

Siemens  
EcoTech



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

Figure similar

General information	
Product type designation	DQ 16x 230 V AC/2 A ST (relay)
HW functional status	FS01
Firmware version	V1.1.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	No
<ul style="list-style-type: none"> <li>Prioritized startup</li> </ul>	Yes
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V13 SP1 / -
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul style="list-style-type: none"> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.3 / -
Operating mode	
<ul style="list-style-type: none"> <li>DQ</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DQ with energy-saving function</li> </ul>	No
<ul style="list-style-type: none"> <li>PWM</li> </ul>	No
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<ul style="list-style-type: none"> <li>MSO</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Integrated operating cycle counter</li> </ul>	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
<b>Switching capacity of the outputs</b>	
• on lamp load, max.	50 W (230 V AC), 5 W (24 V DC)
<b>Output current</b>	
• 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
<b>Parallel switching of two outputs</b>	
• for logic links	Yes
• for uprating	No
• for redundant control of a load	Yes
<b>Switching frequency</b>	
• with resistive load, max.	1 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	1 Hz
<b>Total current of the outputs</b>	
• 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
<b>Relay outputs</b>	
• 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
<b>Switching capacity of contacts</b>	
— with inductive load, max.	2 A; see additional description in the manual
— with resistive load, max.	2 A; see additional description in the manual
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Interrupts/diagnostics/status information</b>	
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
<b>Diagnoses</b>	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	No
<b>Diagnostics indication LED</b>	
• 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
<b>Potential separation</b>	
<b>Potential separation channels</b>	
• between the channels	No
• between the channels, in groups of	2

<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes		
<ul style="list-style-type: none"> <li>• Between the channels and load voltage L+</li> </ul>	Yes		
<b>Permissible potential difference</b>			
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		
<b>Isolation</b>			
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)		
<b>Standards, approvals, certificates</b>			
Siemens Eco Profile (SEP)	Siemens EcoTech		
Suitable for safety functions	No		
Suitable for safety-related tripping of standard modules	Yes; From FS02		
<b>Ecological footprint</b>			
<ul style="list-style-type: none"> <li>• environmental product declaration</li> </ul>	Yes		
<b>Global warming potential</b>			
— 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		
<b>Highest safety class achievable for safety-related tripping of standard modules</b>			
<ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> </ul>	PL c		
<ul style="list-style-type: none"> <li>• Category according to ISO 13849-1</li> </ul>	Cat. 2		
<ul style="list-style-type: none"> <li>• SIL acc. to IEC 62061</li> </ul>	SIL 1		
<ul style="list-style-type: none"> <li>• remark on safety-oriented shutdown</li> </ul>	<a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a>		
<b>product functions / security / header</b>			
signed firmware update	No		
data integrity	No		
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> </ul>	-25 °C; From FS02		
<ul style="list-style-type: none"> <li>• horizontal installation, max.</li> </ul>	60 °C		
<ul style="list-style-type: none"> <li>• vertical installation, min.</li> </ul>	-25 °C; From FS02		
<ul style="list-style-type: none"> <li>• vertical installation, max.</li> </ul>	40 °C		
<b>Dimensions</b>			
Width	35 mm		
Height	147 mm		
Depth	129 mm		
<b>Weights</b>			
Weight, approx.	350 g		
<b>Classifications</b>			
		<b>Version</b>	<b>Classification</b>
	eClass	14	27-24-22-04
	eClass	12	27-24-22-04
	eClass	9.1	27-24-22-04
	eClass	9	27-24-22-04
	eClass	8	27-24-22-04
	eClass	7.1	27-24-22-04
	eClass	6	27-24-22-04
	ETIM	10	EC001419
	ETIM	9	EC001419
	ETIM	8	EC001419
	ETIM	7	EC001419
	IDEA	4	3566
	UNSPSC	15	32-15-17-05
<b>Approvals / Certificates</b>			
<b>General Product Approval</b>			



[Miscellaneous](#)

[Manufacturer Declaration](#)



[KC](#)

General Product Approval

For use in hazardous locations

Maritime application



[EM](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)



Environment



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