PB 1064LE-AG

LioN-R Modules for PROFINET

The robust design and high level of functional reliability of the new ruggedized modules in the LioN series (LioN-R) for PROFINET provide secure connections between actuators/sensors and control units, even under extreme environmental conditions.

Galvanic Isolation Between Sensors/Actuators and PROFINET, Together With Short Circuit-proof Outputs, Ensure Extremely Reliable Data Transmission.

The Encapsulated Metal Housing also Brings a High Level of Mechanical Stability and Provides Maximum Protection Against Harsh Environmental Conditions.

- Combined with the "easy diagnostics" concept, the galvanic isolation between sensors/actuators and PROFINET provides maximum availability for systems and machines
- The integrated 2-port switch (10/100 Mbit/s), cost-effective line topologies can be implemented without additional switches
- A higher level of efficiency is achieved, due to standardized M12 connectors that considerably reduce wiring efforts and permit simple and fast extensions to the existing plant and equipment

Usable in both line and ring topologies, the new ruggedized LioN-R modules for PROFINET guarantee reliable data transmission even under the most extreme environmental conditions. Signals from connected sensors/actuators are bundled via vibration-proof M12 connectors before being sent to the controllers via PROFINET. The galvanic isolation between sensors/actuators and the bus system provides reliable protection against interference. The "fail-safe" function ensures reliable operation as well as safe switch-off when faults occur. The behavior of each individual output channel in the event of a fault can be defined during module configuration.

Applications

The LioN-R modules for PROFINET make it possible to implement dependable and flexible solutions, especially in mechanical and plant engineering. Thanks to their robust design, they are capable of withstanding welding sparks, shavings or aggressive coolants and lubricants. Equipped machines and systems can be employed in areas such as the automotive industry, where the AIDA group of manufacturers have opted for PROFINET as their network standard. Numerous other sectors can also benefit from the ruggedized LioN-R modules.

Your Benefits

LioN-R modules for PROFINET enable cost-effective solutions whenever you need to connect sensors and actuators to controllers. They owe their high functional reliability to the galvanic isolation between sensors/actuators and PROFINET, and to their simple diagnostics concept while ensuring maximum machine operating times. Because the modules come with an integrated 2-port switch, one can implement line topologies without the need for additional switches. In comparison with parallel wiring, the efforts for all types of tasks are further reduced – including planning, installation, maintenance and warehousing.

LioN-R Modules Support the PROFINET Protocol

Encapsulated in a metal housing, the ruggedized LioN modules for PROFINET are available in three versions. They each offer 16 digital channels configured as inputs, outputs or a combination of both. And the optimum slot arrangement makes them easy to use, even with T distributors. The rated output current is up to 1.6 A per channel. Maximum output current is 9 A per module. The power supply has a nominal voltage of 24 V and a voltage range of 19 to 30 V. All versions comply with the requirements of the IP67 protection class, are designed for a temperature range of -10°C to +60°C, and are PNO- and UL-certified.

Benefits at a Glance

- Combined with the "easy diagnostics" concept, the galvanic isolation between sensors/actuators and PROFINET brings maximum availability of systems and machines
- Short circuit-proof outputs contribute to maximum functional reliability
- The "fail-safe" function ensures reliable operation as well as safe switch-off in case of faults
- Support for RT and IRT real-time standards
- PNO-certification and UL approval

The "fail-safe" function ensures reliable operation and safe switch-off in case of faults

- Standardized M12 connection technology reduces wiring effort and also permits fast and simple extensions to your plant and systems
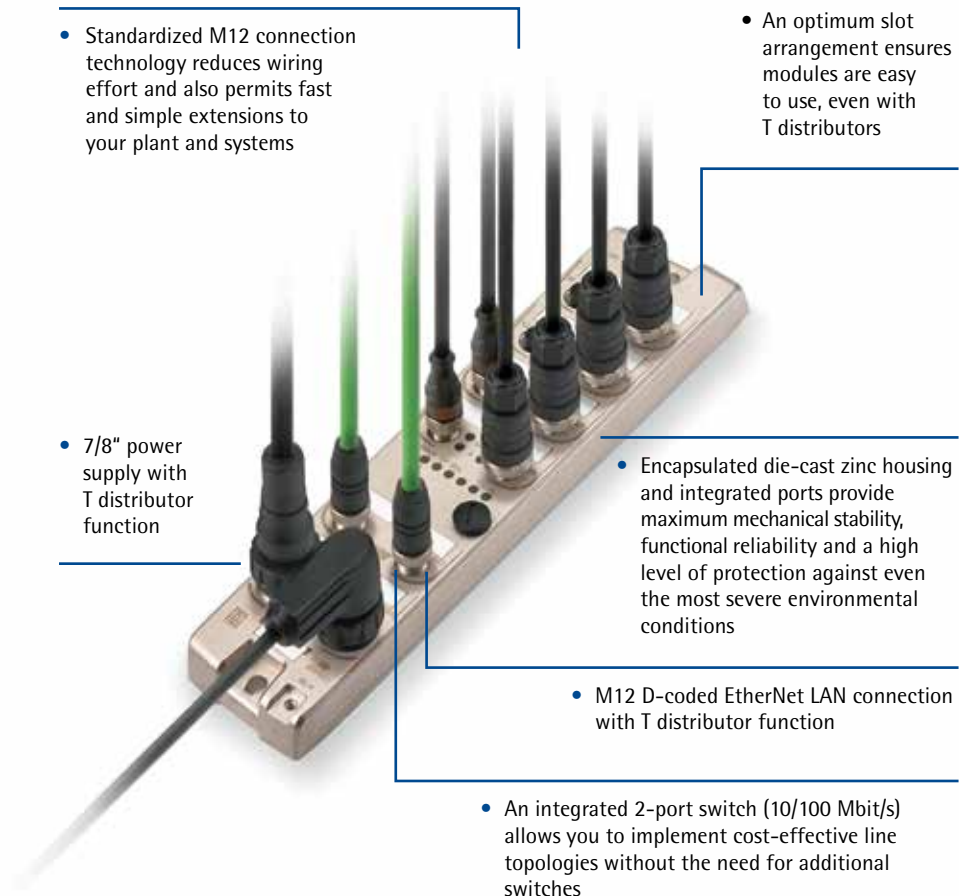
- An optimum slot arrangement ensures modules are easy to use, even with T distributors

- 7/8" power supply with T distributor function

- Encapsulated die-cast zinc housing and integrated ports provide maximum mechanical stability, functional reliability and a high level of protection against even the most severe environmental conditions

- M12 D-coded EtherNet LAN connection with T distributor function

- An integrated 2-port switch (10/100 Mbit/s) allows you to implement cost-effective line topologies without the need for additional switches
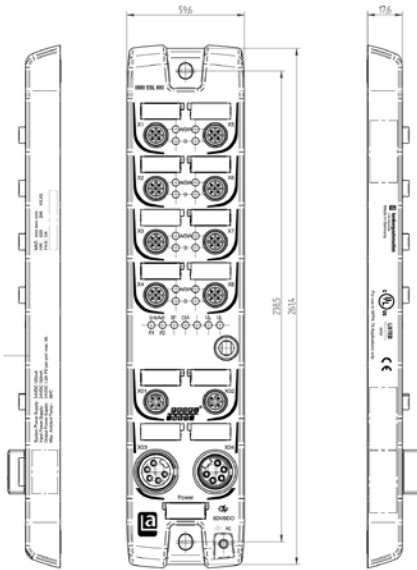
Technical Specifications

Product Description			
Type	0980 ESL 801-PNET 16DI-M12-R	0980 ESL 802-PNET 16DO-M12-R	0980 ESL 803-PNET 8DI/8DO-M12-R
Description	Digital input module, 16 digital input channels, PROFINET device, M12 LAN port, 4 poles D-coded, 7/8" power supply 5 poles	Digital output module, 16 digital output channels with galvanic isolation, PROFINET device, M12 LAN port, 4 poles D-coded, 7/8" power supply 5 poles	Digital I/O module, 8 digital I/O channels with galvanic separation, PROFINET device, M12 LAN port, 4 poles D-coded, 7/8" power supply 5 poles
Order No.	934 692-001	934 692-002	934 692-003
Technical Data			
Protection Class	IP67		
Operating Temperature Range	-10°C to +60°C		
Weight	605 g		
Housing Material	Metal (diecast zinc)		
Bus System			
Transmission Rate	10/100 Mbs		
Address Range	0 to 255		
Default Address	0		
Inputs			
Rated Input Voltage	24 V DC	–	24 V DC
Sensor Type	PNP (source)	–	PNP (source)
Power Consumption of Sensor	Max. 100 mA	–	Max. 100 mA
Reverse Polarity Protection	Yes	–	Yes
Short Circuit-proof	Yes	–	Yes
Number of Digital Channels	16	–	8
Status Indicator	LED white per channel	–	LED white per channel
Diagnostic Indicator	LED red per port	–	LED red per port
Actuator Power Supply UL			
Rated Output Current	–	24 V DC	24 V DC
Voltage Range	–	19 to 30 V DC	19 to 30 V DC
Reverse Polarity Protection	–	Yes/antiparallel diode	Yes/antiparallel diode
Indicator	–	LED green	LED white
Outputs			
Rated Output Current	–	1.6 A per channel	1.6 A per channel
Short Circuit-proof	–	Yes	Yes
Max. Current Carrying Capacity	–	9 A per module	9 A per module
Overload-proof	–	Yes	Yes
Number of Digital Channels	–	16	8
Channel Type N.O.	–	p-switching	p-switching
Status Indicator	–	LED white per channel	LED white per channel
Diagnostic Indicator	–	LED red per port	LED red per port
Galvanic Isolation from Electronics	–	Yes	Yes
Included in Delivery			
M12 Dust Covers	4 pieces		
Attachable Labels	10 pieces		

The use of these products in aggressive media should be verified in each case. Technical modifications reserved.
Certifications have been applied for UL and CSA.
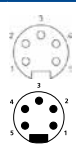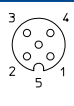
Technical Data

Diagnostic Indicator

LED	Indicator	Condition
U$_S$	Green	Logic/sensor power supply
U$_L$	Green	Actuator power supply
1...8 A	Yellow	Channel status
1...8 DIA A	Red	Periphery error
1...8 B	Yellow	Channel status
1...8 DIA B	Red	Periphery error
P1 Lnk/Act	Green Yellow flashing Off	Connection to an PROFINET device IO device exchanging data No connection to any other device
P2 Lnk/Act	Green Yellow flashing Off	Connection to an PROFINET device IO device exchanging data No connection to any other device
BF	Red Off	Bus error, no data exchange with I/O controller via PROFINET No error message
DIA	Red Red flashing Off	Common indicator for periphery errors Firmware update No error message

Technical modifications reserved.

Bit Assignment

Bit	7	6	5	4	3	2	1	0
M12 Input 16DI								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A
M12 Output 16DO								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A
M12 Input 8DI								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
M12 Output 8DO								
Byte 0	8B	8A	7B	7A	6B	6A	5B	5A

Pin Assignment

LAN Connection M12, D-coded

1 = TD+
2 = RD+
3 = TD-
4 = RD-

Housing = shielded

Voltage Supply 7/8"

1 = GND (0 V)
2 = GND (0 V)
3 = PE/Earth
4 = 24 V
5 = 24 V

M12 Inputs/Outputs

1 = +24 V
2 = IN/OUT B
3 = GND (0 V)
4 = IN/OUT A
5 = Earth

Housing = PE

Always the Right Solution

Belden is the world's leading supplier of signal transmission solutions including cable, connectivity and active components for mission-critical applications ranging from industrial automation and alternative power generation through to professional broadcasting. Belden offers an extensive portfolio of highly specialized products for steering, control and field level, which the company produces and markets under its proprietary Belden®, Hirschmann™ , and Lumberg Automation™ brands. We would be glad to give you a more personal introduction to our integrated product palette for industrial applications and the worldwide Belden Service

You will find further information and technical details online at **www.lumberg-automationusa.com** or contact our Sales Team directly: **Tel. 717.217.2272.**