

**NP 1046LE**
**Lumberg Automation™  
Shielded M12 Receptacle  
Connectors**

High level of functional reliability thanks to continuous shielding from one device to the next.



**Shielded M12 Receptacle Connectors From Lumberg Automation™ are Safe and Easy to Install and Highly Versatile. They Provide a Cost-effective and Reliable Way of Connecting Control Equipment to the Network via Bus Modules.**

- Simple and secure transmission of analog data is guaranteed thanks to optimized shielding connections
- Standardized M12 connector technology facilitates fast contacts and hence increases productivity
- Different robustly designed versions allow flexible and reliable solutions with a long useful life

The new shielded M12 receptacle connectors from Lumberg Automation™ can be used to reliably connect control equipment via bus modules to ProfiNet and Profibus networks, and also allow secure transmission of analog data at field level. They are offered either with control cable sets or with print contacts for mounting on PCBs. Thanks to their robust design they are able to withstand even rugged environmental conditions and extreme temperatures. The shielded M12 receptacle connectors thus offer highly available and cost-effective solutions for data communication in the field of automation.

#### Applications

Shielded M12 receptacle connectors can be used in a variety of industrial applications. The versions with control cable sets will be your first choice wherever you need reliable interfaces between control equipment housed

in switch cabinets and bus modules. This will be the case, for instance, in mechanical engineering, plant construction, materials handling and packaging applications.

These receptacle connectors are also eminently suitable, for instance, for public transport applications, such as networking the payment systems in buses.

Versions with print contacts for PCBs also offer a reliable solution for manufacturers of equipment such as weighing machines, because here, as in many other applications, they enable the reliable transmission of analog data even in case of strong electromagnetic fields.

#### Benefits

Malfunctions due to inadvertent errors or tampering cannot occur because the integrated interface is inside the switch cabinet, which does not need to be reopened to install or deinstall the downstream bus connection.

Standardized M12 connection technology and color coding of the bus connectors enable fast contacts, thus facilitating simple and secure installation and maintenance, or – in other words – a sustained increase in productivity. In addition, the different versions and robust design permit flexible and reliable solutions with a long useful life.

**A new product to  
serve your needs.  
Be certain**

## **Secure Operation of Equipment, Machinery and Plant Through Shielded M12 Connectors**

Thanks to the use of standardized M12 connection technology, these screened receptacle connectors with molded control cables can dispense with the otherwise usual PG threads for external connections. This makes for a highly flexible plug-in system. In addition, depending on the port assignments, the diagnostic interface can be controlled from outside the switch cabinet via an Ethernet connection. This avoids the possibility of malfunctions as a result of human errors when working inside the switch cabinet – making a considerable contribution to system security.

Fault-free processing of analog signals by securing continuous shielding of all devices.

### **Maximum Flexibility of Shield Conductance**





These shielded M12 receptacle connectors with print contacts are remarkable for their integrated shielding plate, which can be used for soldering to a PCB or a separate conductor and provides maximum flexibility for the shield conductance. This means that metal casings can be attached to cable lugs or eyelets, and plastic casings can be soldered to PCBs, making the connector housing available to the solder wave in addition to the actual contact and further increasing the reliability of the soldering process.





### **The Advantages at a Glance**

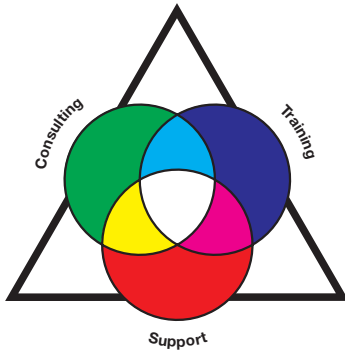
- Integrated shielding plate for maximum flexibility of the shield conductance
- Enlarged base for secure soldering
- Color-coded bus connectors prevent confusion
- High contact density in spite of compact construction (variants with 4, 5, 8 and 12 poles)
- Flexible connection technology
- Shock and vibration resistant
- Temperature range from -30°C to +80°C
- Industrial protection class IP67
- Perfectly geared to shielded cables and connectors or shielded field-attachable connectors from the Lumberg Automation™ portfolio



## Technical Information

Product Description				
Type	RSHLS	RKHL5	0976 PFC 160	0976 PMC 160
				
<b>Description</b>	Receptacle connector, M12 male connector for rear mounting, with shielding plate, print contacts, chassis side thread PG 9 (panel nut RSKF 9) 4, 5, 8 and 12 poles	Receptacle connector, M12 female connector for rear mounting, with shielding plate, print contacts, chassis side thread PG 9 (panel nut RSKF 9) 4, 5, 8 and 12 poles	Receptacle connector, M12 female connector for rear mounting, with shielding plate, print contacts, chassis side thread PG 9 (panel nut RSKF 9) 5 poles, B coded	Receptacle connector, M12 male connector for rear mounting, with shielding plate, print contacts, chassis side thread PG 9 (panel nut RSKF 9) 5 poles, B coded
Technical Data				
<b>Operating Temperature</b>	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C
<b>Housing/Molded Body</b>	CuZn, nickel-plated	CuZn, nickel-plated	CuZn, nickel-plated	CuZn, nickel-plated
<b>Insert</b>	PA	PA	PA	PA
<b>Contact</b>	CuZn, pre-nickeled and gold-plated	CuZn, pre-nickeled and gold-plated	CuZn, pre-nickeled and gold-plated	CuZn, pre-nickeled and gold-plated
<b>O-Ring</b>	FKM	FKM	FKM	FKM
Mechanical Data				
<b>Protection Class</b>	IP67 (Only in locked position with its proper counterparts.)			
<b>Mode of Connection</b>	Printed circuit board mount	Printed circuit board mount	Printed circuit board mount	Printed circuit board mount
Electrical Data				
<b>Contact Resistance</b>	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
<b>Nominal Current at 40°C</b>	4 A, 8- and 12 poles 2 A	4 A, 8- and 12 poles 2 A	4 A	4 A
<b>Nominal Voltage</b>	4 poles: 240 V, 5 poles: 60 V, 8- and 12 poles: 30 V encapsulated		60 V encapsulated	

Product Description				
Type	0986 EFC 158	RSHS	0975 254 112/* M	0985 342 112/* M
				
<b>Description</b>	Receptacle connector, M12 female connector for rear mounting, with shielding plate, print contacts, chassis side thread PG 9 (panel nut RSKF 9) 4 poles, D coded	Receptacle connector, M12 male connector for rear mounting, assembled with molded control cables, shielding goes over the housing, 4 and 5 poles	Receptacle connector, M12 female connector for rear mounting, assembled with molded control cables, shielding goes over the housing 5 poles, B coded	Receptacle connector, M12 female connector for rear mounting, assembled with molded control cables, shielding goes over the housing 4 poles, D coded
Technical Data				
<b>Operating Temperature</b>	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +70°C
<b>Housing/Molded Body</b>	CuZn, nickel-plated	Zinc diecasting, nickel-plated	Zinc diecasting, nickel-plated	Zinc diecasting, nickel-plated
<b>Insert</b>	PA	PA	TPU	TPU
<b>Contact</b>	CuZn, pre-nickeled and gold-plated	CuZn, gold-plated	CuZn, gold-plated	CuZn, gold-plated
<b>O-Ring</b>	FKM	NBR	FKM	FKM
Mechanical Data				
<b>Protection Class</b>	IP67 (Only in locked position with its proper counterparts.)			
<b>Mode of Connection</b>	Printed circuit board mount	–	–	–
Electrical Data				
<b>Contact Resistance</b>	≤ 5 mΩ	–	–	–
<b>Nominal Current at 40°C</b>	4 A, 8- and 12 poles 2 A	4 A, 8- and 12 poles 2 A	4 A	4 A
<b>Nominal Voltage</b>	240 V encapsulated	60 V	60 V	250 V



## The Belden® Competence Center

Make sure you get an economical end-to-end solution for your network: In addition to its well-known products, Belden can also offer you a wide range of vendor-independent services. Whether it's consulting, training or support – at the Belden® Competence Center you can be certain of tailor-made service from a single supplier.

Whichever technology you use: our experts will support you all the way, from designing your network to optimizing the measures required in the operating phase. Up-to-date manufacturer's expertise, an international service network and fast access to external specialists guarantees you the best possible support. Bundle your individual service package today!

### Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who are able to add value to your business. When it comes to signal transmissions, Belden is the number one solutions provider. We understand your business and want to know your specific challenges and targets to see how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our three leading brands, Belden®; Hirschmann™; and Lumberg Automation™, we are able to offer the solution you need. Today it may be a single cable, a switch or a connector, thus solving a specific issue; tomorrow it can be a complex range of integrated applications, systems and solutions.

We guarantee the superior performance of your mission-critical systems, even in the most demanding circumstances. If signal transmission is vital to your business, get in touch with the partner that delivers. Be certain. Belden.