

SIMATIC S7-1500, DIGITAL OUTPUT MODULE DQ 8xDC 24V/2A HF; 8 CHANNELS IN GROUPS OF 8, 8 A PER GROUP; DIAGNOSIS; SUBSTITUTE VALUE



Figure similar

General information	
Product type designation	DQ 8x24VDC/2A HF
HW functional status	FS01
Firmware version	V2.1.0
<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 / -
<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>DQ</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DQ with energy-saving function</li> </ul>	Yes; with an application
<ul style="list-style-type: none"> <li>PWM</li> </ul>	Yes

- Oversampling
- MSO

No

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 10 A per group

### Input current

Current consumption, max.	40 mA; 20 mA per group, no output is activated.
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### Output voltage

Rated value (DC)	24 V
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### Power

Power available from the backplane bus	0.9 W
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### Power loss

Power loss, typ.	5.6 W; 6.8 W for PWM operation
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### Digital outputs

Number of digital outputs	8
Current-sourcing	Yes
Short-circuit protection	Yes
<ul style="list-style-type: none"> <li>• Response threshold, typ.</li> </ul>	3 A
Limitation of inductive shutdown voltage to	-17 V
Controlling a digital input	Yes

### Digital output functions, parameterizable

<ul style="list-style-type: none"> <li>• Freely usable digital output</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• PWM output</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Number, max.</li> </ul>	2
<ul style="list-style-type: none"> <li>— Cycle duration, parameterizable</li> </ul>	Yes; 2 ... 100 ms continuous
<ul style="list-style-type: none"> <li>— ON period, min.</li> </ul>	0 %
<ul style="list-style-type: none"> <li>— ON period, max.</li> </ul>	100 %
<ul style="list-style-type: none"> <li>— Resolution of the duty cycle</li> </ul>	0.1 %
<ul style="list-style-type: none"> <li>— Minimum pulse duration</li> </ul>	300 $\mu$ s

### Switching capacity of the outputs

<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	10 W
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### 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>	4 k $\Omega$

### Output voltage

<ul style="list-style-type: none"> <li>• for signal "1", min.</li> </ul>	L+ (-0.8 V)
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### Output current

<ul style="list-style-type: none"> <li>• for signal "1" rated value</li> </ul>	2 A
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<ul style="list-style-type: none"> <li>• for signal "1" permissible range, max.</li> </ul>	2.4 A; Note derating specification for PWM operation
<ul style="list-style-type: none"> <li>• for signal "0" residual current, max.</li> </ul>	0.5 mA
<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>• "0" to "1", typ.</li> </ul>	80 µs
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> </ul>	100 µs
<ul style="list-style-type: none"> <li>• "1" to "0", typ.</li> </ul>	300 µs
<ul style="list-style-type: none"> <li>• "1" to "0", max.</li> </ul>	500 µs
<b>Parallel switching of two outputs</b>	
<ul style="list-style-type: none"> <li>• for logic links</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• for uprating</li> </ul>	No
<ul style="list-style-type: none"> <li>• for redundant control of a load</li> </ul>	Yes
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> </ul>	100 Hz; With PWM operation: 500 Hz
<ul style="list-style-type: none"> <li>• with inductive load, max.</li> </ul>	0.5 Hz; According to IEC 60947-5-1, DC-13; max. 500 Hz with PWM operation only with external circuit; see additional description in the manual
<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	10 Hz
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>• Current per channel, max.</li> </ul>	2 A; see additional description in the manual
<ul style="list-style-type: none"> <li>• Current per group, max.</li> </ul>	8 A; see additional description in the manual
<ul style="list-style-type: none"> <li>• Current per module, max.</li> </ul>	16 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)	No
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
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>• 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>• Group error</li> </ul>	Yes
<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

- for channel diagnostics
- for module diagnostics

Yes; Red LED

Yes; Red LED

### Potential separation

#### Potential separation channels

- between the channels
- between the channels, in groups of
- between the channels and backplane bus

No

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Yes

### Isolation

Isolation tested with

707 V DC (type test)

### Decentralized operation

Prioritized startup

Yes

### Dimensions

Width

35 mm

Height

147 mm

Depth

129 mm

### Weights

Weight, approx.

240 g

**last modified:**

12/07/2016