



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/0.5 ST
HW functional status	from FS21
Firmware version	V0.0
• FW update possible	No
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	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 TIA V14 with HSP0222 / integrated as of TIA V15
• STEP 7 configurable/integrated from version	V5.5 SP3 with HSP0230 V7.0 / integrated as of V5.6 SP1
• PCS 7 configurable/integrated from version	V8.1 SP1
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	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.	30 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.	2 byte; + 2 bytes for QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	Type A

<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>	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
<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 "1" permissible range, max.</li> <li>• for signal "0" residual current, max.</li> </ul>	0.5 A 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; see Equipment Manual "Derating curve"
<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>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>	Yes
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> <li>• Wire-break</li> </ul>	Yes Yes; Module-wise

• Short-circuit to M	Yes; Module-wise	
• Short-circuit to L+	Yes; Module-wise	
• 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	No	
• 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	No	
<b>Ecological footprint</b>		
• environmental product declaration	Yes	
<b>Global warming potential</b>		
— global warming potential, (total) [CO2 eq]	29.3 kg	
— global warming potential, (during production) [CO2 eq]	3.98 kg	
— global warming potential, (during operation) [CO2 eq]	25.6 kg	
— global warming potential, (after end of life cycle) [CO2 eq]	-0.245 kg	
<b>Ambient conditions</b>		
<b>Ambient temperature during operation</b>		
• horizontal installation, min.	-30 °C; < 0 °C as of FS03	
• horizontal installation, max.	60 °C	
• vertical installation, min.	-30 °C; < 0 °C as of FS03	
• 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.	30 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
IDEA	4	3566
UNSPSC	15	32-15-17-05
<b>Approvals / Certificates</b>		
<b>General Product Approval</b>		



[Manufacturer Declaration](#)

[KC](#)



[KC](#)

General Product Approval    EMV    For use in hazardous locations



[KC](#)



[EM](#)

[CCC-Ex](#)

[Miscellaneous](#)

For use in hazardous locations    Marine / Shipping



Marine / Shipping    Environment

[NK / Nippon Kaiji Kyokai](#)



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



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