

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
<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 	No
<ul style="list-style-type: none"> PWM 	No
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> 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)	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	
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	
<ul style="list-style-type: none"> on lamp load, max. 	50 W (230 V AC), 5 W (24 V DC)
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, min. 	10 mA; 10 V
<ul style="list-style-type: none"> for signal "1" permissible range, max. 	2 A; thermal continuous current
<ul style="list-style-type: none"> for signal "0" residual current, max. 	0 A
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. 	1 Hz
<ul style="list-style-type: none"> with inductive load, max. 	0.5 Hz
<ul style="list-style-type: none"> on lamp load, max. 	1 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. 	2 A; see additional description in the manual
<ul style="list-style-type: none"> Current per module, max. 	32 A; see additional description in the manual
Relay outputs	
<ul style="list-style-type: none"> Number of relay outputs 	16

<ul style="list-style-type: none"> • Rated supply voltage of relay coil L+ (DC) 	24 V
<ul style="list-style-type: none"> • Current consumption of relays (coil current of all relays), typ. 	150 mA
<ul style="list-style-type: none"> • external protection for relay outputs 	Miniature circuit breaker B10 / B16
<ul style="list-style-type: none"> • Contact connection (internal) 	No
<ul style="list-style-type: none"> • Size of motor starters according to NEMA, max. 	5
<ul style="list-style-type: none"> • Number of operating cycles, max. 	see additional description in the manual
<ul style="list-style-type: none"> • Relay approved acc. to UL 508 	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	
<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 	No
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
<ul style="list-style-type: none"> • Channel status display 	Yes; Green LED
<ul style="list-style-type: none"> • for channel diagnostics 	No
<ul style="list-style-type: none"> • for module diagnostics 	Yes; Red LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> • between the channels 	No
<ul style="list-style-type: none"> • between the channels, in groups of 	2
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> • 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: 12/01/2016