SIEMENS

Data sheet 6ES7143-5BF00-0BL0



SIMATIC ET 200AL, IO-Link, DIQ 4+DQ 4x 24 V DC/0.5 A, 8x M8, Degree of protection IP67

General information	
Product type designation	IO-Link DIQ 4+DQ 4x24VDC/0.5A
HW functional status	FS01
Firmware version	V1.0.x
Vendor identification (VendorID)	42
Device identifier (DeviceID)	229382
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)	15 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.	2.3 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	

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● Rated value (DC)	24 V
● for signal "0"	-3 to +5V
● for signal "1"	+11 to +30V
Input current	
● 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	
● unshielded, max.	30 m
Digital outputs	
Number of digital outputs	8; 4 DQ fixed, 4 DIQ parameterizable
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+ (-50 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 module, max.	4 A
Cable length	
● unshielded, max.	30 m
Encoder	
Connectable encoders	
● 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
IO-Link	
IO-Link protocol 1.1	Yes
Transmission rate	38.4 kBd (COM2)
Cycle time, min.	2.4 ms
Size of process data, input per module	1 byte
Size of process data, output per module	1 byte
Supported IO-Link profiles	common profile
Cable length unshielded, max.	20 m
Connection of IO-Link devices	
● Port type B	Yes
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; channel by channel, parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
Diagnoses	
● short-circuit	Yes; outputs to ground; encoder supply to ground; module by module
Diagnostics indication LED	

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● 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	No
● 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	
● Performance level according to ISO 13849-1	PL d
● Category according to ISO 13849-1	Cat. 3
● SIL acc. to IEC 62061	SIL 2
● remark on safety-oriented shutdown	https://support.industry.siemens.com/cs/de/en/view/39198632
Ambient conditions	
Ambient temperature during operation	
● min.	-30 °C
● max.	55 °C
Connection method	
Design of electrical connection for the inputs and outputs	M8, 3-pole
Type of electrical connection for IO-Link	M12, 5-pin, A-coded
Dimensions	
Width	30 mm
Height	159 mm
Depth	40 mm
Weights	
Weight, approx.	125 g

Classifications

	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

Approvals / Certificates

General Product Approval

Miscellaneous | Manufacturer Declaration

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General Product Approval				Functional Saftey	Maritime application
EAC	CE EG-Konf.	UKCA	China RoHS	TUEV	ABS

Maritime application					
BUREAU VERITAS	DNV	Lloyd's Register LRS	NK / Nippon Kaiji Kyokai	RINA	CCS (China Classification Society)

Maritime application	other
KR (Korean Register of Shipping)	

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