



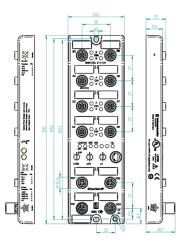
Product: 0980 ESL 311-121 ☑

LioN-P, EtherNet/IP I/O Device, 16DI (8x M12), M12 L-coded Power Supply, Metal, 60 mm

Product Description

LioN-P, I/O Standalone, EtherNet/IP, industrial metal housing, 60 mm, up to IP69K, 16 digital input channels, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles

Technical Drawing



Technical Specifications

Product Description

Brand:	Belden
Product Family:	I/O Systems: Active - Standalone
Product Sub Family:	LioN-P
Item Description:	0980 ESL 311-121
Part Number:	934839001
Device Type:	I/O Module
Protocol:	EtherNet/IP
I/O Function:	16DI
Bus Connection:	M12, 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:	Digital Input

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:	500 g
Ambient Temperature (Operation)*:	-20 °C to 70 °C
Ambient Temperature (Storage/Transport):	-25 °C to 85 °C
Permissible Humidity (Operation):	5 % 95 % (For UL applications max. 80 %)
Permissible Humidity (Storage/Transport):	5 % 95 % (For UL applications max. 80 %)
Air Pressure (Operation):	80 kPa … 106 kPa (up to 2000 m above sea level)
Air Pressure (Storage/Transport):	80 kPa … 106 kPa (up to 2000 m above sea level)
Flammabilty 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):	444 years. acc. to Telcordia SR-332 (2011) 20°C
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

EtherNet/IP

Protocol (EtherNet/IP):	EtherNet/IP
Connection:	M12 LAN, 4-poles, D-coded
Number of Connections:	2
Specification:	CIP V3.1x, EIP Adaption of CIP V1.1x
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:	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

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.):	120 mA (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	

Digital Input Channels

Connection:M12, 5-poles, A-codedNumber of Ports:8x, X1 to X8Channel Type:Type 3 acc. to IEC 61131-2Input Wiring:2, 3, 4-wireNominal Voltage:24 V DC via US (module power supply)Nominal Current:typ. 5 mASensor Current Supply:max. 200 mA per port (at 30°C)Input Voltage Range "0" signal:-3V DC +5 V DCInput Voltage Range "1" signal:11 V DC 30 V DCInput Filter Time:3 ms, fixedProtective Circuit:Electronically: Overload protection, short-circuit protectionBrust Indicator (Inputs):LED while or yellow per channel		
Number of Ports:8x, X1 to X8Channel Type:Type 3 acc. to IEC 61131-2Input Wiring:2-, 3-, 4-wireNominal Voltage:24 V DC via US (module power supply)Nominal Current:typ. 5 mASensor Current Supply:max. 200 mA per port (at 30°C)Sensor Type:PNPInput Voltage Range "0" signal:-3 V DC+5 V DCInput Voltage Range "1" signal:11 V DC 30 V DCInput Filter Time:3 ms, fixedProtective Circuit:Electronically: Overload protection, short-circuit protectionBernoral Low ier or yellow per channel	Number of Digital Input Channels:	max. 16, fixed
Channel Type:Type 3 acc. to IEC 61131-2Input Wiring:2, 3, 4-wireNominal Voltage:24 V DC via US (module power supply)Nominal Current:24 V DC via US (module power supply)Nominal Current:typ. 5 mASensor Current Supply:max. 200 mA per port (at 30°C)Sensor Type:PNPInput Voltage Range "0" signal:3 V DC+5 V DCInput Voltage Range "1" signal:11 V DC 30 V DCInput Filter Time:3 ms, fixedProtective Circuit:Electronically: Overload protection, short-circuit protectionBust Indicator (Inputs):Leb white or yellow per channel	Connection:	M12, 5-poles, A-coded
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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: 3 ms, fixed Protective Circuit: Electronically: Overload protection, short-circuit protection Status Indicator (Inputs): LED white or yellow per channel	Sensor Current Supply:	max. 200 mA per port (at 30°C)
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Input Filter Time: 3 ms, fixed Protective Circuit: Electronically: Overload protection, short-circuit protection Status Indicator (Inputs): LED white or yellow per channel	Input Voltage Range "0" signal:	-3 V DC+5 V DC
Protective Circuit: Electronicaly: Overload protection, short-circuit protection Status Indicator (Inputs): LED white or yellow per channel	Input Voltage Range "1" signal:	11 V DC 30 V DC
Status Indicator (Inputs): LED white or yellow per channel	Input Filter Time:	3 ms, fixed
	Protective Circuit:	Electronicaly: Overload protection, short-circuit protection
Diagnostic Indicator: LED red per port	Status Indicator (Inputs):	LED white or yellow per channel
	Diagnostic Indicator:	LED red per port

Electrical Isolation

US (System Supply Voltage) / FE:	500 V DC
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

Safety & Environmental Compliance

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

Approvals

UL:	cULus Listed, UL 61010-1
UL-File:	E230848
CSA:	Yes, via UL
ODVA:	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!
Update and Revision:	Revision Number: 0.83 Revision Date: 03-04-2023

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