Bus system cable - SAC-5P-M12MS/ 3,0-920/M12FS

1514100

https://www.phoenixcontact.com/pc/products/1514100

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, red lilac RAL 4001, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 3 m

Commercial Data

Item number	1514100
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	BF1CKD
GTIN	4017918914868
Weight per Piece (including packing)	210.2 g
Weight per Piece (excluding packing)	210.2 g
Customs tariff number	85444290
Country of origin	PL

Technical Data

Product properties

Product type	Data cable preassembled
Number of positions	5
No. of cable outlets	1
Shielded	yes
Coding	A - standard

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

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

LED signaling

Status display	No
Status display present	No

Electrical properties

Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Nominal voltage U_N	48 V AC
	60 V DC
Nominal current I_N	4 A

Material specifications

Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	Zinc die-cast, nickel-plated

Connector

Insertion/withdrawal cycles	≥ 100

Header 1

Head design	Plug

Head cable outlet	straight
Head thread type	M12
Coding	A

Head 2

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Coding	A
Number of positions	5
Coding	A - standard
Insertion/withdrawal cycles	≥ 100
Contact material	CuSn
Contact surface material	Ni/Au
Number of positions	5
Coding	A - standard
Insertion/withdrawal cycles	≥ 100
Contact material	CuSn
Contact surface material	Ni/Au

Cable / line

Cable length	3 m
Cable weight	90 kg/km
UL AWM Style	21198 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	CANopen®/DeviceNet™, PUR, violet [920]
Conductor structure signal line	19x 0.13 mm
AWG signal line	24
Conductor cross section	2x 0.25 mm² (Data cable)
	2x 0.34 mm² (Power supply)
	1x 0.34 mm² (Drain wire)
Wire diameter incl. insulation	1.95 mm ±0.05 mm (Data cable)
	1.4 mm ±0.05 mm (Power supply)
External cable diameter	6.7 mm ±0.3 mm
Outer sheath, material	PUR
External sheath, color	red lilac RAL 4001
Conductor material	Tin-plated Cu litz wires
Material wire insulation	Foamed PE (Data cable)
	PE (Power supply)
Single wire, color	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

Optical shield covering	80 %
Insulation resistance	≥ 5 GΩ*km (Data cable)
	≥ 5 GΩ*km (Power supply)
Loop resistance	≤ 181.80 Ω/km (Data cable)
	≤ 114.80 Ω/km (Power supply)
Wave impedance	120 Ω ±10 % (with 1 MHz)
Cable capacity	nom. 40 nF/km (Data cable)
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.)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Max. bending cycles	5000000
Shield attenuation	≤ 22.9 dB/km (with 1 MHz)
	≤ 16.4 dB/km (At 500 kHz)
	≤ 9.5 dB/km (At 125 kHz)
Halogen-free	in accordance with DIN VDE 0472 part 815
	according to IEC 60754-1
Flame resistance	IEC 60332-1-2
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
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)
	-20 °C ... 60 °C (cable, drag chain applications)

Cable structure

Cable type	CANopen®/DeviceNet™, PUR, violet
Signal type/category	CANopen®
	DeviceNet™
External cable diameter	6.70 mm
Outer sheath, material	PUR
External sheath, color	red lilac RAL 4001
Conductor material	Tin-plated Cu litz wires
Conductor structure signal line	19x 0.12 mm
AWG signal line	24
Conductor structure, voltage supply	19x 0.15 mm
AWG power supply	22
Material wire insulation	PE (Power supply)
	Foamed PE (Signal line)
Wire diameter incl. insulation	2.05 mm ±0.1 mm (Signal line)
	1.4 mm ±0.05 mm (Power supply)
Single wire, color	Red-black, blue-white
Twisted pairs	2 cores to the pair

Type of pair shielding	Aluminum-lined polyester foil
Overall twist	2 pairs around a drain wire in the center to the core
Shielding	Tinned copper braided shield
Optical shield covering	70 %

Electrical properties

Nominal voltage, cable	300 V (Power supply)
	30 V (Signal line)
Test voltage, cable	1500 V (Signal line)
	2000 V (Power supply)
Conductor resistance	≤ 78.4 Ω/km (Signal line)
	≥ 51.6 Ω/km (Power supply)
Cable insulation resistance	≥ 5 GΩ*km (Signal line)
	≥ 100 MΩ*km (Power supply)
Working capacitance	39.3 pF (Signal line, Core-Core)
	78.7 pF (Signal line, Core-Shield)

Mechanical properties

Smallest bending radius, fixed installation	67 mm
Smallest bending radius, movable installation	67 mm
Number of bending cycles	5000000
Bending radius	67 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	7 m/s²

Bending cycles

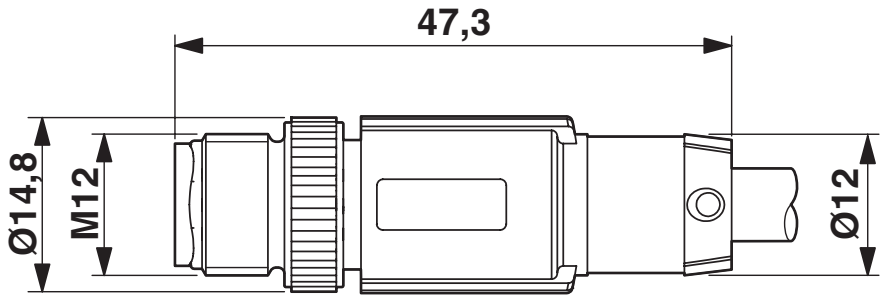
Smallest bending radius, fixed installation	67 mm
Smallest bending radius, movable installation	67 mm
Number of bending cycles	5000000
Bending radius	67 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	7 m/s²

Ambient conditions

Degree of protection	IP65
	IP67
	IP68
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)
	-40 °C ... 80 °C (cable, fixed installation)
	-20 °C ... 75 °C (Cable, flexible installation)

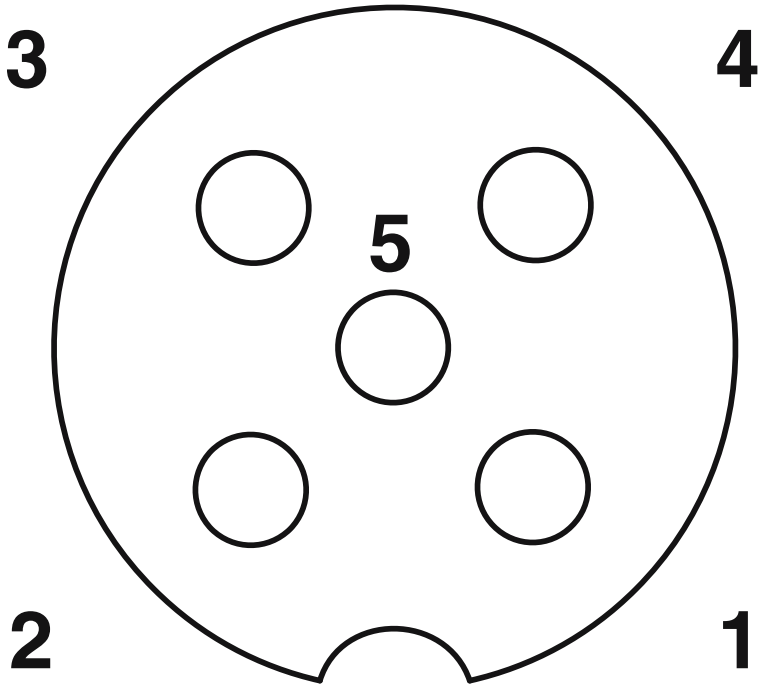
Drawings

Dimensional drawing



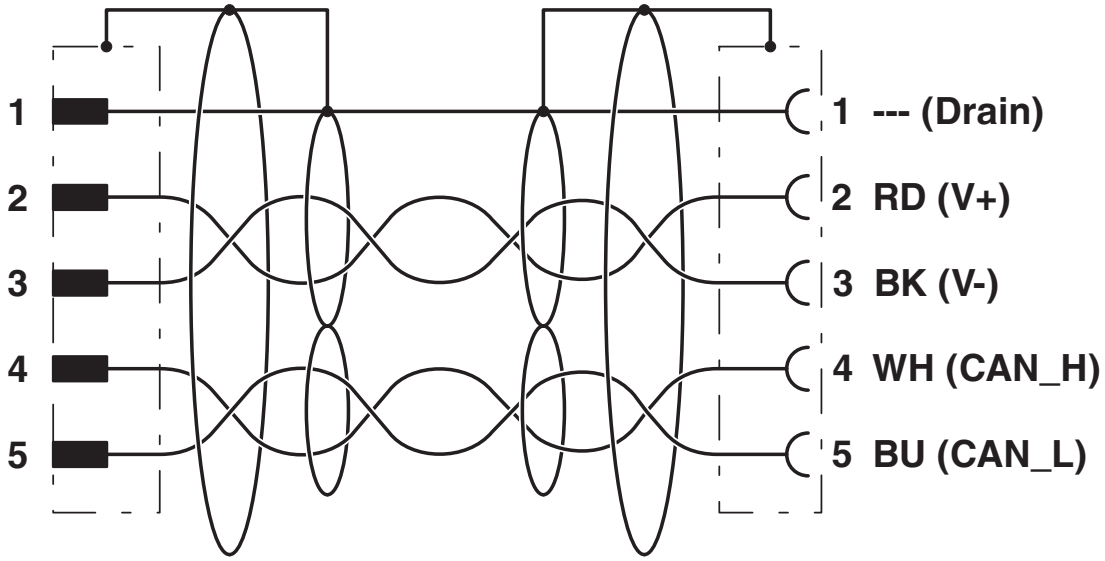
Plug, M12 x 1, straight, shielded

Schematic diagram



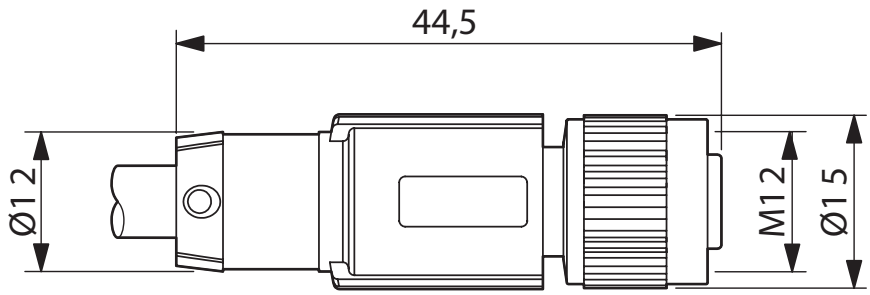
Pin assignment M12 socket, 5-pos., A-coded, socket side view

Circuit diagram



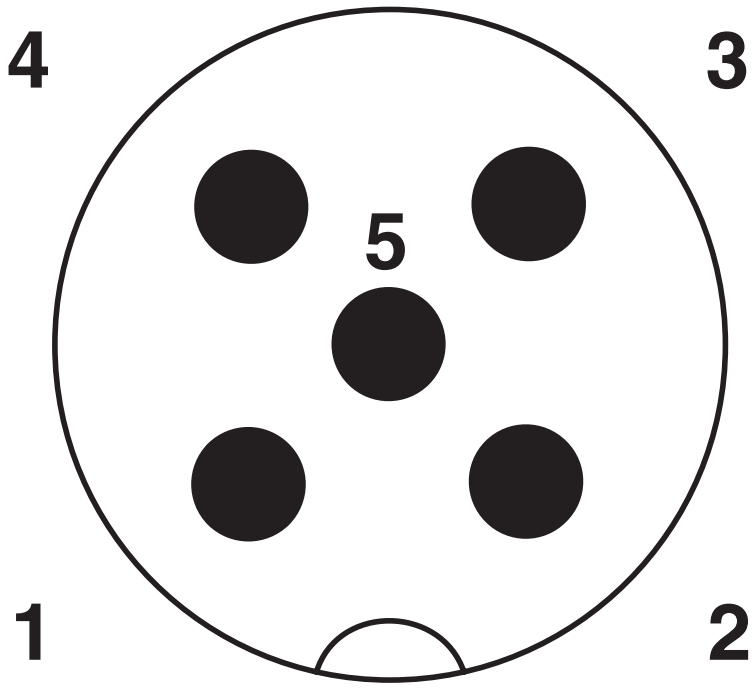
Contact assignment of the M12 connector and the M12 socket

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram



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

Approvals

EAC

Classifications

ECLASS

ECLASS-9.0	27060311
ECLASS-10.0.1	27060311
ECLASS-11.0	27060307

ETIM

ETIM 8.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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