

PB00088
**One-Cable Automation:
LioN-Power Hybrid I/O
Modules**

Streamline power and data transfer in one space-saving module with fewer connectors. Hybrid connectivity integrates Industrial Ethernet protocols and peripheral voltage into a single 8-pole cable.



Unlike traditional I/O modules with two ports for data and two ports for power, Hybrid I/O modules combine data and power in one connector for a more compact device.

- **Faster installation** – cut installation times significantly thanks to one small interface that combines data and power with up to 2x 6 amps.
- **Innovative** – enhance your connectivity with the world's first I/O module that provides multiprotocol support in combination with M12 hybrid technology.
- **Multipurpose** – gain flexibility with IO-Link master functionality that enables you to configure every port as DI, DO or IO-Link to meet your needs.

The growth of Industry 4.0 and the Industrial Internet of Things (IIoT) has increased the need for miniaturized and weight-efficient connectivity solutions that have higher performance capabilities.

Lumberg Automation brings you the perfect solution: the world's first M12 hybrid modules that provide powerful multiprotocol 8-port IO-Link master support in an extremely compact and lightweight design.

Applications

The modules' compact and lightweight design is especially well-suited for tight spaces and smaller machines. Plus, these features make the hybrid I/O modules ideal for any type of moving application, such as robotic arms.

Your Benefits

LioN-Power Hybrid I/O Modules in combination with the M12 hybrid Y-coding technology reduce the number of cables you need, simplifying your installation and making it easier to replace modules over time. As a result, you have significant time savings and reduced material costs.

With fewer cables, you reduce sources of installation errors and bring efficient order to cable trays, especially helpful for drag-chain applications. Reduced cabling also minimizes the space requirements in the machine itself, giving machine builders more flexible design options.

In addition, our T-splitter with M12 hybrid to D-coded Ethernet and L-coder power supply provides seamless integration in already existing LioN-Power applications.

Multi-PROTOCOL

EtherNet/IP

IO-Link



Benefits at a Glance

- Achieve one-cable automation with a single M12 hybrid connector that combines power and data transmission
- Be global-ready with UL 61010-1 approval and multiprotocol support for PROFINET and EtherNet/IP
- Meet multiple needs with a variety of IO-Link port operation modes, including standard digital input, digital output or IO-Link
- Use with smart sensor and smart actuators thanks to Class A and Class B ports
- Easily configure IO-Link devices through the embedded webserver or the IO-Link Device Tool with full IODD support*
- Simplify installation – compact design in combination with M8 5-pole I/O connectivity variants
- Withstand harsh conditions – IP65, IP67 and IP69K-rated tolerances for mechanical stress

**See the Lumberg Automation PB00087 for more information on IO-Link.*

Fewer cables reduce both sources of installation errors and installation times significantly.



M12 Y-coded

24 V / 6 A CAT5e, 100 Mbps



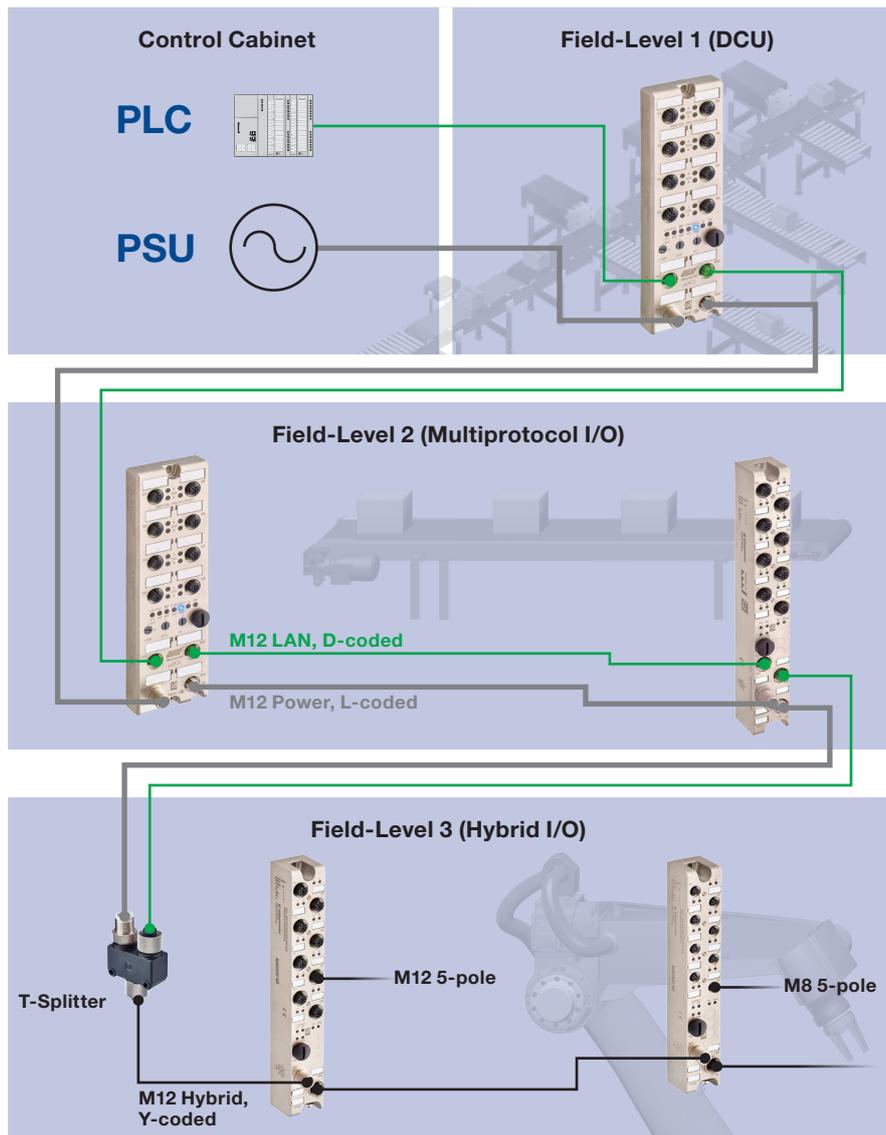
Hybrid

61076-2-113/CD IEC (E)

LioN-Power Hybrid I/O Modules

LioN-P Hybrid I/O Modules are designed for today's applications that require higher performance from smaller devices. As a multi-purpose, multiprotocol IO-Link master, the modules also increase your application flexibility. The M12 hybrid connectors' innovative technology combines reliable power and data transmission while meeting industry Y-coding standards according to IEC 61076-2-113.

These modules are 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.





LionN-Power Hybrid I/O Modules

Technical Information

| Product Description | | |
|--|---|---|
| Type | 0980 ESL 1x9-331 | 0980 ESL 1x9-332 |
| |  |  |
| Description | M12 8-pole Y-coded power supply M12 5-pole I/O connectors 30 mm housing | M12 8-pole Y-coded power supply M8 5-pole I/O connectors 30 mm housing |
| Technical Data | | |
| Protection Degree | IP65, IP67, IP69K (only if mounted and locked in combination with Hirschmann/Lumberg connector) | |
| Ambient Temperature (Operation) | -20°C to +70°C | |
| Dimensions (W x H x D) | 30 x 43 x 204 (mm) | 30 x 43 x 183 (mm) |
| Weight | 448 g | 413 g |
| Housing Material | Metal, Zinc Die-cast | |
| Bus System | | |
| Protocol | 0980 ESL 109-33x: PROFINET 0980 ESL 199-33x: PROFINET & EtherNet/IP | |
| Connection | M12 Hybrid, 8-pole, Y-coded | |
| Transmission Rate | Fast Ethernet (100 Mbit/s), Full Duplex | |
| Rotary Address Switches | 0980 ESL 109-33x: No 0980 ESL 199-33x: Yes | |
| Power Supply | | |
| Nominal Voltage | 24 V DC (SELV/PELV) | |
| Nominal Voltage Range | 18 to 30 V DC | |
| Connection | M12 Hybrid, 8-pole, Y-coded | |
| Current Carrying Capacity of Connector | 6 A | |
| Current Consumption (typ.) | 180 mA (+/-20% at 24 V DC) | |
| IO-Link Master Channels | | |
| Number of Channels | 8 | |
| Connection | M12, 5-pole, A-coded | M8, 5-pole, B-coded |
| Number of A Ports (IOL) | 4 (X1 to X4) | |
| Number of B Ports (IOL) | 4 (X5 to X8) | |
| Nominal Voltage (IOL) | 24 V DC via US (system power supply) | |
| Nominal Current C/Q (Pin 4) | 500 mA | |
| Nominal Current L+/- (Pin 1 and 3) | 500 mA | |
| Nominal Current Uaux (Pin 2, B Ports) | max. 4 A per module | |
| Input Channels | | |
| Number of Channels | max. 12, 4 x (Pin 2, fixed) + 8 x (Pin 4, configurable) | |
| Connection | M12, 5-pole, A-coded | M8, 5-pole, B-coded |
| Channel Type | Type 1 acc. to IEC 61131-2 | |
| Nominal Voltage | 24 V DC via US (system power supply) | |
| Sensor Current Supply | 500 mA per Port via L+/-L | |
| Sensor Type | PNP | |
| Output Channels | | |
| Number of Channels | max. 8 (Pin 4, configurable) | |
| Connection | M12, 5-pole, A-coded | M8, 5-pole, B-coded |
| Channel Type | p-switching | |
| Nominal Voltage | 24 V DC via Uaux (actuator power supply) | |
| Output Current per Channel | max. 500 mA (Pin 4) | |
| Output Current per Module | max. 9 A | |
| Protective Circuit | Electronically: Overload protection, short-circuit protection | |
| Galvanically Isolated | No | |

| Type | 0980 ESL 1x9-331 | 0980 ESL 1x9-332 |
|---|---|---|
| Power Supply | M12 Hybrid | M12 Hybrid |
| I/O Connection | M12 5-pole | M8 5-pole |
| |  |  |
|  | 0980 ESL 109-331 | 0980 ESL 109-332 |
| | 934862001 | 934840001 |
|  | 0980 ESL 199-331 | 0980 ESL 199-332 |
| | 934964001 | 934964002 |



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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