## **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

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 IL+   • Rated value (DC)   24 V; Supply from 1Us+ of the IO-Link master   • permissible range, lower limit (DC)   18 V   • permissible range, lower limit (DC)   30 V   • Reverse polarity protection   Yes; against destruction   Load voltage ZL+   • Rated value (DC)   24 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   24 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   24 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   24 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Pate value (DC)   25 V; Supply from 2UA+ of the IO-Link master   • Power loss, typ.   2.3 W   • Power loss   2.3 W   • Power loss   2.3 W   • Parameterizable as DIQ   • Pate value (DC)   24 V   • For signal "O"   4. Parameterizable as DIQ   • Pate value (DC)   4. V   • For signal "O"   4. Parameterizable as DIQ   • Fated value (DC)   24 V   • For signal "O"   4. Parameterizable as DIQ   • Pate value (DC)   4. V   • For signal "O"   4. Parameterizable   • Pate value (DC)   4. V   • For signal "O"   4. Parameterizable   • Pate value (DC)   4. V   • For signal "O"   4.	General information	
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) 30 V  • permissible range, upper limit (DC) 30 V  • Reverse polarity protection Yes; against destruction  Load voltage 2L+  • Rated value (CC) 24 V; Supply from 2UA+ of the IO-Link master  • permissible range, lower limit (DC) 20 A V  • permissible range, lower limit (DC) 20 A V  • permissible range, lower limit (DC) 20 A V  • permissible range, permit (DC) 20 A V  • permissible range, permit (DC) 20 A 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. 4A; Maximum value  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  Power loss  Power loss  Power loss  Power loss  Number of digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max. 4  Input voltage  • Rated value (DC) 24 V	Product type designation	IO-Link DIQ 4+DQ 4x24VDC/0.5A
Vendor identification (VendorID)  Device identifier (DeviceID)  Engineering with  I ODD file  Ves  Supply voitage  Load voltage 1L+  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Load voltage 2L+  Rated value (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Load voltage 2L+  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, lower limit (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes, Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)  from load voltage 2L+, max.  Leneder supply  Number of outputs  Supply from 2UA+ of the IO-Link master  Yes, Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Yes, Per module, electronic  O, 7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss  Power loss, typ.  Digital inputs  Number of digital inputs  All mounting positions  — up to 55 °C, max.  4  Input voltage  Rated value (DC)  24 V	HW functional status	FS01
Device identifier (DeviceID) Engineering with  • IODD file Supply voltage Load voltage 1L+  • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • Reverse polarity protection Load voltage 2L+  • Rated value (DC) • Reverse polarity protection Load voltage 2L+  • Rated value (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) 24 V; Supply from 2UA+ of the IO-Link master  • permissible range, lower limit (DC) 20.4 V; Supply from 2UA+ of the IO-Link master  20.4 V = permissible range, upper limit (DC) • Reverse polarity protection • Permissible range, upper limit (DC) • Reverse polarity protection  Urrent consumption (rated value)  from load voltage 2L+, max.  25 max.  4 A; Maximum value  Encodor supply  • Short-circuit protection • Output current, max.  27 ver, per module, electronic • Output current, max.  28 ver per module, electronic • Output current, max.  29 ver loss  Power loss  Power loss, typ.  23 W  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55°C, max.  4  Hipput voltage • Rated value (DC)  24 V; Supply from 1Us+ of the IO-Link master supply via 24 V	Firmware version	V1.0.x
Engineering with  I ODD file  Supply voltage  Load voltage 11+  Rated value (DC)  I permissible range, lower limit (DC)  I permissible range, upper limit (DC)  Reverse polarity protection  Yes; against destruction  Load voltage 21+  Rated value (DC)  Patewase polarity protection  Yes; against destruction  Load voltage 21+  Rated value (DC)  Permissible range, lower limit (DC)  Permissible range, lower limit (DC)  Permissible range, upper limit (DC)  Reverse polarity protection  Pess, Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)  Input current  Current consumption (rated value)  Is ma; without load  from load voltage 21+, max.  4 A; Maximum value  Encoder supply  Number of outputs  Si; Supply from 2UA+ of the IO-Link master  24 V encoder supply  Power loss  Power loss, typ.  Power loss, typ.  2.3 W  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  4  Input voltage  Rated value (DC)  24 V	Vendor identification (VendorID)	42
■ IODD file  Supply voltage  Load voltage 1L+  ■ Rated value (DC) ■ permissible range, lower limit (DC) ■ Reverse polarity protection  Load voltage 2L+  ■ Rated value (DC) ■ Rated value (DC) ■ Reverse polarity protection  Load voltage 2L+  ■ Rated value (DC) ■ permissible range, lower limit (DC) ■ permissible range, upper limit (DC) ■ Reverse polarity protection  Pass Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)  Input durage 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 ■ Output current, max.  7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss, typ.  Power loss, typ.  2.3 W  Digital inputs  Number of digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  4  Input voltage  ■ Rated value (DC)  24 V	Device identifier (DeviceID)	229382
Supply voltage   Lead voltage   Le	Engineering with	
Load voltage 1L+  • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • Reverse polarity protection  Load voltage 2L+ • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • Permissible range, upper limit (DC) • Reverse polarity protection  Pass, Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)  from load voltage 2L+, max.  4 A; Maximum value  Encoder supply  Number of outputs  2 V encoder supply  • Short-circuit protection • Output current, max.  2 V encoder supply  Power loss  Power loss  Power loss, typ.  2 3 W  Digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage • Rated value (DC)  4 V 9  24 V v  Late (CC)  4 V 9	• IODD file	Yes
Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range upper limit (DC)  permissible range, upper limit	Supply voltage	
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Load voltage 2L+ Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Permissible range, upper limit (DC) Reverse polarity protection Permissible range, upper limit (DC) Reverse polarity protection Permissible range, upper limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Permissible range, upper limit (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC	Load voltage 1L+	
Permissible range, upper limit (DC)     Reverse polarity protection  Load voltage 2L+      Rated value (DC)     Permissible range, lower limit (DC)     Permissible range, upper limit (DC)     Permissible range, upper limit (DC)     Reverse polarity protection     Reverse polarity protection     Reverse polarity protection  Input current  Current consumption (rated value)  from load voltage 2L+, max.  Input current of digital inputs  Short-circuit protection  Power loss  Power loss, typ.  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  Rated value (DC)  Yes; against destruction  24 V; supply from 2UA+ of the IO-Link master  24 New input protection  4 A; Maximum value  15 mA; without load  4 A; Maximum value  15 mA; without boad  4 A; Maximum value  16 Input current of the IO-Link master  24 V encoder supply  Signature of all encoders (depending on IO-Link master supply via 2UA+)  Power loss  Power loss  Power loss, typ.  2.3 W  Digital inputs  Input voltage  Rated value (DC)  Reverse polarity protection  Yes; per module, electronic  4 Perameterizable as DIQ  Yes  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  Rated value (DC)  Position (DC)	<ul> <li>Rated value (DC)</li> </ul>	24 V; Supply from 1Us+ of the IO-Link master
Reverse polarity protection  Load voltage 2L+  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)  from load voltage 2L+, max.  A A; Maximum value  Encoder supply  Number of outputs  Short-circuit protection  Output current, max.  Power loss  Power loss  Power loss  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  Rated value (DC)  P4 V; Supply from 2UA+ of the IO-Link master  24 V; Supply from 2UA+ of the IO-Link master  25. Supply from 2UA+ of the IO-Link master  26. Ta, Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss  Power loss  Power loss  Power loss  A; Parameterizable as DIQ  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  4  Input voltage  Rated value (DC)  P4 V; Supply from 2UA+ of the IO-Link master  24 V; Supply from 2UA+ of the IO-Link master  25. Supply from 2UA+ of the IO-Link master  26. Supply from 2UA+ of the IO-Link master  27. Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss  Power loss  Power loss  A; Parameterizable as DIQ  Permissible range in a via via via via via via via via via v	<ul> <li>permissible range, lower limit (DC)</li> </ul>	18 V
Load voltage 2L+  Rated value (DC) Parmissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Province of outputs Power loss Power loss, typ. Power loss, typ. Power loss, typ. Digital inputs Number of digital inputs Number of digital inputs Number of digital inputs Number of simultaneously controllable inputs all mounting positions — up to 55 °C, max.  Province of voltage Parmissible range, lower limit (DC) 28.8 V  24 V; Supply from 2UA+ of the IO-Link master 28.8 V  28.8 V  29.9 Ves, Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up Point from load voltage 2L+, max.  4 A; Maximum value  Encoder supply  Siscuply from 2UA+ of the IO-Link master  24 V encoder supply  Siscuply from 2UA+ of the IO-Link master  24 V encoder supply  Siscuply from 2UA+ of the IO-Link master  25 Ves; per module, electronic  C7 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  A; Parameterizable as DIQ  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  4  Input voltage  Rated value (DC)  Page 4 V	<ul> <li>permissible range, upper limit (DC)</li> </ul>	30 V
Rated value (DC)  Permissible range, lower limit (DC)  Reverse polarity protection  Reverse polarity, loads pick up  Input current  Current consumption (rated value)  Input current  Current consumption (rated value)  Input current  Reverse polarity protection  Input current  Input current  Input characteristic curve in accordance with IEC 61131, type 3  Number of digital inputs  Reverse polarity protection  Input characteristic curve in accordance with IEC 61131, type 3  Reverse polarity forthe activation; encoder power supply outputs applied with reversed polarity, loads pick up  Reverse polarity loads pick up  Reverse polarity destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Reverse polarity loads pick up  Reverse polarity destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Reverse polarity loa	<ul> <li>Reverse polarity protection</li> </ul>	Yes; against destruction
<ul> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> <li>Reverse polarity protection</li> <li>Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up</li> </ul> Input current Current consumption (rated value) <ul> <li>form load voltage 2L+, max.</li> <li>4 A; Maximum value</li> </ul> Encoder supply Number of outputs <ul> <li>8; Supply from 2UA+ of the IO-Link master</li> </ul> 24 V encoder supply <ul> <li>Short-circuit protection</li> <li>Output current, max.</li> <li>O.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)</li> </ul> Power loss Power loss, typ. <ul> <li>2.3 W</li> </ul> Digital inputs <ul> <li>Input characteristic curve in accordance with IEC 61131, type 3</li> <li>Number of simultaneously controllable inputs</li> <li>all mounting positions</li> <li>— up to 55 °C, max.</li> <li>Input voltage</li> <li>Rated value (DC)</li> </ul> 24 V	Load voltage 2L+	
permissible range, upper limit (DC)     Reverse polarity protection     Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Input current  Current consumption (rated value)     from load voltage 2L+, max.  Incoder supply  Number of outputs     S; Supply from 2UA+ of the IO-Link master  24 V encoder supply  Short-circuit protection     Output current, max.  Power loss  Power loss  Power loss, typ.  Poigital inputs  Number of digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  Rated value (DC)  28.8 V  Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up  15 mA; Without load  4 A; Maximum value  8; Supply from 2UA+ of the IO-Link master  Yes; per module, electronic  0.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss  Power loss  Power loss, typ.  2.3 W  Digital inputs  A; Parameterizable as DIQ  Yes  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  4  Input voltage  • Rated value (DC)	<ul> <li>Rated value (DC)</li> </ul>	24 V; Supply from 2UA+ of the IO-Link master
Power loss Rumber of digital inputs Power loss Rumber of simultaneously controllable inputs  Rated value (DC)  Power loss Power los	<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
Input current  Current consumption (rated value)  from load voltage 2L+, max.  Encoder supply  Number of outputs  • Short-circuit protection • Output current, max.  Power loss  Power loss, typ.  Power loss, typ.  Digital inputs  Number of digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage • Rated value (DC)  15 mA; without load  4 A; Maximum value  8; Supply from 2UA+ of the IO-Link master  4 Yes; per module, electronic  0.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  2UA+)  Power loss  Power loss  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	<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
Current consumption (rated value)  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  • Output current, max.  23 W  Power loss  Power loss, typ.  Digital inputs  Number of digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  15 mA; without load  4 A; Maximum value  8; Supply from 2UA+ of the IO-Link master  2 UA+ of the IO-Link master  4; Parameterizatic current of all encoders (depending on IO-Link master supply via 2UA+)  Yes  Ves  15 mA; without load  4 A; Maximum value  8; Supply from 2UA+ of the IO-Link master  2 UA+ of the IO-Link master  4 Parameterizable as DIQ  Yes  Number of simultaneously controllable inputs  4 Parameterizable as DIQ  Yes  Number of simultaneously controllable inputs  4 Input voltage  • Rated value (DC)  24 V	Reverse polarity protection	
from load voltage 2L+, max.  Encoder supply  Number of outputs  8; Supply from 2UA+ of the IO-Link master  24 V encoder supply  • Short-circuit protection  • Output current, max.  23 W  Power loss  Power loss, typ.  23 W  Digital inputs  Number of digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  4; Maximum value  8; Supply from 2UA+ of the IO-Link master  2.3 W  2.3 W  2.3 W  Yes  4; Parameterizable as DIQ  Yes  Augustation  4  Input voltage  • Rated value (DC)  24 V	Input current	
Number of outputs   8; Supply from 2UA+ of the IO-Link master	Current consumption (rated value)	15 mA; without load
Number of outputs  24 V encoder supply  Short-circuit protection Output current, max.  Power loss  Power loss, typ.  Digital inputs  Number of digital inputs  Number of simultaneously controllable inputs  all mounting positions — up to 55 °C, max.  Input voltage  Rated value (DC)  8; Supply from 2UA+ of the IO-Link master 2UA+) of the IO-Link master supply via 2UA+  Yes; per module, electronic  0.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss, typ.  2.3 W  2.3 W  Yes  4; Parameterizable as DIQ  Yes  A Farameterizable as DIQ  Yes  A Input voltage  Rated value (DC)	from load voltage 2L+, max.	4 A; Maximum value
24 V encoder supply  Short-circuit protection Output current, max.  Power loss Power loss, typ.  2.3 W  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions — up to 55 °C, max.  Input voltage Rated value (DC)  Yes; per module, electronic  Yes; per module, electronic  2.3 W  2.3 W  2.3 W  4; Parameterizable as DIQ  Yes  4; Parameterizable as DIQ  4 Yes  4 Input characteristic curve in accordance with IEC 61131, type 3  A Unique (DC)  24 V	Encoder supply	
Short-circuit protection Output current, max.  O.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  Power loss Power loss, typ.  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  Rated value (DC)  Yes; per module, electronic  0.7 A; Total current of all encoders (depending on IO-Link master supply via 2UA+)  9.7 Yes  4.7 Parameterizable as DIQ  Yes  4.7 Parameterizable as DIQ  Yes  Number of simultaneously controllable inputs  24 V	Number of outputs	8; Supply from 2UA+ of the IO-Link master
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  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  • Rated value (DC)	24 V encoder supply	
Power loss, typ.  Power loss, typ.  2.3 W  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  • Rated value (DC)	Short-circuit protection	Yes; per module, electronic
Power loss, typ.  Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  • Rated value (DC)	Output current, max.	
Digital inputs  Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  4; Parameterizable as DIQ  Yes  4  Yes	Power loss	
Number of digital inputs  Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  4; Parameterizable as DIQ  Yes  4  Yes	Power loss, typ.	2.3 W
Input characteristic curve in accordance with IEC 61131, type 3  Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  Yes  Yes	Digital inputs	
Number of simultaneously controllable inputs  all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  24 V	Number of digital inputs	4; Parameterizable as DIQ
all mounting positions  — up to 55 °C, max.  Input voltage  • Rated value (DC)  24 V	Input characteristic curve in accordance with IEC 61131, type 3	Yes
— up to 55 °C, max. 4  Input voltage  ● Rated value (DC) 24 V	Number of simultaneously controllable inputs	
Input voltage  ● Rated value (DC)  24 V	all mounting positions	
Rated value (DC)  24 V	— up to 55 °C, max.	4
	Input voltage	
• for signal "0" -3 to +5V	<ul> <li>Rated value (DC)</li> </ul>	24 V
	• for signal "0"	-3 to +5V

• for signal "1"	+11 to +30V
Input current	1116 1601
• 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	i.e iiie
unshielded, max.	30 m
Digital outputs	
Number of digital outputs	8; 4 DQ fixed, 4 DIQ parameterizable
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	( 00 0)
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	1 Naa
• for signal "1", min.	L+ (-0.8 V)
Output current	L. ( 0.0 V)
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.5 mA
Switching frequency	U.S IIIA
with resistive load, max.	100 Hz
	0.5 Hz
with inductive load, max.	
on lamp load, max.  Tatal current of the putation	1 Hz
Total current of the outputs  • Current per module, max.	A A
Cable length	4 A
9	20 m
• unshielded, max.	30 m
Encoder	
Connectable encoders	V
Connectable encoders  • 2-wire sensor	Yes
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.	Yes 1.5 mA
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link	1.5 mA
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1	1.5 mA Yes
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate	1.5 mA  Yes 38.4 kBd (COM2)
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.	1.5 mA  Yes 38.4 kBd (COM2) 2.4 ms
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module	1.5 mA  Yes 38.4 kBd (COM2) 2.4 ms 1 byte
Connectable encoders  ◆ 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module	1.5 mA  Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.	1.5 mA  Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte
Connectable encoders  • 2-wire sensor — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate Cycle time, min. Size of process data, input per module Size of process data, output per module Supported IO-Link profiles Cable length unshielded, max. Connection of IO-Link devices	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m
Connectable encoders  • 2-wire sensor — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate Cycle time, min. Size of process data, input per module Size of process data, output per module Supported IO-Link profiles Cable length unshielded, max. Connection of IO-Link devices • Port type B	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile
Connectable encoders  • 2-wire sensor — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate Cycle time, min. Size of process data, input per module Size of process data, output per module Supported IO-Link profiles Cable length unshielded, max. Connection of IO-Link devices	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m
Connectable encoders  • 2-wire sensor — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate Cycle time, min. Size of process data, input per module Size of process data, output per module Supported IO-Link profiles Cable length unshielded, max. Connection of IO-Link devices • Port type B	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable
Connectable encoders  • 2-wire sensor — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate Cycle time, min. Size of process data, input per module Size of process data, output per module Supported IO-Link profiles Cable length unshielded, max. Connection of IO-Link devices • Port type B  Interrupts/diagnostics/status information Substitute values connectable Alarms • Diagnostic alarm Diagnoses	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm  Diagnoses  • Short-circuit	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm  Diagnoses  • Short-circuit  Diagnostics indication LED	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable  Yes; outputs to ground; encoder supply to ground; module by module
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm  Diagnoses  • Short-circuit  Diagnostics indication LED  • Channel status display	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable  Yes; outputs to ground; encoder supply to ground; module by module  Yes; green LED
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm  Diagnoses  • Short-circuit  Diagnostics indication LED  • Channel status display  • for module diagnostics	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable  Yes; outputs to ground; encoder supply to ground; module by module  Yes; green LED Yes; green/red LED
Connectable encoders  • 2-wire sensor  — permissible quiescent current (2-wire sensor), max.  IO-Link  IO-Link protocol 1.1  Transmission rate  Cycle time, min.  Size of process data, input per module  Size of process data, output per module  Supported IO-Link profiles  Cable length unshielded, max.  Connection of IO-Link devices  • Port type B  Interrupts/diagnostics/status information  Substitute values connectable  Alarms  • Diagnostic alarm  Diagnoses  • Short-circuit  Diagnostics indication LED  • Channel status display  • for module diagnostics  • For load voltage monitoring	Yes 38.4 kBd (COM2) 2.4 ms 1 byte 1 byte common profile 20 m  Yes  Yes; channel by channel, parameterizable  Yes; Parameterizable  Yes; outputs to ground; encoder supply to ground; module by module  Yes; green LED Yes; green/red LED

Potential separation channels		
<ul> <li>between the channels</li> </ul>	No	
<ul> <li>between the channels and the power supply of the electronics</li> </ul>	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> <li>Performance level according to ISO 13849-1</li> </ul>	PL d	
<ul> <li>Category according to ISO 13849-1</li> </ul>	Cat. 3	
<ul> <li>SIL acc. to IEC 62061</li> </ul>	SIL 2	
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	

3/7/2022

last modified: