



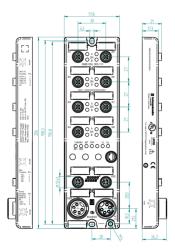
# Product: 0980 ESL 303-111 ☑

LioN-P, PROFINET I/O Device, 8DI 8DO (8x M12), 7/8" Power Supply, Metal, 60 mm

### **Product Description**

LioN-P, I/O Standalone, PROFINET, industrial metal housing, 60 mm, up to IP67, 8 digital input and 8 digital output channels (2 A) with galvanic isolation, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x 7/8" 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 303-111
Part Number:	934881003
Device Type:	I/O Module
Protocol:	PROFINET
I/O Function:	8DI 8DO
Bus Connection:	M12, 4-poles, D-coded
Power Connection (System Supply):	7/8" Power, 5-poles
I/O Connection:	M12, 5-poles, A-coded
I/O Type:	Digital Input and Digital Output

#### **General Data**

Housing Material:	Metal, Zinc Die-cast
Housing Plating:	Nickel, matt
Housing Color:	Grey Metallic
Protection Degree / IP Rating**:	IP65, IP67
Potted:	Yes

Dimensions (W x H x D):	60 mm x 26 mm x 206 mm
Weight:	520 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):	693 years. acc. to Telcordia SR-332 (2011) 20°C
Contact Base Material:	M12, D-coded, CuSn, Gold-plated   7/8" CuZn, Gold-plated
Contact Bearer Material:	PA / TPU
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):	7/8": 1.5 Nm
Fastening Torque (I/O Connection):	M12: 0.5 Nm

# PROFINET

Protocol:	PROFINET
Connection:	M12 LAN, 4-poles, D-coded
Number of Connections:	2
Specification:	V2.3X
Conformance Class:	C
Performance Class:	RT (switch supports IRT)
Netload Class:	III
Transmission Rate:	Fast Ethernet (10/100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Update Rate:	min. 1 ms
Addressing:	DCP
Fast Startup (FSU):	Supported, ≤ 1000 ms
Media Redundancy Protocol (MRP):	Supported, MRP client
Shared Device:	Not Supported
Topology Detection:	LLDP, SNMP V1
Easy Device Replacement:	Supported, based on LLDP
Supported Network Protocols (Other):	ARP, HTTP, Ping, SNMP V1, TCP/IP

# **Power Supply**

Connection Module Supply Voltage:	7/8" Power, 5-poles
Number of Connections:	2
Current Carrying Capacity of Connector:	max. 9 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. 9 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
Connection Actuator Supply Voltage:	via Module Supply Connection
Current Carrying Capacity of Connector:	max. 9 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

# **Digital Input Channels**

Number of Digital Input Channels:max. 8, fixedConnection:M12, 5-poles, A-codedNumber of Ports:4, X1 to X4Channel Type:Type 3 acc. to IEC 61131-2Input Wiring:2, 9, 4-wireNominal Voltage:4 V D C via US (module power supply)Nominal Current:typ. 5 mASensor Current Supply:max. 20 mA per port (at 30°C)Input Voltage Range °0° signal:-3 VD C45 VDCInput Voltage Range °1° signal:1 VD C30 VDCInput Filter Time:Sensor Current Supply:Input Status Indicator (Inputs):Eutomicator (Sensor Supple)		
Number of Ports:4x, X1 to X4Channel Type:Type 3 acc. to IEC 61131-2Input Wiring:2, 3, 4-wireNominal Voltage:24 V DC via US (module power supply)Nominal Current:100, 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, fixedPortective Circuit:Beronically: Overload protection, short-circuit protection	Number of Digital Input Channels:	max. 8, 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:yp. 5 mASensor Current Supply:max. 200 mA per port (at 30°C)Sensor Type:PNPInput Voltage Range "0" signal:3 V DC 45 V DCInput Filter Time:3ms, fixedProtective Circuit:Betronically: Overload protection, short-circuit protection	Connection:	M12, 5-poles, A-coded
Input Wing:2, 3, 4 wireNominal Voltage:24 V D C 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 D C +5 V D CInput Voltage Range "1" signal:11 V D C 30 V D CInput Filter Time:3 ms, fixedProtective Circuit:Electronically: Overload protection, short-circuit protection	Number of Ports:	4x, X1 to X4
Nominal Voltage:24 V DC via US (module power supply)Nominal Current:24 V DC via US (module power supply)Nominal Current:Tup. 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:Electonically: Overload protection, short-circuit protection	Channel Type:	Type 3 acc. to IEC 61131-2
Nominal Current: typ. 5 mA   Sensor Current Supply: max. 200 mA per port (at 30°C)   Sensor Type: PNP   Input Voltage Range "0" signal: -3 V DC +5 V DC   Input Filter Time: 3 ms, fixed   Protective Circuit: Betornically: Overload protection, short-circuit protection	Input Wiring:	2-, 3-, 4-wire
Sensor Current Supply: max. 200 mA per port (at 30°C)   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: 3 ms, fixed   Protective Circuit: Electronically: Overload protection, short-circuit protection	Nominal Voltage:	24 V DC via US (module power supply)
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:     3 ms, fixed       Protective Circuit:     Electronically: Overload protection, short-circuit protection	Nominal Current:	typ. 5 mA
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	Sensor Current Supply:	max. 200 mA per port (at 30°C)
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	Sensor Type:	PNP
Input Filter Time: 3 ms, fixed   Protective Circuit: Electronicaly: Overload protection, short-circuit protection	Input Voltage Range "0" signal:	-3 V DC+5 V DC
Protective Circuit: Electronicaly: Overload protection, short-circuit protection	Input Voltage Range "1" signal:	11 V DC 30 V DC
	Input Filter Time:	3 ms, fixed
Status Indicator (Inputs): LED white or yellow per channel	Protective Circuit:	Electronicaly: Overload protection, short-circuit protection
	Status Indicator (Inputs):	LED white or yellow per channel
Diagnostic Indicator: LED red per port	Diagnostic Indicator:	LED red per port

# **Digital Output Channels**

Number of Digital Output Channels:	max. 8, fixed
Connection:	M12, 5-poles, A-coded
Number of Ports:	4x, X5 to X8
Channel Type:	p-switching
Output Wiring:	2-, 3-wire
Nominal Voltage:	24 V DC via UL (actuator power supply)
Output Current per Channel:	max. 2 A
Output Current per Module:	max. 9 A
Galvanically Isolated:	Yes
Protective Circuit:	Electronicaly: Overload protection, short-circuit protection
Overload Behavior:	Manual restart
Status Indicator (Outputs):	LED white or yellow per channel
Diagnostic Idicator:	LED red per channel

### **Electrical Isolation**

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

#### Safety & Environmental Compliance

Class A

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

#### **Approvals**

UL:	cULus Listed, UL 61010-1
UL-File:	E230848
CSA:	Yes, via UL
PNO:	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: 0.78 Revision Date: 03-04-2023

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