



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	
• 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	V5.5 SP4 Hotfix 7 or higher
• 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; 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>	
• Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	+11 to +30V
<b>Input current</b>	
• for signal "1", typ.	3.2 mA
<b>Input delay (for rated value of input voltage)</b>	
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
<b>Cable length</b>	
• unshielded, max.	30 m
<b>Digital outputs</b>	
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)
<b>Switching capacity of the outputs</b>	
• on lamp load, max.	5 W
<b>Load resistance range</b>	
• lower limit	48 Ω
• upper limit	4 kΩ
<b>Output voltage</b>	
• for signal "1", min.	L+ (-0.8 V)
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.5 mA
<b>Switching frequency</b>	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	1 Hz
<b>Total current of the outputs</b>	
• Current per group, max.	2 A
<b>Cable length</b>	
• unshielded, max.	30 m
<b>Encoder</b>	
<b>Connectable encoders</b>	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
<b>Interrupts/diagnostics/status information</b>	
Substitute values connectable	Yes; channel by channel, parameterizable
<b>Alarms</b>	
• Diagnostic alarm	Yes; Parameterizable
<b>Diagnoses</b>	
• Short-circuit	Yes; Outputs to M; encoder supply to M; module by module
<b>Diagnostics indication LED</b>	
• Channel status display	Yes; green LED
• for module diagnostics	Yes; green/red LED
• For load voltage monitoring	Yes; green LED
<b>Potential separation</b>	
between the load voltages	Yes
<b>Potential separation channels</b>	
• between the channels, in groups of	4; DIQ channels are isolated from DQ channels
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	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)
<b>Degree and class of protection</b>	
IP degree of protection	IP65/67
<b>Standards, approvals, certificates</b>	
Suitable for safety-related tripping of standard modules	Yes; From FS01
Highest safety class achievable for safety-related tripping of standard modules	
• Performance level according to ISO 13849-1	PL d
• Category according to ISO 13849-1	Cat. 3
• SIL acc. to IEC 62061	SIL 2
<b>Ambient conditions</b>	
Ambient temperature during operation	
• min.	-30 °C
• max.	55 °C
<b>connection method</b>	
Design of electrical connection for the inputs and outputs	M12, 5-pole
Design of electrical connection for supply voltage	M8, 4-pole
ET-Connection	
• ET-Connection	M8, 4-pin, shielded
<b>Dimensions</b>	
Width	30 mm
Height	159 mm
Depth	40 mm
<b>Weights</b>	
Weight, approx.	145 g
<b>last modified:</b>	
3/7/2022 	