

SIMATIC ET 200SP, Digital output module, DQ 16x 24V DC/0,5A Standard, Source output (PNP,P-switching) Packing unit: 1 piece, fits to BU-type A0, Colour Code CC00, substitute value output, module diagnostics for: short-circuit to L+ and ground, wire break, supply voltage



General information	
Product type designation	DQ 16x24VDC/0.5A ST, PU 1
HW functional status	From FS03
Firmware version	V0.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	No
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC00
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
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul>	V14
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>	V5.5 SP3
<ul style="list-style-type: none"> <li>PCS 7 configurable/integrated as of version</li> </ul>	V8.1 SP1
<ul style="list-style-type: none"> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	One GSD file each, Revision 3 and 5 and higher
<ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>	GSDML V2.3
Operating mode	

• DQ	Yes
• DQ with energy-saving function	No
• PWM	No
• Oversampling	No
• MSO	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

### Input current

Current consumption, max.	60 mA; without load
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### Output voltage

Rated value (DC)	24 V
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### Power loss

Power loss, typ.	1 W
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### Address area

Address space per module	
• Address space per module, max.	2 byte; + 2 bytes for QI information

### Hardware configuration

Automatic encoding	Yes
• Mechanical coding element	Yes

### Selection of BaseUnit for connection variants

• 1-wire connection	BU type A0
• 2-wire connection	BU type A0 + Potential isolation module
• 3-wire connection	BU type A0 + Potential isolation module
• 4-wire connection	BU type A0 + Potential isolation module

### Digital outputs

Type of digital output	Source output (PNP, current-sourcing)
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
• Response threshold, typ.	1 A; 0.7 to 1.3 A
Open-circuit detection	Yes
Limitation of inductive shutdown voltage to	Typ. L+ (-50 V)
Controlling a digital input	Yes

### Switching capacity of the outputs

• with resistive load, max.	0.5 A
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• on lamp load, max.	5 W
<b>Load resistance range</b>	
• lower limit	48 $\Omega$
• upper limit	12 k $\Omega$
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
<b>Output delay with resistive load</b>	
• "0" to "1", typ.	50 $\mu$ s
• "1" to "0", typ.	100 $\mu$ s
<b>Parallel switching of two outputs</b>	
• for uprating	No
• for redundant control of a load	Yes
<b>Switching frequency</b>	
• with resistive load, max.	100 Hz
• with inductive load, max.	2 Hz
• on lamp load, max.	10 Hz
<b>Total current of the outputs</b>	
• Current per channel, max.	0.5 A
• Current per module, max.	8 A
<b>Total current of the outputs (per module)</b>	
horizontal installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	8 A
— up to 50 °C, max.	6 A
— up to 60 °C, max.	4 A
vertical installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	6 A
— up to 50 °C, max.	4 A
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Monitoring the supply voltage	Yes
• Wire-break	Yes; Module-wise

• Short-circuit to M	Yes; Module-wise
• Short-circuit to L+	Yes; Module-wise
• Group error	Yes

#### Diagnostics indication LED

• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	No
• 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	707 V DC (type test)
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#### Standards, approvals, certificates

Suitable for safety functions	No
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Suitable for safety-related tripping of standard modules	Yes; From FS01
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##### Highest safety class achievable in safety mode

• Performance level according to ISO 13849-1	PL d
• SIL acc. to IEC 61508	SIL 2

#### Ambient conditions

##### Ambient temperature during operation

• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
• vertical installation, max.	50 °C

##### Altitude during operation relating to sea level

• Installation altitude above sea level, max.	2 000 m; On request: Installation altitudes greater than 2 000 m
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#### Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

#### Weights

Weight, approx.	30 g
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**last modified:** 05/09/2020