BELDEN
SENDING ALL THE RIGHT SIGNALS

# I/O Systems

## Industrial Connectivity Solutions

lumbergautomation
A BELDEN BRAND

- Distributed Control Units
- IO-Link Masters
- IO-Link Hubs
- Multiprotocol I/O
- Single Protocol I/O
- Passive Distribution Boxes
- Accessories

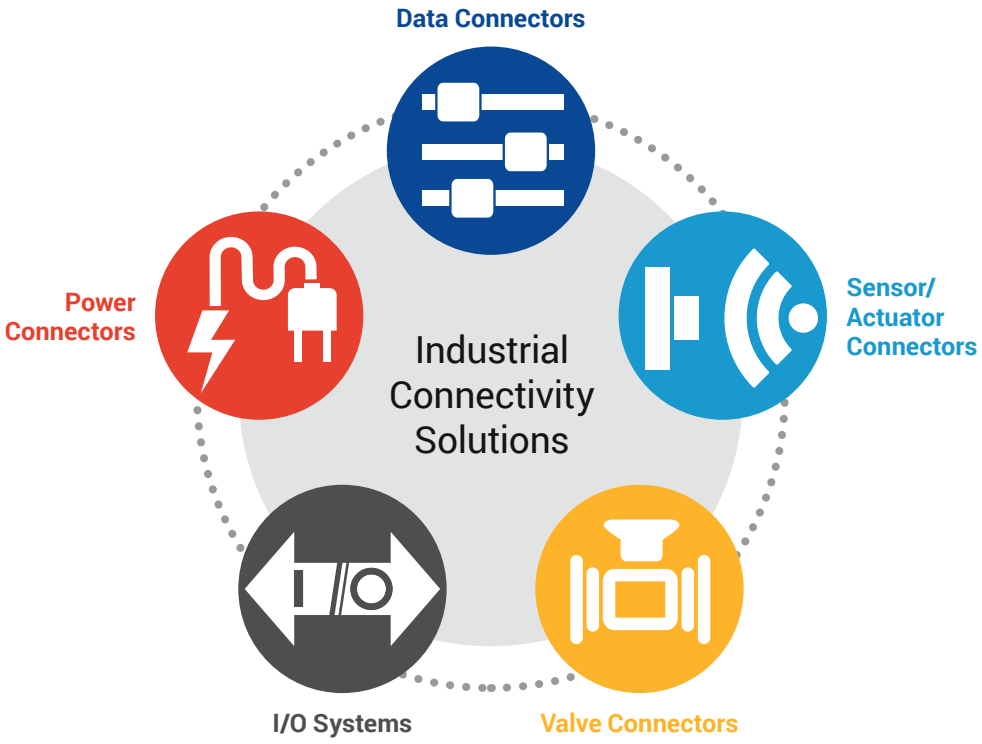
Be certain.
Belden.

# Industrial Connectivity Solutions from Belden

Founded in 1902, Belden's long-term proven solutions are in reliable operation worldwide. Our two leading brands – Hirschmann and Lumberg Automation – combine proven experience with innovation. And a focus on customer needs has made us the global leader in high-quality, end-to-end signal transmissions.

Developed with ease of use in mind, our industrial connectivity solutions are especially designed to stand up to surroundings characterized by dust, water and heavy vibrations.

Whether you want to transfer power, data, signals or all combined in the form of an intelligent I/O system, our diversified product portfolio offers you the right solution for every application.



# I/O Systems

When it comes to intelligent and reliable data transmission, a flexible and cost-effective I/O system is essential. The choice of an appropriate I/O module depends on the nature of the application as well as on your specific requirements.

Ranging from passive distribution boxes to high performance fieldbus-independent modules, the Lumberg Automation I/O systems portfolio offers a broad variety of solutions to meet your individual needs.

## Table of Contents



## A Reliable Partner Who Understands Your Industry

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# Product Overview

## Active I/O Modules

| Type | LioN-P (Slim) | LioN-P | LioN-R | LioN-M |
|---|---|---|---|---|
| |  |  |  |  |
| **General Data** | | | | |
| **Housing** | Metal, Zinc die-cast | Metal, Zinc die-cast | Metal, Zinc die-cast | Plastic, PBT |
| **Potted Housing** | Yes | Yes | Yes | No |
| **Dimensions (W)** | 30 mm | 60 mm | 60 mm | 60 mm |
| **Ambient Temperatur (Operation)** | -20 °C to +70 °C | -20 °C to +70 °C | -10 °C to +60 °C | -10 °C to +60 °C |
| **Protection Degree** | IP65/IP67/IP69K | IP65/IP67/IP69K | IP65/IP67 | IP67 |
| **Bus Systems/Protocols** | | | | |
| **EtherCAT Slave** | | ● | | |
| **EtherNet/IP Device** | ● | ● | ● | ● |
| **PROFINET Device** | ● | ● | ● | ● |
| **Multiprotocol Support** | ● | ● | | |
| **IO-Link Master** | ● | ● | | |
| **Available I/O Types** | | | | |
| **Digital Inputs/DI** | | ● | ● | ● |
| **Digital Outputs/DO** | | ● | ● | |
| **Digital In- and Outputs/DI DO** | | ● | ● | |
| **Digital In-/Outputs (Universal)/DIO** | | ● | | ● |
| **IO-Link Masters/IOLM** | ● | ● | | |
| **IO-Link I/O Hubs/IOLD** | | ● | | |
| **I/O Technical Data** | | | | |
| **Digital Inputs: Channel Type** | Type 1 | Type 1 or Type 3 | Type 3 | Type 3 |
| **Digital Inputs: Sensor Current Supply** | max. 500 mA per port | max. 500 mA per port | max. 200 mA per port | max. 200 mA per port |
| **Digital Outputs: Output Current** | max. 500 mA per channel | max. 2 A per channel | max. 1.6 A per channel | max. 1.6 A per channel |
| **Digital Outputs: Galvanic Isolation** | No | Yes, depending on module | Yes, depending on module | No |
| **I/O Connection** | | | | |
| **M8, 5-poles** | ● | | | |
| **M12, 5-poles** | ● | ● | ● | ● |
| **Power Connection** | | | | |
| **7/8" 4-poles** | | | ● (9 A) | ● (9 A) |
| **7/8" 5-poles** | | ● (9 A) | ● (9 A) | ● (9 A) |
| **M12 Power L-coded** | ● (16 A) | ● (16 A) | | |
| **M12 Hybrid Y-coded** | ● (6 A) | | | |

# Product Overview

## Passive Distribution Boxes

| Type | ASB-S | ASB-C | ASB-R | ASB-N |
|---|---|---|---|---|
| |  |  |  |  |
| **General Data** | | | | |
| **Housing** | Plastic, PBT | Plastic, TPU | Metal, Zinc die-cast | Stainless-steel |
| **Potted Housing** | No | No | Yes | Yes |
| **Dimensions (W)** | 30 mm | 30 or 60 mm | 60 mm | 60 mm |
| **Ambient Temperature (Operation)** | -25 °C to +70 °C | -15 °C to +80 °C | -40 °C to +80 °C | -25 °C to +70 °C |
| **Protection Degree** | IP67/NEMA 6P | IP67/NEMA 6P | IP65/IP67 | IP67/IP69K |
| **Electrical Data** | | | | |
| **Nominal Voltage (Range)** | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC |
| **Nominal Current** | max. 1.5 A per port | max. 2 A or 4 A per port | max. 4 A per port | max. 4 A per port |
| **Circuit Logic** | PNP | PNP or NPN | PNP | PNP |
| **Status/Diagnostic Indicators** | Yes, optional | Yes, optional | Yes, optional | Yes |
| **Module Variants with Plug Interface** | | | | |
| **I/O Connection** | M8 | M8 or M12 | M12 | — |
| **I/O Connection Entry Point** | Top entry | Top entry | Top entry | — |
| **I/O Signals per Port** | 1 signal per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port | — |
| **Port Variants** | 4-, 6-, 8- or 10- ports | 4- , 6- or 8-ports | 4- or 8-ports | — |
| **Plug Interface** | M12 | M12 or M23 | M23 | — |
| **Module Variants with Control Cable** | | | | |
| **I/O Connection** | M8 | M8 or M12 | M12 | M12 |
| **I/O Connection Entry Point** | Top entry | Top entry | Top entry | Top or side entry |
| **I/O Signals per Port** | 1 signal per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port |
| **Port Variants** | 4-, 6-, 8- ,10- or 12- ports | 4- , 6- or 8-ports | 4- or 8-ports | 8-ports |
| **Control Cable Material** | PUR | PUR | PUR | PVC |

# Coding Overview

| Coding | | Image Coding | Description | Purpose |
|---|---|---|---|---|
| M8 | M8 A-coding |  | M8 A-coding<br>Available with 3, 4 and 8 poles | Flexible solutions for almost every application including small power applications for servo drives |
| | M8 B-coding |  | M8 B-coding<br>Available with 5 poles | Flexible solutions for almost every application including small power applications for servo drives |
| M12 | M12 A-coding |  | M12 A-coding<br>Available with 3, 4, 5, 8 and 12 poles | Flexible solutions for almost every sensor/actuator application including sensor data transmission |
| | M12 B-coding |  | M12 B-coding<br>Available with 4 or 5 poles | Connection for sensors/actuators and PROFIBUS applications |
| | M12 C-coding |  | M12 C-coding<br>Available with 3, 4 and 5 poles | Connection for sensors/actuators (also known as U-coding) |
| | M12 D-coding |  | M12 D-coding<br>Available with 4 poles | Connection for Industrial Ethernet applications (e.g. PROFINET, EtherNet/IP, EtherCAT, ...) |
| | M12 K-coding |  | M12 K-coding<br>Available with 5 poles | High power connection for field devices, drives, AC motors, frequency inverters and for the Lumberg Automation LioN-Power family |
| | M12 L-coding |  | M12 L-coding<br>Available with 5 poles | |
| | M12 S-coding |  | M12 S-coding<br>Available with 4 poles | |
| | M12 T-coding |  | M12 T-coding<br>Available with 4 poles | |
| | M12 X-coding |  | M12 X-coding<br>Available with 8 poles | Connector for Industrial Ethernet (10 Gbit/s, Cat6) applications |
| | M12 Y-coding |  | M12 Y-coding<br>Available with 4 + 2 x 2 poles | Hybrid connector for automation industry |
| 7/8" | 7/8" |  | 7/8"<br>Available with 2, 3, 4 and 5 poles | Power connection for rough environments such as mining, automotive, machine building or subsea technologies |
| M23 | M23 |  | M23<br>Available with 12 and 19 poles | Power and signal transmission for engines, controls or drives such as lathe- or milling-machines |

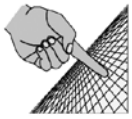
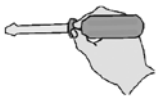
# Cable Material Comparison

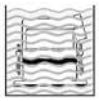
| Material | High Temp | Low Temp | Flexibility | UV-Rays | Chemicals | Oil |
|---|---|---|---|---|---|---|
| PUR | ●●●● | ●●●○ | ●●●○ | ●●●○ | ●●●● | ●●●○ |
| PVC | ●●○○ | ●●○○ | ●●○○ | ●●●○ | ●●●○ | ●●○○ |
| TPE | ●●●○ | ●●●● | ●●●● | ●●○○ | ●●○○ | ●●●○ |

●○○○ = Poor ●●○○ = Fair ●●●○ = Good ●●●● = Excellent

Please request datasheet for more detailed information

# IP Code

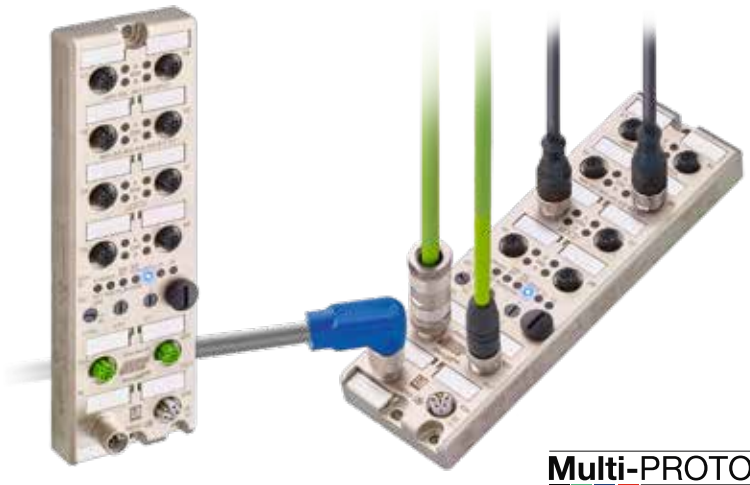
| Index | | Degree of Protection |
|---|---|---|
| 0 |  | No protection against accidental contact, no protection against solid foreign bodies |
| 1 |  | Protection against contact with any large area by hand and against solid foreign bodies with Ø >50 mm |
| 2 |  | Protection against contact with the fingers, protection against solid foreign bodies with Ø >12 mm |
| 3 |  | Protection against tools, wires or similar objects with Ø >2.5 mm, protection against solid foreign bodies with Ø >2.5 mm |
| 4 |  | Just like 3 except for the size difference of Ø >1 mm |
| 5 |  | Full protection against contact, protection against interior injurious dust deposits |
| 6 |  | Total protection against contact, protection against penetration of dust |

| Index | | Degree of Protection |
|---|---|---|
| 0 | | No protection against water |
| 1 |  | Protection against vertical water drops |
| 2 |   | Protection against water drops (up to a 15° angle) |
| 3 |   | Protection against diagonal water drops (up to a 60° angle) |
| 4 |  | Protection against splashed water from all directions |
| 5 |  | Protection against water (out of a nozzle) from all directions |
| 6 |  | Protection against water penetration during temporary flooding |
| 7 |  | Protection against temporary submersion in water |
| 8 |  | Protection against permanent submersion in water |
| 9K |  | Protection against water from high-pressure/steam jet cleaners |

# LioN-Power
# Distributed Control Units

## World‘s First Multiprotocol I/O Module with PLC Functionality

DCUs combine the benefits of a field-level (IP67) I/O module and a programmable logic controller (PLC) into one device for easy, customized performance of automation functions. Performs simple logical operations of more complex control systems, all without a higher-level PLC.



Multi-PROTOCOL
PROFINET INDUSTRIAL ETHERNET
EtherNet/IP
EtherCAT

## The Benefits

**Improve overall automation security** through integrated intelligence to ensure control applications can run, even if there is a PLC failure

**Replace modules faster** – by using the universal channels as digital input or digital output, without any configuration necessary

**Simplify machine transparency** – by transforming fieldbus machines into Ethernet-ready devices that can work across a variety of protocols

## Markets & Applications

- Material Handling/Packaging
- Machine Building
- Automation
- Automotive
- Food & Beverage Manufacturing[1)]
- Robotic Machinery

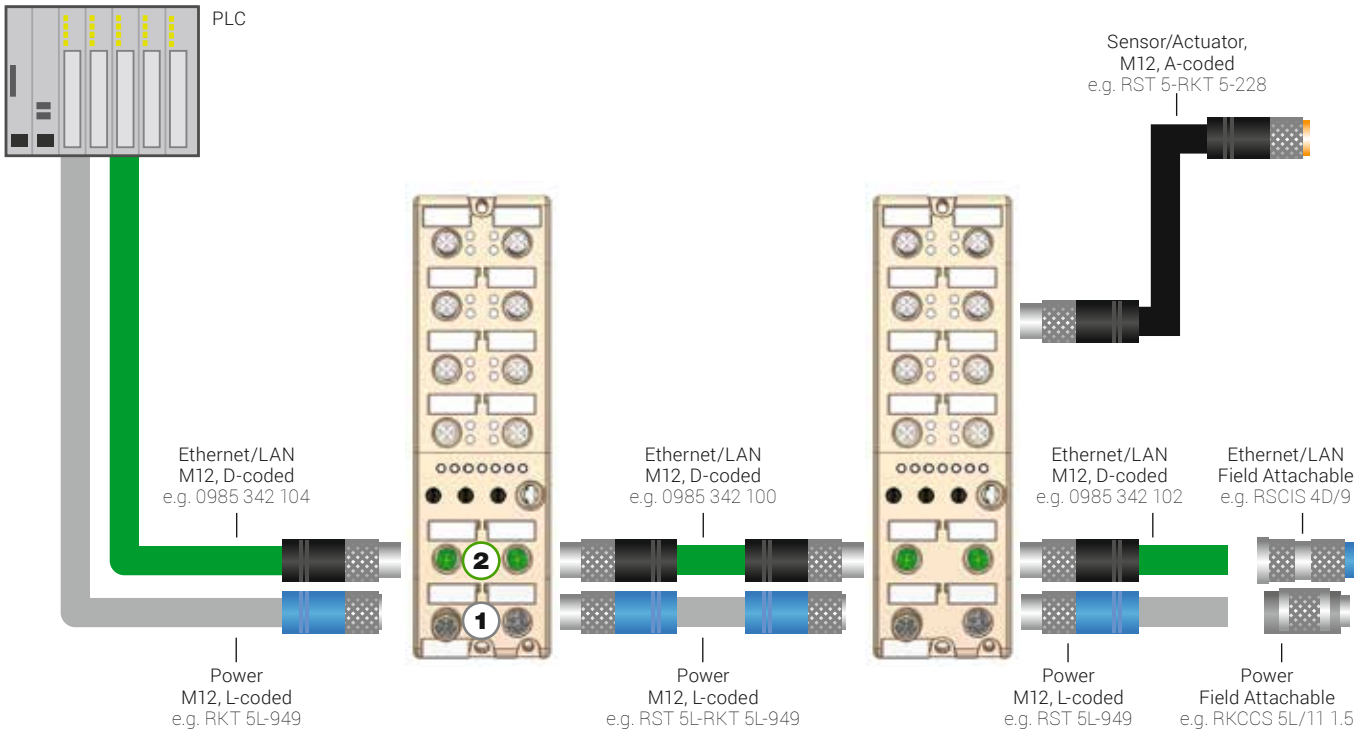
1) No direct contact with food

# Technical Information

| Type | 8DI 8DO | 16DIO |
|---|---|---|
| |  |  |
| Order Designation | 0980 ESL 393-121-DCU1 | 0980 ESL 390-121-DCU1 |
| Product Description | LioN-P, Distributed Control Unit, LDmicro Programmable (Ladder), Multiprotocol (PROFINET, EtherNet/IP and EtherCAT) I/O device, industrial metal housing, 60 mm, up to IP69K, 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 M12 L-coded power supply connection, 5-poles | LioN-P, Distributed Control Unit, LDmicro Programmable (Ladder), Multiprotocol (PROFINET, EtherNet/IP and EtherCAT) I/O device, industrial metal housing, 60 mm, up to IP69K, 16 digital in-/output channels (universal I/O) (2 A), 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | |
| Housing | Metal, zinc die-cast, potted | |
| Dimensions (W x H x D) | 60 mm x 31 mm x 200 mm | |
| Weight | ca. 500 g | |
| Ambient Temperature | -20 °C to +70 °C (Operation) | |
| Protection Degree | IP65, IP67, IP69K[1)] | |
| Shock/Vibration | 50 g/15 g | |
| **Power Supply** | 1 | |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | |
| Connection | 2 x M12, L-coded, 5-poles, up to 2 x 16 A | |
| Current Consumption | typ. 120 mA (at 24 V DC) | |
| **Control System** | | |
| Programming | Programming via LDmicro in Ladder Logic (LAD) | |
| Program Deployment | via Webserver/HTTP | |
| Processor | 200 MHz RISC CPU | |
| Performance | DCU cycle time of avg. 10 ms | |
| Program Memory | max. 99 Rungs/99 Bit Variables/99 Integer Variables | |
| Flash Memory | 16 MB | |
| Operation Modes | Slave I/O, Standalone DCU mode, mixed DCU/PLC mode | |
| **Bus System** | 2 | |
| Protocol | Multiprotocol (PROFINET, EtherNet/IP and EtherCAT) | |
| Connection | 2 x M12, D-coded, 4-poles | |
| PROFINET Features | PROFINET V2.3 (CC-C), Netload Class III, FSU, MRP | |
| EtherNet/IP Features | EtherNet/IP acc. to CIP Edition V3.11, EIP Adaption of CIP V1.12, DLR, Quick Connect | |
| EtherCAT Features | EtherCAT IO acc. to ETG.1000 V1.2, auto-increment and fixed addressing, CoE, EoE, FoE | |
| **On-Board I/O** | | |
| I/O Function | 8 digital inputs and 8 digital outputs, fixed configuration | 16 digital in-/outputs (DIO), universal I/O option per channel |
| Connection | 8 x M12, A-coded, 5-poles | |
| DI Channel Type | Type 3 acc. To IEC 61131-2, PNP (typ. 5 mA nominal input current) | |
| Sensor Current Supply | max. 200 mA per port | max. 500 mA per port |
| DO Output Current | max. 2 A per channel | |
| Galv. Isolated Outputs | Yes, all outputs | No |
| Protective Circuit | Electronically: Overload and short-circuit protection | |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide




| 1 Power – L-coded M12 Power, 5-poles | | 2 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|
|  | **Male straight/Female straight**<br>RST 5L-RKT 5L-949/* M<br>Shielded version: RSTS 5L-RKTS 5L-956/*M<br>**Male angled/Female angled**<br>RSWT 5L-RKWT 5L-949/* M<br>Shielded version: RSWTS 5L-RKWTS 5L-956/*M |  | **Male straight/Male straight**<br>0985 342 100/* M<br>**Male angled/Male angled**<br>0985 342 132/* M<br>**Male angled/Male angled**<br>0985 342 131/* M |
|  | **Male straight/Open**<br>RST 5L-949/*M<br>Shielded version: RSTS 5L-956/*M<br>**Male angled/Open**<br>RSWT 5L-949/*M<br>Shielded version: RSWTS 5L-956/*M<br>**Female straight/Open**<br>RKT 5L-949/*M<br>Shielded version: RKTS 5L-956/*M<br>**Female angled/Open**<br>RKWT 5L-949/*M<br>Shielded version: RKWTS 5L-956/*M |  | **Male straight/Open**<br>0985 342 102/* M<br>**Male angled/Open**<br>0985 342 130/* M |
| | |  | **M12-RJ45 Industrial Ethernet data cordset**<br>0985 342 104/* M umspritzt<br>**RJ45-RJ45 Industrial Ethernet data cordset**<br>0985 342 500/* M umspritzt |
|  | **Field attachable – Male straight**<br>Crimp type: RSCCS 5L/11 1.5<br>**Field attachable – Male angled**<br>Crimp type: RSCWCS 5L/11 1.5<br>**Field attachable – Female straight**<br>Crimp type: RKCCS 5L/11 1.5<br>**Field attachable – Female angled**<br>Crimp type: RKCWCS 5L/11 1.5 |  | **Field attachable – Male Straight**<br>Clamping cage: RSCIS 4D/9<br>Spring type: 0986 EMC 102 |
| | |  | **Adapter – M12/RJ45**<br>0981 ENC 100 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Information

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), M12 Power** | | | | | | | | | |
| 934879005 | 0980 ESL 393-121-DCU1 | Multiprotocol | Metal | 60 mm | up to IP69K | 8DI 8DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934879008 | 0980 ESL 390-121-DCU1 | Multiprotocol | Metal | 60 mm | up to IP69K | 16DIO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |

# LioN-Power
# IO-Link Masters: M12 Power

## Intelligent Communication Between Enterprise Resource Planning (ERP) and Sensor Level

As the world's first IO-Link Masters to provide multiprotocol support for PROFINET and EtherNet/IP in combination with the new M12 Power L-coded power supply connection, LioN-Power modules offer a major step forward in the miniaturization and future-proofing for intelligent industrial connectivity.

Multi-PROTOCOL
PROFINET INDUSTRIAL ETHERNET
EtherNet/IP
IO-Link

## The Benefits

Gain flexibility in IO-Link smart device connectivity with **4 x Class A and 4 x Class B ports** as well as multiprotocol support

**Implement preventive maintenance** by transmitting diagnostic data of intelligent IO-Link sensors and actuators before a failure happens

Transmit up to 2 x 16 A per module with the **industry's first IO-Link System with M12 L-coding** power connection

## Markets & Applications

- Process Visualization
- Valve Integration
- Machine Building
- Packaging
- Simplifying analog sensor connections

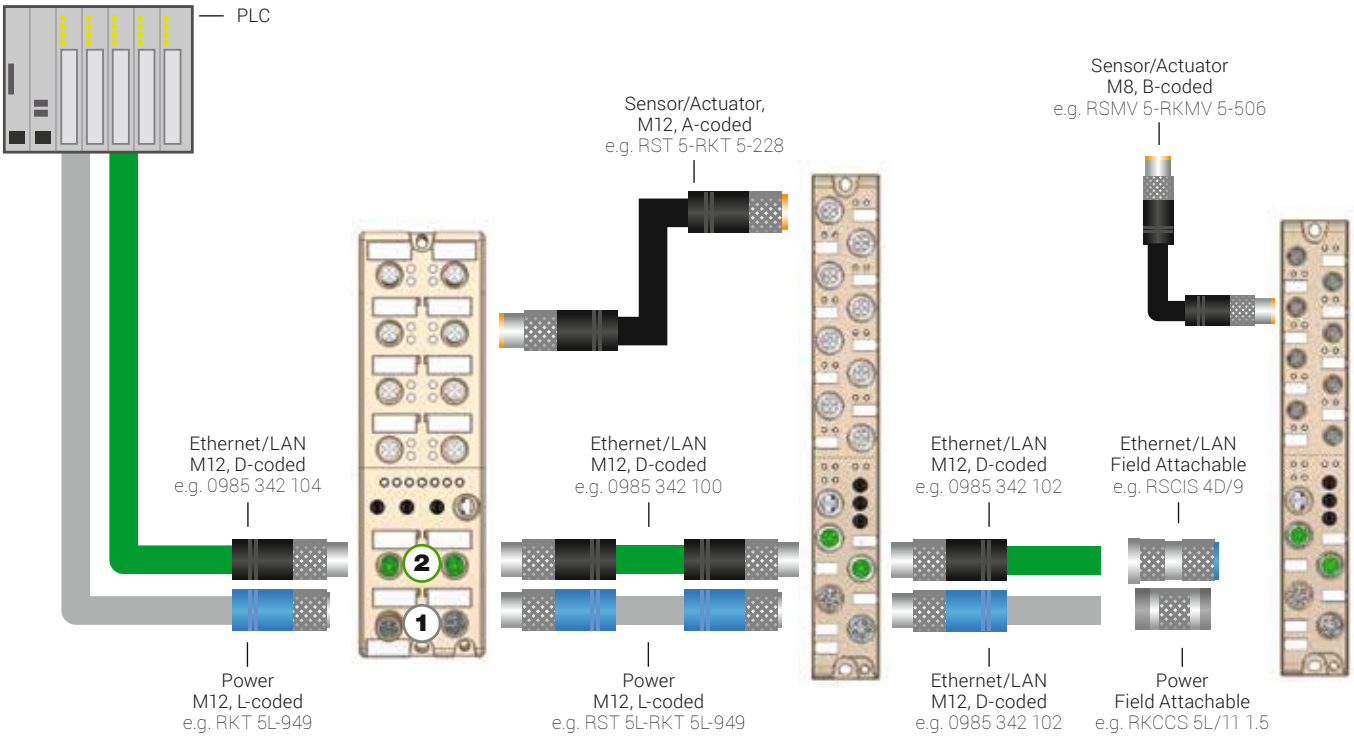
# Technical Information

| Type (IO-Link Master) | 4DI 4DO 8IOL | 4DI 8IOL (M12) | 4DI 8IOL (M8) |
|---|---|---|---|
| |  |  |  |
| Order Designation | 0980 ESL 3x9-121[1)] | 0980 ESL 1x9-121 | 0980 ESL 1x9-122 |
| Product Description | LioN-P, IO-Link Master, PROFINET or Multiprotocol (PROFINET and EtherNet/IP), industrial metal housing, 60 mm, up to IP69K, 4 digital input and 4 digital output channels (2 A) with galvanic isolation and 8 IO-Link Master, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles | LioN-P, IO-Link Master, PROFINET or Multiprotocol (PROFINET and EtherNet/IP), industrial metal housing, 30 mm, up to IP69K, 4 digital input channels and 8 IO-Link Master, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles | LioN-P, IO-Link Master, PROFINET or Multiprotocol (PROFINET and EtherNet/IP), industrial metal housing, 30 mm, up to IP69K, 4 digital input channels and 8 IO-Link Master, 8 x M8 B-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | | |
| Housing | Metal, zinc die-cast, potted | | |
| Dimensions (W x H x D) | 60 mm x 31 mm x 200 mm | 30 mm x 43 mm x 225 mm | 30 mm x 43 mm x 204 mm |
| Weight | ca. 500 g | ca. 480 g | ca. 450 g |
| Ambient Temperature | -20 °C to +70 °C (Operation) | | |
| Protection Degree | IP65, IP67, IP69[2)] | | |
| Shock/Vibration | 50 g/15 g | | |
| **Power Supply** | 1 | | |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | | |
| Connection | 2 x M12, L-coded, 5-poles, up to 2 x 16 A | | |
| Current Consumption | typ. 180 mA (at 24 V DC) | | |
| **IO-Link Master** | | | |
| IO-Link Specification | V1.1 (COM 1 … 3) | | |
| IO-Link Class A Ports | 4 x (X1 to X4) | | |
| IO-Link Class B Ports | 4 x (X5 to X8) | | |
| Nominal Current C/Q (Pin 4) | 500 mA | | |
| Nominal Current 1L+ (Pin 1) | 500 mA | | |
| Nominal Current 2L+ (Pin 2) | max. 2 A per Port | max. 4 A per Module | |
| **Bus System** | 2 | | |
| Protocol | Multiprotocol (PROFINET, EtherNet/IP) | | |
| Connection | 2 x M12, D-coded, 4-poles | | |
| PROFINET Features | PROFINET V2.3 (CC-C), Netload Class II, FSU, MRP, Shared Device | | |
| EtherNet/IP Features | EtherNet/IP acc. to CIP Edition V3.11, EIP Adaption of CIP V1.12, DLR | | |
| **I/O Channels** | | | |
| I/O Function | 4 digital inputs, 4 digital outputs and 8 IO-Link Master (configurable as DI, DO, IOL) | 4 digital inputs and 8 IO-Link Master (configurable as DI, DO, IOL) | |
| Connection | 8 x M12, A-coded, 5-poles | | 8 x M8, B-coded, 5-poles |
| Digital Input Channels | max. 12 (4 x Pin 2 (Class A) and 8 x configurable via Pin 4) | | |
| DI Channel Type | Type 1 acc. To IEC 61131-2, PNP | | |
| Sensor Current Supply | max. 500 mA per port | | |
| DO Output Current | max. 500 mA per channel via C/Q, max. 2 A per channel via 2L+ (Pin 2) | max. 500 mA per channel via C/Q | |
| Galv. Isolated Outputs | Yes, 2L+ (Pin 2) outputs | No | |
| Protective Circuit | Electronically: Overload and short-circuit protection | | |

1) Also available as: 0980 ESL 3x8-121 - With extra decoupling of Pin 2L+/Uaux with series diode against power feedback from L+ for maximum security. Nominal current of 2L+ (Pin 2) is limited to 1.6 A due to protective circuit.

2) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide




| 1 Power – L-coded M12 Power, 5-poles | | 2 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|
|  | **Male straight/Female straight**<br>RST 5L-RKT 5L-949/* M<br>Shielded version: RSTS 5L-RKTS 5L-956/*M<br>**Male angled/Female angled**<br>RSWT 5L-RKWT 5L-949/* M<br>Shielded version: RSWTS 5L-RKWTS 5L-956/*M |  | **Male straight/Male straight**<br>0985 342 100/* M<br>**Male straight/Male angled**<br>0985 342 132/* M<br>**Male angled/Male angled**<br>0985 342 131/* M |
|  | **Male straight/Open**<br>RST 5L-949/*M<br>Shielded version: RSTS 5L-956/*M<br>**Male angled/Open**<br>RSWT 5L-949/*M<br>Shielded version: RSWTS 5L-956/*M<br>**Female straight/Open**<br>RKT 5L-949/*M<br>Shielded version: RKTS 5L-956/*M<br>**Female angled/Open**<br>RKWT 5L-949/*M<br>Shielded version: RKWTS 5L-956/*M |  | **Male straight/Open**<br>0985 342 102/* M<br>**Male angled/Open**<br>0985 342 130/* M |
| | |  | **M12-RJ45 Industrial Ethernet data cordset**<br>0985 342 104/* M umspritzt<br>**RJ45-RJ45 Industrial Ethernet data cordset**<br>0985 342 500/* M umspritzt |
|  | **Field attachable – Male straight**<br>Crimp type: RSCCS 5L/11 1.5<br>**Field attachable – Male angled**<br>Crimp type: RSCWCS 5L/11 1.5<br>**Field attachable – Female straight**<br>Crimp type: RKCCS 5L/11 1.5<br>**Field attachable – Female angled**<br>Crimp type: RKCWCS 5L/11 1.5 |  | **Field attachable – Male Straight**<br>Clamping cage: RSCIS 4D/9<br>Spring type: 0986 EMC 102 |
| | |  | **Adapter – M12/RJ45**<br>0981 ENC 100 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Overview

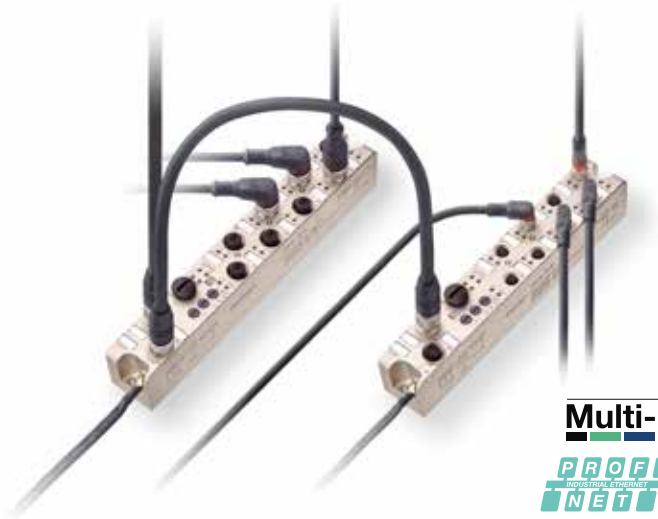
| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **IO-Link Master, PROFINET, M12 Power** | | | | | | | | | |
| 934861001 | 0980 ESL 109-121 | PROFINET | Metal | 30 mm | up to IP69K | 4DI 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934857001 | 0980 ESL 109-122 | PROFINET | Metal | 30 mm | up to IP69K | 4DI 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M8, 5-poles |
| 934878004 | 0980 ESL 309-121 | PROFINET | Metal | 60 mm | up to IP69K | 4DI 4DO 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934878005 | 0980 ESL 308-121[1)] | PROFINET | Metal | 60 mm | up to IP69K | 4DI 4DO 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| **IO-Link Master, Multiprotocol (PROFINET and EtherNet/IP), M12 Power** | | | | | | | | | |
| 934964004 | 0980 ESL 199-121 | Multiprotocol | Metal | 30 mm | up to IP69K | 4DI 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934964003 | 0980 ESL 199-122 | Multiprotocol | Metal | 30 mm | up to IP69K | 4DI 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M8, 5-poles |
| 934879004 | 0980 ESL 399-121 | Multiprotocol | Metal | 60 mm | up to IP69K | 4DI 4DO 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934879009 | 0980 ESL 398-121[1)] | Multiprotocol | Metal | 60 mm | up to IP69K | 4DI 4DO 8IOL | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |

1) Also available as: 0980 ESL 398-121 - With extra decoupling of Pin 2L+/Uaux with series diode against power feedback from L+ for maximum security. Nominal current of 2L+ (Pin 2) is limited to 1.6 A due to protective circuit.

# LioN-Power
# IO-Link Masters: M12 Hybrid

## Streamline Power and Fast Ethernet Data in One Space-saving Module

Unlike traditional IO-Link Masters with two ports for data and two ports for power, M12 Hybrid IO-Link Masters combine data and power in one connector for a more compact device. This is possible with the standardized M12 Hybrid Y-coding according to IEC 61076-2-113.



Multi-PROTOCOL

PROFINET INDUSTRIAL ETHERNET · EtherNet/IP · IO-Link

## The Benefits

**Faster installation** – minimize installation times significantly thanks to one small interface that combines data and power with up to 2 x 6 amps.

**Reduce sources of installation errors** – and efficiently use your limited installation space for machine automation

**Bring efficient order to cable trays** – especially helpful for drag-chain applications

## Markets & Applications

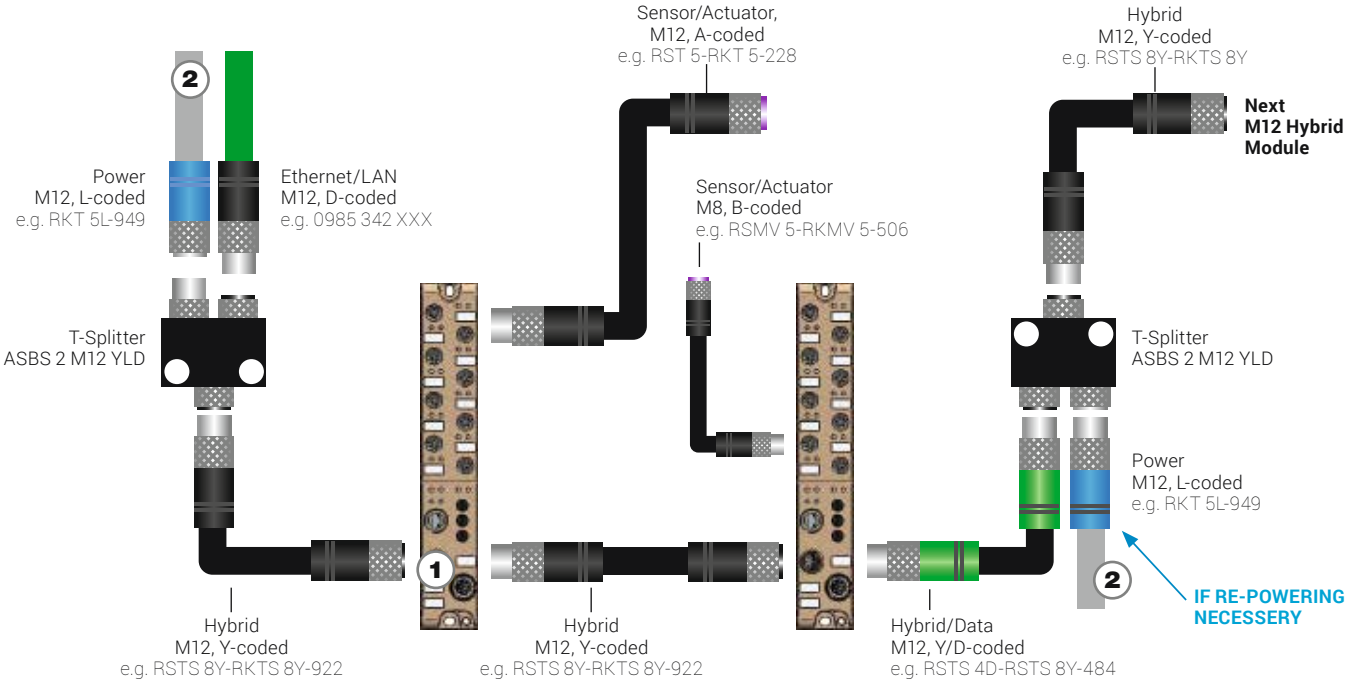
- Robotics
- Machine Tools
- Pick and Place
- Process Visualization
- Valve Integration
- Machine Building
- Packaging

# Technical Information

| Type | 4DI 8IOL (M12) | 4DI 8IOL (M8) |
|---|---|---|
| |  |  |
| Order Designation | 0980 ESL 199-331 | 0980 ESL 199-332 |
| Product Description | LioN-P, IO-Link Master, PROFINET or Multiprotocol (PROFINET and EtherNet/IP), industrial metal housing, 30 mm, up to IP69K, 4 digital input and 8 IO-Link Master, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 Y-coded bus and power supply connection, 8-poles | LioN-P, IO-Link Master, PROFINET or Multiprotocol (PROFINET and EtherNet/IP), industrial metal housing, 30 mm, up to IP69K, 4 digital input and 8 IO-Link Master, 8 x M8 B-coded I/O connection, 5-poles, 2 x M12 Y-coded bus and power supply connection, 8-poles |
| **General Data** | | |
| Housing | Metal, zinc die-cast, potted | |
| Dimensions (W x H x D) | 30 mm x 43 mm x 204 mm | 30 mm x 43 mm x 183 mm |
| Weight | ca. 448 g | ca. 413 g |
| Ambient Temperature | -20 °C to +70 °C (Operation) | |
| Protection Degree | IP65, IP67, IP69K[1)] | |
| Shock/Vibration | 50 g/15 g | |
| **Power Supply** | 1 | |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | |
| Connection | 2 x M12, Y-coded, 8-poles, up to 2 x 6 A | |
| Current Consumption | typ . 180 mA (at 24 V DC) | |
| **IO-Link Master** | | |
| IO-Link Specification | V1.1 (COM 1 ... 3) | |
| IO-Link Class A-Ports | 4 x (X1 to X4) | |
| IO-Link Class B-Port | 4 x (X5 to X8) | |
| Nominal Current C/Q (Pin 4) | 500 mA | |
| Nominal Current 1L+ (Pin 1) | 500 mA | |
| Nominal Current 2L+ (Pin 2) | max. 4 A per Module | |
| **Bus System** | 1 | |
| Protocol | Multiprotocol (PROFINET, EtherNet/IP) | |
| Connection | 2 x M12, Y-coded, 8-poles | |
| PROFINET Features | PROFINET V2.3 (CC-C), Netload Class II, FSU, MRP, Shared Device | |
| EtherNet/IP Features | EtherNet/IP acc. to CIP Edition V3.11, EIP Adaption of CIP V1.12, DLR | |
| **I/O Channels** | | |
| I/O Function | 4 digital inputs and 8 IO-Link Master (configurable as DI, DO, IOL) | |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M8, B-coded, 5-poles |
| Digital Input Channels | max. 12 (4 x Pin 2 (Class A) and 8 x configurable via Pin 4) | |
| DI Channel Type | Type 1 acc. To IEC 61131-2, PNP | |
| Sensor Current Supply | max. 500 mA per port | |
| DO Output Current | max. 500 mA per channel via C/Q | |
| Galv. Isolated Outputs | No | |
| Protective Circuit | Electronically: Overload and short-circuit protection | |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide

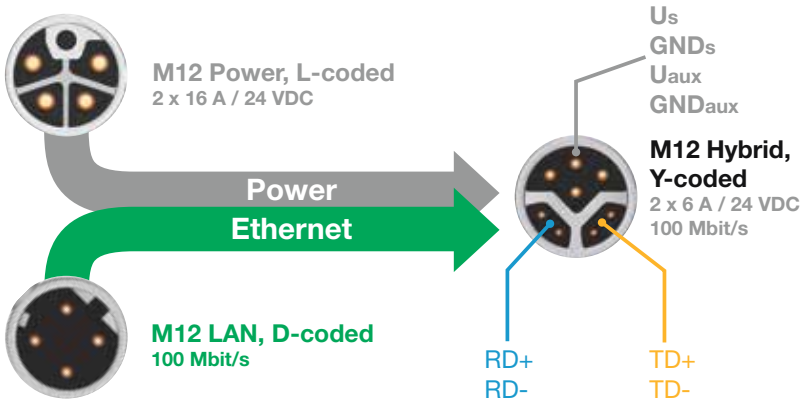


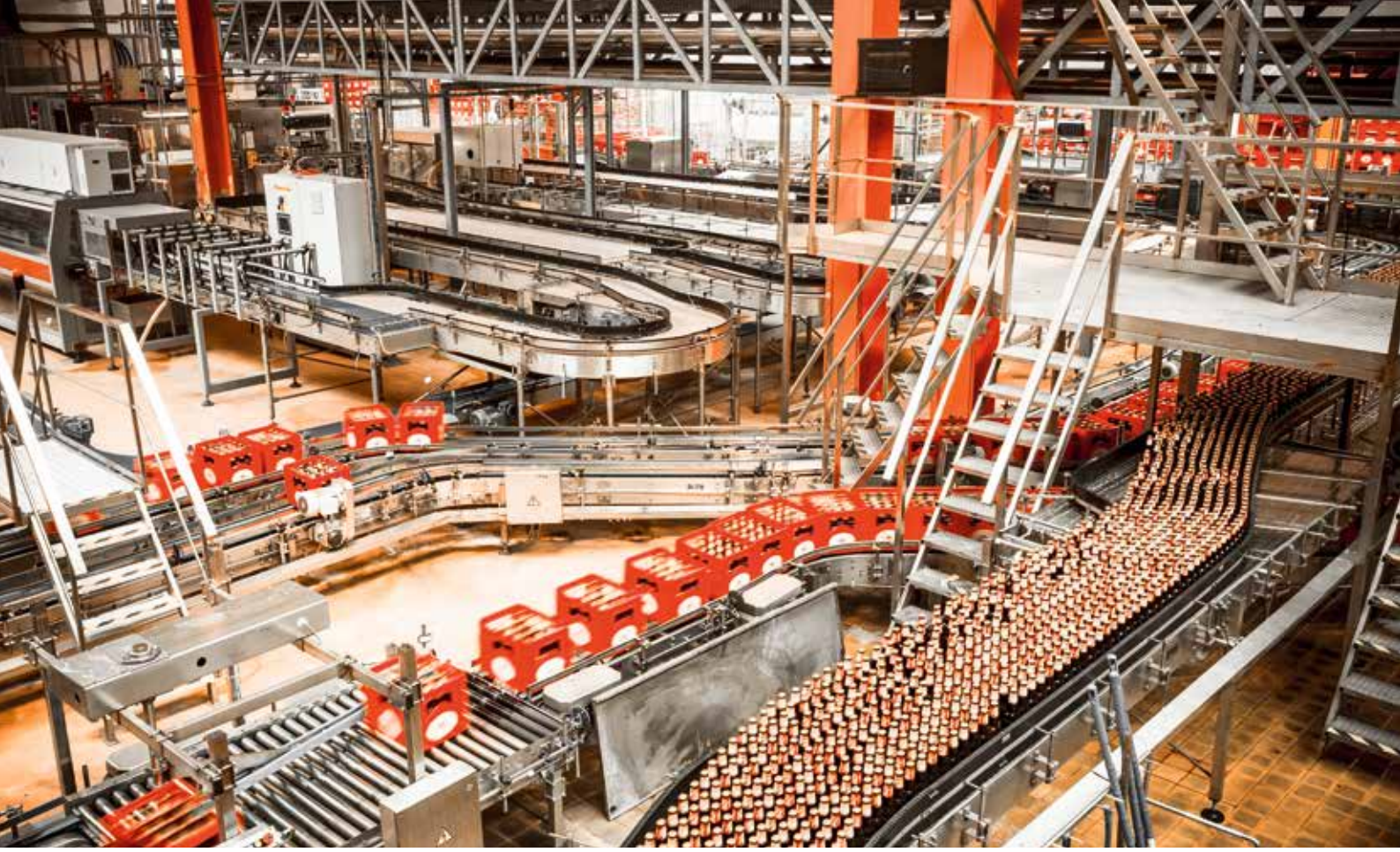

| 1 Hybrid – Y-coded M12 Power, 8-poles | | 2 Power – L-coded M12 Power, 5-poles | |
|---|---|---|---|
|  | **Male straight/Female straight, Shielded**<br>RSTS 8Y-RKTS 8Y-922/* M |  | **Male straight/Female straight**<br>RST 5L-RKT 5L-949/* M<br>Shielded version: RSTS 5L-RKTS 5L-956/*M<br>**Male angled/Female angled**<br>RSWT 5L-RKWT 5L-949/* M<br>Shielded version: RSWTS 5L-RKWTS 5L-956/*M |
|  | **Male straight/Open, Shielded**<br>RSTS 8Y-922/*M<br>**Female straight/Open, Shielded**<br>RKTS 8Y-922/*M |  | **Male straight/Open**<br>RST 5L-949/*M<br>Shielded version: RSTS 5L-956/*M<br>**Male angled/Open**<br>RSWT 5L-949/*M<br>Shielded version: RSWTS 5L-956/*M<br>**Female straight/Open**<br>RKT 5L-949/*M<br>Shielded version: RKTS 5L-956/*M<br>**Female angled/Open**<br>RKWT 5L-949/*M<br>Shielded version: RKWTS 5L-956/*M |
|  | **Hybrid/Ethernet – M12 Y to M12 D**<br>RSTS 4D-RSTS 8Y-484/* M | | |
|  | **T-Connector – M12 L & M12 D to M12 Y**<br>ASBS 2 M12 YLD |  | **Field attachable – Male straight**<br>Crimp type: RSCCS 5L/11 1.5<br>**Field attachable – Male angled**<br>Crimp type: RSCWCS 5L/11 1.5<br>**Field attachable – Female straight**<br>Crimp type: RKCCS 5L/11 1.5<br>**Field attachable – Female angled**<br>Crimp type: RKCWCS 5L/11 1.5 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **IO-Link Master, PROFINET, M12 Hybrid** | | | | | | | | | |
| 934862001 | 0980 ESL 109-331 | PROFINET | Metal | 30 mm | up to IP69K | 4DI 8IOL | via bus connection | 2 x M12, Y-coded | 8 x M12, A-coded |
| 934840001 | 0980 ESL 109-332 | PROFINET | Metal | 30 mm | up to IP69K | 4DI 8IOL | via bus connection | 2 x M12, Y-coded | 8 x M8, 5-poles |
| **IO-Link Master, Multiprotocol (PROFINET and EtherNet/IP), M12 Hybrid** | | | | | | | | | |
| 934964001 | 0980 ESL 199-331 | Multiprotocol | Metal | 30 mm | up to IP69K | 4DI 8IOL | via bus connection | 2 x M12, Y-coded | 8 x M12, A-coded |
| 934964002 | 0980 ESL 199-332 | Multiprotocol | Metal | 30 mm | up to IP69K | 4DI 8IOL | via bus connection | 2 x M12, Y-coded | 8 x M8, 5-poles |





# LioN-Power
# IO-Link I/O Hubs

## The Most Cost-Effective Active and Standardized Signal Transmission Method

IO-Link I/O Hubs collect up to 16 standard digital signals and transmit them through an IO-Link Master to the controller via the IO-Link protocol. This makes the hubs particularly suitable for applications which have many digital sensors and actuators in a restricted space.

IO-Link

## The Benefits

**Process up to 132 I/O signals** per system by connecting IO-Link I/O Hubs with an IO-Link Master

I/O Hubs will only need **one bus address** (via the Masters) to variably group sensor data within an area of 20 m

You may only need **one A-coded M12 connector** to power the I/O Hub and collect and transmit the I/O data (depending on the I/O Hub selected)

## Markets & Applications

- Passive to Active Hub Upgrade
- Machine Building
- Packaging



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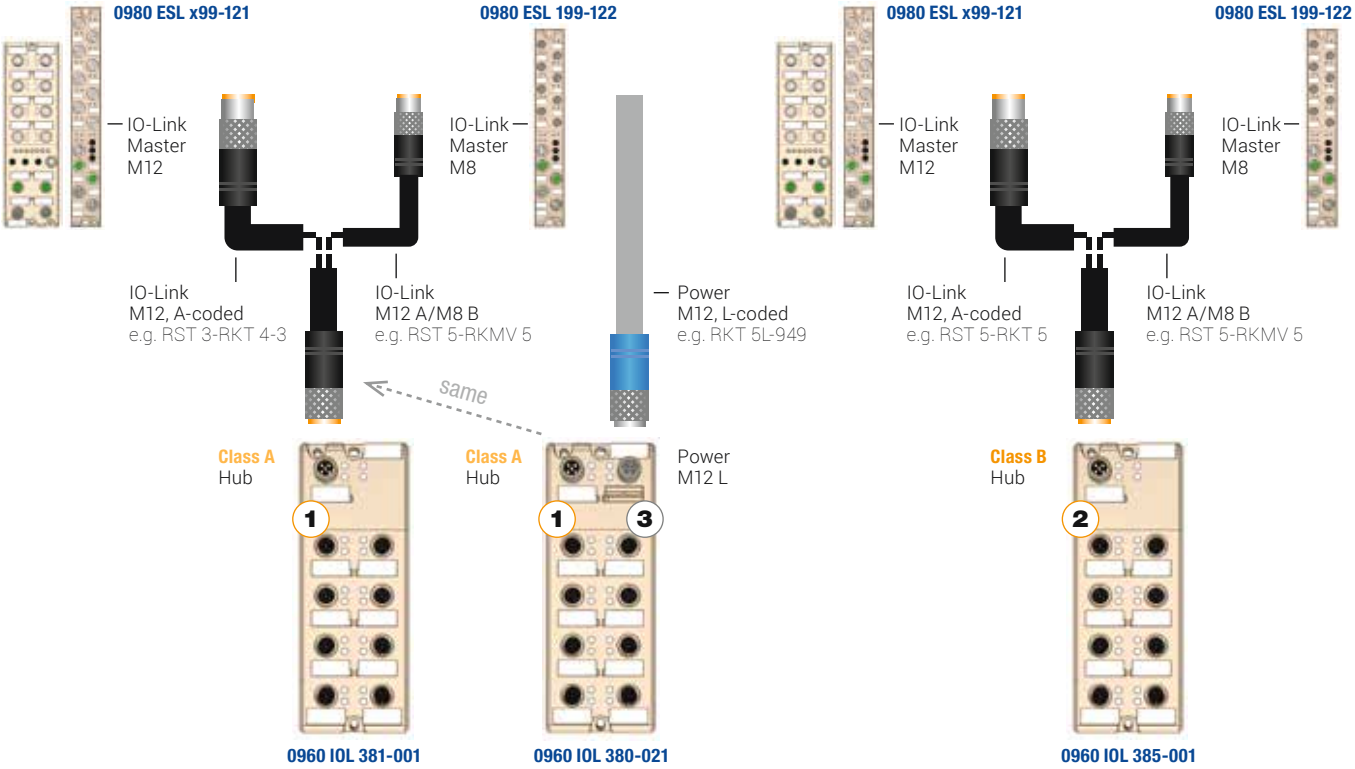
# Technical Information

| Type | 16DI | 10DI 6DO | 16DIO |
|---|---|---|---|
| |  |  |  |
| Order Designation | 0960 IOL 381-001... | 0960 IOL 385-001... | 0960 IOL 380-021... |
| Product Description | LioN-P, IO-Link I/O Hub, IO-Link, industrial metal housing, 60 mm, up to IP69K, 16 digital input channels, 8 x M12 A-coded I/O connection, 5-poles, 1 x M12 A-coded IO-Link Class A connection, 5-poles | LioN-P, IO-Link I/O Hub, IO-Link, industrial metal housing, 60 mm, up to IP69K, 10 digital input and 6 digital output channels (0.5 A) with galvanic isolation, 8 x M12 A-coded I/O connection, 5-poles, 1 x M12 A-coded IO-Link Class B connection, 5-poles | LioN-P, IO-Link I/O Hub, IO-Link, industrial metal housing, 60 mm, up to IP69K, 16 digital in-/output channels (universal I/O) (2 A), 8 x M12 A-coded I/O connection, 5-poles, 1 x M12 L-coded IO-Link Class A connection, 5-poles, 1 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | | |
| Housing | Metal, zinc die-cast, potted | | |
| Dimensions (W x H x D) | 60 mm x 31 mm x 159 mm | | |
| Weight | ca. 280 g | | |
| Ambient Temperature | -20 °C to +70 °C (Operation) | | |
| Protection Degree | IP65, IP67, IP69K[1)] | | |
| Shock/Vibration | 50 g/15 g | | |
| **Power Supply** | 1 | 1 | 3 |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | | |
| Connection | 1 x M12, A-coded, 5-poles | | 1 x M12, A-coded, 5-poles, 1 x M12, L-coded, 5-poles |
| Module Supply Voltage | 1L+ (US), Pin 1/3 | | |
| Sensor Supply Voltage | 1L+ (US), Pin 1/3 | | US via M12, L-coded |
| Actuator Supply Voltage | N/A | 2L+ (Uaux), Pin 2/5 | UL via M12, L-coded |
| Current Consumption | typ. 80 mA (at 24 V DC) | | |
| Galv. Isolated | No | Yes | No |
| **IO-Link** | 1 | 2 | 1 |
| IO-Link Specification | V1.1.2 | | |
| COM Mode | COM 3 | | |
| IO-Link Class | Class A | Class B | Class A |
| Data Storage | Supported | | |
| **Digital Input Channels** | | | |
| Connection | 8 x M12, A-coded, 5-poles | 5 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles |
| Digital Input Channels | 16, fixed | 10, fixed | max. 16, universal I/O |
| DI Channel Type | Type 1 acc. To IEC 61131-2, PNP | | Type 3 acc. To IEC 61131-2, PNP |
| Nominal Input Current | typ. 4.6 mA | | typ. 5.3 mA |
| Sensor Current Supply | max. 700 mA per module<br>see below: IO-Link Master Limitation [2)] | | max. 500 mA per port<br>max. 16 A per hub |
| Supplied by | 1L+ (US) | | M12 Power: Pin 1/3 |
| **Digital Output Channels** | | | |
| Connection | – | 3 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles |
| Digital Output Channels | – | 6, fixed | max. 16, universal I/O |
| DO Output Current | – | max. 500 mA<br>see below: IO-Link Master Limitation [2)] | max. 2 A<br>max. 16 A per hub |
| Supplied by | – | 2L+/Uaux | M12 Power: Pin 2/4 |
| Galv. Isolated Outputs | – | Yes, all outputs | |
| Protective Circuit | – | Electronically: Overload and short-circuit protection | |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

| 2) IO-Link Master Limitation | 0980 ESL 3x8-121 | 0980 ESL 3x9-121 | 0980 ESL 1x9-12x | 0980 ESL 1x9-33x |
|---|---|---|---|---|
| 1L+, max. | max. 500 mA per Port | | | |
| 2L+, max. | max. 1.6 A per Port | max. 2 A per Port | max. 4 A per Module | max. 4 A per Module |

# Connection Guide




| IO-Link | 1 Class A | 2 Class B | 3 Power – L-coded M12 Power, 5-poles | |
|---|---|---|---|---|
|  | **Male straight/Female straight**<br>RST 3-RKT 4-3-224/* M<br>**Male straight/Female angled**<br>RST 3-RKWT 4-3-224/* M | RST 5-RKT 5-228/* M<br>RST 5-RKWT 5-228/* M |  | **Male straight/Female straight**<br>RST 5L-RKT 5L-949/* M<br>Shielded version: RSTS 5L-RKTS 5L-956/*M<br>**Male angled/Female angled**<br>RSWT 5L-RKWT 5L-949/* M<br>Shielded version: RSWTS 5L-RKWTS |
|  | **Male straight/Open**<br>RST 3-224/*M<br>**Male angled/Open**<br>RSWT 3-224/*M<br>**Female straight/Open**<br>RKT 4-3-224/*M<br>**Female angled/Open**<br>RKWT 4-3-224/*M | RST 5-228/* M<br>RSWT 5-228/*M<br>RKT 5-228/* M<br>RKWT 5-228/* M |  | **Male straight/Open**<br>RST 5L-949/*M<br>Shielded version: RSTS 5L-956/*M<br>**Male angled/Open**<br>RSWT 5L-949/*M<br>Shielded version: RSWTS 5L-956/*M<br>**Female straight/Open**<br>RKT 5L-949/*M<br>Shielded version: RKTS 5L-956/*M<br>**Female angled/Open**<br>RKWT 5L-949/*M<br>Shielded version: RKWTS 5L-956/*M |
|  <br>  | **Male straight, Screw Type**<br>SW 15: RSC 3/7<br>SW 19: RSC 3/9<br>**Male straight, SpringType**<br>SW 15: RSCQ 3/7<br>SW 19: RSCQ 3/9<br>**Male angled, Screw Type**<br>SW 15: RSCW 3/7<br>SW 19: RSCQ 3/9<br>**Female straight, Screw Type**<br>SW 15: RKC 4/3/7<br>SW 19: RKC 4/3/9<br>**Female angled, Screw Type**<br>SW 15: RKCW 4/3/7<br>SW 19: RKCW 4/3/9 | RSC 5/7<br>RSC 5/9<br>RSCW 5/7<br>RSCW 5/9<br>RKC 5/7<br>RKC 5/9<br>RKCW 5/7<br>RKCW 5/9 |  <br>  | **Field attachable – Male straight**<br>Crimp type: RSCCS 5L/11 1.5<br>**Field attachable – Male angled**<br>Crimp type: RSCWCS 5L/11 1.5<br>**Field attachable – Female straight**<br>Crimp type: RKCCS 5L/11 1.5<br>**Field attachable – Female angled**<br>Crimp type: RKCWCS 5L/11 1.5 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **IO-Link I/O Hub[1)]** | | | | | | | | | |
| 934992002 | 0960 IOL 381-001 | IO-Link | Metal | 60 mm | up to IP69K | 16DI | via bus connection | 1 x M12, A-coded | 8 x M12, A-coded |
| 935001001 | 0960 IOL 385-001 | IO-Link | Metal | 60 mm | up to IP69K | 10DI 6DO | via bus connection | 1 x M12, A-coded | 8 x M12, A-coded |
| 934994001 | 0960 IOL 380-021 | IO-Link | Metal | 60 mm | up to IP69K | 16DIO | 1 x M12, L-coded | 1 x M12, A-coded | 8 x M12, A-coded |
| **IO-Link I/O Hub, Basic Parameter Set I/O Hubs[2)]** | | | | | | | | | |
| 934992052 | 0960 IOL 381-001-PX0 | IO-Link | Metal | 60 mm | up to IP69K | 16DI | via bus connection | 1 x M12, A-coded | 8 x M12, A-coded |
| 935001052 | 0960 IOL 385-001-PX0 | IO-Link | Metal | 60 mm | up to IP69K | 10DI 6DO | via bus connection | 1 x M12, A-coded | 8 x M12, A-coded |
| 934994052 | 0960 IOL 380-021-PX0 | IO-Link | Metal | 60 mm | up to IP69K | 16DIO | 1 x M12, L-coded | 1 x M12, A-coded | 8 x M12, A-coded |

1) As of November 2018 all our hubs are built according to the common profile specification.

2) Basic Parameter Set I/O hubs are especially designed for use without IODD or any need for configuration/parameterization.
They can be used out of the box and always work in their default settings. Perfectly suited for tool change applications or device exchange.

# LioN-Power
# Multiprotocol I/O: M12 Power

## One Device Supports the Three Dominant Ethernet Protocols

The family of LioN-Power multiprotocol modules offer highly customizable features to deliver fieldbus-independent automation for the leading industrial Ethernet protocols. The modules' M12 power technology offers the highest current rating in the industry – unscaled 2 x 16 amps per module.

Multi-PROTOCOL

PROFINET INDUSTRIAL ETHERNET · EtherNet/IP · EtherCAT

## The Benefits

**Connect more field devices in a daisy-chain** with the industry's only I/O module powerful enough to support 2 x 16 amps

**Streamline your field devices** through the industry's first multi-protocol I/O device for PROFINET, EtherNet/IP and EtherCAT protocols

**Replace modules faster** by using the universal channels as digital input or digital output, without any configuration

## Markets & Applications

- Automation
- Automotive
- Machine Building
- Material Handling/Packaging
- Transportation
- Food & Beverage Manufacturing[1)]

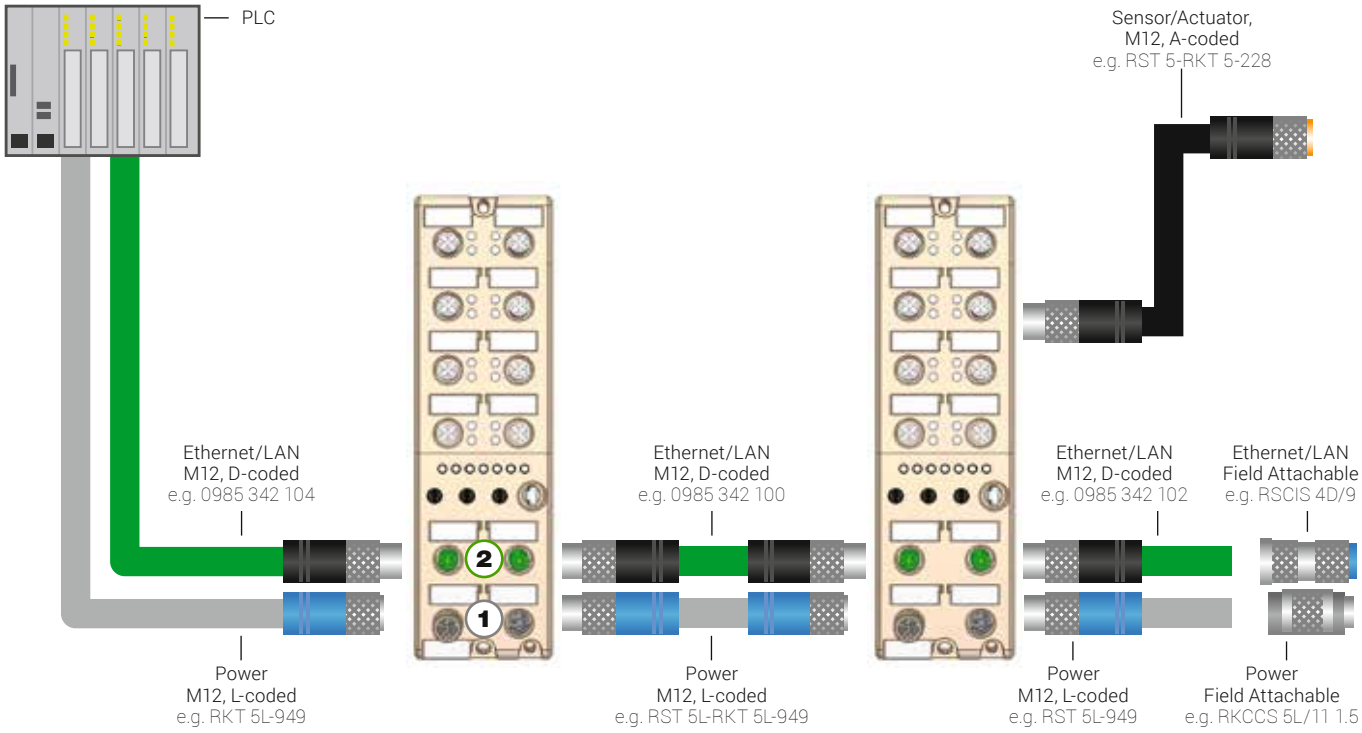
1) No direct contact with food

# Technical Information

| Type | 16DIO | 16DI | 16DO | 8DI 8DO |
|---|---|---|---|---|
| |  |  |  |  |
| Order Designation | 0980 ESL 390-121 | 0980 ESL 391-121 | 0980 ESL 392-121 | 0980 ESL 393-121 |
| Product Description | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP69K, 16 digital in-/output channels (universal I/O) (2 A), 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP69K, 16 digital input channels, 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP69K, 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 M12 L-coded power supply connection, 5-poles | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP69K, 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, w4-poles, 2 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | | | |
| Housing | Metal, zinc die-cast, potted | | | |
| Dimensions (W x H x D) | 60 mm x 31 mm x 200 mm | | | |
| Weight | 500 g | | | |
| Ambient Temperature | -20 °C to +70 °C (Operation) | | | |
| Protection Degree | IP65, IP67, IP69K[1)] | | | |
| Shock/Vibration | 50 g/15 g | | | |
| **Power Supply** | 1 | | | |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | | | |
| Connection | 2 x M12, L-coded, 5-poles, up to 2 x 16 A | | | |
| Current Consumption | typ. 120 mA (at 24 V DC) | | | |
| **Bus System** | 2 | | | |
| Protocol | Multiprotocol (PROFINET, EtherNet/IP and EtherCAT) | | | |
| Connection | 2 x M12, D-coded, 4-poles | | | |
| PROFINET Features | PROFINET V2.3 (CC-C), Netload Class III, FSU, MRP | | | |
| EtherNet/IP Features | EtherNet/IP acc. to CIP Edition V3.11, EIP Adaption of CIP V1.12, DLR, Quick Connect | | | |
| EtherCAT Features | EtherCAT IO acc. to ETG.1000 V1.2, Auto-increment and fixed addressing, CoE, EoE, FoE | | | |
| **Digital Input Channels** | | | | |
| Digital Input Channels | max. 16 (universal I/O) | 16, fixed | - | 8, fixed |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | - | 4 x M12, A-coded, 5-poles |
| DI Channel Type | Type 3 acc. To IEC 61131-2, PNP | Type 3 acc. to IEC 61131-2, PNP | - | Type 3 acc. To IEC 61131-2, PNP |
| Nominal Input Current | typ. 5 mA | typ. 5 mA | - | typ. 5 mA |
| Sensor Current Supply | max. 500 mA per port | max. 200 mA per port | - | max. 200 mA per port |
| **Digital Output Channels** | | | | |
| Digital Output Channels | max. 16 (universal I/O) | - | 16, fixed | 8, fixed |
| Connection | 8 x M12, A-coded, 5-poles | - | 8 x M12, A-coded, 5-poles | 4 x M12, A-coded, 5-poles |
| DO Output Current | max. 2 A per channel | - | max. 2 A per channel | max. 2 A per channel |
| DO Channel Type | p-switching | - | p-switching | p-switching |
| Galv. Isolated Outputs | No | - | Yes, all outputs | Yes, all outputs |
| Protective Circuit | Electronically: Overload and short-circuit protection | - | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide




| 1 Power – L-coded M12 Power, 5-poles | | 2 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|
|  | **Male straight/Female straight**<br>RST 5L-RKT 5L-949/* M<br>Shielded version: RSTS 5L-RKTS 5L-956/*M<br>**Male angled/Female angled**<br>RSWT 5L-RKWT 5L-949/* M<br>Shielded version: RSWTS 5L-RKWTS 5L-956/*M |  | **Male straight/Male straight**<br>0985 342 100/* M<br>**Male angled/Male angled**<br>0985 342 131/* M |
|  | **Male straight/Open**<br>RST 5L-949/*M<br>Shielded version: RSTS 5L-956/*M<br>**Male angled/Open**<br>RSWT 5L-949/*M<br>Shielded version: RSWTS 5L-956/*M<br>**Female straight/Open**<br>RKT 5L-949/*M<br>Shielded version: RKTS 5L-956/*M<br>**Female angled/Open**<br>RKWT 5L-949/*M<br>Shielded version: RKWTS 5L-956/*M |  | **Male straight/Open**<br>0985 342 102/* M<br>**Male angled/Open**<br>0985 342 130/* M |
| | |  | **M12-RJ45 Industrial Ethernet data cordset**<br>0985 342 104/* M umspritzt<br>**RJ45-RJ45 Industrial Ethernet data cordset**<br>0985 342 500/* M umspritzt |
|  | **Field attachable – Male straight**<br>Crimp type: RSCCS 5L/11 1.5<br>**Field attachable – Male angled**<br>Crimp type: RSCWCS 5L/11 1.5<br>**Field attachable – Female straight**<br>Crimp type: RKCCS 5L/11 1.5<br>**Field attachable – Female angled**<br>Crimp type: RKCWCS 5L/11 1.5 |  | **Field attachable – Male Straight**<br>Clamping cage: RSCIS 4D/9<br>Spring type: 0986 EMC 102 |
| | |  | **Adapter – M12/RJ45**<br>0981 ENC 100 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), M12 Power** | | | | | | | | | |
| 934879001 | 0980 ESL 391-121 | Multiprotocol | Metal | 60 mm | up to IP69K | 16DI | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934879002 | 0980 ESL 392-121 | Multiprotocol | Metal | 60 mm | up to IP69K | 16DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934879003 | 0980 ESL 393-121 | Multiprotocol | Metal | 60 mm | up to IP69K | 8DI 8DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934879007 | 0980 ESL 390-121 | Multiprotocol | Metal | 60 mm | up to IP69K | 16DIO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |

# LioN-Power
# Multiprotocol I/O: 7/8" Power

## One Device Supports the Three Dominant Ethernet Protocols

The family of LioN-Power multiprotocol modules offers highly customizable features to deliver fieldbus-independent automation for the leading industrial Ethernet protocols. In addition to having the latest M12 power technology, the modules also offer standard 7/8" power technology.

Multi-PROTOCOL

PROFINET INDUSTRIAL ETHERNET · EtherNet/IP · EtherCAT

## The Benefits

**Straightforward retrofitting/ conversion of existing machines** with LioN-Power multiprotocol modules

**Streamline your field devices** through the industry's first multi-protocol I/O device for PROFINET, EtherNet/IP and EtherCAT protocols

**Replace modules faster** by using the universal channels as digital input or digital output, without any configuration

## Markets & Applications

- Retrofitting
- Automation
- Automotive
- Machine Building
- Material Handling/Packaging
- Transportation
- Food & Beverage Manufacturing[1)]

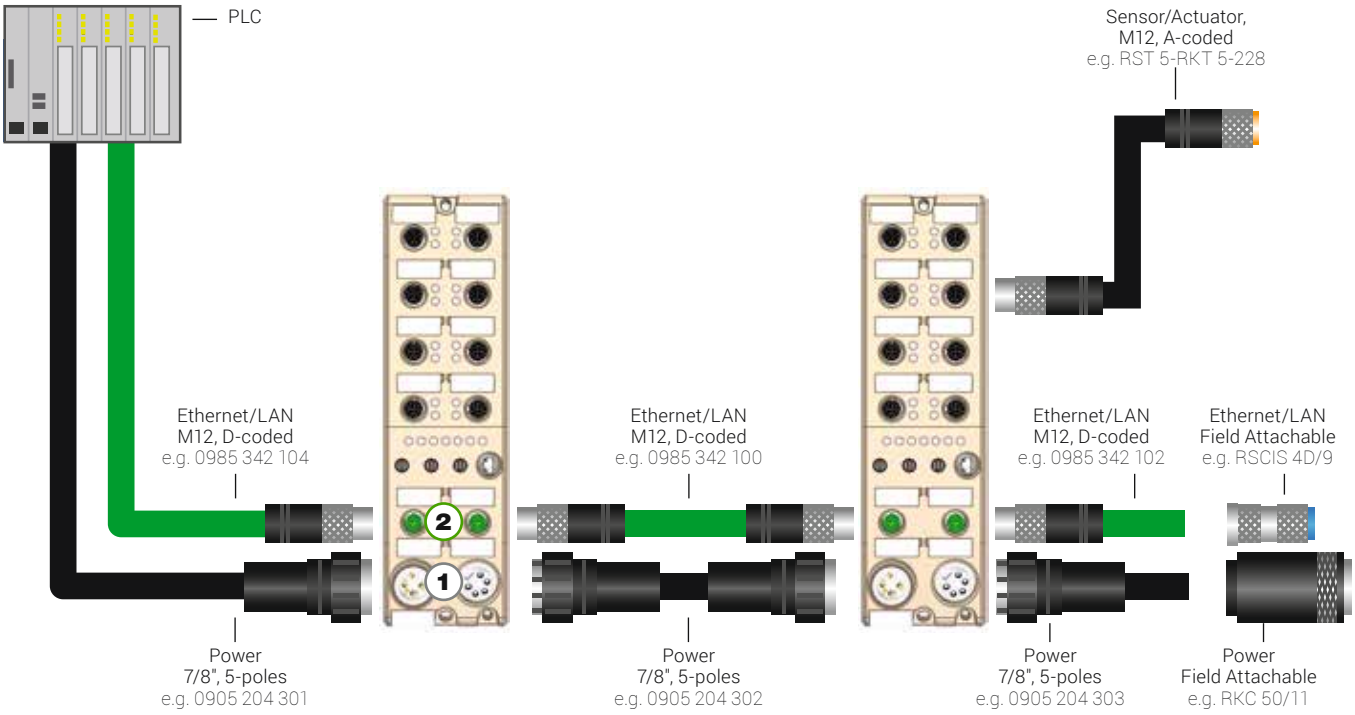
1) No direct contact with food

# Technical Information

| Type | 16DIO | 16DI | 16DO | 8DI 8DO |
|---|---|---|---|---|
| |  |  |  |  |
| Order Designation | 0980 ESL 390-111 | 0980 ESL 391-111 | 0980 ESL 392-111 | 0980 ESL 393-111 |
| Product Description | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP67, 16 digital in-/output channels (universal I/O) (2 A), 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 | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 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 | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), 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 | LioN-P, I/O device, Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), 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 |
| **General Data** | | | | |
| Housing | Metal, zinc die-cast, potted | | | |
| Dimensions (W x H x D) | 60 mm x 27 mm x 206 mm | | | |
| Weight | ca. 520 g | | | |
| Ambient Temperature | -20 °C to +70 °C (Operation) | | | |
| Protection Degree | IP65, IP67[1)] | | | |
| Shock/Vibration | 50 g/15 g | | | |
| **Power Supply** | 1 | | | |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | | | |
| Connection | 2 x 7/8", 5-poles, up to 2 x 9 A | | | |
| Current Consumption | typ. 120 mA (at 24 V DC) | | | |
| **Bus System** | 2 | | | |
| Protocol | Multiprotocol (PROFINET, EtherNet/IP and EtherCAT) | | | |
| Connection | 2 x M12, D-coded, 4-poles | | | |
| PROFINET Features | PROFINET V2.3 (CC-C), Netload Class III, FSU, MRP | | | |
| EtherNet/IP Features | EtherNet/IP acc. to CIP Edition V3.11, EIP Adaption of CIP V1.12, DLR, Quick Connect | | | |
| EtherCAT Features | EtherCAT IO acc. to ETG.1000 V1.2, Auto-increment and fixed addressing, CoE, EoE, FoE | | | |
| **Digital Input Channels** | | | | |
| Digital Input Channels | max. 16, universal I/O | 16, fixed | - | 8, fixed |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | - | 4 x M12, A-coded, 5-poles |
| DI Channel Type | Type 3 acc. To IEC 61131-2, PNP | Type 3 acc. to IEC 61131-2, PNP | - | Type 3 acc. To IEC 61131-2, PNP |
| Nominal Input Current | typ. 5 mA | typ. 5 mA | - | typ. 5 mA |
| Sensor Current Supply | max. 500 mA per port | max. 200 mA per port | - | max. 200 mA per port |
| **Digital Output Channels** | | | | |
| Digital Output Channels | max. 16, universal I/O | - | 16, fixed | 8, fixed |
| Connection | 8 x M12, A-coded, 5-poles | - | 8 x M12, A-coded, 5-poles | 4 x M12, A-coded, 5-poles |
| DO Output Current | max. 2 A per channel | - | max. 2 A per channel | max. 2 A per channel |
| DO Channel Type | p-switching | - | p-switching | p-switching |
| Galv. Isolated Outputs | No | - | Yes, all outputs | Yes, all outputs |
| Protective Circuit | Electronically: Overload and short-circuit protection | - | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide




| 1 Power – 7/8", 5-poles | | 2 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|
|  | **Male straight/Female straight**<br>0905 204 302/* M<br>**Male angled/Female angled**<br>0905 204 309/* M |  | **Male straight/Male straight**<br>0985 342 100/* M<br>**Male straight/Male angled**<br>0985 342 132/* M<br>**Male angled/Male angled**<br>0985 342 131/* M |
|  <br>  | **Male straight/Open**<br>0905 204 303/* M<br>**Male angled/Open**<br>0905 204 302/* M<br>**Female straight/Open**<br>0905 204 301/* M<br>**Female angled/Open**<br>0905 204 308/* M |  | **Male straight/Open**<br>0985 342 102/* M<br>**Male angled/Open**<br>0985 342 130/* M |
| | |  | **M12-RJ45 Industrial Ethernet data cordset**<br>0985 342 104/* M umspritzt<br>**RJ45-RJ45 Industrial Ethernet data cordset**<br>0985 342 500/* M umspritzt |
|  <br>  | **Field attachable – Male straight, Screw Type**<br>PG 9: RSC 50/9<br>PG 11: RSC 50/11<br>PG 13.5: RSC 50/13.5<br>PG 16: RSC 50/16<br>**Field attachable – Female straight, Screw Type**<br>PG 9: RKC 50/9<br>PG 11: RKC 50/11<br>PG 13.5: RKC 50/13.5<br>PG 16: RKC 50/16 |  | **Field attachable – Male Straight**<br>Clamping cage: RSCIS 4D/9<br>Spring type: 0986 EMC 102 |
| | |  | **Adapter – M12/RJ45**<br>0981 ENC 100 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **Multiprotocol (PROFINET, EtherNet/IP and EtherCAT), 7/8" Power** | | | | | | | | | |
| 934882001 | 0980 ESL 391-111 | Multiprotocol | Metal | 60 mm | up to IP67 | 16DI | 2 x, 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934882002 | 0980 ESL 392-111 | Multiprotocol | Metal | 60 mm | up to IP67 | 16DO | 2 x, 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934882003 | 0980 ESL 393-111 | Multiprotocol | Metal | 60 mm | up to IP67 | 8DI 8DO | 2 x, 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934882007 | 0980 ESL 390-111 | Multiprotocol | Metal | 60 mm | up to IP67 | 16DIO | 2 x, 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |

# LioN-Power, LioN-R, LioN-M Single Protocol I/O: EtherNet/IP

## The Right Fit for Any EtherNet/IP Application

Lumberg Automation offers a broad variety of single protocol I/O modules for EtherNet/IP to meet the complex requirements of Industrial Ethernet applications in harsh environments.

EtherNet/IP™

## The Benefits

**Utmost flexibility and reliability** for almost any industrial application

**High operational reliability and system availability** due to robust design

**Guaranteed electrical performance** due to outstanding vibration and shock resistance

## Markets & Applications

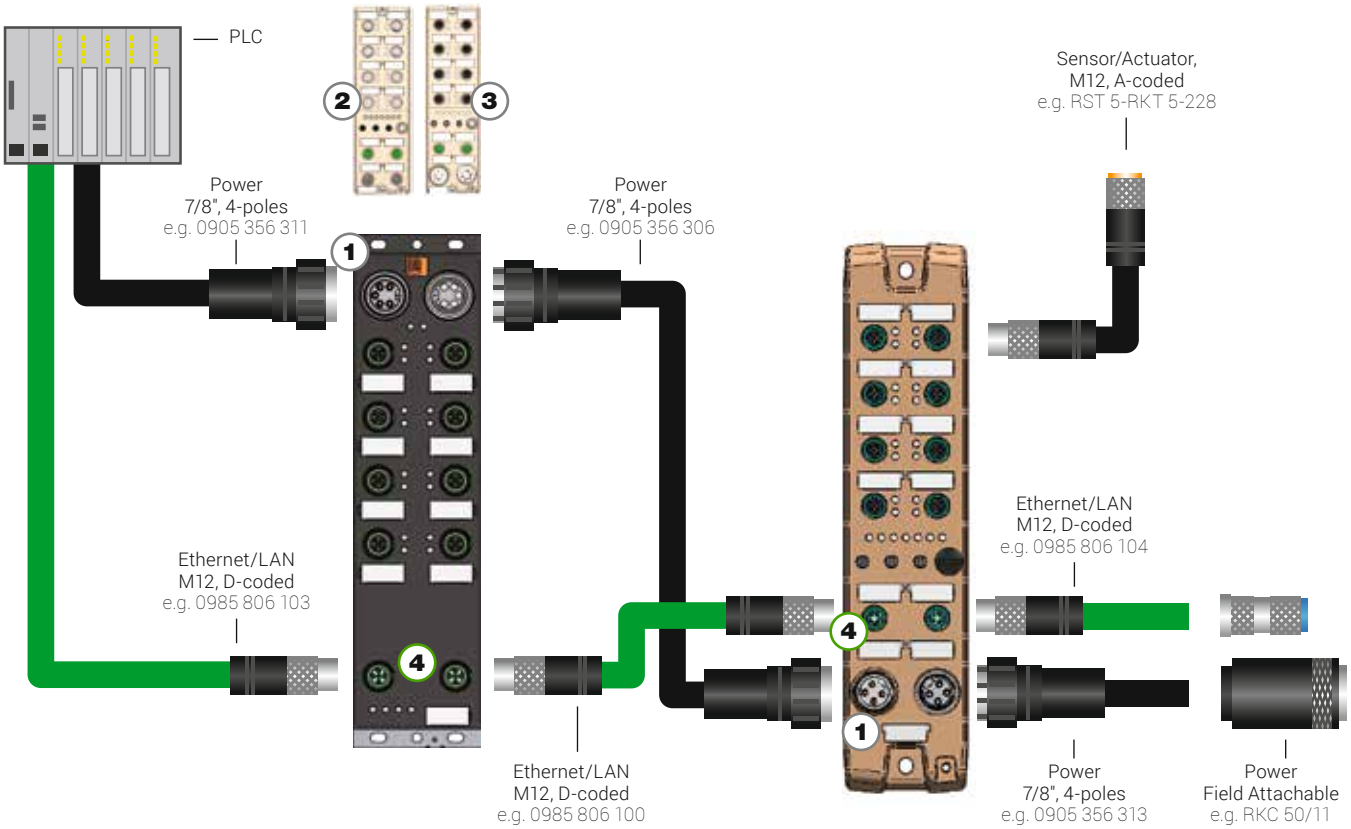
- Automation
- Automotive
- Machine Building
- Material Handling/Packaging
- Transportation

# Technical Information

| Type | LioN-M | LioN-R | LioN-P: 7/8" | LioN-P: M12 L |
|---|---|---|---|---|
| |  |  |  |  |
| Order Designation | 0980 ESL 71x | 0980 ESL 81x … | 0980 ESL 31x-111 | 0980 ESL 31x-121 |
| Product Description | LioN-M, I/O device, EtherNet/IP, industrial plastic housing, 60 mm, up to IP67, 16 digital input channels or 16 digital in-/output channels (universal I/O) (1.6 A), 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, 4-poles | LioN-R, I/O device, EtherNet/IP, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (1.6 A) or 16 digital output channels (1.6 A), 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, 4-poles | LioN-P, I/O device, EtherNet/IP, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (2 A), 16 digital output channels (1.6 A) or 16 digital in-/output channels (universal I/O) (2 A), 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, 4-poles | LioN-P, I/O device, EtherNet/IP, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (2 A), 16 digital output channels (1.6 A) or 16 digital in-/output channels (universal I/O) (2 A), 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | | | |
| Housing | Plastic, PBT | Metal, zinc die-cast, potted | Metal, zinc die-cast, potted | Metal, zinc die-cast, potted |
| Dimensions (W x H x D) | 60 x 39.5 x 243 mm | 59.6 x 26.2 x 206 mm | 59.6 x 26.2 x 206 mm | 59.6 x 30.7 x 200 mm |
| Weight | ca. 380 g | ca. 520 g | ca. 520 g | ca. 500 g |
| Ambient Temperature | -10 °C to +60 °C (Operation) | -10 °C to +60 °C (Operation) | -20 °C to +70 °C (Operation) | -20 °C to +70 °C (Operation) |
| Protection Degree | IP67 | IP65, IP67 | IP65, IP67 | IP65, IP67, IP69K[1)] |
| Shock/Vibration | 50 g/15 g | 50 g/15 g | 50 g/15 g | 50 g/15 g |
| **Power Supply** | 1 | 1 | 2 | 3 |
| Nominal Voltage | 24 V DC (18 to 30 V DC) | | | |
| Connection | 2 x 7/8", 4-poles, up to 2 x 9 A | 2 x 7/8", 4-poles, up to 2 x 9 A | 2 x 7/8", 5-poles, up to 2 x 9 A | 2x M12, L-coded, up to 2 x 16 A |
| Current Consumption | 90 mA (+/- 20% at 24 V DC) | 100 mA (+/- 20% at 24 V DC) | 160 mA (+/- 20% at 24 V DC) | 160 mA (+/- 20% at 24 V DC) |
| **Bus System** | 4 | 4 | 4 | |
| Protocol | EtherNet/IP | EtherNet/IP | EtherNet/IP | |
| Connection | M12, D-coded, 4-poles | M12, D-coded, 4-poles | M12, D-coded, 4-poles | |
| Features | DLR | DLR, Quick Connect | DLR, Quick Connect | |
| **Digital Input Channels** | | | | |
| Digital Input Channels | max. 16 | 8 to max. 16 | 8 to max. 16 | |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | |
| DI Channel Type | Type 3 acc. To IEC 61131-2, PNP | Type 3 acc. To IEC 61131-2, PNP | Type 3 acc. To IEC 61131-2, PNP | |
| Nominal Input Current | typ. 5 mA | typ. 5 mA | typ. 5 mA | |
| Sensor Current Supply | max. 200 mA per Port | max. 200 mA per Port | max. 200 to 500 mA (16DIO) per port | |
| **Digital Output Channels** | | | | |
| Digital Output Channels | max. 16 | 8 to max. 16 | max. 16 | |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | |
| DO Output Current | max. 1.6 A per Channel | max. 1.6 A per Channel | max. 2 A per Channel | |
| DO Channel Type | p-switching | p-switching | p-switching | |
| Galv. Isolated Outputs | No | Yes, all outputs | Yes, all outputs (except 16DIO) | |
| Protective Circuit | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection | |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide



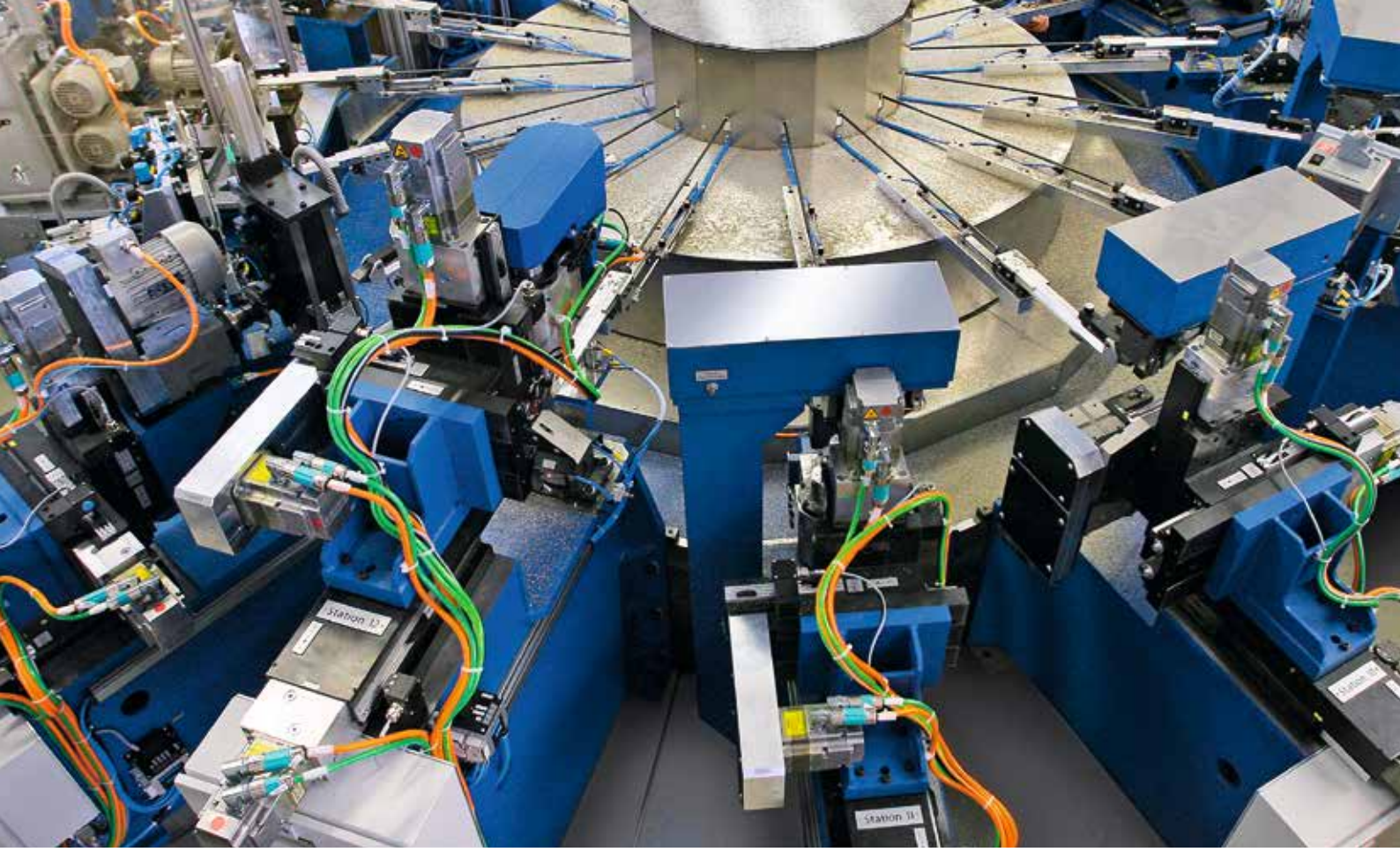

| 1 Power – 7/8", 5-poles | | 2 7/8", 5-poles | | 4 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|---|---|
|  | **Male straight/ Female straight**<br>0905 356 311/* M<br><br>**Male angled/ Female angled**<br>0905 204 309/* M | **Male straight/ Female straight**<br>0905 204 302/* M<br><br>**Male angled/ Female angled**<br>0905 204 309/* M |  | **Male straight/Male straight**<br>0985 806 100/* M<br>Shielded: 0985 YM57530 100/* M<br>**Male straight/Male angled**<br>0985 806 125/* M<br>**Male angled/Male angled**<br>0985 806 124/* M<br>**Male straight/Female straight**<br>0985 806 102/* M<br>**Male angled/Female straight**<br>0985 806 127/* M<br>**Female straight/Female straight**<br>0985 806 112/* M |
|  | **Male straight/Open**<br>0905 356 313/* M<br>**Male angled/Open**<br>0905 356 306/* M<br>**Female straight/Open**<br>0905 356 311/* M<br>**Female angled/Open**<br>0905 356 304/* M | **Male straight/Open**<br>0905 204 303/* M<br>**Male angled/Open**<br>0905 204 302/* M<br>**Female straight/Open**<br>0905 204 301/* M<br>**Female angled/Open**<br>0905 204 308/* M |  | **Male straight/RJ45**<br>0985 806 103/* M<br><br>**Male angled/RJ45**<br>0985 806 124/* M<br><br>**RJ45/RJ45**<br>0985 806 500/* M<br>Shielded: 0985 YM57530 500/* M<br><br>**Female Bulkhead/RJ45**<br>0985 806 104/* M<br>Shielded: 0985 YM57530 104/* M |
|  | **Field attachable – Male straight, Screw Type**<br>PG 9: RSC 40/9<br><br>**Field attachable – Female straight, Screw Type**<br>PG 9: RKC 40/9 | **Field attachable – Male straight, Screw Type**<br>PG 9: RSC 50/9<br>PG 11: RSC 50/11<br>PG 13.5: RSC 50/13.5<br>PG 16: RSC 50/16<br><br>**Field attachable – Female straight, Screw Type**<br>PG 9: RKC 50/9<br>PG 11: RKC 50/11<br>PG 13.5: RKC 50/13.5<br>PG 16: RKC 50/16 | | |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

3 ** See page 26 for M12 Power connection guide

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **LioN-M, EtherNet/IP, 7/8" Power, 4-poles** | | | | | | | | | |
| 109630 | 0980 ESL 711 | EtherNet/IP | Plastic | 60 mm | up to IP67 | 16DI | 2 x 7/8", 4-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 109627 | 0980 ESL 710 | EtherNet/IP | Plastic | 60 mm | up to IP67 | 16DIO | 2 x 7/8", 4-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-R, EtherNet/IP, 7/8" Power, 4-poles** | | | | | | | | | |
| 934691001 | 0980 ESL 811-EIP 16DI-M12-R | EtherNet/IP | Metal | 60 mm | up to IP67 | 16DI | 2 x 7/8", 4-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934691002 | 0980 ESL 812-EIP 16DO-M12-R | EtherNet/IP | Metal | 60 mm | up to IP67 | 16DO | 2 x 7/8", 4-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934691003 | 0980 ESL 813-EIP 8DI/8DO-M12-R | EtherNet/IP | Metal | 60 mm | up to IP67 | 8DI 8DO | 2 x 7/8", 4-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-P, EtherNet/IP, 7/8" Power, 5-poles** | | | | | | | | | |
| 934880001 | 0980 ESL ESL 311-111 | EtherNet/IP | Metal | 60 mm | up to IP67 | 16DI | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934880002 | 0980 ESL ESL 312-111 | EtherNet/IP | Metal | 60 mm | up to IP67 | 16DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934880003 | 0980 ESL ESL 313-111 | EtherNet/IP | Metal | 60 mm | up to IP67 | 8DI 8DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934880007 | 0980 ESL ESL 310-111 | EtherNet/IP | Metal | 60 mm | up to IP67 | 16DIO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-P, EtherNet/IP, M12 Power** | | | | | | | | | |
| 934839001 | 0980 ESL ESL 311-121 | EtherNet/IP | Metal | 60 mm | up to IP69K | 16DI | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934839002 | 0980 ESL ESL 312-121 | EtherNet/IP | Metal | 60 mm | up to IP69K | 16DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934839003 | 0980 ESL ESL 313-121 | EtherNet/IP | Metal | 60 mm | up to IP69K | 8DI 8DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934839007 | 0980 ESL ESL 310-121 | EtherNet/IP | Metal | 60 mm | up to IP69K | 16DIO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |



# LioN-Power, LioN-R, LioN-M Single Protocol I/O: PROFINET

## The Right Fit for Any PROFINET I/O Application

Lumberg Automation offers a broad variety of single protocol I/O modules for PROFINET to meet the complex requirements of Industrial Ethernet applications in harsh environments.

## The Benefits

**Utmost flexibility and reliability** for almost any industrial application

**High operational reliability and system availability** due to robust design

**Guaranteed electrical performance** due to outstanding vibration and shock resistance

## Markets & Applications

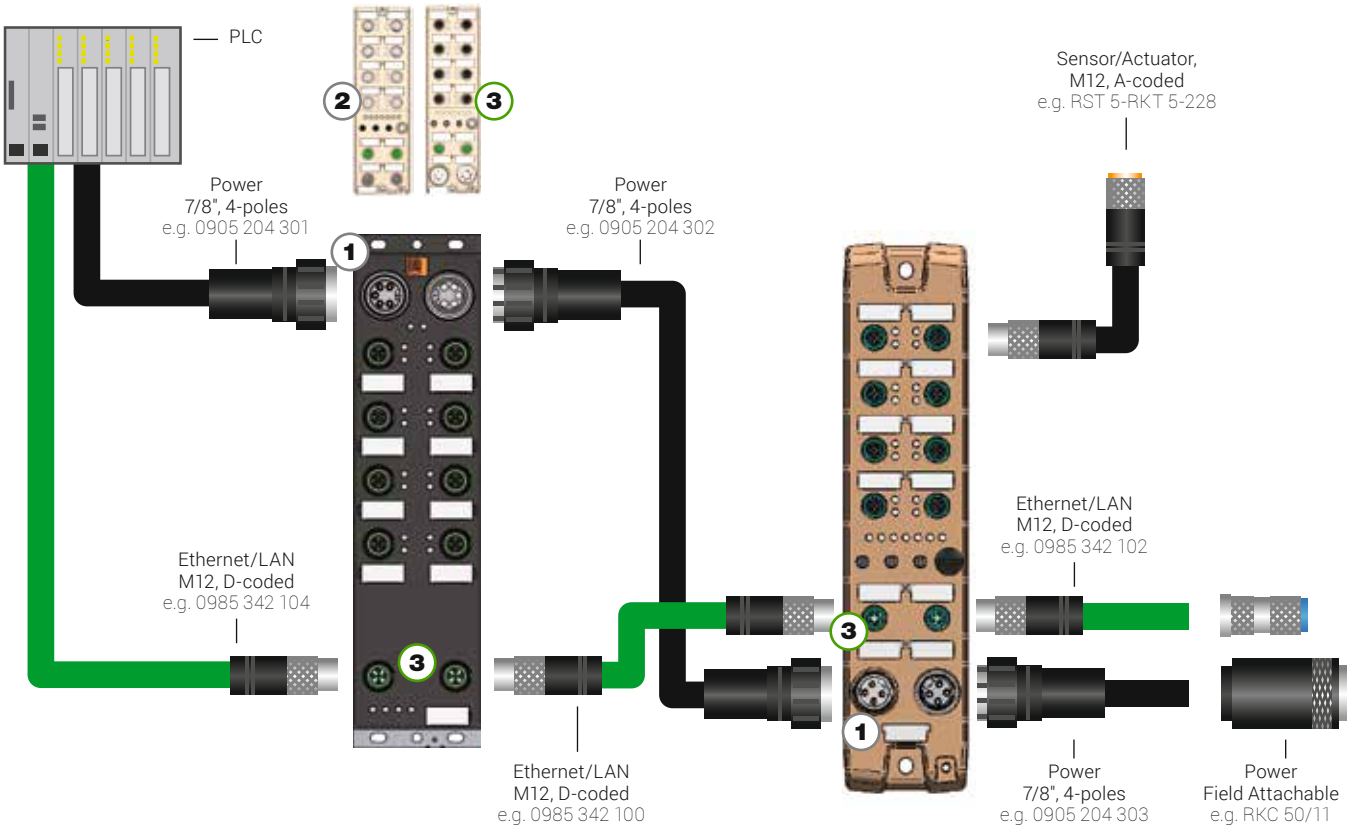
- Automation
- Automotive
- Machine Building
- Material Handling/Packaging
- Transportation

# Technical Information

| Type | LioN-M | LioN-R | LioN-P: 7/8" | LioN-P: M12 L |
|---|---|---|---|---|
| |  |  |  |  |
| Order Designation | 0980 ESL 70x | 0980 ESL 80x … | 0980 ESL 30x-111 | 0980 ESL 30x-121 |
| Product Description | LioN-M, I/O device, PROFINET, industrial plastic housing, 60 mm, up to IP67, 16 digital input channels or 16 digital in-/output channels (universal I/O) (1.6 A), 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 | LioN-R, I/O device, PROFINET, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (1.6 A) or 16 digital output channels (1.6 A), 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 | LioN-P, I/O device, PROFINET, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (2 A), 16 digital output channels (1.6 A) or 16 digital in-/output channels (universal I/O) (2 A), 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 | LioN-P, I/O device, PROFINET, industrial metal housing, 60 mm, up to IP67, 16 digital input channels, 8 digital input and 8 digital output channels (2 A), 16 digital output channels (1.6 A) or 16 digital in-/output channels (universal I/O) (2 A), 8 x M12 A-coded I/O connection, 5-poles, 2 x M12 D-coded bus connection, 4-poles, 2 x M12 L-coded power supply connection, 5-poles |
| **General Data** | | | | |
| Housing | Plastic, PBT | Metal, zinc die-cast, potted | Metal, zinc die-cast, potted | Metal, zinc die-cast, potted |
| Dimensions (W x H x D) | 60 x 39.5 x 243 mm | 59.6 x 26.2 x 206 mm | 59.6 x 26.2 x 206 mm | 59.6 x 30.7 x 200 mm |
| Weight | ca. 380 g | ca. 520 g | ca. 520 g | ca. 500 g |
| Ambient Temperature | -10 °C to +60 °C (Operation) | -10 °C to +60 °C (Operation) | -20 °C to +70 °C (Operation) | -20 °C to +70 °C (Operation) |
| Protection Degree | IP67 | IP65, IP67 | IP65, IP67 | IP65, IP67, IP69K |
| Shock/Vibration | 50 g/15 g | 50 g/15 g | 50 g/15 g | 50 g/15 g |
| **Power Supply** | 1 | 1 | 1 | 2 |
| Nominal Voltage | 24 V DC (11 to 30 V DC) | 24 V DC (18 to 30 V DC) | 24 V DC (18 to 30 V DC) | 24 V DC (18 to 30 V DC) |
| Connection | 2 x 7/8", 4-poles, up to 2 x 9 A | 2 x 7/8", 4-poles, up to 2 x 9 A | 2 x 7/8", 5-poles, up to 2 x 9 A | 2 x M12, L-coded, up to 2 x 16 A |
| Current Consumption | 90 mA (+/- 20% at 24 V DC) | 100 mA (+/- 20% at 24 V DC) | 160 mA (+/- 20% at 24 V DC) | 160 mA (+/- 20% at 24 V DC) |
| **Bus System** | 3 | 3 | 3 | |
| Protocol | PROFINET | PROFINET | PROFINET | |
| Connection | 7/8" 4-poles (EIP) I 5-poles (PN) | 7/8" 4-poles (EIP) I 5-poles (PN) | 7/8" 5-poles | |
| PROFINET Features | CC-B, NC I | CC-B | CC-C, NC III, FSU, MRP | |
| EtherNet/IP Features | DLR | DLR, Quick Connect | DLR, Quick Connect | |
| **Digital Input Channels** | | | | |
| Digital Input Channels | max. 16 | 8 to max. 16 | 8 to max. 16 | |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | |
| DI Channel Type | Type 3 acc. To IEC 61131-2 PNP | Type 3 acc. To IEC 61131-2 PNP | Type 3 acc. To IEC 61131-2 PNP | |
| Nominal Input Current | typ. 5 mA | typ. 5 mA | typ. 5 mA | |
| Sensor Current Supply | 200 mA per Port | 200 mA per Port | 200 to 500 mA (16DIO) per port | |
| **Digital Output Channels** | | | | |
| Digital Output Channels | max. 16 | 8 to max. 16 | 8 to max. 16 | |
| Connection | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | 8 x M12, A-coded, 5-poles | |
| DO Output Current | max. 1.6 A per Channel | max. 1.6 A per Channel | max. 2 A per Channel | |
| DO Channel Type | p-switching | p-switching | p-switching | |
| Galv. Isolated Outputs | No | Yes, all outputs | Yes, all outputs (except 16DIO) | |
| Protective Circuit | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection | Electronically: Overload and short-circuit protection | |

1) Only if mounted and locked and in combination with Hirschmann/Lumberg Automation connector.

# Connection Guide



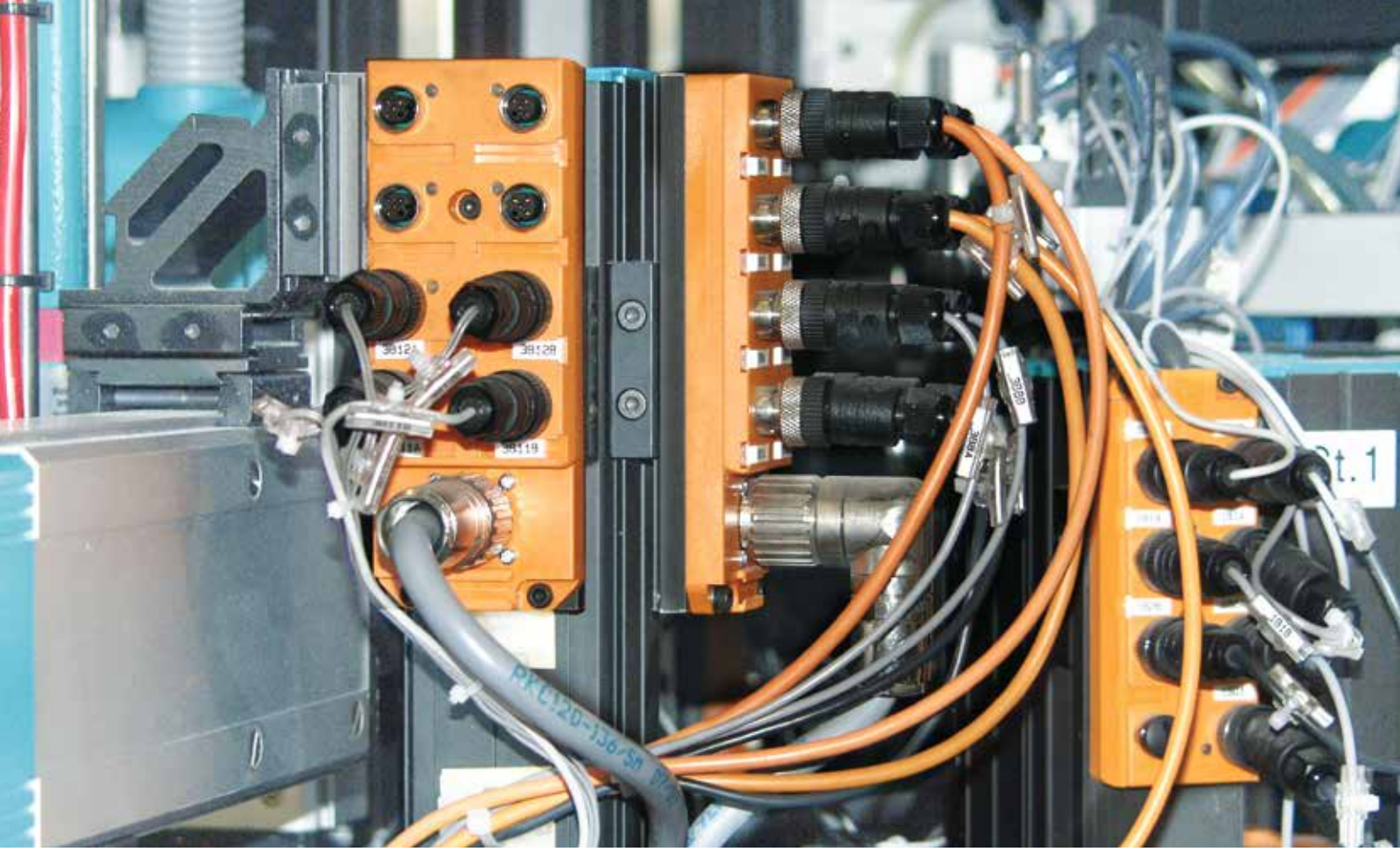

| 1 Power – 7/8", 5-poles | | 3 Data – D-coded M12 LAN/Ethernet, 4-poles | |
|---|---|---|---|
|  | **Male straight/Female straight**<br>0905 204 302/* M<br>**Male angled/Female angled**<br>0905 204 309/* M |  | **Male straight/Male straight**<br>0985 342 100/* M<br>**Male straight/Male angled**<br>0985 342 132/* M<br>**Male angled/Male angled**<br>0985 342 131/* M |
|  | **Male straight/Open**<br>0905 204 303/* M<br>**Male angled/Open**<br>0905 204 302/* M<br>**Female straight/Open**<br>0905 204 301/* M<br>**Female angled/Open**<br>0905 204 308/* M |  | **Male straight/Open**<br>0985 342 102/* M<br>**Male angled/Open**<br>0985 342 130/* M |
| | |  | **M12-RJ45 Industrial Ethernet data cordset**<br>0985 342 104/* M umspritzt<br>**RJ45-RJ45 Industrial Ethernet data cordset**<br>0985 342 500/* M umspritzt |
|  | **Field attachable – Male straight, Screw Type**<br>PG 9: RSC 50/9<br>PG 11: RSC 50/11<br>PG 13.5: RSC 50/13.5<br>PG 16: RSC 50/16<br>**Field attachable – Female straight, Screw Type**<br>PG 9: RKC 50/9<br>PG 11: RKC 50/11<br>PG 13.5: RKC 50/13.5<br>PG 16: RKC 50/16 |  | **Field attachable – Male Straight**<br>Clamping cage: RSCIS 4D/9<br>Spring type: 0986 EMC 102 |
| | |  | **Adapter – M12/RJ45**<br>0981 ENC 100 |

* = Cable length in m (e.g. 30 cm -> 0.3 M). Standard cable lengths: 0.3 m, 0.6 m, 1 m, 2 m, 5 m, 10 m, 15 m, 20 m, 30 m.
For other cable lengths and connectors please contact **icos-sales@belden.com**

2 ** See page 26 for M12 Power connection guide.

# Order Overview

| Order Number | Order Designation | Bus Protocol | Housing | Width | IP | I/O | PWR Connection | Bus Connection | I/O Connection |
|---|---|---|---|---|---|---|---|---|---|
| **LioN-M, PROFINET, 7/8" Power, 5-poles** | | | | | | | | | |
| 109629 | 0980 ESL 701 | PROFINET | Plastic | 60 mm | up to IP67 | 16DI | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 109628 | 0980 ESL 700 | PROFINET | Plastic | 60 mm | up to IP67 | 16DIO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-R, PROFINET, 7/8" Power, 5-poles** | | | | | | | | | |
| 934692001 | 0980 ESL 801-PNET 16DI-M12-R | PROFINET | Metal | 60 mm | up to IP67 | 16DI | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934692002 | 0980 ESL 802-PNET 16DO-M12-R | PROFINET | Metal | 60 mm | up to IP67 | 16DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934692003 | 0980 ESL 803-PNET DI/8DO-M12-R | PROFINET | Metal | 60 mm | up to IP67 | 8DI 8DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-P, PROFINET, 7/8" Power, 5-poles** | | | | | | | | | |
| 934881001 | 0980 ESL 301-111 | PROFINET | Metal | 60 mm | up to IP67 | 16DI | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934881002 | 0980 ESL 302-111 | PROFINET | Metal | 60 mm | up to IP67 | 16DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934881003 | 0980 ESL 303-111 | PROFINET | Metal | 60 mm | up to IP67 | 8DI 8DO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| 934881007 | 0980 ESL 300-111 | PROFINET | Metal | 60 mm | up to IP67 | 16DIO | 2 x 7/8", 5-poles | 2 x M12, D-coded | 8 x M12, A-coded |
| **LioN-P, PROFINET, M12 Power** | | | | | | | | | |
| 934878001 | 0980 ESL 301-121 | PROFINET | Metal | 60 mm | up to IP69K | 16DI | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934878002 | 0980 ESL 302-121 | PROFINET | Metal | 60 mm | up to IP69K | 16DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934878003 | 0980 ESL 303-121 | PROFINET | Metal | 60 mm | up to IP69K | 8DI 8DO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |
| 934878007 | 0980 ESL 300-121 | PROFINET | Metal | 60 mm | up to IP69K | 16DIO | 2 x M12, L-coded | 2 x M12, D-coded | 8 x M12, A-coded |



# ASB-Series
# Passive Distribution Boxes: Plug Connection

## Rely on the Original Market-leading Solution That Revolutionized On-machine Connectivity

Many styles to choose from: 4-, 6-, 8-, or 10- ports, with or without LED operation and function indicators, M8 (pico) or M12 (micro) I/O connection, top-entry I/O mount, M12 or M23 connection for the control cable.

## The Benefits

**Extensive product range** – offers flexible connection solutions

**For the harshest conditions** – the ASB-R line with its fully potted die-cast zinc housing can withstand even the most challenging environments

**Built to your needs** – our Connectivity Center will create a custom product to fit your application

## Markets & Applications

- Automotive
- Automation
- Drag Chains
- Machine Building
- Material Handling/Packaging
- Robotic Machinery

# Technical Information

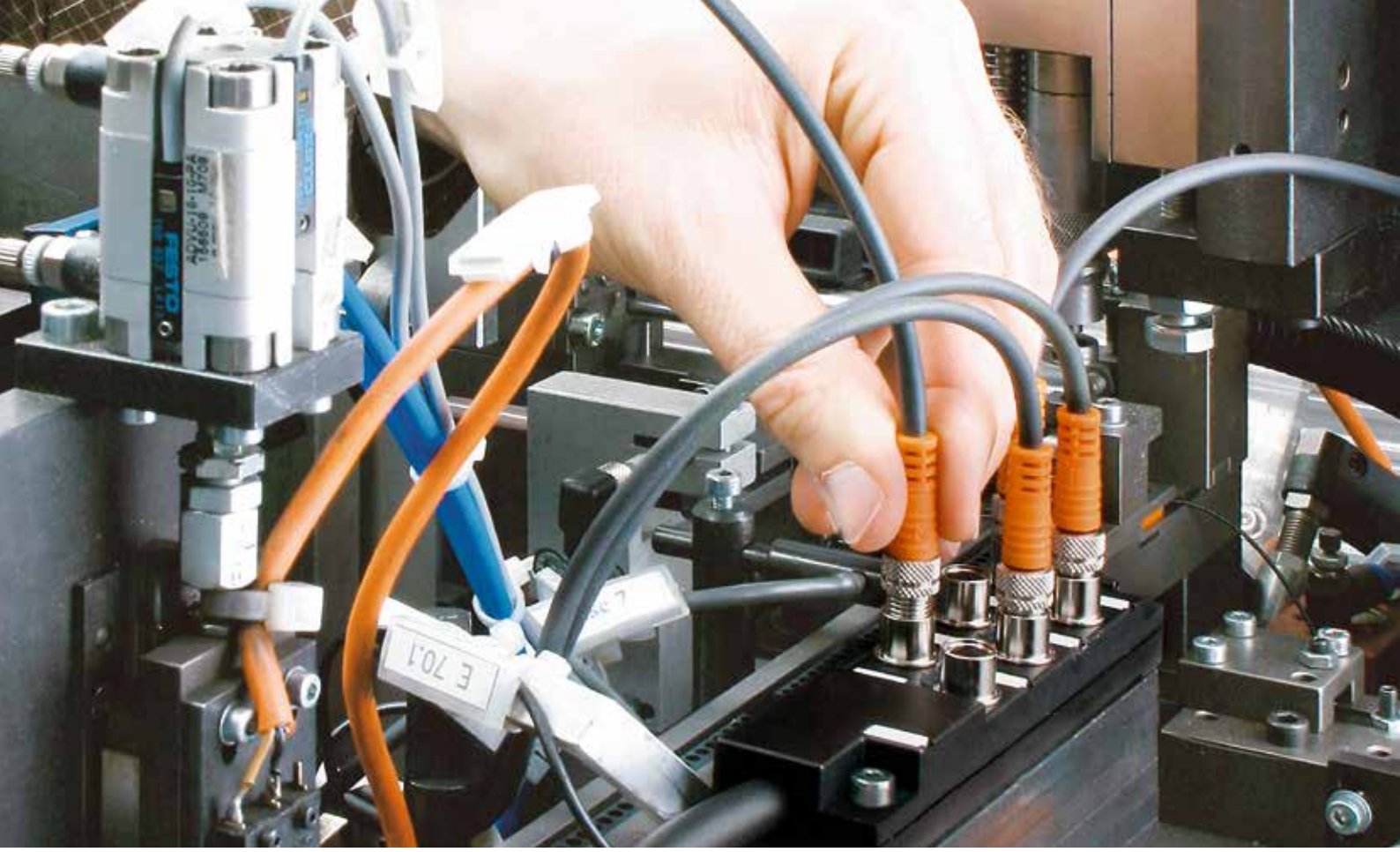
| Type | ASB-S | ASB-C | ASB-C | ASB-R |
|---|---|---|---|---|
| |  |  |  |  |
| Order Designation | ASBSM … | SBS … | ASBS(V) … | ASBS(V)-R … |
| Product Description | Pluggable minuature actuator/sensor distribution box with or without LED operation and function indicators, top-entry, 4 to 10-ports, M8 socket, 3-poles, 1 signal per socket, M12 connection for the control cable | Pluggable minuature actuator/sensor distribution box with LED operation and function indicators, top-entry, 4-ports, M8 socket, 3-poles, 1 or 2 signal(s) per socket, M12 connection for the control cable | Pluggable actuator/sensor distribution box with or without LED operation and function indicators, top-entry, 4 to 8-ports, combined FIXCON/M12 socket, 4- or 5-poles, 1 or 2 signal(s) per socket, M23 connection for the control cable | Pluggable rugged actuator/sensor distribution box with or without LED operation and function indicators, top-entry, 4- or 8-ports, M12 socket, 4- or 5-poles, 1 or 2 signal(s) per socket, M23 connection for the control cable |
| **General Data** | | | | |
| Housing | Plastic, PBT | Plastic, TPU | Plastic, TPU | Metal, Zinc die-cast |
| Shielded Housing | Yes, optional | Yes, optional | No | Yes |
| Potted Housing | No | Yes | Yes | Yes |
| Dimensions (w) | 30 mm | 30 mm | 60 mm | 60 mm |
| Ambient Temperature | -25 °C to +70 °C | -15 °C to +90 °C | -15 °C to +80 °C | -40 °C to +80 °C |
| Protection Degree | IP67/NEMA 6P | IP67/NEMA 6P | IP67/NEMA 6P | IP65/IP67 |
| **Materials** | | | | |
| Contact Base Material | CuSn, pre-nickeled and gold-plated | CuSn, pre-nickeled and gold-plated | CuZn, pre-nickeled and gold-plated | CuZn, pre-nickeled and gold-plated |
| Contact Bearer Material | PA, self-extinguishing | M8: TPU, self-extinguishing/M12: PA | PA GF | M12: PA, M23: PBT |
| Threaded Sleeve Material | Brass, nickel-plated | Brass, nickel-plated | CuZn, nickeled | --- (No threads) |
| O-Ring Material | FKM | FKM | FKM | FKM |
| **Electrical Data** | | | | |
| Nominal Voltage (Range) | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC |
| Nominal Current | 1.5 A per port (max. 1.5 A total) | 2 A per port (max. 2 A total) | 4 A per port (max. 12 A total) | 4 A per port (max. 12 A total) |
| Circuit Logic | PNP | PNP or NPN | PNP or NPN | PNP |
| Status/Diagnostic Indicators | Yes, optional | Yes | Yes, optional | Yes, optional |
| **Module Variants** | | | | |
| I/O Connection | M8, 3-poles | M8, 3-poles | M12, 4- or 5-poles | M12, 4- or 5-poles |
| I/O Connection Entry Point | Top | Top | Top | Top |
| I/O Signals per Port | 1 signal per port | 1 signal per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port |
| Port Variants | 4-, 6-, 8- or 10-ports | 4- or 8-ports | 4- , 6- or 8-ports | 4- or 8-ports |
| Plug Interface | M12 | M12 | M23 | M23 |

# Order Overview

| Type | | | | ASB-S | ASB-C | ASB-C | ASB-R |
|---|---|---|---|---|---|---|---|
| | | | |  |  |  |  |
| Housing | | | | Plastic, PBT | Plastic, TPU | Plastic, TPU | Metal, Zinc die-cast |
| Plug Interface | | | | M12 Plug | M12 Plug | M23 Plug | M23 Plug |
| | | | |  |  |  |  |
| **4-ports** | | | | | | | |
| M8 |  | 1 Signal | PNP, LEDs | ASBSM 4/LED 3<br>Shielded Housing:<br>ASBSM 4/LED 3 ESD | SBS 4/LED 3<br>Shielded Housing:<br>SBS 4/LED 3 ESD | – | – |
| | | | NPN, LEDs | – | SBS 4/LED NPN 3 | – | – |
| M12 |  | 1 Signal | PNP | – | – | – | ASBS-R 4 5-4 |
| | | | PNP, LEDs | – | – | ASBS 4/LED 5-4 | ASBS-R 4/LED 5-4 |
| | | 2 Signals | PNP | – | – | ASBSV 4 5 | ASBSV-R 4 5 |
| | | | PNP, LEDs | – | – | ASBSV 4/LED 5 | ASBSV-R 4/LED 5 |
| **6-ports** | | | | | | | |
| M8 |  | 1 Signal | PNP, LEDs | ASBSM 4/LED 3<br>Shielded Housing:<br>ASBSM 4/LED 3 ESD | – | – | – |
| M12 |  | 1 Signal | PNP | – | – | ASBS 6 5-4 | – |
| | | | PNP, LEDs | – | – | ASBS 6/LED 5-4 | – |
| | | 2 Signals | PNP | – | – | ASBSV 6 5 | – |
| | | | PNP, LEDs | – | – | ASBSV 6/LED 5 | – |
| **8-ports** | | | | | | | |
| M8 |  | 1 Signal | PNP, LEDs | ASBSM 8/LED 3<br>Shielded Housing:<br>ASBSM 8/LED 3 ESD | – | – | – |
| M12 |  | 1 Signal | PNP | – | SBS 4/LED NPN 3 | – | – |
| | | | PNP, LEDs | – | – | – | ASBS-R 4 5-4 |
| | | | NPN, LEDs | – | – | ASBS 4/LED 5-4 | ASBS-R 4/LED 5-4 |
| | | 2 Signals | PNP | – | – | ASBSV 4 5 | ASBSV-R 4 5 |
| | | | PNP, LEDs | – | – | ASBSV 4/LED 5 | ASBSV-R 4/LED 5 |
| **10-ports** | | | | | | | |
| M8 |  | 1 Signal | PNP, LEDs | ASBSM 10/LED 3 | – | – | – |

# Order Information

| Order Number | Order Designation | Product Line | Interface | Housing Material | Housing Width | IP Rating | I/O Ports | I/O Connection | PNP/NPN | LED | Shielded Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M8 3-poles, 1 signal per port, with plug connection** | | | | | | | | | | | |
| 12124 | SBS 4/LED 3 | ASB-C | M12 Plug | TPU | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | No |
| 67255 | SBS 4/LED 3 ESD | ASB-C | M12 Plug | TPU | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | Yes |
| 17787 | SBS 4/LED NPN 3 | ASB-C | M12 Plug | TPU | 30 mm | IP67 | 4x | M8 3-poles | NPN | Yes | No |
| 65305 | ASBSM 4/LED 3 | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | No |
| 106560 | ASBSM 4/LED 3 ESD | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | Yes |
| 65346 | ASBSM 6/LED 3 | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | Yes | No |
| 934637891 | ASBSM 6/LED3 ESD | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | Yes | Yes |
| 65347 | ASBSM 8/LED 3 | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 106561 | ASBSM 8/LED 3 ESD | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | Yes |
| 65348 | ASBSM 10/LED 3 | ASB-S | M12 Plug | PBT | 30 mm | IP67 | 10x | M8 3-poles | PNP | Yes | No |
| **M12 4-poles, 1 Signal per port, with plug connection** | | | | | | | | | | | |
| 11126 | ASBS 4/LED 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 934761001 | ASBS-R 4 5-4 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | No | No |
| 934761002 | ASBS-R 4/LED 5-4 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 11127 | ASBS 6 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | No | No |
| 11128 | ASBS 6/LED 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | Yes | No |
| 11129 | ASBS 8 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | No | No |
| 11130 | ASBS 8/LED 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 53499 | ASBS 8/LED 5-4/4E-4A | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 12474 | ASBS 8/LED NPN 5-4 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 4-poles | NPN | Yes | No |
| 934763001 | ASBS-R 8 5-4 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 934763002 | ASBS-R 8/LED 5-4 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | Yes | No |
| **M12 4-poles, 2 Signals per port, with plug connection** | | | | | | | | | | | |
| 11133 | ASBSV 4 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | No | No |
| 11134 | ASBSV 4/LED 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 934767001 | ASBSV-R 4 5 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | No | No |
| 934767002 | ASBSV-R 4/LED 5 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 11135 | ASBSV 6 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | No | No |
| 11136 | ASBSV 6/LED 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | Yes | No |
| 11137 | ASBSV 8 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | No | No |
| 11138 | ASBSV 8/LED 5 | ASB-C | M23 Plug | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 934769001 | ASBSV-R 8 5 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | No | No |
| 934769002 | ASBSV-R 8/LED 5 | ASB-R | M23 Plug | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | Yes | No |



# ASB-Series
# Passive Distribution Boxes: Control Cable

## Rely on the Original Market-leading Solution That Revolutionized On-machine Connectivity

Many styles to choose from: 4-, 6-, 8-, 10- or 12-ports, with or without LED operation and function indicators, M8 (pico) or M12 (micro) I/O connection, top- or side-entry I/O mount, with integrated control cable.

## The Benefits

**Extensive product range** – a wide range of versions offers flexible connection solutions

**For the food industry** – the ASB-N line is designed to be corrosion resistant and easy to clean

**Built to your needs** – our Connectivity Center will create a custom product to fit your application

## Markets & Applications

- Automotive
- Automation
- Drag Chains
- Food & Beverage Manufacturing
- Machine Building
- Material Handling/Packaging
- Robotic Machinery

# Technical Information

| Type | ASB-S | ASB-C | ASB-C | ASB-N | ASB-R |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| Order Designation | ASBM … | SB … | ASB(V)… | ASNB(V or L) … | ASB(V)-R … |
| Product Description | Miniature actuator/ sensor distribution box with or without LED operation and function indicators, top-entry, 4- to 12-ports, M8 socket, 3-poles, 1 signal per socket, with integrated control cable | Miniature actuator/sensor distribution box with LED operation and function indicators, top-entry, 4- to 8-ports, M8 socket, 3-poles, 1 signal per socket, with integrated control cable | Actuator/sensor distribution box with or without LED operation and function indicators, top-entry, 4- to 8-ports, combined FIXCON/ M12 socket, 3- to 5-poles, 1 or 2 signal(s) per socket, with integrated control cable | Actuator/sensor distribution box with LED operation and function indicators, top- or side-entry, 8-ports, M12 socket, 4- or 5-poles, 1 or 2 signal(s) per socket, with integrated control cable | Rugged actuator/sensor distribution box with or without LED operation and function indicators, top-entry, 4- or 8-ports, M12 socket, 4- or 5-poles, 1 or 2 signal(s) per socket, with integrated control cable |
| **General Data** | | | | | |
| Housing | Plastic, PBT | Plastic, PBT | Plastic, TPU | Stainless-steel | Metal, Zinc die-cast |
| Shielded Housing | Yes, optional | No | Yes, optional | No | No |
| Potted Housing | No | Yes | Yes | Yes | Yes |
| Dimensions (w) | 30 mm | 30 mm | 60 mm | 60 mm | 60 mm |
| Ambient Temperature | -25 °C to +70 °C | -15 °C to +80 °C | -15 °C to +80 °C | -25 °C to +70 °C | -40 °C to +80 °C |
| Protection Degree | IP67/NEMA 6P | IP67/NEMA 6P | IP67/NEMA 6P | IP67/IP69K | IP65/IP67 |
| **Materials** | | | | | |
| Contact Base Material | CuSn, pre-nickeled and gold-plated | CuSn, pre-nickeled and gold-plated | CuZn, pre-nickeled and gold-plated | CuSn, pre-nickeled and gold-plated | CuZn, pre-nickeled and gold-plated |
| Contact Bearer Material | PA, self-extinguishing | M8: TPU, self-extinguishing | PA GF, self-extinguishing | PVC | M12: PA, M23: PBT |
| Threaded Sleeve Material | Brass, nickel-plated | Brass, nickel-plated | CuZn, nickeled | Stainless-steel | --- (No threads) |
| O-Ring Material | FKM | FKM | FKM | EPDM | FKM |
| **Electrical Data** | | | | | |
| Nominal Voltage (Range) | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC | 10 to 30 V AC/DC |
| Nominal Current | 1.5 A per port (max. 1.5 A total) | 2 A per port (max. 2 A total) | 4 A per port (max. 12 A total) | 4 A per port (max. 12 A total) | 4 A per port (max. 12 A total) |
| Circuit Logic | PNP | PNP or NPN | PNP or NPN | PNP | PNP |
| Status/Diagnostic Indicators | Yes, optional | Yes | Yes, optional | Yes, optional | Yes, optional |
| **Module Variants** | | | | | |
| I/O Connection | M8, 3-poles | M8, 3-poles | M12, 3- to 5-poles | M12, 4- or 5-poles | M12, 4- or 5-poles |
| I/O Connection Entry Point | Top | Top | Top | Top or side | Top |
| I/O Signals per Port | 1 signal per port | 1 signal per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port | 1 or 2 signal(s) per port |
| Port Variants | 4-, 6-, 8-, 10- or 12- ports | 8-ports | 4- , 6- or 8-ports | 8- ports | 4- or 8-ports |
| Plug Interface | PUR | PUR | PUR | PVC | PUR |

# Order Overview

| Type | | | | ASB-S | ASB-C | ASB-C | ASB-N | ASB-R |
|---|---|---|---|---|---|---|---|---|
| | | | |  |  |  |  |  |
| **Housing** | | | | Plastic, PBT | Plastic, PBT | Plastic, TPU | Stainless-steel | Metal, Zinc die-cast |
| **Cable Material** | | | | PUR | PUR | PUR | PVC | PUR |
| **4-ports** | | | | | | | | |
| **M8** |  | **1 Signal** | PNP, LEDs | ASBM 4/LED 3-343/* M | – | – | – | – |
| **M12** |  | **1 Signal** | PNP | – | – | ASBV 4 4-3-256/* M | – | – |
| | | **1 Signal** | PNP | – | – | ASB 4 5-4-328/* M | – | ASB-R 4 5-4-328/* M |
| | | **1 Signal** | PNP, LEDs | – | – | ASB 4/LED 5-4-328/* M<br>Shielded Housing Variant:<br>ASB 4/LED 5-4-328/* M ESD | – | – |
| | | **1 Signal** | NP, LEDs | | | ASB 4/LED NPN 5-4-328/* M | | |
| | | **2 Signals** | PNP | – | – | ASBV 4 5-256/* M | – | ASBV-R 4 5-256/* M |
| | | **2 Signals** | PNP, LEDs | – | – | ASBV 4/LED 5-256/* M | – | ASBV-R 4/LED 5-256/* M |
| **6-ports** | | | | | | | | |
| **M8** |  | 1 Signal | PNP | ASBM 6 3-344/* M | – | – | – | – |
| | | 1 Signal | PNP, LEDs | ASBM 6/LED 3-344/* M | – | – | – | – |
| **M12** |  | 1 Signal | PNP | – | – | ASB 6 5-4-330/* M | – | – |
| | | 1 Signal | PNP, LEDs | – | – | ASB 6/LED 5-4-330/* M | – | – |
| | | 2 Signals | PNP | – | – | ASBV 6 5-332/* M | – | – |
| | | 2 Signals | PNP, LEDs | – | – | ASBV 6/LED 5-332/* M | – | – |
| **8-ports** | | | | | | | | |
| **M8** |  | **1 Signal** | PNP | ASBM 8 3-345/* M | – | – | – | – |
| | | **1 Signal** | PNP, LEDs | ASBM 8/LED 3-345/* M<br>Shielded Housing Variant:<br>ASBM 8/LED 3-345/* M ESD | SB 8/LED 3-333/* M | | – | – |
| | | **1 Signal** | NPN, LEDs | – | SB 8/LED NPN 3-333/* M | – | – | – |
| **M12** |  | **1 Signal** | PNP | – | – | ASBV 8 4-3-242/* M | – | – |
| | | **1 Signal** | PNP | – | – | ASB 8 5-4-331/* M | – | ASB-R 8 5-4-331/* M |
| | | **1 Signal** | PNP, LEDs | – | – | ASB 8/LED 5-4-331/* M | Side Mount Version:<br>ASNBL 8/LED 5-4-320/* M | ASB-R 8/LED 5-4-331/* M |
| | | **1 Signal** | NPN, LEDs | – | – | ASB 8/LED NPN 5-4-331/* M | – | – |
| | | **2 Signals** | PNP | – | – | ASBV 8 5-242/* M | – | ASBV-R 8 5-242/* M |
| | | **2 Signals** | PNP, LEDs | – | – | ASBV 8/LED 5-242/* M | ASNBV 8/LED 5-278/* M | ASBV-R 8/LED 5-242/* M |
| **10-ports** | | | | | | | | |
| **M8** |  | **1 Signal** | PNP | ASBM 10 3-346/* M | – | – | – | – |
| | | **1 Signal** | PNP, LEDs | ASBM 10/LED 3-346/* M | – | – | – | – |
| **12-ports** | | | | | | | | |
| **M8** |  | **1 Signal** | PNP | ASBM 12 3-347/* M | – | – | – | – |
| | | **1 Signal** | PNP, LEDs | ASBM 12/LED 3-347/* M | – | – | – | – |

* = Cable length in m (e.g. 30 cm -> 0.3M), Standard cable lengths: 0.3 M, 0.6 M, 1M, 2M, s5M, 10 M, 15 M, 20 M, 30 M
For other cable lengths and variants please contact **icos-sales@belden.com**

# Control Cable Overview

| Control Cable | Conductor Size | Cable Material | Jacket Color | Temperature Range Stationary/Flexible | Diameter | Bend Radius Stationary/ Flexible | Bending Cycles | Cable Shielding | Cable Characteristics |
|---|---|---|---|---|---|---|---|---|---|
| 242 | 16x0.50mm² (AWG 20) + 3x1.0mm² (AWG 18) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 11.60 ±0.30 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 255 | 16x0.50mm² (AWG 20) + 3x1.0mm² (AWG 18) | PUR | Orange | -40°C to +90°C / -25°C to +90°C | ø 11.60 ±0.30 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 256 | 8x0.50mm² (AWG 20) + 3x1.0mm² (AWG 18) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 9.30 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 271 | 8x0.50mm² (AWG 20) + 3x1.0mm² (AWG 18) | PUR | Grey | -50°C to +90°C / -25°C to +90°C | ø 9.30 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 278 | 16x0.50mm² (AWG 20) +3x1.0mm² (AWG 18) | PVC | Black | -40°C to +80°C / +5°C to +80°C | ø 11.60 ±0.30 mm | > 5 x D / > 10 x D | > 1 Mio. | No | |
| 320 | 8x0.34mm² (AWG 22) + 3x0.75mm² (AWG 19) | PVC | Black | -40°C to +90°C / +5°C to +90°C | ø 9.50 ±0.20 mm | > 5 x D / > 10 x D | > 1 Mio. | No | |
| 328 | 4x0.34mm² (AWG 22) + 3x0.75mm² (AWG 19) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 6.80 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 330 | 6x0.34mm² (AWG 22) + 3x0.75mm² (AWG 19) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 7.60 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 331 | 8x0.34 mm² (AWG 22) + 3x0.75 mm² (AWG 19) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 8.0 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 332 | 12x0.50mm² (AWG 20) + 3x1.0mm² (AWG 18) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 9.10 ±0.30 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 333 | 8x0.34 mm² (AWG 22) + 2x0.50 mm² (AWG 20) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 8.0 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 343 | 6x0.25mm² (AWG 24) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 5.10 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 344 | 8x0.25mm² (AWG 24) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 6.0 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 345 | 10x0.25mm² (AWG 24) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 6.30 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 346 | 12x0.25mm² (AWG 24) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 6.40 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 347 | 14x0.25mm² (AWG 24) | PUR | Black | -50°C to +80°C / -25°C to +80°C | ø 7.20 ±0.20 mm | > 5 x D / > 10 x D | > 2 Mio. | No | |
| 352 | 16x0.50mm² (AWG 20) +3x1.0mm² (AWG 18) | TPU | Black | -50°C to +80°C / -25°C to +80°C | ø 11.60 ±0.30 mm | > 5 x D / > 10 x D | > 2 Mio. | Yes | |

Vibration and shock resistance
UL-approved
UV resistance
Oil, coolants, lubricants and emulsion resistance
Drag chain suitability
Welding sparks resistance

# Order Information

| Order Number | Order Designation | Product Line | Interface | Housing Material | Housing Width | IP Rating | I/O Ports | I/O Connection | PNP/ NPN | LED | Shielded Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M8 3-poles, 1 signal per port, with control cable** | | | | | | | | | | | |
| 65349 | ASBM 4/LED 3-343/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | No |
| 65350 | ASBM 4/LED 3-343/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | No |
| 65351 | ASBM 4/LED 3-343/15 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 4x | M8 3-poles | PNP | Yes | No |
| 934637877 | ASBM 6 3-344/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | No | No |
| 65352 | ASBM 6/LED 3-344/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | Yes | No |
| 65353 | ASBM 6/LED 3-344/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | Yes | No |
| 65354 | ASBM 6/LED 3-344/15 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 6x | M8 3-poles | PNP | Yes | No |
| 934636751 | ASBM 8 3-345/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | No | No |
| 934637875 | ASBM 8 3-345/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | No | No |
| 60637 | SB 8/LED 3-333/5 M | ASB-C | Control Cable | TPU | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 60636 | SB 8/LED 3-333/10 M | ASB-C | Control Cable | TPU | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 934637755 | SB 8/LED 3-333/15 M | ASB-C | Control Cable | TPU | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 65355 | ASBM 8/LED 3-345/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 65356 | ASBM 8/LED 3-345/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 65357 | ASBM 8/LED 3-345/15 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | No |
| 106589 | ASBM 8/LED 3-345/5 M ESD | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | Yes |
| 106590 | ASBM 8/LED 3-345/10 M ESD | ASB-S | Control Cable | PBT | 30 mm | IP67 | 8x | M8 3-poles | PNP | Yes | Yes |
| 61339 | SB 8/LED NPN 3-333/5 M | ASB-C | Control Cable | TPU | 30 mm | IP67 | 8x | M8 3-poles | NPN | Yes | No |
| 61338 | SB 8/LED NPN 3-333/10 M | ASB-C | Control Cable | TPU | 30 mm | IP67 | 8x | M8 3-poles | NPN | Yes | No |
| 934637878 | ASBM 10 3-346/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 10x | M8 3-poles | PNP | No | No |
| 65358 | ASBM 10/LED 3-346/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 10x | M8 3-poles | PNP | Yes | No |
| 65359 | ASBM 10/LED 3-346/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 10x | M8 3-poles | PNP | Yes | No |
| 65360 | ASBM 10/LED 3-346/15 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 10x | M8 3-poles | PNP | Yes | No |
| 934637879 | ASBM 12 3-347/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 12x | M8 3-poles | PNP | No | No |
| 65361 | ASBM 12/LED 3-347/5 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 12x | M8 3-poles | PNP | Yes | No |
| 65362 | ASBM 12/LED 3-347/10 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 12x | M8 3-poles | PNP | Yes | No |
| 65363 | ASBM 12/LED 3-347/15 M | ASB-S | Control Cable | PBT | 30 mm | IP67 | 12x | M8 3-poles | PNP | Yes | No |
| **M12 3-poles, 1 signal per port, with control cable** | | | | | | | | | | | |
| 105568 | ASBV 4 4-3-256/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 3-poles | PNP | No | No |
| 105578 | ASBV 4 4-3-256/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 3-poles | PNP | No | No |
| 105865 | ASBV 4 4-3-256/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 3-poles | PNP | No | No |
| 105582 | ASBV 8 4-3-242/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 3-poles | PNP | No | No |
| 105583 | ASBV 8 4-3-242/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 3-poles | PNP | No | No |
| 105786 | ASBV 8 4-3-242/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 3-poles | PNP | No | No |

Standard cable lengths: 5 m, 10 m, 15 m
For other cable lengths and variants please contact **icos-sales@belden.com**

# Order Information

| Order Number | Order Designation | Product Line | Interface | Housing Material | Housing Width | IP Rating | I/O Ports | I/O Connection | PNP/ NPN | LED | Shielded Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M12 4-poles, 1 signal per port, with control cable** | | | | | | | | | | | |
| 60640 | ASB 4 5-4-328/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | No | No |
| 60555 | ASB 4 5-4-328/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | No | No |
| 60587 | ASB 4 5-4-328/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | No | No |
| 934758001 | ASB-R 4 5-4-328/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | No | No |
| 934758002 | ASB-R 4 5-4-328/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | No | No |
| 60644 | ASB 4/LED 5-4-328/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 60643 | ASB 4/LED 5-4-328/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 60619 | ASB 4/LED 5-4-328/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 69997 | ASB 4/LED 5-4-328/5 M ESD | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | Yes |
| 69998 | ASB 4/LED 5-4-328/10 M ESD | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | Yes |
| 108389 | ASB 4/LED 5-4-328/15 M ESD | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | PNP | Yes | Yes |
| 60629 | ASB 4/LED NPN 5-4-328/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | NPN | Yes | No |
| 60628 | ASB 4/LED NPN 5-4-328/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 4-poles | NPN | Yes | No |
| 934758003 | ASB-R 4/LED 5-4-328/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 934758004 | ASB-R 4/LED 5-4-328/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 934758005 | ASB-R 4/LED 5-4-328/15 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 4-poles | PNP | Yes | No |
| 60583 | ASB 6 5-4-330/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | No | No |
| 60580 | ASB 6 5-4-330/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | No | No |
| 60878 | ASB 6 5-4-330/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | No | No |
| 60600 | ASB 6/LED 5-4-330/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | Yes | No |
| 60656 | ASB 6/LED 5-4-330/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | Yes | No |
| 60936 | ASB 6/LED 5-4-330/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 4-poles | PNP | Yes | No |
| 60585 | ASB 8 5-4-331/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | No | No |
| 60584 | ASB 8 5-4-331/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | No | No |
| 68942 | ASB 8 5-4-331/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | No | No |
| 934760001 | ASB-R 8 5-4-331/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 934760002 | ASB-R 8 5-4-331/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 60584 | ASB 8/LED 5-4/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 11115 | ASB 8/LED 5-4-95/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 11114 | ASB 8/LED 5-4-95/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 17164 | ASB 8/LED 5-4-271/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 17571 | ASB 8/LED 5-4-271/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 1155 | ASB 8/LED 5-4-271/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 60603 | ASB 8/LED 5-4-331/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 60602 | ASB 8/LED 5-4-331/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |
| 61037 | ASB 8/LED 5-4-331/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | No |

Standard cable lengths: 5 m, 10 m, 15 m
For other cable lengths and variants please contact **icos-sales@belden.com**

# Order Information

| Order Number | Order Designation | Product Line | Interface | Housing Material | Housing Width | IP Rating | I/O Ports | I/O Connection | PNP/ NPN | LED | Shielded Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M12 4-poles, 1 signal per port, with control cable** | | | | | | | | | | | |
| 69999 | ASB 8/LED 5-4-331/5 M ESD | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | Yes |
| 70000 | ASB 8/LED 5-4-331/10 M ESD | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | PNP | Yes | Yes |
| 61060 | ASB 8/LED NPN 5-4-331/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | NPN | Yes | No |
| 61058 | ASB 8/LED NPN 5-4-331/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 4-poles | NPN | Yes | No |
| 934760003 | ASB-R 8/LED 5-4-331/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 934760004 | ASB-R 8/LED 5-4-331/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 934760005 | ASB-R 8/LED 5-4-331/15 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 4-poles | PNP | No | No |
| 58453 | ASNBL 8/LED 5-4-320/5 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |
| 58459 | ASNBL 8/LED 5-4-320/10 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |
| 58460 | ASNBL 8/LED 5-4-320/15 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |
| **M12 5-poles, 2 signals per port, with control cable** | | | | | | | | | | | |
| 60605 | ASBV 4 5-256/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | No | No |
| 60604 | ASBV 4 5-256/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | No | No |
| 61091 | ASBV 4 5-256/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | No | No |
| 934764001 | ASBV-R 4 5-256/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | No | No |
| 934764002 | ASBV-R 4 5-256/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | No | No |
| 11147 | ASBV 4/LED 5-256/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 11145 | ASBV 4/LED 5-256/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 11146 | ASBV 4/LED 5-256/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 17170 | ASBV 4/LED 5-271/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 18754 | ASBV 4/LED 5-271/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 934764003 | ASBV-R 4/LED 5-256/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 934764004 | ASBV-R 4/LED 5-256/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 4x | M12 5-poles | PNP | Yes | No |
| 60669 | ASBV 6 5-332/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | No | No |
| 60666 | ASBV 6 5-332/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | No | No |
| 61168 | ASBV 6 5-332/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | No | No |
| 60674 | ASBV 6/LED 5-332/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | Yes | No |
| 60672 | ASBV 6/LED 5-332/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | Yes | No |
| 60673 | ASBV 6/LED 5-332/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 6x | M12 5-poles | PNP | Yes | No |
| 60671 | ASBV 8 5-242/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | No | No |
| 60670 | ASBV 8 5-242/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | No | No |
| 61204 | ASBV 8 5-242/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | No | No |
| 934765001 | ASBV-R 8 5-242/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | No | No |
| 934765002 | ASBV-R 8 5-242/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | No | No |

Standard cable lengths: 5 m, 10 m, 15 m
For other cable lengths and variants please contact **icos-sales@belden.com**

# Order Information

| Order Number | Order Designation | Product Line | Interface | Housing Material | Housing Width | IP Rating | I/O Ports | I/O Connection | PNP/ NPN | LED | Shielded Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M12 5-poles, 2 signals per port, with control cable** | | | | | | | | | | | |
| 11167 | ASBV 8/LED 5-242/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 11165 | ASBV 8/LED 5-242/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 11166 | ASBV 8/LED 5-242/15 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 11170 | ASBV 8/LED 5-255/5 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 11168 | ASBV 8/LED 5-255/10 M | ASB-C | Control Cable | TPU | 60 mm | IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 934765003 | ASBV-R 8/LED 5-242/5 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 934765004 | ASBV-R 8/LED 5-242/10 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 934765007 | ASBV-R 8/LED 5-242/15 M | ASB-R | Control Cable | Zinc die-cast | 60 mm | IP65, IP67 | 8x | M12 5-poles | PNP | Yes | No |
| 38552 | ASNBV 8/LED 5-278/5 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |
| 30608 | ASNBV 8/LED 5-278/10 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |
| 38551 | ASNBV 8/LED 5-278/15 M | ASB-N | Control Cable | Stainless-steel | 60 mm | IP65, IP67, IP69K | 8x | M12 4-poles | PNP | Yes | No |

Standard cable lengths: 5 m, 10 m, 15 m
For other cable lengths and variants please contact **icos-sales@belden.com**

# Adapters, Caps, Labels, Clips, Tools
# Accessories

## Complete Automation Solution Package for Convenience, Functionality and Safety

Accessories from Lumberg Automation offer practical solutions and are perfectly tailored to each individual product series.

## The Benefits

**One stop shop** – all the accessoires you need from a single supplier

**Perfectly tailored** – to the individual product series

**High flexibility** – thanks to a large selection

## Product Offering

- Dust/Sealing Caps
- Labels and Labeling Pen
- Mounting Adapters, Clips, Nuts
- Terminating Resistors
- Tools

# Dust/Sealing Caps/Labels and Labeling Pen

| | | | | Passive Distribution Boxes | | | | Active I/O Boxes | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Product Picture** | **Order Designation** | **Order Number** | **Description** | **ASB-C** | **ASB-N** | **ASB-R** | **ASB-S** | **LioN-M** | **LioN-P** | **LioN-R** |
|  | ZVKM | 7116 | Protective cap for unused M8 female ports (sockets), plastic, black | ● | | | ● | | ● | |
|  | ZVK | 12291 | Protective cap for unused M12 female ports (sockets), plastic, black | ● | | ● | ● | ● | ● | ● |
|  | ZVKGY | 934962001 | Protective cap for unused M12 Power (L-coded) female ports (sockets), plastic, grey | | | | | | ● 3) | |
|  | ZVKGN | 934962002 | Protective cap for unused M12 female ports (sockets), plastic, green | ● | | ● | ● | ● | ● | ● |
|  | PZVK | 46005 | Protective cap for unused M12 ports/ sockets, plastic (PVC), white. Especially suitable for use in food processing equipment | ● | ● | ● | ● | ● | ● | ● |
|  | RKV | 11428 | Protective cap for unused 7/8" female ports (sockets), metal, silver | | | | | ● | ● 4) | ● |
|  | RSV | 12104 | Protective cap for unused 7/8" male ports (plugs), metal, silver | | | | | ● | ● 4) | ● |
|  | 0906 UAC 201 | 7659 | Seal ring for M23 connectors, universal use for cables with Ø 2.5 to 10.5 mm | ● | | ● | | | | |
|  | ZBR 5/10 | 71326 | Labels in frame, 5 mm x 10 mm<br>Pack size: 40<br>- 10 single labels per frame<br>- 4 frames per package | ● 1) | | | ● | | ● 2) | |
|  | ZBS 7/10 | 12285 | Labels in frame, 7 mm x 14 mm<br>Pack size: 10<br>- 10 single labels per frame<br>- 1 frame per package | ● | | ● | | | | |
|  | ZBR 8/40 | 7801 | Labels in frame, 8 mm x 17 mm<br>Pack size: 40<br>- 5 single labels per frame<br>- 8 frames per package | | | | | | | |
|  | ZBR 9/40 | 7799 | Labels in frame, 9 mm x 20 mm<br>Pack size: 40<br>- 5 single labels per frame<br>- 8 frames per package | | | | | ● | | |
|  | ZBR 8/20 | 935015 | Labels in frame, 8 mm x 20 mm<br>Pack size: 15<br>- 5 single labels per frame<br>- 3 frames per package | | | | | | ● 3) 4) | |
|  | ZBST | 7800 | Labeling pen, India ink recommendation for plotters: INK 2000 and Clean 2000 | ● | | ● | ● | ● | ● | ● |

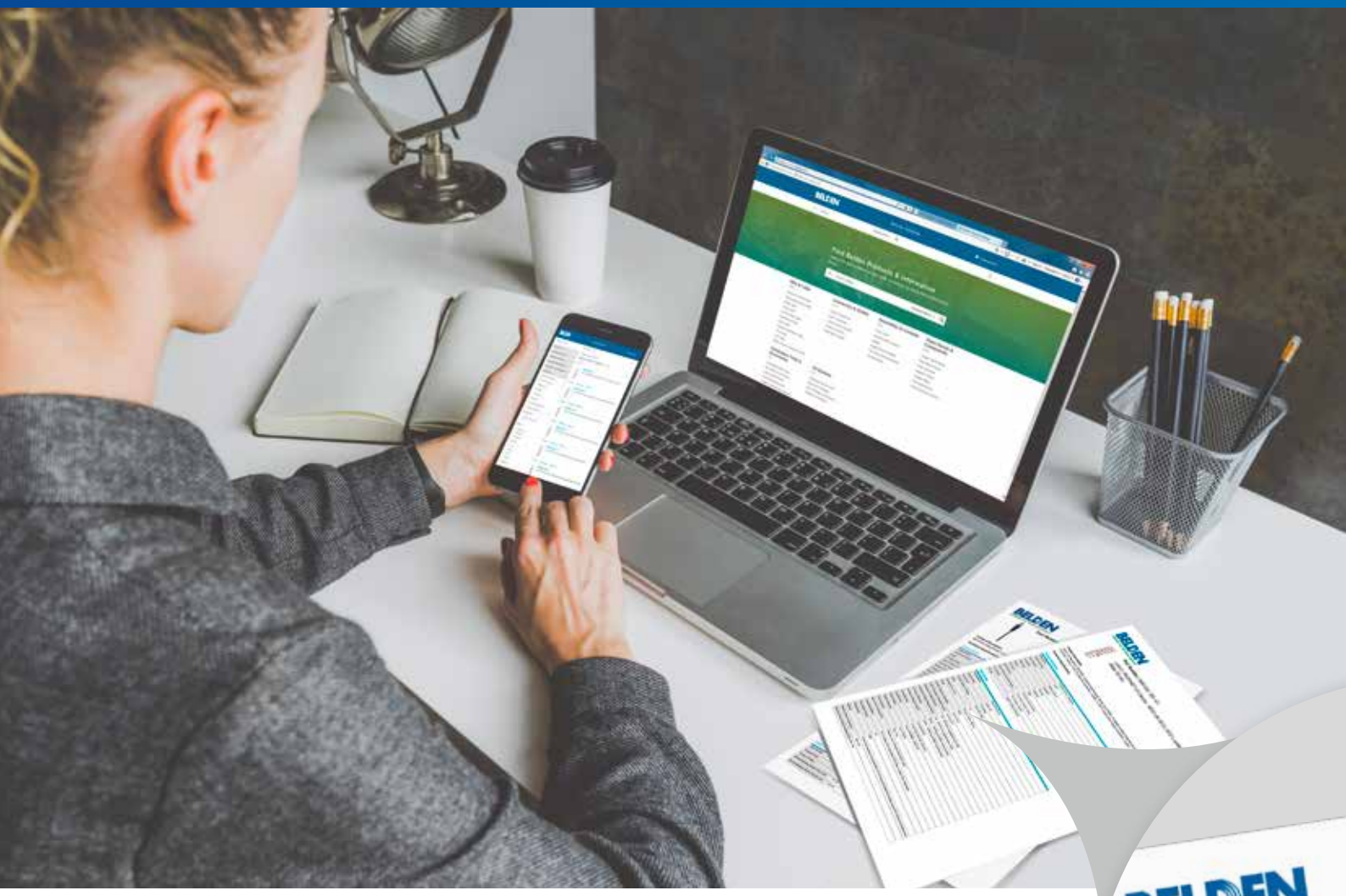
1) Suitable for all 30 mm boxes
2) Suitable for all M8 modules (0980 ESL 1xx-1x2)
3) Suitable for all M12 Power modules (0980 ESL xxx-12x)
4) Suitable for all 7/8" Power modules (0980 ESL xxx-11x)

# Mounting Adapters, Clips, Nuts

| | | | | Passive Distribution Boxes | | | | Active I/O Boxes | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Product Picture | Order Designation | Order Number | Description | ASB-C | ASB-N | ASB-R | ASB-S | LioN-M | LioN-P | LioN-R |
|  | ZKS 2 | 74051 | Mounting clip for M8 connectors | ● | | | ● | | ● | |
|  | ZKS 1 | 74050 | Mounting clip for M12 connectors | ● | | ● | | ● | ● | ● |
|  | RSKF 8 | 11644 | Mounting nut for M8 male and female receptacle connectors, thread: M8 x 0.5 | | | | | | ● | |
|  | RSKF 9<br>RSKFM 16<br>RSKFM 20 | 11645<br>25049<br>25048 | Mounting nut for M12 male and female receptacle connectors<br>Thread sizes:<br>RSKF 9: PG9<br>RSKFM 16: M16 x 1.5<br>RSKFM 20: M20 x 1.5 | | | | | ● | ● | ● |
|  | RSKF 11<br>RSKF 13.5 | 11642<br>11643 | Mounting nut for 7/8" male and female receptacle connectors<br>Thread sizes:<br>RSKF 11: PG11<br>RSKF 13.5: PG13.5 | ● | ● | ● | | ● | ● | ● |
|  | STS-Clip | 54643 | Securing/retention clip for molded connectors to electrical equipment<br>Suitable for use in areas with flammable dust as per EN 50281-1-1 | | | | | ● | | ● |
|  | UMA 001 ZDC | 934961001 | Mounting adapter/screw-clip for fixing LioN-Power I/O modules | | | | | | ● | |

# Tools

| | | | | Passive Distribution Boxes | | | | Active I/O Boxes | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Product Picture | Order Designation | Order Number | Description | ASB-C | ASB-N | ASB-R | ASB-S | LioN-M | LioN-P | LioN-R |
|  | AWKZ 3/4 | 61905 | Stripping tool for 3 and 4-core/poles cables Especially suitable for stripping 224 and 225 cable | ● | ● | ● | ● | ● | ● | ● |
|  | AWKZ 5 | 61907 | Stripping tool for 5-core/poles cables Especially suitable for stripping 228 cable | ● | ● | ● | ● | ● | ● | ● |
|  | AWKZ 12/19 | 61906 | Cable stripping knife for quick stripping of all established types of circular cable from 4 to 15 mm Ø, automatic switch from circular cut to lengthwise cut using twisting internal blade | ● | ● | ● | ● | ● | ● | ● |
|  | DMWKZ | 62068 | Torque screwdriver for M8 and M12 connectors, including M12 Power connectors. Attachment for screwing M12 connectors included | ● | ● | ● | ● | ● | | ● |
|  | DMEWKZ 8 | 62069 | Attachment for DMWKZ for screwing field attachable M8 connectors | ● | | | ● | | ● | |
|  | DMEWKZ K 12 | 62072 | Attachment for DMWKZ for screwing field attachable M12 connectors, including M12 Power connectors | ● | ● | ● | ● | ● | ● | ● |
|  | ZMS 19 | 7059 | Installation wrench for 12 and 19-pin M23 male and female connectors | ● | ● | ● | | | | |
|  | XZC 0703 | 932507004 | Crimping tool for all M12 Power connectors | | | | | | ● | |



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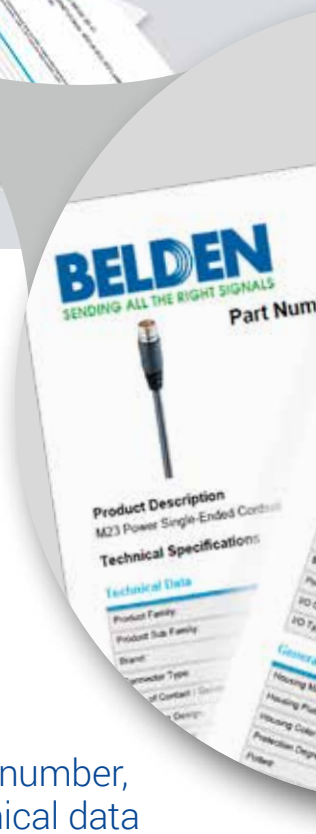


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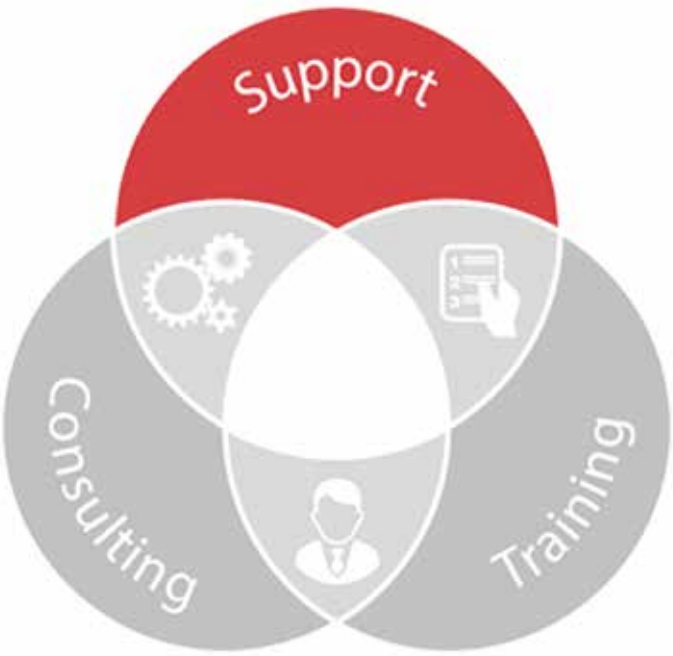

## Custom-made Connectivity Solutions

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When it comes to automation technologies, we are the experts for quality connectors and wiring components. With an extensive connectivity portfolio, Lumberg Automation and Hirschmann can offer you a wide range of standard solutions.

**Require a specialized solution that does not yet exist or have a problem with your current solution?**

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insights

trends

developments

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