

# Bus system cable - SAC-5P-MS/ 2,0-923/FS CAN SCO



1419052

<https://www.phoenixcontact.com/pc/products/1419052>

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Bus system cable, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, PUR halogen-free, silver-gray RAL 7001, shielded, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 2 m, Connector unshielded

## Commercial Data

Item number	1419052
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	BF1CDD
Catalog Page	Page 431 (C-2-2019)
GTIN	4046356542968
Weight per Piece (including packing)	150.3 g
Weight per Piece (excluding packing)	146.3 g
Customs tariff number	85444290
Country of origin	PL

## Technical Data

### Product properties

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

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

Bus system	CANopen <sup>®</sup> /DeviceNet <sup>™</sup>
Signal type/category	CANopen <sup>®</sup> DeviceNet <sup>™</sup>

### LED signaling

Status display	No
Status display present	No

### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Transmission medium	Copper

### Material specifications

Color Handle area	black
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
Material for screw connection	Zinc die-cast, nickel-plated

### Connection data

#### 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)
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	5 (Plug) = BU (CAN_L) = 5 (Socket)
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## Connector

### Connection 1

Head design	Plug
Head cable outlet	straight
Head thread type	M12
Head locking type	SPEEDCON
Coding	A


### Connection 2

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Head locking type	SPEEDCON
Coding	A

## Cable / line

Cable length	2 m
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### CANopen<sup>®</sup>/DeviceNet<sup>™</sup>, PUR, gray [923]

Dimensional drawing	
Cable weight	90 kg/km
UL AWM Style	21198 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	CANopen <sup>®</sup> /DeviceNet <sup>™</sup> , PUR, gray [923]
Conductor structure	2xAWG24/19+2xAWG22/19
Conductor structure signal line	19x 0.13 mm
AWG signal line	24
Conductor cross section	2x 0.25 mm <sup>2</sup> (Data cable) 2x 0.34 mm <sup>2</sup> (Power supply) 1x 0.34 mm <sup>2</sup> (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

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External sheath, color	silver-gray RAL 7001
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	UL 1581, Sec. 1060 (FT-1)
	IEC 60332-1
Other resistance	Low adhesion
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-20 °C ... 80 °C (Cable, flexible installation)
	≤ 70 °C (cable, drag chain applications)

## Ambient conditions

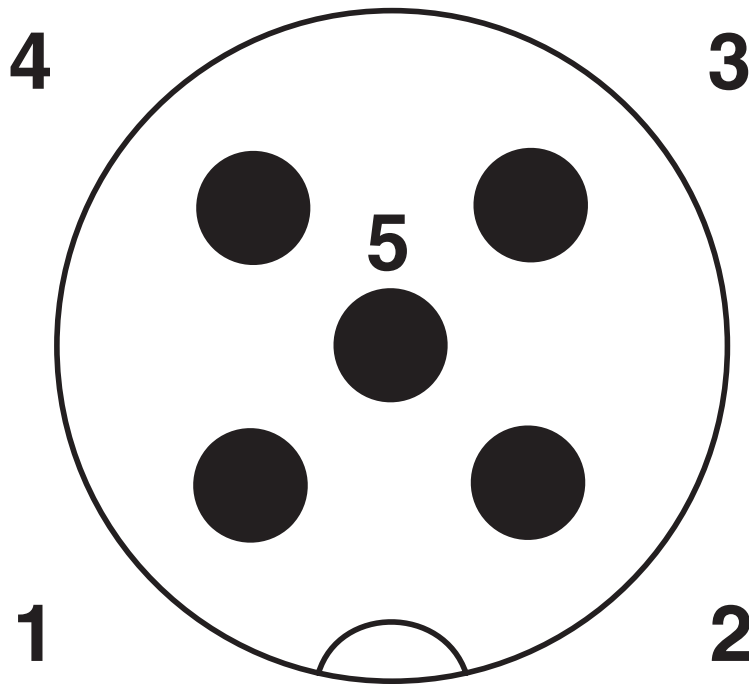
Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

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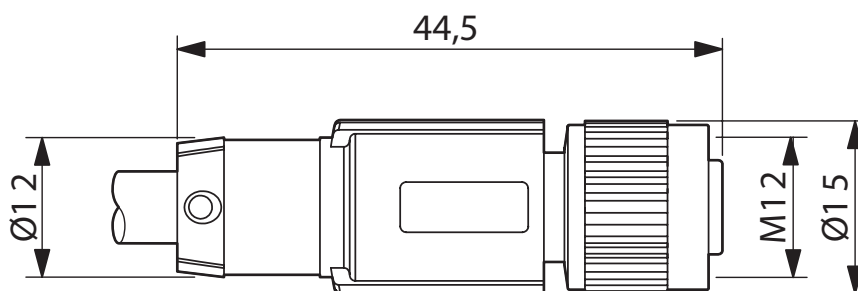
## Drawings

Schematic diagram



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

Dimensional drawing



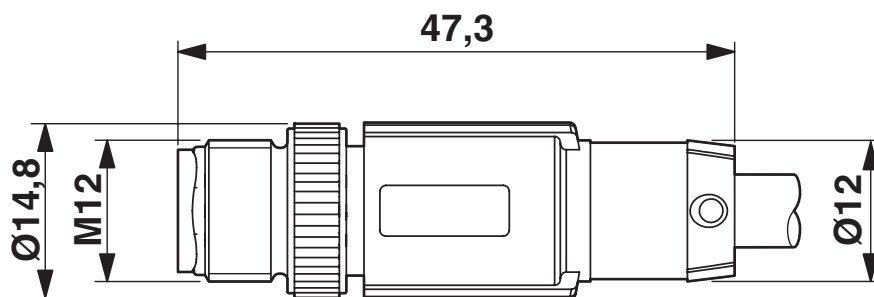
M12 x 1 socket, straight

Schematic diagram



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

Dimensional drawing

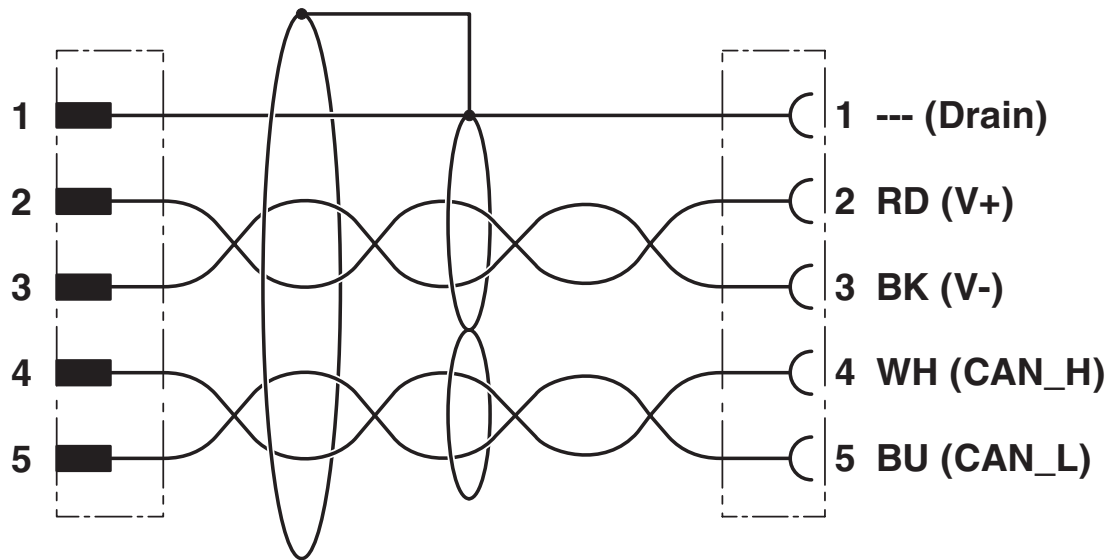


Plug, M12 x 1, straight, shielded

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Circuit diagram



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## Approvals



**EAC**

Approval ID: RU C-DE.BL08.B.00286



**UL Listed**

Approval ID: FILE E 221474

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	125 V	4 A	-	-



**cUL Listed**

Approval ID: FILE E 221474

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	125 V	4 A	-	-



**EAC**

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

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

### ETIM

ETIM 8.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental Product Compliance

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

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## Accessories

### Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

<https://www.phoenixcontact.com/pc/products/1208429>



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

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### Torque screwdriver

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

<https://www.phoenixcontact.com/pc/products/1212224>



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

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## Adapter insert

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

<https://www.phoenixcontact.com/pc/products/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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## Tool

Tool - SAC BIT M12-D15 - 1208432

<https://www.phoenixcontact.com/pc/products/1208432>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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## Sealing cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

<https://www.phoenixcontact.com/pc/products/1430873>

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



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## Locking clip

Locking clip - SAC-M12-EXCLIP-M - 1558988

<https://www.phoenixcontact.com/pc/products/1558988>

Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## Screw plug

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

<https://www.phoenixcontact.com/pc/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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## Locking clip

Locking clip - SAC-M12-EXCLIP-F - 1558991

<https://www.phoenixcontact.com/pc/products/1558991>

Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## H distributor

H distributor - SAC-5PH-M-F/2XF SH1 SCO - 1417414

<https://www.phoenixcontact.com/pc/products/1417414>



H distributor, 5-position, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Thread M12 not rotatable, Parallel distributor

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## T distributor

T distributor - SAC-5P-M12T/2XM12 VP - 1541186

<https://www.phoenixcontact.com/pc/products/1541186>



T distributor, 5-position, unshielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Parallel distributor

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## T distributor

T distributor - SAC-5PT-F/F-M VP - 1424712

<https://www.phoenixcontact.com/pc/products/1424712>



T distributor, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, unshielded, Socket straight M12, coding: A - standard, on Socket straight M12, coding: A - standard and Plug straight M12, coding: A - standard, Parallel distributor

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## Termination resistor

Termination resistor - SAC-5P-M12MS CAN TR - 1507816

<https://www.phoenixcontact.com/pc/products/1507816>



Terminating resistor CANopen<sup>®</sup>/DeviceNet<sup>™</sup> M12

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