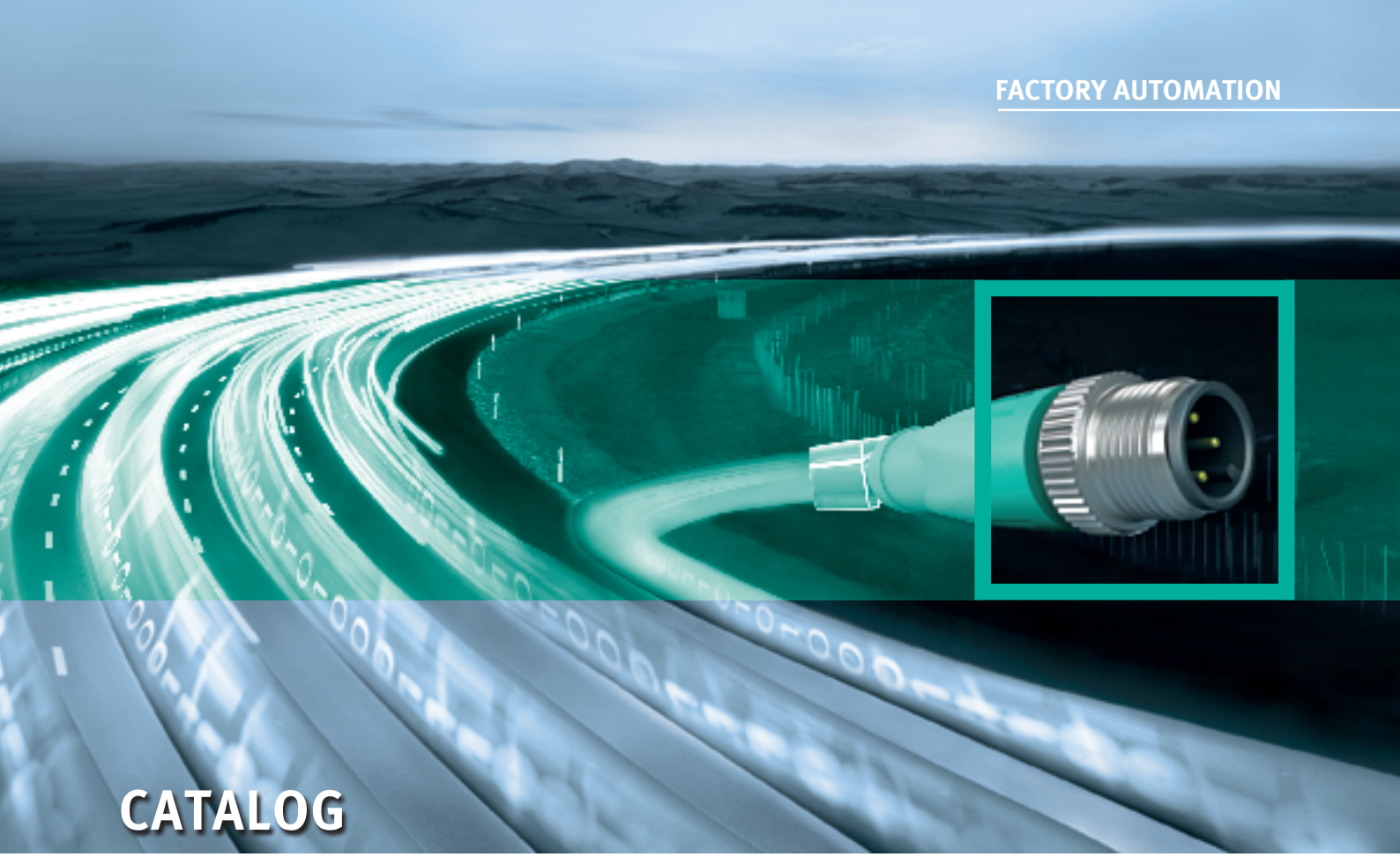
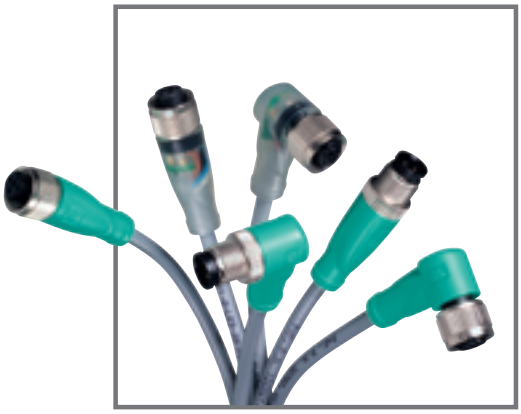
FACTORY AUTOMATION

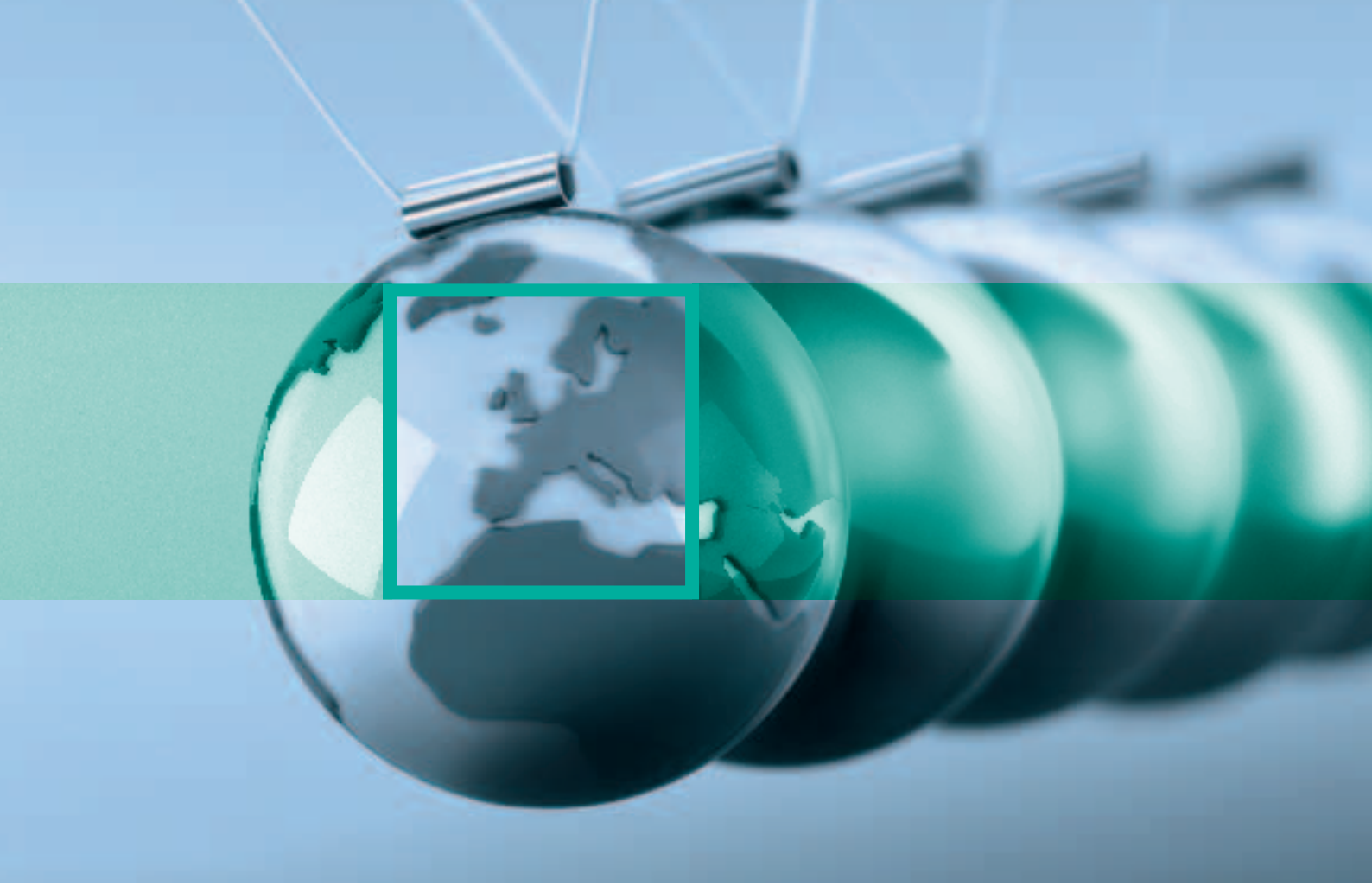


CATALOG

CONNECTORS, CORDSETS AND SPLITTERS



PEPPERL+FUCHS
SENSING YOUR NEEDS



About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

PEPPERL+FUCHS – SENSING YOUR NEEDS

The main target markets of the **Factory Automation Division** are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies. With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for factory automation. The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

PEPPERL+FUCHS – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

PEPPERL+FUCHS

WORLDWIDE PRESENCE IN 33 COUNTRIES

THE THREE CENTERS OF EXCELLENCE ARE THE FOCAL POINTS OF THE GLOBAL PRESENCE OF PEPPERL+FUCHS

Mannheim
Mannheim is the traditional headquarters of Pepperl+Fuchs and the center of excellence focusing on engineering. More than 800 specialists support the activities of this principal Pepperl+Fuchs location.

Twinsburg
Since 1983, Twinsburg/Ohio has been the headquarters for the American market. 250 employees on site develop specific solutions for the American customers of Pepperl+Fuchs.

Singapore
More than 700 employees are engaged in the Singapore center of excellence of Pepperl+Fuchs. Since 1979, all activities associated with the Asiatic economic area have been controlled from Singapore. This region is becoming of increasing importance due to the growth market in China.

The global presence of Pepperl+Fuchs:

- Technology centers with their own development groups in Berlin, Tuttlingen and Sulbiate/Italy offer customers specific solutions. Furthermore the locations operate highly flexible production in small batch sizes.
- The production facilities in Hungary and Indonesia are equipped for series production in large quantities.
- The worldwide sales network guarantees that we are close to our customers and enforces Pepperl+Fuchs to react swiftly and competently to customer requirements. You are in need of contact addresses of our sales partners? Please try the internet at www.pepperl-fuchs.com/company/presence.

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Pepperl+Fuchs - Your Expert Partner

Pepperl+Fuchs is one of the world's leading manufacturers of industrial sensors and sensor systems. We also provide a comprehensive range of connectors and junction blocks for machine and plant installations. Each product is designed to be an optimum solution for specific application conditions.
Our IS0 9001 certification ensures that our products meet the highest standards of quality and are a reliable source for your application.

Sales offices in all industrial markets throughout the world make Pepperl+Fuchs the ideal partner for all global players in factory automation. Through knowledgeable contacts, we offer you first-class service anywhere in the world. Our on-site staff use their extensive knowledge of products and applications to best meet your needs.

Always the right connection

Pepperl+Fuchs stands for innovation and close cooperation with its customers. As the "inventor of the proximity switch" we have been expanding the boundaries for more than 50 years, always leading the way with new market developments. Our success is based on knowing and understanding our target industries and the needs of our customers. For this reason, we are the expert contact for our customers when they are looking for new solutions. We can provide brand-new theories product concepts to solve complex challenges. We always aim to add technical and commercial value.

We are successful because we provide valuable technical assistance, offer a comprehensive range of products and are flexible when it comes to putting new ideas and concepts into practice. Whether it involves innovative technical solutions or providing support, we will always find the right solution based on our extensive experience, product line, manufacturing, and application know-how. Choose the RIGHT CONNECTION and contact us today!

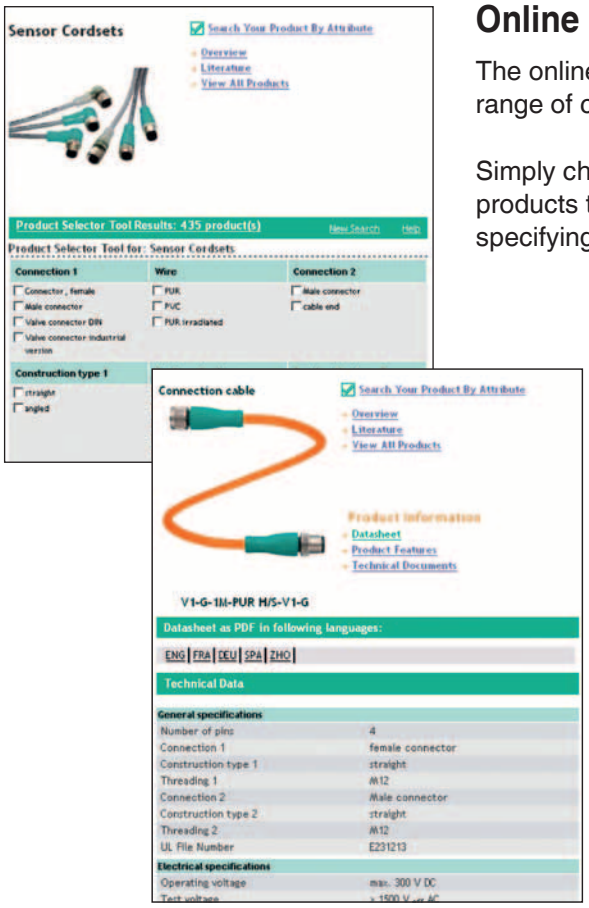
Visit us online at

www.pepperl-fuchs.com

Our website contains everything you need to know about Pepperl+Fuchs products and services as well as numerous application examples.

Expert Service

We are happy to answer any questions you have regarding connection technology.

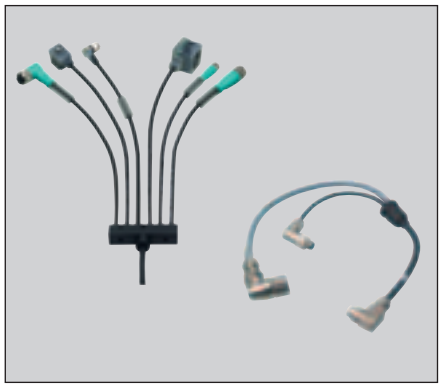


Online Product Selector

The online product selector helps you to select the right item from our wide range of connectors.

Simply choose the necessary technical features for an overview of all products that correspond to your request. The more precise you are when specifying the product, the more accurate the results will be.

Here you will not only find all technical information but also CAD drawings and approvals.



Customer-Specific Solutions

We always listen to our customers' needs and strive to provide the best solution. Sometimes this is only possible with a customized product. Regardless of whether it is a matter of simple assembling, complete cable assemblies, or customer-specific developments:

We offer tailor-made solutions for your application!

With our expertise in tool manufacturing, injection-molding technology, metal processing, electronic engineering, and assembling, we are perfectly positioned to quickly provide the product that's best for your specific application. We assure the highest standards through the qualification and approval of our products to international standards by test programs implemented by our own testing laboratory.

Our services:

- Advice
- Development/construction
- Tool manufacturing
- Assembly
- Custom design
- Preassembly

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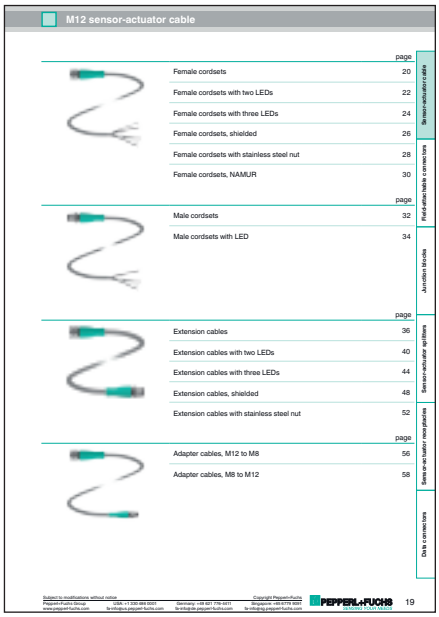
PEPPERL+FUCHS
SENSING YOUR NEEDS


M12 sensor-actuator cable

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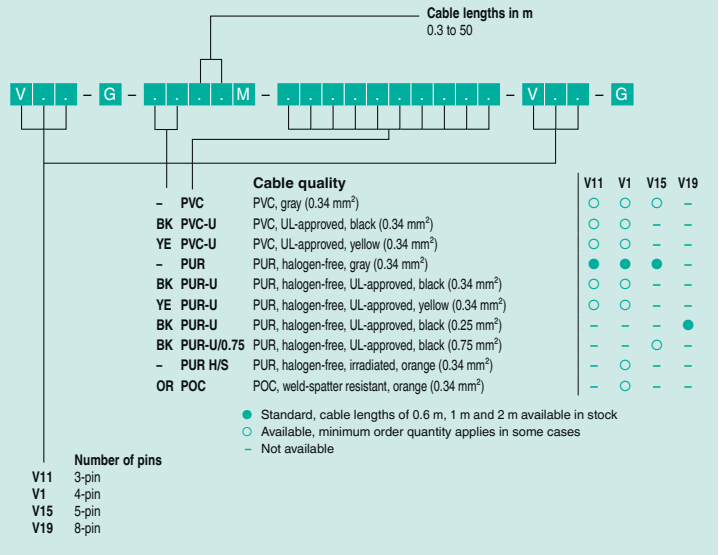
Ordering Made Easy

Choosing and ordering the right product for your application is quite simple. From the table of contents, go directly to the desired subchapter. Here you will find an overview of all the models listed in this chapter. On the chosen cataloge page, configure your product using our type code. For example, just select the desired cable material and length, then enter these into the empty space on the type code – your order code is complete.

Example

You wish to order the following M12 connection cable:

- M12 socket, straight to M12 plug, straight, 4-pin
- Halogen-free, irradiated PUR cable
- 1 m cable length



As you can see from the image above, the correct order code is:
V1-G-1M-PUR H/S-V1-G

Tip:
If you are unsure about which type of cable you need for your application, you can find a description of the types of cable and the relevant applications in the “The Correct Cable for Every Application” on page 10.

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Highest Standards of Quality

For us, quality primarily means customer satisfaction. With this in mind, all business processes are geared towards customer satisfaction, be it in the form of the qualification and manufacture of our products or providing expert advice. This is maintained through quality management according to DIN EN ISO 9001:2000.

Our products are qualified in the Pepperl+Fuchs testing laboratory with regard to the relevant European standards and directives as well as the specifications provided. In addition, certain products must also meet our even more stringent in-house standards. Our measurement and test equipment meets stringent quality standards and is constantly being updated to comply with the latest standards.

In our **production facility in Hungary,** modern production standards and 100% functional testing of every product ensure zero tolerance for defects and the highest levels of functional safety. An automated 4-point testing program of all connectors guarantees this zero-defect test commitment:

- Short-circuit detection across all internal strands against each other
- Testing of series resistance
- Load test with 4 A per lead
- LED test
- High voltage test

Under the key word “LEAN production,” our production processes are constantly being inspected and refined. We focus not just on quality but also on the cycle time and flexibility of our processes. Only in this way can short delivery times and a large range of products be maintained.

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PEPPERL+FUCHS
SENSING YOUR NEEDS

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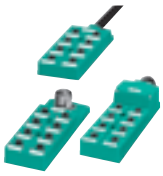

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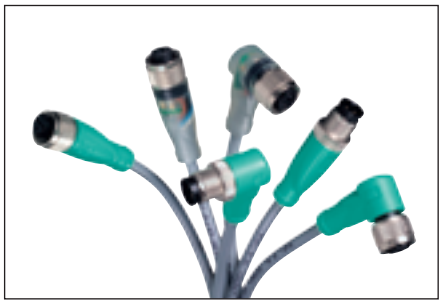


Product Diversity – Always the Right Connection

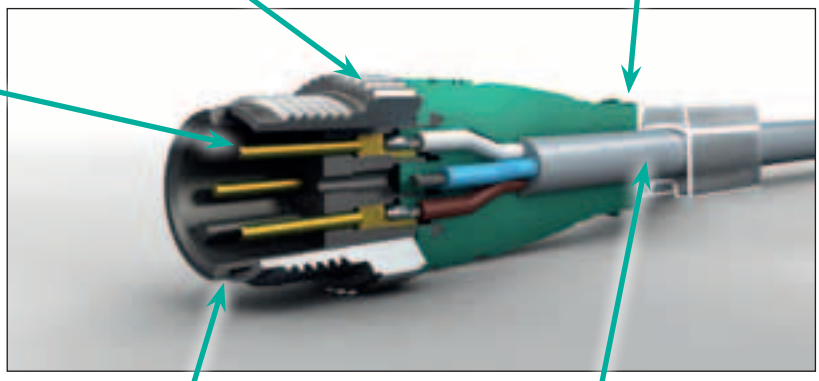
Pepperl+Fuchs offers a comprehensive range of sensor-actuator cables for machine and plant installations. In addition to the common M8, M12, and valve connector designs, ready-made 1/2″ and 7/8″ connectors are also available in stock as standard. Our recently introduced "LEAN Production" philosophy will enable us to manufacture and deliver customized versions with short delivery times.

The choice of cable product often depends on the application requirements or user standards.
Our range includes:

- Shielded versions
- A version with stainless-steel coupling nut
- Versions with indicators for operation and function.

In conjunction with our wide range of cable types, these options mean that we can provide the optimum solution for virtually any application.

The New Generation – Connectors with Impressive Properties



- Optimized size and a rounded body designed for a secure grip enable the connector to be used in the tightest of spaces
- Gold-plated, machined contacts ensure contact resistances < 5 mΩ
- Halogen-free PUR leads prevent toxic vapors being released in the event of a fire
- The knurled nut enables a torque wrench to be used to securely tighten our connectors
- Highly effective integrated vibration protection

Your Benefits at a Glance

- **Flexibility – we are happy to customize our products to your specifications**
- **Shortest delivery times – even for customized products**
- **Quality – exhaustive functional testing of all connectors**
- **Products are approved for the American market –**
- **Reliably sealed to IP67 or higher**

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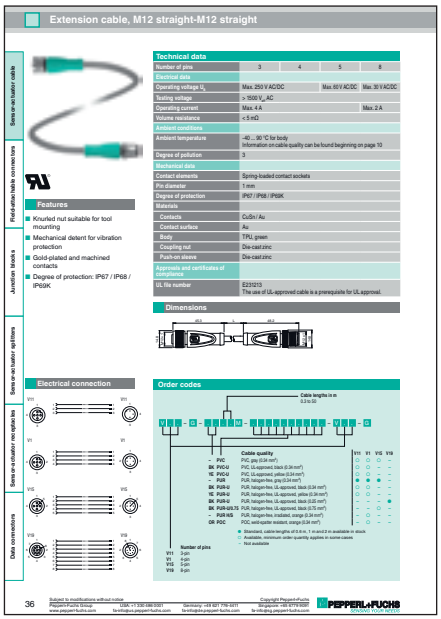
Extension cable, M12 straight-M12 straight

Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_b	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC	
Testing voltage	> 1500 V_{rms} AC			
Operating current	Max. 4 A		Max. 2 A	
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40...80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuZn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Push-on sleeve	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.			

Features
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

Dimensions

Electrical connection

Order codes

Cable lengths in m
0.3 to 50

V . . – G – . . . . M – . . . . . – V . . – G

Cable quality

			V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V11 3-pin
V1 4-pin
V15 5-pin
V19 8-pin

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Our Type Code – Your Order Code

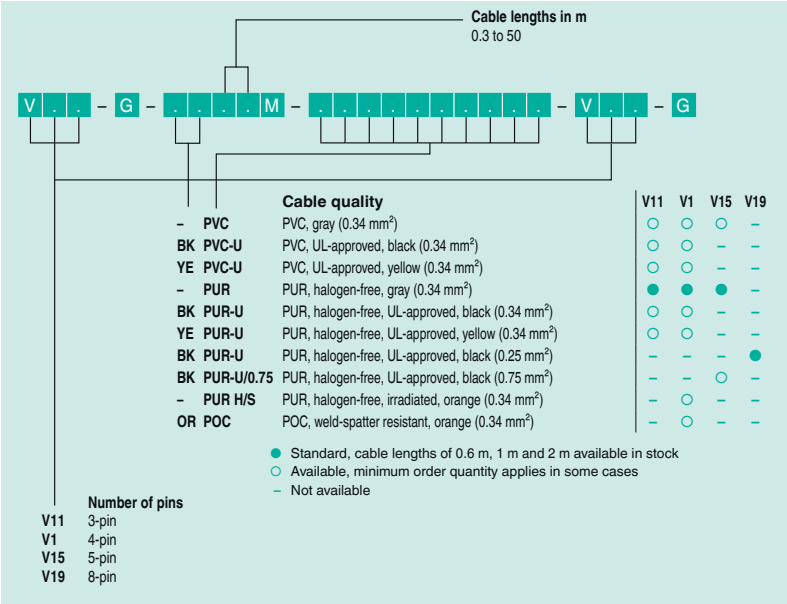
Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired cable material and enter this into the empty space on the type code – your order code is complete.

Example

You wish to order the following M12 connection cable:

- M12 socket, straight to M12 plug, straight, 4-pin
- Halogen-free polyurethane cable, gray
- 1 m cable length



As you can see from the image above, the correct order code is: **V1-G-1M-PUR-V1-G**.

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The Correct Cable for Every Application

Choosing the right cable is crucial in terms of the service life you can expect from a sensor-actuator cable. This is why it pays to familiarize yourself with our extensive range of cables. It will save you time as well as money!

PVC – for straightforward applications

Application areas:
For use in areas subject to moderate mechanical strain, e.g., packaging machines, assembly and production lines.

- **Affordable cable quality**
- **Effective resistance to chemicals**
- **Suitable for the food industry**

Features:

- Easily strippable
- Excellent flame retardance
- Suitable for flexible installation to some extent
- Limited resistance to oil and lubricant

Temperature range

Permanently installed	–25 °C ... 70 °C
	–25 °C ... 105 °C for indicated cable types
Non-fixed	–5 °C ... 70 °C
Minimum bend radius	10 x D

Cable types

Cable type	Structure	Diameter	Use
PVC, gray	3/4/5 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M12
	3/4 x 0.25 mm^2 (14 x 0.15 mm)	D = 4.3 mm	M8
PVC, blue (NAMUR)	2/4 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M8 / M12
PVC, black	2+1/3+1/4+1 x 0.5 mm^2 (16 x 0.2 mm)	D = 5.1 mm/5.7 mm/6.6 mm	Valve connectors
PVC-U, black	3/4 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.3 mm	M8 / M12
PVC-U, yellow	3/4 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.3 mm	M8 / M12
PVC-U, yellow, 105 °C	3/4/5 x 0.34 mm^2 (42 x 0.1 mm)	D = 5.2 mm/5.5 mm/5.9 mm	1/2″

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PUR/PVC – for more exacting specifications

Application areas:
This cable is suitable for situations where it is exposed to a high level of mechanical stress, e.g., with machine tools or production processes involving removal of metal.

- **High abrasion resistance**
- **Effective resistance to chemicals**
- **Effective resistance to oil**
- **Suitable for flexible installation**

Features

- Easily strippable
- Resistant to microbes and hydrolysis
- UV-resistant

Temperature range

Permanently installed	–25 °C ... 80 °C
Non-fixed	–5 °C ... 80 °C
Minimum bend radius	10 x D

Cable types

Cable type	Structure	Diameter	Use
PUR, black	2+1/3+1/4+1 x 0.5 mm^2 (16 x 0.2 mm)	D = 5.7 mm/6.0 mm/6.5 mm	Valve connectors

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PUR – for complex applications

Application areas:
Suitable for long-term flexible use in the most challenging of environments such as with machine tools, rotary tables and swivel tables. Shielded versions available to meet additional EMC requirements.

- **Halogen-free**
- **Capable of withstanding a high level of mechanical stress**
- **Effective resistance to chemicals**
- **Effective resistance to oil**
- **UL cable types are extremely flame-retardant**

Features:

- Free from silicone and substances that inhibit lacquer adhesion
- Resistant to microbes and hydrolysis
- UV-resistant

Temperature range

Permanently installed	–40 °C ... 80 °C
Non-fixed	–20 °C ... 80 °C
Minimum bend radius	10 x D

Additional data for UL-approved cable types (unshielded):

Min. no. of bend cycles	5 million
Distance	5 m
Acceleration	5 m/s^2
Speed	3.33 m/s
Torsion	±180°/m tested at 20 °C ... 25 °C

Cable types

Cable type	Structure	Diameter	Use
PUR, gray	3/4/5 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M12
	3/4 x 0.25 mm^2 (14 x 0.15 mm)	D = 4.3 mm	M8
PUR, blue (NAMUR)	2/4 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M8 / M12
PUR-U, black	8 x 0.25 mm^2 (14 x 0.15 mm)	D = 6.0 mm	M12
	2+1/4+1 x 0.5 mm^2 (28 x 0.15 mm)	D = 4.8 mm / 5.5 mm	Valve connectors
	3/4 x 0.34 mm^2 (42 x 0.1 mm)	D = 4.3 mm	M8 / M12
PUR-U/ABG, black, shielded	8 x 0.25 mm^2 (14 x 0.15 mm)	D = 6.0 mm	M12
PUR-ABG, gray, shielded	4/5 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M8 / M12
PUR-U, yellow	4 x 0.34 mm^2 (42 x 0.1 mm)	D = 4.3 mm	M8 / M12
PUR-U/0.75, black	5 x 0.75 mm^2 (42 x 0.15 mm)	D = 6.0mm	M12

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Irradiated PUR – for extreme applications

Application areas:
This cable boasts properties that are better than those of conventional PUR cables, making this highly-flexible control cable also suitable for use in robot applications and particularly with welding robots.

- **Welding bead resistant**
- **Resistant to high temperatures**
- **Capable of withstanding mechanical stress**
- **Robot-compatible**
- **Halogen-free**
- **Excellent flame retardance**

Features:

- Effective resistance to oil
- Effective resistance to chemicals
- UV-resistant
- Free from silicone and substances that inhibit lacquer adhesion
- Resistant to microbes and hydrolysis

Temperature range

Permanently installed	–50 °C ... 105 °C	
	–50 °C ... 80 °C	for UL cable types
Non-fixed	–40 °C ... 105 °C	
	–40 °C ... 80 °C	for UL cable types
Minimum bend radius	10 x D	
Min. no. of bend cycles	5 million	
Distance	10 m	
Acceleration	10 m/s²	
Speed	3 m/s	
Torsion	Torsion ±360°/m tested at 20 °C ... 25 °C	

Cable types

Cable type	Structure	Diameter	Use
PUR H/S, orange	4 x 0.34 mm² (19 x 0.15 mm)	D = 4.8 mm	M8 / M12
PUR H/S, yellow	3/4/5 x 0.75 mm² (42 x 0.15 mm)	D = 5.8 mm	1/2″

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POC welding bead resistant – for the most challenging scenarios

Application areas:
This special cable comes into its own for applications in the welding sector that cannot be solved with irradiated PUR cables.

- **Welding bead resistant**
- **Resistant to high temperatures**
- **Capable of withstanding mechanical stress**
- **Robot-compatible**
- **Excellent flame retardance**

Features:

- Effective resistance to oil
- Effective resistance to chemicals
- UV-resistant
- Free from silicone and substances that inhibit lacquer adhesion
- Resistant to microbes and hydrolysis

Temperature range

Permanently installed	–40 °C ... 150 °C
Non-fixed	–15 °C ... 150 °C
Minimum bend radius	10 x D
Torsion	±360°/m tested at 20 °C ... 25 °C

Cable types

Cable type	Structure	Diameter	Use
POC, orange	4 x 0.34 mm^2 (19 x 0.15 mm)	D = 4.8 mm	M8 / M12

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STOOW – THE cable for the American market

Application areas:
This type of cable uses an extremely resilient PVC mixture that is used predominantly in the American market.

- **Extremely resilient PVC mixture acc. to STOOW-A**
- **Tried and tested for outdoor use**
- **Approved up to 600 V**
- **Excellent flame retardance**

Features:

- Effective resistance to oil
- Effective resistance to chemicals

Temperature range

Permanently installed	–25 °C ... 105 °C
Non-fixed	–5 °C ... 105 °C
Minimum bend radius	10 x D

Cable types

Cable type	Structure	Diameter	Use
STOOW, yellow	3/4/5 x AWG16 (~1.25 mm^2, 19 x 0.29 mm)	D = 9.9 mm / 10.7 mm / 12.9 mm	7/8″

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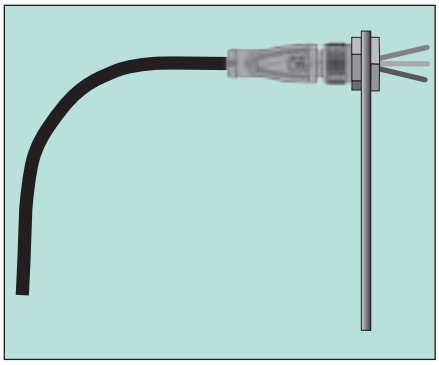
Instructions on Connecting and Routing Cables

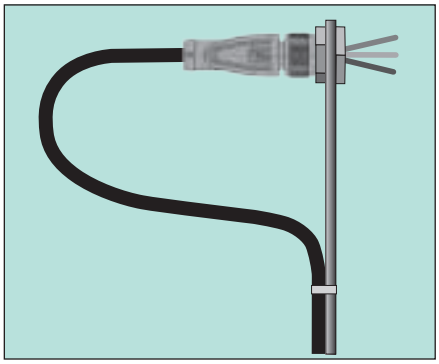
Avoid common mistakes when connecting and routing cables
Properly connecting, routing, and maintaining cable systems is the best way to ensure their reliability and long service life.

Bending radius
By using an appropriate bending radius you can reduce the tensions that arise from bending, and extend the cable's service life.

Recommended flexible installation

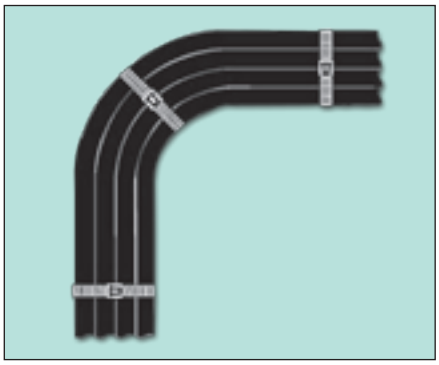


Recommended fixed installation



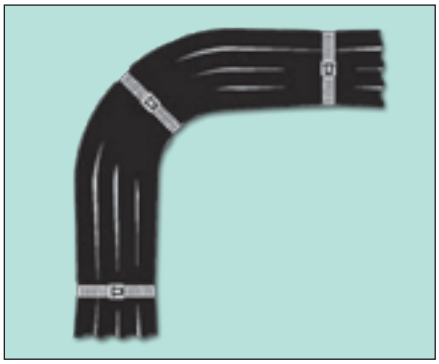
Bundling
When individual cables are connected to a device and when securing cables together, take care to avoid deforming the cables with the cable ties. When cables are secured correctly it should be possible to move them easily and without using much force; this will extend their service life.

Correct bundling



Incorrect bundling

Cable ties that are too tight should be loosened, and those that are too slack should be tightened



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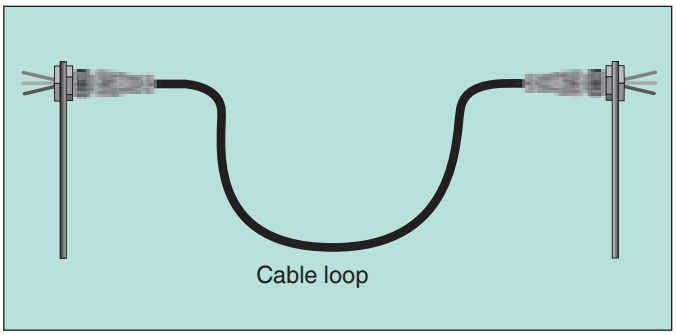
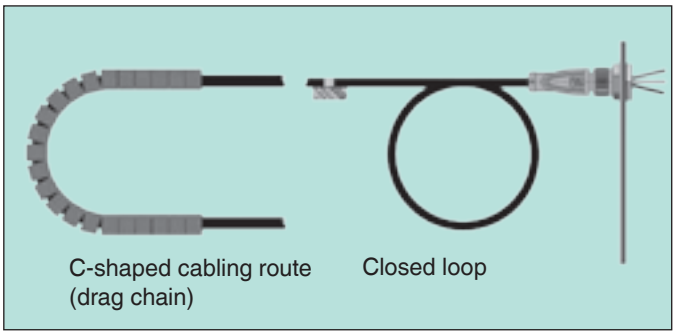
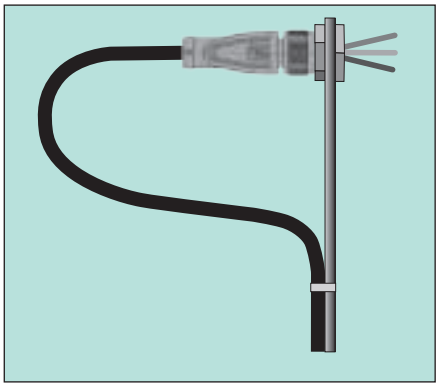
Connecting cables to portable devices
Connecting cables that are subject to movement between two points must be long enough to avoid excessive strain on the cables and connectors.
In this situation it is advisable to form loops in the cable and route sections in the shape of the letter C.



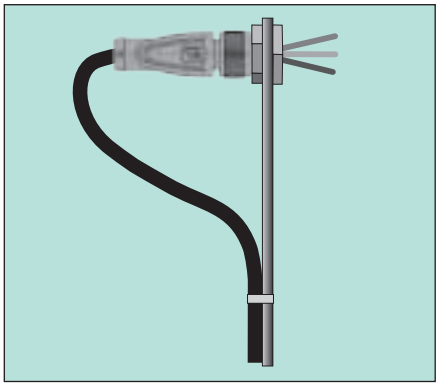


Strains
If a sufficiently large loop is formed at connection points, then excessive wear and common problems due to the strains illustrated below can be avoided.
Pepperl+Fuchs connecting cables feature rugged, pre-fitted easy-grip body.
If these are combined with correctly formed loops, the result is that both connector and cable are relieved very effectively of strain.

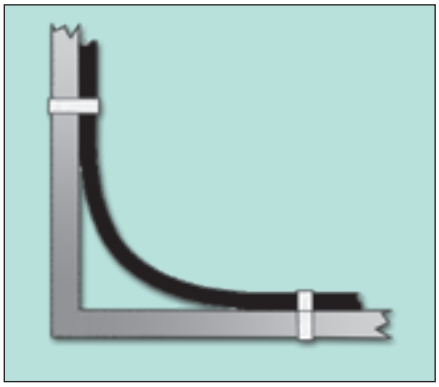
Correct strain relief loop



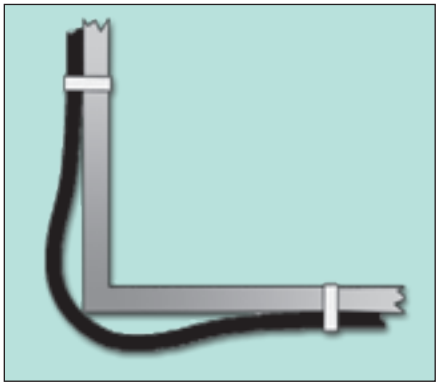
Incorrect strain relief loop



Recommended: Routing inside corner



Routing the cable round the outside of a corner is not recommended



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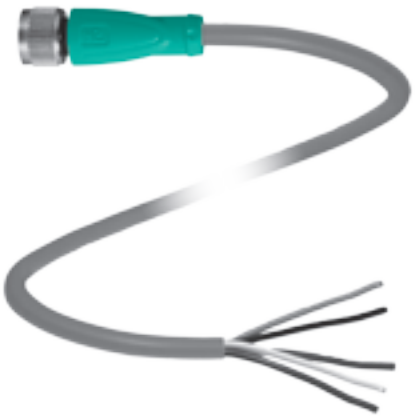


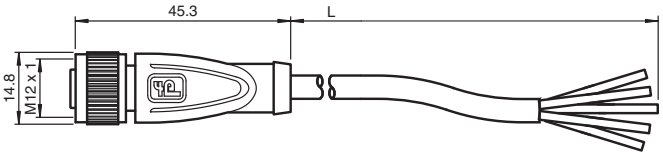
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

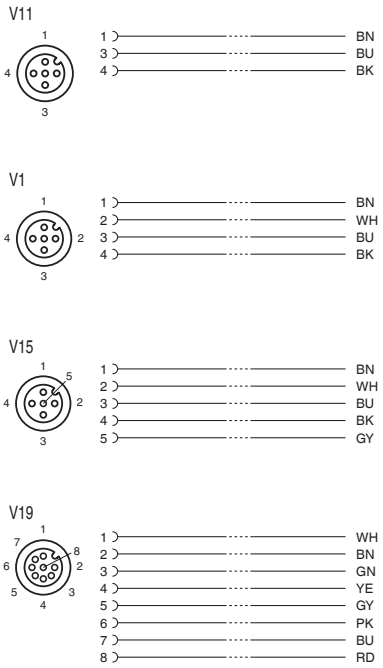
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Degree of protection	IP67 / IP68 / IP69K			
Material				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.			

Dimensions



Electrical connection



Order codes

V . . – G – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

		Cable quality	V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins	
V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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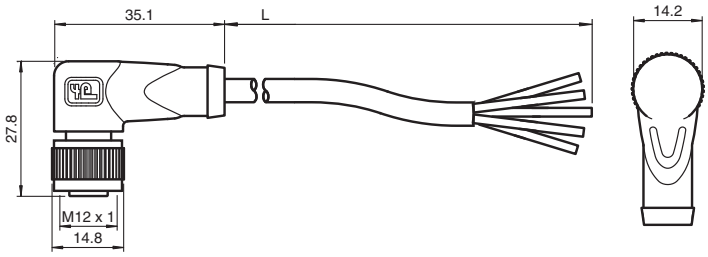
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

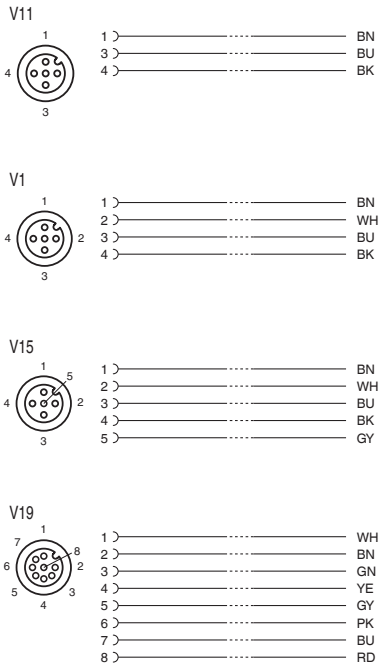
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Degree of protection	IP67 / IP68 / IP69K			
Material				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.			

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . .

Cable quality

			V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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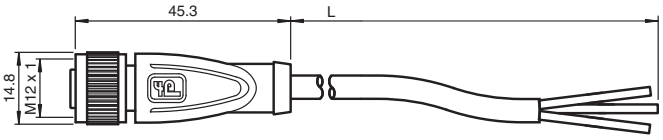
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

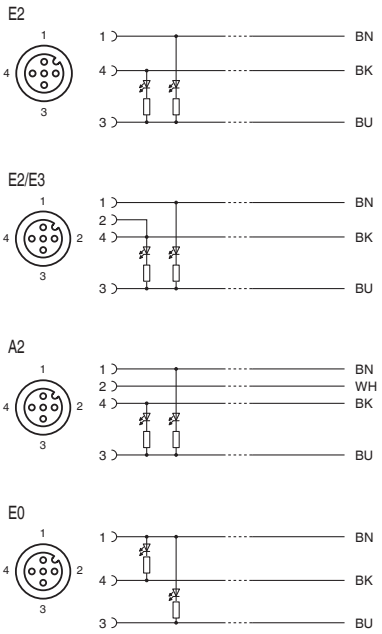
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP68 / IP69K		
Material			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent		
Coupling nut	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.		

Dimensions



Electrical connection



Order codes

V 1 – G – . . . . . – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

		Cable quality	E2	E2/E3	A2	E0
–	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	●
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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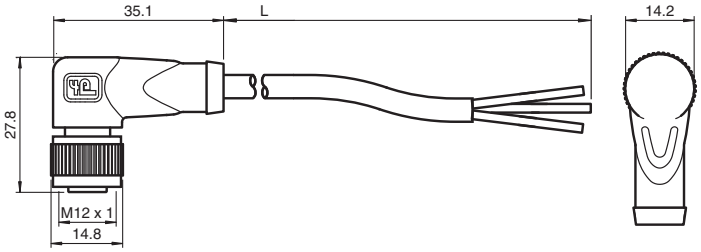
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

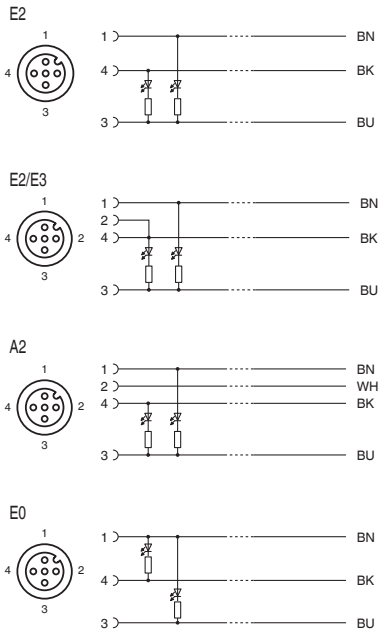
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP68 / IP69K		
Material			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent		
Coupling nut	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – W – . . . . . – . . . . M – . . . . . .

Cable quality

			E2	E2/E3	A2	E0
–	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	●
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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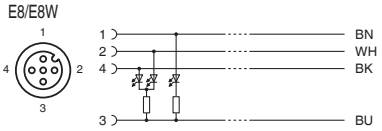
M12 x 1 female cordset, straight, three LEDs

Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

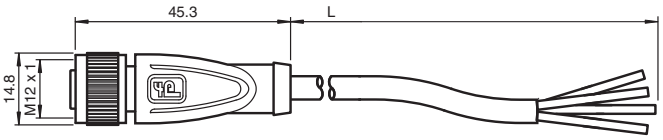
Electrical connection



Technical data

Number of pins	4 (E8)	4 (E8W)
Displays/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67 / IP68 / IP69K	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality	

Dimensions



Order codes

V1 – G – ... – ....M – .....

Cable lengths in m
0.3 to 50

Cable quality

			E8	E8W
–	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
E8 4-pin
E8W 4-pin

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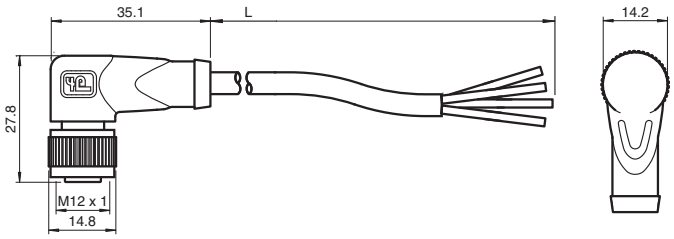
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

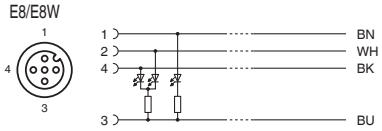
Technical data

Number of pins	4 (E8)	4 (E8W)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67 / IP68 / IP69K	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213, Prerequisite for UL approval is the use of a UL-approved cable quality	

Dimensions



Electrical connection



Order codes

V 1 – G – . . . – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

Number of pins

E8	4-pin
E8W	4-pin

Cable quality

			E8	E8W
–	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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M12 x 1 female cordset, straight, shielded

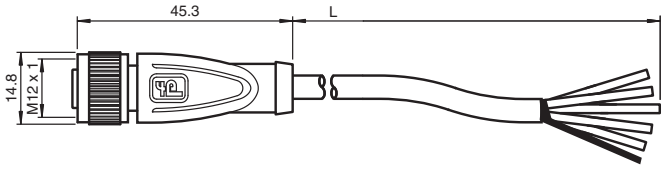
Technical data

Number of pins	4	5	8	7 + 1 x shield
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC	
Operating current	Max. 4 A		Max. 2 A	
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Degree of protection	IP67			
Material				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Shield	Braided			

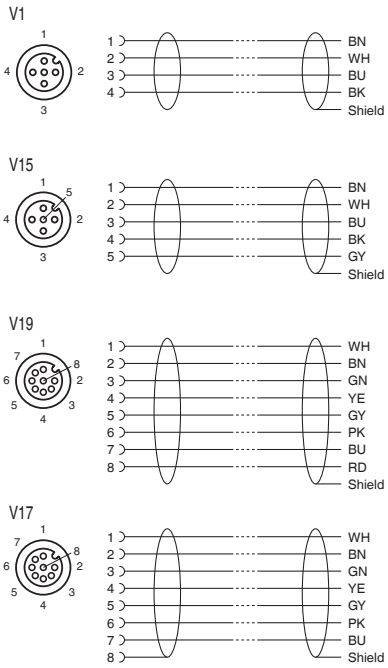
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

V . . – G – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

Cable quality

			V1	V15	V19	V17
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	●	●	–	–
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25mm²)	–	–	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin
V17	7-pin + 1 x shield

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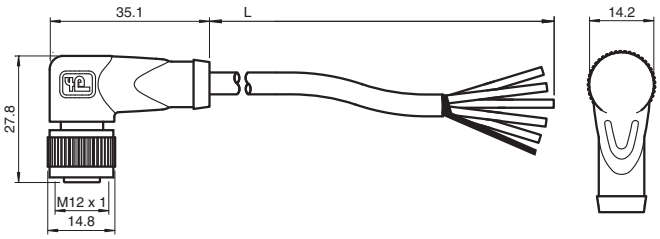
Technical data

Number of pins	4	5	8	7 + 1 x shield
Electrical data				
Operating voltage U_B	Max. 250 V DC	Max. 60 V DC	Max. 30 V DC	
Operating current	Max. 4 A		Max. 2 A	
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Degree of protection	IP67			
Material				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Shield	Braided			

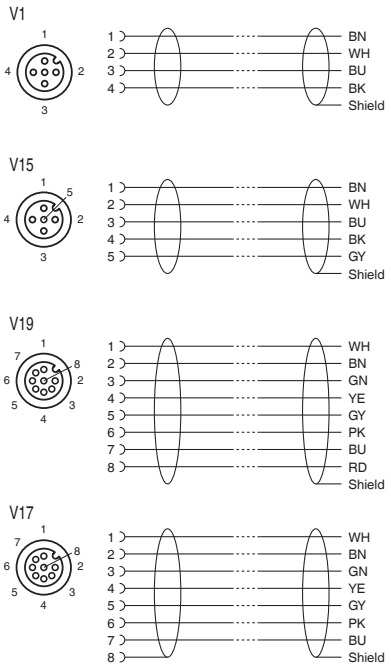
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . .

Cable quality

			V1	V15	V19	V17
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	●	●	–	–
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25mm²)	–	–	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin
V17	7-pin + 1 x shield

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M12 x 1 female cordset, straight, stainless steel

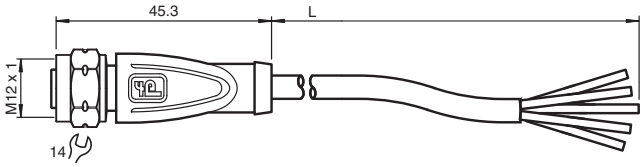
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

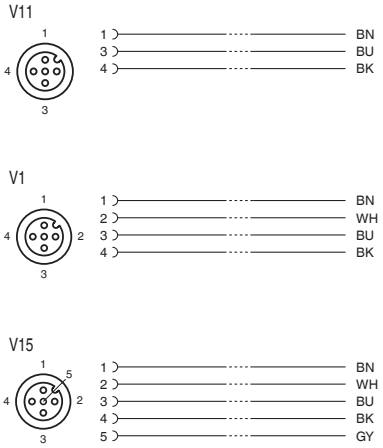
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP68 / IP69K		
Material			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G V 4 A – . . . . M – . . . . .

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	●	●	●
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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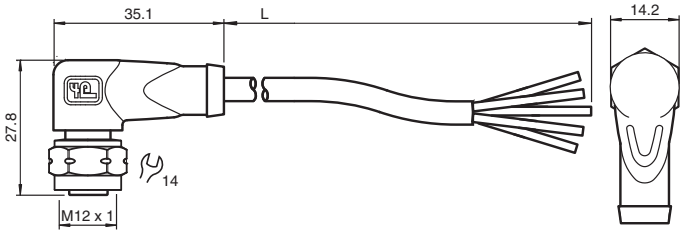
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

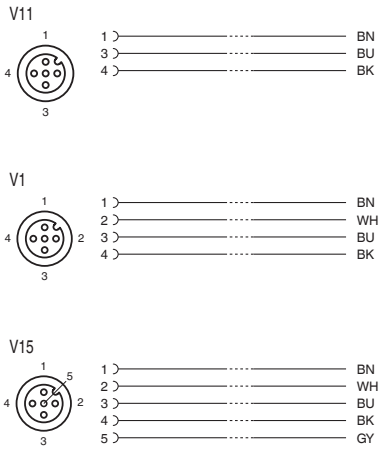
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP68 / IP69K		
Material			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 Prerequisite for UL approval is the use of a UL-approved cable quality.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W V 4 A – . . . . M – . . . . .

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	●	●	●
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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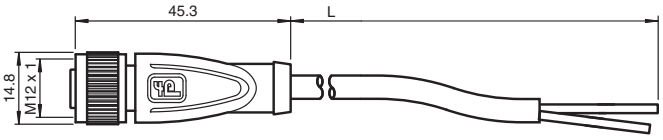
Technical data

Number of pins	2	4
Electrical data		
Operating voltage U_B	Max. 250 V AC/DC	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67 / IP68 / IP69K	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	PUR, blue	
Coupling nut	Die-cast zinc	

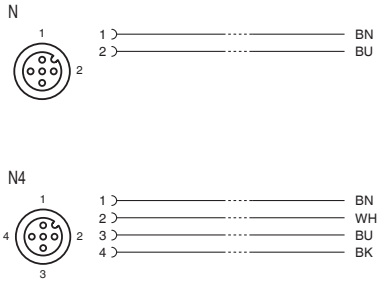
Features

- Suitable for NAMUR technology
- Blue body and sheathing
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

Dimensions



Electrical connection



Order codes

V1 – G – . . . . M – . . .

Cable lengths in m
0.3 to 50

Cable quality

		N	N4
PVC	PVC, blue (0.34 mm²)	○	○
PUR	PUR, blue (0.34 mm²)	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
N 2-pin
N4 4-pin

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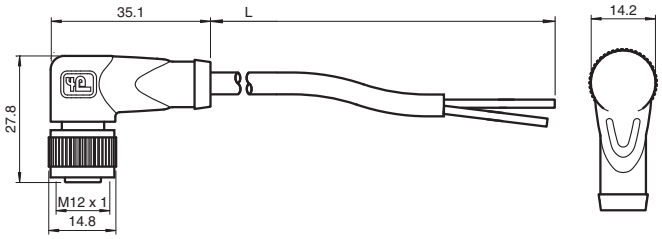
Technical data

Number of pins	2	4
Electrical data		
Operating voltage U_B	Max. 250 V AC/DC	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67 / IP68 / IP69K	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	PUR, blue	
Coupling nut	Die-cast zinc	

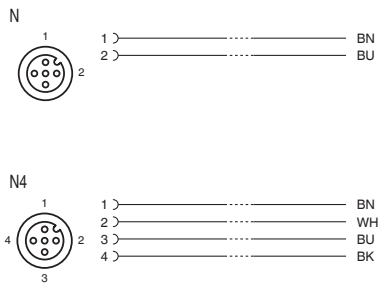
Features

- Suitable for NAMUR technology
- Blue body and sheathing
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

Dimensions



Electrical connection



Order codes

V 1 – W – . . . . M – . . .

Cable lengths in m
0.3 to 50

Cable quality

		N	N4
PVC	PVC, blue (0.34 mm²)	○	○
PUR	PUR, blue (0.34 mm²)	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
N 2-pin
N4 4-pin

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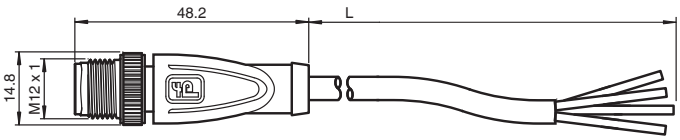
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

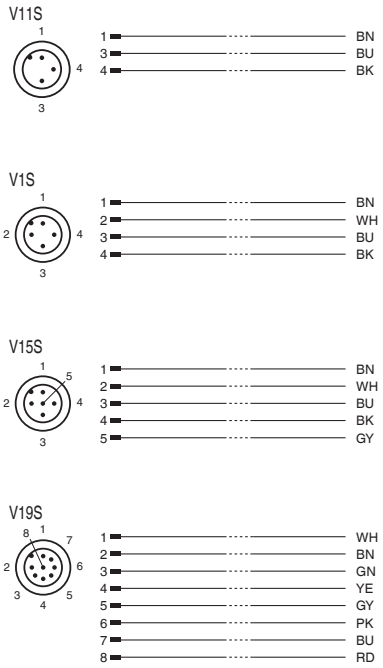
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval			

Dimensions



Electrical connection



Order codes

V . . S – G – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

Cable quality

			V11S	V1S	V15S	V19S
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11S	3-pin
V1S	4-pin
V15S	5-pin
V19S	8-pin

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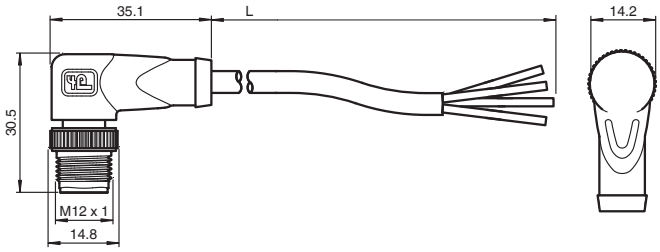
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

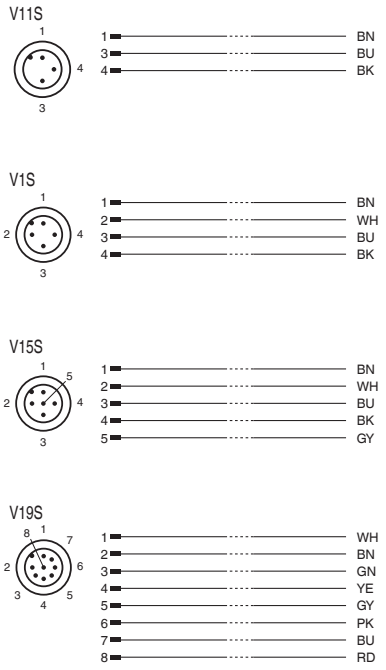
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval			

Dimensions



Electrical connection



Order codes

V . . S – W – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

		Cable quality	V11S	V1S	V15S	V19S
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11S	3-pin
V1S	4-pin
V15S	5-pin
V19S	8-pin

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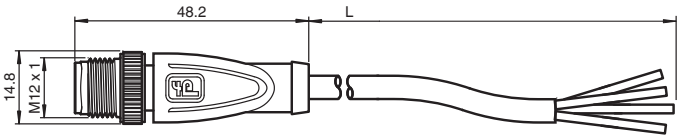
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

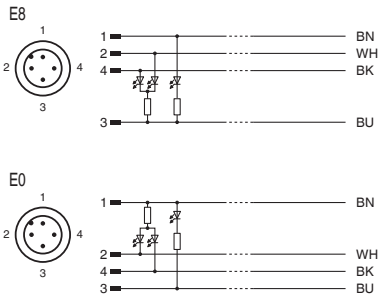
Technical data

Number of pins	4 (E8)	4 (E0)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

V 1 S – G – . . – . . . . M – . . . . . .

Cable lengths in m
0.3 to 50

Cable quality

			E8	E0
–	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
E8 4-pin
E0 4-pin (NPN)

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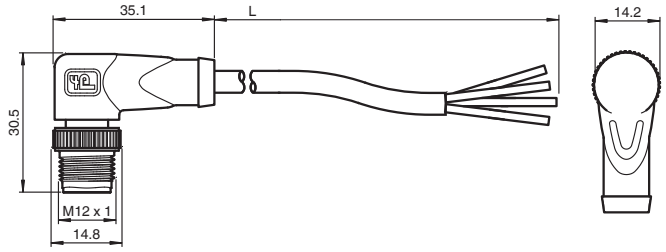
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

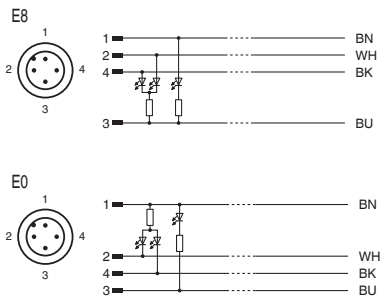
Technical data

Number of pins	4 (E8)	4 (E0)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found starting from page 10	
Mechanical data		
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 S – W – . . – . . . . M – . . . . . .

Cable quality

			E8	E0
–	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, welding bead resistant, orange (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E8 4-pin
E0 4-pin (NPN)

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Extension cable, M12 straight-M12 straight

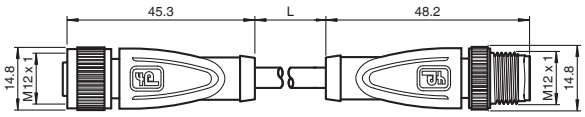
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

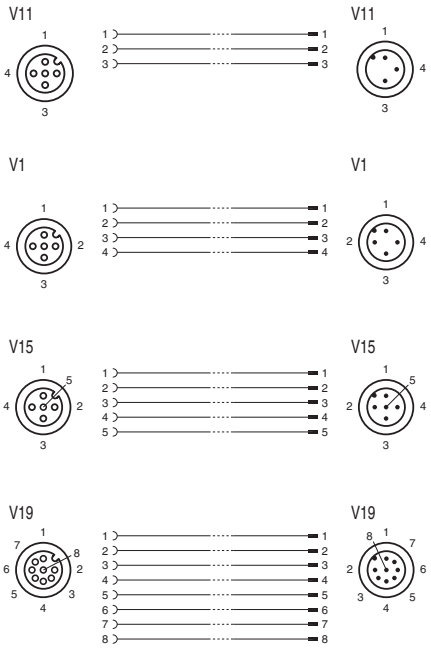
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Push-on sleeve	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.			

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G – . . . . M – . . . . . – V . . – G

Cable quality

			V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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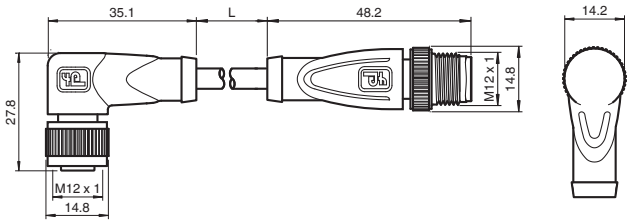
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

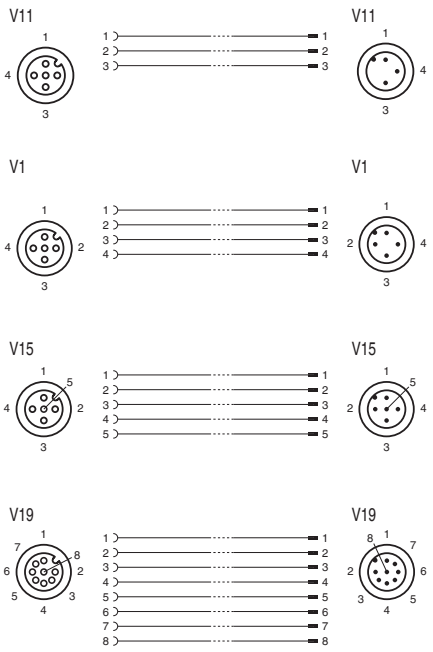
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Push-on sleeve	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.			

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . – V . . – G

		Cable quality	V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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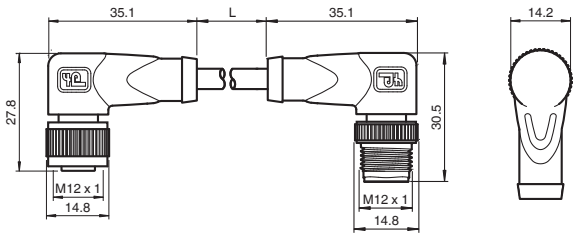
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

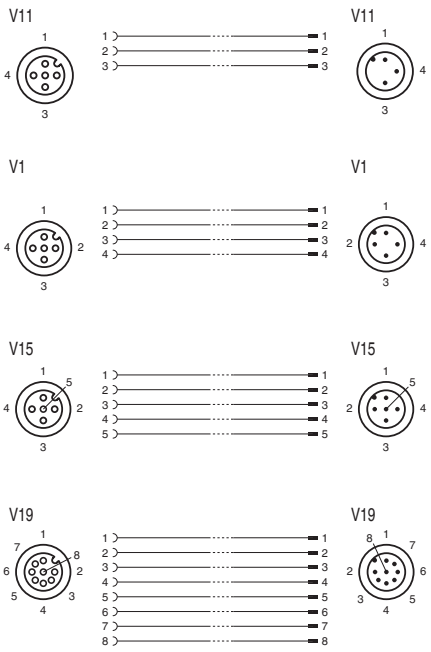
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Push-on sleeve	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.			

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . – V . . – W

Cable quality

			V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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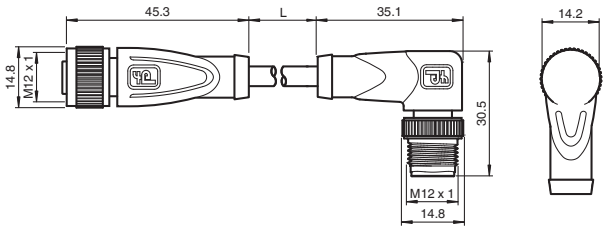
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

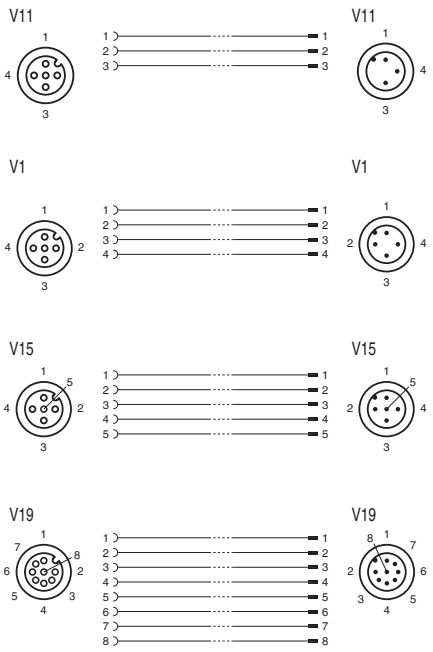
Technical data

Number of pins	3	4	5	8
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC			
Operating current	Max. 4 A			Max. 2 A
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Contact elements	Spring-loaded contact sockets			
Pin diameter	1 mm			
Degree of protection	IP67 / IP68 / IP69K			
Materials				
Contacts	CuSn / Au			
Contact surface	Au			
Body	TPU, green			
Coupling nut	Die-cast zinc			
Push-on sleeve	Die-cast zinc			
Approvals and certificates of compliance				
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.			

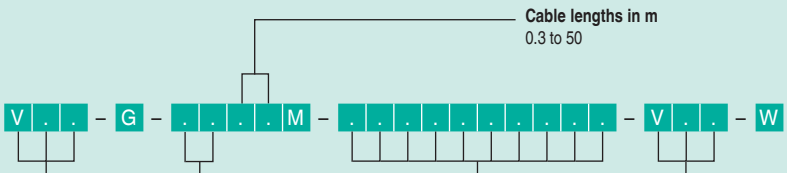
Dimensions



Electrical connection



Order codes



		Cable quality	V11	V1	V15	V19
–	PVC	PVC, gray (0.34 mm²)	○	○	○	–
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–	–
–	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○	–	–
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	–	–
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.25 mm²)	–	–	–	●
BK	PUR-U/0.75	PUR, halogen-free, UL-approved, black (0.75 mm²)	–	–	○	–
–	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	–	–
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	–	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin
V19	8-pin

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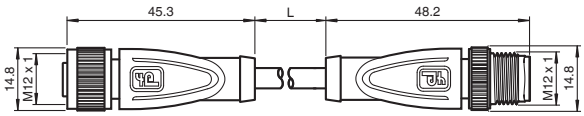
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection IP67 / IP68 / IP69K

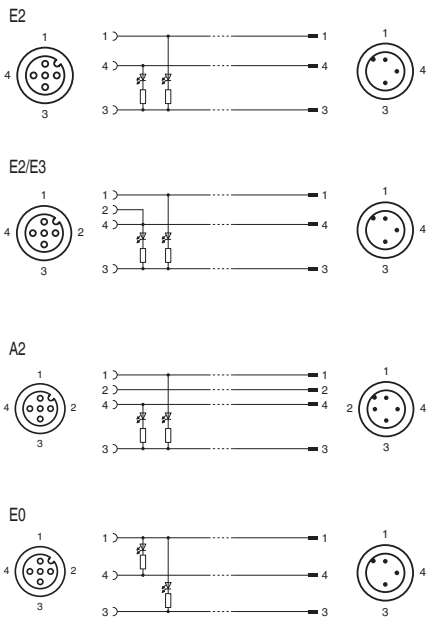
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent/green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50; with minimum order quantity

V 1 – G – . . . . . – . . . . M – . . . . . – V 1 – G

Cable quality

			E2	E2/E3	A2	E0
-	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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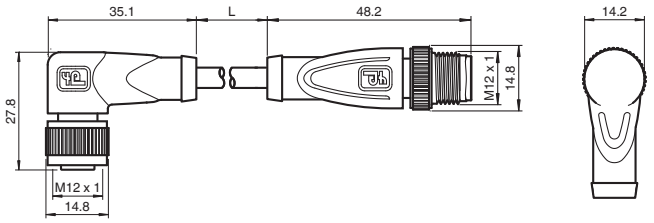
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

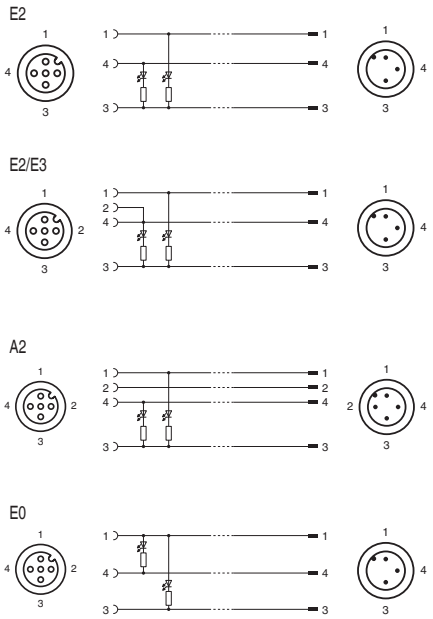
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent/green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – W – . . . . . – . . . . M – . . . . . – V 1 – G

		Cable quality	E2	E2/E3	A2	E0
-	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	●
-	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●	●	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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Extension cable, M12 angled-M12 angled, two LEDs

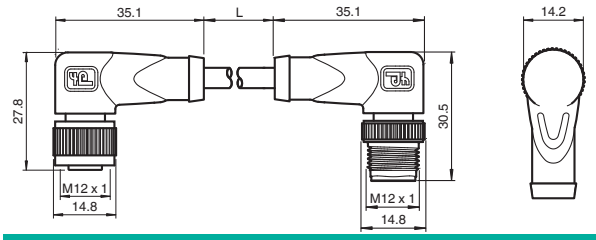
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

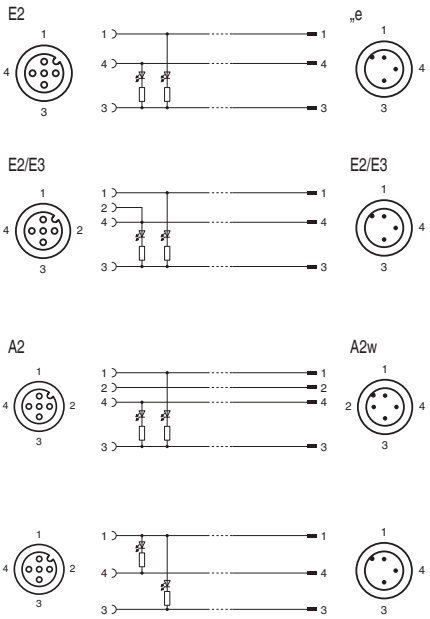
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent/green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – W – . . . . . – . . . . M – . . . . . – V 1 – W

Cable quality

			E2	E2/E3	A2	E0
-	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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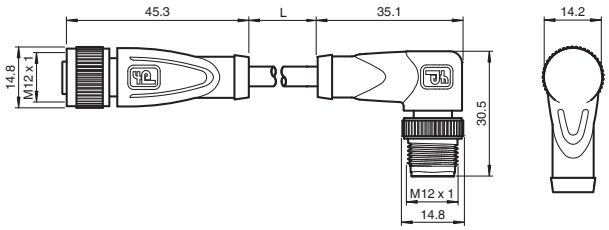
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection IP67 / IP68 / IP69K

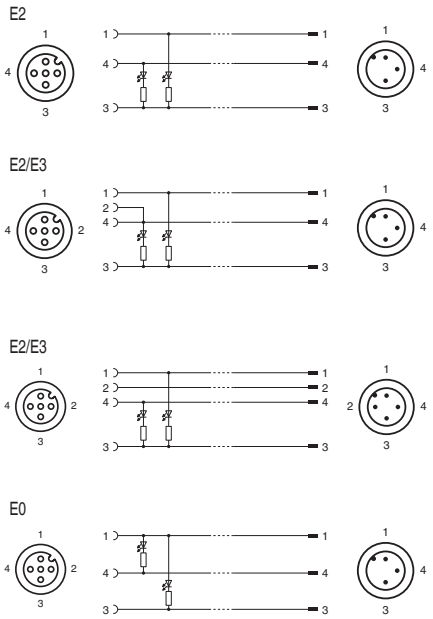
Technical data

Number of pins	3 (E2, E0)	4 (E2/E3)	4 (A2)
Display/controls			
Green LED	Operating display		
Yellow LED	NO contact function display	NO/NC contact function display	NO contact function display
Electrical data			
Operating voltage U_B	Max. 24 V DC ± 15%		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, transparent/green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval		

Dimensions



Electrical connection



Order codes

V 1 – G – . . . . . – . . . . M – . . . . . – V 1 – W

Cable lengths in m
0.3 to 50; lengths with minimum order quantity

		Cable quality	E2	E2/E3	A2	E0
-	PVC	PVC, gray (0.34 mm²)	○	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	–	○	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	–	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E2	3-pin
E2/E3	4-pin (2+4 bridged)
A2	4-pin
E0	3-pin (NPN)

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Extension cable, M12 straight-M12 straight, three LEDs

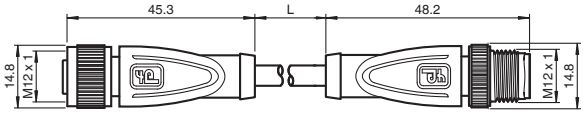
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection IP67 / IP68 / IP69K

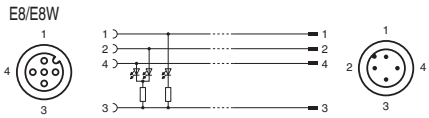
Technical data

Number of pins	4 (E8)	4 (E8W)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – G – . . . – . . . . M – . . . . . – V 1 – G

		Cable quality	E8	E8W
-	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
E8 4-pin
E8W 4-pin

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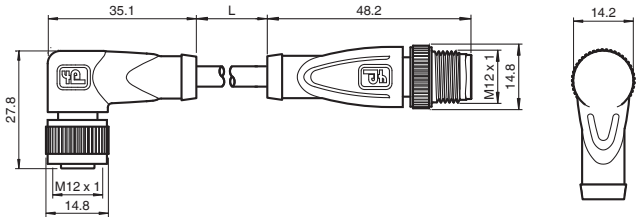
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection IP67 / IP68 / IP69K

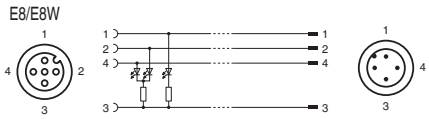
Technical data

Number of pins	4 (E8)	4 (E8W)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut/push-on sleeve	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – W – . . . – . . . . M – . . . . . – V 1 – G

Cable quality

			E8	E8W
-	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	●	●
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

E8 4-pin
E8W 4-pin

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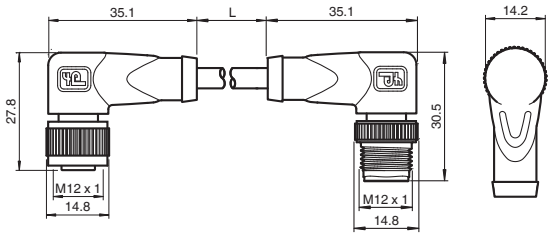
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

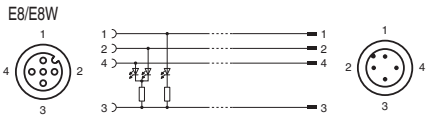
Technical data

Number of pins	4 (E8)	4 (E8W)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut/push-on sleeve	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – W – . . . – . . . . M – . . . . . – V 1 – W

			E8	E8W
		Cable quality		
-	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
E8 4-pin
E8W 4-pin

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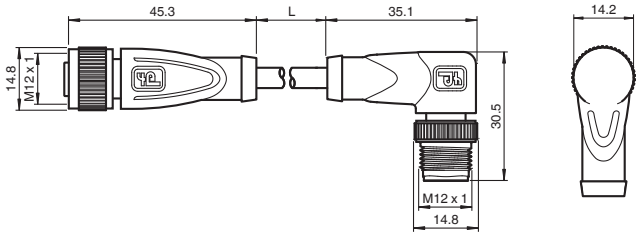
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

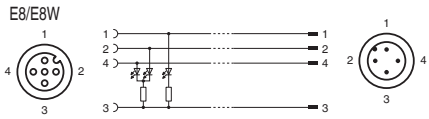
Technical data

Number of pins	4 (E8)	4 (E8W)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact 4 function display	
Red LED	NO contact 2 function display	–
White LED	–	NO contact 2 function display
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 ... 90 °C for body Information on cable quality can be found beginning on page 10	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut/push-on sleeve	Die-cast zinc	
Approvals and certificates of compliance		
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 1 – G – . . . – . . . . M – . . . . . – V 1 – W

			E8	E8W
		Cable quality		
-	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.34 mm²)	○	○
BK	PUR-U	PUR, halogen-free, shielded, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○
-	PUR H/S	PUR, halogen-free, irradiated, orange (0.34 mm²)	○	○
OR	POC	POC, weld-spatter resistant, orange (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
E8 4-pin
E8W 4-pin

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Extension cable, M12 straight - M12 straight, shielded

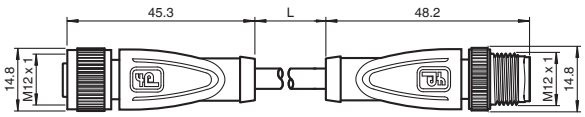
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Shield	Braided		

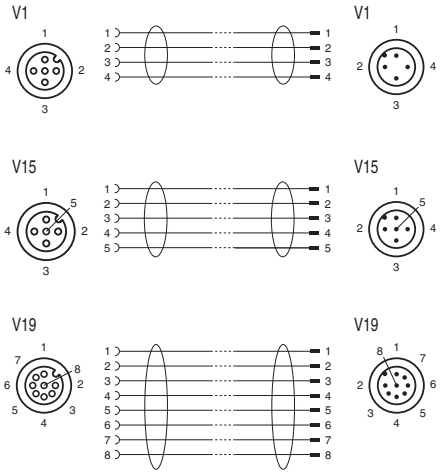
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G – . . . . M – . . . . . – V . . – G

Cable quality

			V1	V15	V19
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25 mm²)	–	–	●
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	●	●	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin

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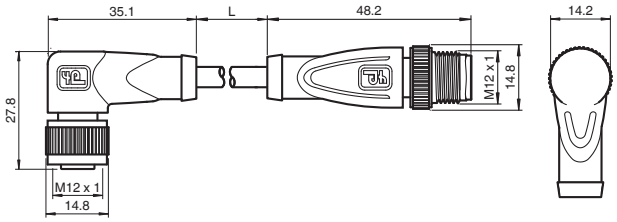
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Shield	Braided		

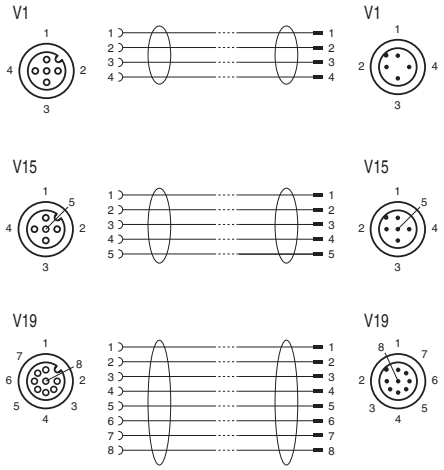
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . – V . . – G

Cable quality

			V1	V15	V19
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25 mm²)	–	–	○
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin

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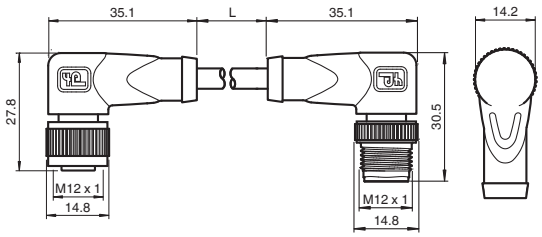
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

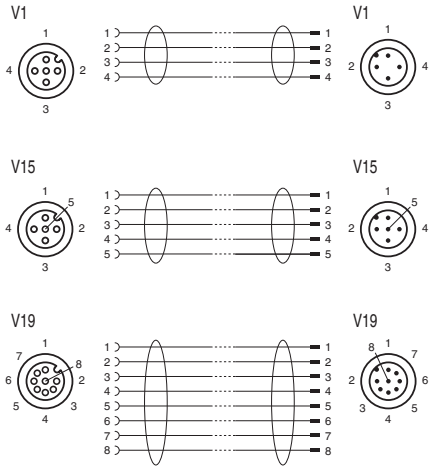
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Shield	Braided		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . – V . . – W

Cable quality

			V1	V15	V19
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25 mm²)	–	–	○
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin

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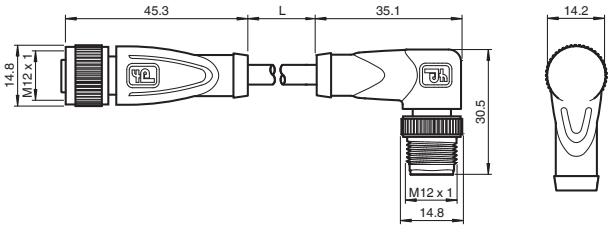
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

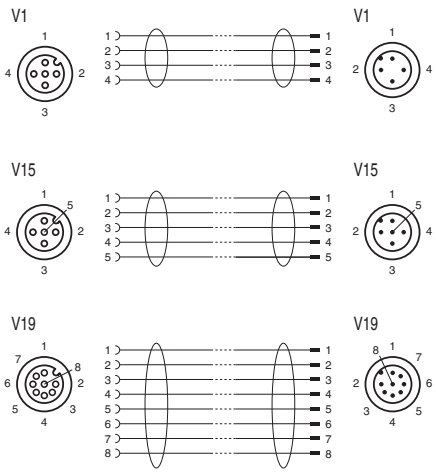
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Die-cast zinc		
Push-on sleeve	Die-cast zinc		
Shield	Braided		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G – . . . . M – . . . . . – V . . – W

Cable quality

			V1	V15	V19
BK	PUR-U/ABG	PUR, halogen-free, shielded, UL-approved, black (0.25 mm²)	–	–	●
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	●	●	–

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1	4-pin
V15	5-pin
V19	8-pin

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Extension cable, M12 straight - M12 straight, stainless steel

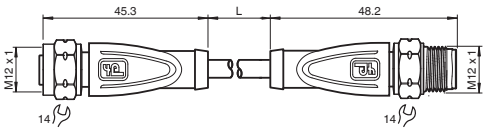
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

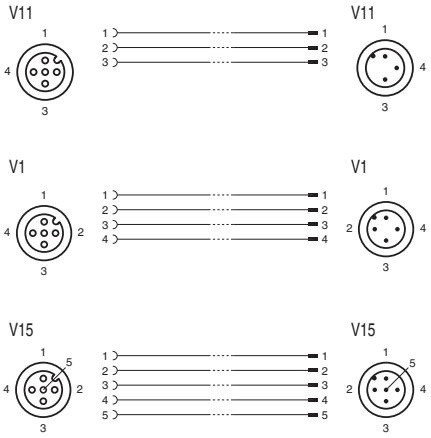
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Push-on sleeve	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – GV4A – . . . . M – . . . . . – V . . – GV4A

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	●	●	●
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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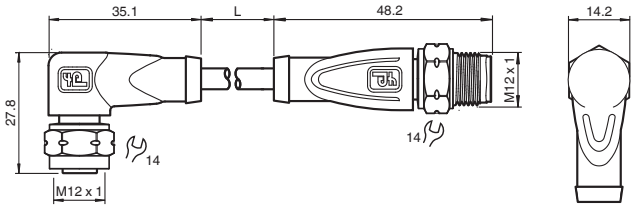
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

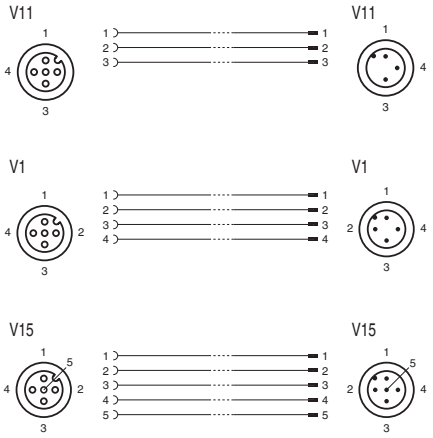
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Push-on sleeve	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W V 4 A – . . . . M – . . . . . – V . . – G V 4 A

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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Extension cable, M12 angled - M12 angled, stainless steel

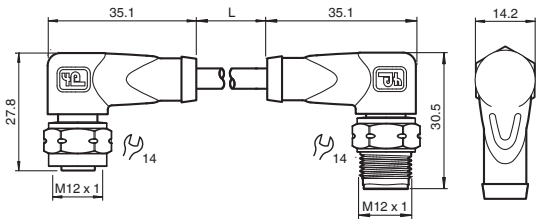
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection IP67 / IP68 / IP69K

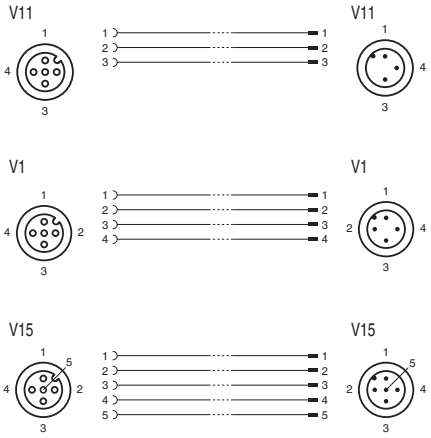
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Push-on sleeve	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – WV4A – . . . . M – . . . . . – V . . – WV4A

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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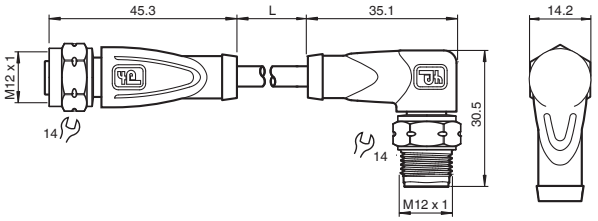
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts
- Degree of protection: IP67 / IP68 / IP69K

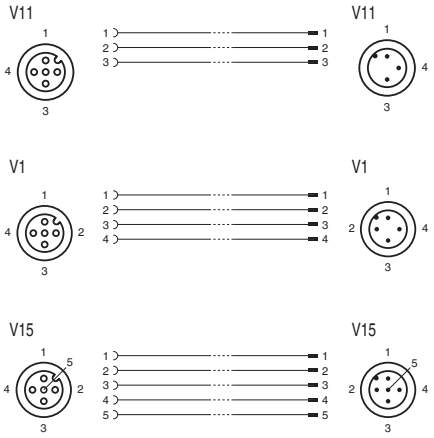
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP68 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, green		
Coupling nut	Stainless steel AISI 316L		
Push-on sleeve	Stainless steel AISI 316L		
Approvals and certificates of compliance			
UL file number	E231213 The use of UL-approved cable is a prerequisite for UL approval.		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G V 4 A – . . . . M – . . . . . – V . . – W V 4 A

Cable quality

			V11	V1	V15
–	PVC	PVC, gray (0.34 mm²)	○	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○	–
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	3-pin
V1	4-pin
V15	5-pin

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Extension cable, M12 straight-M8 straight

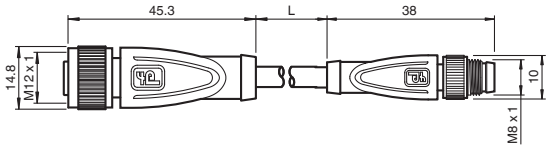
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

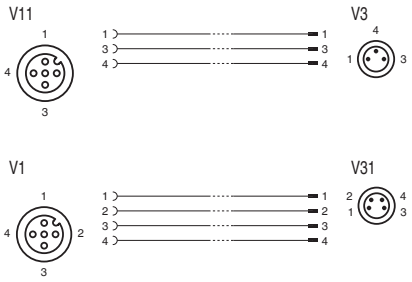
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G – . . . . M – . . . . . – V . . – G M

Cable quality

			V11-V3	V1-V31
–	PVC	PVC, gray (0.34 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.25 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	V3	3-pin
V1	V31	4-pin

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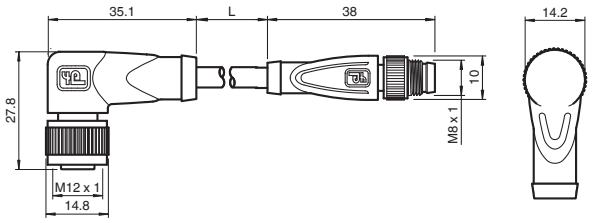
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

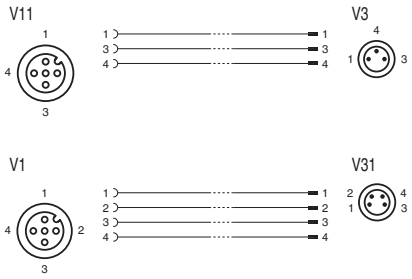
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – . . . . M – . . . . . – V . . – G M

		Cable quality	V11-V3	V1-V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V11	V3	3-pin
V1	V31	4-pin

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Extension cable, M8 straight-M12 straight

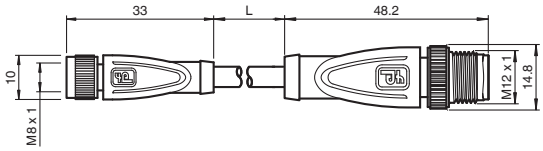
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67 / IP68 / IP69K	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

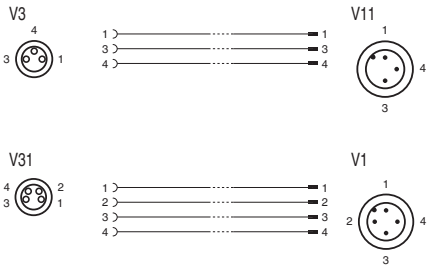
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . . . M – . . . . . – V . . – G

		Cable quality	V3-V11	V31-V1
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	V11	3-pin
V31	V1	4-pin

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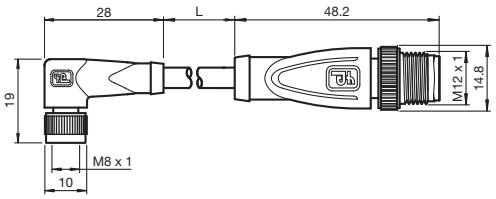
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Materials		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

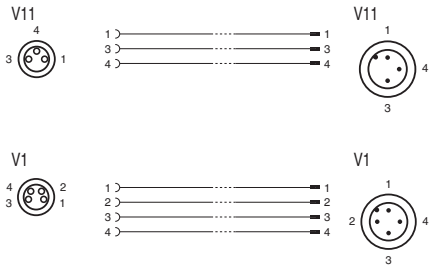
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . . . M – . . . . . – V . . – G

		Cable quality	V3-V11	V31-V1
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	V11	3-pin
V31	V1	4-pin

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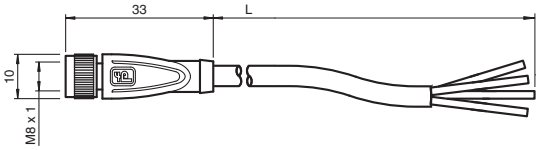
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	

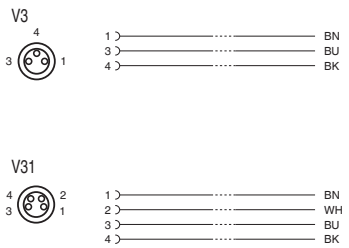
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

V . . – G M – . . . . M – . . . . .

Cable lengths in m
0.3 to 50

		Cable quality	V3	V31
-	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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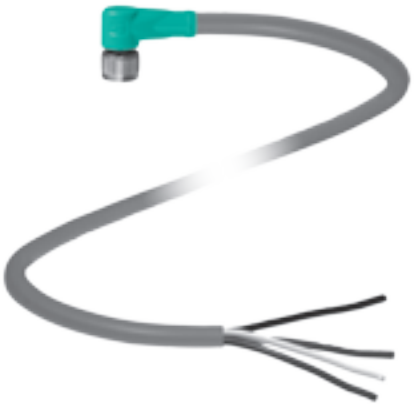
M8 x 1 female cordset, angled



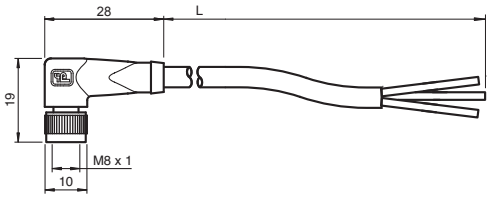
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	

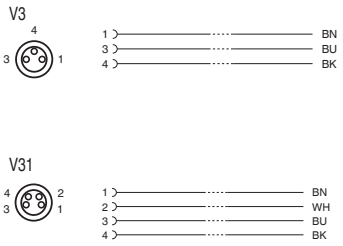
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

V . . – W M – . . . . M – . . . . .

Cable lengths in m
0.3 to 50

Cable quality

			V3	V31
-	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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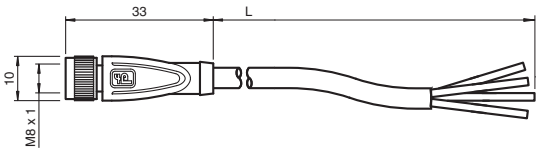
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	

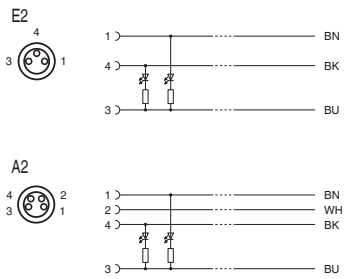
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . . . . M – . . . . .

Cable quality

			V3	V31
-	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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M8 x 1 female cordset, angled, two LEDs

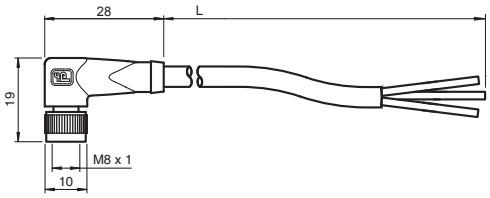
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

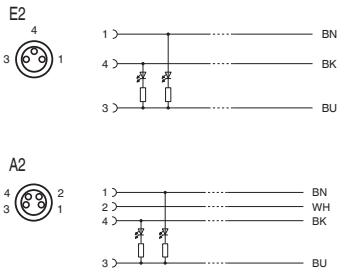
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent	
Coupling nut	Die-cast zinc	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . . . . M – . . . . .

			V3	V31
Cable quality				
-	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
-	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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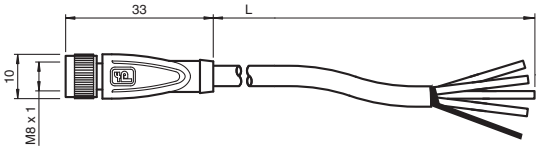
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Shield	Braided	

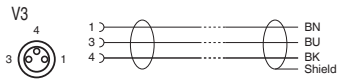
Features

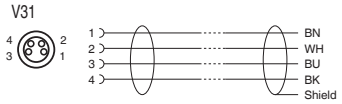
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection





Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . M – P U R – A B G

Cable quality

		V3	V31
PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

Number of pins

V3	3-pin
V31	4-pin

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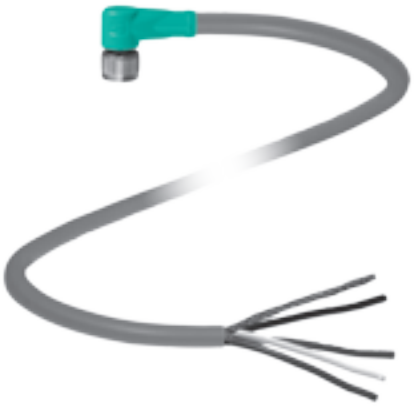
M8 x 1 female cordset, angled, shielded



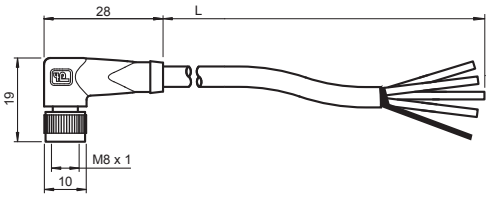
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Shield	Braided	

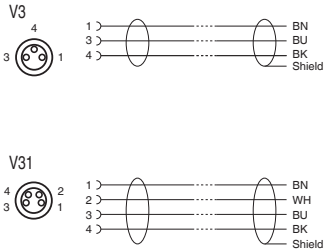
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . M – P U R – A B G

Cable quality

		V3	V31
PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3 3-pin
V31 4-pin

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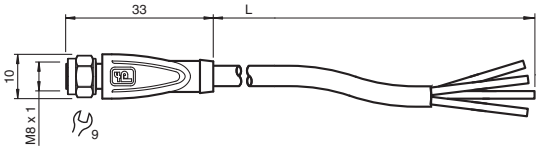
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	

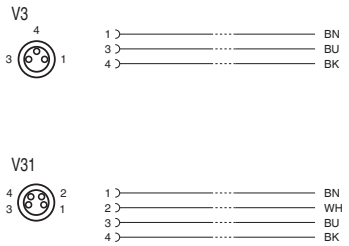
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M V 4 A – . . . . M – . . . . .

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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M8 x 1 female cordset, angled, stainless steel

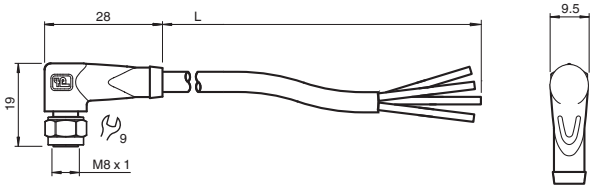
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	

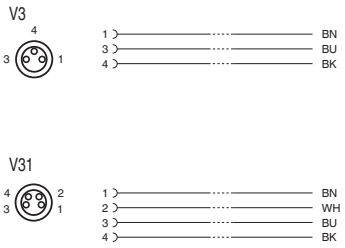
Features

- Stainless steel coupling nut
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M V 4 A – . . . . M – . . . . .

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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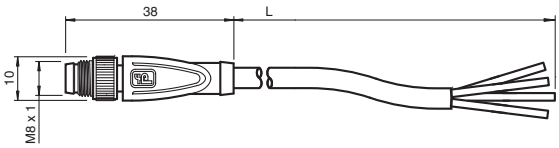
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	

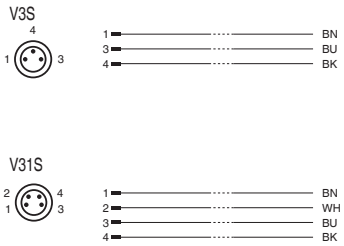
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . S – G M – . . . . M – . . . . .

Cable quality

			V3S	V31S
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3S 3-pin
V31S 4-pin

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M8 x 1 male cordset, angled

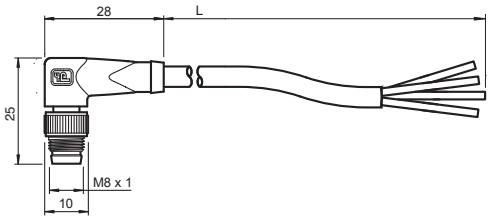
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	

Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection

V3S

V31S

Order codes

Cable lengths in m
0.3 to 50

V . . S – W M – . . . . M – . . . . .

Cable quality

			V3S	V31S
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3S 3-pin
V31S 4-pin

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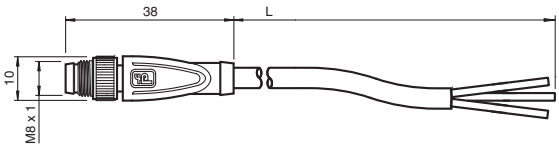
Technical data

Number of pins	3
Display/controls	
Green LED	Operating display
Yellow LED	NO contact function display
Electrical data	
Operating voltage U_B	Max. 24 V DC ± 15%
Operating current	Max. 3 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10
Degree of pollution	3
Mechanical data	
Pin diameter	1 mm
Degree of protection	IP67
Material	
Contacts	CuSn / Au
Contact surface	Au
Body	TPU, transparent
Coupling nut	Die-cast zinc

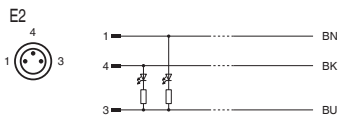
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 3 S – G M – E 2 – . . . . M – . . . . .

Cable quality

			V3S
–	PVC	PVC, gray (0.25 mm²)	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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M8 x 1 male cordset, angled, two LEDs

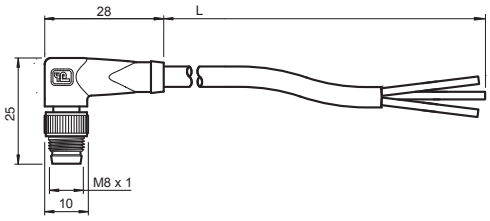
Technical data

Number of pins	3
Display/controls	
Green LED	Operating display
Yellow LED	NO contact function display
Electrical data	
Operating voltage U_B	Max. 24 V DC ± 15%
Operating current	Max. 3 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10
Degree of pollution	3
Mechanical data	
Pin diameter	1 mm
Degree of protection	IP67
Material	
Contacts	CuSn / Au
Contact surface	Au
Body	TPU, transparent
Coupling nut	Die-cast zinc

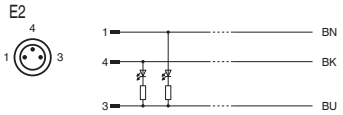
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V 3 S – W M – E 2 – . . . . M – . . . . .

		Cable quality	V3S
–	PVC	PVC, gray (0.25 mm²)	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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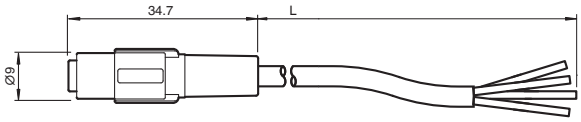
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 70 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP65	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	PUR, black	

Features

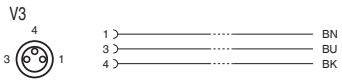
- Snap lock

Dimensions

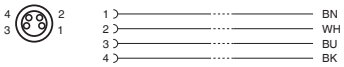


Electrical connection

V3



V31



Order codes

V . . – G R – . . M – . . .

Cable lengths in m
0.3 to 50

Cable quality

		V3	V31
PVC	PVC, black (0.25mm²)	○	○
PUR	PUR/PVC, black (0.25mm²)	●	●

- ● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

Number of pins
V3 3-pin
V31 4-pin

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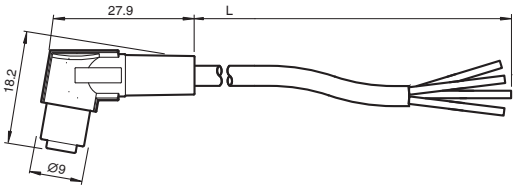
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 70 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Degree of protection	IP65	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	PUR, black	

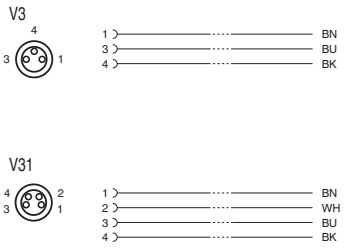
Features

- Snap lock

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W R – . . M – . . .

Cable quality

		V3	V31
PVC	PVC, black (0.25mm²)	○	○
PUR	PUR/PVC, black (0.25mm²)	●	●

- ● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

Number of pins
V3 3-pin
V31 4-pin

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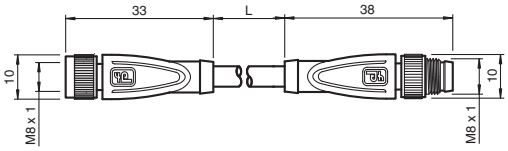
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

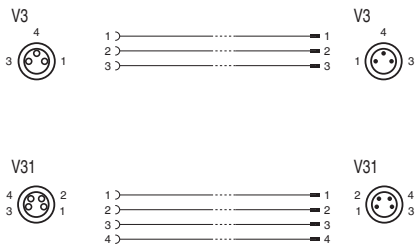
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . . . M – . . . . . – V . . – G M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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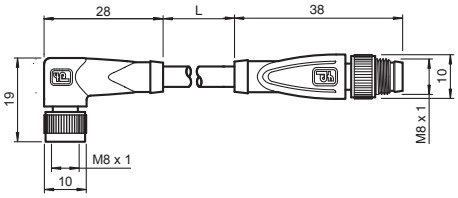
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

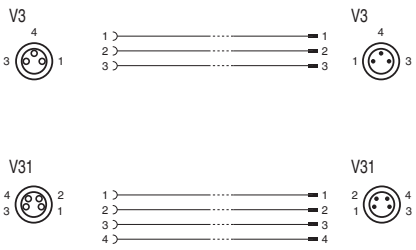
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – WM – . . . . M – . . . . . – V . . – GM

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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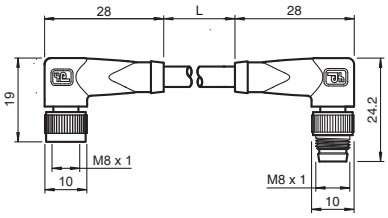
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

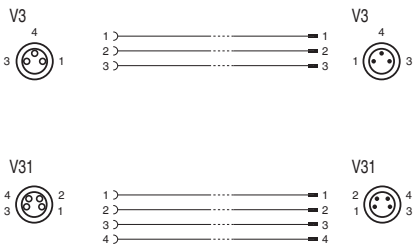
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . . . M – . . . . . – V . . – W M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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Extension cable, M8 straight - M8 angled

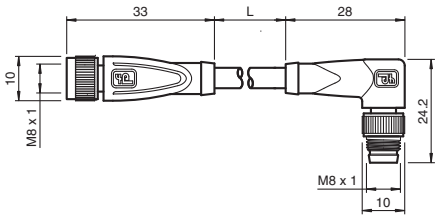
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

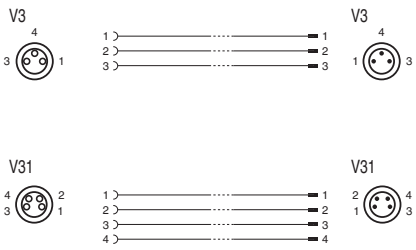
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

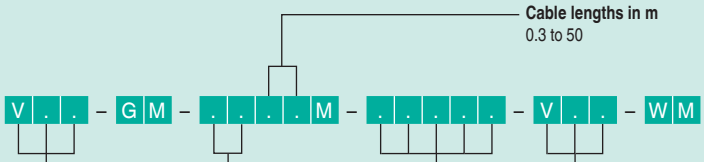
Dimensions



Electrical connection



Order codes



		Cable quality	V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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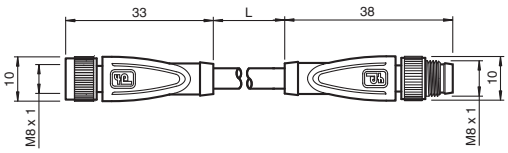
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

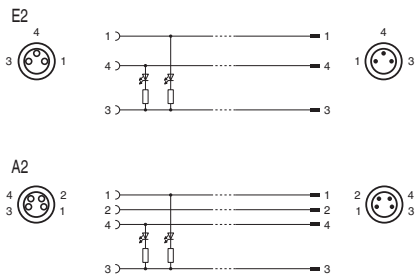
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . – . . . . M – . . . . . – V . . – G M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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Extension cable, M8 angled - M8 straight, two LEDs

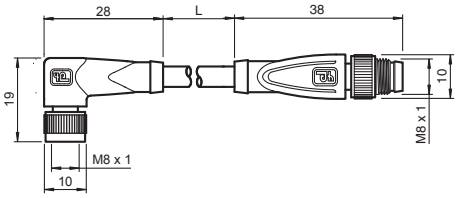
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

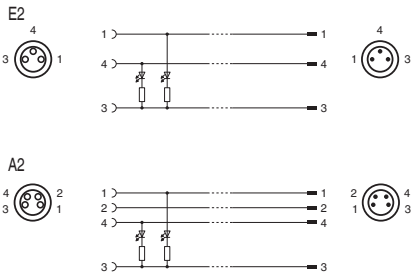
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . – . . . . M – . . . . . – V . . – G M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	●	●
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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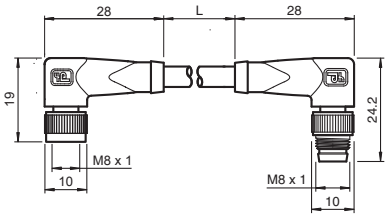
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

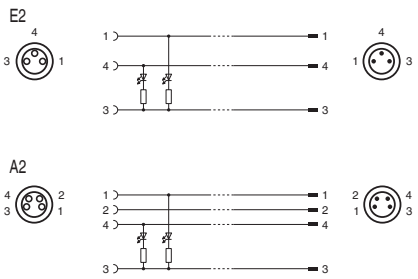
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . – . . . . M – . . . . . – V . . – W M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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Extension cable, M8 straight - M8 angled, two LEDs

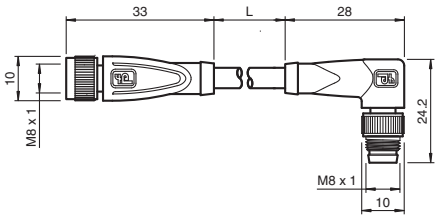
Features

- Built-in LED, as operating and function indicator
- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

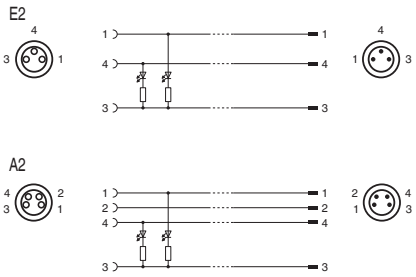
Technical data

Number of pins	3 (E2)	4 (A2)
Display/controls		
Green LED	Operating display	
Yellow LED	NO contact function display	
Electrical data		
Operating voltage U_B	Max. 24 V DC ± 15%	
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, transparent/green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . – . . . . M – . . . . . – V . . – W M

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3	E2	3-pin
V31	A2	4-pin

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Extension cable, M8 straight - M8 straight, shielded

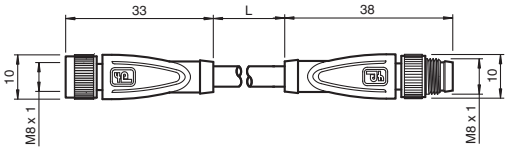
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	
Shield	Braided	

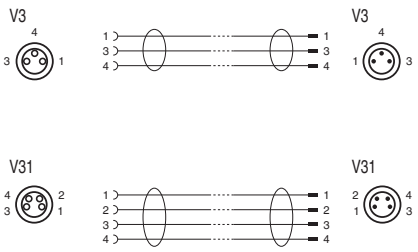
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . M – . . . . . – V . . – G M

Cable quality

		V3	V31
PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

Number of pins

V3	3-pin
V31	4-pin

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Extension cable, M8 angled - M8 straight, shielded

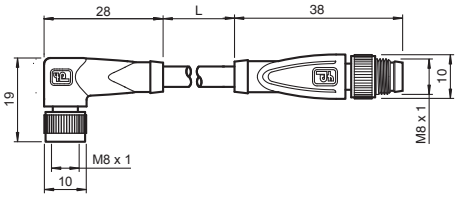
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

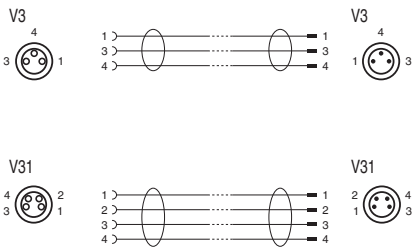
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	
Shield	Braided	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . . . M – . . . . . – V . . – G M

Cable quality

– **PUR-ABG** PUR, halogen-free, shielded, gray (0.34 mm²)

V3	V31
○	○

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

Number of pins

V3 3-pin
V31 4-pin

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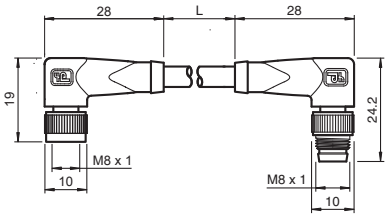
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

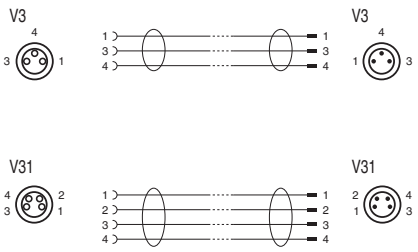
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	
Shield	Braided	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M – . . . . M – . . . . . – V . . – W M

Cable quality

			V3	V31
–	PUR-ABG	PUR, halogen-free, shielded, gray (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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Extension cable, M8 straight - M8 angled, shielded

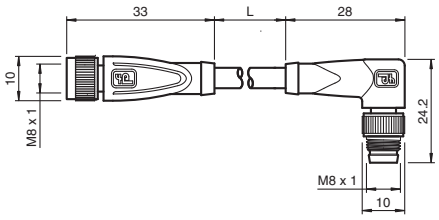
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated and machined contacts

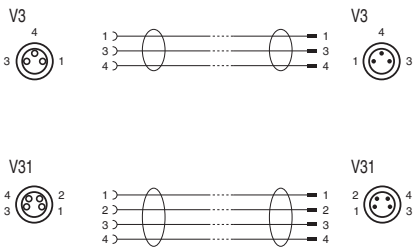
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Die-cast zinc	
Push-on sleeve	Die-cast zinc	
Shield	Braided	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M – . . . . M – . . . . . – V . . – W M

Cable quality

– **PUR-ABG** PUR, halogen-free, shielded, gray (0.34 mm²)

V3	V31
○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V3 3-pin
V31 4-pin

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Extension cable, M8 straight - M8 straight, stainless steel

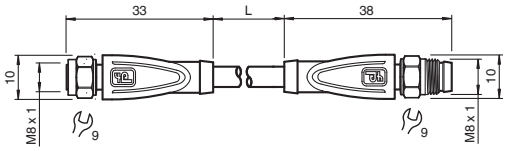
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	
Push-on sleeve	Stainless steel AISI 316L	

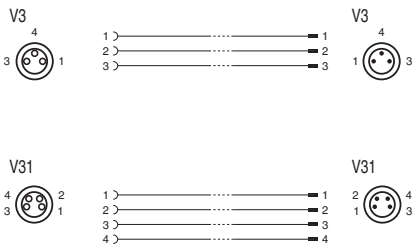
Features

- Stainless steel coupling nut and push-on sleeve
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G M V 4 A – . . . . M – . . . . . – V . . – G M V 4 A

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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Extension cable, M8 angled - M8 straight, stainless steel

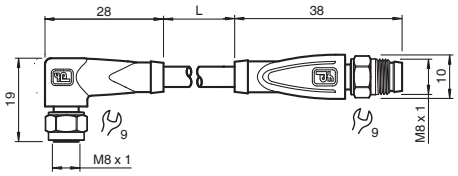
Features

- Stainless steel coupling nut and push-on sleeve
- Gold-plated and machined contacts

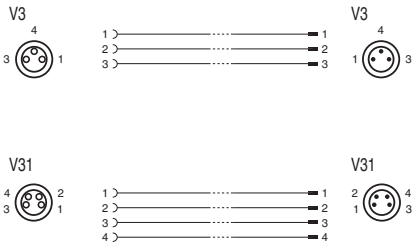
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	
Push-on sleeve	Stainless steel AISI 316L	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W M V 4 A – . . . . M – . . . . . – V . . – G M V 4 A

		Cable quality	V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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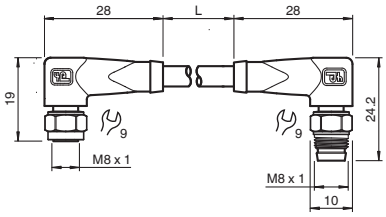
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	
Push-on sleeve	Stainless steel AISI 316L	

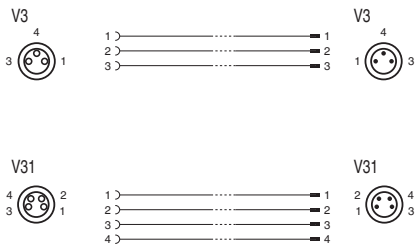
Features

- Stainless steel coupling nut and push-on sleeve
- Gold-plated and machined contacts

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – WMV4A – . . . . M – . . . . . – V . . – WMV4A

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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Extension cable, M8 straight - M8 angled, stainless steel

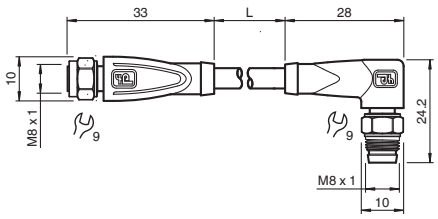
Features

- Stainless steel coupling nut and push-on sleeve
- Gold-plated and machined contacts

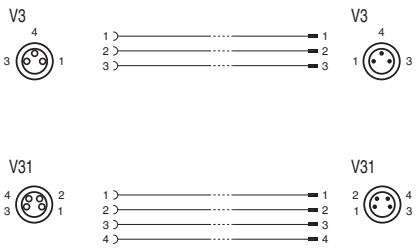
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	
Operating current	Max. 3 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-40 … 90 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Contact elements	Spring-loaded contact sockets	
Pin diameter	1 mm	
Degree of protection	IP67	
Material		
Contacts	CuSn / Au	
Contact surface	Au	
Body	TPU, green	
Coupling nut	Stainless steel AISI 316L	
Push-on sleeve	Stainless steel AISI 316L	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – GMV4A – . . . . M – . . . . . – V . . – WMV4A

Cable quality

			V3	V31
–	PVC	PVC, gray (0.25 mm²)	○	○
BK	PVC-U	PVC, UL-approved, black (0.34 mm²)	○	○
YE	PVC-U	PVC, UL-approved, yellow (0.34 mm²)	○	○
–	PUR	PUR, halogen-free, gray (0.25 mm²)	○	○
BK	PUR-U	PUR, halogen-free, UL-approved, black (0.34 mm²)	○	○
YE	PUR-U	PUR, halogen-free, UL-approved, yellow (0.34 mm²)	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V3 3-pin
V31 4-pin

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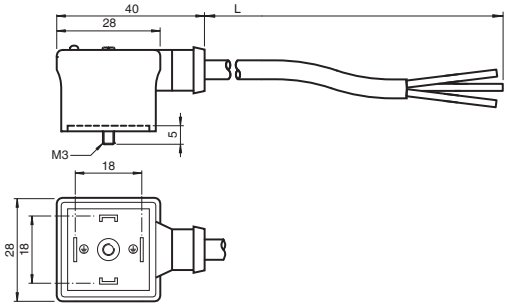
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Technical data

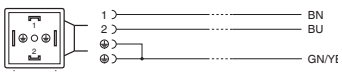
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 10 A (depending on cable quality)			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		

Dimensions

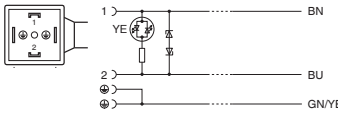


Electrical connection

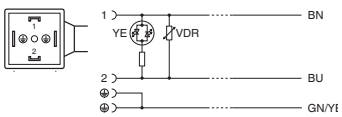
2+P



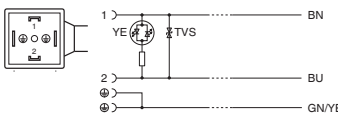
2+P/Z2



2+P/V2



2+P/S2



Order codes

V M A – . . . . . – . . M – . . . . .

Cable lengths in m
0.3 to 50

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black, (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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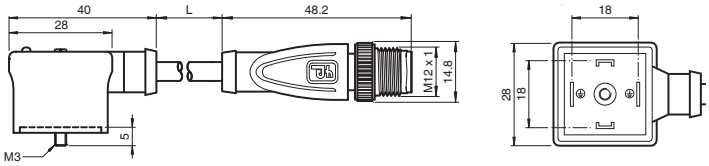
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Technical data

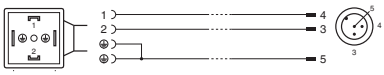
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Dimensions

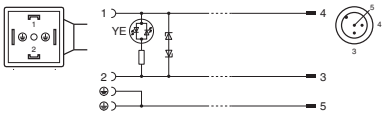


Electrical connection

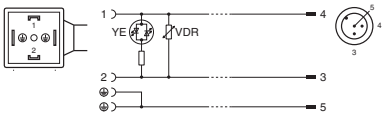
2+P



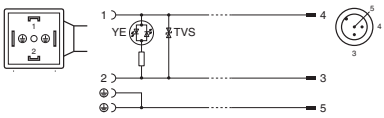
2+P/Z2



2+P/V2



2+P/S2



Order codes

Cable lengths in m
0.3 to 50

V M A – . . . . . – . . M – . . . . . – V 1 – G

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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Features

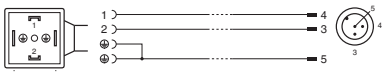
- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Technical data

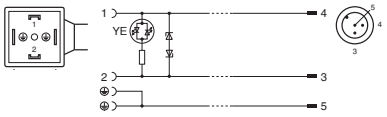
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection

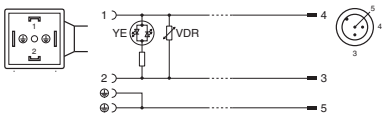
2+P



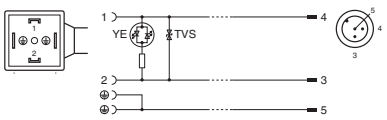
2+P/Z2



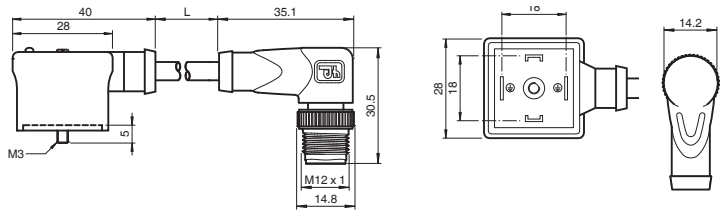
2+P/V2



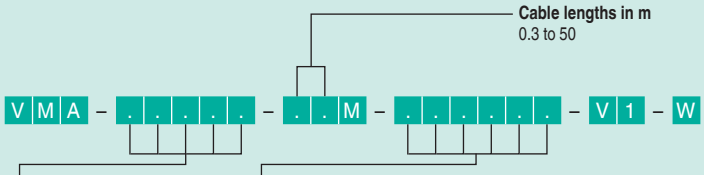
2+P/S2



Dimensions



Order codes



Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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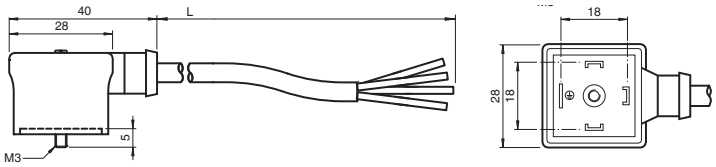
Technical data

General data		
Circuitry	3+P	Operating display 3+P/L1
Number of pins	2+PE	
Display/controls		
Green/yellow LED	–	Function display
Electrical data		
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC
Operating current	Max. 10 A (depending on cable quality)	
Volume resistance	< 10 Ω	
Ambient conditions		
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Degree of protection	IP67	
Material		
Contacts	CuZn	
Contact surface	CuSn	
Body	TPU, black	PUR, transparent

Features

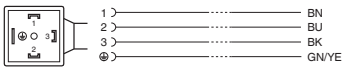
- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Dimensions

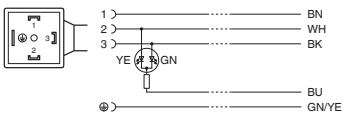


Electrical connection

3+P



3+P/L1



Order codes

V M A – . . . . . – . . M – . . . . .

Cable lengths in m
0.3 to 50

Cable quality

		3+P	3+P/L1
PVC	PVC, black (0.5 mm²)	○	○
PUR	PUR/PVC, black, (0.5 mm²)	●	●
PUR-U	PUR, halogen-free, black (0.5 mm²)	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Circuitry

3+P
3+P/L1 With operating display

Other cable qualities and circuits available on request

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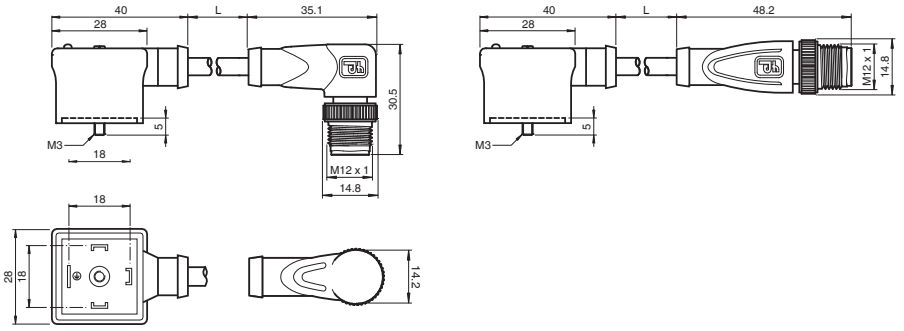
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

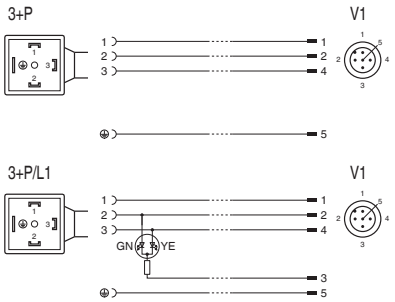
Technical data

General data		
Circuitry	3+P	Operating display 3+P/L1
Number of pins	2+PE	
Display/controls		
Green/yellow LED	–	Function display
Electrical data		
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC
Operating current	Max. 10 A (depending on cable quality)	
Volume resistance	< 10 Ω	
Ambient conditions		
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10	
Degree of pollution	3	
Mechanical data		
Degree of protection	IP67	
Material		
Contacts	CuZn	
Contact surface	CuSn	
VMA body	TPU, black	PUR, transparent
M12 body	PUR, transparent	
Pin diameter	1 mm	
Push-on sleeve	Brass, nickel-plated	
Contacts	CuZn	
Contact surface	Au	

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V M A – . . . . . – . . M – . . . . . – V 1 – .

Design
G straight
W angled

Cable quality		3+P	3+P/L1
PVC	PVC, black (0.5 mm²)	○	○
PUR	PUR/PVC, black, (0.5 mm²)	●	●
PUR-U	PUR, halogen-free, black (0.5 mm²)	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Other cable qualities and circuits available on request

Circuitry
3+P
3+P/L1 With operating display

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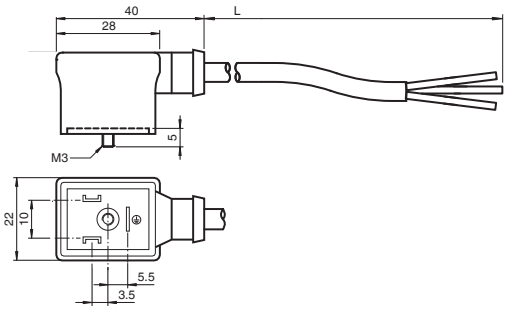
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal

Technical data

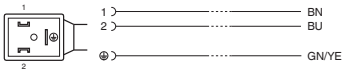
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 10 A (depending on cable quality)			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		

Dimensions

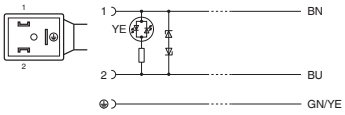


Electrical connection

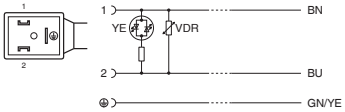
2+P



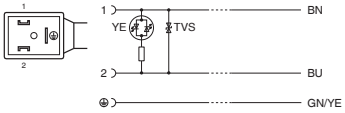
2+P/Z2



2+P/V2



2+P/S2



Order codes

Cable lengths in m
0.3 to 50

V M B – . . . . . – . . M – . . . . .

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black, (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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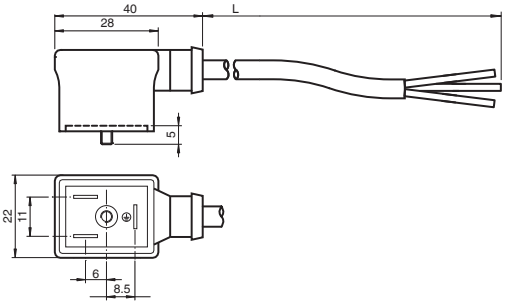
Features

- Molded seal

Technical data

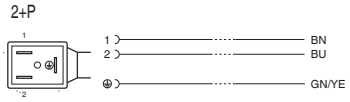
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 10 A (depending on cable quality)			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		

Dimensions

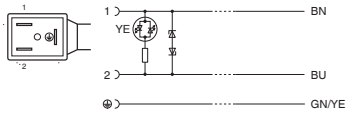


Electrical connection

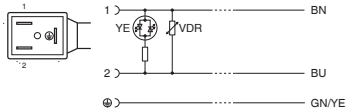
2+P



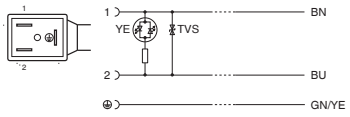
2+P/Z2



2+P/V2



2+P/S2



Order codes

Cable lengths in m
0.3 to 50

V M B I – . . . . . – . . M – . . . . .

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black, (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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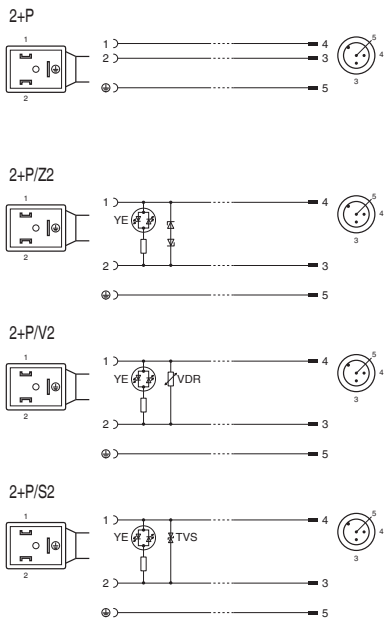
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

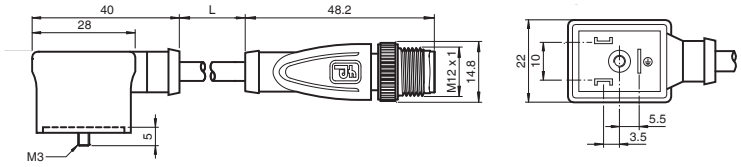
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 50

V M B – . . . . . – . . M – . . . . . – V 1 – G

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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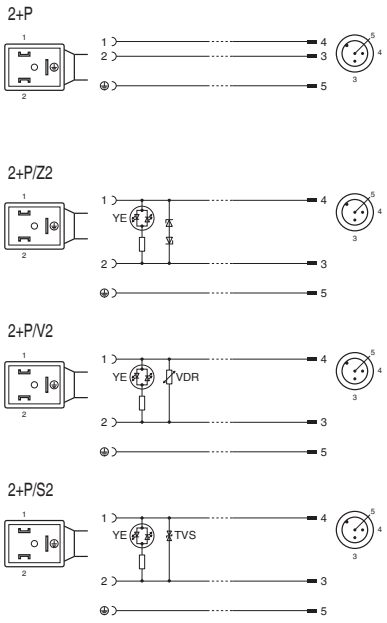
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal

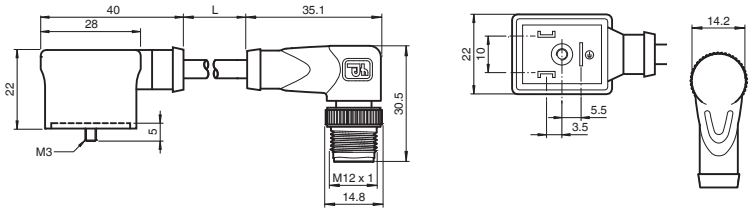
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 to 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

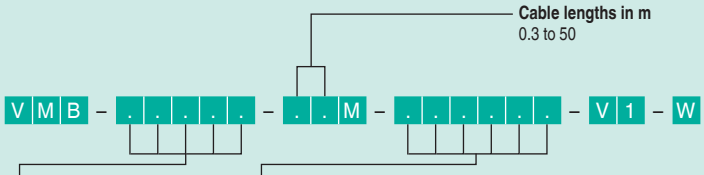
Electrical connection



Dimensions



Order codes



Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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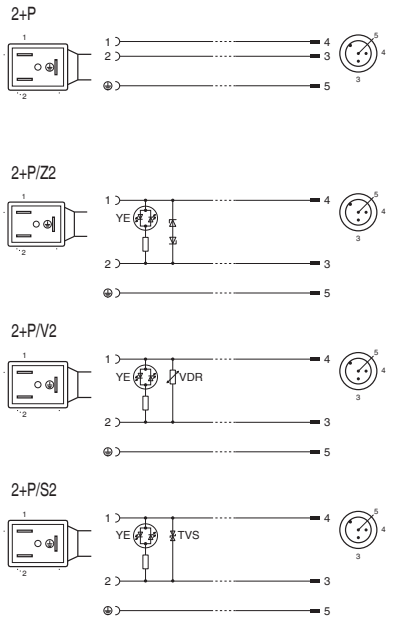
Features

- Molded seal

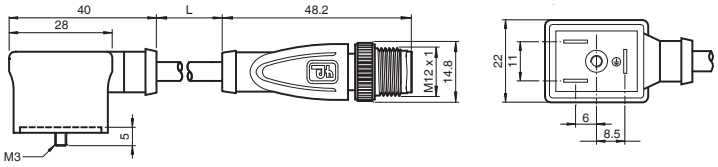
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 50

V M B I – . . . . . – . . M – . . . . . – V 1 – G

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
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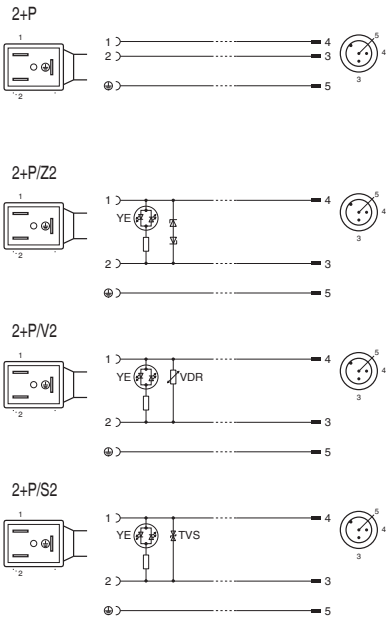
Features

- Molded seal

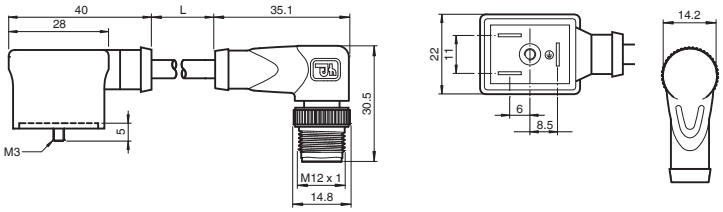
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

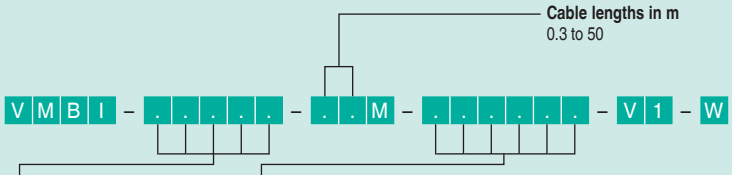
Electrical connection



Dimensions



Order codes



Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
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– Not available
Other cable qualities and circuits available on request

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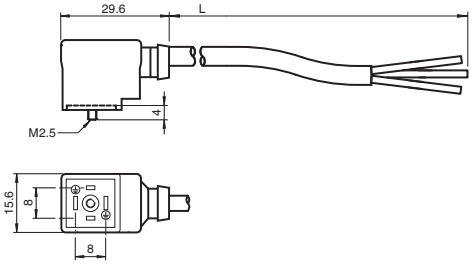
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 6 A (depending on cable quality)			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		

Features

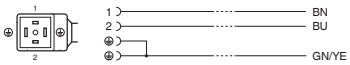
- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Dimensions

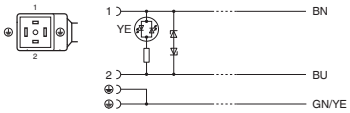


Electrical connection

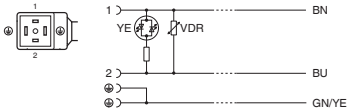
2+P



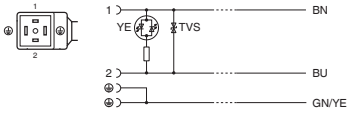
2+P/Z2



2+P/V2



2+P/S2



Order codes

VMC – . . . . . – . . M – . . . . .

Cable lengths in m
0.3 to 50

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black, (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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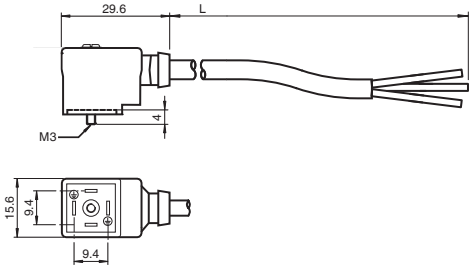
Features

- Molded seal
- Two-point connector ground

Technical data

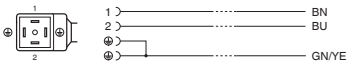
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 6 A (depending on cable quality)			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		

Dimensions

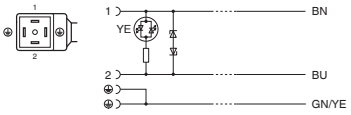


Electrical connection

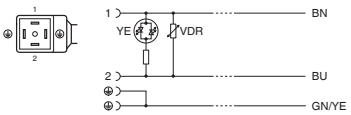
2+P



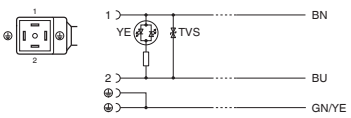
2+P/Z2



2+P/V2



2+P/S2



Order codes

Cable lengths in m
0.3 to 50

V M C I – . . . . . – . . M – . . . . .

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black, (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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Features

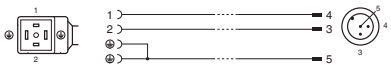
- Valve connector EN 175301-803 A/ISO4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

Technical data

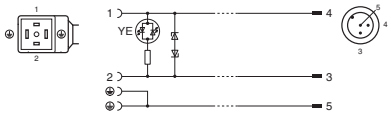
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection

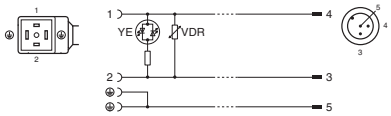
2+P



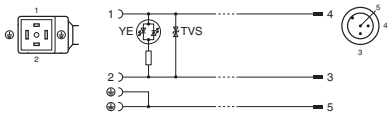
2+P/Z2



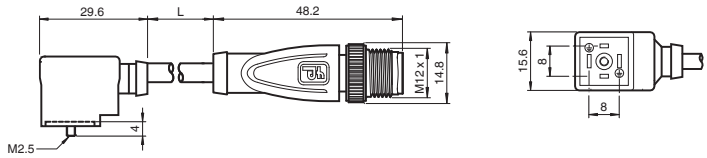
2+P/V2



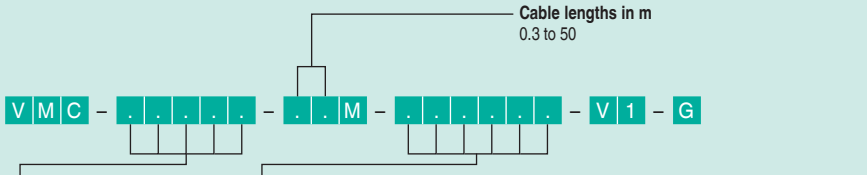
2+P/S2



Dimensions



Order codes



Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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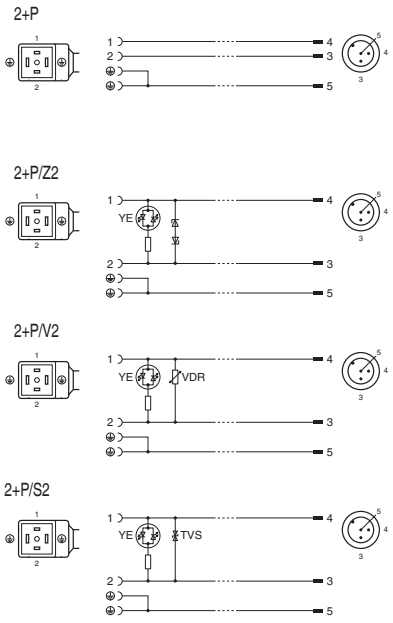
Features

- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal
- Two-point connector ground

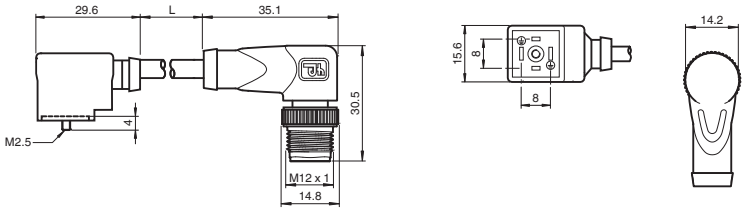
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 50

V M C – . . . . . – . . M – . . . . . – V 1 – W

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5 mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5 mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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Features

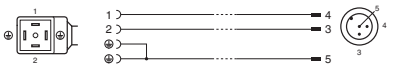
- Molded seal
- Two-point connector ground

Technical data

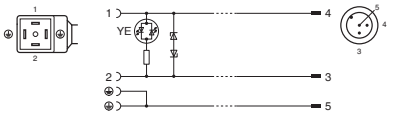
General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection

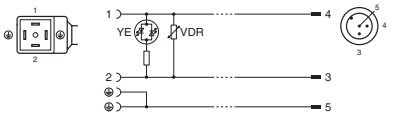
2+P



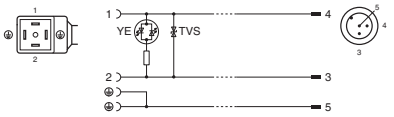
2+P/Z2



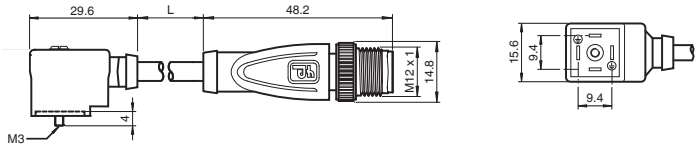
2+P/V2



2+P/S2



Dimensions



Order codes

Cable lengths in m
0.3 to 50

V M C I – . . . . . – . . M – . . . . . – V 1 – G

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5 mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5 mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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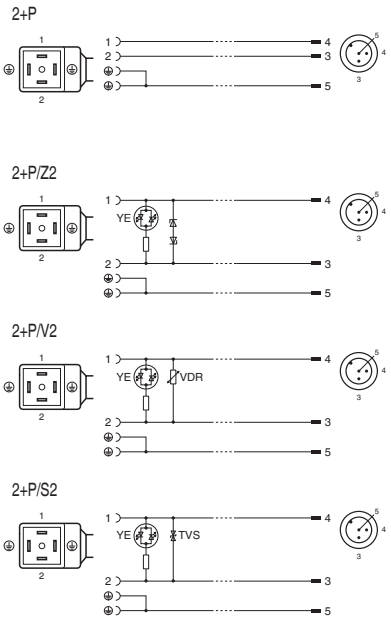
Features

- Molded seal
- Two-point connector ground

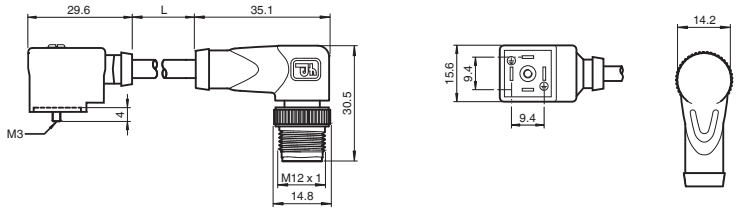
Technical data

General data				
Circuitry	2+P	Z diode 2+P/Z2	Varistor 2+P/V2	Suppressor diode 2+P/S2
Number of pins	2+PE			
Display/controls				
Yellow LED	–	Function display		
Electrical data				
Operating voltage U_B	Max. 250 V AC/DC	24 V AC/DC		
Testing voltage	2000 V			
Operating current	Max. 4 A			
Volume resistance	< 10 Ω			
Ambient conditions				
Ambient temperature	-40 … 80 °C for body Information on cable quality can be found beginning on page 10			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP67			
Material				
Contacts	CuZn			
Contact surface	CuSn			
Body	PUR, black	PUR, transparent		
M12 body	TPU, black			
Pin diameter	1 mm			
Push-on sleeve	Brass, nickel-plated			
Contacts	CuZn			
Contact surface	Au			

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 50

V M C I – . . . . . – . . M – . . . . . – V 1 – W

Circuitry

2+P	
2+P/Z2	Z diode
2+P/V2	Varistor
2+P/S2	Suppressor diode

Cable quality

		2+P	2+P/Z2	2+P/V2	2+P/S2
PVC	PVC, black (0.5 mm²)	○	○	○	○
PUR	PUR/PVC, black (0.5 mm²)	●	●	○	○
PUR-U	PUR, halogen-free, UL-approved, black (0.5 mm²)	○	○	○	○

● Standard, cable lengths of 0.6 m, 1 m and 2 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available
Other cable qualities and circuits available on request

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1/2″ Female cordsets	110
1/2″ Extension cables	112

	page
7/8″ Female cordsets	113
7/8″ Extension cables	115

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Female cordset, 1/2″ straight

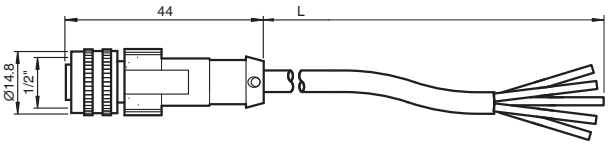
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated contacts
- IP67/IP69K protection

Technical data

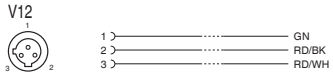
Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 … 90 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, yellow		
Coupling nut	Brass, nickel-plated		
Approvals and certificates of compliance			
UL file number	E300203		

Dimensions



Electrical connection

V12



V124

V125

Order codes

Cable lengths in m
0.3 to 50

V . . . – G – . . . . M – . . . . . .

Cable quality

			V12	V124	V125
YE	PVC	PVC, yellow (AWG22)	●	●	●
YE	PUR H/S	PUR, halogen-free, irradiated, yellow (AWG18)	○	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V12 3-pin
V124 4-pin
V125 5-pin

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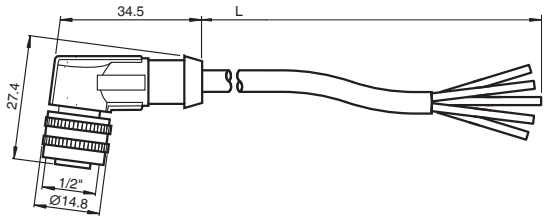
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated contacts
- IP67/IP69K protection

Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/ DC		Max. 60 V AC/ DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 … 90 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, yellow		
Coupling nut	Brass, nickel-plated		
Approvals and certificates of compliance			
UL file number	E300203		

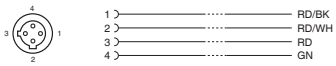
Dimensions



Electrical connection

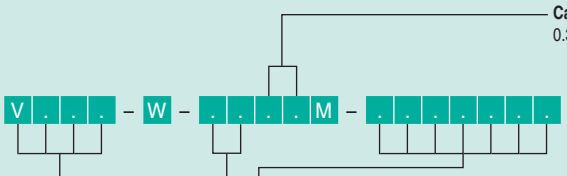
V12

V124



V125

Order codes



Cable lengths in m
0.3 to 50

Cable quality

			V12	V124	V125
YE	PVC	PVC, yellow (AWG22)	●	●	●
YE	PUR H/S	PUR, halogen-free, irradiated, yellow (AWG18)	○	○	○

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins
V12 3-pin
V124 4-pin
V125 5-pin

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Extension cable, 1/2″ straight-1/2″ straight

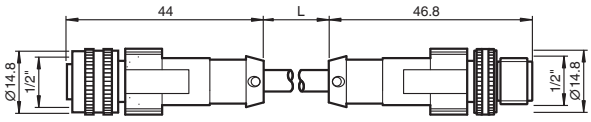
Features

- Knurled nut suitable for tool mounting
- Mechanical detent for vibration protection
- Gold-plated contacts
- IP67/IP69K protection

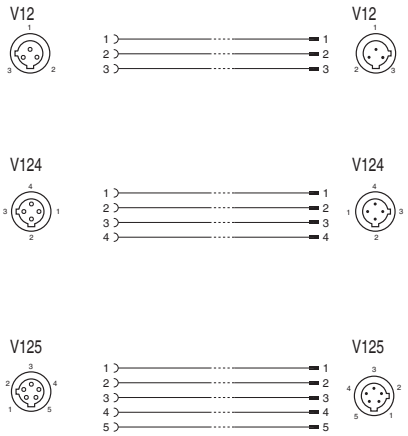
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Testing voltage	> 1500 V_{eff} AC		
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 … 90 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Pin diameter	1 mm		
Degree of protection	IP67 / IP69K		
Materials			
Contacts	CuSn / Au		
Contact surface	Au		
Body	TPU, yellow		
Coupling nut	Brass, nickel-plated		
Approvals and certificates of compliance			
UL file number	E300203		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . . – G – . . . . M – . . . . . – V . . – G

Cable quality

			V12	V124	V125
YE	PVC	PVC, yellow (AWG22)	○	○	○
YE	PUR H/S	PUR, halogen-free, irradiated, yellow (AWG18)	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V12	V12	3-pin
V124	V124	4-pin
V125	V125	5-pin

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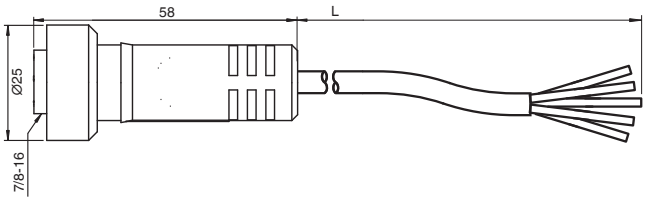
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Testing voltage	4000 V		
Operating current	Max. 13 A	Max. 10 A	Max. 8 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 105 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PVC		
Coupling nut	Aluminum, anodized		
Approvals and certificates of compliance			
UL file number	E300203		

Features

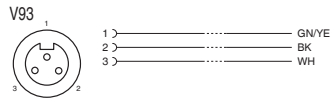
- Mini connector
- Gold-plated contacts
- Heavy-gauge wire

Dimensions

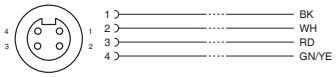


Electrical connection

V93



V94



V95

Order codes

Cable lengths in m
0.3 to 50

V . . – G – Y E . . M – S T O O W

Number of pins

V93	3-pin
V94	4-pin
V95	5-pin

Cable quality

STOOW	PVC, yellow (AWG16)

V93	V94	V955
●	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

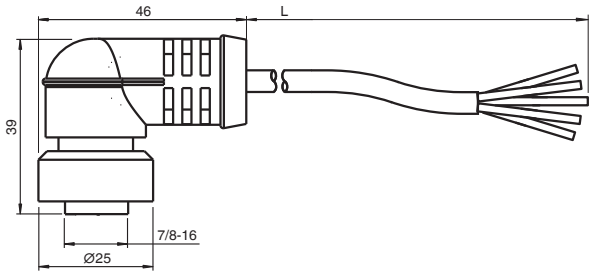
Features

- Mini connector
- Gold-plated contacts
- Heavy-gauge wire

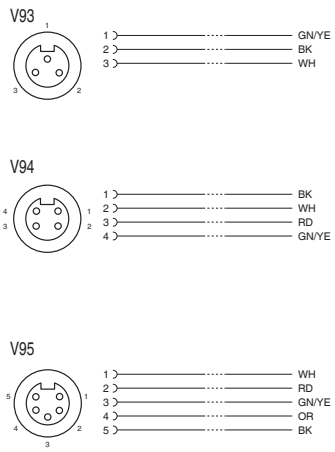
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Testing voltage	4000 V		
Operating current	Max. 13 A	Max. 10 A	Max. 8 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 105 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PVC		
Coupling nut	Aluminum, anodized		
Approvals and certificates of compliance			
UL file number	E300203		

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – W – Y E . . M – S T O O W

Number of pins
V93 3-pin
V94 4-pin
V95 5-pin

STOOW Cable quality
PVC, yellow (AWG16)

V93	V94	V955
●	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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Singapore: +65 6779 9091
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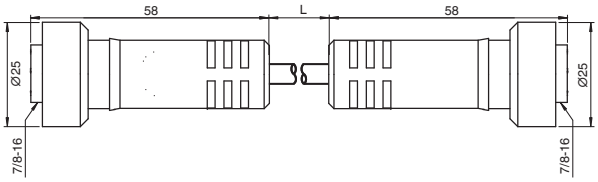
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Testing voltage	4000 V		
Operating current	Max. 13 A	Max. 10 A	Max. 8 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 105 °C for body Information on cable quality can be found starting from page 10		
Degree of pollution	3		
Mechanical data			
Contact elements	Spring-loaded contact sockets		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PVC		
Coupling nut	Aluminum, anodized		
Approvals and certificates of compliance			
UL file number	E300203		

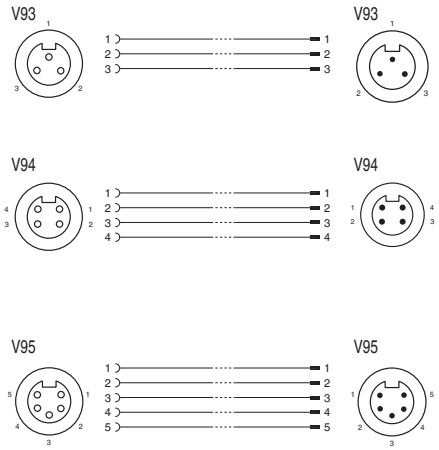
Features

- Mini connector
- Gold-plated contacts
- Heavy-gauge wire

Dimensions



Electrical connection



Order codes

Cable lengths in m
0.3 to 50

V . . – G – Y E . . M – S T O O W – V . . – G

Number of pins
V93 3-pin
V94 4-pin
V95 5-pin

STOOW **Cable quality**
PVC, yellow (AWG16)

V93	V94	V955
●	●	●

● Standard, cable lengths of 2 m, 5 m and 10 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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Features

- Tightening tool for round plug connectors with knurled coupling nuts
- Preset torque

Order code	
MH V1-SCREWDRIVER	Torque screwdriver
Length	blade: 100 mm
Drive	4 mm hexagonal
Preset torque	0.4 Nm
Weight	approx. 93 g
Matching nut	MH V1-BIT M12
MH V1-BIT M12	Nut for hexagon drive
Weight	approx. 19 g
MH V3 SCREWDRIVER	Torque screwdriver
Length	blade: 100 mm
Drive	4 mm hexagonal
Preset torque	0.2 Nm
Weight	approx. 95 g
Matching nut	MH V3-BIT M8
MH V3-BIT M8	Nut for hexagon drive
Weight	approx. 17 g

Order code	
V1-B	Threaded plug
Thread	M12 x 1
V3-B	Threaded plug
Thread	M8 x 1
V1S-B	Threaded cap
Thread	M12 x 1
V3S-B	Threaded cap
Thread	M8 x 1

Order code	
V1/V3-LABELHOLDER	Label holder
Color	Transparent
Cable diameter	4.0 - 6.0 mm
Material	PTE
Length	23 mm
V1/V3-LABEL	Label plate
Color	White
Material	PC

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Product Diversity – Always The Right Connection

If different lengths of cable are required during field wiring, then these are generally cut to length and assembled on-site. The ability to install them quickly yet simultaneously ensuring a quality is paramount.

Pepperl+Fuchs provides a wide range of ready made connectors for this very purpose:

- **M8**
- **M12**
- **Valve connectors**
- **RD24**
- **M18**
- **1/2″**
- **7/8″**

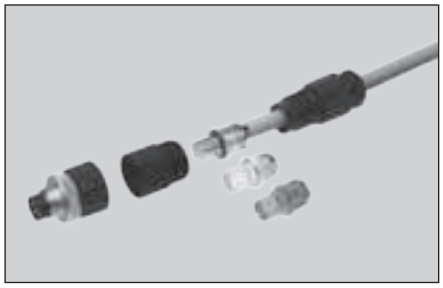
These connectors are available in both straight and angled designs with socket and pin contacts with various connection points.

Depending on the application, different connection technology can be used for M8 and M12 connectors. Shielded versions with a metal housing are available to meet additional EMC requirements.

The Connection Technology – Conventional or Innovative

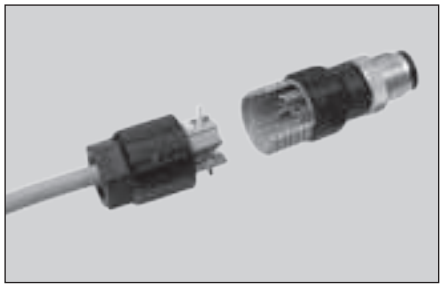
M8/M12 Screw Connection

Classic connection technology, the screw connection, provides a secure and reliable contact for a range of wire gauges.



M8 MiniQuick

Connecting the relatively small M8 to screw terminals is often quite time-consuming. The MiniQuick version solves the problem by forming an axial contact between the connector pin and the conductor strands. This saves time by avoiding the need to strip the insulation from each conductor.



M12 Quickon

Quickon quick connection technology provides an inexpensive and easy connection solution without having to strip the insulation. Using insulation displacement technology, the contact pierces the cable insulation and a creates a vibration-proof and airtight contact.

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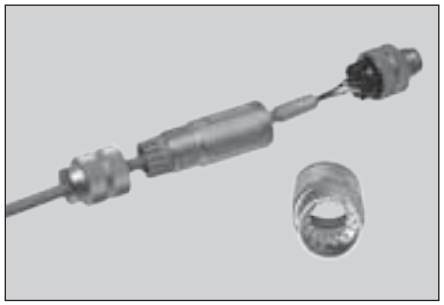
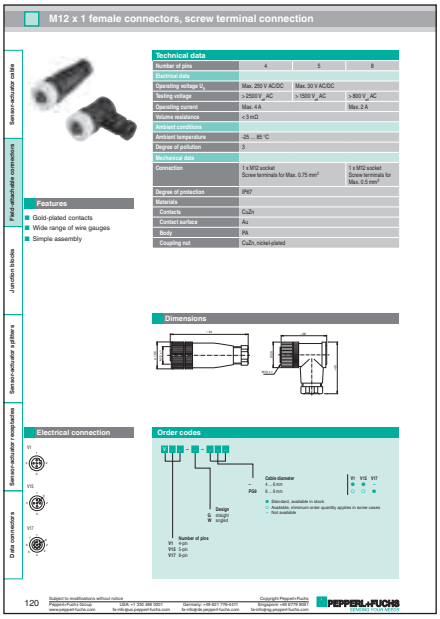


Shielded M12 with Iris Springs

Iris spring shielding greatly simplifies the manufacture of field attachable shielded cables. The cable shield only has to be cut to a defined length before being slid over the cable jacket to the required position. The iris spring ensures the contact between the shield and the connector housing.

Your Benefits at a Glance

- **Wide product range – assemble quickly and reliably on-site**
- **Different connection possibilities – the ideal solution for every application**
- **Shortest delivery times – available in stock as standard**
- **Quality – reliably sealed to IP67 or higher**



M12 x 1 female connectors, screw terminal connection

Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 30 V AC/DC	
Testing voltage	> 2500 V_{AC}	> 1500 V_{AC}	> 800 V_{AC}
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 3 mΩ		
Ambient conditions			
Ambient temperature	-25 ... 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 socket Screw terminals for Max. 0.75 mm²		1 x M12 socket Screw terminals for Max. 0.5 mm²
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PA		
Coupling nut	CuZn, nickel-plated		

Features
- Gold-plated contacts
- Wide range of wire gauges
- Simple assembly

Dimensions

Electrical connection

Order codes

120 Subject to modifications without notice Pepperl+Fuchs Group www.pepperl-fuchs.com USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com Germany: +49 621 776-4411 fa-info@de.pepperl-fuchs.com Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com Copyright Pepperl+Fuchs PEPPERL+FUCHS SENSING YOUR NEEDS

Our Type Code – Your Order Code

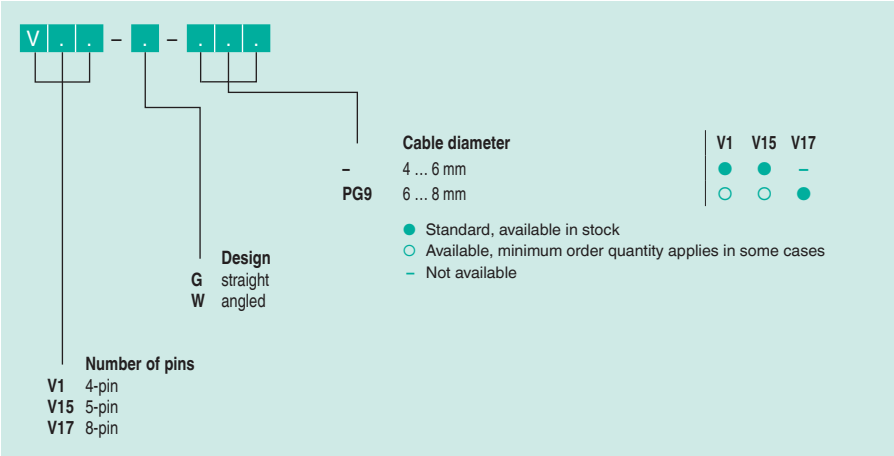
Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired number of pins and cable outlet, then enter these into the empty space on the type code – your order code is complete!

Example

You need the following M12 connector:

- M12 socket, straight, screw connection
- 4-pin
- PG9 cable gland with cable diameter of 6 to 8 mm



As you can see from the image above, the correct order code is: **V1-G-PG9**

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	page
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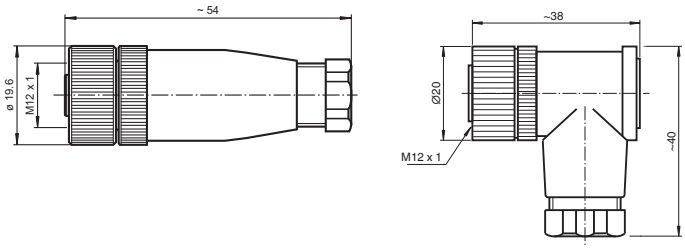
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 2500 V_{eff} AC	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 3 mΩ		
Ambient conditions			
Ambient temperature	-25 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 socket Screw terminals for Max. 0.75 mm^2		1 x M12 socket Screw terminals for Max. 0.5 mm^2
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PA		
Coupling nut	CuZn, nickel-plated		

Features

- Gold-plated contacts
- Wide range of wire gauges
- Simple assembly

Dimensions



Electrical connection

V1

V15

V17

Order codes

V . . – . – . . .

Number of pins
- **V1** 4-pin
- **V15** 5-pin
- **V17** 8-pin

Design
- **G** straight
- **W** angled

Cable diameter

		V1	V15	V17
–	4 … 6 mm	●	●	–
PG9	6 … 8 mm	○	○	●

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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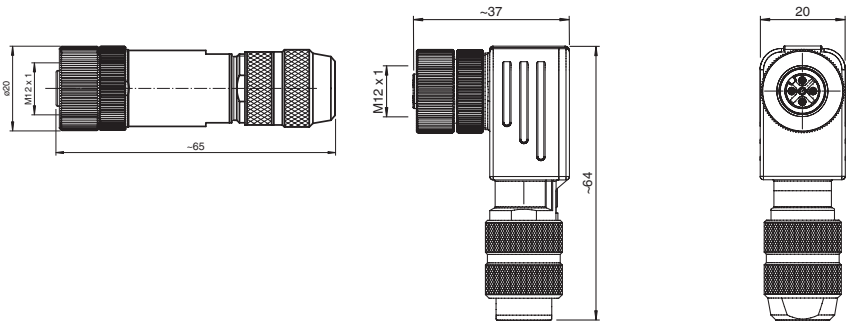
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 2500 V_{eff} AC	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 3 mΩ		
Ambient conditions			
Ambient temperature	-25 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 socket Screw terminals for max. 0.75 mm^2		1 x M12 socket Screw terminals for max. 0.5 mm^2
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	Die-cast zinc, nickel-plated		
Coupling nut	CuZn, nickel-plated		
Cable			
Cable diameter	5 … 8 mm		

Features

- Iris spring provides easy shield bonding
- Gold-plated contacts
- Simple assembly

Dimensions



Electrical connection

V1

V15

V19

Order codes

V . . – . – A B G – P G 9

Design

		V1	V15	V19
G	straight	●	●	●
W	angled	●	●	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1 4-pin
V15 5-pin
V19 8-pin

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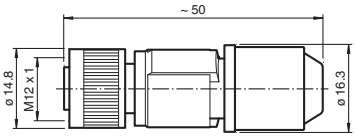
Technical data

Number of pins	4 (Q3)	4 (Q2)
Electrical data		
Operating voltage U_B	Max. 125 V AC/DC	Max. 250 V AC/DC
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M12 socket Insulation displacement for 0.14 … 0.34 mm²	1 x M12 socket Insulation displacement for 0.34 … 0.75 mm²
Degree of protection	IP65/IP67	
Materials		
Contacts	CuSn	
Contact surface	Ni/Au	
Body	PA 66, black	
Coupling nut	Die-cast zinc	
Cable		
Cable diameter	3.5 … 6 mm	4 … 8 mm

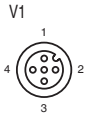
Features

- Time-saving insulation displacement connection technology
- Gold-plated contacts
- No screwdriver required

Dimensions



Electrical connection



Order codes

V 1 – G – . .

	Core cross-section	V1
Q2	0.34 – 0.75 mm²	●
Q3	0.14 – 0.34 mm²	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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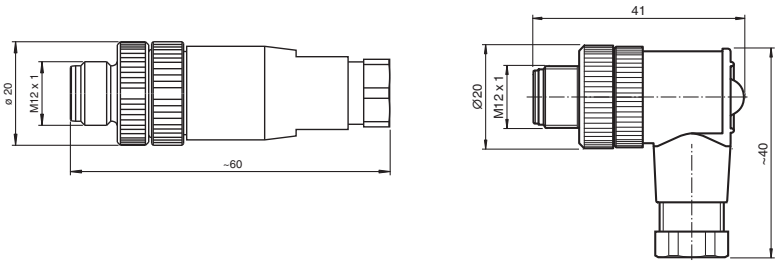
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 2500 V_{eff} AC	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 3 mΩ		
Ambient conditions			
Ambient temperature	-25 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 plug Screw terminals for max. 0.75 mm^2		1 x M12 plug Screw terminals for max. 0.5 mm^2
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PA		
Coupling nut	CuZn, nickel-plated		

Features

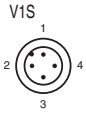
- Gold-plated contacts
- Wide range of wire gauges
- Simple assembly

Dimensions



Electrical connection

V1S



V15S

V17S

Order codes

V . . S – . – . . .

Number of pins
- **V1S** 4-pin
- **V15S** 5-pin
- **V17S** 8-pin

Design
- **G** straight
- **W** angled

Cable diameter
- **–** 4 … 6 mm
- **PG9** 6 … 8 mm

	V1	V15	V17
–	●	●	–
PG9	○	○	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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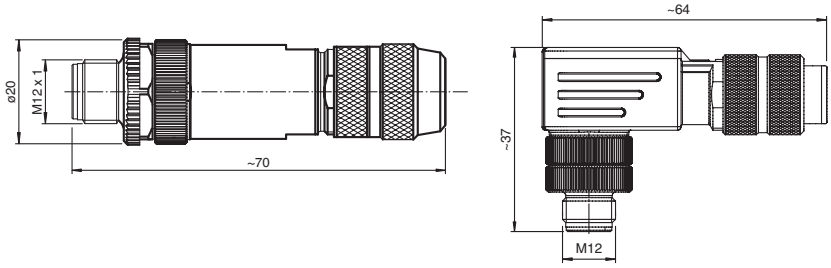
Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 2500 V_{eff} AC	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 3 mΩ		
Ambient conditions			
Ambient temperature	-25 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 plug Screw terminals for Max. 0.75 mm^2		1 x M12 plug Screw terminals for Max. 0.5 mm^2
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	Die-cast zinc, nickel-plated		
Coupling nut	CuZn, nickel-plated		
Cable			
Cable diameter	5 … 8 mm		

Features

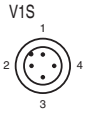
- Iris spring provides easy shield bonding
- Gold-plated contacts
- Simple assembly

Dimensions



Electrical connection

V1S



V15S

V19S

Order codes

V . . S – . – A B G – P G 9

Design

		V1	V15	V19
G	straight	●	●	●
W	angled	●	●	–

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Number of pins

V1S 4-pin
V15S 5-pin
V19S 8-pin

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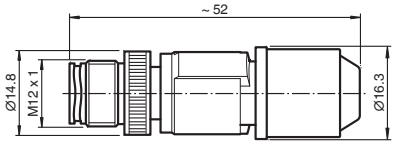
Technical data

Number of pins	4 (Q3)	4 (Q2)
Electrical data		
Operating voltage U_B	Max. 125 V AC/DC	Max. 250 V AC/DC
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M12 plug Insulation displacement for 0.14 … 0.34 mm²	1 x M12 plug Insulation displacement for 0.34 … 0.75 mm²
Degree of protection	IP65/IP67	
Materials		
Contacts	CuSn	
Contact surface	Ni/Au	
Body	PA 66, black	
Coupling nut	Die-cast zinc	
Cable		
Cable diameter	3.5 … 6 mm	4 … 8 mm

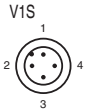
Features

- Time-saving insulation displacement connection technology
- Gold-plated contacts
- No screwdriver required

Dimensions



Electrical connection



Order codes

V 1 S – G – . .

	Core cross-section	V1S
Q2	0.34 … 0.75 mm²	●
Q3	0.14 … 0.34 mm²	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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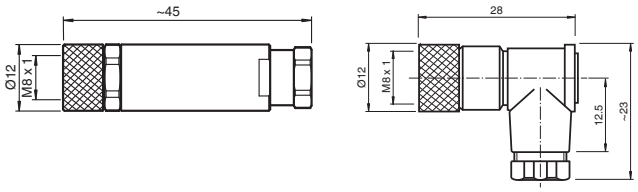
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A	
Volume resistance	< 3 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 socket Straight design: screw terminals < 0.5 mm^2 Angled design: solder connection 0.25 mm^2	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	CuZn, nickel-plated	
Cable		
Cable diameter	3.5 … 5 mm	

Features

- Gold-plated contacts

Dimensions



Electrical connection

V3

V31

Order codes

V . . – . M

Design
G straight
W angled

Connection technology

	V3	V31
Screw terminals	●	●
Solder connection	●	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins
V3 3-pin
V31 4-pin

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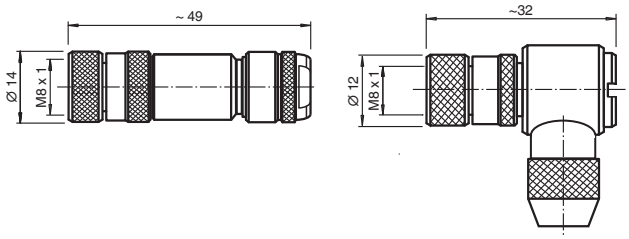
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A	
Volume resistance	< 3 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 socket Straight design: screw terminals < 0.5 mm^2 Angled design: solder connection 0.25 mm^2	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	CuZn, nickel-plated	
Cable		
Cable diameter	3.5 … 5 mm	

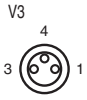
Features

- Gold-plated contacts
- All-metal connector housing

Dimensions



Electrical connection



Order codes

V . . – . M – A B G

Design
G straight
W angled

Number of pins
V3 3-pin
V31 4-pin

Connection technology	V3	V31
Screw terminals	○	○
Solder connection	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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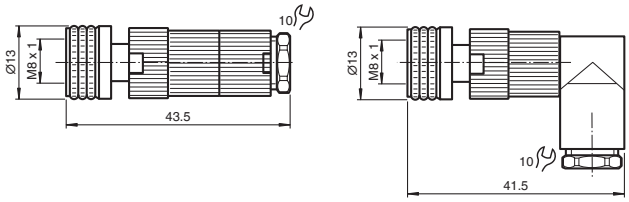
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 70 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 socket Penetration technology 0.14 … 0.34 mm²	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	ZnAl / Ni	
Cable		
Cable diameter	4 … 5 mm	

Features

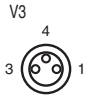
- Time-saving axial wire contact technology
- Gold-plated contacts

Dimensions



Electrical connection

V3



V31

Order codes

V . . – . M – M Q

Design
G straight
W angled

Number of pins
V3 3-pin
V31 4-pin

V3	V31
○	○
○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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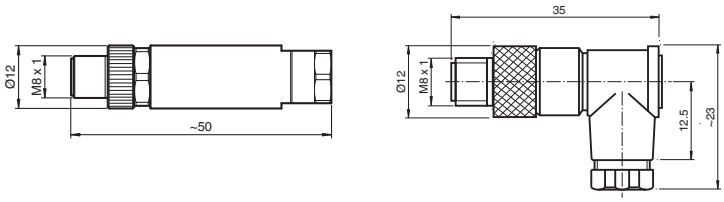
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A	
Volume resistance	< 3 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 plug Straight design: screw terminals < 0.5 mm^2 Angled design: solder connection 0.25 mm^2	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	CuZn, nickel-plated	
Cable		
Cable diameter	3.5 … 5 mm	

Features

- Gold-plated contacts

Dimensions



Electrical connection

Order codes

V . . S – . M

Design
G straight
W angled

Number of pins
V3 3-pin
V31 4-pin

Connection technology	V3	V31
Screw terminals	●	●
Solder connection	●	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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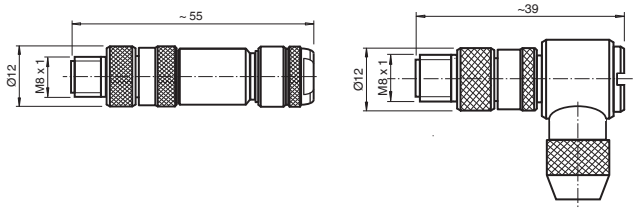
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Testing voltage	> 1500 V_{eff} AC	> 800 V_{eff} AC
Operating current	Max. 4 A	
Volume resistance	< 3 mΩ	
Ambient conditions		
Ambient temperature	-25 … 85 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 plug Straight design: screw terminals < 0.5 mm^2 Angled design: solder connection 0.25 mm^2	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	CuZn, nickel-plated	
Cable		
Cable diameter	3.5 … 5 mm	

Features

- Gold-plated contacts
- All-metal connector housing

Dimensions



Electrical connection

V3

V31

Order codes

V . . S – . M – A B G

Design
G straight
W angled

Number of pins
V3 3-pin
V31 4-pin

Connection technology	V3	V31
Screw terminals	○	○
Solder connection	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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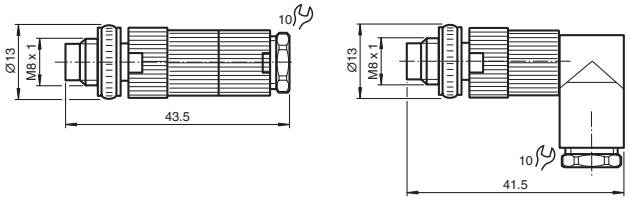
Technical data

Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 … 70 °C	
Degree of pollution	3	
Mechanical data		
Connection	1 x M8 socket Penetration technology 0.14 … 0.34 mm^2	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Body	PA	
Coupling nut	ZnAl / Ni	
Cable		
Cable diameter	4 … 5 mm	

Features

- Time-saving axial wire contact technology
- Gold-plated contacts

Dimensions



Electrical connection

Order codes

V . . S – . M – M Q

Design
G straight
W angled

Number of pins
V3 3-pin
V31 4-pin

V3	V31
○	○
○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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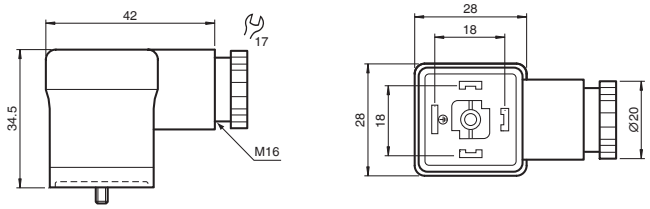
Technical data

Number of pins	2+PE	3+PE
Electrical data		
Operating voltage U_B	Max. 250 V AC/DC	
Operating current	Max. 10 A	
Volume resistance	< 10 mΩ	
Ambient conditions		
Ambient temperature	-40 … 125 °C	
Mechanical data		
Degree of protection	IP67	
Connection	Screw terminals for max. 1.5 mm^2 M16 cable gland	
Materials		
Contacts	CuZn	
Contact surface	Ni	
Body	PA, black	
Cable		
Cable diameter	6 … 8 mm	

Features

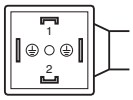
- Valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)
- Molded seal

Dimensions

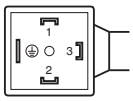


Electrical connection

2+PE



3+PE



Order codes

V M A – . + P E

	Number of pins	VMA
2	2-pin + PE	●
3	3-pin + PE	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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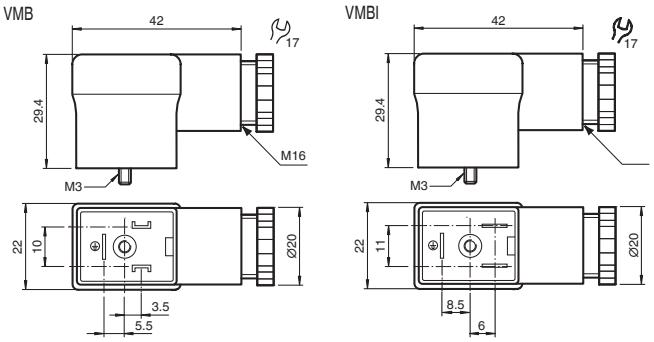
Technical data

Number of pins	2+PE
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Operating current	Max. 10 A
Volume resistance	< 10 mΩ
Ambient conditions	
Ambient temperature	-40 … 125 °C
Mechanical data	
Degree of protection	IP65
Connection	Screw terminals for max. 1.5 mm^2 M16 cable gland
Materials	
Contacts	CuZn
Contact surface	Ni
Body	PA, black
Cable	
Cable diameter	6 … 8 mm

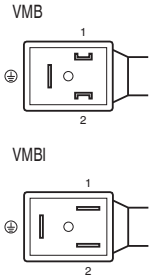
Features

- VMB: valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)

Dimensions



Electrical connection



Order codes

V M B . – 2 + P E

	Standard	Availability
–	DIN	●
I	Industrial	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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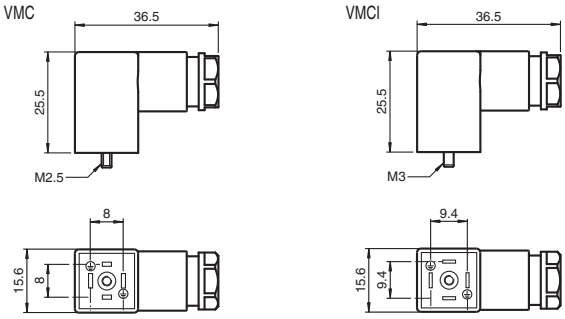
Technical data

Number of pins	2+PE
Electrical data	
Operating voltage U_B	250 V AC/DC
Operating current	Max. 6 A
Volume resistance	< 15 mΩ
Ambient conditions	
Ambient temperature	-20 … 120 °C
Mechanical data	
Degree of protection	IP65
Connection	Screw terminals for max. 1.5 mm^2 M16 cable gland
Materials	
Contacts	CuSn
Contact surface	Ni
Body	PA, black
Cable	
Cable diameter	4 … 6 mm

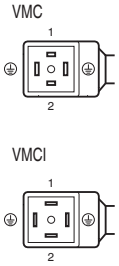
Features

- VMC: valve connector EN 175301-803 A/ISO 4400 (previously DIN 43650)

Dimensions



Electrical connection



Order codes

V M C . – 2 + P E

	Standard	Availability
–	DIN	●
I	Industrial	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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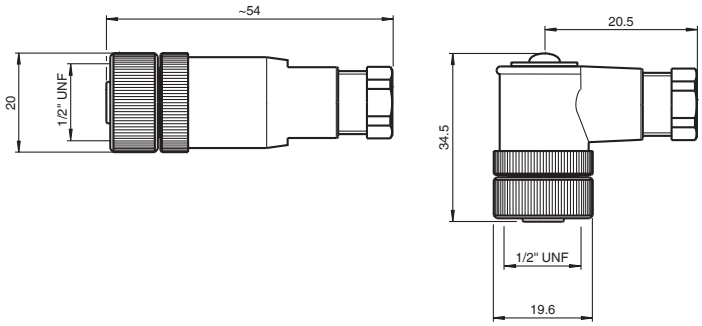
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 socket Screw terminals for max. 0.75 mm² PG7 cable gland		
Degree of protection	IP67		
Materials			
Contacts	CuSn		
Contact surface	Au		
Body	PA		
Coupling nut	CuSn / Ni		
Cable			
Cable diameter	4 … 6 mm		

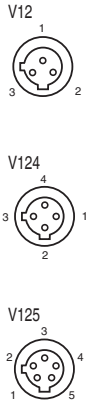
Features

- Gold-plated contacts

Dimensions



Electrical connection



Order codes

V . . . – .

Design
G straight
W angled

V12	V124	V125
●	○	○
●	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins
V12 3-pin
V124 4-pin
V125 5-pin

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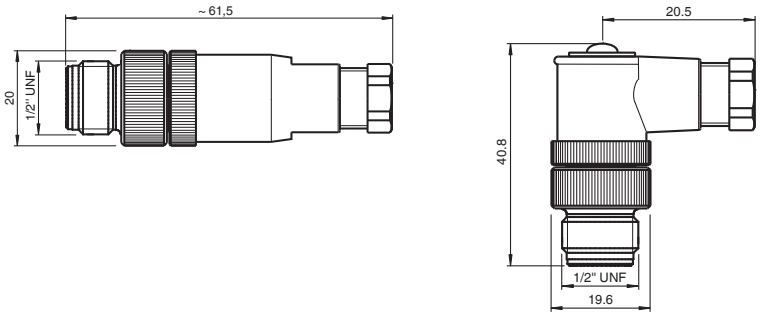
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC		Max. 60 V AC/DC
Operating current	Max. 4 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-40 … 85 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M12 plug Screw terminals for max. 0.75 mm² PG7 cable gland		
Degree of protection	IP67		
Materials			
Contacts	CuSn		
Contact surface	Au		
Body	PA		
Coupling nut	CuSn / Ni		
Cable			
Cable diameter	4 … 6 mm		

Features

- Gold-plated contacts

Dimensions



Electrical connection

V12

V124

V125

Order codes

V . . . S – .

Design
- **G** straight
- **W** angled

	V12	V124	V125
G	●	○	○
W	●	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins
- **V12** 3-pin
- **V124** 4-pin
- **V125** 5-pin

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7/8″ Field-attachable female connector

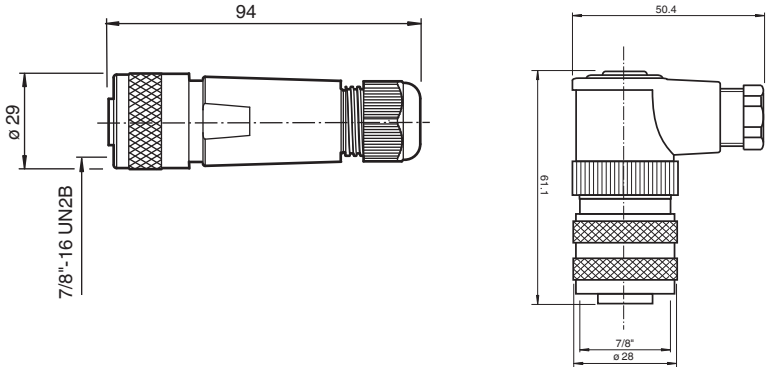
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Operating current	Max. 18 A	Max. 15 A	Max. 12 A
Ambient conditions			
Ambient temperature	-40 … 90 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x 7/8" socket Screw terminals < 2.0 mm²		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PA		
Coupling nut	Al, anodized		
Cable			
Cable diameter	5 … 13 mm		

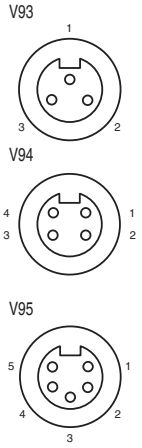
Features

- Gold-plated contacts

Dimensions



Electrical connection



Order codes

V 9 . – .

Design
- **G** straight
- **W** angled

	V93	V94	V95
G straight	●	●	●
W angled	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins
- **V93** 3-pin
- **V94** 4-pin
- **V95** 5-pin

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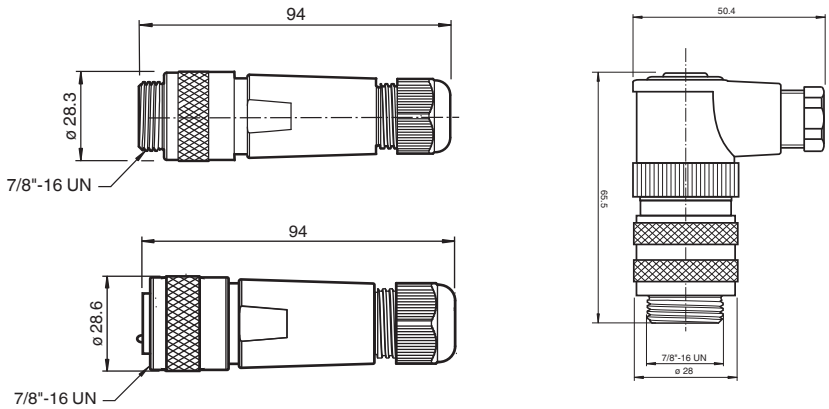
Features

- Gold-plated contacts

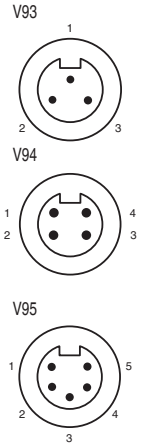
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Operating current	Max. 18 A	Max. 15 A	Max. 12 A
Ambient conditions			
Ambient temperature	-40 … 90 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x 7/8" plug, internal or external thread Screw terminals < 2.0 mm² PG9 cable gland		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Body	PA		
Coupling nut	Al, anodized		
Cable			
Cable diameter	5 … 13 mm		

Dimensions



Electrical connection



Order codes

V 9 . – . – S .

Number of pins
- **V93** 3-pin
- **V94** 4-pin
- **V95** 5-pin

Design
- **G** straight
- **W** angled

Type of thread
- **I** internal
- **E** external

	V93	V94	V95
	●	●	●
	○	○	○

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Combination not available

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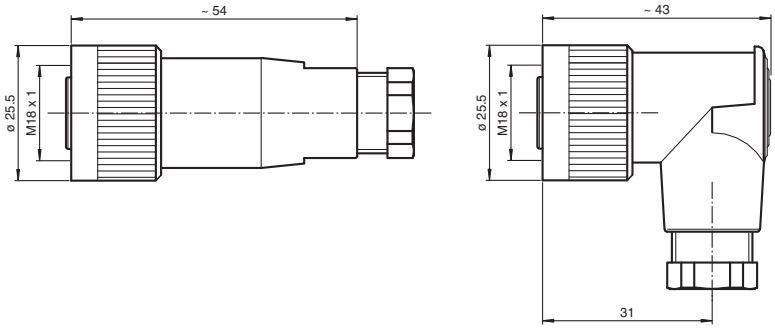
Technical data

Number of pins	4
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Operating current	Max. 16 A
Volume resistance	< 8 mΩ
Ambient conditions	
Ambient temperature	-25 ... 85 °C
Degree of pollution	3
Mechanical data	
Connection	1 x M18 socket Screw terminals for max. 1.5 mm^2 PG9 cable gland
Degree of protection	IP67
Materials	
Contacts	CuZn
Contact surface	CuSnZn
Body	PA
Coupling nut	PA
Cable	
Cable diameter	6 ... 8 mm

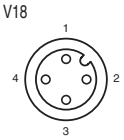
Features

- Gold-plated contacts

Dimensions



Electrical connection



Order codes

V 1 8 – .

	Design	V18
G	straight	●
W	angled	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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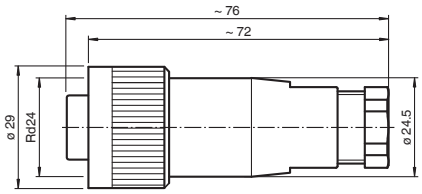
Technical data

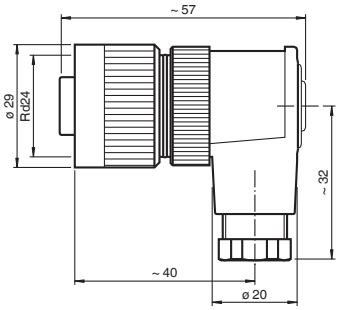
Number of pins	6 + PE
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Operating current	Max. 10 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 100 °C
Degree of pollution	3
Mechanical data	
Connection	1 x socket, Rd 24 x 1/8" Screw terminals < 1.5 mm² PG9 cable gland
Degree of protection	IP65/IP67
Materials	
Contacts	CuZn
Contact surface	Ag
Body	PBT
Cable	
Cable diameter	6 … 8 mm

Features

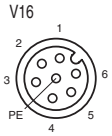
- Silver-plated contacts

Dimensions





Electrical connection



Order codes

V 1 6 – .

	Design	V16
G	straight	●
W	angled	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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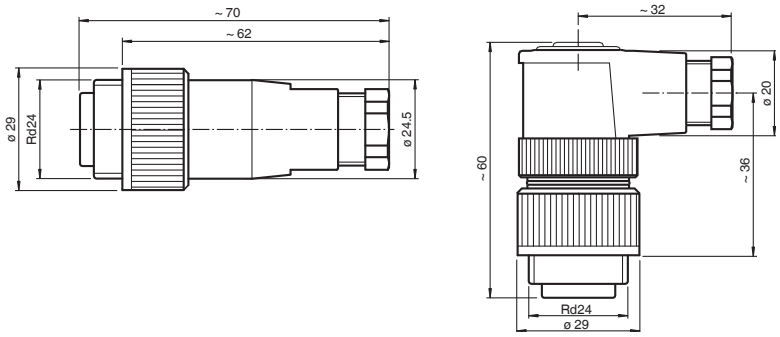
Technical data

Number of pins	6 + PE
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Operating current	Max. 10 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 100 °C
Degree of pollution	3
Mechanical data	
Connection	1 x plug, Rd 24 x 1/8" Screw terminals for max. 1.5 mm^2
Degree of protection	IP65/IP67
Materials	
Contacts	CuZn
Body	PBT
Contact surface	Ag
Cable	
Cable diameter	6 … 8 mm

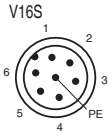
Features

- Silver-plated contacts

Dimensions



Electrical connection



Order codes

V 1 6 S – .

	Design	V16
G	straight	●
W	angled	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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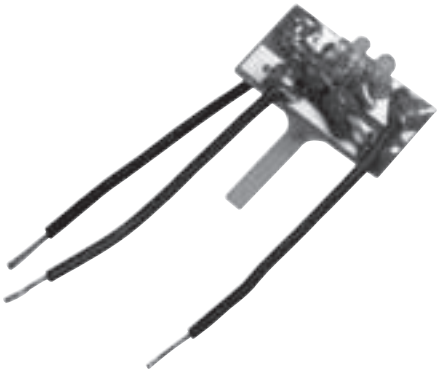

Order code	
V1-E/E2-LED	PCB with LED
Green LED	Operating display
Yellow LED	NO contact function display
Operating voltage	max. 24 V DC ± 15%
Operating current	max. 4 A

Only fits in specific M12 connectors with a screw terminal connection.

Order code	
CBL-PVC-GY-04x025-100M	PVC cable coil, 100 m, 4 x 0.25 mm^2
CBL-PVC-GY-04x034-100M	PVC cable coil, 100 m, 4 x 0.34 mm^2
CBL-PVC-U-BK-04x034-100M	PVC cable coil with UL, 100 m, 4 x 0.34 mm^2
CBL-PUR-GY-04x025-100M	PUR cable coil, 100 m, 4 x 0.25 mm^2
CBL-PUR-GY-04x034-100M	PUR cable coil, 100 m, 4 x 0.34 mm^2
CBL-PUR-U-BK-04x034-100M	PUR cable coil with UL, 100 m, 4 x 0.34 mm^2
CBL-PUR-OR-04x034-100M	PUR cable coil, welding bead resistant, 100 m, 4 x 0.34 mm^2
CBL-PUR-ABG-GY-04x034-100M	PUR cable coil, shielded, 100 m, 4 x 0.34 mm^2

Other lengths and cable qualities available on request.

You will find technical data in Chapter “The Correct Cable for Every Application” on page 10.

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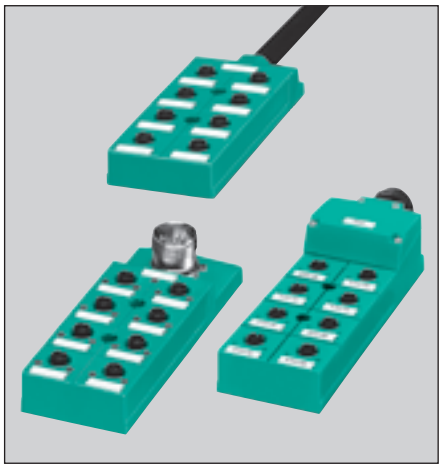
Product Diversity – Always The Right Connection



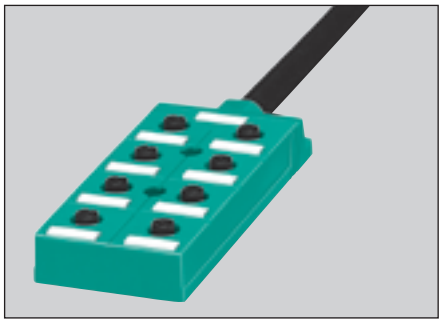
Passive splitter systems are frequently used in decentralized field installations to prevent the need for cable harnesses where several sensors and actuators are located in tight spaces. Expensive and time-consuming parallel wiring to a terminal box is replaced by a single master cable that carries both the supply voltage and signal lines. Assembly and installation times, not to mention financial costs, are reduced as a result.

Sensors and actuators can be easily connected on-site using preassembled cables. LED indicators signal the status of the supply voltage and signals. This considerably simplifies the process of troubleshooting faults. Thanks the modular design, components can be replaced quickly and easily.

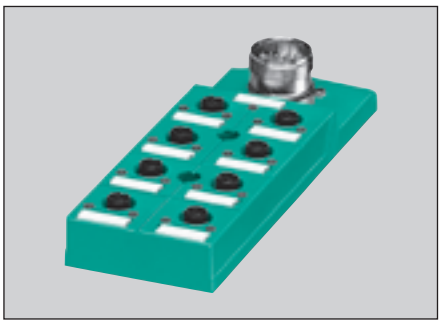
Our product range includes M8 and M12 junction blocks with four, six and eight ports. By using double allocation ports, up to 16 sensors or actuators can be connected to the controller. The fully encapsulated M12 junction blocks, extremely robust and watertight, are suitable for even the harshest of application conditions. For restricted installation locations we provide our light and compact M8 splitter.

Different Connection Technologies – for Flexibility when Connecting

Choosing the best connection technology depends on the intended application, and on your personal preferences or standards.



Junction Blocks with Molded Master Cable
If the ease of installation process top priority, then the junction blocks with a molded master cable are the logical choice. Cut the master cable the required length and wire into the terminal box. Since the master cable can be supplied in any length, Pepperl+Fuchs offers the best product for every application.



Junction Blocks with Plug-In Connection
If modularity is the overriding factor, then junction blocks with a plug-in connection is the best solution. If a module needs to be replaced, just unplug the connectors and plug-in a new junction block. The M12 or M23 connector master cables can also be ordered in different lengths.

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Junction Blocks with Terminal Compartment

The master cables are sometimes routed in the plant in advance, with the junction blocks being connected at a later date. In this instance a junction block with a terminal compartment is the correct solution.

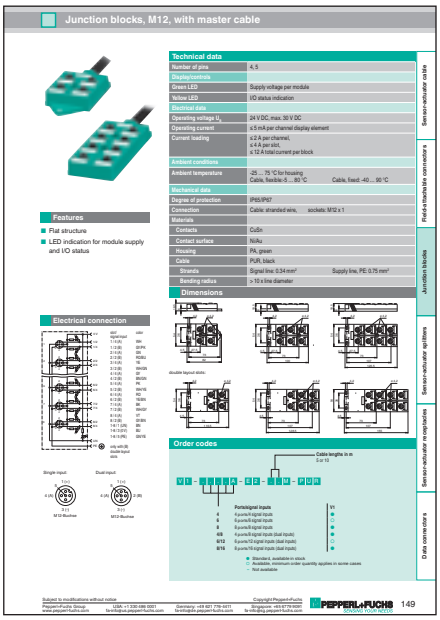
Your Benefits at a Glance

- Wide range – the right product for every need
- Different connection technologies – flexibility when connecting
- Shortest delivery times – available in stock as standard
- Quality – reliably sealed to IP67 or higher

Our Type Code – Your Order Code

Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired sensor count/type allocation and cable length and enter this into the empty space on the type code – your order code is complete.



Junction blocks, M12, with master cable

Features
- Flat structure
- LED indication for module supply and I/O status

Technical data

Number of pins	4, 5
Display/controls	
Green LED	Supply voltage per module
Yellow LED	I/O status indication
Electrical data	
Operating voltage U_B	24 V DC, max. 30 V DC
Operating current	≤ 5 mA per channel display element
Current loading	≤ 2 A per channel, ≤ 4 A per slot, ≤ 12 A total current per block
Ambient conditions	
Ambient temperature	-25 ... 75 °C for housing Cable, flexible: -5 ... 80 °C Cable, fixed: -40 ... 90 °C
Mechanical data	
Degree of protection	IP65/IP67
Connection	Cable: stranded wire, sockets: M12 x 1
Materials	
Contacts	CuSn
Contact surface	NiAu
Housing	PA, green
Cable	PUR, black
Strands	Signal line: 0.34 mm² Supply line, PE: 0.75 mm²
Bending radius	> 10 x line diameter

Dimensions

Electrical connection

Order codes

V1 - . . . . A - E2 - . . M - PUR

Cable lengths in m 5 or 10

	Ports/signal inputs	V1
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	○
8	8 ports/8 signal inputs	●
4/8	4 ports/8 signal inputs (dual inputs)	●
6/12	6 ports/12 signal inputs (dual inputs)	○
8/16	8 ports/16 signal inputs (dual inputs)	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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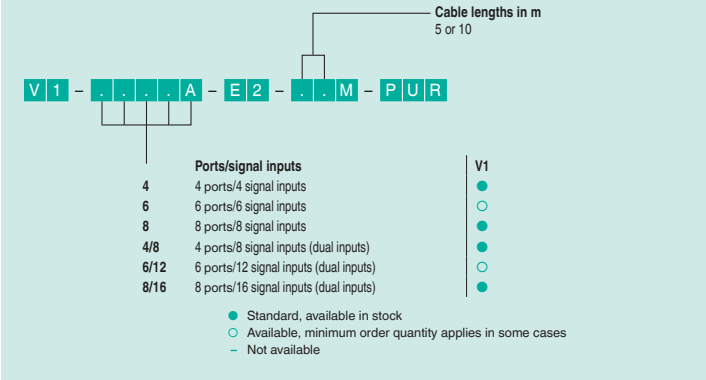
149

Example

You wish to order the following junction block:

- M12, 4 ports
- Single input
- 5 m master cable



As you can see from the image above, the correct order code is:
V1-4A-E2-5M-PUR

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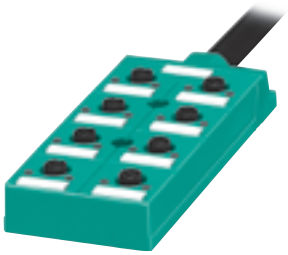
page

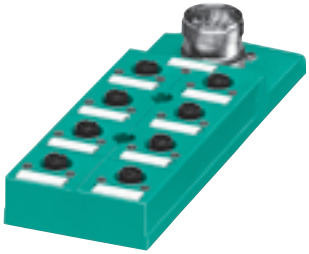


Junction blocks, M12, with master cable 149

page

Junction blocks, M12, with cage terminals 150

page



Junction blocks, M12, with M23 plug 151

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Junction blocks, M8, with master cable 152

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Junction blocks, M8, with M12 plug 153

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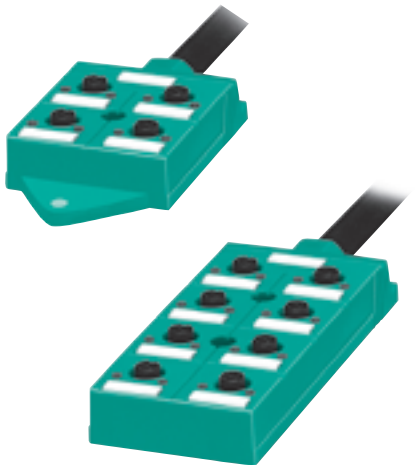


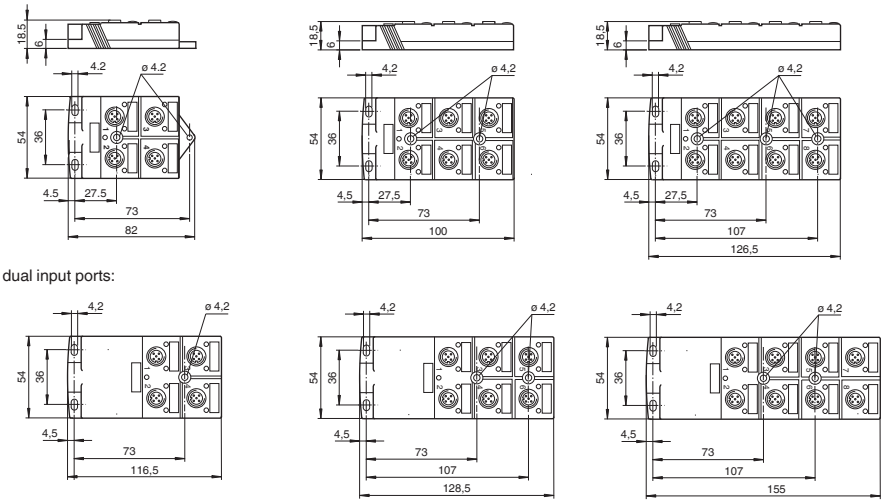
Features

- Flat design
- LED indication for module supply and I/O status

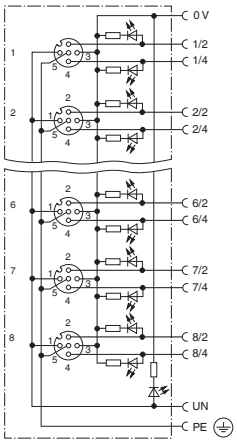
Technical data

Number of pins	4, 5
Display/controls	
Green LED	Supply voltage per module
Yellow LED	I/O status indication
Electrical data	
Operating voltage U_B	24 V DC, max. 30 V DC
Operating current	≤ 5 mA per channel display element
Current loading	≤ 2 A per channel, ≤ 4 A per slot, ≤ 12 A total current per block
Ambient conditions	
Ambient temperature	-25 ... 75 °C for housing Cable, flexible:-5 ... 80 °C Cable, fixed: -40 ... 90 °C
Mechanical data	
Degree of protection	IP65/IP67
Connection	Cable: stranded wire, sockets: M12 x 1
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Housing	PA, green
Cable	PUR, black
Strands	Signal line: 0.34 mm² Supply line, PE: 0.75 mm²
Bending radius	> 10 x line diameter

Dimensions



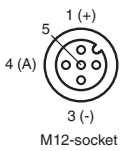
Electrical connection



port/ signal input	color
1 / 4 (A)	WH
1 / 2 (B)	GY/PK
2 / 4 (A)	GN
2 / 2 (B)	RD/BU
3 / 4 (A)	YE
3 / 2 (B)	WH/GN
4 / 4 (A)	GY
4 / 2 (B)	BN/GN
5 / 4 (A)	PK
5 / 2 (B)	WH/YE
6 / 4 (A)	RD
6 / 2 (B)	YE/BN
7 / 4 (A)	BK
7 / 2 (B)	WH/GY
8 / 4 (A)	VT
8 / 2 (B)	GY/BN
1-8 / 1 (UN)	BN
1-8 / 3 (0 V)	BU
1-8 / 5 (PE)	GN/YE

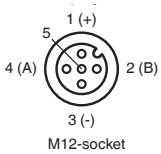
only with (B) dual input ports

Single input:



M12-socket

Dual input:



M12-socket

Order codes

Cable lengths in m
5 or 10

V1 – . . . . . A – E2 – . . M – PUR

	Ports/signal inputs	V1
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	○
8	8 ports/8 signal inputs	●
4/8	4 ports/8 signal inputs (dual inputs)	●
6/12	6 ports/12 signal inputs (dual inputs)	○
8/16	8 ports/16 signal inputs (dual inputs)	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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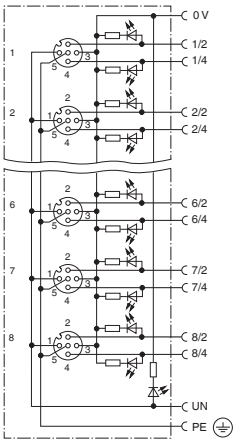
Features

- Quick, easy mounting with cage terminals
- LED indication for module supply and I/O status

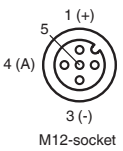
Electrical connection



slot/ signal input	terminal
1 / 4 (A)	1 / 4
1 / 2 (B)	1 / 2
2 / 4 (A)	2 / 4
2 / 2 (B)	2 / 2
3 / 4 (A)	3 / 4
3 / 2 (B)	3 / 2
4 / 4 (A)	4 / 4
4 / 2 (B)	4 / 2
5 / 4 (A)	5 / 4
5 / 2 (B)	5 / 2
6 / 4 (A)	6 / 4
6 / 2 (B)	6 / 2
7 / 4 (A)	7 / 4
7 / 2 (B)	7 / 2
8 / 4 (A)	8 / 4
8 / 2 (B)	8 / 2
1-8 / 1 (UN)	UN
1-8 / 3 (0 V)	0 V
1-8 / 5 (PE)	PE

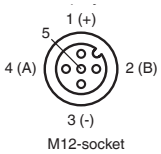
only with (B) double layout slots

Single input:



M12-socket

Dual input:

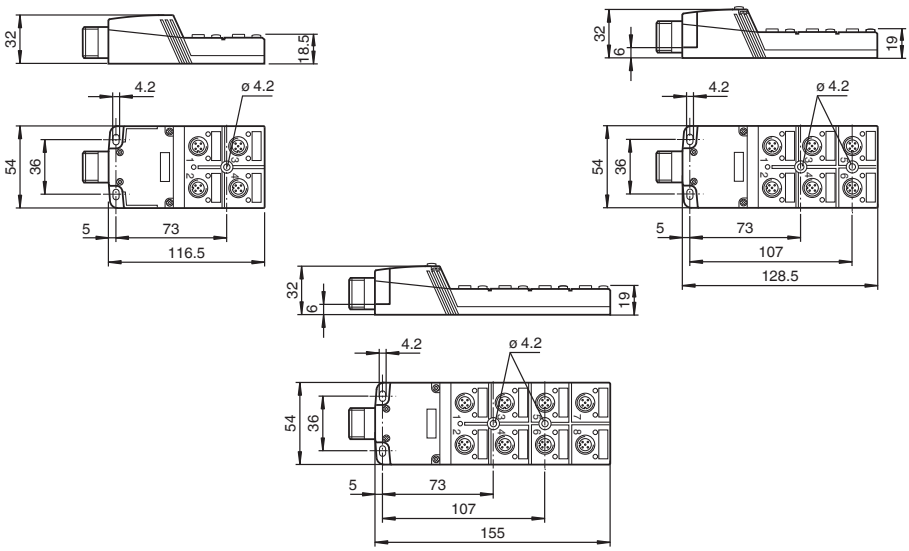


M12-socket

Technical data

Number of pins	4, 5
Display/controls	
Green LED	Supply voltage per module
Yellow LED	I/O status indication
Electrical data	
Operating voltage U_B	24 V DC, max. 30 V DC
Operating current	≤ 5 mA per channel display element
Current loading	≤ 2 A per channel, ≤ 4 A per slot, ≤ 12 A total current per block
Ambient conditions	
Ambient temperature	-25 … 75 °C
Mechanical data	
Degree of protection	IP/65IP67
Connection	Cage tension spring terminals Supply line, PE: 0.2 … 1.5 mm² Signal line: 0.14 … 1 mm² M12 x 1 sockets
Cable diameter	6.5 … 9.5 mm
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Housing	PA, green

Dimensions



Order codes

V 1 – . . . . A – E 2

	Ports/signal inputs	V1
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	○
8	8 ports/8 signal inputs	●
4/8	4 ports/8 signal inputs (dual inputs)	●
6/12	6 ports/12 signal inputs (dual inputs)	○
8/16	8 ports/16 signal inputs (dual inputs)	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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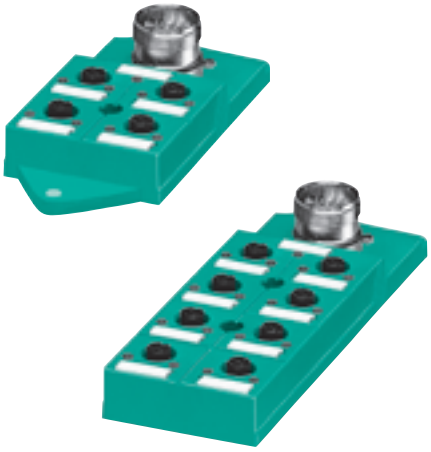


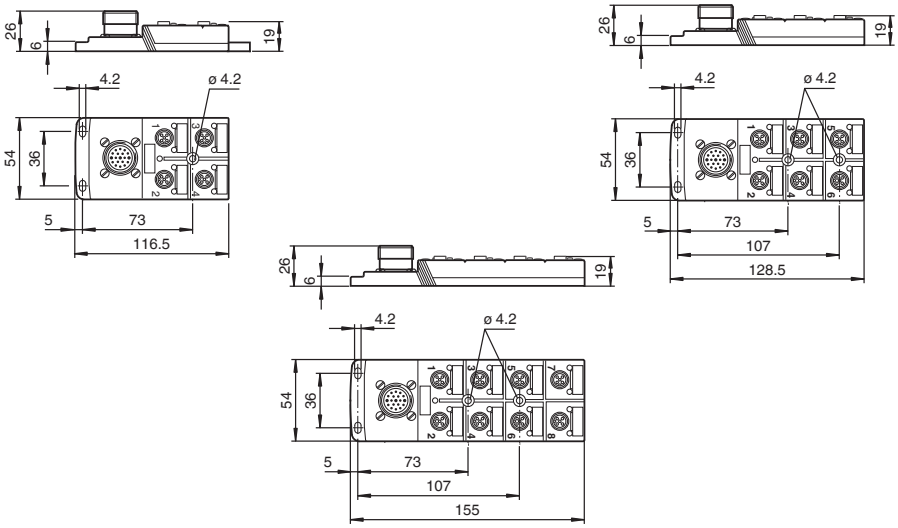
Technical data

Number of pins	4, 5
Display/controls	
Green LED	Supply voltage per module
Yellow LED	I/O status indication
Electrical data	
Operating voltage U_B	24 V DC, max. 30 V DC
Operating current	≤ 5 mA per channel display element
Current loading	≤ 2 A per channel, ≤ 4 A per slot, ≤ 12 A total current per block
Ambient conditions	
Ambient temperature	-25 ... 75 °C
Mechanical data	
Degree of protection	IP65/IP67
Connection	Cylindrical connector: M23 Sockets: M12 x 1
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Housing	PA, green

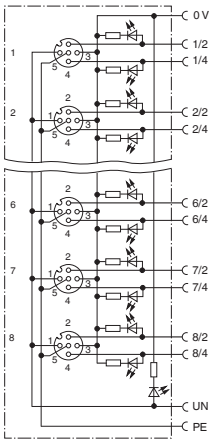
Features

- Quick, flexible mounting/isolation
- LED indication for module supply and I/O status

Dimensions



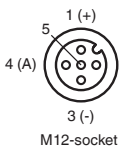
Electrical connection



slot/ signal input	pin 12-pin	pin 19-pin
1 / 4 (A)	1	15
1 / 2 (B)		7
2 / 4 (A)	2	5
2 / 2 (B)		4
3 / 4 (A)	3	16
3 / 2 (B)		8
4 / 4 (A)	4	3
4 / 2 (B)		14
5 / 4 (A)	5	17
5 / 2 (B)		9
6 / 4 (A)	6	2
6 / 2 (B)		13
7 / 4 (A)	7	11
7 / 2 (B)		10
8 / 4 (A)	8	1
8 / 2 (B)		18
1-n / 1 (UN)	11	19
1-n / 3 (0 V)	9+10	6
1-n / 5 (PE)	12	12

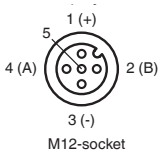
12-pin with simple layout, 19-pin with double layout, slots

Single input:

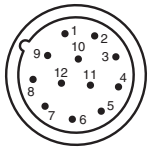


M12-socket

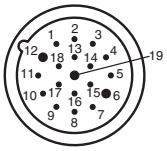
Dual input:



M12-socket



M23-connector
12-pin



M23 connector
19-pin

Order codes

V 1 – . . . . A – E 2 – M 2 3

	Ports/signal inputs	V1
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	○
8	8 ports/8 signal inputs	●
4/8	4 ports/8 signal inputs (dual inputs)	●
6/12	6 ports/12 signal inputs (dual inputs)	○
8/16	8 ports/16 signal inputs (dual inputs)	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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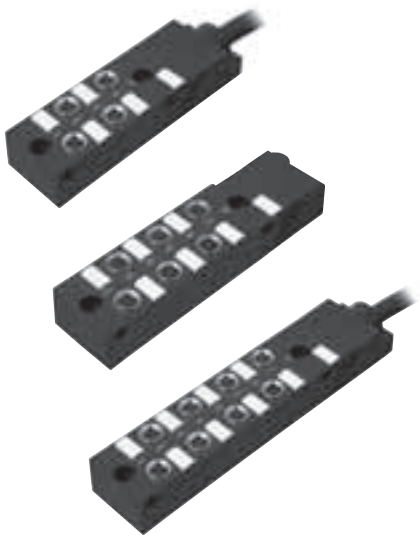
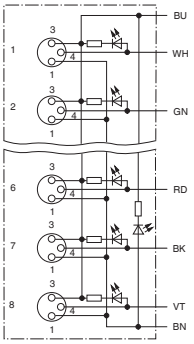


Features

- LED indication for module supply and I/O status
- High-density connections

Electrical connection



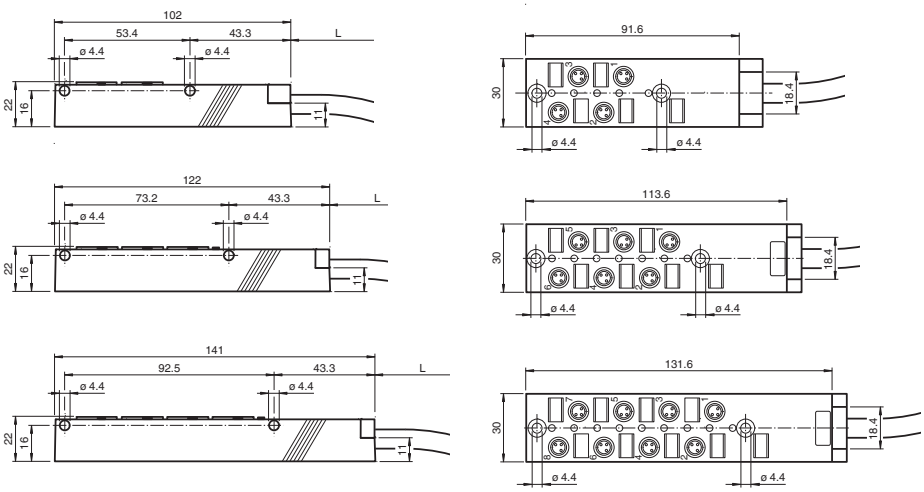
Core colour	M8-socket/pole
WH	1/4 (A)
GN	2/4 (A)
YE	3/4 (A)
GY	4/4 (A)
PK	5/4 (A)
RD	6/4 (A)
BK	7/4 (A)
VT	8/4 (A)
BN	1 ... 8/1 (+24 V)
BU	1 ... 8/3 (0 V)

M8 socket

Technical data

Number of pins	3	
Display/controls		
Green LED	Supply voltage per module	
Yellow LED	I/O status indication	
Electrical data		
Operating voltage U_B	24 V DC, max. 30 V DC	
Operating current	≤ 5 mA per channel display element	
Current loading	≤ 2 A per channel, ≤ 2 A per slot, ≤ 6 A total current per block	
Ambient conditions		
Ambient temperature	-30 … 80 °C Cable, flexible: -5 … 80 °C	Cable, fixed: -40 … 90 °C
Mechanical data		
Degree of protection	IP65/IP67	
Connection	Cable: stranded wire,	Sockets: M8
Materials		
Contacts	CuSn	
Contact surface	Ni/Au	
Housing	PBT	
Cables	PUR, black	
Strands	Signal line: 0.34 mm²	Supply line: 0.75 mm²
Bending radius	> 10 x line diameter	

Dimensions



Order codes

Cable lengths in m
5 or 10

V 3 – . A – E 2 – . . M – P U R

	Ports/signal inputs	V3
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	●
8	8 ports/8 signal inputs	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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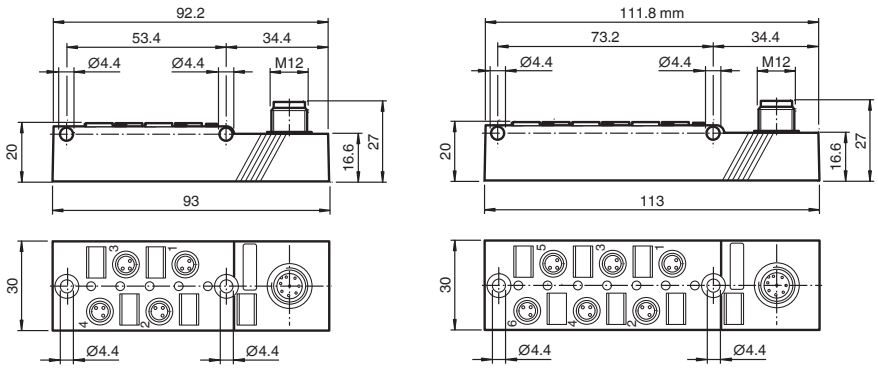
Technical data

Number of pins	3
Display/controls	
Green LED	Supply voltage per module
Yellow LED	I/O status indication
Electrical data	
Operating voltage U_B	24 V DC, max. 30 V DC
Operating current	≤ 5 mA per channel display element
Current loading	≤ 2 A per channel, ≤ 2 A per slot, ≤ 4 A total current per block
Ambient conditions	
Ambient temperature	-30 ... 80 °C
Mechanical data	
Degree of protection	IP65/IP67
Connection	Cylindrical connector M12 x 1, 8-pin Sockets M 8, 3-pin
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Housing	PBT

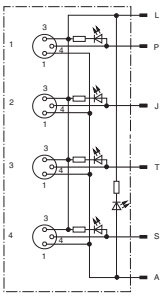
Features

- Quick, flexible mounting/isolation
- LED indication for module supply and I/O status
- High-density connections

Dimensions

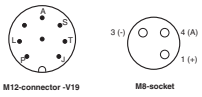


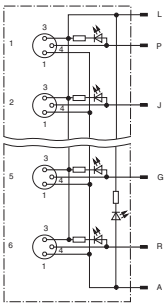
Electrical connection



M12-connector -V19	M8-socket/pole
P	1/4 (A)
J	2/4 (A)
T	3/4 (A)
S	4/4 (A)
A	1 ... 4/1 (+24 V)
L	1 ... 4/3 (0 V)

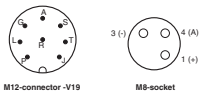
Displays





M12-connector -V19	M8-socket/pole
P	1/4 (A)
J	2/4 (A)
T	3/4 (A)
S	4/4 (A)
G	5/4 (A)
R	6/4 (A)
A	1 ... 6/1 (+24 V)
L	1 ... 6/3 (0 V)

Displays



Order codes

V 3 – . A – E 2 – V 1 9

	Ports/signal inputs	V3
4	4 ports/4 signal inputs	●
6	6 ports/6 signal inputs	●

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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Features

- Tightening tool for round plug connectors with knurled coupling nuts

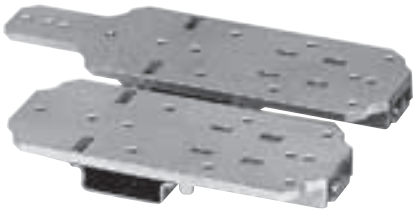
Order code	
MH V1-SCREWDRIVER	Torque screwdriver
Length	blade: 100 mm
Drive	4 mm hexagonal
Preset torque	0.4 Nm
Weight	approx. 93 g
Matching nut	MH V1-BIT M12
MH V1-BIT M12	Nut for hexagon drive
Weight	approx. 19 g
MH V3 SCREWDRIVER	Torque screwdriver
Length	blade: 100 mm
Drive	4 mm hexagonal
Preset torque	0.2 Nm
Weight	approx. 95 g
Matching nut	MH V3-BIT M8
MH V3-BIT M8	Nut for hexagon drive
Weight	approx. 17 g

Order code	
V1-B	Threaded plug
Thread	M12 x 1
V3-B	Threaded plug
Thread	M8 x 1

Order code	
V1-BOX-LABEL	Label for M12 junction blocks, unprinted
V3-BOX-LABEL	Label for M8 junction blocks, unprinted

Order code	
CBL-PUR-BK-16x050/3x100-50M	PUR cable coil, 50 m, 16 x 0.5 mm^2/3 x 1 mm^2
CBL-PUR-BK-16x050/3x100-1000M	PUR cable coil, 1000 m, 16 x 0.5 mm^2/3 x 1 mm^2

Other lengths and cable quality available on request.



Order code	
Material	Die-cast zinc
MH 05-SACB-4	Mounting base for the DIN rail (four-ports boxes)
Weight	approx. 130 g
Dimensions	107 mm x 52 mm x 3 mm
MH 05-SACB-8	Mounting base for the DIN rail (eight-ports boxes)
Weight	approx. 150 g
Dimensions	136 mm x 52 mm x 3 mm

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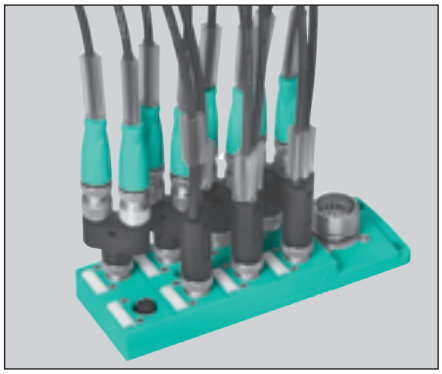
Product Diversity – Always The Right Connection



There are thousands of sensors and actuators in complex production plants, where the signals must be collected and transmitted to the controller. For this reason, junction block systems are frequently used in decentralized field installations to minimize wiring and save time and money.

Double allocation sensor-actuator boxes have another advantage for many sensors that are installed in tight spaces. These can collect two signals per slot and transmit them to the controller. In this case solid molded Y splitters or flexible cabled Y splitters are used.

Another application that occurs frequently is the looping-through of the power supply and signals from one device to the next. This type of application is useful, for example, for cascaded systems such as congested track scanners for roller conveyors. In this case, junction blocks are used with a 1:1 connection.

Nonstandard cases can also be solved easily by combining virtually any M8 and M12 connection system with an associated internal interface circuit. Do not hesitate to get in touch with us. We'll be sure to find the right solution together!

Your Benefits at a Glance

- **Cost-saving – save yourself the cost of additional junction blocks**
- **Flexibility – we are happy to customize our products to your specifications**
- **Shortest delivery times – even for customized products**
- **Quality – 100 % functional testing**
- **Reliably sealed to IP67 or higher**

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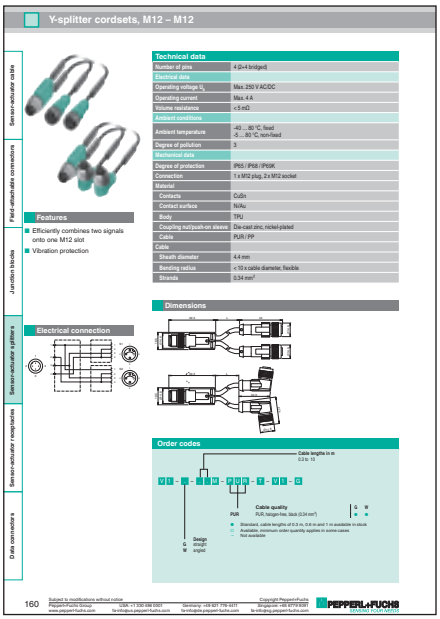
Y-splitter cordsets, M12 – M12

Technical data

Number of pins	4 (2+4 bridged)
Electrical data	
Operating voltage U_b	Max. 250 V AC/DC
Operating current	Max. 4 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 ... 80 °C, fixed -5 ... 80 °C, non-fixed
Degree of pollution	3
Mechanical data	
Degree of protection	IP65 / IP68 / IP69K
Connection	1 x M12 plug, 2 x M12 socket
Material	
Contacts	CuSn
Contact surface	Ni/Au
Body	TPU
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR / PP
Cable	
Sheath diameter	4.4 mm
Bending radius	< 10 x cable diameter, flexible
Strands	0.34 mm²

Features
- Efficiently combines two signals onto one M12 slot
- Vibration protection

Electrical connection

Dimensions

Order codes

V1 - . - . . M - P U R - T - V1 - G

Cable lengths in m 0.3 to 10

Cable quality: PUR, halogen-free, black (0.34 mm²) — G ● W ●

Design: G straight, W angled

● Standard, cable lengths of 0.3 m, 0.6 m and 1 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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Our Type Code – Your Order Code

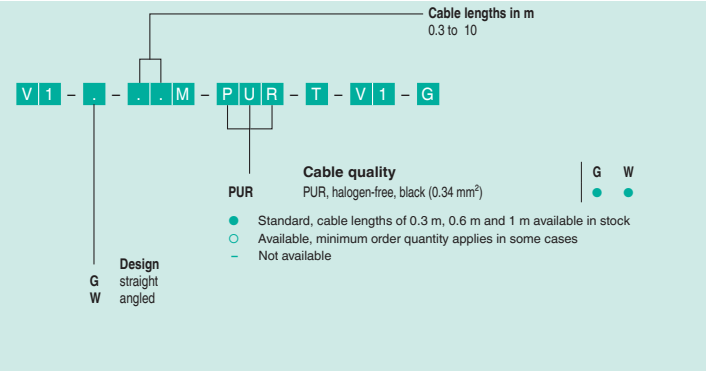
Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired connector combination, cable length, and cable type and enter this into the empty space on the type code – your order code is complete.

Example

You wish to order the following sensor-actuator splitter:

- M12 plug straight/2x M12 socket straight (pin 2+4 bridged)
- Halogen-free polyurethane cable
- 1 m cable length



As you can see from the image above, the correct order code is:
V1-G-1M-PUR-T-V1-G

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	page
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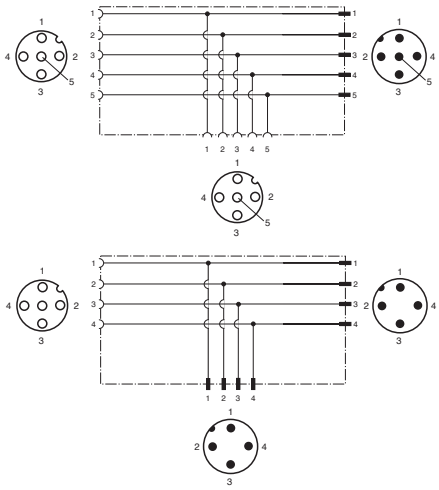
Technical data

Number of pins	4	5
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 ... 85 °C	
Degree of pollution	3	
Mechanical data		
Degree of protection	IP65/IP67	
Connection	1 x M12 plug 1 x M12 plug / 1 x M12 socket	1 x M12 socket 1 x M12 plug / 1 x M12 socket
Material		
Contacts	CuZn	
Contact surface	Ni/Au	
Housing	TPU	
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated	

Features

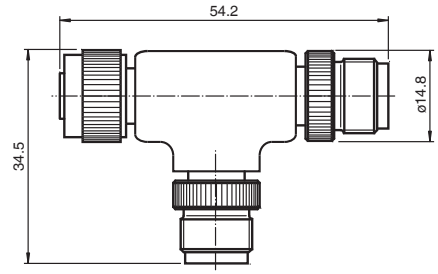
- Parallel splitter
- Vibration protection
- 5-pin: compatible with DeviceNet and CANopen

Electrical connection

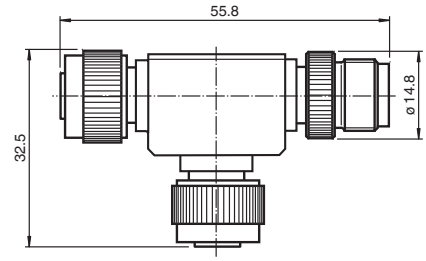


Dimensions

4-pin



5-pin



Order codes

V . . . – T E E – V . . . . .

		Number of pins	V1S/V15S
V1S	V1/V1S	4-pin	●
V15S	V15	5-pin	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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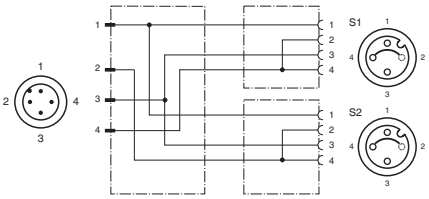
Features

- Efficiently combines two signals onto one M12 slot
- Vibration protection

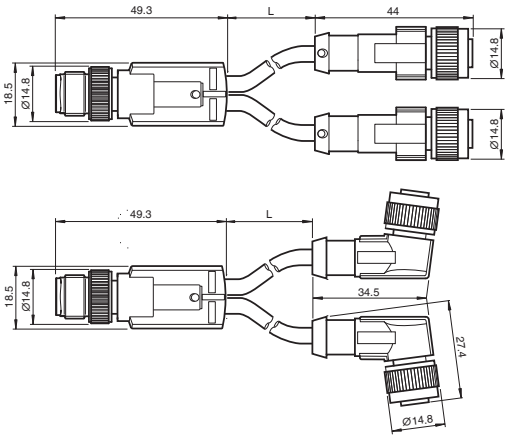
Technical data

Number of pins	4 (2+4 bridged)
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Operating current	Max. 4 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 80 °C, fixed -5 … 80 °C, non-fixed
Degree of pollution	3
Mechanical data	
Degree of protection	IP65 / IP68 / IP69K
Connection	1 x M12 plug, 2 x M12 socket
Material	
Contacts	CuSn
Contact surface	Ni/Au
Body	TPU
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR / PP
Cable	
Sheath diameter	4.4 mm
Bending radius	< 10 x cable diameter, flexible
Strands	0.34 mm²

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 10

V 1 – . – . . M – P U R – T – V 1 – G

Cable quality

		G	W
PUR	PUR, halogen-free, black (0.34 mm²)	●	●

● Standard, cable lengths of 0.3 m, 0.6 m and 1 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Design
G straight
W angled

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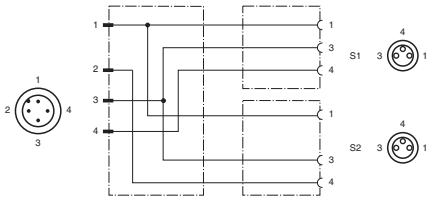
Features

- Efficiently combines two signals onto one M12 slot
- Vibration protection

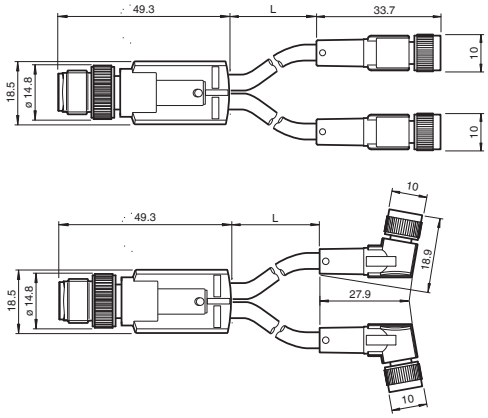
Technical data

Number of pins	3
Electrical data	
Operating voltage U_B	Max. 60 V AC/DC
Operating current	Max. 3 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 … 80 °C, fixed -5 … 80 °C, non-fixed
Degree of pollution	3
Mechanical data	
Degree of protection	IP65 / IP68 / IP69K
Connection	1 x M12 plug, 2 x M8 socket
Material	
Contacts	CuSn
Contact surface	Ni/Au
Body	TPU
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR / PP
Cable	
Sheath diameter	4.4 mm
Bending radius	< 10 x cable diameter, flexible
Strands	0.25 mm²

Electrical connection



Dimensions



Order codes

Cable lengths in m
0.3 to 10

V 3 – . . – . . M – P U R – T – V 1 – G

Cable quality
PUR, halogen-free, black (0.25 mm²)

	GM	WM
PUR	●	●

● Standard, cable lengths of 0.3 m, 0.6 m and 1 m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

Design
GM straight
WM angled

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Features

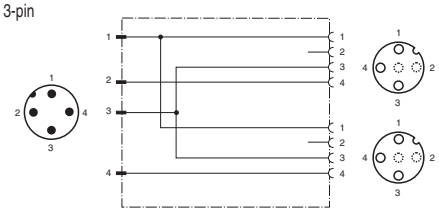
- Efficiently combines two signals onto one M12 slot
- Vibration protection
- Parallel splitter compatible with DeviceNet and CANopen

Technical data

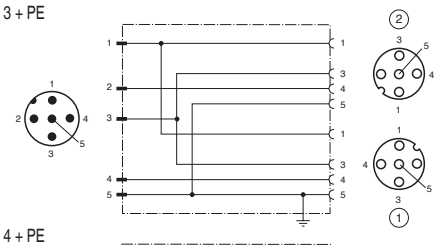
Number of pins	3	3 + PE	4 + PE	5 (parallel)
Electrical data				
Operating voltage U_B	Max. 60 V AC/DC			
Operating current	Max. 4 A			
Volume resistance	< 5 mΩ			
Ambient conditions				
Ambient temperature	-25 … 90 °C			
Degree of pollution	3			
Mechanical data				
Degree of protection	IP65/IP67			
Connection	1 x M12 plug 1 x M12 socket / 1 x M12 socket			1 x M12 socket 1 x M12 plug / 1 x M12 socket
Material				
Contacts	CuZn			
Contact surface	Ni/Au			
Housing	TPU			
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated			

Electrical connection

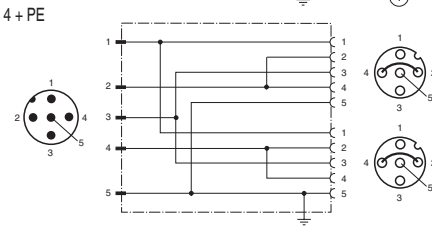
3-pin



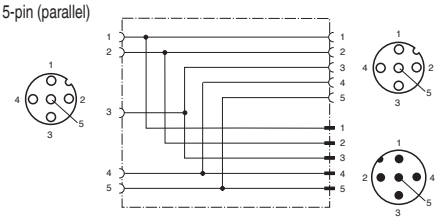
3 + PE



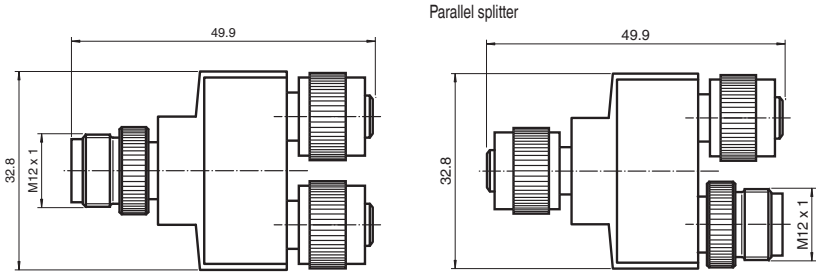
4 + PE



5-pin (parallel)



Dimensions



Order codes

V . . . – T – V . .

		Number of pins	Availability
V11S	V11	3-pin	●
V1S	V1	3-pin + PE	●
V15S	V15	4-pin + PE (pins 2+4 bridged)	●

V . . . – Y E E – V . .

		Number of pins	Availability
V15S	V15	5-pin	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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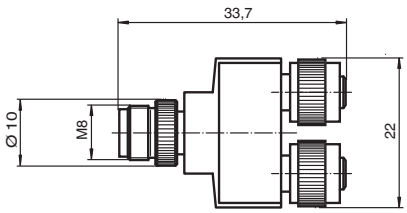
Technical data

Number of pins	3	3 (parallel)	4 (parallel)
Electrical data			
Operating voltage U_B	Max. 30 V AC/DC		
Operating current	Max. 3 A		
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 … 90 °C		
Degree of pollution	3		
Mechanical data			
Connection	1 x M8 plug 2 x M8 socket		
Degree of protection	IP65/IP67		
Material			
Contacts	CuZn		
Contact surface	Ni/Au		
Housing	TPU		
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated		

Features

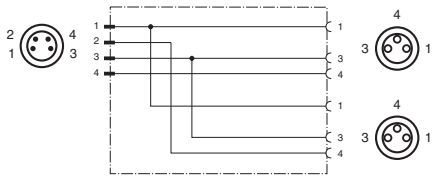
- Efficiently combines two signals onto one M8 slot
- Vibration protection
- Parallel splitter: suitable for looping-through signals

Dimensions

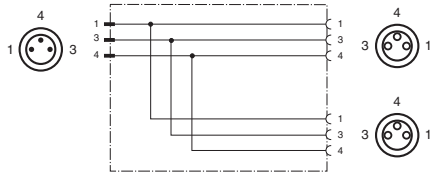


Electrical connection

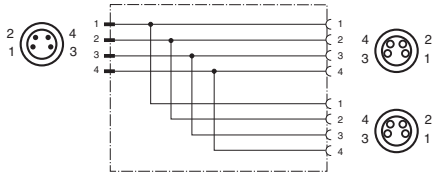
3-pin



3-pin (parallel)



4-pin (parallel)



Order codes

V . . . – T – V .

V31S V3 — Number of pins: 3-pin — Availability: ○

V . . . – Y E E – V . .

V3S V3 — Number of pins: 3-pin — Availability: ○
V31S V31 — Number of pins: 4-pin — Availability: ○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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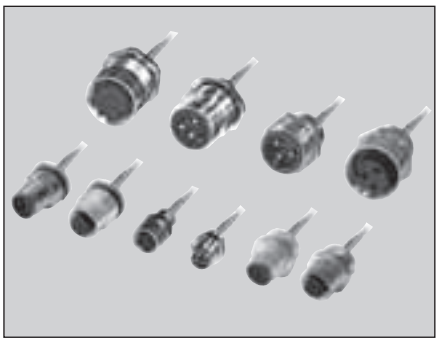

Product Diversity – Always The Right Connection

With technology for connecting devices, the key issues are straightforward integration in the housing concept and therefore cost-effective manufacture of the end devices. Depending on the requirement for the interface, the receptacles

- **M8**
- **M12**
- **7/8″**

are typically used.

Pepperl+Fuchs offers you a wide range of receptacles in metal housings, with different numbers of pins, and different mounting threads. In addition, several types of mounting are available so there is the right solution for every housing concept!

Types of mounting – the right one for every housing concept

Front panel mounting

In this type of mounting, the plug-in connector from the outside of the device is screwed in. If the minimum thickness of the wall falls below 3 mm, it can easily be countered with a thin nut. The mounting thread is flattened on two sides to provide anti-rotation protection. The mounting cutout only needs to be adjusted. This type of mounting is available with M16 and PG9 mounting threads.

Front panel mounting, adjustable position

Sometimes, it is necessary to ensure that the plug-in connectors have a defined alignment. In this case, front panel mounting with an adjustable position is the right choice. The plug-in connectors from the outside of the device are screwed in easily and put in the right position. This is then countered by using the pre-mounted fastening nut. This type of mounting is available with M16 and PG9 mounting threads.

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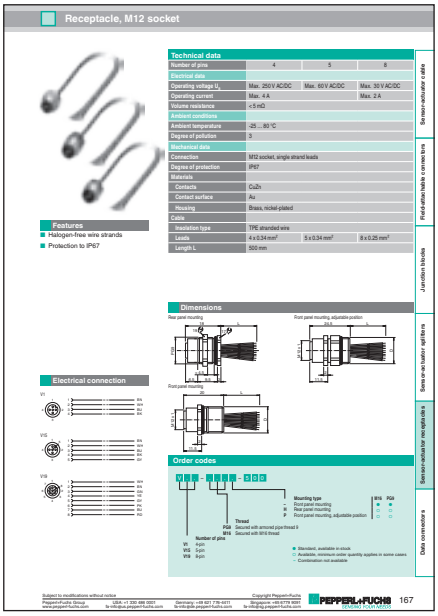
Rear panel mounting

In some cases, through-the-wall interface connections are required. For this reason, plug-in receptacles are available for through mounting. These are positioned from the inside of the cabinet or enclosure through the mounting cutout and fastened using a nut on the outside of the device. By adjusting the mounting cutout, anti-rotation protection can be implemented using the flattened thread.

Your Benefits at a Glance

- **Wide range – the right product for every need**
- **Different types of mounting – the right one for every housing concept**
- **Shortest delivery times – available in stock as standard**
- **Quality – reliably sealed to IP67 or higher**



Receptacle, M12 socket

Technical data

Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max.: 250 V AC/DC	Max.: 60 V AC/DC	Max.: 30 V AC/DC
Operating current	Max.: 4 A		Max.: 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 ... 80 °C		
Degree of pollution	3		
Mechanical data			
Connection	M12 socket, single strand leads		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Housing	Brass, nickel-plated		
Cable			
Insulation type	TPE stranded wire		
Leads	4 x 0.34 mm²	5 x 0.34 mm²	8 x 0.25 mm²
Length L	500 mm		

Features
- Halogen-free wire strands
- Protection to IP67

Dimensions

Electrical connection

Order codes

Sensor-actuator cable | Field-attachable connectors | Junction blocks | Sensor-actuator splitters | Sensor-actuator receptacles | Data connectors

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167

Our Type Code – Your Order Code

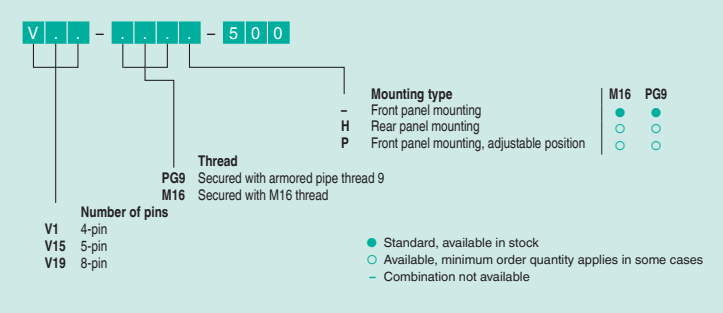
Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired number of pins and the desired mounting thread, then enter these into the empty space on the type code – your order code is complete!

Example

You wish to order the following M12 receptacle:

- M12 socket, front panel mounting
- 4-pin
- PG9



As you can see from the image above, the correct order code is:
V1-PG9-500

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	page
Receptacles, M12	167
Receptacles, M8	169
Receptacles, 7/8″	170

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Features

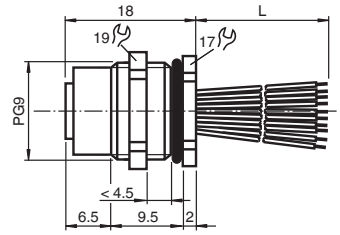
- Halogen-free wire strands
- Protection to IP67

Technical data

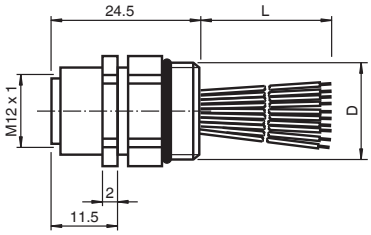
Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 ... 80 °C		
Degree of pollution	3		
Mechanical data			
Connection	M12 socket, single strand leads		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Housing	Brass, nickel-plated		
Cable			
Insolation type	TPE stranded wire		
Leads	4 x 0.34 mm^2	5 x 0.34 mm^2	8 x 0.25 mm^2
Length L	500 mm		

Dimensions

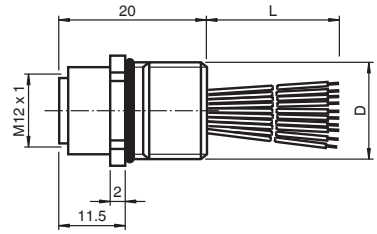
Rear panel mounting



Front panel mounting, adjustable position



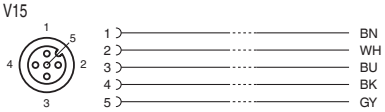
Front panel mounting



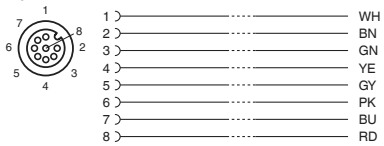
Electrical connection

V1

V15



V19



Order codes

V . . – . . . . – 5 0 0

Mounting type

		M16	PG9
–	Front panel mounting	●	●
H	Rear panel mounting	○	○
P	Front panel mounting, adjustable position	○	○

Thread

- **PG9** Secured with armored pipe thread 9
- **M16** Secured with M16 thread

Number of pins

- **V1** 4-pin
- **V15** 5-pin
- **V19** 8-pin

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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Features

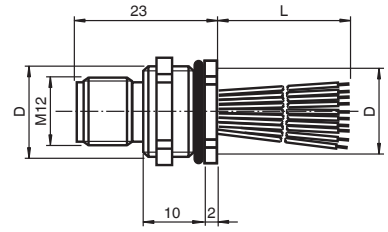
- Halogen-free wire strands
- Protection to IP67

Technical data

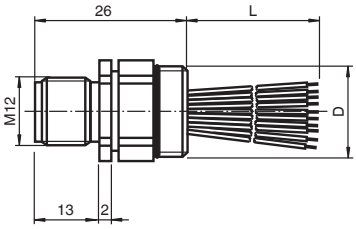
Number of pins	4	5	8
Electrical data			
Operating voltage U_B	Max. 250 V AC/DC	Max. 60 V AC/DC	Max. 30 V AC/DC
Operating current	Max. 4 A		Max. 2 A
Volume resistance	< 5 mΩ		
Ambient conditions			
Ambient temperature	-25 ... 80 °C		
Degree of pollution	3		
Mechanical data			
Connection	M12 plug, single strand leads		
Pin diameter	1 mm		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Housing	Brass, nickel-plated		
Cable			
Insolation type	TPE stranded wire		
Leads	4 x 0.34 mm²	5 x 0.34 mm²	8 x 0.25 mm²
Length L	500 mm		

Dimensions

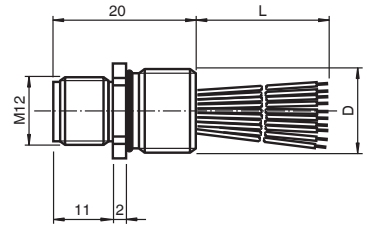
Rear panel mounting



Front panel mounting, adjustable position

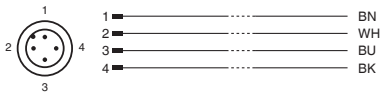


Front panel mounting

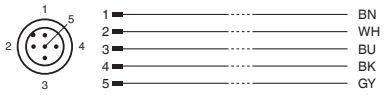


Electrical connection

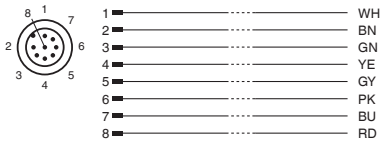
V1



V15



V19



Order codes

V . . S – . . . . – 5 0 0

Mounting type

		M16	PG9
–	Front panel mounting	●	●
H	Rear panel mounting	○	○
P	Front panel mounting, adjustable position	○	○

Thread

PG9 Secured with armored pipe thread 9
M16 Secured with M16 thread

Number of pins

V1 4-pin
V15 5-pin
V19 8-pin

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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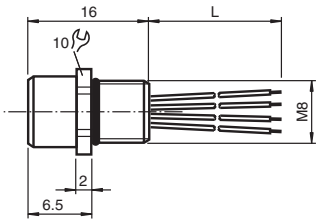
Technical data

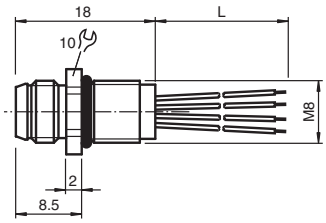
Number of pins	3	4
Electrical data		
Operating voltage U_B	Max. 60 V AC/DC	Max. 30 V AC/DC
Operating current	Max. 4 A	
Volume resistance	< 5 mΩ	
Ambient conditions		
Ambient temperature	-25 ... 80 °C	
Degree of pollution	3	
Mechanical data		
Connection	M8 x 0.5 mounting thread, single strand leads	
Degree of protection	IP67	
Materials		
Contacts	CuZn	
Contact surface	Au	
Housing	Brass, nickel-plated	
Cable		
Insolation type	TPE stranded wire	
Leads	3 x 0.25 mm²	4 x 0.25 mm²
Length L	500 mm	

Features

- Halogen-free wire strands
- Protection to IP67

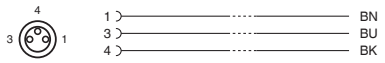
Dimensions



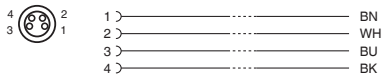


Electrical connection

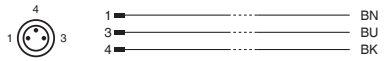
V3



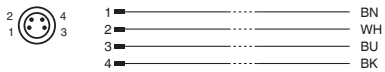
V31



V3S



V31S



Order codes

V . . . – M 8 – 5 0 0

Type

		V3	V31
–	Socket	●	●
S	Plug	●	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins

V3 3-pin
V31 4-pin

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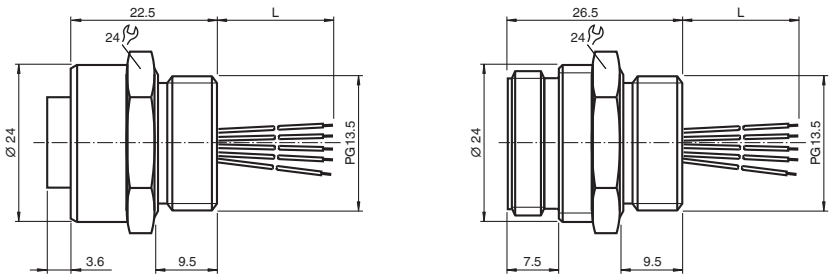
Technical data

Number of pins	3	4	5
Electrical data			
Operating voltage U_B	Max. 600 V AC/DC		
Operating current	Max. 12 A	Max. 9 A	
Ambient conditions			
Ambient temperature	-40 … 80 °C		
Degree of pollution	3		
Mechanical data			
Connection	7/8″-16 UN socket/plug, single strand leads, mounting thread PG13.5		
Degree of protection	IP67		
Materials			
Contacts	CuZn		
Contact surface	Au		
Housing	Brass, nickel-plated		
Cable			
Insolation type	PE stranded wire		
Leads	3 x 0.75 mm²	4 x 0.75 mm²	5 x 0.75 mm²
Length L	500 mm		

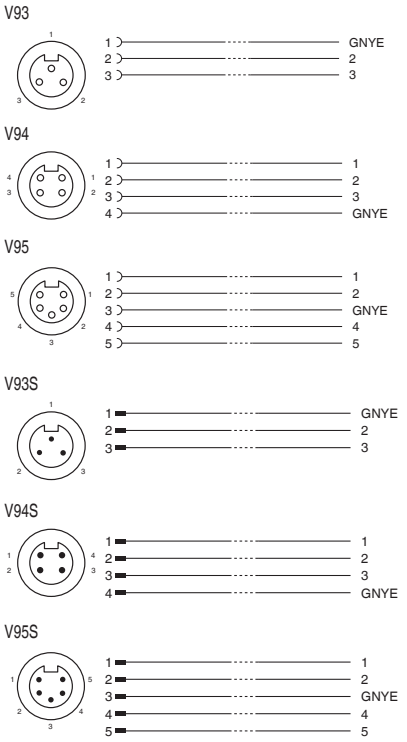
Features

- Halogen-free wire strands
- Protection to IP67

Dimensions



Electrical connection



Order codes

V . . . – P G 1 3 , 5 – 5 0 0

Type

		V93	V94	V95
–	Socket	○	○	○
S	Plug	○	○	○

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

Number of pins

V93 3-pin
V94 4-pin
V95 5-pin

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Order code	
V1-B	Threaded plug
Thread	M12 x 1
V3-B	Threaded plug
Thread	M8 x 1
V1S-B	Threaded cap
Thread	M12 x 1
V3S-B	Threaded cap
Thread	M8 x 1

Order code	
LOCKNUT M8 NICKEL BRASS	Hexagon nut
Thread	M8 x 0.5
Width across the flats	10
Thickness	2.2 mm
Materials	Brass, nickel-plated
LOCKNUT PG9 NICKEL BRASS	Hexagon nut
Thread	PG9
Width across the flats	18
Thickness	2.8 mm
Materials	Brass, nickel-plated
LOCKNUT M16 NICKEL BRASS	Hexagon nut
Thread	M16 x 1.5
Width across the flats	19
Thickness	2.8 mm
Materials	Brass, nickel-plated

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Product Diversity – Always The Right Connection

With the decentralization of production plants and the high demand for exchanging data and information quickly, a range of standardized data interfaces is currently used for production control. However, all these interfaces share one common theme – the components used must be suitable for the harsh conditions awaiting them in industrial applications.

Pepperl+Fuchs provides industry-grade components boasting an IP67 protection rating for all current fieldbuses and industrial Ethernets. Designed primarily for field applications, our array of products range from ready-made cables and field attachable connectors to device connections.

All components are manufactured in accordance with the guidelines of the fieldbus user organizations. This ensures optimum performance in the application.

Industrial Ethernet

The needs of industrial Ethernet are met with ready-made and field attachable M12 and RJ45 components that are designed to withstand the extreme stresses of humidity, temperature, vibrations and electromagnetic interference present in industrial applications.

These carry an IP67 protection rating, EMC protection, and an anti-vibration connection. Twisted-pair cables with a braided shield ensure that the components comply with the specified communication standard. The PUR outer sheath offers high mechanical and abrasion resistance and will withstand even the harshest of ambient conditions.

All components conform to CAT5 acc. to IEC 11801:2002.

PROFIBUS, CANopen, DeviceNet

Conventional PROFIBUS, CANopen and DeviceNet bus structures allow nodes to be connected via short drop lines to anywhere along the trunk. Terminators on each end of the bus (often switchable and integrated into the connectors) prevent signal reflections.

In addition to ready-made and field-attachable M12 connectors, Pepperl+Fuchs also offers T-splitters and Y-splitters as passive cordsets. Integrated terminators for the bus line in both M12 and SUB-D design are also available.

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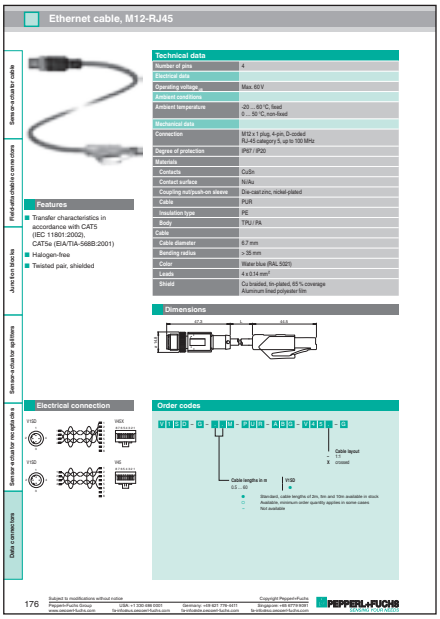
Your Benefits at a Glance

- **Reliability – manufactured in compliance with fieldbus user organization guidelines**
- **Industry-compatible – robust and reliably sealed**
- **Flexibility – we are happy to customize our products to meet your specific product needs**
- **Shortest delivery times – even for customized products**
- **Quality – exhaustive functional testing of all connectors**


Ethernet cable, M12-RJ45

Technical data

Number of pins	4
Electrical data	
Operating voltage	Max. 60 V
Ambient conditions	
Ambient temperature	-20 ... 60 °C, fixed 0 ... 50 °C, non-fixed
Mechanical data	
Connection	M12 x 1 plug, 4-pin, D-coded RJ-45 category 5, up to 100 MHz
Degree of protection	IP67 / IP20
Materials	
Contacts	CuSn
Contact surface	NiAu
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR
Insulation type	PE
Body	TPU / PA
Cable	
Cable diameter	6.7 mm
Bending radius	> 35 mm
Color	Water blue (RAL 5021)
Leads	4 x 0.14 mm²
Shield	Cu braided, tin-plated, 65 % coverage Aluminum lined polyester film

Features

- Transfer characteristics in accordance with CAT5 (IEC 11801:2002), CAT5e (EIA/TIA-568B:2001)
- Halogen-free
- Twisted pair, shielded

Dimensions

Electrical connection

Order codes

V1SD - G - . . M - PUR - ABG - V45 . - G

Cable layout
– 1:1
X crossed

Cable lengths in m
0.5 ... 60

V1SD
●

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

176

Our Type Code – Your Order Code

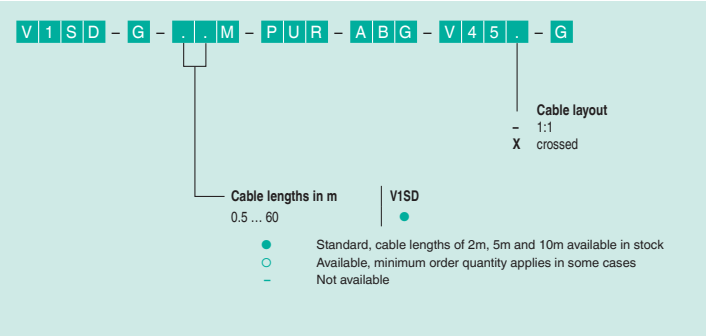
Simply use our type code to order the product you desire with a minimum of fuss. We'll show you how!

For example, just select the desired length and enter this into the empty space on the type code – your order code is complete.

Example

You wish to order the following Ethernet connection cable:

- M12 plug to RJ45, 1:1 pinout
- 2 m cable length



As you can see from the image above, the correct order code is:
V1SD-G-2M-PUR-ABG-V45-G.

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Ethernet cables, RJ45-RJ45	177

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RJ45 male connectors	178

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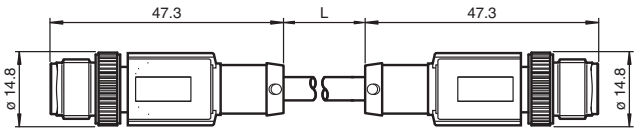
Features

- Transfer characteristics in accordance with CAT5 (IEC 11801:2002), CAT5e (EIA/TIA-568B:2001)
- Halogen-free
- Twisted pair, shielded

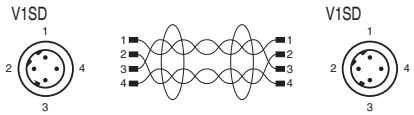
Technical data

Number of pins	4
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-20 … 70 °C, fixed 0 … 50 °C, non-fixed
Mechanical data	
Connection	M12 plug, 4-pin, D-coded
Degree of protection	IP65/IP67/IP69K
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR
Strand insulation	PE
Body	TPU
Cable	
Sheath diameter	8 mm
Bending radius	> 35 mm
Color	Water blue (RAL 5021)
Leads	4 x 0.25 mm^2
Shield	Cu braided, tin-plated, 65 % coverage Aluminum lined polyester film

Dimensions



Electrical connection



Order codes

V 1 S D – G – . . M – P U R – A B G – V 1 S D – G

Cable lengths in m: 0.5 … 60

	V1SD
	●

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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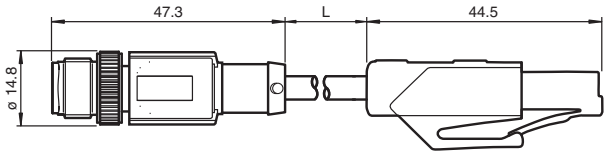
Technical data

Number of pins	4
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Ambient conditions	
Ambient temperature	-20 … 60 °C, fixed 0 … 50 °C, non-fixed
Mechanical data	
Connection	M12 x 1 plug, 4-pin, D-coded RJ-45 category 5, up to 100 MHz
Degree of protection	IP67 / IP20
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR
Insulation type	PE
Body	TPU / PA
Cable	
Cable diameter	6.7 mm
Bending radius	> 35 mm
Color	Water blue (RAL 5021)
Leads	4 x 0.14 mm^2
Shield	Cu braided, tin-plated, 65 % coverage Aluminum lined polyester film

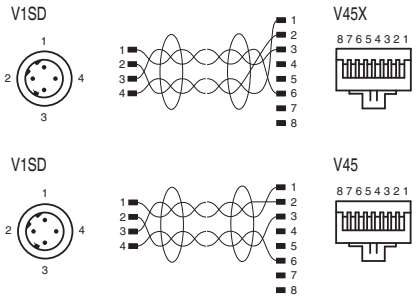
Features

- Transfer characteristics in accordance with CAT5 (IEC 11801:2002), CAT5e (EIA/TIA-568B:2001)
- Halogen-free
- Twisted pair, shielded

Dimensions



Electrical connection



Order codes

V 1 S D – G – . . M – P U R – A B G – V 4 5 . – G

Cable layout
– 1:1
X crossed

Cable lengths in m
0.5 … 60

1:1	crossed
●	○

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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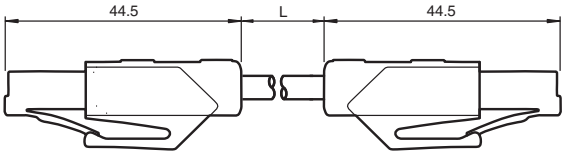
Technical data

Number of pins	8
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Ambient conditions	
Ambient temperature	-40 … 50 °C
Mechanical data	
Connection	RJ-45 category 5, up to 100 MHz
Degree of protection	IP20
Materials	
Cable	PVC
Strand insulation	PVC
Body	PA
Cable	
Sheath diameter	6.5 mm
Color	Gray
Leads	4 x 0.14 mm^2
Shield	Cu braided, tin-plated Aluminum lined polyester film

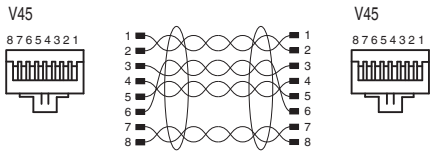
Features

- Transfer characteristics in accordance with CAT5 (IEC 11801:2002)
- Twisted pair, shielded

Dimensions



Electrical connection



Order codes

V 4 5 – G – . . M – V 4 5 – G

Cable lengths in m	V45
0.5 … 30	●

● Standard, cable lengths of 2m, 5m and 10m available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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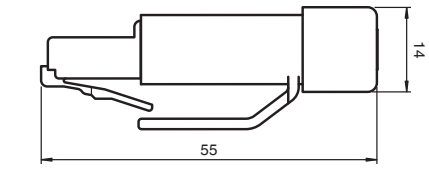
Technical data

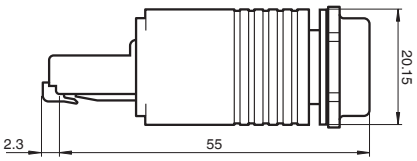
Design	Standard	Push-pull
Number of pins	4	
Electrical data		
Operating voltage $_{UB}$	Max. 60 V	
Ambient conditions		
Ambient temperature	-40 ... 70 °C	
Mechanical data		
Connection	RJ-45 category 5, up to 100 MHz Insulation displacement connection 0.25 ... 0.34 mm²	
Degree of protection	IP20	IP65/IP67
Materials		
Housing	PUR	
Contacts	Ni/Au	
Cable		
Cable diameter	6.1 ... 6.9 mm	6.5 ... 7.2 mm

Features

- Transfer characteristics in accordance with CAT5 (IEC 11801:2002)
- Insulation displacement connection technology
- Push-pull: protection to IP67

Dimensions





Electrical connection

V45

Order codes

V 4 5 – G .

	Design	V45
–	Standard	●
P	Push-pull	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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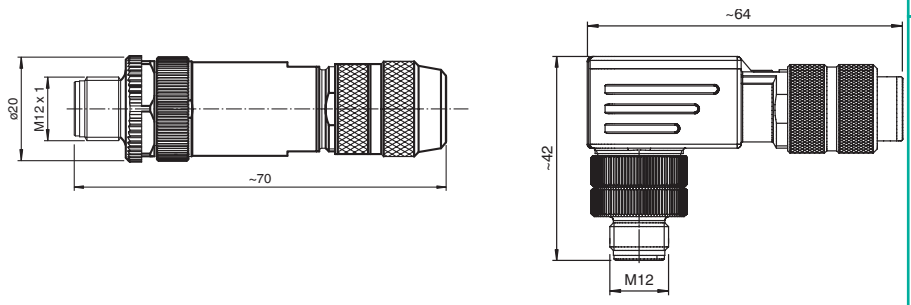
Technical data

Number of pins	4
Electrical data	
Operating voltage U_B	Max. 250 V AC/DC
Testing voltage	> 2500 V_{eff} AC
Operating current	Max. 4 A
Volume resistance	< 3 mΩ
Ambient conditions	
Ambient temperature	-25 … 85°C
Degree of pollution	3
Mechanical data	
Connection	1 x M12 plug Screw terminals for max. 0.75 mm^2
Degree of protection	IP67
Materials	
Contacts	CuZn
Contact surface	Au
Body	Die-cast zinc, nickel-plated
Coupling nut	CuZn, nickel-plated
Cable	
Cable diameter	5 … 8 mm

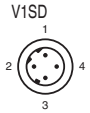
Features

- Iris spring provides for easy shield bonding
- Gold-plated contacts

Dimensions



Electrical connection



Order codes

V 1 S D – . – A B G – P G 9

		V1SD
G	straight	●
W	angled	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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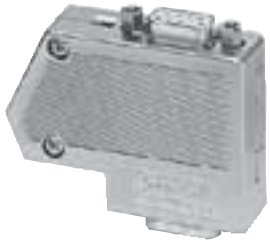
	PROFIBUS bus cables, M12-M12	181
	M12 Male/female connectors, D-coded	182
	Sub-D male connectors, D-coded	183
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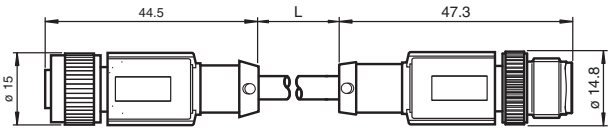
Features

- Shielded coupling nut
- Data transfer up to 12 Mbaud
- Halogen-free

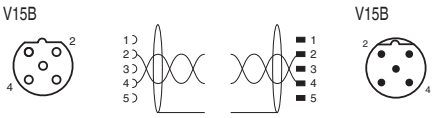
Technical data

Number of pins	2 + shield
Transfer rate	Max. 12 MBit/s
Electrical data	
Operating voltage $_{UB}$	Max. 250 V
Operating current	Max. 4 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-20 … 80 °C (253 … 353 K), non-fixed -25 … 80 °C (233 … 353 K), fixed
Degree of pollution	3
Mechanical data	
Connection	M12 plug/socket, 5-pin, B-coded
Degree of protection	IP65 / IP67/ IP69K
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Body	TPU, black
Coupling nut	Die-cast zinc, nickel-plated
Push-on sleeve	Die-cast zinc, nickel-plated
Cable	
Cable diameter	7.8 mm
Bending radius	> 78 mm
Color	Violet (RAL 4001)
Leads	2 x 0.25 mm^2
Shield	Braided, tin-plated copper wires, 80 % coverage Aluminum lined polyester film

Dimensions



Electrical connection



Order codes

V 1 5 B – G – . . M – P U R – A B G – V 1 5 B – G

Cable lengths in m	V15B
0.2 … 40	●

- ● Standard, cable lengths of 2 m, 5 m and 10m available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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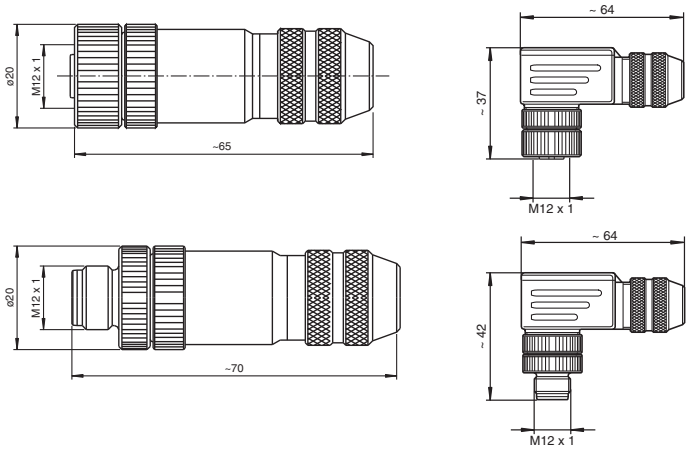
Technical data

Number of pins	5
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Operating current	Max. 4 A
Volume resistance	< 3 mΩ
Ambient conditions	
Ambient temperature	-25 … 85°C
Degree of pollution	3
Mechanical data	
Connection	1 x M12 socket/plug Screw terminals for max. 0.75 mm²
Degree of protection	IP67
Materials	
Contacts	CuZn
Contact surface	Au
Body	Die-cast zinc, nickel-plated
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	
Cable diameter	5 … 8 mm

Features

- Iris spring provides easy shield bonding
- Gold-plated contacts

Dimensions



Electrical connection

V15B

V15SB

Order codes

V 1 5 . B – . – A B G – P G 9

Connection
– Socket
S Plug

Design
G straight
W angled

	V15B	V15SB
G	●	●
W	●	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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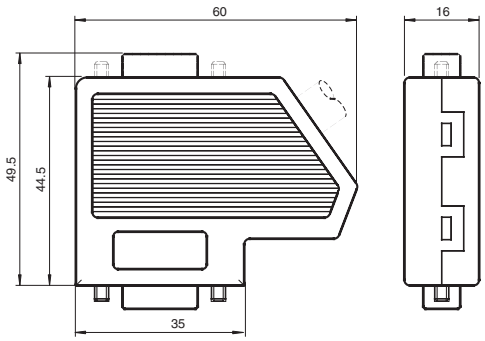
Technical data

Number of pins	9
General data	
Transfer rate	Max. 12 MBit/s
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Operating current	Max. 1 A
Ambient conditions	
Ambient temperature	-20 … 75 °C
Mechanical data	
Connection	9-pin sub-D plug (pin contact strip) Tension spring connection 0.12 … 0.5 mm (rigid)
Degree of protection	IP40
Materials	
Housing	ABS, metalized
Cable	
Cable diameter	7.6 … 8.4 mm

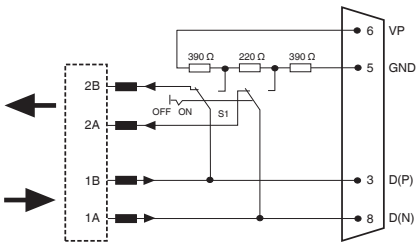
Features

- Integrated switchable terminator
- Option of right/left cable outlet

Dimensions



Electrical connection



Order codes

V A Z – P B – D B 9 – W

Availability
●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Not available

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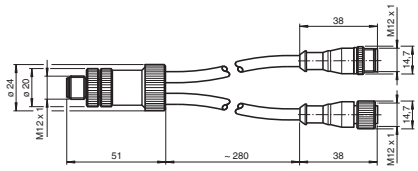
Features

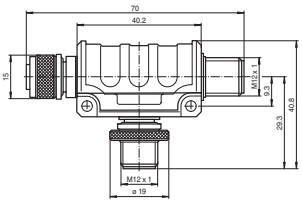
- Devices can be interchanged without interrupting the bus
- Data transfer rate up to 12 Mbaud
- Shielded coupling nut/pin 5

Technical data

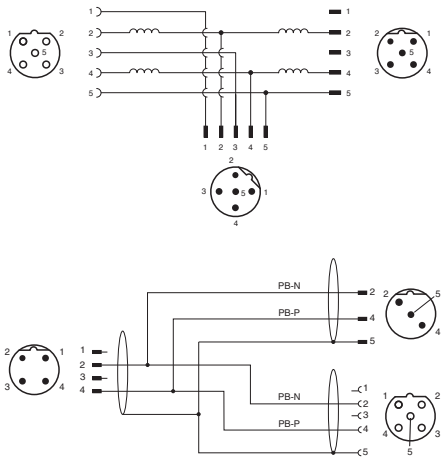
Design	Y-cable	T-splitter
Number of pins	2 + shield	5
General data		
Transfer rate	Max. 12 MBit/s	
Ambient conditions		
Ambient temperature	-40 ... 85 °C	-40 ... 80 °C
Mechanical data		
Connection	M12 plug/socket, 5-pin, B-coded for PROFIBUS	M12 plug/socket, 5-pin, B-coded for PROFIBUS
Degree of protection	IP65	IP67
Materials		
Contacts	CuZn, gold-plated	
Housing	Die-cast zinc, nickel-plated	PUR
Body	PUR	–
Coupling nut/push-on sleeve	CuZn, nickel-plated	
Cable	PUR	–
Cable		
Cable diameter	8 mm	–
Color	Violet	–

Dimensions





Electrical connection



Order codes

I C Z – 3 T – 0 , 2 M – P U R A B G – V 1 5 B – G

Availability ●

I C Z – 3 T – V 1 5 B

Availability ●

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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DeviceNet/CANOpen bus cables, M12-M12	186
M12 Male/female connectors, A-coded	187
T-splitters for DeviceNet/CANOpen	188

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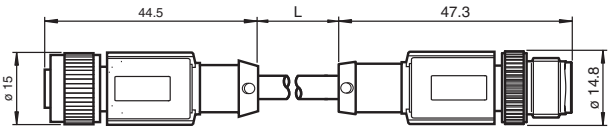
Features

- Shielded coupling nut
- Halogen-free

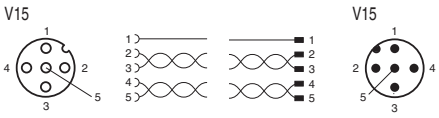
Technical data

Number of pins	5
Electrical data	
Operating voltage	Max. 60 V
Operating current	Max. 4 A
Volume resistance	< 5 mΩ
Ambient conditions	
Ambient temperature	-40 ... 80 °C, fixed -20 ... 75 °C, non-fixed
Degree of pollution	3
Mechanical data	
Connection	M12 plug/socket, A-coded
Degree of protection	IP65 / IP67/ IP69K
Materials	
Contacts	CuSn
Contact surface	Ni/Au
Body	TPU, black
Coupling nut	Die-cast zinc, nickel-plated
Push-on sleeve	Die-cast zinc, nickel-plated
Cable	PUR
Cable	
Strands	2 x 0.2 mm_ (signal line) 2 x 0.32 mm_ (power supply)
Shield	Braided, tin-plated copper wires, 70 % coverage Aluminum lined polyester film
Cable diameter	6.7 mm
Color	violet (RAL 4001)

Dimensions



Electrical connection



Order codes

V 1 5 – G – . . M – P U R – C A N – V 1 5 – G

Cable lengths in m	V15
0.2 ... 40	●

- ● Standard, cable lengths of 2m, 5m and 10m available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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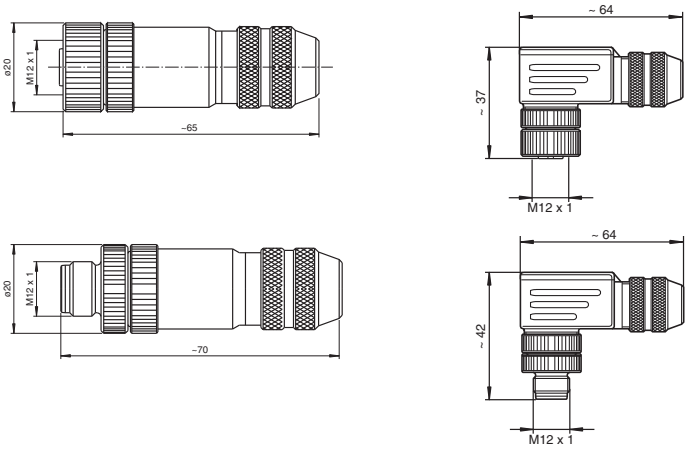
Technical data

Number of pins	5
Electrical data	
Operating voltage $_{UB}$	Max. 60 V
Operating current	Max. 4 A
Volume resistance	< 3 mΩ
Ambient conditions	
Ambient temperature	-25 … 85°C
Degree of pollution	3
Mechanical data	
Connection	M12 plug/socket Screw terminals for max. 0.75 mm²
Degree of protection	IP67
Materials	
Contacts	CuZn
Contact surface	Au
Body	Die-cast zinc, nickel-plated
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated
Cable	
Cable diameter	5 … 8 mm

Features

- Iris spring provides easy shield bonding
- Gold-plated contacts
- Die-cast connector body

Dimensions



Electrical connection

V15

V15S

Order codes

V 1 5 . – . – A B G – P G 9

Connection
– Socket
S Plug

Design
G straight
W angled

	V15	V15S
G	●	●
W	●	●

● Standard, available in stock
○ Available, minimum order quantity applies in some cases
– Combination not available

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Similar image

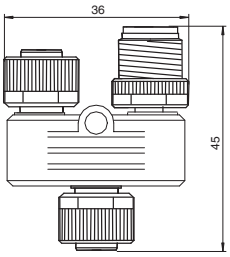
Technical data

Number of pins	5
Electrical data	
Operating voltage UB	Max. 60 V
Operating current	4A
Volume resistance	≤ 10 mΩ
Ambient conditions	
Ambient temperature	-25 … 90 °C
Mechanical data	
Connection	1 x M12 socket 1 x M12 plug / 1 x M12 socket
Degree of protection	IP67
Materials	
Contacts	CuZn, gold-plated
Housing	PUR
Coupling nut/push-on sleeve	Die-cast zinc, nickel-plated

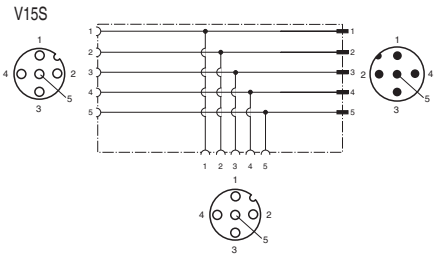
Features

- Parallel splitter for bus connection
- Devices can be interchanged without interrupting the bus

Dimensions



Electrical connection



Order codes

V 1 5 S – T – C A N / D N – V 1 5

Availability: ●

- ● Standard, available in stock
- ○ Available, minimum order quantity applies in some cases
- – Not available

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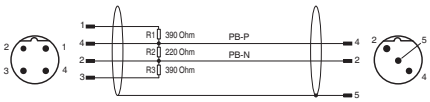
Order code	
ICZ-TR-V15B	Terminator for PROFIBUS
Connection	4-pin M12 plug, B-coded for PROFIBUS
ICZ-TR-CAN/DN-V15	Terminator for DeviceNet, CANopen
Connection	M12 plug, 5-pin, A-coded for DeviceNet, CANopen

Order code	
ICZ-2T/TR-0.2M-PUR ABG-V15B-G	Termination cable with terminator for PROFIBUS
Number of pins	2 + 1 x shield
Transfer rate	max. 12 MBit/s
Ambient conditions	
Ambient temperature	-40 - 85 °C
Mechanical data	
Connection	M12 plug/socket, 5-pin, B-coded for PROFIBUS
Degree of protection	IP65
Material	
Contacts	CuZn, gold-plated
Body	PUR / Die-cast zinc, nickel-plated
Cable	PUR, violet
Coupling nut	CuZn, nickel-plated
Cable	
Leads	2 x 0.64 mm^2
Length	Approx. 28 cm

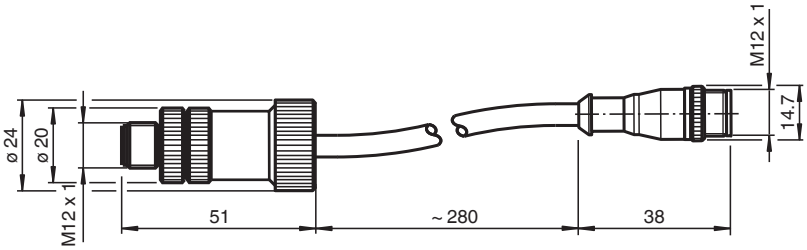
Features

- Integrated terminator
- Shielded coupling nut/pin 5
- Data transfer rate up to 12 Mbaud
- Labeled sleeve

Electrical connection



Dimensions



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Technical Information

The user must follow the appropriate equipment instructions when using connectors. We reserve the right to alter designs for quality improvement, product enhancement and technology improvements. The technical information listed in the catalog is based on connectors that are not allowed to be connected in energized condition.

The distance to conductive parts should not be minimized by stripping the insulation. Take care when soldering cables to ensure that no individual strands are loose or exposed, making possible the risk of short-circuits. Listed below are the key standards and regulations to which our products are produced and tested.

Product-Specific Standards

DIN IEC 61076-2-101 / DIN EC 61076-2-104

Connectors for electronic equipment

Part 2-101: Circular connectors – design specification for screw-locking M12 connectors for low-voltage applications

Part 2-104: Circular connectors – design specification for screw or snap-locking M8 connectors for low-voltage applications

These standards specify the design guidelines for M12 and M8 connectors. They also serve as the basis for the test specifications.

DIN EN 175301-803

Design specification:

Rectangular connectors – 0.8 mm-thick flat contacts, captive-locking screws

This standard specifies the design guidelines for valve connectors. It also serves as the basis for the test specification.

DIN EN 60664-1

Coordination of the insulation of electronic equipment in low-voltage systems – Part 1:

Principles, requirements and tests

This standard replaces DIN VDE 0110-1, which was valid until the end of the transitional period in May 2006. These standards define the air and creepage distances depending on area of application, material and degree of pollution.

DIN EN 61984

Connectors – Safety requirements and tests

This standard replaces DIN VDE 0627, which was valid until the end of the transitional period in October 2004.
In addition to the product-specific standards for connectors, this standard specifies further design requirements and calls for individual testing.

DIN EN 60512

Connectors for electronic equipment – Tests and measurements

This standard specifies the test requirements for connectors. The test program includes: climate/mechanical tests, test description of the mechanical characteristics of connectors such as max. current and insulation resistance.

DIN EN 60068

Environmental tests

In this series of tests the possible influences on the environment are defined. Among other things, this includes climatic influences such as dry heat, coldness, moist heat and temperature cycles as well as mechanical influences such as vibration and shock. With these tests, the influences from the location to be used are checked in the laboratory.

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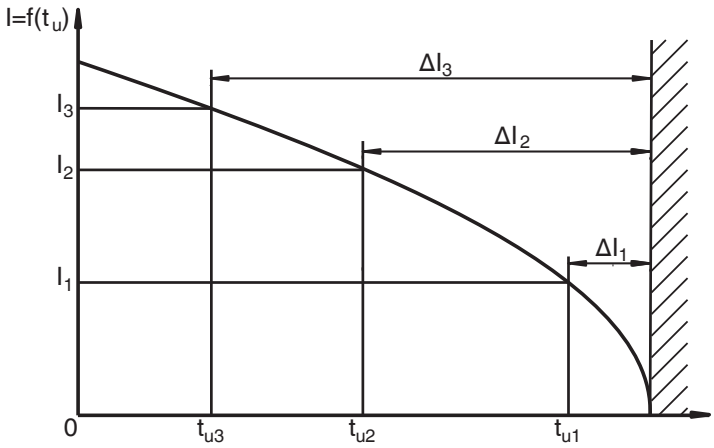
DIN EN 60529

Protection class due to housing (IP code)

In this standard the IP code is defined. The test setup and the test conditions necessary to comply with the IP coding are prescribed.

Standards and Test Conditions

Characteristic	Standard	Note
Housing degree of protection	IEC 60529	When plugged in.
Mechanical service life	IEC 60512-5 (Test 9a)	Test is carried out with no electrical load
Rated voltage	IEC 60664-1	The value given is defined in combination with the degree of pollution and the surge category
Impulse test voltage	IEC 60664-1	Highest impulse voltage value that does not cause the insulation to be pierced
Current carrying capacity	IEC 60512-3 (Test 5b)	The current carrying capacity of a connector determines whether current can be conducted continuously and simultaneously through all contacts. The current carrying capacity drops as the ambient temperature increases (derating).  Example of a derating curve
Rated current		Relates to an ambient temperature of +40 °C
Volume resistance	IEC 60512-2 (Test 2a)	Transfer resistance between contact pin and socket when plugged in over a defined area
Insulation resistance	IEC 60512-2 (Test 3a)	Insulation between two conductive parts (material-dependant)

IP CODE IN GENERAL

For safety reasons, electrical equipment must be protected from any external influences. This is ensured by housings and enclosures that protect the electrical equipment from contact with dangerous parts and prevent the ingress of solid foreign objects, dust, humidity and water.

The German standards DIN EN 60529 entitled “Degrees of protection provided by enclosures (IP code)” and DIN 40050-9 “Vehicles; IP protection classes; protection against solid foreign objects, water and contact; electrical equipment” form the basis for the definition and classification of the protection class for a product and provide additional information regarding such protection.

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INTERNATIONAL PROTECTION CLASSES ACCORDING TO DIN EN 60529 (IEC 529/VDE 047 T1)

IP 6 7

Degree of protection against contact and foreign objects		Degree of protection against water	
0	-No protection	0	-No protection
1	-Protected against access to dangerous parts with the back of the hand -Protection against hard foreign objects 50 mm in diameter and larger	1	-Protection against vertically dripping water
2	-Protection against access to dangerous parts with a finger -Protection against hard foreign objects 12.5 mm in diameter and larger	2	-Protection against dripping water when the housing is tilted up to 15°
3	-Protection against access to dangerous parts with a tool -Protection against hard foreign objects 2.5 mm in diameter and larger	3	-Protection against falling water spray when the housing is tilted up to 60°
4	-Protection against access to dangerous parts with a wire -Protection against hard foreign objects 1.0 mm in diameter and larger	4	-Protection against splashed water
5(K)	-Protection against access to dangerous parts with a wire -Dust protection	4k	-All round protection against water sprayed under increased pressure
6(K)	-Protection against access to dangerous parts with a wire -Dustproof	5	-Protection against water injection (nozzle) from any angle
		6	-Protection against strong water injection (flooding)
		6k	-Protection against strong water injection under increased pressure (flooding)
		7	-Protection against the effects of temporary submersion in water
		8	-Protection against the effects of continuous submersion in water
		9k	-Protection against water when high-pressure/ steam cleaning

Notes

If an identifier does not have to be given, it is to be replaced by the letter X.

Devices that are designated with the second digit as 7 or 8 do not need to meet the requirements of the second digits 5 or 6, unless they have been furnished with a dual designation (e.g. IPX6/IPX7).

The letter K is used as an individual identifier to identify street-vehicle equipment.

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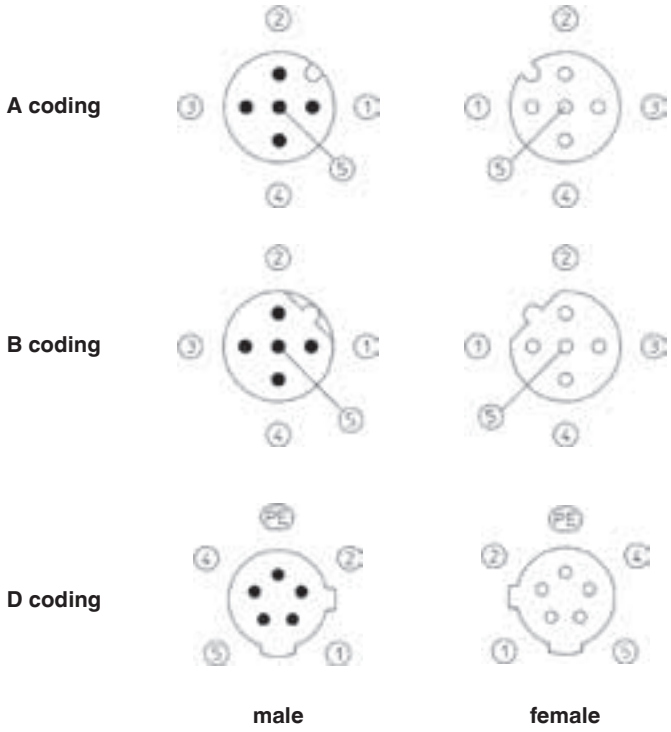
Coding M12 Connectors

Coding M12 connectors with a pin or groove on the contact body prevents similar M12-style connectors from being mixed up and erroneously connected. Distinctions are made between “A” standard coding, “B” coding (Reverse Key) for fieldbus applications such as Profibus, “C” coding (Double Key; also known as “U” coding) and “D” coding for Ethernet applications.



Shielding

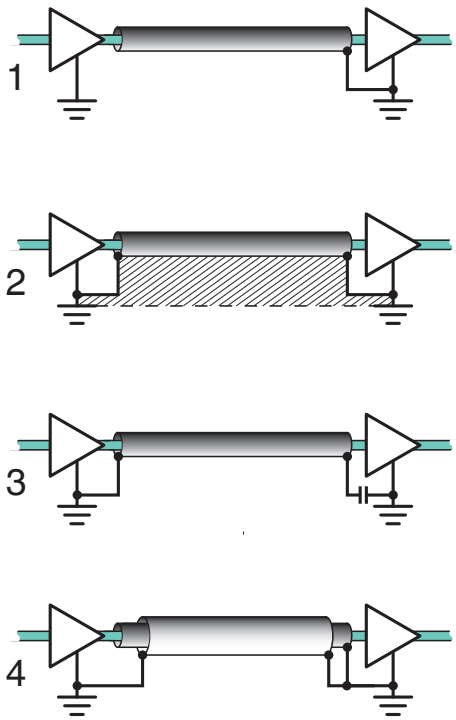
The shield is an electrically-conductive protective coating that surrounds the signal contacts. Cable shielding is usually in the form of copper braided or aluminium foil. It reduces electromagnetic interference, disruption to signal-carrying conductors as well as preventing the radiation of electrical noise. This increases electromagnetic compatibility (EMC).

Shielded connectors and cables are strongly recommended in EMC-critical applications. Interference on the cable from external sources and vice versa is effectively suppressed by the shielding.

Shielded connectors and cables are also essential for sensitive signals and for transferring data at a high rate.

Conductive housings that can be connected to the cable shield are frequently used. When using round plug connectors, care must be taken to ensure that the cable’s braided shield is carefully attached to the shielded connection on the connector. In this situation the optimum results are achieved by total contact (through 360°).

The two components must connect seamlessly with each other when they plugged together. The screening attenuation is given in decibels (db) and is dependent on the frequency. Higher screening attenuation values demonstrate good shielding that is not dramatically effected over a large frequency range (Mhz).



Shield Connection

The type of shield connection is primarily decided by the nature of the expected interference.

To suppress electrical fields, the shield must be grounded (1) at one end.

However, interference caused by a magnetic alternating field can only be suppressed if the shield is connected at both ends (2).

A ground loop, including all its known disadvantages, is created when a shield is connected at both ends. The useful signal is particularly susceptible to noise on the reference voltage. Triaxial cables (4) combat this effect. The internal shield is connected at one end, whereas the external shield is connected at both ends.

Interference of this nature when a cable shield is connected at both ends is often reduced by also connecting one end of the shield to the reference potential via a capacitor (3). This breaks the ground loop, at least for direct currents and low-frequency currents.

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Calculating American Wire Gauge (AWG) in mm²

Certain branches of industry also use the American Wire Gauge (AWG) for lines and wires.
The table below demonstrates how to convert AWG to mm².

AWG	Cable Structure [mm]	Cable diameter [mm]	Conductor Cross-Section [mm²]
30	1 x 0.25	0.25	0.05
	7 x 0.10	0.36	0.06
28	1 x 0.32	0.32	0.08
	7 x 0.13	0.38	0.09
26	1 x 0.4	0.40	0.13
	7 x 0.16	0.48	0.14
24	1 x 0.51	0.51	0.21
	17 x 0.20	0.61	0.22
	19 x 0.13	0.64	0.25
22	1 x 0.64	0.64	0.33
	7 x 0.25	0.76	0.34
	19 x 0.16	0.81	0.38
20	1 x 0.81	0.81	0.52
	7 x 0.32	0.97	0.56
	19 x 0.20	1.02	0.60
18	1 x 1.02	1.02	0.82
	19 x 0.25	1.27	0.93
16	19 x 0.29	1.44	1.25
14	19 x 0.36	1.80	1.93
12	19 x 0.46	2.29	3.16
10	37 x 0.40	3.10	4.65

Please note that cables with the same AWG number may have different cross-sections due to their differing structures.

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Cable Structure Data

VDE standard 0295 specifies that only the maximum single wire diameter and the corresponding highest-permissible electrical resistance have to be determined for each cable cross-section.

Cables made of Uninsulated or Tin-Plated Copper Wires Number of Wires x Wire Diameter [mm] VDE 0295							
Conductor Cross-Section [mm²]	**Single-Wire** Class 1	**Stranded** Class 2	**Finely-Stranded*** Class 5	**Extra Finely-Stranded*** Class 6			
0.10			14 x0.10			26 x 0.07	50 x 0.05
0.14			18 x 0.10			36 x 0.07	72 x 0.05
0.25			14 x 0.15		32 x 01.0	65 x 0.07	128 x 0.05
0.34		7 x 0.25	19 x 0.15		43 x 0.10	88 x 0.07	180 x 0.05
0.50	1 x 0.80	7 x 0.30	16x 0.20	28 x 0.15	63 x 0.10	129 x 0.07	258 x 0.05
0.75	1 x 1.00	7 x 0.37	24 x 0.20	42 x 0.15	95 x 0.10	196 x 0.07	384 x 0.05
1.00	1 x 1.13	7 x 0.43	32 x 0.20	56 x 0.15	127 x 0.10	258 x 0.07	512 x 0.05
1.50	1 x 1.38	7 x 0.52	30 x 0.25	84 x 0.15	191 x 0.10	385 x 0.07	768 x 0.05
2.50	1 x 1.78	7 x 0.67	50 x 0.25	140 x 0.15	320 x 0.10	651 x 0.07	1281 x 0.05
4.00	1 x 2.26	7 x 0.85	56 x 0.30	224 x 0.15	512 x 0.10	1036 x 0.07	
6.00	1 x 2.77	7 x 1.05	84 x 0.30	192 x 0.20	765 x 0.10	1561 x 0.07	
10.00	1 x 3.57	7 x 1.35	80 x 0.40	320 x 0.20	1275 x 0.10		

* The number of wires in finely and extra finely-stranded cable structures are preferred values.

Certification

Depending on their intended application, different series of connectors have been tested and certificated by several certification bodies. The individual marks of conformity have the following meanings:

VDE mark for electronic components and shortform for VDE Reg. No.

All components recognized by UL (Underwriters Laboratories Inc.) are listed in an annual directory (Recognized Component Directory) and documented with the 'yellow card'. They are subject to continuous production checks. (Follow-up Service)

Chemical resistance

The chemical resistance of the plastics, elastomers and outer sheath are shown in the table below:

Outer Sheath / Chemical	PVC	PUR	TPU	Polyamide	NBR	Flourinated rubber (FPM)
Acetone	●●	▬	▬	●●	▬	▬
10% Aluminium chloride	●●	●				
Formic acid	▬	▬				
Ammonia	○	●●	●●	●●	●●	●●
Ammonium chloride	●●	●				
Aniline	▬	▬				
ASTM OIL I	●●	●●	●●			
ASTM OIL II	●●	●●	●●			
ASTM OIL III	●●	●●	●●			
ASTM fuel I	●●	●●				
ASTM fuel II	●	○				
ASTM fuel III	●	○				
Gasoline, normal		●●	●●	●●	●●	
Benzene	▬	▬	▬	●●	▬	●●
ATE brake fluid	●	▬				
Butanol	▬	▬				
Butyl acetate	▬	▬				
40% calcium chloride	●●	●				
Chlorobenzene	▬	▬				
Chloroform	▬	▬				
Chromic acid	▬	▬				
Cyclohexanone	▬	○				
Cyclohexanone	▬	▬	▬	●●		
Diesel oil/heating oil	▬	●	●●	●●	●●	●●
Dimethylformamide						
10% iron III chloride	●●	●				
10% acetic acid	●	●	●●	○	●●	●●
Ethanol	▬	●	▬	○	●●	●●
Diethylether	▬	●				
Ethyl acetate	▬	▬				
Ethylendichlorid	▬	●				
Frigen 12	●	○				
Frigen 22	●	○				
SA E90 transmission oil	●	▬				
Glycerin	●●	●●	●●	●●	●●	○
Glycol	○	●●	●●	▬	●●	●●
Hydraulic oils		●●	●●			
Isopropanol	▬	○	○	○	●●	●●

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Outer Sheath / Chemical	PVC	PUR	TPU	Polyamide	NBR	Flourinated rubber (FPM)
10% caustic potash	●●	●●				
Potassium dichromate	●●	●●				
Potassium nitrate	●●	●●				
Potassium permanganate	○	▬				
30% magnesium chloride	●●	●				
Seawater		●●	●●	●●	●●	
Methanol	▬	○				
Methyl acetate	▬	▬				
Methylene chloride	▬	▬				
Methyl ethyl ketone	▬	○				
Methyl glycol	▬	▬				
Methyl glycol acetate	▬	▬				
10% lactic acid	●●	○	●●	●●	○	●●
Mineral oils		●●	●●	●●	○	
Naphtalene			●●	●●	●●	
10% sodium chloride	●●	●				
Sodium hypochloride solution	○	●●				
10% sodium hydroxide solution	●●	●●	●●	●●	○	○
Ozone	●●	●●				
Perchloroethylene	●●	▬				
Petroleum ether	▬	●●				
Petroleum	▬	●				
30% phosphoric acid	●	▬	●●	▬	●●	●●
Cleaning agents			●●	●●	●●	
10% nitric acid	▬	▬	▬	▬	●●	●●
20% hydrochloric acid	●●	●●	●●	▬	○	●●
Carbon disulfide	▬	▬				
30% sulfuric acid	●●	●●	●●	▬	●●	●●
Tetrachloroethylene	▬	▬				
Carbon tetrachloride	▬	▬				
Tetrahydrofuran	▬	▬				
Toluene	▬	▬				
Trichloroethylene	▬	▬				
Detergent			●●	●●	●●	
3% hydrogen peroxide	●●	●●				
Xylene	▬	▬				
Citric acid		●●	●●	●●	●●	

●● = resistant ● = largely resistant ○ = offers limited resistance ▬ = not resistant

The research was carried out, unless otherwise indicated, at room temperature. Resistances may change when different mediums converge, hence we can assume no liability with regard to this information.

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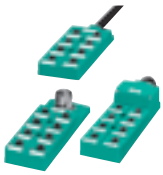

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