

## Bus system cable - SAC-5P-M12MS/2,0-92X/M12FSSHOD - 1410467

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


### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Corrosion protection for all exposed metal parts, thanks to the use of stainless steel type 1.4404
- ✓ Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C to +105°C
- ✓ Reliable signal transmission – 360° shielding in environments with electromagnetic interference



CANopen/DeviceNet

### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 899055
GTIN	4046356899055

### Technical data

#### Dimensions

Length of cable	2 m
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#### Ambient conditions

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

#### General

Rated current at 40°C	4 A
Rated voltage	48 V AC

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## Technical data

### General

	60 V DC
Number of positions	5
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M12 connector IEC 61076-2-101
Signal type/category	CANopen® DeviceNet™
Status display	No
Protective circuit/component	unwired
Degree of pollution	3
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm (M12 connector)

### Material

Flammability rating according to UL 94	V0
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PP
Material of grip body	PP
Material, knurls	Stainless steel
Sealing material	FPM

### Pin assignment

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

### Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
Flammability rating according to UL 94	V0

### Cable

Cable type	CANopen®/DeviceNet™ outdoor installation, FRNC, black
Cable type (abbreviation)	92X
Cable abbreviation	LI2XCHX02XS
UL AWM style	21281 (80°C/300 V)
Cable structure	2xAWG24/19+2xAWG22/19
Conductor cross section	2x 0.25 mm² (Signal)
	2x 0.34 mm² (Power)
	1x 0.38 mm² (Drain wire)
AWG signal line	24

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## Technical data

### Cable

AWG power supply	22
Conductor structure signal line	19x 0.13 mm
Conductor structure, voltage supply	19x 0.16 mm
Core diameter including insulation	1.9 mm (Signal)
	1.4 mm (Power)
Thickness, insulation	0.6 mm (Signal)
	0.3 mm (Power)
Wire colors	Red-black, blue-white
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
Shielding	Tinned copper braided shield
Optical shield covering	70 %
External sheath, color	black
Outer sheath thickness	1.15 mm
External cable diameter D	6.9 mm ±0.3 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Cable weight	70 kg/km
Outer sheath, material	FRNC
Material conductor insulation	PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 200 MΩ*km (at 20 °C)
Conductor resistance	90 Ω/km (Signal)
	55 Ω/km (Power)
Working capacitance	39.8 nF (at 1 kHz, core/core)
Wave impedance	120 Ω ±12 Ω (f = 1 MHz)
Signal runtime	4.46 ns/m
Nominal voltage, cable	≤ 300 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	According to IEC 60332-3-25 (Cat. D)
Halogen-free	yes
Resistance to oil	yes
Other resistance	UV resistant
Ambient temperature (operation)	-40 °C ... 105 °C

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years

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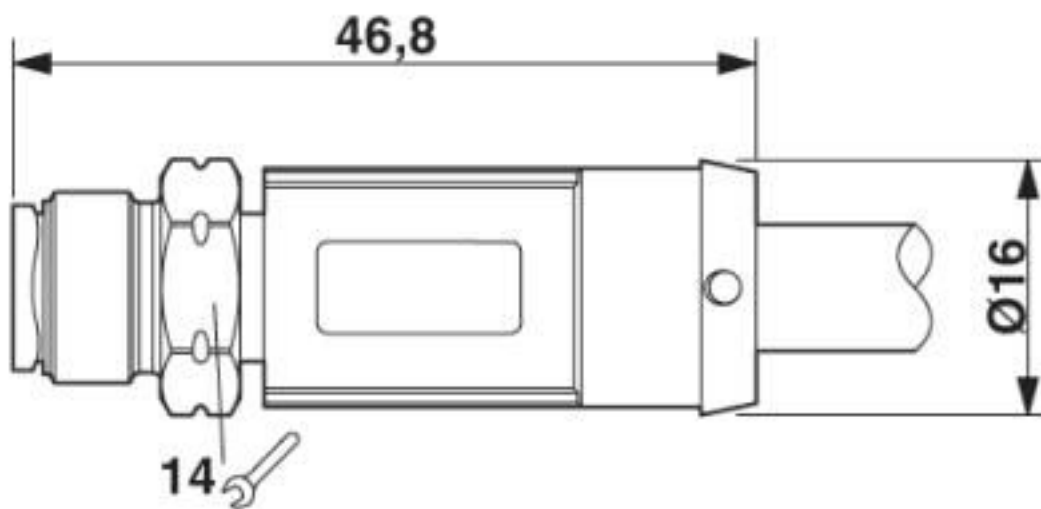
## Technical data

### Environmental Product Compliance

	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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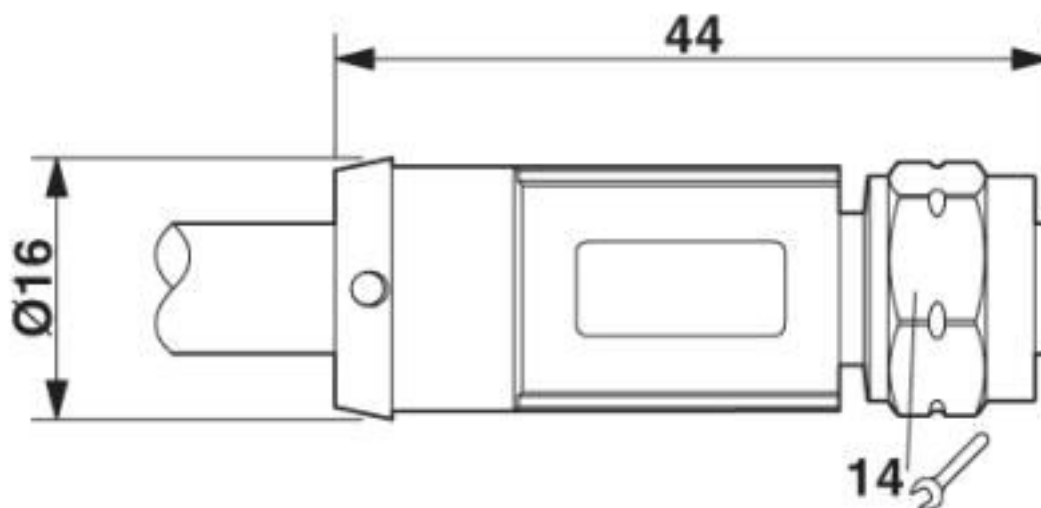
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

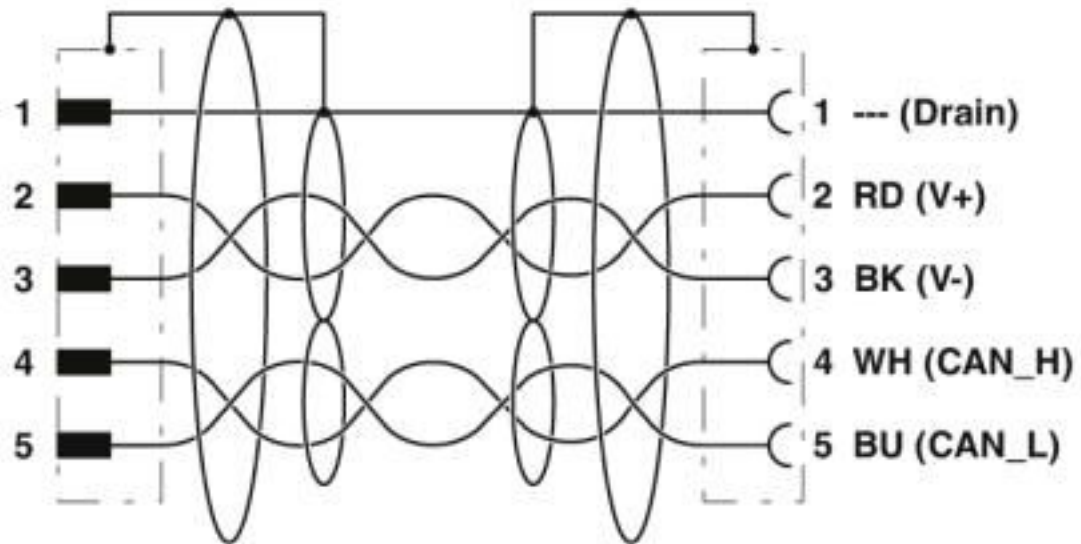
Dimensional drawing



M12 x 1 socket, straight

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Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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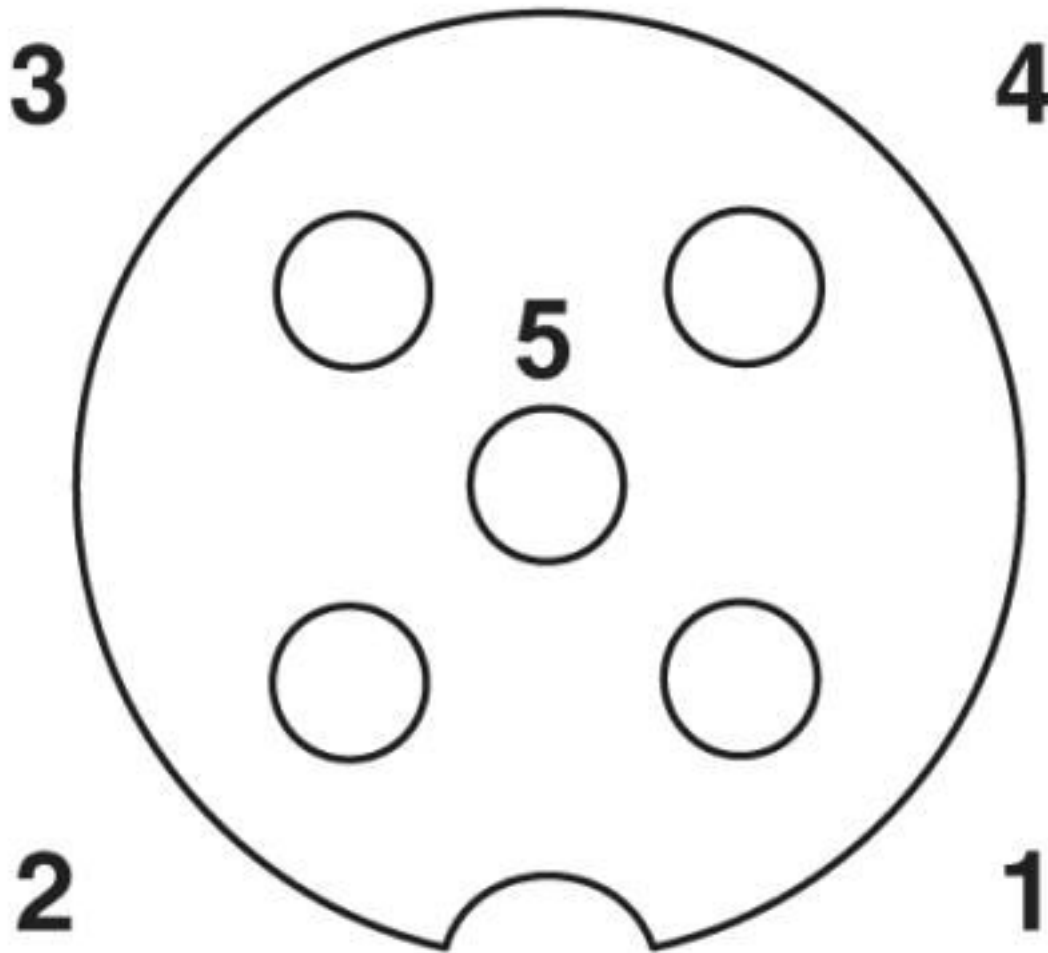
Schematic diagram



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

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Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, socket side view

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Cable cross section



CANopen<sup>®</sup>/DeviceNet<sup>™</sup> outdoor installation, FRNC, black [92X]

## Classifications

eCl@ss

eCl@ss 10.0.1	27060308
eCl@ss 4.0	27060300
eCl@ss 4.1	27060300
eCl@ss 5.0	27061800
eCl@ss 5.1	27061800
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 8.0	27279218
eCl@ss 9.0	27060308



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## Classifications

### ETIM

ETIM 4.0	EC001855
ETIM 5.0	EC002599
ETIM 6.0	EC001262
ETIM 7.0	EC001262

### UNSPSC

UNSPSC 13.2	31251501
UNSPSC 18.0	26121604
UNSPSC 19.0	26121604
UNSPSC 20.0	26121604
UNSPSC 21.0	26121604

## Approvals

### Approvals

Approvals

EAC-RoHS

Ex Approvals

### Approval details

EAC-RoHS		RU D- DE.HB35.B.00387
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## Accessories

### Accessories

#### Screwdriver tools

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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### Accessories

Adapter - SAC BIT M12-W14 - 1212513



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive

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### Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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Torque screwdriver - TSD-M 1,2NM - 1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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