SIEMENS

Data sheet

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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

Figure similar

General information			
Product type designation	DQ 8x24VDC/2A HF		
HW functional status	FS03		
Firmware version	V2.2.0		
FW update possible	Yes		
Product function			
I&M data	Yes; I&M0 to I&M3		
 Isochronous mode 	No		
Prioritized startup	Yes		
Engineering with	Engineering with		
 STEP 7 TIA Portal configurable/integrated from version 	V13 SP1 / -		
 STEP 7 configurable/integrated from version 	V5.5 SP3 / -		
 PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1		
PROFINET from GSD version/GSD revision	V2.3 / -		
Operating mode			
• DQ	Yes		
 DQ with energy-saving function 	Yes; with an application		
• PWM	Yes; FS02 and FW V2.1.0 or higher; two outputs can be operated with max. 500 Hz PWM		
 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)	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	Transistar
Type of digital output	Transistor
Number of digital outputs	8 Vac
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
Response threshold, typ. Limitation of industries shutdown valtage to	3 A
Limitation of inductive shutdown voltage to	-17 V
Controlling a digital input	Yes
Digital output functions, parameterizable • Freely usable digital output	Yes
Preely usable digital output PWM output	Yes; FS02 and FW V2.1.0 or higher
•	2
— Number, max.	Yes; 2 100 ms continuous
Cycle duration, parameterizableON period, min.	0 %
— ON period, max.	100 %
Resolution of the duty cycle	0.1 %
Minimum pulse duration	300 μs
Switching capacity of the outputs	- 300 μs
on lamp load, max.	10 W
Load resistance range	10 44
lower limit	12 Ω
upper limit	4 kΩ
Output voltage	7 1/22
• 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
• on lamp load, may	manual
on lamp load, max. Total current of the outputs	10 Hz
Total current of the outputs	2 A: see additional description in the manual
Current per group, max.	2 A; see additional description in the manual8 A; see additional description in the manual
Current per group, max.	
Current per module, max. Cable length	16 A; see additional description in the manual
• shielded, max.	1 000 m
unshielded, max. unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	100
Diagnostic alarm	Yes
Maintenance interrupt	Yes
Diagnoses	1.00
Monitoring the supply voltage	Yes
Wire-break	No
Short-circuit	Yes
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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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