

SAC-5P-M12MS/ 2,0-92X SH OD - Bus system cable



1410471

<https://www.phoenixcontact.com/us/products/1410471>

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Bus system cable, CANopen®, DeviceNet™, 5-position, FRNC halogen-free, black, shielded, Plug straight M12, coding: A, on free cable end, cable length: 2 m, for outdoor applications, with high-grade steel knurl

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C ... +105°C
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

Commercial data

Item number	1410471
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	AF1CKD
GTIN	4046356899376
Weight per piece (including packing)	159.5 g
Weight per piece (excluding packing)	152.9 g
Customs tariff number	85444290
Country of origin	PL

Technical data

Product properties

Product type	Data cable preassembled
Application	External areas
Sensor type	CANopen®
Number of positions	5
No. of cable outlets	1
Shielded	yes
Coding	A

Insulation characteristics

Degree of pollution	3
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Interfaces

Bus system	CANopen®/DeviceNet™
Signal type/category	CANopen® DeviceNet™

Signaling

Status display	no
Status display present	no

Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage U_N	48 V AC 60 V DC
Nominal current I_N	4 A
Transmission medium	Copper

Mechanical properties

Mechanical data	
Insertion/withdrawal cycles	≥ 100

Material specifications

Flammability rating according to UL 94	V0
Material of grip body	PP
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PP
Material for screw connection	Stainless steel

Connection data

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Connection assignment

Contact Color (signal designation) Contact (optional)	1 (Plug) SR (shield)
	2 (Plug) RD (V+)
	3 (Plug) BK (V-)
	4 (Plug) WH (CAN_H)
	5 (Plug) BU (CAN_L)

Connector

Connection 1

Type	Plug straight M12
Number of positions	5
Coding type	A (Standard)

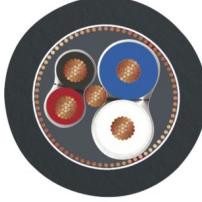
Connection 2

Type	free cable end
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Cable/line

Cable length	2 m
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CANopen®/DeviceNet™ outdoor installation, FRNC, black [92X]

Dimensional drawing	
Cable weight	70 kg/km
UL AWM Style	21281 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	CANopen®/DeviceNet™ outdoor installation, FRNC, black [92X]
Conductor structure	2xAWG24/19+2xAWG22/19
Signal runtime	4.46 ns/m
Conductor structure signal line	19x 0.13 mm
AWG signal line	24
Conductor structure, voltage supply	19x 0.16 mm
AWG power supply	22
Conductor cross section	2x 0.25 mm² (Signal) 2x 0.34 mm² (Power) 1x 0.38 mm² (Drain wire)
Wire diameter incl. insulation	1.9 mm (Signal) 1.4 mm (Power)

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External cable diameter	6.90 mm ± 0.3 mm
Outer sheath, material	FRNC
External sheath, color	black
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE
Single wire, color	red-black, blue-white
Thickness, insulation	0.60 mm (Signal) 0.30 mm (Power)
Thickness, outer sheath	1.15 mm
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined foil
Overall twist	2 pairs around a drain wire in the center to the core
Optical shield covering	70 %
Max. conductor resistance	90 Ω /km (Signal) 55 Ω /km (Power)
Insulation resistance	$\geq 200 \text{ M}\Omega \cdot \text{km}$ (at 20 °C)
Wave impedance	120 $\Omega \pm 12 \Omega$ ($f = 1 \text{ MHz}$)
Working capacitance	39.8 nF (at 1 kHz, core/core)
Nominal voltage, cable	$\leq 300 \text{ V}$
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000.00 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	35 mm
Smallest bending radius, movable installation	69 mm
Halogen-free	yes
Flame resistance	According to IEC 60332-3-25 (Cat. D)
Resistance to oil	yes
Other resistance	UV resistant
Ambient temperature (operation)	-40 °C ... 105 °C
Ambient temperature (installation)	-40 °C ... 105 °C

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65 IP67 IP68 IP69K
Ambient temperature (operation) (male connector/female connector)	-40 °C ... 105 °C (Plug / socket)
Ambient temperature (operation) (Operation)	-40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4))

Standards and regulations

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M12

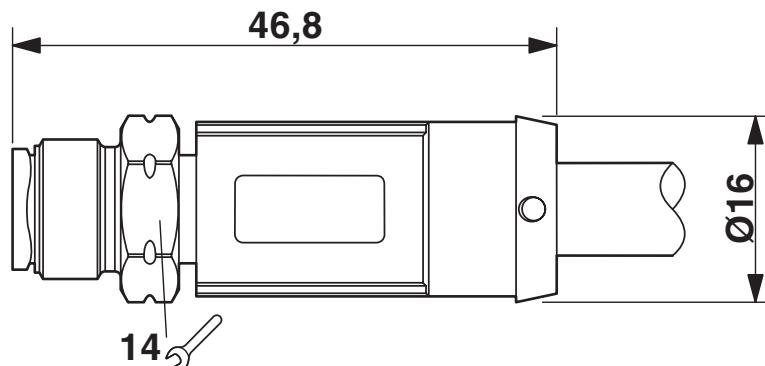
Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101

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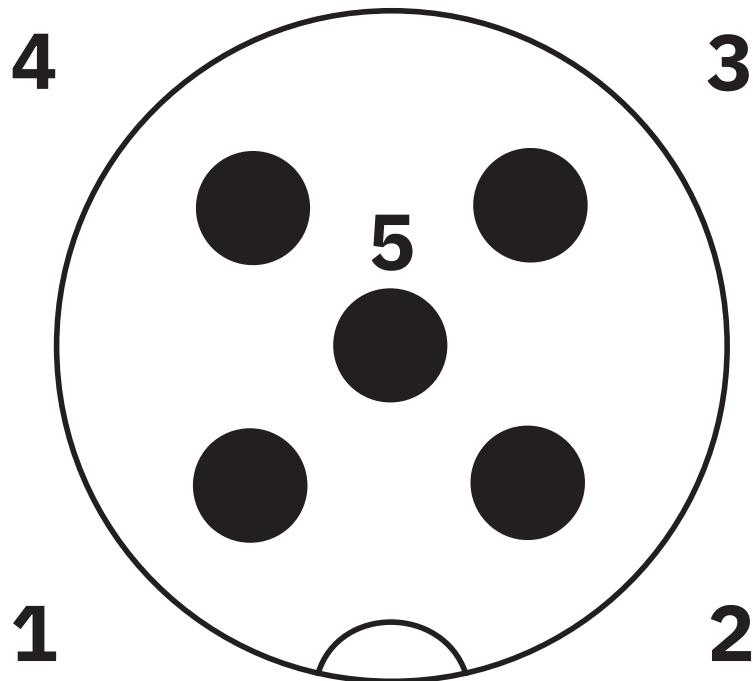
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



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

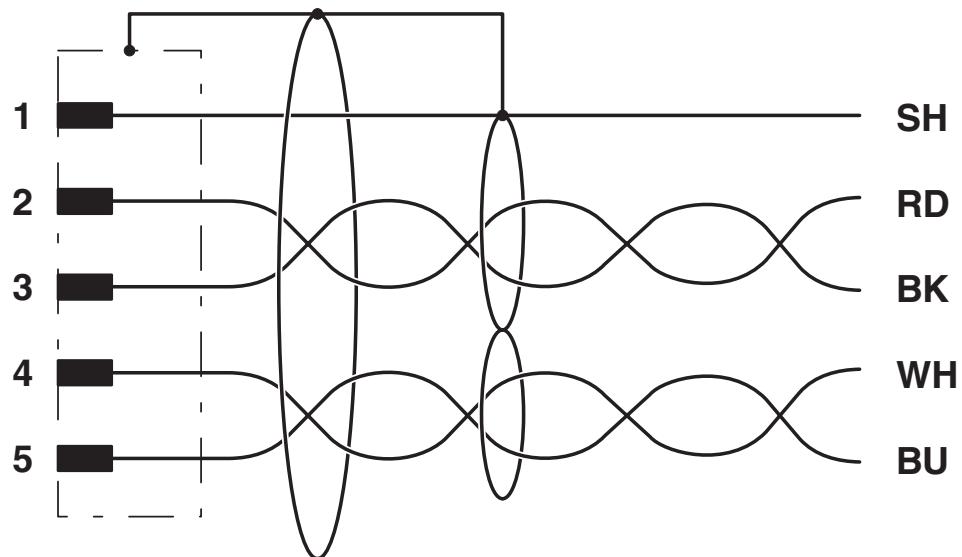
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Circuit diagram



Contact assignment of the M12 plug

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Approvals

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EAC-RoHS

Approval ID: RU D-DE.HB35.B.00387

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Classifications

ECLASS

ECLASS-13.0	27060307
ECLASS-15.0	27060307

ETIM

ETIM 9.0	EC001855
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UNSPSC

UNSPSC 21.0	26121600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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EF3.0 Climate Change

CO2e kg	10.617 kg CO2e
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