

SIMATIC S7-1500, DIGITAL OUTPUT MODULE DQ 16 X  
24VDC/0.5A; 16 CHANNELS IN GROUPS OF 8, 4 A PER GROUP;  
DIAGNOSIS; SUBSTITUTE VALUE



Figure similar

General information	
Product type designation	DQ 16x24VDC/0.5A ST
HW functional status	E01
Firmware version	V2.0.0
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>	V12 / V12
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>	V2.3 / -
Operating mode	
<ul style="list-style-type: none"> <li>MSO</li> </ul>	Yes
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; through internal protection with 7 A per group
<b>Input current</b>	
Current consumption, max.	30 mA
<b>Output voltage</b>	
Rated value (DC)	24 V
<b>Power</b>	
Power available from the backplane bus	1.1 W
<b>Power loss</b>	
Power loss, typ.	2 W
<b>Digital outputs</b>	
Number of digital outputs	16
Current-sourcing	Yes
Short-circuit protection	Yes; Clocked electronically
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
<b>Load resistance range</b>	
• lower limit	48 $\Omega$
• upper limit	12 k $\Omega$
<b>Output voltage</b>	
• for signal "1", min.	L+ (-0.8 V)
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, max.	0.5 A
• for signal "0" residual current, max.	0.5 mA
<b>Output delay with resistive load</b>	
• "0" to "1", max.	100 $\mu$ s
• "1" to "0", max.	500 $\mu$ s
<b>Parallel switching of two outputs</b>	
• for logic links	Yes
• for uprating	No
• for redundant control of a load	Yes
<b>Switching frequency</b>	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13
• on lamp load, max.	10 Hz
<b>Total current of the outputs</b>	

<ul style="list-style-type: none"> <li>• Current per channel, max.</li> </ul>	0.5 A; see additional description in the manual
<ul style="list-style-type: none"> <li>• Current per group, max.</li> </ul>	4 A; see additional description in the manual
<ul style="list-style-type: none"> <li>• Current per module, max.</li> </ul>	8 A; see additional description in the manual
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	1 000 m
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	600 m
<b>Isochronous mode</b>	
Isochronous operation (application synchronized up to terminal)	Yes
Execution and activation time (TCO), min.	70 $\mu$ s
Bus cycle time (TDP), min.	250 $\mu$ s
<b>Interrupts/diagnostics/status information</b>	
Substitute values connectable	Yes
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>	Yes
<b>Diagnostic messages</b>	
<ul style="list-style-type: none"> <li>• Diagnostics</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Wire-break</li> </ul>	No
<ul style="list-style-type: none"> <li>• Short-circuit</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Fuse blown</li> </ul>	No
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• RUN LED</li> </ul>	Yes; Green LED
<ul style="list-style-type: none"> <li>• ERROR LED</li> </ul>	Yes; Red LED
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; Green LED
<ul style="list-style-type: none"> <li>• Channel status display</li> </ul>	Yes; Green LED
<ul style="list-style-type: none"> <li>• for channel diagnostics</li> </ul>	No
<ul style="list-style-type: none"> <li>• for module diagnostics</li> </ul>	Yes; Red LED
<b>Potential separation</b>	
<b>Potential separation channels</b>	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	No
<ul style="list-style-type: none"> <li>• between the channels, in groups of</li> </ul>	8
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes
<b>Permissible potential difference</b>	
between different circuits	75 V DC/60 V AC (base isolation)
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Decentralized operation</b>	
Prioritized startup	Yes

## Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

## Weights

Weight, approx.	230 g
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**last modified:** 18.12.2015