

Siemens
EcoTech



SIMATIC S7-1500, digital output module, DQ16xDC 24V/0.5A BA, 16 channels in groups of 8, 4 A per group; 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. delivery incl. front connector push-in

General information	
Product type designation	DQ 16x24VDC/0.5A BA
HW functional status	from FS01
Firmware version	V1.0.0
• 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 / V13
• 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
• Cam control (switching at comparison values)	No
• Oversampling	No
• MSO	Yes
• Integrated operating cycle counter	No
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	1.15 W
Power loss	
Power loss, typ.	2.2 W
Address area	

Address space per module	
• Inputs	0 byte; typical, maximum 14 bytes, see manual for details
• Outputs	2 byte
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	No
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Digital output functions, parameterizable	
• Switching tripped by comparison values	No
• Freely usable digital output	No
• PWM output	No
• Digital output with oversampling	No
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
Interrupts/diagnostics/status information	
Diagnostics function	No
Substitute values connectable	No
Alarms	
• Diagnostic alarm	No
• Maintenance interrupt	No
Diagnoses	
• Monitoring the supply voltage	No
• Wire break	No
• short-circuit	No

• Group error	No		
Diagnostics indication LED			
• RUN LED	Yes; green LED		
• ERROR LED	Yes; red LED		
• MAINT LED	No		
• Monitoring of the supply voltage (PWR-LED)	Yes; green LED		
• Channel status display	Yes; green LED		
• for channel diagnostics	No		
• for module diagnostics	No		
Potential separation			
Potential separation channels			
• between the channels	No		
• between the channels, in groups of	8		
• 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			
• 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	PL d		
• Category according to ISO 13849-1	Cat. 3		
• SIL acc. to IEC 62061	SIL 2		
• remark on safety-oriented shutdown	https://support.industry.siemens.com/cs/de/en/view/39198632		
Security			
signed firmware update	Yes; Firmware V3.0.0 or higher		
safely removing data	No		
data integrity	Yes; Firmware V3.0.0 or higher		
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min.	-30 °C; from FS04		
• horizontal installation, max.	60 °C		
• vertical installation, min.	-30 °C; from FS04		
• vertical installation, max.	40 °C		
Altitude during operation relating to sea level			
• Installation altitude above sea level, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual		
Absolute humidity			
• dew point, min.	-60 °C; suitable for dry room applications		
Dimensions			
Width	25 mm		
Height	147 mm		
Depth	129 mm		
Weights			
Weight, approx.	230 g		
Other			
Note:	Supplied incl. 40-pole push-in front connectors		
Classifications			
		Version	Classification

eClass	16	27-24-22-04
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](#)



General Product ApprovalFor use in hazardous locations




[Manufacturer Declaration](#)
[China RoHS](#)

[FM](#)


For use in hazardous locations

[FM](#)
[CCC-Ex](#)




[Type Examination Certificate](#)
[Miscellaneous](#)

For use in hazardous locationsMaritime application

[CCC-Ex](#)





[NK / Nippon Kaiji Kyokai](#)

Maritime applicationEnvironment




[CCS \(China Classification Society\)](#)
[KR \(Korean Register of Shipping\)](#)


