

SIMATIC S7-1500, digital output module DQ 8x24 V DC/2A HF; 8 channels in groups of 8; 8 A per group; Diagnostics, substitute value: Front connector (screw terminals or push-in) to be ordered separately



Figure similar

General information	
Product type designation	DQ 8x24VDC/2A HF
HW functional status	FS03
Firmware version	V2.2.0
<ul style="list-style-type: none"> FW update possible 	Yes
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No
<ul style="list-style-type: none"> Prioritized startup 	Yes
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated as of version 	V13 SP1 / -
<ul style="list-style-type: none"> STEP 7 configurable/integrated as of version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PROFIBUS as of GSD version/GSD revision 	V1.0 / V5.1
<ul style="list-style-type: none"> PROFINET as of GSD version/GSD revision 	V2.3 / -
Operating mode	
<ul style="list-style-type: none"> DQ 	Yes

• DQ with energy-saving function	Yes; with an application
• PWM	Yes
• Cam control (switching at comparison values)	No
• Oversampling	No
• MSO	Yes
• Integrated operating cycle counter	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

Type of digital output	Transistor
Number of digital outputs	8
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
• Response threshold, typ.	3 A
Limitation of inductive shutdown voltage to	-17 V
Controlling a digital input	Yes

Digital output functions, parameterizable

• Freely usable digital output	Yes
• PWM output	Yes
— Number, max.	2
— Cycle duration, parameterizable	Yes; 2 ... 100 ms continuous
— ON period, min.	0 %
— ON period, max.	100 %
— Resolution of the duty cycle	0.1 %
— Minimum pulse duration	300 µs

Switching capacity of the outputs

• on lamp load, max.	10 W
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Load resistance range

• lower limit	12 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	2 A
• for signal "1" permissible range, max.	2.4 A; note derating specification for PWM operation
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", typ.	80 μs
• "0" to "1", max.	100 μs
• "1" to "0", typ.	300 μs
• "1" to "0", max.	500 μs
Parallel switching of two outputs	
• for logic links	Yes
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz; With PWM operation: 500 Hz
• with inductive load, max.	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
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	2 A; see additional description in the manual
• Current per group, max.	8 A; see additional description in the manual
• Current per module, max.	16 A; see additional description in the manual
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	

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|----------------------------------------------|-----------------|
| • RUN LED | Yes; green LED |
| • ERROR LED | Yes; red LED |
| • MAINT LED | Yes; Yellow LED |
| • Monitoring of the supply voltage (PWR-LED) | Yes; green LED |
| • Channel status display | Yes; green LED |
| • for channel diagnostics | Yes; red LED |
| • for module diagnostics | Yes; red LED |

Potential separation

Potential separation channels

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| • between the channels | No |
| • between the channels, in groups of | 4 |
| • between the channels and backplane bus | Yes |

Isolation

Isolation tested with	707 V DC (type test)
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Standards, approvals, certificates

Suitable for safety functions	No
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Suitable for safety-related tripping of standard modules	Yes; From FS03
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Highest safety class achievable for safety-related tripping of standard modules

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|----------------------------------------------|---------|
| • Performance level according to ISO 13849-1 | PL d |
| • Category according to ISO 13849-1 | Cat. 3 |
| • SILCL according to IEC 62061 | SILCL 2 |

Ambient conditions

Altitude during operation relating to sea level

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|-----------------------------------------------|------------------------------------------------------------------------|
| • Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
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Dimensions

Width	35 mm
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Height	147 mm
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Depth	129 mm
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Weights

Weight, approx.	240 g
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last modified:	05/13/2020
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