



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	FS06
Firmware version	V2.0.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	
power supply according to NEC Class 2 required	No
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; 40 mA (1L+) / 20 mA (2L+); 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
Sourcing/sinking input	P-reading
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
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	3.2 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", min.	1.2 ms
— at "0" to "1", max.	4.8 ms
— at "1" to "0", min.	1.2 ms
— at "1" to "0", max.	4.8 ms
Cable length	
• unshielded, max.	30 m
Digital outputs	
Number of digital outputs	8; 4 DQ fixed, 4 DIQ parameterizable
• in groups of	4; 2 load groups for 4 outputs each
Current-sourcing	Yes
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes; per channel, electronic
• Response threshold, typ.	0.7 A
Limitation of inductive shutdown voltage to	2L+ (-47 V)
Switching capacity of the outputs	
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.5 mA
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	1 Hz
Total current of the outputs	
• Current per group, max.	2 A
Cable length	
• unshielded, max.	30 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; channel by channel, parameterizable
Alarms	
• Diagnostic alarm	Yes; Parameterizable
Diagnoses	
• Short-circuit	Yes; Outputs to M; encoder supply to M; module by module
Diagnostics indication LED	
• Channel status display	Yes; green LED
• for module diagnostics	Yes; green/red LED
• For load voltage monitoring	Yes; green LED
Potential separation	
between the load voltages	Yes

Potential separation channels																																														
<ul style="list-style-type: none">• between the channels, in groups of• between the channels and backplane bus• between the channels and the power supply of the electronics	4; DIQ channels are isolated from DQ channels Yes No; DIQ channels are non-isolated and DQ channels are isolated from supply voltage 1L+																																													
Isolation																																														
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">• Performance level according to ISO 13849-1• Category according to ISO 13849-1• SIL acc. to IEC 62061• remark on safety-oriented shutdown	PL d Cat. 3 SIL 2 https://www.modulplc.com/?s=6ES7143-5BF00-0BA0																																													
Security																																														
signed firmware update	Yes																																													
data integrity	Yes																																													
Ambient conditions																																														
Ambient temperature during operation																																														
<ul style="list-style-type: none">• min.• max.	-30 °C 55 °C																																													
Altitude during operation relating to sea level																																														
<ul style="list-style-type: none">• Ambient air temperature-barometric pressure-altitude	Up to max. 5 000 m, at installation height > 2 000 m additional restrictions																																													
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">• ET-Connection	M8, 4-pin, shielded																																													
Dimensions																																														
Width	30 mm																																													
Height	159 mm																																													
Depth	40 mm																																													
Weights																																														
Weight, approx.	145 g																																													
Classifications																																														
	<table><tr><td></td><td>Version</td><td>Classification</td></tr><tr><td>eClass</td><td>16</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>14</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>12</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>9.1</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>9</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>8</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>7.1</td><td>27-24-26-04</td></tr><tr><td>eClass</td><td>6</td><td>27-24-26-04</td></tr><tr><td>ETIM</td><td>10</td><td>EC001599</td></tr><tr><td>ETIM</td><td>9</td><td>EC001599</td></tr><tr><td>ETIM</td><td>8</td><td>EC001599</td></tr><tr><td>ETIM</td><td>7</td><td>EC001599</td></tr><tr><td>IDEA</td><td>4</td><td>3566</td></tr><tr><td>UNSPSC</td><td>15</td><td>32-15-17-05</td></tr></table>		Version	Classification	eClass	16	27-24-26-04	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	10	EC001599	ETIM	9	EC001599	ETIM	8	EC001599	ETIM	7	EC001599	IDEA	4	3566	UNSPSC	15	32-15-17-05
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Approvals / Certificates																																														
General Product Approval	For use in hazardous locations																																													



last modified:

10/23/2025