

SIMATIC S7-1500, DIGITAL OUTPUT MODULE DQ 16 X 230VAC / 2A ST; RELAY; 16 CHANNELS IN GROUPS OF 2, 4A PER GROUP; DIAGNOSIS; SUBSTITUTE VALUE



General information

Product type designation	DQ 16x230VAC/2A ST (relay)
HW functional status	FS01
Firmware version	V1.0.0
• 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	V13 SP1 / -
• 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
• Oversampling	No
• MSO	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
Input current	
Current consumption, max.	150 mA
Output voltage	
Rated value (AC)	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	
Number of digital outputs	16
Current-sinking	Yes
Current-sourcing	Yes
Short-circuit protection	No
Controlling a digital input	Yes
Switching capacity of the outputs	
• on lamp load, max.	50 W (230 V AC), 5 W (24 V DC)
Output current	
• for signal "1" rated value	2 A
• for signal "1" permissible range, min.	10 mA; 10 V
• for signal "1" permissible range, max.	2 A; thermal continuous current
• for signal "0" residual current, max.	0 A
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.	1 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	1 Hz
Total current of the outputs	
• Current per channel, max.	2 A; see additional description in the manual
• Current per group, max.	2 A; see additional description in the manual
• Current per module, max.	32 A; see additional description in the manual
Relay outputs	
• Number of relay outputs	16

• Rated supply voltage of relay coil L+ (DC) • Current consumption of relays (coil current of all relays), typ. • external protection for relay outputs • Contact connection (internal) • Size of motor starters according to NEMA, max. • Number of operating cycles, max. • Relay approved acc. to UL 508	24 V 150 mA Miniature circuit breaker B10 / B16 No 5 see additional description in the manual No
Switching capacity of contacts	
— with inductive load, max.	2 A; see additional description in the manual
— with resistive load, max.	2 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	No
Diagnostics indication LED	
• RUN LED	Yes; Green LED
• ERROR LED	Yes; Red LED
• Monitoring of the supply voltage (PWR-LED)	Yes; Green LED
• Channel status display	Yes; Green LED
• for channel diagnostics	No
• for module diagnostics	Yes; Red LED
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels, in groups of	2
• between the channels and backplane bus	Yes
• Between the channels and load voltage L+	Yes
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
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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)
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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 operation

Prioritized startup	Yes
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Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

Weights

Weight, approx.	350 g
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last modified: 10/28/2016