

INSTALLATION DOCUMENT PACKAGE

Installation Instructions

SIEMENS SIMATIC HMI

6AV6642-0BA01-1AX1

SIMATIC OPERATOR TOUCH PANEL

Applicable product family: SIMATIC HMI Panels

OFFICIAL SOURCE

6AV6642-0BA01-1AX1 6AV6 642-0BA01-1AX1.pdf

The following pages are selected from the supplied manufacturer document and retain their original page content.

Operator control and process monitoring devices

Panels – 170 series

SIMATIC TP 177B

Design

- Display versions
 - 4.3" TFT widescreen display with 256 colors or
 - 5.7" STN display with 256 colors or 4 blue levels
- LED or CCFL¹⁾ Backlighting with long service life
- Analog resistive touch screen
- Numeric and alphanumeric on-screen keyboard
- High performance thanks to RISC processor and 2 MB user memory, plus additional integrated recipe memory
- Data in the message buffer are retained even when panel is disconnected from the power supply, without batteries
- MPI, PROFIBUS DP interfaces (up to 12 Mbaud) as well as USB 1.1 (max. 100 mA) on-board
- PROFINET interface is already on-board in the color versions
- Configuration of the 6" version with SIMATIC WinCC flexible 2005 Compact or higher, the 4" version as of WinCC flexible 2008 Compact
- Complete functionality for demanding tasks
- Comprehensive Reichert graphics library
- Multimedia Card / SD card
 - can be used for standard Multimedia Cards or standard SD Cards (for backup / restoration or for backing up recipe data sets, the configuration, and system data); the 4" version also supports USB flash drives
- The SINUMERIK, Sm@rtAccess and Sm@rtService options can be used
- Service-friendly thanks to maintenance-free design and long service life of the backlighting display

1) Cold Cathode Fluorescence Lamps

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 images, 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 pictures. In the configuration tool, a library is available containing extensive graphics and a wide variety of objects. All editors with an OLE interface (e.g., PaintShop, Designer or CorelDraw) can be used as graphics editors.
- 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 with 5 selectable languages, incl. Asian and Cyrillic languages,
 - this also applies to language-specific graphics

- Scheduler
 - for cyclic function execution
- 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 messages. The alarm history is retained even if the device is switched off. Analog alarms (limit value messages) in addition to discrete alarms.
- 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
- Multimedia Card / SD card compatibility
 - for external standard data carriers, can be used for backup / restoration or for transporting recipe data records; the 4" version also supports USB flash drives
- 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 and brightness setting and calibration
 - Configuration simulation directly on the configuration computer

Configuring

Configuration is implemented using the innovative engineering tool SIMATIC WinCC flexible from version 2005 for the 6" versions or with WinCC flexible from version 2008 for the 4" version, in each case the Compact Edition 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. When OP17 projects are implemented, the project engineer must make certain changes following conversion as a result of the innovated display technology. Support is however provided by WinCC flexible. 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.

Additional options

- SINUMERIK
 - Optionally with "SINUMERIK HMI copy license WinCC flexible CE". The SINUMERIK HMI engineering WinCC flexible package is also required for configuration. 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.

Technical specifications

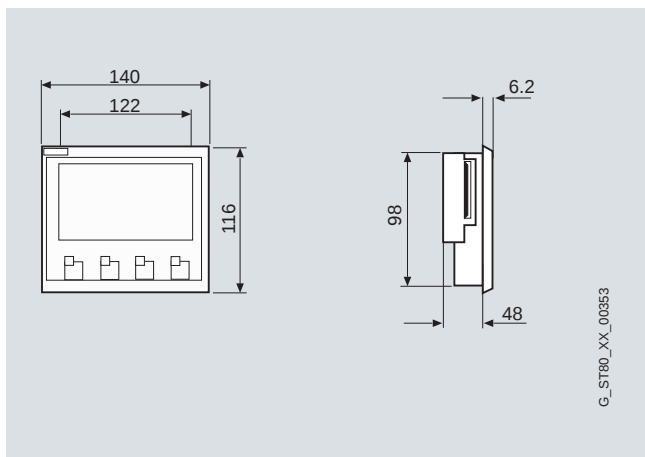
SIMATIC TP 177B	6AV6 642-0BD01-3AX0 TP 177B Widescreen	6AV6 642-0BC01-1AX1 TP 177B Bluemode	6AV6 642-0BA01-1AX1 TP 177B color
Supply voltage			
Supply voltage	24 V DC	24 V DC	24 V DC
permissible range	+19.2 V ... +28.8 V DC	+20.4 V ... +28.8 V DC	+20.4 V ... +28.8 V DC
Rated current	0.2 A	0.24 A	0.24 A
Memory			
Type	Flash / RAM	Flash / RAM	Flash / RAM
Usable memory for user data	2 048 KByte usable memory for user data	2 048 KByte usable memory for user data	2 048 KByte usable memory for user data
Time of day			
Clock			
• Type	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable	Hardware clock, battery backup, synchronizable
Protocols			
Protocols (terminal link)			
• Sm@rtAccess	Yes	Yes	Yes
Configuring			
Configuring tool	WinCC flexible Compact Version 2008 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)	WinCC flexible Compact Version 2005 or higher (to be ordered separately)
Display			
Display type	TFT, 256 colors	STN, 4 shades of blue	STN, 256 colors
Size	4.3" (95 mm x 53 mm)	5.7" (120 mm x 90 mm)	5.7" (120 mm x 90 mm)
Resolution (WxH in pixel)	480 x 272	320 x 240	320 x 240
Backlighting			
• MTBF backlighting (at 25 °C)	Approx. 30 000 hours	about 50 000 hours	about 50 000 hours
Operating mode			
Control elements	Membrane keyboard	Touch screen	Touch screen
Function keys, programmable	4 function keys		
Connection for mouse / keyboard / barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
Touch operation			
• Touch screen	analog, resistive	analog, resistive	analog, resistive
• Numeric / alphabetical input	Yes (on-screen keyboard) / Yes (on-screen keyboard)	Yes / Yes	Yes / Yes
Ambient conditions			
Mounting position	vertical	vertical	vertical
maximum permissible angle of inclination without external ventilation	+/- 35 °	+/- 35 °	+/- 35 °
max. relative humidity (in %)	90 %	90 %	90 %
Temperature			
• Operation (vertical installation)	0 °C ... +50 °C	0 °C ... +50 °C	0 °C ... +50 °C
• Operation (max. tilt angle)	0 °C ... +40 °C	0 °C ... +40 °C	0 °C ... +40 °C
• Transport, storage	-20 °C ... +60 °C	-20 °C ... +60 °C	-20 °C ... +60 °C
Degree of protection			
Front	IP65, NEMA 4, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4x, NEMA 12 (when installed)	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20	IP20	IP20
Certifications & standards			
Certifications	CE, GL, FM Class I Div. 2, cULus, C-TICK, NEMA 4, NEMA 4x, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX Zone 2, EX Zone 22, C-TICK, NEMA 4x, NEMA 12
I/O			
I/O devices	Printer	Printer	Printer

Technical specifications (continued)

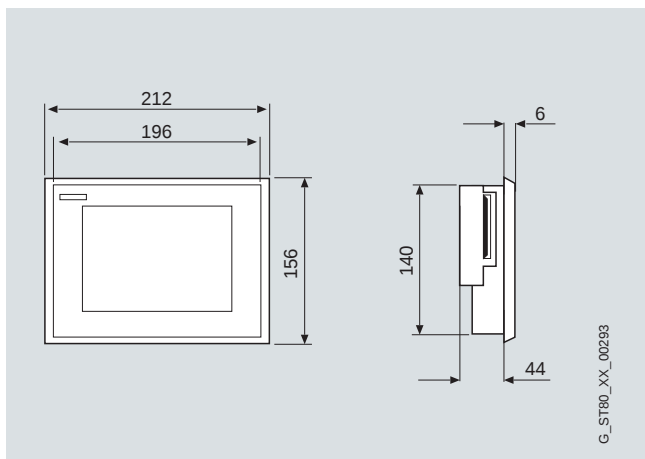
SIMATIC TP 177B	6AV6 642-0BD01-3AX0 TP 177B Widescreen	6AV6 642-0BC01-1AX1 TP 177B Bluemode	6AV6 642-0BA01-1AX1 TP 177B color
Functionality under WinCC flexible (continued)			
Security			
• Number of user groups	50	50	50
• Passwords exportable	Yes	Yes	Yes
• Number of user rights	32	32	32
Data carrier support			
• PC card	No	No	No
• CF card	No	No	No
• Multi Media Card	Yes	Yes	Yes
Recording			
• Recording / Printing	Alarms, report (shift report), color print, hardcopy	Alarms, report (shift report), hardcopy	Alarms, report (shift report), color print, hardcopy
• Printer driver	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6	ESC/P2, PCL3 / PCL6
Fonts			
• Keyboard fonts	US American (English)	US American (English)	US American (English)
Languages			
• Online languages	5	5	5
• 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, 1 additional character sets can be loaded, all freely scalable	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable	Tahoma, Courier New, WinCC flexible Standard, symbol languages, 2 additional character sets can be loaded, all freely scalable
Transfer (upload / download)			
• Transfer of configuration	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, automatic transfer recognition	MPI / PROFIBUS DP, serial, USB, by means of external storage medium, automatic transfer recognition	MPI / PROFIBUS DP, serial, USB, Ethernet, by means of external storage medium, 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), OMRON (LINK / Multilink), Modicon (Modbus), see chapter "System interfaces"	S5, S7-200, S7-300 / 400, Win AC, SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"	S5, S7-200, S7-300 / 400, Win AC, PC (TCP/IP), SINUMERIK, SIMOTION, Allen Bradley (DF1), Mitsubishi (FX), Telemecanique (ADJUST), Modicon (Modbus), for further non-Siemens drivers, see section on "System interfaces"
Expandability / openness			
• Open Platform Program	Yes	Yes	Yes
Dimensions			
Front of enclosure (W x H)	140 mm x 116 mm	212 mm x 156 mm	212 mm x 156 mm
Mounting cutout / device depth (W x H)	123 mm x 99 mm / 48 mm device depth	198 mm x 142 mm / 44 mm device depth	198 mm x 142 mm / 44 mm device depth
Weight			
Weight	0.5 kg; Max.	0.8 kg	0.8 kg

Dimensions

All specifications in mm. Panel cutout see technical specifications.



SIMATIC TP 177B, 4" version



SIMATIC TP 177B PN / DP, 6" version

Further information

Additional 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 refer to "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.