

Siemens
EcoTech



SIMATIC ET 200SP HA, digital output module, DQ 16x24VDC/0.5A HA, suitable for terminal block, H1, M1, color code CC02, channel diagnostics

General information	
Product type designation	DQ 16x24VDC/0.5A HA
Firmware version	V1.0
<ul style="list-style-type: none"> FW update possible 	Yes
Usable terminal block	type H1, M1, N0, H0, M0 (for details see the system manual)
Color code for module-specific color-coded label	CC02
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 from version 	V16
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	V5.6
<ul style="list-style-type: none"> PCS 7 configurable/integrated from version 	V9.0
<ul style="list-style-type: none"> PCS neo can be configured/integrated from version 	V3.0
<ul style="list-style-type: none"> PROFINET from GSD version/GSD revision 	GSDML 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 	No
Redundancy	
<ul style="list-style-type: none"> Redundancy capability 	Yes; With TB type M1
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 (rated value)	60 mA; without load
Current consumption, max.	70 mA; without load
Output voltage	
Rated value (DC)	24 V
Power loss	
Power loss, typ.	1.2 W; minimum - typ. specification not possible because load-dependent
Address area	
Address space per module	

<ul style="list-style-type: none"> Address space per module, max. 	2 byte; + 2 bytes for QI information
Digital outputs	
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes; Ensure sufficient low-resistance cable routing to the sensor/actuator in order to attain the response threshold. Depending on the cable cross-section used, there may be constraints regarding the usable length of cable.
<ul style="list-style-type: none"> Response threshold, typ. 	0.7 A to 1.3 A (for IO redundancy up to max 2.6 A)
Open-circuit detection	Yes; 0.7 mA test current for wire-break diagnostics; this value is doubled in the case of IO redundancy
Overload protection	Yes
Limitation of inductive shutdown voltage to	L+ -(37 to 41V)
Controlling a digital input	Yes
Switching capacity of the outputs	
<ul style="list-style-type: none"> with resistive load, max. 	0.5 A
<ul style="list-style-type: none"> on lamp load, max. 	5 W
Load resistance range	
<ul style="list-style-type: none"> lower limit 	48 Ω
<ul style="list-style-type: none"> upper limit 	12 kΩ
Output current	
<ul style="list-style-type: none"> for signal "1" rated value 	0.5 A
<ul style="list-style-type: none"> for signal "0" residual current, max. 	0.7 mA; Test current for wire-break diagnostics; this value is doubled in the case of IO redundancy
Output delay with resistive load	
<ul style="list-style-type: none"> "0" to "1", typ. 	50 μs
<ul style="list-style-type: none"> "1" to "0", typ. 	100 μs
Parallel switching of two outputs	
<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. 	100 Hz
<ul style="list-style-type: none"> with inductive load, max. 	2 Hz
<ul style="list-style-type: none"> on lamp load, max. 	10 Hz
Total current of the outputs	
<ul style="list-style-type: none"> Current per channel, max. 	0.5 A
<ul style="list-style-type: none"> Current per module, max. 	8 A
Total current of the outputs (per module)	
horizontal installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	8 A
— up to 50 °C, max.	8 A
— up to 60 °C, max.	5.5 A
— up to 70 °C, max.	3 A
vertical installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	6.33 A
— up to 50 °C, max.	4.67 A
— up to 60 °C, max.	3 A
Cable length	
<ul style="list-style-type: none"> shielded, max. 	1 000 m
<ul style="list-style-type: none"> unshielded, max. 	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
<ul style="list-style-type: none"> Diagnostic alarm 	Yes
Diagnoses	
<ul style="list-style-type: none"> Monitoring the supply voltage 	Yes

• Wire-break	Yes; channel by channel
• Short-circuit to M	Yes; channel by channel
• Short-circuit to L+	Yes; channel by channel
• Group error	Yes

Diagnostics indication LED	
• MAINT LED	Yes; Yellow LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	Yes; red LED
• for module diagnostics	Yes; green/red DIAG LED

Potential separation	
Potential separation channels	
• between the channels	No
• between the channels and backplane bus	Yes

Isolation	
Isolation tested with	1 500 V DC/1 min, type test

Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-40 °C
• horizontal installation, max.	70 °C
• vertical installation, min.	-40 °C
• vertical installation, max.	60 °C

Dimensions	
Width	22.5 mm
Height	115 mm
Depth	138 mm

Weights	
Weight, approx.	137 g

Classifications			
		Version	Classification
	eClass	14	27-24-26-04
	eClass	12	27-24-26-04
	eClass	9.1	27-24-26-04
	eClass	9	27-24-26-04
	eClass	8	27-24-26-04
	eClass	7.1	27-24-26-04
	eClass	6	27-24-26-04
	ETIM	10	EC001599
	ETIM	9	EC001599
	ETIM	8	EC001599
	ETIM	7	EC001599

Approvals / Certificates

General Product Approval


EG-Konf.






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UL



General Product Approval	For use in hazardous locations
 <small>RCM</small>	
 <small>IECEX</small>	Declaration of Conformity
 <small>CCC</small>	 <small>UL</small>

For use in hazardous locations	Maritime application				
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Maritime application	other	Environment
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[NK / Nippon Kaiji Kyokai](#)



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

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