Data sheet

SIMATIC S7-1500, Digital output module DQ 8xAC 230V/5A ST; relay; 8 channels in groups of 1; 5 A per group; diagnostics; Substitute value



Figure similar

General information		
Product type designation	DQ 8x230 V AC/5 A ST (relay)	
HW functional status	FS01	
Firmware version	V2.0.0	
 FW update possible 	Yes	
Product function		
● I&M data	Yes; I&M0 to I&M3	
Engineering with		
 STEP 7 TIA Portal configurable/integrated as of version 	V12 / V12	
 STEP 7 configurable/integrated as of version 	V5.5 SP3 / -	
 PROFIBUS as of GSD version/GSD revision 	V1.0 / V5.1	
 PROFINET as of GSD version/GSD revision 	V2.3 / -	
Operating mode		
• DQ	Yes	
 DQ with energy-saving function 	No	
• PWM	No	

Supply voltage Rated value (DC)	Oversampling	No
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 Input current Current consumption, max. 80 mA Output voltage Rated value (AC) 230 V: 24 V DC to 120 V DC / 24 V AC to 230 V AC Power Power available from the backplane bus 0.8 W Power loss Power loss, typ. 5 W Digital outputs Type of digital output 8 Current-sinking Yes Current-sourcing Yes Short-circuit protection No Controlling a digital input possible Switching capacity of the outputs • on lamp load, max. 1 500 W; 10 000 operating cycles • Fluorescent tubes, conventionally compensated • Fluorescent tubes, conventionally compensated • Fluorescent tubes, uncompensated 1 x 58 W (25 000 operating cycles) Output urrent • for signal "1" rated value 5 A • for signal "1" permissible range, mix. 5 mA; 10 V • for signal "1" permissible range, mix. 6 A • for or gignal "0" residual current, max. 9 A Parallel switching of the outputs • for or gignal "0" residual current, max. 9 A Parallel switching of two outputs • for or purating 9 No • for purating 9 No • for or purating 9 No • for purati		Yes
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Reverse polarity protection Figure 1 Current consumption, max. So mA Cutput voltage Rated value (AC) Power Power available from the backplane bus O.8 W Power loss. Power loss. Power loss, typ. Si W Digital outputs Type of digital outputs Current-sourcing Ves Current-sourcing Current-sourcing Controlling a digital input Switching capacity of the outputs • on lamp load, max. • Low energy/fluorescent lamps with electronic control gear • Fluorescent tubes, conventionally compensated • Fluorescent tubes, uncompensated • For signal "1" rated value • for signal "4" permissible range, max. • for signal "4" permissible range, max. • for or signal "4" permissible range, max. • for or prating • for redundant control of a load Fes Switching requency		
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Power available from the backplane bus Power loss Power loss, typ. 5 W Digital outputs Type of digital output Relays Number of digital outputs 8 Current-sinking Yes Current-sourcing Yes Short-circuit protection No Controlling a digital input Switching capacity of the outputs • on lamp load, max. • Low energy/fluorescent lamps with electronic control gear • Fluorescent tubes, conventionally compensated • Fluorescent tubes, uncompensated • For signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for or signal "0" residual current, max. • for logic links • for or uprating • for or redundant control of a load Ves Switching frequency	Output voltage	
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Fluorescent tubes, uncompensated Output current for signal "1" rated value for signal "1" permissible range, min. for signal "1" permissible range, max. for signal "0" residual current, max. A k; thermal continuous current for logic links for uprating for redundant control of a load Switching frequency 10x 58 W (25 000 operating cycles) 5 A 5 mA; 10 V 8 A; thermal continuous current 9 A No Yes No Yes Switching frequency	Fluorescent tubes, conventionally compensated	1x 58 W (25 000 operating cycles)
Output current • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. Parallel switching of two outputs • for logic links • for uprating • for redundant control of a load Switching frequency		10x 58 W (25 000 operating cycles)
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for signal "0" residual current, max. Parallel switching of two outputs for logic links for uprating for redundant control of a load Switching frequency O A Yes Yes No Yes		
Parallel switching of two outputs • for logic links • for uprating • for redundant control of a load Switching frequency Yes Yes No Yes		
 for logic links for uprating for redundant control of a load Switching frequency 		
for uprating for redundant control of a load Yes Switching frequency		Voe
• for redundant control of a load Yes Switching frequency		
Switching frequency		
		Yes
with resistive load, max. 2 Hz		
	with resistive load, max.	
• with inductive load, max. 0.5 Hz	• with inductive load, max.	0.5 Hz

● on lamp load, max.	2 Hz
Total current of the outputs	
Current per channel, max.	8 A; see additional description in the manual
Current per group, max.	8 A; see additional description in the manual
• Current per module, max.	64 A; see additional description in the manual
Relay outputs	· ·
Number of relay outputs	8
Rated supply voltage of relay coil L+ (DC)	24 V
 Current consumption of relays (coil current of all relays), typ. 	80 mA
 external protection for relay outputs 	With miniature circuit breaker with characteristic B for: cos ϕ 1.0: 600 A cos ϕ 0.5 0.7: 900 A with 8 A Diazed fuse: 1000 A
 Contact connection (internal) 	No
• Size of motor starters according to NEMA, max.	5
 Number of operating cycles, max. 	4 000 000; see additional description in the manual
 Relay approved acc. to UL 508 	Yes; 250 V AC/5 A g.p.; 120 V AC TV-4 tungsten; A300, R300
Switching capacity of contacts	
— with inductive load, max.	see additional description in the manual
— with resistive load, max.	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 Yes
Substitute values connectable Alarms	
Alarms	Yes
Alarms ● Diagnostic alarm	Yes
Alarms • Diagnostic alarm Diagnostic messages	Yes
Alarms	Yes Yes
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break	Yes Yes No
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break • Short-circuit	Yes Yes No
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED	Yes Yes No No
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED	Yes Yes No No Yes; Green LED
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • ERROR LED	Yes Yes Yes No No Yes; Green LED Yes; Red LED
Alarms • Diagnostic alarm Diagnostic messages • Monitoring the supply voltage • Wire-break • Short-circuit Diagnostics indication LED • RUN LED • ERROR LED • Monitoring of the supply voltage (PWR-LED)	Yes Yes Yes No No Yes; Green LED Yes; Red LED Yes; Green LED

Potential separation	
Potential separation channels	
between the channels	Yes; Switching of different phases permitted
between the channels, in groups of	1
between the channels and backplane bus	Yes
Between the channels and load voltage L+	Yes
• between the channels and load voltage L+	165
Permissible potential difference	
between different circuits	250 V AC between the channels and the supply voltage L+; 250 V
	AC between the channels and the backplane bus; 500 V AC
	between the channels
Isolation	
Isolation tested with	Between channels: 3 100 V DC; between channels backplane
	bus: 3 100 V DC; between L+ and backplane bus: 707 V DC (type
	test)
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	0 °C
 horizontal installation, max. 	60 °C
• vertical installation, min.	0 °C
• vertical installation, max.	40 °C
Decentralized energtion	
Decentralized operation Prioritized startup	Yes
- Hornizou Guirtap	1.50
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	350 g
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