



SIMATIC ET 200AL, DIQ 4+DQ 4x 24 V DC/0.5 A, 4x M12, Degree of protection IP67

General information	
Product type designation	DIQ 4+DQ 4x24VDC/0.5A
HW functional status	FS03
Firmware version	V1.0.x
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	STEP 7 V13 SP1 or higher
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	V5.5 SP4 Hotfix 7 or higher
<ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision 	GSD as of Revision 5
<ul style="list-style-type: none"> PROFINET from GSD version/GSD revision 	GSDML V2.3.1
Supply voltage	
power supply according to NEC Class 2 required	No
Load voltage 1L+	
<ul style="list-style-type: none"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> permissible range, lower limit (DC) 	20.4 V
<ul style="list-style-type: none"> permissible range, upper limit (DC) 	28.8 V
<ul style="list-style-type: none"> Reverse polarity protection 	Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up
Load voltage 2L+	
<ul style="list-style-type: none"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> permissible range, lower limit (DC) 	20.4 V
<ul style="list-style-type: none"> permissible range, upper limit (DC) 	28.8 V
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Short-circuit protection 	Yes; per module, electronic
<ul style="list-style-type: none"> 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
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
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	
• between the channels, in groups of	4; DIQ channels are isolated from DQ channels

<ul style="list-style-type: none"> • between the channels and backplane bus • between the channels and the power supply of the electronics 	<p>Yes</p> <p>No; DIQ channels are non-isolated and DQ channels are isolated from supply voltage 1L+</p>
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 	<p>PL d</p> <p>Cat. 3</p> <p>SIL 2</p>
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • min. • max. 	<p>-30 °C</p> <p>55 °C</p>
connection method / header	
Design of electrical connection for the inputs and outputs	M12, 5-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
last modified:	3/7/2022 