

SIMATIC S7-1500, Digital output module DQ 8x24 V DC/2A HF; 8 channels in groups of 8; 8A per group; diagnostics; 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"> FW update possible 	Yes
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
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
<ul style="list-style-type: none"> DQ with energy-saving function 	Yes; with an application
<ul style="list-style-type: none"> PWM 	Yes

- Oversampling
- MSO

No
Yes

Supply voltage

Type of supply voltage	DC
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
Short-circuit protection	Yes
<ul style="list-style-type: none"> • Response threshold, typ. 	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"> • Freely usable digital output 	Yes
<ul style="list-style-type: none"> • PWM output 	Yes
<ul style="list-style-type: none"> — Number, max. 	2
<ul style="list-style-type: none"> — Cycle duration, parameterizable 	Yes; 2 ... 100 ms continuous
<ul style="list-style-type: none"> — ON period, min. 	0 %
<ul style="list-style-type: none"> — ON period, max. 	100 %
<ul style="list-style-type: none"> — Resolution of the duty cycle 	0.1 %
<ul style="list-style-type: none"> — Minimum pulse duration 	300 μs

Switching capacity of the outputs

<ul style="list-style-type: none"> • on lamp load, max. 	10 W
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Load resistance range

<ul style="list-style-type: none"> • lower limit 	12 Ω
<ul style="list-style-type: none"> • upper limit 	4 kΩ

Output voltage

<ul style="list-style-type: none"> • for signal "1", min. 	L+ (-0.8 V)
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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
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	No
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	
• RUN LED	Yes; Green LED
• ERROR LED	Yes; Red LED

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| • 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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Decentralized operation

Prioritized startup	Yes
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Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

Weights

Weight, approx.	240 g
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last modified:	07/17/2018
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