

# SAC-5P-MR/15,0-923/FS CAN SCO - Bus system cable



1419063

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, silver-grey RAL 7001, shielded, Plug angled M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 15 m, Connector unshielded

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1419063       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CDD        |
| GTIN                                 | 4046356543248 |
| Weight per piece (including packing) | 222.22 g      |
| Weight per piece (excluding packing) | 222.22 g      |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | CANopen®                |
| Number of positions  | 5                       |
| No. of cable outlets | 1                       |
| Coding               | A                       |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Interfaces

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

### 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

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 | HB                                          |
| Seal 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

#### Connection 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)

## Connector

### Connection 1

|                                 |                          |
|---------------------------------|--------------------------|
| Type                            | Plug angled M12 SPEEDCON |
| Number of positions             | 5                        |
| Locking type                    | SPEEDCON                 |
| Coding type                     | A (Standard)             |
| Ambient temperature (operation) | -25 °C ... 90 °C         |

### Connection 2

|                                 |                              |
|---------------------------------|------------------------------|
| Type                            | Socket straight M12 SPEEDCON |
| Number of positions             | 5                            |
| Locking type                    | SPEEDCON                     |
| Coding type                     | A (Standard)                 |
| Ambient temperature (operation) | -25 °C ... 90 °C             |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 15 m |
|--------------|------|

### CANopen®/DeviceNet™, PUR, gray [923]

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing            |  |
| UL AWM Style                   | 21198 (80°C/300 V)                                                                   |
| Number of positions            | 4                                                                                    |
| Shielded                       | yes                                                                                  |
| Cable type                     | CANopen®/DeviceNet™, PUR, gray [923]                                                 |
| Conductor structure            | 2xAWG24/19+2xAWG22/19                                                                |
| AWG signal line                | 24                                                                                   |
| AWG power supply               | 22                                                                                   |
| Conductor cross section        | 2x 0.25 mm² (Data cable)<br>2x 0.34 mm² (Power supply)<br>1x 0.34 mm² (Drain wire)   |
| Wire diameter incl. insulation | 1.95 mm ±0.05 mm (Data cable)<br>1.4 mm ±0.05 mm (Power supply)                      |
| External cable diameter        | 6.70 mm ±0.3 mm                                                                      |
| Outer sheath, material         | PUR                                                                                  |
| External sheath, color         | silver-grey RAL 7001                                                                 |

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|                                               |                                                                                                                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                                   |
| Overall twist                                 | 2 pairs around a drain wire in the center to the core                                                                                                                                                 |
| Optical shield covering                       | 80 %                                                                                                                                                                                                  |
| Insulation resistance                         | $\geq 5 \text{ G}\Omega \cdot \text{km}$ (Data cable)                                                                                                                                                 |
|                                               | $\geq 5 \text{ G}\Omega \cdot \text{km}$ (Power supply)                                                                                                                                               |
| Wave impedance                                | $120 \Omega \pm 10 \%$ (with 1 MHz)                                                                                                                                                                   |
| Nominal voltage, cable                        | $\leq 300 \text{ V}$ (Peak value, not for high-power applications)                                                                                                                                    |
| 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    | 4 x D                                                                                                                                                                                                 |
| Minimum bending radius, flexible installation | 8 x D                                                                                                                                                                                                 |
| Dynamic load capacity (bending)               | Max. bending cycles: 5000000, Bending radius: 70 mm, Bending radius: 15 x D, Traversing path: 4.5 m, Traversing rate: 3 m/s, Acceleration: 3 m/s <sup>2</sup> , Ambient temperature: -20 °C ... 60 °C |
| Shield attenuation                            | $\leq 22.9 \text{ dB/km}$ (with 1 MHz)                                                                                                                                                                |
|                                               | $\leq 16.4 \text{ dB/km}$ (At 500 kHz)                                                                                                                                                                |
|                                               | $\leq 9.5 \text{ dB/km}$ (At 125 kHz)                                                                                                                                                                 |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                                                                                                                                                              |
|                                               | according to IEC 60754-1                                                                                                                                                                              |
| Flame resistance                              | UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)                                                                                                                                                  |
|                                               | UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2)                                                                                                                                              |
|                                               | IEC 60332-1-2                                                                                                                                                                                         |
|                                               | in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)                                                                                                                                                  |
| 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)                                                                                                                                                     |

## Environmental and real-life conditions

### Ambient conditions

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

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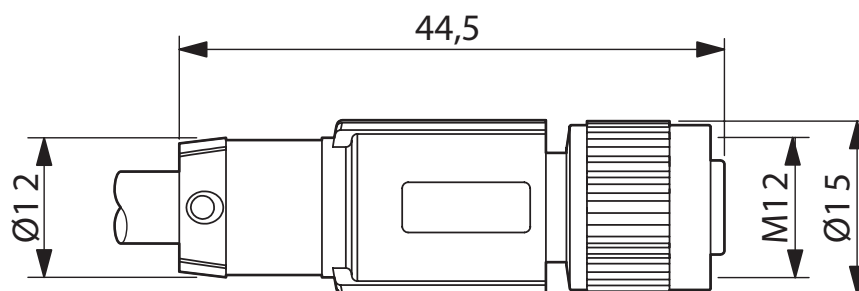
## Drawings

Dimensional drawing



M12 x 1 male plug, angled

Dimensional drawing



M12 x 1 socket, straight

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Schematic diagram



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

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

### 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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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)