Product overview

2

2.1 Properties

Article number

6ES7147-5JD00-0BA0

View of the module

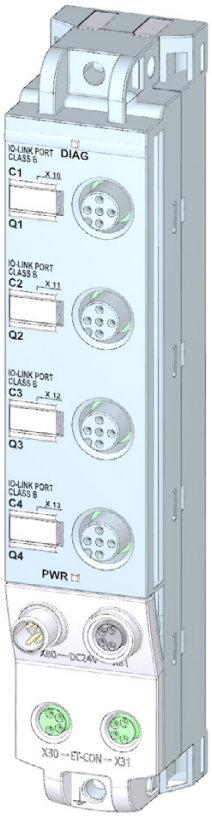


Figure 2-1 View of the CM 4xIO-Link 4xM12 communication module

Properties

The module has the following technical properties:

- IO-Link Master according to IO-Link specification V1.1
- 4 ports, type class B
- 4 M12 connectors
- SIO mode (standard IO mode)
- Supported data transmission rates:
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Configuration limits:
  - Max. 33 bytes of input data and 32 bytes of output data per port
  - Max. 132 bytes of input data and 128 bytes of output data per module
- Automatic backup of device parameters during replacement of the IO-Link device (only for V1.1 devices)
- Suitable for connection of IO-Link devices with 3-wire and 5-wire connection
- Configurable diagnostics can be set for each channel
- Dimensions 30 x 159 mm

The module supports the following functions:

Table 2- 1 Version dependencies of the module functions

Function	Firmware version of the module
Firmware update	V1.0 or higher
Identification and maintenance data (I&M)	V1.0 or higher
PROFIenergy	V1.0 or higher
IO-Link port configuration with S7-PCT (as of V3.2)	V1.0 or higher
IO-Link port configuration without S7-PCT	V1.1 or higher
Master backup with "IO_LINK_MASTER" function block	V1.1 or higher
Port Qualifier Information (PQI)	V1.1 or higher
Support of I/O data per module > 32 bytes	V1.2 or higher

Accessories

The following components are included in the module package:

- Identification labels
- Spacers

Technical specifications

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Technical specifications of the CM 4xIO-Link 4xM12 communication module

The following table shows the technical specifications as of 03/2021. You can find a data sheet including daily updated technical specifications on the Internet (https://support.industry.siemens.com/cs/ww/en/pv/6ES7147-5JD00-0BA0/td?dl=en).

Article number	6ES7147-5JD00-0BA0
General information	
Product type designation	CM 4x IO-Link
HW functional status	FS05
Firmware version	V1.2.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	From V5.5 SP4 Hotfix 3
• PROFIBUS from GSD version/GSD revision	GSD as of Revision 5
• PROFINET from GSD version/GSD revision	GSDML V2.3.1
Supply voltage	
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
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

Article number	6ES7147-5JD00-0BA0
24 V encoder supply	
• Short-circuit protection	Yes; per module, electronic
• Output current, max.	1.4 A; Total current of all ports
Power loss	
Power loss, typ.	2.6 W
IO-Link	
Number of ports	4
• of which simultaneously controllable	4
IO-Link protocol 1.0	Yes
IO-Link protocol 1.1	Yes
Transmission rate	4.8 kBaud (COM1); 38.4 kBaud (COM2), 230 kBaud (COM3)
Size of process data, input per port	32 byte
Size of process data, input per module	132 byte
Size of process data, output per port	32 byte
Size of process data, output per module	128 byte
Memory size for device parameter	2 kbyte; for each port
Master backup	Possible with function block IO_LINK_MASTER
Configuration without S7-PCT	Possible; autostart/manual function
Cable length unshielded, max.	20 m
Operating modes	
• IO-Link	Yes
• DI	Yes
• DQ	Yes; max. 100 mA
Connection of IO-Link devices	
• Port type A	Yes; via 3-core cable
• Port type B	Yes; Additional device supply: 1.6 A total current of all ports
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes; Parameterizable
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
Diagnostics indication LED	
• 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	

Article number	**6ES7147-5JD00-0BA0**
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	No
Isolation	
Isolation tested with	707 V DC (type test)
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

Dimension drawing

A

The following figure shows the dimension drawing of the CM 4xIO-Link 4xM12 communication module in front and side view.

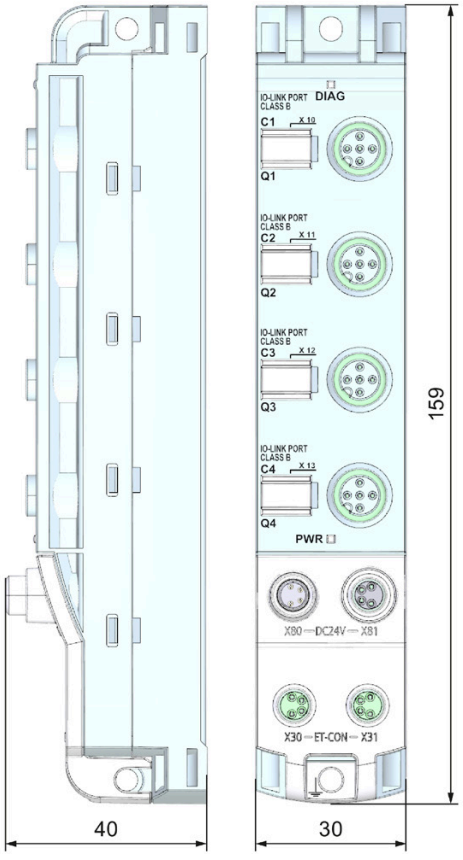


Figure A-1 Dimension drawing