



SIMATIC ET 200SP, digital output module, DQ 16x 24 V DC/0.5 A high feature, source output PNP, switching to P potential, packing unit: 1 unit, suitable for BU type A0, color code CC00, channel diagnostics for: short-circuit and wire break, supply voltage, channel fault LED

General information	
Product type designation	DQ 16x24VDC/0.5A HF
HW functional status	01
Firmware version	V1.0
• FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes; 250 µs
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 V18 or higher with HSP 0416
• STEP 7 configurable/integrated from version	V5.5 SP3 or higher
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	GSDML V2.43
Operating mode	
• DQ	Yes
• DQ with energy-saving function	No
• PWM	No
• Cam control (switching at comparison values)	No
• Oversampling	No
• MSO	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
Input current	
Current consumption, max.	20 mA; without load
output voltage / header	
Rated value (DC)	24 V
Power loss	
Power loss, typ.	1 W
Address area	
Address space per module	
• Address space per module, max.	8 byte; 4 channels per submodule + QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	Type A

<b>Submodules</b>	
<ul style="list-style-type: none"> <li>Number of configurable submodules, max.</li> </ul>	4
<b>Selection of BaseUnit for connection variants</b>	
<ul style="list-style-type: none"> <li>1-wire connection</li> <li>2-wire connection</li> <li>3-wire connection</li> </ul>	BU type A0 BU type A0 with AUX terminals or potential distributor module BU type A0 with AUX terminals or potential distributor module
<b>Digital outputs</b>	
Type of digital output	Source output (PNP, current-sourcing)
Number of digital outputs	16
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes; Electronic
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	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
<b>Switching capacity of the outputs</b>	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> </ul>	0.5 A 0.5 A 5 W
<b>Load resistance range</b>	
<ul style="list-style-type: none"> <li>lower limit</li> <li>upper limit</li> </ul>	48 Ω 12 kΩ
<b>Output current</b>	
<ul style="list-style-type: none"> <li>for signal "1" rated value</li> <li>for signal "0" residual current, max.</li> </ul>	0.5 A 0.1 mA
<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>"0" to "1", typ.</li> <li>"1" to "0", typ.</li> </ul>	50 μs 100 μs
<b>Parallel switching of two outputs</b>	
<ul style="list-style-type: none"> <li>for uprating</li> <li>for redundant control of a load</li> </ul>	No Yes
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> <li>with inductive load, max.</li> <li>on lamp load, max.</li> </ul>	100 Hz 0.1 Hz; higher frequencies are possible, see Equipment Manual "Maximum permitted switching frequency of inductive loads" 10 Hz
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>Current per channel, max.</li> <li>Current per module, max.</li> </ul>	0.5 A 8 A
<b>Total current of the outputs (per module)</b>	
horizontal installation	
<ul style="list-style-type: none"> <li>up to 40 °C, max.</li> <li>up to 50 °C, max.</li> <li>up to 60 °C, max.</li> </ul>	8 A 6 A 4 A
vertical installation	
<ul style="list-style-type: none"> <li>up to 30 °C, max.</li> <li>up to 40 °C, max.</li> <li>up to 50 °C, max.</li> </ul>	8 A 6 A 4 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>shielded, max.</li> <li>unshielded, max.</li> </ul>	1 000 m 600 m
<b>Isochronous mode</b>	
Execution and activation time (TCO), min.	48 μs
Bus cycle time (TDP), min.	500 μs
Jitter, max.	8 μs
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes

<b>Alarms</b>		
• Diagnostic alarm	Yes	
<b>Diagnoses</b>		
• 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	
<b>Diagnostics indication LED</b>		
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED	
• Channel status display	Yes; green LED	
• for channel diagnostics	Yes; green LED, see Alarms/diagnostics	
• for module diagnostics	Yes; green/red DIAG LED	
<b>Potential separation</b>		
<b>Potential separation channels</b>		
• between the channels	No	
• between the channels and backplane bus	Yes	
• Between the channels and load voltage L+	No	
<b>Isolation</b>		
Isolation tested with	707 V DC (type test)	
<b>Standards, approvals, certificates</b>		
Suitable for safety functions	No	
Suitable for safety-related tripping of standard modules	Yes; see FAQ Entry ID: 39198632	
<b>Highest safety class achievable for safety-related tripping of standard modules</b>		
• 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	<a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a>	
<b>Ambient conditions</b>		
<b>Ambient temperature during operation</b>		
• horizontal installation, min.	-30 °C	
• horizontal installation, max.	60 °C	
• vertical installation, min.	-30 °C	
• vertical installation, max.	50 °C	
<b>Altitude during operation relating to sea level</b>		
• Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual	
<b>Dimensions</b>		
Width	15 mm	
Height	73 mm	
Depth	58 mm	
<b>Weights</b>		
Weight, approx.	26 g	
<b>Classifications</b>		
	<b>Version</b>	<b>Classification</b>
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	9	EC001599
ETIM	8	EC001599
ETIM	7	EC001599
<b>Approvals / Certificates</b>		
<b>General Product Approval</b>		



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[KC](#)

[Miscellaneous](#)



General Product Approval

EMV

For use in hazardous locations

[KC](#)



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Maritime application



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Maritime application



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