

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	
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC02
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul>	V14 SP1 with HSP 202
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>	V5.5 SP4 HF5
<ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>	V2.31
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes

Input current	
Current consumption (rated value)	75 mA; without load
Current consumption, max.	21 mA; From the backplane bus
Output voltage	
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	
<ul style="list-style-type: none"> <li>Inputs</li> </ul>	6 byte; 5 bytes non-RIOforFA; 6 bytes RIOforFA
<ul style="list-style-type: none"> <li>Outputs</li> </ul>	6 byte; 5 bytes non-RIOforFA; 6 bytes RIOforFA
Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> <li>Electronic coding element type F</li> </ul>	Yes
Digital outputs	
Number of digital outputs	8
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	Min. 0.7 A
Open-circuit detection	No
Limitation of inductive shutdown voltage to	Typ. -39 V
Controlling a digital input	Yes
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	2 W
Load resistance range	
<ul style="list-style-type: none"> <li>lower limit</li> </ul>	48 $\Omega$
<ul style="list-style-type: none"> <li>upper limit</li> </ul>	12 000 $\Omega$
Output voltage	
<ul style="list-style-type: none"> <li>for signal "1", min.</li> </ul>	24 V; L+ (-0.5 V)
Output current	
<ul style="list-style-type: none"> <li>for signal "1" rated value</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>for signal "0" residual current, max.</li> </ul>	0.5 mA
Switching frequency	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>	30 Hz; Symmetrical
<ul style="list-style-type: none"> <li>with inductive load, max.</li> </ul>	0.1 Hz; according to IEC 60947-5-1, DC-13, symmetrical
<ul style="list-style-type: none"> <li>with capacitive load, max.</li> </ul>	2 Hz; Symmetrical
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	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>	
Potential separation channels	
• 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
<b>Highest safety class achievable in safety mode</b>	
• 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 accordance with SIL3	< 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
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### Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

### Weights

Weight, approx.	48 g
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**last modified:** 05/06/2020