

SIMATIC S7-1500, FAILSAFE DIGITAL OUTPUT MODULE F-DQ  
 8X24VDC 2A PPM PROFISAFE; 35 MM WIDTH; UP TO PL E (ISO  
 13849-1)/ SIL3 (IEC 61508)



General information	
Product type designation	F-DQ 8x24VDC/2A PPM
Firmware version	
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
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>	V13 SP1 with HSP0086
Operating mode	
<ul style="list-style-type: none"> <li>DQ</li> </ul>	Yes
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
Input current	
Current consumption (rated value)	110 mA; without load

Output voltage	
Rated value (DC)	24 V
Power	
Power available from the backplane bus	0.8 W
Power loss	
Power loss, typ.	11 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Address space per module, max.</li> </ul>	6 byte
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
Current-sinking	Yes
Current-sourcing	Yes
Short-circuit protection	Yes
Open-circuit detection	Yes
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	8 mA
Overload protection	Yes
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	2.9 A
Limitation of inductive shutdown voltage to	PM-switching: -24 V + (-47 V), PP-switching: -24 V
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>	2 A
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	10 W
Load resistance range	
<ul style="list-style-type: none"> <li>lower limit</li> </ul>	12 $\Omega$
<ul style="list-style-type: none"> <li>upper limit</li> </ul>	2 000 $\Omega$
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>	2 A
<ul style="list-style-type: none"> <li>for signal "0" residual current, max.</li> </ul>	0.5 mA; Current-sourcing, or current sourcing and sinking switches individually, current sinking: max. 1 mA
Switching frequency	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>	30 Hz
<ul style="list-style-type: none"> <li>with inductive load, max.</li> </ul>	0.1 Hz
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	10 Hz
Total current of the outputs	
<ul style="list-style-type: none"> <li>Current per channel, max.</li> </ul>	2 A

Total current of the outputs (per module)	
horizontal installation	
— up to 40 °C, max.	16 A
— up to 60 °C, max.	8 A
vertical installation	
— up to 40 °C, max.	8 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	500 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	No
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	
• RUN LED	Yes; Green LED
• ERROR LED	Yes; Red LED
• Monitoring of the supply voltage (PWR-LED)	Yes
• Channel status display	Yes; Green LED
• for channel diagnostics	Yes; Red LED
• for module diagnostics	Yes; Red LED
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels and backplane bus	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	0 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	0 °C
• vertical installation, max.	40 °C
Dimensions	
Width	35 mm

Height	147 mm
Depth	129 mm
<b>Weights</b>	
Weight, approx.	300 g
<b>last modified:</b>	12/01/2016