



SIMATIC ET 200AL, DIQ 4+DQ 4x 24 V DC/0.5 A, 8XM8, Degree of protection IP67

General information	
Product type designation	DIQ 4+DQ 4x24VDC/0.5A
HW functional status	E01
Firmware version	V1.0.x
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 V13 SP1 or higher
• STEP 7 configurable/integrated from version	From V5.5 SP4 Hotfix 3
• PROFIBUS from GSD version/GSD revision	GSD as of Revision 5
• PROFINET from GSD version/GSD revision	GSDML V2.3.1
Supply voltage	
Load voltage 1L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
• Reverse polarity protection	Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up
Load voltage 2L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
• Reverse polarity protection	Yes; against destruction; load increasing
Input current	
Current consumption (rated value)	40 mA; without load
from load voltage 1L+ (unswitched voltage)	4 A; Maximum value
from load voltage 2L+, max.	4 A; Maximum value
Encoder supply	
Number of outputs	4
24 V encoder supply	
• Short-circuit protection	Yes; per module, electronic
• Output current, max.	0.7 A; Total current of all encoders
Power loss	
Power loss, typ.	2.5 W
Digital inputs	
Number of digital inputs	4; Parameterizable as DIQ
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 55 °C, max.	4

<b>Input voltage</b>	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>	24 V -3 to +5V +11 to +30V
<b>Input current</b>	
<ul style="list-style-type: none"> <li>for signal "1", typ.</li> </ul>	3.2 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
<ul style="list-style-type: none"> <li>at "0" to "1", min.</li> <li>at "0" to "1", max.</li> <li>at "1" to "0", min.</li> <li>at "1" to "0", max.</li> </ul>	1.2 ms 4.8 ms 1.2 ms 4.8 ms
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>unshielded, max.</li> </ul>	30 m
<b>Digital outputs</b>	
Number of digital outputs	8; 4 DQ fixed, 4 DIQ parameterizable
<ul style="list-style-type: none"> <li>in groups of</li> </ul>	4; 2 load groups for 4 outputs each
Short-circuit protection	Yes; per channel, electronic
<ul style="list-style-type: none"> <li>Response threshold, typ.</li> </ul>	0.7 A
Limitation of inductive shutdown voltage to	2L+ (-47 V)
<b>Switching capacity of the outputs</b>	
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	5 W
<b>Load resistance range</b>	
<ul style="list-style-type: none"> <li>lower limit</li> <li>upper limit</li> </ul>	48 Ω 4 kΩ
<b>Output voltage</b>	
<ul style="list-style-type: none"> <li>for signal "1", min.</li> </ul>	L+ (-0.8 V)
<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 0.5 mA
<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 0.5 Hz 1 Hz
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>Current per group, max.</li> </ul>	2 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>unshielded, max.</li> </ul>	30 m
<b>Encoder</b>	
<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>2-wire sensor</li> <li>permissible quiescent current (2-wire sensor), max.</li> </ul>	Yes 1.5 mA
<b>Interrupts/diagnostics/status information</b>	
Substitute values connectable	Yes; channel by channel, parameterizable
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> </ul>	Yes; Parameterizable
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>Short-circuit</li> </ul>	Yes; Outputs to M; encoder supply to M; module by module
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>Channel status display</li> <li>for module diagnostics</li> <li>For load voltage monitoring</li> </ul>	Yes; green LED Yes; green/red LED Yes; green LED
<b>Potential separation</b>	
between the load voltages	Yes
<b>Potential separation channels</b>	
<ul style="list-style-type: none"> <li>between the channels, in groups of</li> <li>between the channels and backplane bus</li> <li>between the channels and the power supply of the electronics</li> </ul>	4; DIQ channels are isolated from DQ channels Yes No; DIQ channels are non-isolated and DQ channels are isolated from supply voltage 1L+
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)

Degree and class of protection	
IP degree of protection	IP65/67
Standards, approvals, certificates	
Suitable for safety-related tripping of standard modules	Yes; From FS01
Highest safety class achievable for safety-related tripping of standard modules	
<ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> <li>• Category according to ISO 13849-1</li> <li>• SIL acc. to IEC 62061</li> </ul>	PL d Cat. 3 SIL 2
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	-30 °C 55 °C
connection method	
Design of electrical connection for the inputs and outputs	M8, 3-pole
Design of electrical connection for supply voltage	M8, 4-pole
ET-Connection	
<ul style="list-style-type: none"> <li>• ET-Connection</li> </ul>	M8, 4-pin, shielded
Dimensions	
Width	30 mm
Height	159 mm
Depth	40 mm
Weights	
Weight, approx.	145 g

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