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Bus system flush-type plug, DeviceNet/CANopen, 5-pos., M12, shielded, A-coded, front/screw mounting with M16 thread, with 0.5 m bus cable,  $2 \times 0.2 \text{ mm}^2$ ,  $2 \times 0.32 \text{ mm}^2$ 

### Your advantages

- Pre-assembled with cables in various standard lengths for immediate use
- ☑ Customer-specific assemblies and cable lengths can be supplied
- Sealed on the cable side for optimum tightness of seal
- Cable designs for all common networks and fieldbuses
- For high transmission safety: shield connection to the housing with optional EMC nut



### **Key Commercial Data**

Packing unit	1 pc
GTIN	4 046356 022361
GTIN	4046356022361

### Technical data

#### Dimensions

Length of cable	0.5 m
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### Ambient conditions

Ambient temperature (operation)	-25 °C 85 °C (Plug / socket)
	-40 °C 85 °C (without mechanical actuation)
	-25 °C 85 °C (Plug / socket)
Degree of protection	IP67

#### General

Note	The electrical and mechanical data specified assume that the connector pair is correctly locked and mounted. If the connector is unlocked and if
	there is a danger of contamination, the connector must be sealed using

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### Technical data

### General

	a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration.
Rated current at 40°C	4 A (Plug/socket in accordance with IEC 61076-2-101, cable technical data is to be observed)
Rated voltage	48 V AC
	60 V DC
Rated surge voltage	1.5 kV
Number of positions	5
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M12 connector IEC 61076-2-101
Signal type/category	CANopen <sup>®</sup>
	DeviceNet™
Status display	No
Overvoltage category	II .
Degree of pollution	3
Test voltage	2500 V
Connection method	CAN Bus / DeviceNet
Insertion/withdrawal cycles	> 100
Tightening torque	3 Nm 4 Nm (Installation-side)
Mounting type	Front mounting M16 x 1.5 With locking nut
Thread type	M16 x 1.5

### Material

Flammability rating according to UL 94	V0
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material, knurls	Nickel-plated brass
Sealing material	NBR

### Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
Safety note	WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.
	WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.
	WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The

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### Technical data

### Standards and Regulations

relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.
The products are suitable for applications in plant, controller, and electrical device engineering.
When operating the connectors in outdoor applications, they must be separately protected against environmental influences.
Assembled products may not be manipulated or improperly opened.
Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at phoenixcontact.com/products).
When using the product in direct connection with third-party manufacturers, the user is responsible.
For operating voltages > 50 V AC, conductive connector housings must be grounded
Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.
Observe the corresponding technical data. You will find information: o On the product o On the packing label o In the supplied documentation o Online at phoenixcontact.com/products under the product
Only use tools recommended by Phoenix Contact
Use a protective cap to protect connectors that are not in use. The suitable accessories are available online in the accessory section of the product at phoenixcontact.com/products
Ensure that the protective or functional ground has been properly connected.
VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector
• The connector warms up in normal operation. Depending on the ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).

### Cable

Cable type	CANopen <sup>®</sup> /DeviceNet™, PUR, violet
Cable type (abbreviation)	920
UL AWM style	21198 (80°C/300 V)
Signal type/category	CANopen <sup>®</sup>
	DeviceNet™
Cable structure	2xAWG24/19+2xAWG22/19
Conductor cross section	2x 0.25 mm² (Data cable)
	2x 0.34 mm² (Power supply)
	1x 0.34 mm² (Drain wire)
AWG signal line	24
AWG power supply	22

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### Technical data

### Cable

	<u></u>
Conductor structure signal line	19x 0.13 mm
Conductor structure, voltage supply	19x 0.15 mm
Core diameter including insulation	1.95 mm ±0.05 mm (Data cable)
	1.4 mm ±0.05 mm (Power supply)
Wire colors	red-black, blue-white
Twisted pairs	2 cores to the pair
Type of pair shielding	Plastic-coated aluminum foil, aluminum side outside
Overall twist	2 pairs around a drain wire in the center to the core
Shielding	Tinned copper braided shield
Optical shield covering	80 %
External sheath, color	red lilac RAL 4001
External cable diameter D	6.7 mm ±0.3 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	5000000
Bending radius	70 mm
Minimum bending radius, drag chain applications	10 x D
Traversing path	4.5 m
Traversing rate	3 m/s
Acceleration	3 m/s²
Ambient temperature (operation)	-20 °C 60 °C
Cable weight	90 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE (Data cable)
	PE (Power supply)
Conductor material	Tin-plated Cu litz wires
Insulation resistance	$\geq 5~G\Omega^*$ km (Data cable)
	$\geq 5 \text{ G}\Omega^*\text{km}$ (Power supply)
Loop resistance	≤ 181.80 Ω/km (Data cable)
	≤ 114.80 Ω/km (Power supply)
Cable capacity	nom. 40 nF/km (Data cable)
Wave impedance	120 Ω ±10 % (with 1 MHz)
Attenuation	≤ 22.9 dB/km (with 1 MHz)
	≤ 16.4 dB/km (At 500 kHz)
	≤ 9.5 dB/km (At 125 kHz)
Nominal voltage, cable	≤ 300 V (Peak value, not for high-power applications)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)

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### Technical data

### Cable

	UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2)
	IEC 60332-1-2
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Halogen-free	in accordance with DIN VDE 0472 part 815
	according to IEC 60754-1
Other resistance	Low adhesion
Ambient temperature (operation)	-40 °C 80 °C (cable, fixed installation)
	-30 °C 70 °C (Cable, flexible installation)
	-20 °C 60 °C (for installation)
Ambient temperature (storage/transport)	-40 °C 80 °C
Shielded	yes

### **Environmental Product Compliance**

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

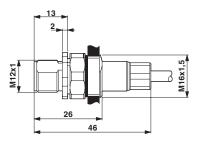
### **Drawings**

### Schematic diagram



Pin assignment M12 male connector, 5-pos., A-coded, male side

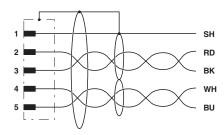
### Dimensional drawing



M12 flush-type plug, front mounting, can be positioned

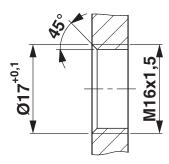


Circuit diagram



Contact assignment of the M12 plug

Dimensional drawing



Housing cutout for M16 fastening thread, mounting panel with thread

Cable cross section



CANopen®/DeviceNet™, PUR, violet [920]



### Classifications

### eCl@ss

eCl@ss 10.0.1	27440102
eCl@ss 11.0	27440102
eCl@ss 4.0	27140800
eCl@ss 4.1	27140800
eCl@ss 5.0	27143400
eCl@ss 5.1	27143400
eCl@ss 6.0	27279200
eCl@ss 7.0	27440103
eCl@ss 9.0	27440102

#### **ETIM**

ETIM 2.0	EC001297
ETIM 3.0	EC002061
ETIM 4.0	EC000830
ETIM 6.0	EC002061
ETIM 7.0	EC002635

### **UNSPSC**

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	39121413
UNSPSC 18.0	39121413
UNSPSC 19.0	39121413
UNSPSC 20.0	39121413
UNSPSC 21.0	39121400

## **Approvals**

Approvals

Approvals

EAC

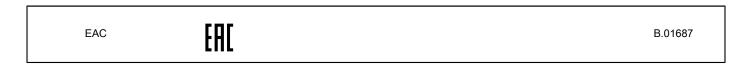
Ex Approvals

Approval details

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### Approvals



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