

MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

Selected official specification and wiring pages

SIEMENS SIMATIC

## 6ES7288-7DP01-0AA0

S7-200 SMART EM DP01 PROFIBUS DP COMMUNICATION MODULE

The following original Siemens pages contain the model-specific specifications, interface details, and wiring information with original pagination retained.

REFERENCE PACKAGE

SIMATIC S7-200 SMART System Manual V2.8, 08/2023

OFFICIAL DOCUMENT

[A5E03822230-AL](#)

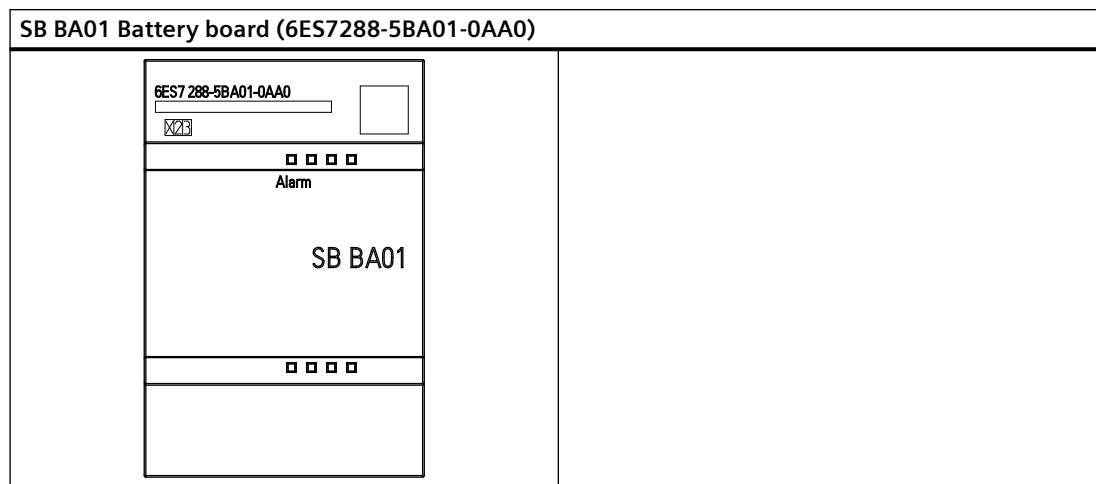
## SIMATIC

### S7 S7-200 SMART

#### System Manual

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Table A-157 Wiring diagram for the SB BA01 Battery board (6ES7288-5BA01-0AA0)



## A.10 EM DP01 PROFIBUS DP module

Table A-158 General specifications

| Technical data            | EM DP01 PROFIBUS DP |
|---------------------------|---------------------|
| Article number            | 6ES7288-7DP01-0AA0  |
| Dimensions W x H x D (mm) | 70 x 100 x 81       |
| Weight                    | 176.2 g             |
| Power dissipation         | 1.5 W (no load)     |
| V DC requirements         |                     |
| +5 V DC (SM Bus)          | 150 mA (no load)    |
| +24 V DC                  | See below           |

Table A-159 EM features

| Technical data                                   | EM DP01 PROFIBUS DP module                                           |
|--------------------------------------------------|----------------------------------------------------------------------|
| Number of ports (limited power)                  | 1                                                                    |
| Electrical interface                             | RS485                                                                |
| PROFIBUS DP / MPI baud rates (set automatically) | 9.6, 19.2, 45.45, 93.75, 187.5, and 500 Kbps; 1.5, 3, 6, and 12 Mbps |
| Protocols                                        | PROFIBUS DP slave and MPI slave                                      |
| Cable length                                     |                                                                      |
| Up to 93.7 Kbps                                  | 1200 m                                                               |
| 187.5 Kbps                                       | 1000 m                                                               |
| 500 Kbps                                         | 400 m                                                                |
| 1 to 1.5 Mbps                                    | 200 m                                                                |

| Technical data               | EM DP01 PROFIBUS DP module       |
|------------------------------|----------------------------------|
| 3 to 12 Mbps                 | 100 m                            |
| <b>Network capabilities</b>  |                                  |
| Station address settings     | 0 to 99 (set by rotary switches) |
| Maximum stations per segment | 32                               |
| Maximum stations per network | 126, up to 99 EM DP01 stations   |
| MPI connections              | 6 total (1 reserved for an OP)   |

Table A-160 Power supply

| Technical data                              | EM DP01 PROFIBUS DP                                                     |
|---------------------------------------------|-------------------------------------------------------------------------|
| <b>24 V DC input power requirements</b>     |                                                                         |
| Voltage range                               | 20.4 to 28.8 V DC<br>(Class 2, Limited Power, or sensor power from PLC) |
| Maximum current:                            |                                                                         |
| Module only with port active                | 30 mA                                                                   |
| Add 90 mA of 5 V port load                  | 60 mA                                                                   |
| Add 120 mA of 24 V port load                | 180 mA                                                                  |
| Ripple noise (< 10 MHz)                     | < 1 V peak to peak (maximum)                                            |
| Isolation (field to logic) <sup>1</sup>     | 500 V AC for 1 minute                                                   |
| <b>5 V DC power on communications port</b>  |                                                                         |
| Maximum current per port                    | 900 mA @ nominal 5 V                                                    |
| Current limit                               | 2.7 A @ 5 V                                                             |
| Isolation (5 V DC to logic)                 | 500 V AC for 1 minute                                                   |
| <b>24 V DC power on communications port</b> |                                                                         |
| Voltage range                               | 20.4 to 28.8 V DC                                                       |
| Maximum current per port                    | 120 mA @ nominal 24 V                                                   |
| Current limit                               | 0.7 to 2.4 A                                                            |
| Isolation                                   | Not isolated, same circuit as input 24 V DC                             |

<sup>1</sup> No power is supplied to module logic by the 24 V DC supply. 24 V DC supplies power for the communications port.

## A.10.1 S7-200 SMART CPUs that support the EM DP01 PROFIBUS DP module

The S7-200 SMART EM DP01 PROFIBUS DP module is an intelligent expansion module designed to work with the S7-200 SMART CPUs, firmware version 2.1 or later, shown in the following table.

Table A-161 EM DP01 PROFIBUS DP module compatibility with S7-200 SMART CPUs, firmware version 2.1 or later

| CPU  | Description            |
|------|------------------------|
| ST20 | CPU ST20 (DC/DC/DC)    |
| SR20 | CPU SR20 (AC/DC/Relay) |

A.10.3 EM DP01 PROFIBUS DP module wiring diagram

Table A-163 Wiring diagram for the EM DP01 PROFIBUS DP module (6ES7288-7DP01-0AA0)

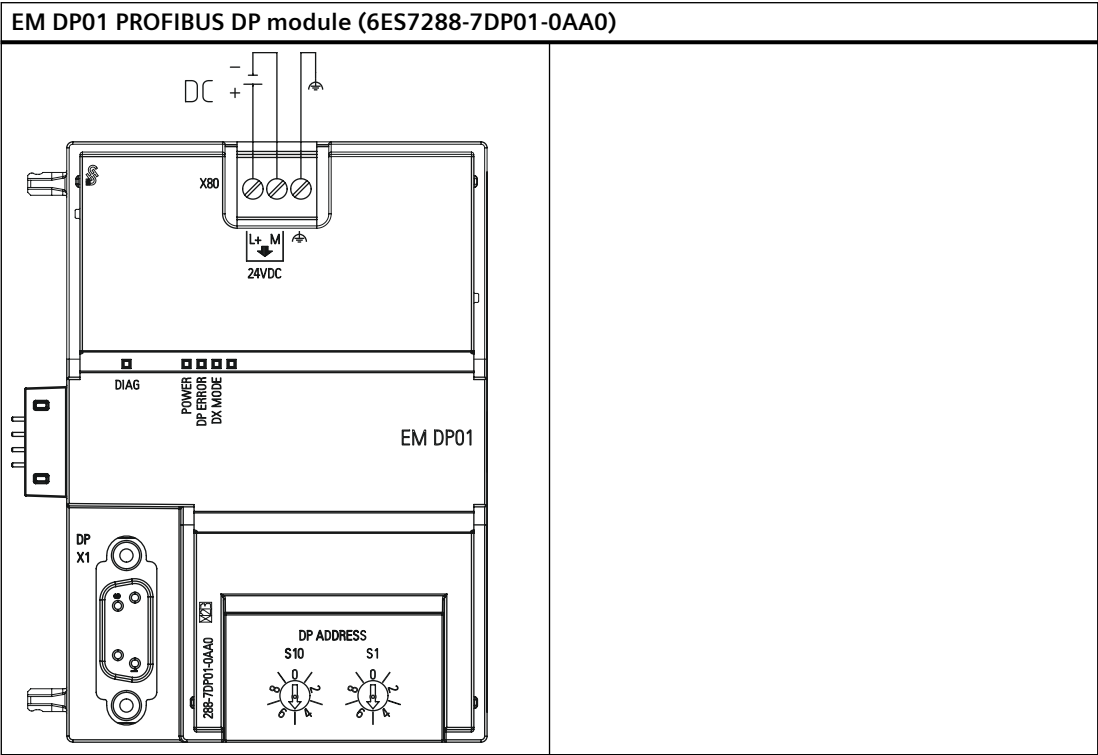


Table A-164 Connector pin locations for EM DP01 PROFIBUS DP module (6ES7288-7DP01-0AA0)

| Pin | X80              |
|-----|------------------|
| 1   | L+ / 24 V DC     |
| 2   | M / 24 V DC      |
| 3   | Functional Earth |

A.11 S7-200 SMART cables

A.11.1 S7-200 SMART I/O expansion cable

Table A-165 S7-200 SMART Expansion cable

| Technical Data |                    |
|----------------|--------------------|
| Article number | 6ES7288-6EC01-0AA0 |
| Cable length   | 1 m                |
| Weight         | 80 g               |