70 Series

SIMATIC OP 77A

Overview

- Compact Operator Panel for operator control and monitoring of machines and plants
- Graphics in a new dimension – small and smart
- Pixel-graphics 4.5" LC display, monochrome
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- All interfaces (e.g. MPI, PROFIBUS DP) are onboard interfaces.
- Together with OP 77B, successor of the successful OP7

Features

- High-contrast display for good readability
- Large keys for high operational safety
- Simple handling and configuring
- Integral component of Totally Integrated Automation (TIA):
  Increases productivity, minimizes the engineering outlay, reduces the lifecycle costs
- Reduction in service and startup costs thanks to maintenance-free design (no battery) and long service life of the backlighting
- Can be used worldwide:
  - 32 languages can be configured (including Asiatic and Cyrillic character sets)
  - Up to 5 languages are selectable online
  - Language-dependent texts and graphics
- Graphics library is available complete with ready-to-use display objects

Area of application

OP 77A Operator Panels can be used wherever machines and systems are controlled and monitored locally – in production, process and building automation alike. They are used in all types of sectors and applications.

Compatibility with OP7

- Same panel cutout as OP7
- Importing of OP7 configurations from ProTool/Lite, ProTool and ProTool/Pro

Migration manual with description of most important changes to OP7 and ProTool

Design

- 4.5" LCD, 160 x 64 pixels, monochrome
- 23 system keys, 8 freely-configurable and freely-inscribable function keys (4 with LEDs)
- Numeric and alphanumeric input facilities
- Compact design with shallow installation depth
- Rugged plastic housing
- The front is resistant to various oils, greases and standard detergents
- Plug-type terminals for connection of a 24 V DC power supply
- RS 485 interface for process links (MPI, PROFIBUS DP up to 1.5 Mbit/s) and for downloading the configuration

Functions

- Permanent window and template concept for creating screen templates
- Input/output fields
  for displaying and changing process parameters
- Function keys
  are used for directly actuating functions and actions. Up to 16 functions can be configured simultaneously on function keys

- Graphics
  can be used as icons instead of text to "label" function keys or buttons. They can also be used as simple on-screen graphics.
  In the configuration tool, a library is available containing an extensive range of graphics and a wide variety of objects. All editors with an OLE interface can be used as graphics editors (such as PaintShop, Designer or CorelDraw).
- Predefined texts
  for labeling function keys, process images and process values in any character size
- Bars are used for the graphical display of dynamic values
- Display selection from the PLC
  supports operator prompting from the PLC
- Language selection during runtime
  - 5 online languages, 32 configuration languages incl. Asian and Cyrillic character sets
  - Language-dependent texts and graphics
- User administration (security) according to the requirements of the various sectors
  - Authentication with user ID and password
  - User-group-specific rights
- Signaling system
  - Freely definable message classes (e.g., status/fault messages) for definition of acknowledgment response and display of message events
  - Message history
- Recipe management
- 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
- Template concept;
  picture elements configured in the template appear in every picture
- Simple maintenance and configuration thanks to:
  - Backup and restoration of the configuration, operating system, data records and firmware on a PC using ProSave
  - Configuration download/upload using MPI/PROFIBUS DP and serially by using RS 485
  - Individual contrast settings
  - No batteries are necessary

Configuration

SIMATIC WinCC flexible Compact, Standard or Advanced configuration software Version 2004 SP1 and higher plus HSP is used for configuration.

For more information about engineering software, see HMI software/engineering software SIMATIC WinCC flexible.

Integration

The OP 77A can be connected to the following:

- SIMATIC S7-200/-300-400
- SIMATIC WinAC Software/Slot PLC

Note:
For further information see "System interfaces"

Technical specifications

	6AV6 641-0BA11-0AX1
Product-type designation	OP 77A

Supply voltage	
Supply voltage	24 V DC
permissible range	+20.4 V to +28.8 V DC
Rated current	0.2 A
Memory	
Type of storage	
Type	Flash / RAM
Memory usable for project data/Options	256 KB usable memory for user data
Time	
Clock	
• Type	Softwareuhr, ungepuffert
Configuration	
Configuration tool	WinCC flexible Compact Version 2004 SP 1 or higher; HSP OP 77 (to be ordered separately)
Display	
Display type	STN, Schwarz/Weiss
Size	4.5"
Resolution (WxH in pixel)	160 x 64
• MTBF backlighting (at 25 °C)	about 100,000 hours
Operating mode	
Operating elements	Membrane keyboard
Function keys, programmable	8 function keys, 4 with LEDs
Connection for mouse/keyboard/barcode reader	- / - / -
• System keys	23
• Numeric/alphabetical input	Yes / Yes
Ambient conditions	
Mounting position	vertical
maximum permissible angle of incliniation without external ventilation	+/- 80 °
max. relative humidity (in %)	90 %
Temperature	
• Operation (vertical installation)	0 °C to +50 °C
• Operation (max. tilt angle)	0 °C to +40 °C
• Transport, storage	-20 °C to +60 °C
Degree of protection	
Front	IP65, NEMA 4x, NEMA 12 (when installed)
Rear	IP20
Certifications & Standards	
Certifications	CE, GL, ABS, BV, DNV, LRS, FM Class I Div. 2, UL, CSA, cULus, EX-Zone 2 (in Vorbereitung), EX-Zone 22 (in Vorbereitung), C-TICK, NEMA 4x, NEMA 12
Type of output	
LED colors	Green
interfaces	
Interfaces	1 x RS422, 1 x RS485 (max. 1.5 Mbit/s)
PC card slot	No
CF card slot	No
Multi Media Card slot	No
USB	No
Ethernet	No

Operating systems	
Operating system	LINUX
Processor	
Processor	ARM
Functionality under WinCC flexible	
Task planner	Yes
Help system	Yes
Status/control	Not possible
Message system	
• Number of messages	1 000
• Bit messages	Yes
• Analog messages	Yes
• Message buffer	Ring buffer (n x 256 entries), non-retentive
Recipes	
• Recipes	5
• Data records per recipe	20
• Entries per data record	20
• Recipe memory	32 kByte integrierter Flash
Number of process images	
• Process images	500
• Variables	1 000
• Limit values	Yes
• Multiplexing	Yes
Image elements	
• Text objects	1,000 text elements
• Graphics object	Bit maps, icons, icon (full-screen)
• dynamic objects	Bar graphs
Lists	
• Text lists	300
• Graphics list	0
• Libraries	Yes
Security	
• Number of user groups	50
• Passwords exportable	Yes
• Number of user rights	32
Recording	
• Recording/Printing	-
Fonts	
• Keyboard fonts	US American (English)
Languages	
• Online languages	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
• Fonts	WinCC flexible Standard, symbol languages
Transfer (Upload/Download)	
• Transfer of configuration	MPI/PROFIBUS DP, serial, automatic transfer recognition
Process coupling	
• Connection to controller	S7-200, S7- 300/400, Win AC see section on "System interfaces"
Expandability/openness	
• Open Platform Program	No
Dimensions	

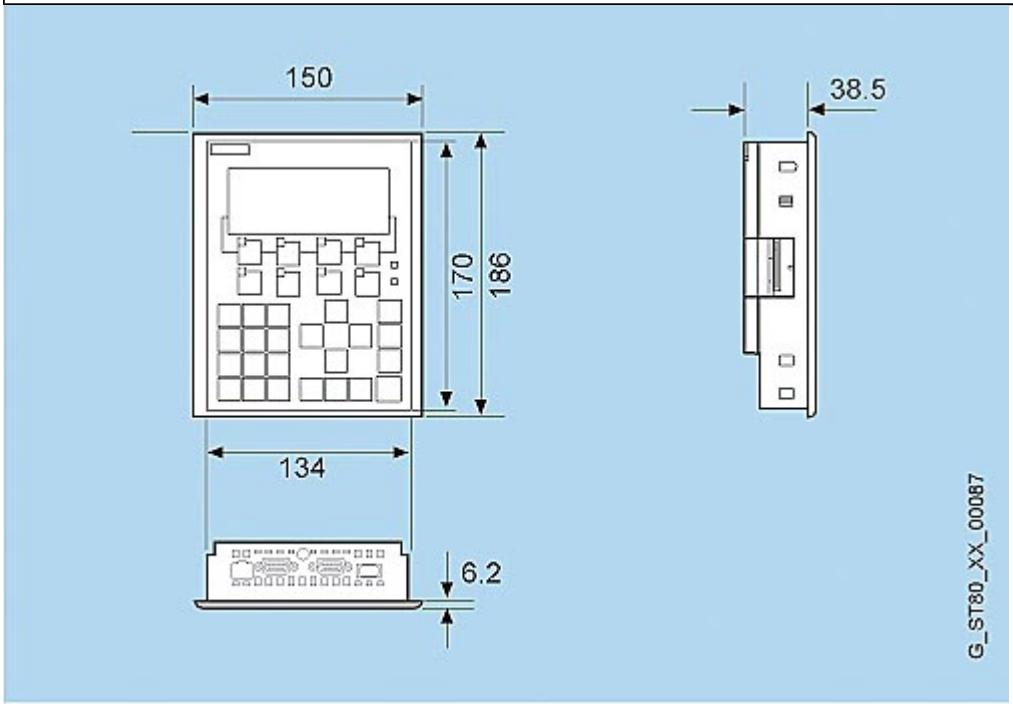
Front of enclosure (W x H)	150 mm x 186 mm
Mounting cutout/Device depth (W x H/D) in mm	135 mm x 171 mm / 38.5 mm device depth

Dimensions and weight

Weight

- Weight — 0.5 kg

Dimensional drawing



OP 77A: Installation cutout (W x H x D) in mm: 134 x 170 x 38.5

Further Information

Additional information is available in the Internet under:

http://www.siemens.com/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.