

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	TB type H1, M1 and N0
Color code for module-specific color identification plate	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"> PCS 7 configurable/integrated as of version 	V9.0
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	
• "0" to "1", typ.	50 µs
• "1" to "0", typ.	100 µs
Parallel switching of two outputs	
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	2 Hz
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	0.5 A
• 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	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• 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
-----------------	-------

last modified: 10/22/2019 