



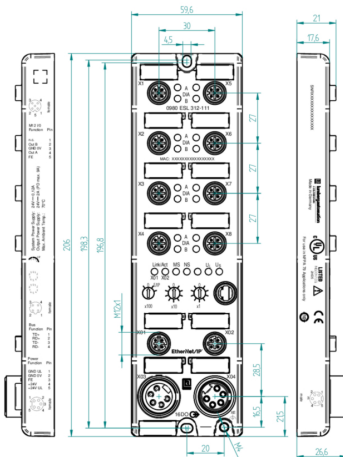
## Part Number: 0980 ESL 312-111

LioN-P, EtherNet/IP I/O Device, 16DO (8x M12), 7/8" Power Supply, Metal, 60 mm

### Product Description

LioN-P, I/O Standalone, EtherNet/IP, industrial metal housing, 60 mm, up to IP67, 16 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

Product Family:	I/O Systems: Active - Standalone
Product Sub Family:	LioN-P
Item Description:	0980 ESL 312-111
Part Number:	934880002
Device Type:	I/O Device
Protocol:	EtherNet/IP
I/O Function:	16DO
Bus Connection:	M12 LAN, 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 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)
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):	714 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
Included in Delivery:	Attachable Labels: 15x, Sealing Caps: 5x M12

EtherNet/IP

Protocol:	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:	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

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:	LED green
Diagnostic Indicator:	LED red
Connection Sensor Supply Voltage:	M12 Power, 5-poles, L-coded
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:	LED green
Diagnostic Indicator:	LED red

### Digital Output Channels

Number of Digital Output Channels:	max. 16, fixed
Connection:	M12, 5-poles, A-coded
Number of Ports:	8x, X1 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:	Electronically: Overload protection, short-circuit protection
Overload Behavior:	Manual restart
Status Indicator:	LED white or yellow per channel
Diagnostic Indicator:	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: $\pm 0.5$ kV/ $\pm 0.5$ kV (symmetrical/asymmetrical); For I/O ports with cables $\leq 30$ m
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: 0.26 Revision Date: 02-15-2019

© 2019 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.