



Figure similar

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: 2 channels can be used for pulse width modulation(PWM) . the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d according to EN ISO 13849-1:2015. front connector (screw terminals or push-in) to be ordered separately

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 from version 	V13 SP1 / -
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
<ul style="list-style-type: none"> PROFINET from 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; FS02 and FW V2.1.0 or higher; two outputs can be operated with max. 500 Hz PWM
<ul style="list-style-type: none"> Cam control (switching at comparison values) 	No
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> MSO 	Yes
<ul style="list-style-type: none"> Integrated operating cycle counter 	Yes
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 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.
output voltage / header	
Rated value (DC)	24 V
Power	
Power available from the backplane bus	0.9 W
Power loss	
Power loss, typ.	5.6 W; 6.8 W for PWM operation
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; FS02 and FW V2.1.0 or higher
— 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
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
Diagnoses	
• 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
• 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

- 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)

Standards, approvals, certificates

Suitable for safety functions No

Suitable for safety-related tripping of standard modules Yes; From FS03

Highest safety class achievable for safety-related tripping of standard modules

- Performance level according to ISO 13849-1 PL d
- Category according to ISO 13849-1 Cat. 3
- SIL acc. to IEC 62061 SIL 2

Ambient conditions

Altitude during operation relating to sea level

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

Dimensions

Width 35 mm

Height 147 mm

Depth 129 mm

Weights

Weight, approx. 240 g

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