

Siemens
EcoTech



Figure similar

SIMATIC S7-1500, digital output module DQ16x24 V DC/0.5A HF; 16 channels in groups of 8; 4 A per group; single-channel diagnostics; substitute value: switching cycle counter for connected actuators. the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d according to EN ISO 13849-1:2015. front connector (screw terminals or push-in) to be ordered separately

General information	
Product type designation	DQ 16x24VDC/0.5A HF
HW functional status	From FS02
Firmware version	V1.1.0
<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
<ul style="list-style-type: none"> Isochronous mode 	Yes
<ul style="list-style-type: none"> Prioritized startup 	Yes
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	V13 SP1 / -
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
<ul style="list-style-type: none"> PROFINET from 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"> Cam control (switching at comparison values) 	No
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> MSO 	Yes
<ul style="list-style-type: none"> Integrated operating cycle counter 	Yes
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; through internal protection with 7 A per group
Input current	
Current consumption, max.	30 mA
Output voltage	
Rated value (DC)	24 V
Power	
Power consumption from the backplane bus	1.1 W
Power loss	
Power loss, typ.	2 W

Digital outputs	
Type of digital output	Transistor
Number of digital outputs	16
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes; Clocked electronically
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	12 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, max.	0.5 A
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", max.	100 μs
• "1" to "0", max.	500 μs
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.	100 Hz
• with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	0.5 A; see additional description in the manual
• Current per group, max.	4 A; see additional description in the manual
• Current per module, max.	8 A; see additional description in the manual
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Isochronous mode	
Execution and activation time (TCO), min.	70 μs
Bus cycle time (TDP), min.	250 μs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
• Maintenance interrupt	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
• Group error	Yes
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

<ul style="list-style-type: none"> • Channel status display 	Yes; green LED	
<ul style="list-style-type: none"> • for channel diagnostics 	Yes; red LED	
<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 	8	
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes	
Isolation		
Isolation tested with	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		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • Performance level according to ISO 13849-1 	PL d	
<ul style="list-style-type: none"> • Category according to ISO 13849-1 	Cat. 3	
<ul style="list-style-type: none"> • SIL acc. to IEC 62061 	SIL 2	
<ul style="list-style-type: none"> • remark on safety-oriented shutdown 	https://support.industry.siemens.com/cs/de/en/view/39198632	
Security		
signed firmware update	No	
data integrity	No	
Ambient conditions		
Ambient temperature during operation		
<ul style="list-style-type: none"> • horizontal installation, min. 	-30 °C; From FS03	
<ul style="list-style-type: none"> • horizontal installation, max. 	60 °C	
<ul style="list-style-type: none"> • vertical installation, min. 	-30 °C; From FS03	
<ul style="list-style-type: none"> • vertical installation, max. 	40 °C	
Altitude during operation relating to sea level		
<ul style="list-style-type: none"> • Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Dimensions		
Width	35 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	230 g	
Classifications		
	Version	Classification
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

Approvals / Certificates

General Product Approval

[Miscellaneous](#)

[Manufacturer Declaration](#)



[China RoHS](#)



General Product Approval For use in hazardous locations



[FM](#)



[FM](#)

[CCC-Ex](#)

For use in hazardous locations Maritime application



[Type Examination Certificate](#)

[Miscellaneous](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



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

Maritime application Environment



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