



SIMATIC DP, Electronics module ET 200SP, F-DQ 8XDC 24V0.5A PP, 15 mm width, up to PL E (ISO 13849) up to SIL 3 (IEC 61508)

### General information

Product type designation	F-DQ 8x24 V DC/0.5 A PP HF
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC02
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V14 SP1 with HSP 202
• STEP 7 configurable/integrated from version	V5.5 SP4 HF5
• PROFINET from GSD version/GSD revision	V2.31

### Supply voltage

Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
power supply according to NEC Class 2 required	No

### Input current

Current consumption (rated value)	75 mA; without load
Current consumption, max.	21 mA; From the backplane bus

### Output voltage / header

Rated value (DC)	24 V
------------------	------

### Power

Power available from the backplane bus	70 mW
--	-------

### Power loss

Power loss, typ.	3 W
------------------	-----

### Address area

Address space per module	
• Inputs	6 byte; 5 bytes non-RIOforFA; 6 bytes RIOforFA
• Outputs	6 byte; 5 bytes non-RIOforFA; 6 bytes RIOforFA

### Hardware configuration

Automatic encoding	Yes
• Electronic coding element type F	Yes

### Digital outputs

Type of digital output	Transistor
Number of digital outputs	8
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes

• Response threshold, typ.	Min. 0.7 A
Open-circuit detection	No
Limitation of inductive shutdown voltage to	Typ. -39 V
Controlling a digital input	Yes
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	0.5 A
• on lamp load, max.	2 W
<b>Load resistance range</b>	
• lower limit	48 Ω
• upper limit	12 000 Ω
<b>Output voltage</b>	
• for signal "1", min.	24 V; L+ (-0.5 V)
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.5 mA
<b>Switching frequency</b>	
• with resistive load, max.	30 Hz; Symmetrical
• with inductive load, max.	0.1 Hz; according to IEC 60947-5-1, DC-13, symmetrical
• with capacitive load, max.	2 Hz; Symmetrical
• on lamp load, max.	10 Hz; Symmetrical
<b>Total current of the outputs</b>	
• Current per channel, max.	0.5 A; note derating data in the manual
• Current per module, max.	3 A; note derating data in the manual
<b>Total current of the outputs (per module)</b>	
horizontal installation	
— up to 40 °C, max.	3 A
— up to 50 °C, max.	2.5 A
— up to 60 °C, max.	2 A
vertical installation	
— up to 50 °C, max.	2 A
<b>Cable length</b>	
• shielded, max.	100 m
• unshielded, max.	100 m
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	No
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostics indication LED</b>	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	Yes; red LED
• for module diagnostics	Yes; green/red DIAG LED
<b>Potential separation</b>	
<b>Potential separation channels</b>	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	No
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Standards, approvals, certificates</b>	
Suitable for safety functions	Yes
Highest safety class achievable in safety mode	
• Performance level according to ISO 13849-1	PLe
• Category according to ISO 13849-1	Cat. 4
• SIL acc. to IEC 61508	SIL 3
Probability of failure (for service life of 20 years and repair time of 100 hours)	
— Low demand mode: PFDavg in accordance with SIL3	< 6.00E-05
— High demand/continuous mode: PFH in	< 2.00E-09 1/h

#### Ambient conditions

##### Ambient temperature during operation

• horizontal installation, min.	0 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	0 °C
• vertical installation, max.	50 °C

##### Altitude during operation relating to sea level

• Installation altitude above sea level, max.	4 000 m; with derating
---	------------------------

#### Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

#### Weights

Weight, approx.	48 g
-----------------	------

#### last modified:

7/19/2022 