



SIMATIC ET 200AL, IO-Link, DIQ 16x24 V DC/0.5 A, 8x M12, Degree of protection IP67

General information	
Product type designation	IO-Link DIQ 16x24VDC/0.5A
HW functional status	FS01
Firmware version	V1.0.x
Vendor identification (VendorID)	42
Device identifier (DeviceID)	229383
Engineering with	
• IODD file	Yes
Supply voltage	
Load voltage 1L+	
• Rated value (DC)	24 V; Supply from 1Us+ of the IO-Link master
• permissible range, lower limit (DC)	18 V
• permissible range, upper limit (DC)	30 V
• Reverse polarity protection	Yes; against destruction
Load voltage 2L+	
• Rated value (DC)	24 V; Supply from 2UA+ of the IO-Link master
• 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
Input current	
Current consumption (rated value)	20 mA; without load
from load voltage 2L+, max.	4 A; Maximum value
Encoder supply	
Number of outputs	8; Supply from 2UA+ of the IO-Link master
24 V encoder supply	
• Short-circuit protection	Yes; per module, electronic
• Output current, max.	0.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)
Power loss	
Power loss, typ.	4 W
Digital inputs	
Number of digital inputs	16; 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.	16
Input voltage	
• Rated value (DC)	24 V

<ul style="list-style-type: none"> • for signal "0" • for signal "1" 	-3 to +5V +11 to +30V
Input current	
<ul style="list-style-type: none"> • for signal "1", typ. 	3 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	
<ul style="list-style-type: none"> • unshielded, max. 	30 m
Digital outputs	
Number of digital outputs	16; Parameterizable as DIQ
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+ (-50 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 • upper limit 	48 Ω 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 • for signal "0" residual current, max. 	0.5 A 0.5 mA
Switching frequency	
<ul style="list-style-type: none"> • with resistive load, max. • with inductive load, max. • on lamp load, max. 	100 Hz 0.5 Hz 1 Hz
Total current of the outputs	
<ul style="list-style-type: none"> • Current per module, max. 	4 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 — permissible quiescent current (2-wire sensor), max. 	Yes 1.5 mA
IO-Link	
IO-Link protocol 1.1	Yes
Transmission rate	38.4 kBd (COM2)
Cycle time, min.	3 ms
Size of process data, input per module	2 byte
Size of process data, output per module	2 byte
Supported IO-Link profiles	common profile
Cable length unshielded, max.	20 m
Connection of IO-Link devices	
<ul style="list-style-type: none"> • Port type B 	Yes
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; channel by channel, parameterizable
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm 	Yes; Parameterizable
Diagnoses	
<ul style="list-style-type: none"> • Short-circuit 	Yes; outputs to ground; encoder supply to ground; module by module
Diagnostics indication LED	
<ul style="list-style-type: none"> • Channel status display • for module diagnostics • For load voltage monitoring 	Yes; green LED Yes; green/red LED Yes; green LED

Potential separation	
between the load voltages	Yes
Potential separation channels	
<ul style="list-style-type: none"> • between the channels 	No
<ul style="list-style-type: none"> • between the channels and the power supply of the electronics 	Yes
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 	PL d
<ul style="list-style-type: none"> • Category according to ISO 13849-1 	Cat. 3
<ul style="list-style-type: none"> • SIL acc. to IEC 62061 	SIL 2
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • min. 	-30 °C
<ul style="list-style-type: none"> • max. 	55 °C
connection method / header	
Design of electrical connection for the inputs and outputs	M12, 5-pin, A-coded
Type of electrical connection for IO-Link	M12, 5-pin, A-coded
Dimensions	
Width	45 mm
Height	159 mm
Depth	40 mm
Weights	
Weight, approx.	157 g
last modified:	3/7/2022 