



Product: [0980 SSL 3131-121-007D-202](#) 

LioN-Safety 8/4-F-DI 4-F-DO 2-IOLM M12 – Ethernet/IP / CIP Safety

Product Description

LioN-Safety 8/4-F-DI 4-F-DO 2-IOLM M12 EtherNet/IP / CIP Safety , M12 L-coded Power Supply, Metal 60mm, IoT Protocols (OPC UA, MQTT, CoAP, REST)

Technical Specifications

Product Description

Brand:	Belden
Product Family:	I/O Systems: Active - Standalone
Product Sub Family:	LioN-Safety
Item Description:	0980 SSL 3131-121-007D-202
Part Number:	935023001
Device Type:	FS I/O Device
Protocol:	CIP Safety
I/O Function:	8/4 FS DI, 4 FS DO, 2 IOLM
Bus Connection:	M12 LAN, 4-poles, D-coded
Power Connection (System Supply):	M12 Power, 5-poles, L-coded
I/O Connection:	M12, 5-poles, A-coded
I/O Type:	Functional Safety Digital In-/Output

General Data

Housing Material:	Metal, Zinc Die-cast
Housing Plating:	Nickel, matt
Housing Color:	Grey Metallic
Protection Degree / IP Rating**:	IP65, IP67, IP69K
Potted:	Yes
Dimensions (W x H x D):	60 mm x 31 mm x 200 mm
Weight:	approx. 500 g
Ambient Temperature (Operation)*:	-40 °C to 70 °C (2000m ASL 63°C)
Ambient Temperature (Storage/Transport):	-40 °C to 85 °C
Permissible Humidity (Operation):	5 % ... 98 % (For UL applications max. 80 %)
Permissible Humidity (Storage/Transport):	5 % ... 98 % (For UL applications max. 80 %)
Air Pressure (Operation):	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air Pressure (Storage/Transport):	70 kPa ... 106 kPa (up to 3000 m above sea level)
Flammability Class:	UL 94 (IEC 61010)
Protection Class:	III, IEC 61140, EN 61140, VDE 0140-1
Pollution Degree:	3 acc. to EN 60664-1, VDE 0110-1
Vibration Resistance:	15 g / 5 -500 Hz
Shock Resistance:	50 g / 11ms
Mean Time To Failure (MTTF):	84 years. acc. to EN ISO 13849-1
Contact Base Material:	M12, D-coded, CuSn, Gold-plated M12 Power, L-coded, CuNi, Gold-plated
Contact Bearer Material:	PA
O-Ring Material:	FKM

Mounting:	2 hole screw mounting. Use standard M4 x 25 / 30 screws with toothed lock washer (as per DIN 125) and self-locking nuts.
Fastening Torque (Fixing Screw):	M4: 1 Nm
Fastening Torque (Ground Connection (FE)):	M4: 1 Nm
Fastening Torque (Bus Connection):	M12: 0.5 Nm
Fastening Torque (Power Connection):	M12: 0.5 Nm
Fastening Torque (I/O Connection):	M12: 0.5 Nm
Included in Delivery:	Attachable Labels: 15x, Sealing Caps: 5x M12

Safety

SIL/ SIL CL (IEC 62061/ IEC 61508):	up to 3
Performance Level IL (ISO 13849):	up to e
Category Cat. (ISO 13849):	up to 4
Probability of failure per hour (PFH):	1,43 E-9
Mission Time:	20 years
Safety Reaction Time:	42ms
Safety Digital Inputs:	8/4
Safety Digital Outputs:	4

EtherNet/IP

Protocol (EtherNet/IP):	EtherNet/IP
Safety Communication:	CIP Safety
Connection:	M12 LAN, 4-poles, D-coded
Number of Connections:	2
Specification:	CIP V3.2x, EIP Adaption of CIP V1.2x
Transmission Rate:	Fast Ethernet (10/100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Requested Packet Interval (RPI):	min. 1 ms
Addressing:	BootP, DHCP, Rotary Address Switches
Address Switches Range:	0 to 255 dec
Connection Types:	Exclusive Owner, Input Only, Listen Only
CIP Msg Connection Limit:	6
CIP I/O Connection Limit:	3
Device Level Ring (DLR):	Supported, beacon based
Quick Connect (QC):	Supported, ≤ 500 ms
Supported Network Protocols (Other):	ACD, ARP, BootP, DHCP, HTTP, IGMP, Ping, TCP/IP

IIoT Protocols

OPC UA:	Cyclic data read/write, Diagnosis data, Event data
MQTT:	Cyclic data read/write, Diagnosis data, Event data
REST API:	Cyclic data read/write, Diagnosis data, Event data
CoAP:	Cyclic data read/write, Diagnosis data, Event data

IO-Links

Protocol:	IO-Link Master
Connection:	M12 5-poles, A-coded
Number of Connections:	2
Specification:	v1.1.3 ready, IEC 61131-9
IO-Link Class:	Class A
Transmission Rate / COM Mode:	COM1, COM2, COM3
Cycle Time / Update Rate:	400µs
Parameter Storage:	supported

Power Supply

Connection Module Supply Voltage:	M12 Power, 5-poles, L-coded
Number of Connections:	2
Current Carrying Capacity of Connector:	max. 16 A
Module Supply Voltage (Nominal):	24 V DC (SELV/PELV)

Module Supply Voltage (Range):	18 V DC to 30 V DC
Current Consumption (typ.):	typ. 180mA (at 24 V DC)
Reverse Polarity Protection:	Yes
Status Indicator (System Supply):	LED green
Diagnostic Indicator:	LED red
Connection Sensor Supply Voltage:	M12 Power, 5-poles, L-coded
Current Carrying Capacity of Connector:	max. 16 A
Sensor Supply Voltage (Nominal):	24 V DC (SELV/PELV)
Sensor Supply Voltage (Range):	18 V DC to 30 V DC
Reverse Polarity Protection:	Yes
Status Indicator (Sensor Supply):	LED green
Diagnostic Indicator:	LED red
Current Carrying Capacity of Connector:	max. 16 A
Actuator Supply Voltage (Nominal):	24 V DC (SELV/PELV)
Actuator Supply Voltage (Range):	18 V DC to 30 V DC
Reverse Polarity Protection:	Yes
Status Indicator (Actuator Supply):	LED green
Diagnostic Indicator:	LED red

IO-Link Master Channels

Number of IO-Link Master Channels:	max. 2, configurable
Connection:	M12, 5-poles, A-coded
IO-Link Class A Ports:	2x, X7 and X8
IO-Link Specification:	V1.1.3
Parameter Storage:	Supported
Supported COM Modes:	4.8 kBaud (COM 1), 38.4 kBaud (COM 2), 230.4 kBaud (COM 3)
Cycle Time / Update Rate:	min. 1 ms for all channels at 32 Byte IN / OUT
Nominal Voltage:	24 V DC via US (system power supply)
Nominal Current C/Q (Pin 4):	500mA
Nominal Current 1L+ (Pin 1):	4A
Perm. Conductor Length to Device:	≤ 20 m
Status Indicator (IOL):	LED green per channel
Diagnostic Indicator:	LED red per port

Digital Input Channels

Number of Digital Input Channels:	up to 8
Connection:	M12, 5-poles, A-coded
Number of Ports:	4x, X1 to X4
Channel Type:	Type 3 acc. to IEC 61131-2
Input Wiring:	2-, 3-, 4-wire
Nominal Voltage:	24 V DC via US (module power supply)
Nominal Current:	typ. 3 mA
Sensor Current Supply:	max. 1500 mA per port
Sensor Type:	PNP
Input Voltage Range "0" signal:	-3 V DC ...+5 V DC
Input Voltage Range "1" signal:	11 V DC ... 30 V DC
Input Filter Time:	configurable
Protective Circuit:	Electronically: Overload protection, short-circuit protection
Diagnostic Indicator:	LED white or yellow per channel

Digital Output Channels

Number of Digital Output Channels:	4
Connection:	M12, 5-poles, A-coded
Number of Ports:	2x, X5 and X6
Channel Type:	p-switching
Output Wiring:	2-wire
Nominal Voltage:	24 V DC via UL

Output Current per Channel:	max. 2 A
Output Current per Module:	max. 8 A
Galvanically Isolated:	Yes
Protective Circuit:	Electronically: Overload protection, short-circuit protection
Overload Behavior:	Auto off and on switching / Manual restart
Status Indicator (Outputs):	LED white or yellow per channel
Diagnostic Indicator:	LED red per channel

Electrical Isolation

US (System Supply Voltage) / FE:	32V DC (clamp voltage)
US / UL (Actuator Supply Voltage):	500 V DC
UL / FE:	32V DC (clamp voltage)
Bus connection / FE:	2000 V DC

EMC Conformance

EMC Directive:	2014/30/EU
EN 61000-4-2 Electrostatic Discharge (ESD):	Criterion B; 4 kV contact discharge, 8 kV air discharge
EN 61000-4-3 Electromagnetic Field:	Criterion A; Field intensity: 10 V/m
EN 61000-4-4 Fast Transients (Burst):	Criterion B, 2 kV
EN 61000-4-5 Surge Voltage:	Criterion B; DC supply lines: ±0.5 kV/±0.5 kV (symmetrical/asymmetrical); For I/O ports with cables ≤ 30m
EN 61000-4-6 Conducted immunity:	Criterion A; Test voltage 10 V
EN 55022 Radio Interference Properties:	Class A
EN 55032 Radio Interference Properties:	Class A

Safety & Environmental Compliance

CE:	Yes
RoHS Compliant:	Yes
China RoHS-Compliant:	Yes

Approvals

FS-Certification:	TÜV (Rheinland) IEC 61508, ISO 13849
UL:	cULus Listed, UL 61010-1
CSA:	Yes, via UL
ODVA:	Yes
IO-Link:	Yes

Notes

Protection Degree / IP Rating Note:	*only if mounted and locked in combination with Hirschmann / Lumberg Automation connector.
System Power Supply Connection Note:	*do not connect / disconnect under voltage!

Variants

Item #	Item Description
935023001	0980 SSL 3131-121-007D-202

© 2025 Belden, Inc
All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.