

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

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"> <ul style="list-style-type: none"> — Number, max. | 2 |
| <ul style="list-style-type: none"> <ul style="list-style-type: none"> — Cycle duration, parameterizable | Yes; 2 ... 100 ms continuous |
| <ul style="list-style-type: none"> <ul style="list-style-type: none"> — ON period, min. | 0 % |
| <ul style="list-style-type: none"> <ul style="list-style-type: none"> — ON period, max. | 100 % |
| <ul style="list-style-type: none"> <ul style="list-style-type: none"> — Resolution of the duty cycle | 0.1 % |
| <ul style="list-style-type: none"> <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 |
|--|------|

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) |
|--|-------------|

Output current

<ul style="list-style-type: none"> • for signal "1" rated value 	2 A
<ul style="list-style-type: none"> • for signal "1" permissible range, max. 	2.4 A; Note derating specification for PWM operation
<ul style="list-style-type: none"> • for signal "0" residual current, max. 	0.5 mA
Output delay with resistive load	
<ul style="list-style-type: none"> • "0" to "1", typ. 	80 µs
<ul style="list-style-type: none"> • "0" to "1", max. 	100 µs
<ul style="list-style-type: none"> • "1" to "0", typ. 	300 µs
<ul style="list-style-type: none"> • "1" to "0", max. 	500 µs
Parallel switching of two outputs	
<ul style="list-style-type: none"> • for logic links 	Yes
<ul style="list-style-type: none"> • for uprating 	No
<ul style="list-style-type: none"> • for redundant control of a load 	Yes
Switching frequency	
<ul style="list-style-type: none"> • with resistive load, max. 	100 Hz; With PWM operation: 500 Hz
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • on lamp load, max. 	10 Hz
Total current of the outputs	
<ul style="list-style-type: none"> • Current per channel, max. 	2 A; see additional description in the manual
<ul style="list-style-type: none"> • Current per group, max. 	8 A; see additional description in the manual
<ul style="list-style-type: none"> • Current per module, max. 	16 A; see additional description in the manual
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	1 000 m
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • Diagnostic alarm 	Yes
Diagnostic messages	
<ul style="list-style-type: none"> • Monitoring the supply voltage 	Yes
<ul style="list-style-type: none"> • Wire-break 	No
<ul style="list-style-type: none"> • Short-circuit 	Yes
<ul style="list-style-type: none"> • Group error 	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • RUN LED 	Yes; Green LED
<ul style="list-style-type: none"> • ERROR LED 	Yes; Red LED
<ul style="list-style-type: none"> • 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

- 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)

Decentralized operation

Prioritized startup Yes

Dimensions

Width 35 mm
 Height 147 mm
 Depth 129 mm

Weights

Weight, approx. 240 g

last modified: 01/29/2018