lumbergautomation

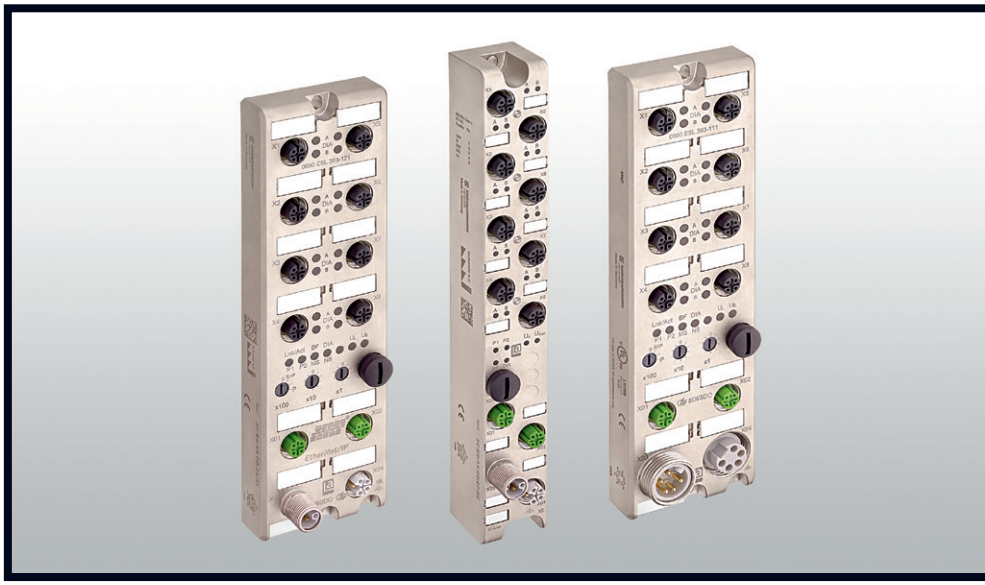
A **BELDEN** BRAND

Product Bulletin

PB00041AG

LioN-Power Active I/O Modules

New multi-protocol I/O modules from Lumberg Automation meet EtherNet/IP and PROFINET protocols and detect both input and output data directly on the machine, saving engineers both time and money with an all-in-one solution for the Industrial Internet of Things (IIoT).



The fully potted, compact I/O modules deliver exceptional flexibility and convenient installation in the field for a variety of industrial automation applications. Plus, they meet IP65 and IP67 ratings for protection against dust, water jets and temporary immersion in water.

- **Flexibility –** IO-Link Master, with Class A and B ports, provides 8 IO-Link ports, which can be configured as either IO-Link (max. 8), digital inputs (DI, max. 12) or digital output (DO, max. 8)
- **Easy installation –** L-coded M12 power ports with compact design and optimized arrangement simplify plant installation and give engineers more options for connecting additional Lumberg Automation LioN-Power products
- **Cost efficiency –** multi-protocol solution, combined with L-coded M12 power connectors, creates long- and short-term cost savings

Previously, engineers who wanted to take advantage of the Industrial Internet of Things (IIoT) needed both PROFINET and EtherNet/IP modules, which required two products with very different power components – 4-pole 7/8" power for EtherNet/IP and 5-pole 7/8" power for PROFINET devices, even as multi-protocol devices. With the new LioN-Power active I/O modules, engineers only need one module to meet both protocols, which can be used in conjunction with the corresponding standardized L-coded M12 power connectors for high cost efficiency.

Applications

The new LioN-Power active I/O modules are fit for a variety of industrial production applications, including robotics, manufacturing, material handling, food and beverage, packaging, and automotive settings.

Specifying, design, control and process engineers, along with contractors, installers and system integrators, will benefit from the product's ability to meet both EtherNet/IP and PROFINET protocols. This is a complete, all-in-one product portfolio for data communication.

Your Benefits

The reduced weight and size of the new LioN-Power active I/O modules, combined with a robust IP67 rating, enables the device to be installed directly on machinery, reducing excess wiring costs.

Standardized cabling and IO-Link interfaces offer enhanced security and comprehensive diagnostic functions, such as a live illustration feature and the ability to parameterize or exchange devices during operation, which leads to quick and simple troubleshooting and reduced network downtime.

A new product to serve your needs. Be certain.

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LioN-Power Active I/O Modules

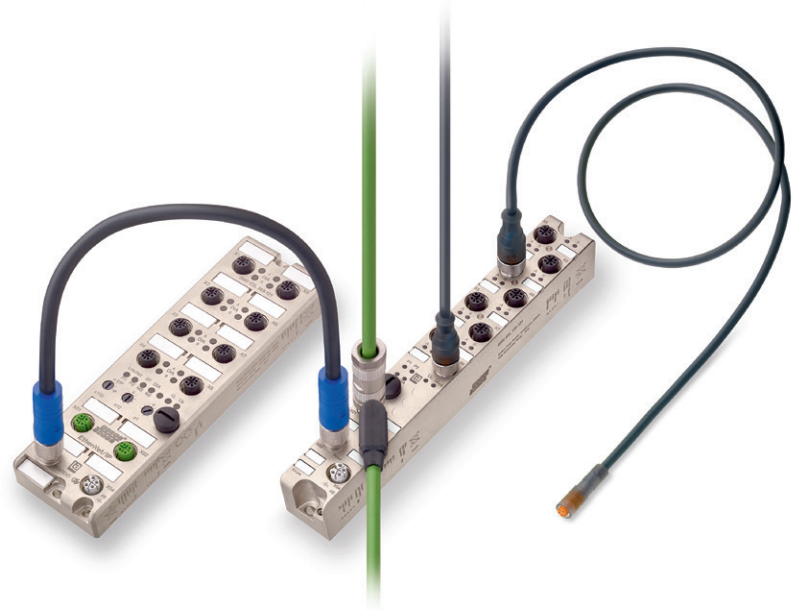
The new LioN-Power active I/O modules deliver the highest application flexibility. Designed to meet the trend toward miniaturization, the new modules are smaller and lighter, bringing optimal performance while reducing costs and required resources.

The new LioN-Power active I/O modules also meet application-specific regulations, including UL 61010-1 (replaces UL 508) certification for safe implementation of electrical test and measurement equipment. The modules can be used with other Belden products, including the M12 power cordsets, 7/8" cordsets, and the M8/M12 cordset portfolio, as well as the mounting adapter.

High performance in smaller and lighter design for the highest application flexibility.

Benefits at a Glance

- Selectable power connection: 7/8" and M12 Power (L-coded with up to 16 A)
- Exceptionally compact design and up to 50% lighter than competitive products
- Fully-potted metal housing for highest durability and density
- Dust-tight and protected against water jets (IP65) and temporary immersion (IP67)
- Superior operational temperature range: -20 °C to +70 °C
- Resistant to welding sparks due to special surface coating
- Hardened against vibration (15 g) and shock (50 g)
- UL 61010-1 (replaces UL 508) certified
- Multi-protocol support for PROFINET V2.3 (Conformance Class C) and EtherNet/IP
- Available in four signal variants: 16 digital inputs, 16 digital outputs, 8 digital inputs and 8 outputs, or 8 IO-Link ports (4 x Type A and 4 x Type B)
- More signal freedom (intelligent sensors, analog, hubs, valves, ...) thanks to IO-Link v1.1
- Digital outputs with up to 2 A per port, short-circuit proof and galvanically isolated
- Integrated web server for information, configuration and diagnostics
- Comprehensive and channel-specific diagnostic & status LEDs
- 2 x M12 Ethernet ports with switch functionality for line topology
- Universal mounting adapters (screw-on) make it simple to upgrade
- Standardized interfaces



Technical Information

Product Description								
Type	**0980 ESL 1xx-121**	**0980 ESL 3xx-121**			**0980 ESL 3xx-111**			
Description	LioN-P PROFINET device, 4 digital input channels, 8 IO-Link channels, M12 LAN connection, 4-poles, D-coded, M12 L-coded power supply, 5-poles, 30 mm housing	LioN-P PROFINET/EtherNet/IP or Multi-protocol module, PROFINET or EtherNet/IP device, 16 digital input channels/16 digital output channels with galvanic isolation, M12 LAN connection, 4-poles, D-coded, M12 L-coded power supply, 5-poles			LioN-P PROFINET/EtherNet/IP or Multi-protocol module, PROFINET or EtherNet/IP device, 16 digital input channels/16 digital output channels with galvanic isolation or 8 digital input and 8 digital output channels with galvanic isolation, M12 LAN connection, 4-poles, D-coded, 7/8" power supply, 4 or 5-poles			
Technical Data								
Environmental Temperature	-20 °C to +70 °C (Operation)							
Housing Material	Metal (Zinc Die-cast)							
Mechanical Data								
Weight	480 g	500 g			520 g			
Protection Class	IP65, IP67							
Module Supply								
Rated Voltage	24 V DC							
Voltage Range	19 to 30 V DC							
Nominal Current	16 A				9 A			
Connection Type	M12 Power, 5-poles, L-coded				PROFINET: 7/8", 5-poles; EtherNet/IP: 7/8", 4-poles			
Number	2							
Bus System								
Network	PROFINET	PROFINET, EtherNet/IP, Multi-protocol						
Transmission Rate	10/100 Mbit/s							
Address Range	–	0 to 255 (not applicable for pure PROFINET modules)						
Connection Type	M12 LAN connection, 4-poles, D-coded							
Number	2							
I/O Variant	**8IOL**	**16DI**	**8DI/8DO**	**16DO**	**8IOL**	**16DI**	**8DI/8DO**	**16DO**
Outputs								
Number of Digital Channels	max. 8 via C/Q	–	8	16	max. 8 via C/Q	–	8	16
Actoric Current	500 mA	–	2 A per channel		500 mA	–	2 A per channel	
Actoric Current (max.)	9 A	–	9 A		9 A	–	9 A	
Short-circuit Proof	yes	–	yes		yes	–	yes	
Channel Type N.O.	p-switching	–	p-switching		p-switching	–	p-switching	
Status Indicator	LED white or yellow per channel	–	LED white or yellow per channel			–	LED white or yellow per channel	
Diagnostic Indicator	LED red per port	–	LED red per port			–	LED red per port	
Inputs								
Number of Digital Channels	4 + max. 8 via C/Q	16	8	–	4 + max. 8 via C/Q	16	8	–
Type	Type 1 acc. IEC 61131-2	Type 3 acc. IEC 61131-2		–	Type 1 acc. IEC 61131-2	Type 3 acc. IEC 61131-2		–
Sensor Type	PNP			–	PNP	PNP		–
Status Indicator	LED white or yellow per channel			–	LED white or yellow per channel	LED white or yellow per channel		–
Diagnostic Indicator	LED red per port			–	LED red per port	LED red per port		–
Sensor Current Supply	200 mA per port			–	200 mA per port	200 mA per port		–
IO-Link								
Number of IO-Link Channels	8	–	–	–	8	–	–	–
Number of A Ports	4	–	–	–	4	–	–	–
Number of B Ports	4	–	–	–	4	–	–	–
Nominal Current C/Q (Pin 4)	500 mA	–	–	–	500 mA	–	–	–
Nominal Current L+/L- (Pin 1 and 3)	200 mA	–	–	–	200 mA	–	–	–
Nominal Current Ua (Type B Ports, Pin 2 and 5)	2 A	–	–	–	2 A	–	–	–
Short-circuit Proof	yes	–	–	–	yes	–	–	–
Cable Length to Sensor	< 20m	–	–	–	< 20m	–	–	–

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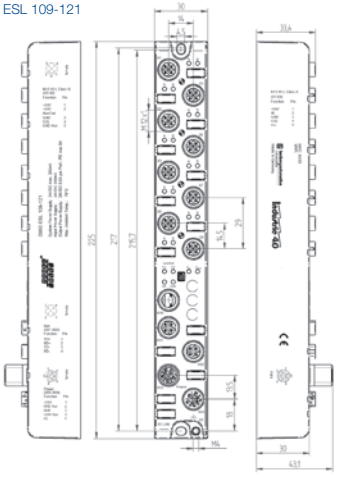
Order Information

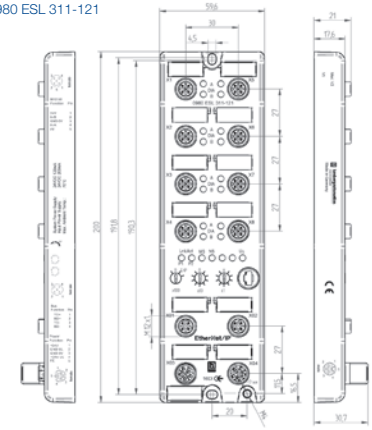
Type	0980 ESL 1xx-121	0980 ESL 3xx-121				0980 ESL 3xx-111		
								
Power Variant	M12 L-coded	M12 L-coded				7/8"		
I/O Variant	8IOL	16DI	8DI/8DO	16DO	8IOL	16DI	8DI/8DO	16DO
PROFINET	934861001	934878001	934878003	934878002	934878004	934881001	934881003	934881002
EtherNet/IP	in 2016	934839001	934839003	934839002	in 2016	934880001	934880003	934880002
Multi-protocol	in 2016	934879001	934879003	934879002	in 2016	934882001	934882003	934882002

Technical Drawings

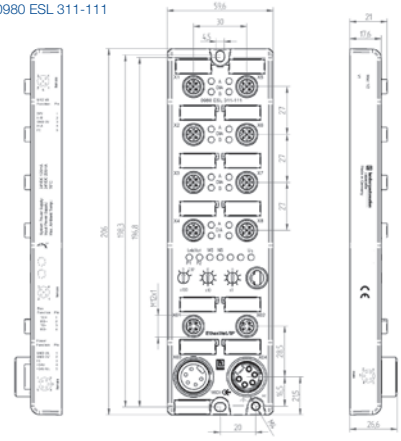
0980 ESL 109-121



0980 ESL 311-121



0980 ESL 311-111



Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who are able to add value to your business. When it comes to signal transmissions, Belden is the No. 1 solutions provider. We understand your business and want to know your specific challenges and targets to see how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our five leading brands, Belden, GarrettCom, Hirschmann, Lumberg Automation and Tofino Security, we are able to offer the solution you need. Today, it may be a single cable, a switch or a connector, thus solving a specific issue; tomorrow, it can be a complex range of integrated applications, systems and solutions.