Siemens 6AV3607-1JC20-0AX1

SIMATIC OP7/DP Operator Panel

Siemens 6AV3607-1JC20-0AX1 is the SIMATIC OP7/DP text operator panel for SIMATIC S7/M7 systems. Its LED-backlit LC display shows four lines of twenty characters, with eight function keys and a PPI/MPI/PROFIBUS DP interface supporting up to 1.5 Mbaud.

Version check. Confirm the OP7/DP version, existing controller connection and ProTool configuration before selecting a replacement.



Technical Specifications

Parameter	Specification
Product Identity	
Manufacturer	Siemens AG
Complete order number	6AV3607-1JC20-0AX1
Product type	SIMATIC OP7/DP text operator panel
Housing dimensions (W × H × D)	144 × 180 × 42.5 mm overall
Mounting depth	38.5 mm
Mounting cutout (W × H)	135 (+1/0) × 171 (+1/0) mm
Functional Configuration	
Display	Monochrome LC display with LED backlighting
Text display capacity	4 lines × 20 characters; 8 mm character height
Operator input	Membrane keys; no touchscreen
Function keys	8 configurable keys; 4 with LEDs
System keys	22
Configuration interface	IF1A RS232; 15-pin sub-D socket
Controller interface	IF1B PPI/MPI/PROFIBUS DP; 9-pin sub-D socket
USB / Industrial Ethernet	Not provided
Engineering software	ProTool/Lite; exact-model datasheet specifies Version 2.51 or higher
Performance & Power	
Configuration memory	128 KB flash for configuration data and data records
Rated supply / permitted range	24 V DC / 18–30 V DC
Current at 24 V	190 mA typical; 240 mA maximum continuous
PROFIBUS transmission rate	Up to 1.5 Mbaud; this is not the DP-12 variant
Battery	OP7 operates without a battery; operating data retained in flash
Environment	
Protection	IP65 front / IP20 rear; front gasket must fit correctly
Operating temperature	0–50 °C vertical; 0–35 °C horizontal
Storage / transport temperature	-25 to +70 °C
Operating humidity	Up to 95%, non-condensing

Compatibility & Selection Guide

SIMATIC system combinations. 6AV3607-1JC20-0AX1 is the OP7/DP version. Its IF1B connection supports SIMATIC S5 over PROFIBUS DP and SIMATIC S7/M7 over PPI, MPI or PROFIBUS DP. The selected controller and configured network must support the corresponding protocol.

PP, DP and DP-12 selection. The OP7/PP supports S5 AS511 and FAP through IF1A, while the OP7/DP uses PROFIBUS DP for S5 communication. OP7/DP-12 adds the 12 Mbaud PROFIBUS option. These versions therefore have different communication capabilities even though they share the OP7 panel format.

Serial equipment compatibility. On OP7/DP, IF1A provides RS232 connections for a PC/programming unit or printer. SIMATIC 500/505 and other PLC serial connections are available on the PP and DP-12 versions, rather than this DP configuration. For a replacement, the existing PLC protocol determines which OP7 version is suitable.

Wiring & Installation Reference

Power and grounding. Use a safely isolated 24 V DC supply within 18–30 V DC. The power terminals accept conductors up to 2.5 mm². Ground the chassis to the cabinet and check DC polarity before attaching RS232, as that connection can defeat polarity-reversal protection. Follow the initial power-up sequence.

Enclosure and panel mounting. Isolate cabinet power and keep ventilation slots clear. Leave at least 50 mm below the housing and use a front panel no more than 6 mm thick. Fit the gasket and secure the panel using all four screw-type clamps. Support the panel during fitting and avoid excessive clamp torque.

Interfaces and signal wiring. Use IF1A for RS232 configuration and IF1B for the DP controller connection. Use the OP7/DP pin assignment in Siemens table D-4 and set the rear DIP switches for the required RTS signal. Use shielded cables, secure the connectors and route them away from high-voltage wiring. Let a damp panel dry completely before energizing.

Diagrams in this PDF

OP7 mounting dimensions · page 5 | OP7/DP interface, Siemens table D-4 · page 7

Siemens sources: exact-model datasheet (May 2017) and OP7/OP17 Equipment Manual, 6AV3991-1AE05-1AB0, Release 04/99. Selected original pages follow on pages 3–7.

SIEMENS

Data sheet 6AV3607-1JC20-0AX1

*** SPARE PART*** OPERATOR PANEL OP7/DP LC DISPLAY, BACKLIT LED 4 LINES, 20 CHARACTERS/LINE, SIMATIC S7, M7, PROFIBUS-DP 1.5 MBAUD UL/CSA-LISTED



General information	
Customer-specific configuration	No
Display	
Design of display	LC display
graphics-enabled	No
Color type	Black/white
Line display	
• Number of lines	4
• Number of characters per line	20
Backlighting	
• MTBF backlighting (at 25 °C)	100 000 h
Control elements	
Control elements	Keys
Keyboard fonts	
• Membrane keyboard	Yes
— user-definable label membrane keys	Yes
• Function keys	
— Number of function keys	8

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14.2.1 Connecting the Power Supply

Terminal Block

There is a two-pin screw-type terminal on the lower side of the OP housing for connecting the power supply. The screw-type terminal is designed for cables having a cross-section not larger than 2.5 mm^2. The terminal screws are accessible via drill holes in the rear panel.

figure 14-1 shows the location of the screw-type terminals on the OP7 and OP17.

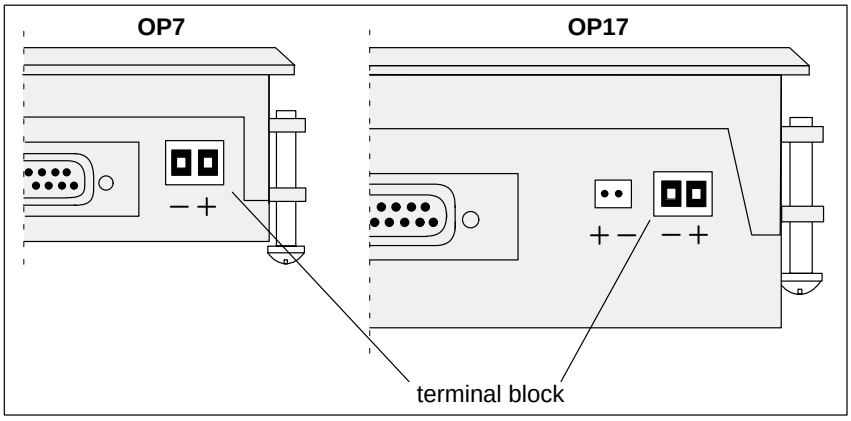


Figure 14-1 Connecting the Power Supply (View of Underside of OP)

Caution

- With a 24 V supply, make sure the extra-low voltage is isolated safely. Use only power supplies complying with ICE 364-4-41 or HD 384.04.41 (DE 0100. Part 410).
- The voltage supply must be within the permissible voltage range for the device in question (see chapter C), otherwise it is not possible to exclude the possibility of failures.

Chassis ground

Connect the chassis ground on the bottom of the device to the cabinet ground.

Device Description

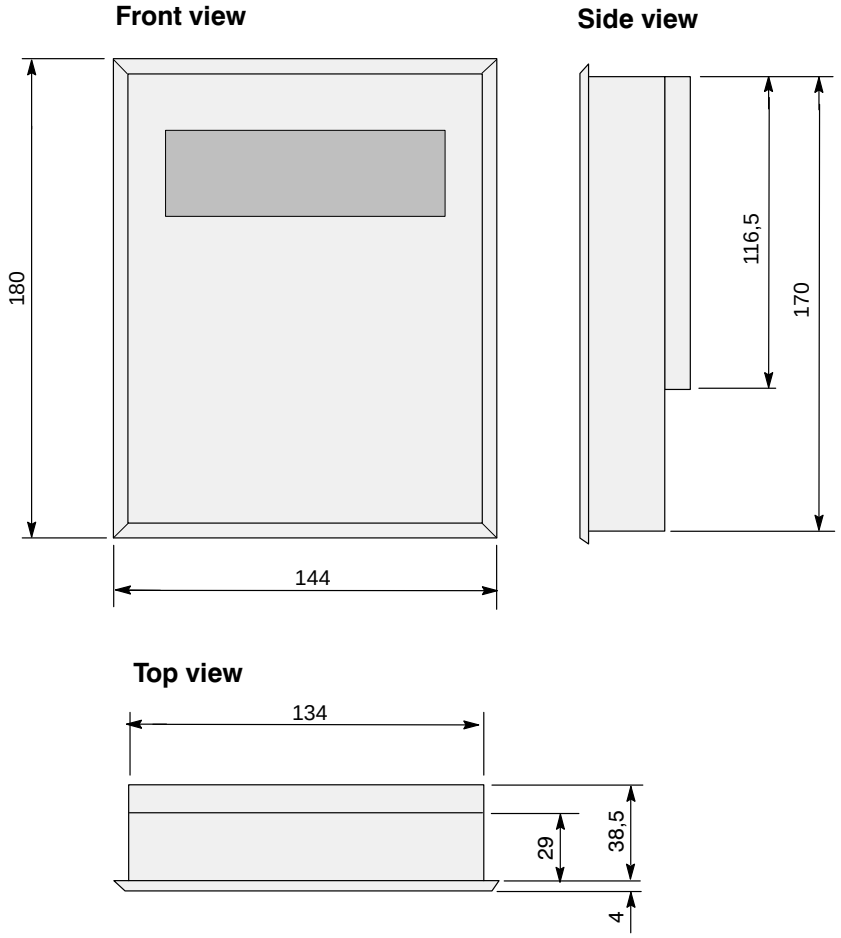
16

In this chapter

This chapter describes the versions, dimension drawings and connection elements of Operator Panels OP7 and OP17.

16.1 OP7

Dimensions



Mounting cutout

The OP7 requires the following mounting cutout (WxH):
135 $^{+1}$ mm x 171 $^{+1}$ mm.

Connection elements

The OP7 is available in versions PP, DP and DP-12. The versions differ only in as far as their communication options are concerned (refer to table 16-1). Figure 16-1 shows the connection elements on the underside of the OP7.

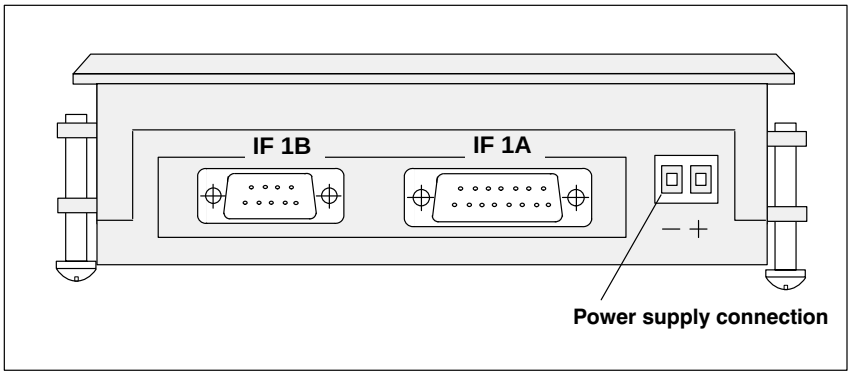


Figure 16-1 Locations of the Connection Elements on the Underside of the OP7

Table 16-1 Communication Options Featured by Different OP7 Versions

Connections	OP7		
	PP	DP	DP-12
SIMATIC S5			
– AS511 (TTY)	IF 1A	—	IF 1A
– FAP (TTY/RS232)	IF 1A	—	IF 1A
– PROFIBUS-DP up to 1.5 MBd	—	IF 1B	IF 1B
– PROFIBUS-DP up to 12 MBd	—	—	IF 1B
SIMATIC S7/M7			
– PPI	—	IF 1B	IF 1B
– MPI	—	IF 1B	IF 1B
– PROFIBUS-DP up to 1.5 MBd	—	IF 1B	IF 1B
– PROFIBUS-DP up to 12 MBd	—	—	IF 1B
SIMATIC 500/505			
– RS232	IF 1A	—	IF 1A
– RS422/RS485	IF 1B	—	IF 1B
Other PLCs			
– RS232/TTY	IF 1A	—	IF 1A
– RS422/RS485	IF 1B	—	IF 1B
PC/PU (TTY)	IF 1A	—	IF 1A
PC/PU (RS232)	IF 1A	IF 1A	IF 1A
Printer (TTY)	IF 1A	—	IF 1A
Printer (RS232)	IF 1A	IF 1A	IF 1A

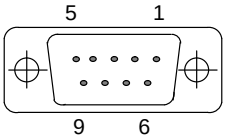


Table D-3 Pin assignment 9-pin sub-D socket

Pin	General	RS422	RS485
1	n.c.		
2	(GND)[1]		
3		TxD (B)	Data B
4		RxD (B)	
5	GND		
6	+5 V		
7	(P24-In)[1]		
8		TxD (A)	Data A
9		RxD (A)	

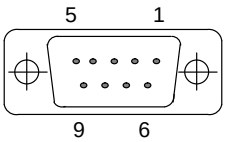


Table D-4 Pin assignment 9-pin sub-D socket

Pin	General	PROFIBUS-DP
1	n.c.	
2	(GND)[1]	
3		Data B
4		RTS[2]
5	GND (floating)	
6	+5 V (floating)	
7	(P24-In)[1]	
8		Data A
9		RTS[2]

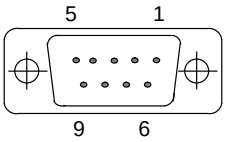


Table D-5 Pin assignment 9-pin sub-D socket

Pin	General	PROFIBUS-DP	RS422	RS485
1	n.c.			
2	(GND)[1]			
3		Data B	TxD (B)	Data B
4		RTS[2]	RxD (B)[2]	
5	GND (floating)			
6	+5 V (floating)			
7	(P24-In)[1]			
8		Data A	TxD (A)	Data A
9		RTS[2]	RxD (A)[2]	

1) Reserved for future use. From current-limited source < 1A only.
2) Can be switched by means of the DIP switch (for switch settings refer to Section 14.2.3)