

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 as of version 	STEP 7 V13 SP1 or higher
<ul style="list-style-type: none"> STEP 7 configurable/integrated as of version 	V5.5 SP4 Hotfix 7 or higher
<ul style="list-style-type: none"> PROFIBUS as of GSD version/GSD revision 	GSD as of Revision 5
<ul style="list-style-type: none"> PROFINET as of GSD version/GSD revision 	GSDML V2.3.1
Supply voltage	
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

• 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
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
<ul style="list-style-type: none"> in groups of 	4; 2 load groups for 4 outputs each
Short-circuit protection	Yes; per channel, electronic
<ul style="list-style-type: none"> Response threshold, typ. 	0.7 A
Limitation of inductive shutdown voltage to	2L+ (-47 V)
Switching capacity of the outputs	
<ul style="list-style-type: none"> on lamp load, max. 	5 W
Load resistance range	
<ul style="list-style-type: none"> lower limit 	48 Ω
<ul style="list-style-type: none"> upper limit 	4 kΩ
Output voltage	
<ul style="list-style-type: none"> for signal "1", min. 	L+ (-0.8 V)
Output current	
<ul style="list-style-type: none"> for signal "1" rated value 	0.5 A
<ul style="list-style-type: none"> for signal "0" residual current, max. 	0.5 mA
Switching frequency	
<ul style="list-style-type: none"> with resistive load, max. 	100 Hz
<ul style="list-style-type: none"> with inductive load, max. 	0.5 Hz
<ul style="list-style-type: none"> on lamp load, max. 	1 Hz
Total current of the outputs	
<ul style="list-style-type: none"> Current per group, max. 	2 A
Cable length	
<ul style="list-style-type: none"> unshielded, max. 	30 m
Encoder	
Connectable encoders	
<ul style="list-style-type: none"> 2-wire sensor 	Yes
<ul style="list-style-type: none"> — permissible quiescent current (2-wire sensor), max. 	1.5 mA
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; channel by channel, parameterizable
Alarms	
<ul style="list-style-type: none"> Diagnostic alarm 	Yes; Parameterizable
Diagnostic messages	
<ul style="list-style-type: none"> Short-circuit 	Yes; Outputs to M; encoder supply to M; module by module
Diagnostics indication LED	
<ul style="list-style-type: none"> Channel status display 	Yes; Green LED
<ul style="list-style-type: none"> for module diagnostics 	Yes; Green/red LED
<ul style="list-style-type: none"> For load voltage monitoring 	Yes; Green LED
Potential separation	
between the load voltages	Yes
Potential separation channels	

- 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

- Performance level according to ISO 13849-1 PL d
- Category according to ISO 13849-1 Cat. 3
- SILCL according to IEC 62061 SILCL 2

Ambient conditions

Ambient temperature during operation

- min. -30 °C
- max. 55 °C

Connection method

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

Dimensions

Width 30 mm

Height 159 mm

Depth 40 mm

Weights

Weight, approx. 145 g

last modified: 11/27/2019