

# SAC-5P-M12MSB/ 0,5-900/M12FSB - Bus system cable



1507175

<https://www.phoenixcontact.com/us/products/1507175>

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Bus system cable, INTERBUS (16 Mbps), 5-position, PUR halogen-free, may green RAL 6017, shielded, Plug straight M12, coding: B, on Socket straight M12, coding: B, cable length: 0.5 m

## Commercial data

Item number	1507175
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	AF1CKB
GTIN	4017918900021
Weight per piece (including packing)	71.6 g
Weight per piece (excluding packing)	70.7 g
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Product properties

Product type	Data cable preassembled
Application	Standard
Number of positions	5
No. of cable outlets	1
Shielded	yes
Coding	B

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

Bus system	INTERBUS
Signal type/category	INTERBUS, 16 Mbps

### Signaling

Status display	no
Status display present	no

### Electrical properties

Insulation resistance	≥ 100 MΩ
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Transmission medium	Copper
Transmission speed	16 Mbps

### Mechanical properties

#### Mechanical data

Insertion/withdrawal cycles	≥ 100
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### Material specifications

Flammability rating according to UL 94	V0
Seal material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material for screw connection	Zinc die-cast, nickel-plated

### Connection data

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## Connection assignment

Contact   Color (signal designation)   Contact (optional)	
	1 (Plug)   YE ( <u>DQ</u> )   1 (Socket)
	2 (Plug)   GN ( <u>DO</u> )   2 (Socket)
	3 (Plug)   GY (DI)   3 (Socket)
	4 (Plug)   PK ( <u>DI</u> )   4 (Socket)
	5 (Plug)   BN (GND)   5 (Socket)

## Connector

### Connection 1

Type	Plug straight M12
Number of positions	5
Coding type	B (inverse)

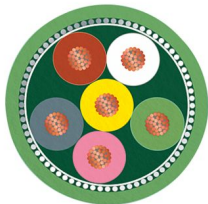
### Connection 2

Type	Socket straight M12
Number of positions	5
Coding type	B

## Cable/line

Cable length	0.5 m
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### INTERBUS [900]

Dimensional drawing	
Cable weight	70 kg/km
Number of positions	6
Shielded	yes
Cable type	INTERBUS [900]
Conductor structure	3 x 2 x 0.22 mm <sup>2</sup>
Signal speed	0.66 c
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	3x 2x 0.22 mm <sup>2</sup>
External cable diameter	8.00 mm
Outer sheath, material	PUR
External sheath, color	may green RAL 6017
Conductor material	Bare Cu litz wires
Material wire insulation	PE

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Single wire, color	green-yellow, white-brown, gray-pink
Twisted pairs	2 cores to the pair
Overall twist	3 pairs to the core
Insulation resistance	$\geq 5 \text{ G}\Omega \cdot \text{km}$
Coupling resistance	$< 250.00 \text{ m}\Omega/\text{m}$ (at 30 MHz)
Loop resistance	$\leq 159.80 \text{ }\Omega/\text{km}$
Wave impedance	$120 \text{ }\Omega \pm 20 \%$ (at 64 kHz) $100 \text{ }\Omega \pm 15 \%$ (with 1 MHz)
Cable capacity	$\leq 60 \text{ nF}/\text{km}$ (At 800 Hz)
Nominal voltage, cable	250 V (Peak value, not for high-power applications)
Test voltage Core/Core	$1500 \text{ V}_{\text{rms}}$
Test voltage Core/Shield	$1000.00 \text{ V}_{\text{rms}}$
Minimum bending radius, fixed installation	$7.5 \times D$
Minimum bending radius, flexible installation	$15 \times D$
Smallest bending radius, fixed installation	60 mm
Smallest bending radius, movable installation	120 mm
Dynamic load capacity (bending)	Max. bending cycles: 5000000, Bending radius: 120 mm, Traversing path: 10 m, Traversing rate: 1.6 m/s, Acceleration: $3.2 \text{ m/s}^2$
Near end crosstalk attenuation (NEXT)	$\geq 61 \text{ dB}$ (at 772 kHz) $\geq 59 \text{ dB}$ (with 1 MHz) $\geq 55 \text{ dB}$ (at 2 MHz) $\geq 50 \text{ dB}$ (at 4 MHz) $\geq 46 \text{ dB}$ (at 8 MHz) $\geq 44 \text{ dB}$ (at 10 MHz) $\geq 41 \text{ dB}$ (at 16 MHz) $\geq 40 \text{ dB}$ (at 20 MHz)
Shield attenuation	$\leq 15 \text{ dB}/\text{km}$ (at 256 kHz) $\leq 24 \text{ dB}/\text{km}$ (at 772 kHz) $\leq 27 \text{ dB}/\text{km}$ (with 1 MHz) $\leq 52 \text{ dB}/\text{km}$ (at 4 MHz) $\leq 84 \text{ dB}/\text{km}$ (at 10 MHz) $\leq 112 \text{ dB}/\text{km}$ (at 16 MHz) $\leq 119 \text{ dB}/\text{km}$ (at 20 MHz)
Flame resistance	according to VDE 0472, Part 4, test type B according to IEC 60332-1
Ambient temperature (operation)	$-40 \text{ }^\circ\text{C} \dots 80 \text{ }^\circ\text{C}$ (cable, fixed installation) $-30 \text{ }^\circ\text{C} \dots 70 \text{ }^\circ\text{C}$ (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65 IP67
Ambient temperature (operation) (male connector/female)	$-25 \text{ }^\circ\text{C} \dots 90 \text{ }^\circ\text{C}$ (Plug / socket)

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connector)

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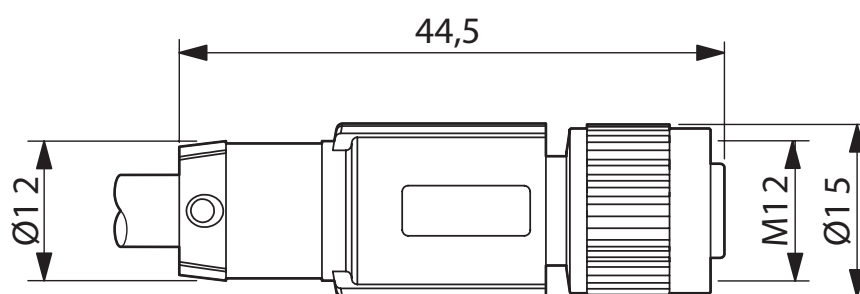
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



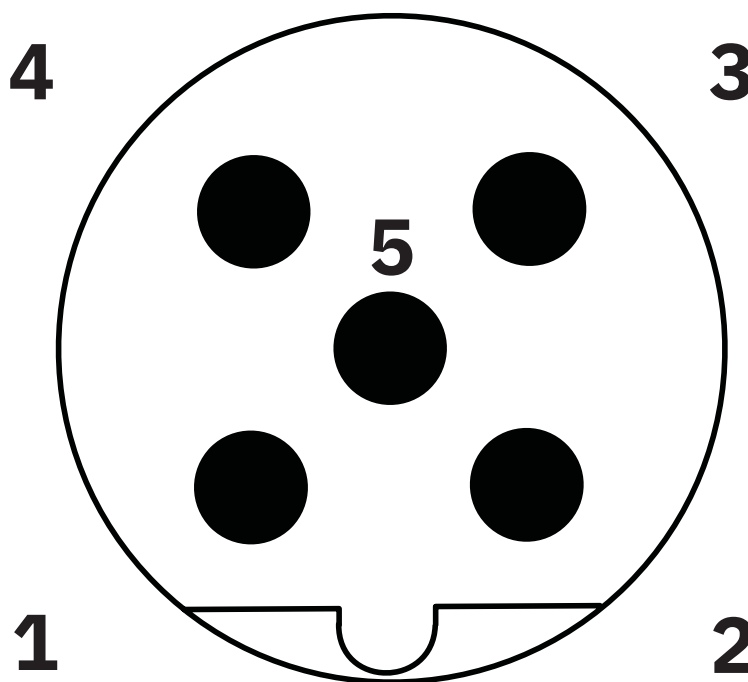
M12 x 1 socket, straight, shielded

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Schematic diagram



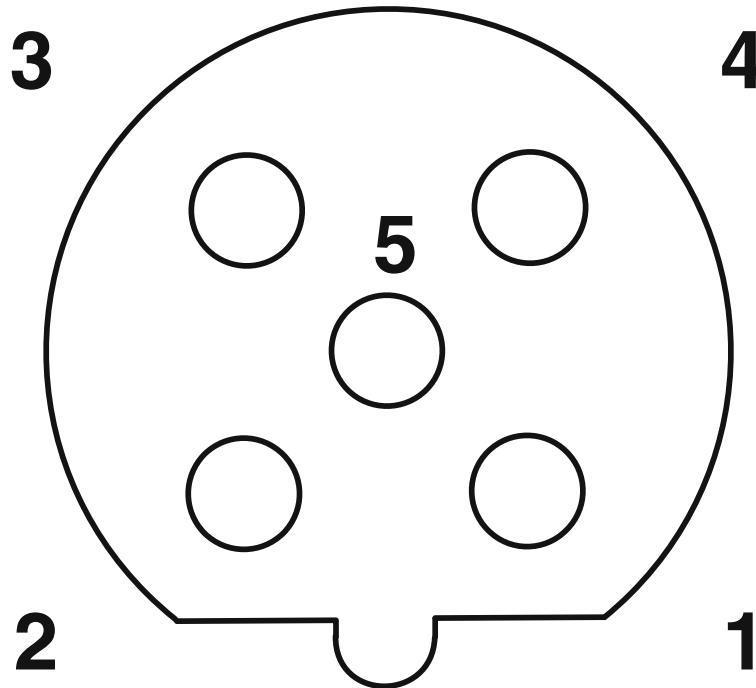
Pin assignment M12 male connector, 5-pos., B-coded, male side

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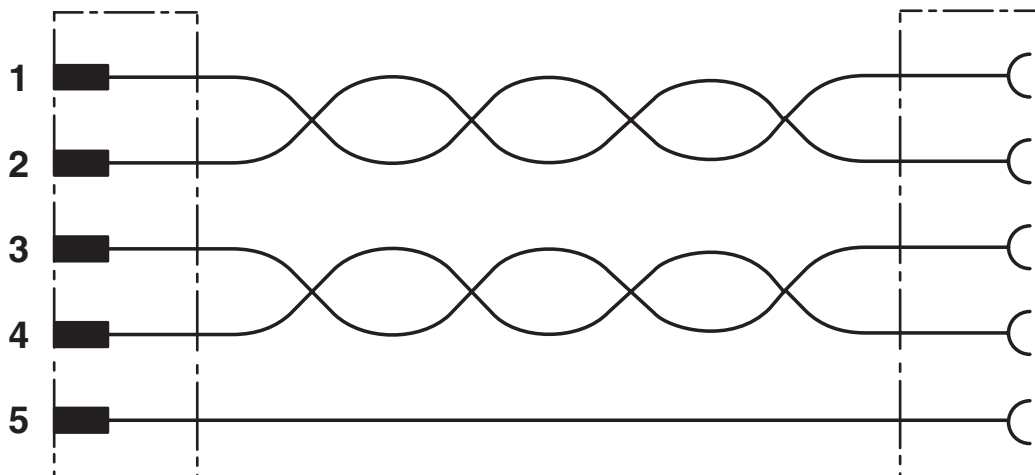
<https://www.phoenixcontact.com/us/products/1507175>

Schematic diagram



Pin assignment M12 socket, 5-pos., B-coded, female side

Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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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

### 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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### EF3.1 Climate Change

CO2e kg	0.595 kg CO2e
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