

Siemens
EcoTech



Figure similar



SIMATIC S7-1500, digital output module DQ 16x 230V AC/2A ST; relay 16 channels in groups of 2; 4 A per group; switching cycle counter for integrated relay, diagnostics; substitute value: the module supports the safety-oriented shutdown of load groups up to SIL1 according to EN IEC 62061:2021 and Category 2 / PL c according to EN ISO 13849-1:2015. front connector (screw terminals or push-in) to be ordered separately

General information	
Product type designation	DQ 16x 230 V AC/2 A ST (relay)
HW functional status	FS01
Firmware version	V1.1.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Prioritized startup	Yes
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	No
• PWM	No
• Oversampling	No
• MSO	Yes
• Integrated operating cycle counter	Yes; FW V1.1.0 or higher
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
Input current	
Current consumption, max.	185 mA
output voltage / header	
Rated value (AC)	230 V; 24 V DC to 120 V DC / 24 V AC to 230 V AC
Power	
Power consumption from the backplane bus	0.8 W
Power loss	
Power loss, typ.	5 W
Digital outputs	
Type of digital output	Relays

Number of digital outputs	16
Current-sinking	Yes
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	No
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	5
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.	4 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)	24 V
• Current consumption of relays (coil current of all relays), typ.	150 mA
• external protection for relay outputs	Miniature circuit breaker B10 / B16
• Contact connection (internal)	No
• Number of operating cycles, max.	see additional description in the manual
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
Interrupts/diagnostics/status information	
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	No
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	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 • Between the channels and load voltage L+	Yes																																							
	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																																							
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)																																							
Standards, approvals, certificates																																								
Siemens Eco Profile (SEP)	Siemens EcoTech																																							
Suitable for safety functions	No																																							
Suitable for safety-related tripping of standard modules	Yes; From FS02																																							
Ecological footprint																																								
• environmental product declaration	Yes																																							
Global warming potential																																								
— global warming potential, (total) [CO2 eq]	43.8 kg																																							
— global warming potential, (during production) [CO2 eq]	9.5 kg																																							
— global warming potential, (during operation) [CO2 eq]	34.5 kg																																							
— global warming potential, (after end of life cycle) [CO2 eq]	-0.231 kg																																							
Highest safety class achievable for safety-related tripping of standard modules																																								
• Performance level according to ISO 13849-1 • Category according to ISO 13849-1 • SIL acc. to IEC 62061 • remark on safety-oriented shutdown	PL c Cat. 2 SIL 1 https://support.industry.siemens.com/cs/de/en/view/39198632																																							
product functions / security / header																																								
signed firmware update	No																																							
data integrity	No																																							
Ambient conditions																																								
Ambient temperature during operation																																								
• horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max.	-25 °C; From FS02 60 °C -25 °C; From FS02 40 °C																																							
Dimensions																																								
Width	35 mm																																							
Height	147 mm																																							
Depth	129 mm																																							
Weights																																								
Weight, approx.	350 g																																							
Classifications																																								
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Approvals / Certificates																																								
General Product Approval	For use in hazardous locations																																							



[KC](#)



For use in hazard-
ous locations

Marine / Shipping

[EM](#)



[NK / Nippon Kaiji Ky-
okai](#)

Marine / Shipping

Environment



[CCS \(China Classifica-
tion Society\)](#)



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