lumbergautomation

A **BELDEN** BRAND

Product Bulletin

PB00084

Fieldbus-Independent Automation: LioN-Power Multiprotocol I/O Modules

Power your industrial automation solutions for Industry 4.0 connectivity with the most versatile multiprotocol I/O modules on the market, supporting PROFINET, EtherNet/IP and EtherCAT.

Multiprotocol technology inside LioN-Power active I/O modules now supports the three largest Ethernet protocols in a single device. Easily select the protocol you need through the integrated rotary switch.

Multi-PROTOCOL

PROFINET
INDUSTRIAL ETHERNET

EtherNet/IP™

EtherCAT®

- **Fieldbus independent** – gain flexibility with the world's first I/O module to support all three of the largest industrial Ethernet protocols, giving you everything you need in one module.
- **Scalable** – configure every channel for digital input and output with the easily adaptable universal DIO module.
- **Powerful** – connect more field devices in a daisy-chain with the industry's only I/O module to support 2 x 16 A in a single connector.

Lumberg Automation is extending its LioN-Power distributed field I/O portfolio with the addition of EtherCAT protocol support. This new version of our popular multiprotocol digital I/O platform (DI, DO, DI DO, DIO) will support all three networks, at no additional cost to you.

Additionally we have integrated, scalable, digital Input/output (DIO) universal module options into this line of products. You have the freedom to easily adapt these modules to any I/O configuration you need, such as 12 inputs and four outputs or 11 inputs and five outputs.

Applications

Fieldbus-independent LioN-Power Multiprotocol I/O Modules are especially helpful for applications where machines or systems are built in an identical way, but with different programmable logic controllers (PLCs). One single LioN-Power I/O device can be used across all three different control systems (protocols) and, therefore, helps you design standardized machines with identical field-level components.

With the addition of universal DIO options, the LioN-Power Multiprotocol I/O modules give machine builders scalable solutions that are adaptable to the needs of customer-specific machines and varying I/O configurations.

Benefits at a Glance

- Achieve fieldbus independent automation with a single multiprotocol device

- Be global-ready with UL 61010-1 approval and multiprotocol support for PROFINET, EtherNet/IP and EtherCAT

- Easily adapt to the various needs of your system with the universal 16 digital input/output (16DIO) module options that allow you to adjust to any configuration you need within in one device

- Upgrade to new technologies without changing your machine design with power connections options in standardized 7/8" and M12 Power (L-coding)

- Connect at least 50% more field devices in a daisy-chain using M12 power L-coding technology that offers 2 x 16 amps, the highest current rating in the industry

- Simplify handling and installation – compact design is up to 50% lighter than competitive products

- Withstand harsh conditions – IP65, IP67 and IP69K-rated tolerances for mechanical stress

- Adapt existing machines with universal mounting adapters (screw-on)

Experience the most versatile field I/O portfolio in the market with fieldbus-independent LioN-Power Multiprotocol I/O Modules.
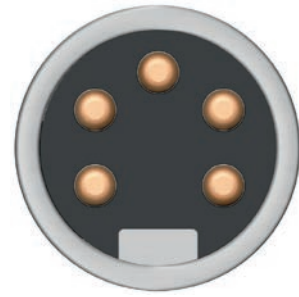
M12 Power, L-coded
24 V / 16 A

Power
61076-2-111/CD IEC (E)

Your Benefits

With LioN-Power multiprotocol I/O modules' additional ability to support EtherCAT, machine builders now have even more flexibility in choosing one LioN-Power module for multiple purposes, regions and customers.

The module's M12 power technology offers the highest current rating in the industry, unscaled 2x 16 amps. This means you can connect at least 50 percent more field devices in a daisy-chain when compared to standard 7/8" power connections.
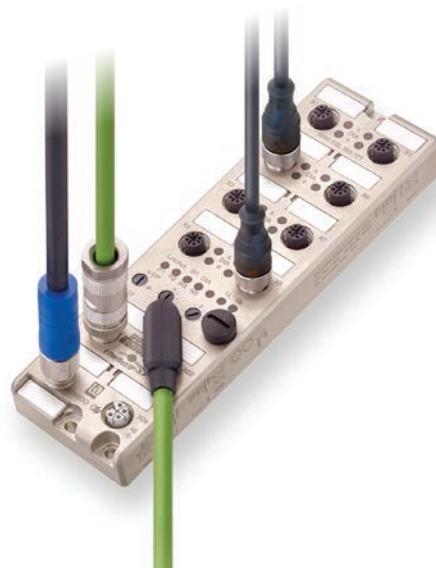
LioN-Power Multiprotocol I/O Modules

As the industry's only module supporting all three of the largest industrial Ethernet standards -- PROFINET, EtherNet/IP and EtherCAT -- LioN-Power Multiprotocol I/O Modules are the most cost-effective and robust solution for field-level connectivity for any industrial application, especially Industrial 4.0 environments.

7/8 in 5-pole
24 V / 9 A

Power
ANSI/NFPA T3.5.29 R1-2007

The modules have the latest M12 power technology, as well as standard 7/8" power technology to offer the newest innovations in standard connectivity design. This means you don't have to change your machine design in order to upgrade to new technologies.

Different I/O connectivity options offer one of the largest state-of-the-art field-level I/O portfolios in the market to suit all your needs. You can set yours up with:

- 16 digital outputs (16DO)

- 16 digital inputs (16DI)

- 8 digital inputs + 8 digital outputs (8DI/8DO)

- NEW – Universal 16 digital inputs/outputs (16DIO)

These modules are a part of Lumberg Automation's LioN-Power system, a one-stop solution for all your automation needs including connectivity, adapters, other I/O modules and more.

Multi-PROTOCOL

PROFINET
INDUSTRIAL ETHERNET

EtherNet/IP

EtherCAT.

LioN-Power Multiprotocol I/O Modules

Technical Information

Product Description				
Type	0980 ESL 3x1-1x1	0980 ESL 3x3-1x1	0980 ESL 3x0-1x1	0980 ESL 3x2-1x1
				UL ... PROFINET INDUSTRIAL ETHERNET / EtherNet/IP / EtherCAT
Description	16 Digital Inputs	8 Digital Inputs and 8 Digital Outputs	16 Digital In-/Outputs	16 Digital Outputs

Technical Data	
Protection Degree	0980 ESL 3xx-121 (M12 Power, L-coded): IP65, IP67, IP69K / 0980 ESL 3xx-111 (7/8"): IP65, IP67 (only if mounted and locked in combination with Hirschmann/Lumberg connector)with Hirschmann/Lumberg connector)
Ambient Temperature (Operation)	-20 °C to +70 °C
Dimensions (W x H x D)	0980 ESL 3xx-121 59.6 x 30.7 x 200 (mm) / 0980 ESL 3xx-111 59.6 x 26.2 x 206 (mm)
Weight	0980 ESL 3xx-121: 500g / 0980 ESL 3xx-111: 520g
Housing Material	Metal, Zinc Die-cast

Bus System	
Protocol	0980 ESL 30x-1x1: PROFINET I/O Device 0980 ESL 31x-1x1: EtherNet/IP I/O Device 0980 ESL 39x-1x1: PROFINET / EtherNet/IP / EtherCAT I/O Device
Connection	M12 LAN, 4-pole, D-coded
Transmission Rate	Fast Ethernet (100 Mbit/s), Full Duplex
Rotary Address Switches	0980 ESL 30x-1x1: No / 0980 ESL 31x-1x1: Yes / 0980 ESL 39x-1x1: Yes

Power Supply	
Nominal Voltage	24 V DC (SELV/PELV)
Nominal Voltage Range	18 to 30 V DC
Connection	0980 ESL 3xx-121: M12 Power, 5-pole, L-coded / 0980 ESL 3xx-111: 7/8", 5-pole
Current Carrying Capacity of Connector	0980 ESL 3xx-121: 16 A / 0980 ESL 3xx-111: 9 A
Current Consumption (typ.)	160 mA (+/-20% at 24 V DC)

Input Channels				
Number of Channels	16	8	max. 16	-
Connection	M12, 5-pole, A-coded			-
Channel Type	Type 3 acc. To IEC 61131-2			-
Nominal Voltage	24 V DC via US (system power supply)			-
Sensor Current Supply	200 mA per Port		500 mA per Port	-
Sensor Type	PNP			-

Output Channels				
Number of Channels	-	8	max. 16	16
Connection	-	M12, 5-pole, A-coded		
Channel Type	-	p-switching		
Nominal Voltage	-	24 V DC via Uaux (actuator power supply)		
Output Current per Channel	-	max. 2 A		
Protective Circuit	-	max. 9 A		
Output Current per Module	-	Electronicaly: Overload protection, short-circuit protection		
Galvanically Isolated	-	Yes	No	Yes

Type	0980 ESL 3xx-121				0980 ESL 3xx-111			
Power Supply	M12 Power L-coded				7/8" Power 5-pole			
I/O Variant	16DI	16DO	8DI 8DO	16DIO	16DI	16DO	8DI 8DO	16DIO
PROFINET	934878001	934878002	934878003	934878007	934881001	934881002	934881003	934881007
EtherNet/IP	934839001	934839002	934839003	**934839007***	934880001	934880002	934880003	**934880007***
Multi-PROTOCOL	934879001	934879002	934879003	**934879007***	934882001	934882002	934882003	**934882007***

*Available in 2017.

Belden Competence Center

As the complexity of communication and connectivity solutions has increased, so have the requirements for design, implementation and maintenance of these solutions. For users, acquiring and verifying the latest expert knowledge plays a decisive role in this. As a reliable partner for end-to-end solutions, Belden offers expert consulting, design, technical support, as well as technology and product training courses, from a single source: Belden Competence Center. In addition, we offer you the right qualification for every area of expertise through the world's first certification program for industrial networks. Up-to-date manufacturer's expertise, an international service network and access to external specialists guarantee you the best possible support for products. Irrespective of the technology you use, you can rely on our full support – from implementation to optimization of every aspect of daily operations.

About Belden

Belden Inc., a global leader in high quality, end-to-end signal transmission solutions, delivers a comprehensive product portfolio designed to meet the mission-critical network infrastructure needs of industrial, enterprise and broadcast markets. With innovative solutions targeted at reliable and secure transmission of rapidly growing amounts of data, audio and video needed for today's applications, Belden is at the center of the global transformation to a connected world. Founded in 1902, the company is headquartered in St. Louis, USA, and has manufacturing capabilities in North and South America, Europe and Asia.

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