99S
G: Subject to export regulations: AL: N and ECCN: 5D992
H: Subject to export regulations: AL: N and ECCN: 5D002ENC3

■ **Dimensions**

All specifications in mm. Panel cutout see technical specifications.

SIMATIC TP 277 6" version

■ **Further information**

Further information is available in the Internet under:

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

Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

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