

# SAC-5P-MS/ 0,5-920/FS SCO - Bus system cable



1518261

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, red lilac RAL 4001, shielded, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 0.5 m

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1518261             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF04                |
| Product key                          | BF1CKD              |
| Catalog page                         | Page 433 (C-2-2017) |
| GTIN                                 | 4017918968380       |
| Weight per piece (including packing) | 67.4 g              |
| Weight per piece (excluding packing) | 64.6 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                       |
| Shielded             | yes                     |
| Coding               | A                       |

### Data management status

|                  |    |
|------------------|----|
| Article revision | 07 |
|------------------|----|

### 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

|                                |          |
|--------------------------------|----------|
| Insulation resistance          | ≥ 100 MΩ |
| Nominal voltage U <sub>N</sub> | 48 V AC  |
|                                | 60 V DC  |
| Nominal current I <sub>N</sub> | 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

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### 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)  |

### Connector

#### Connection 1

|                                 |                            |
|---------------------------------|----------------------------|
| Type                            | Plug straight 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 | 0.5 m |
|--------------|-------|

#### CANopen®/DeviceNet™, PUR, violet [920]

|                                                                                      |                                        |
|--------------------------------------------------------------------------------------|----------------------------------------|
| Dimensional drawing                                                                  |                                        |
|  |                                        |
| 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                                                                  | 2xAWG24/19+2xAWG22/19                  |
| 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)             |

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|                                               |                                                                                                                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | 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                       | 6.70 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                      | 2000.00 V (50 Hz, 1 min.)                                                                                                                                                                             |
| Minimum bending radius, fixed installation    | 5 x D                                                                                                                                                                                                 |
| Minimum bending radius, flexible installation | 10 x D                                                                                                                                                                                                |
| Smallest bending radius, fixed installation   | 34 mm                                                                                                                                                                                                 |
| Smallest bending radius, movable installation | 67 mm                                                                                                                                                                                                 |
| Dynamic load capacity (bending)               | Max. bending cycles: 5000000, Bending radius: 70 mm, Bending radius: 10 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                            | ≤ 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)                                                                                                                                                     |

Environmental and real-life conditions

# SAC-5P-MS/ 0,5-920/FS SCO - Bus system cable



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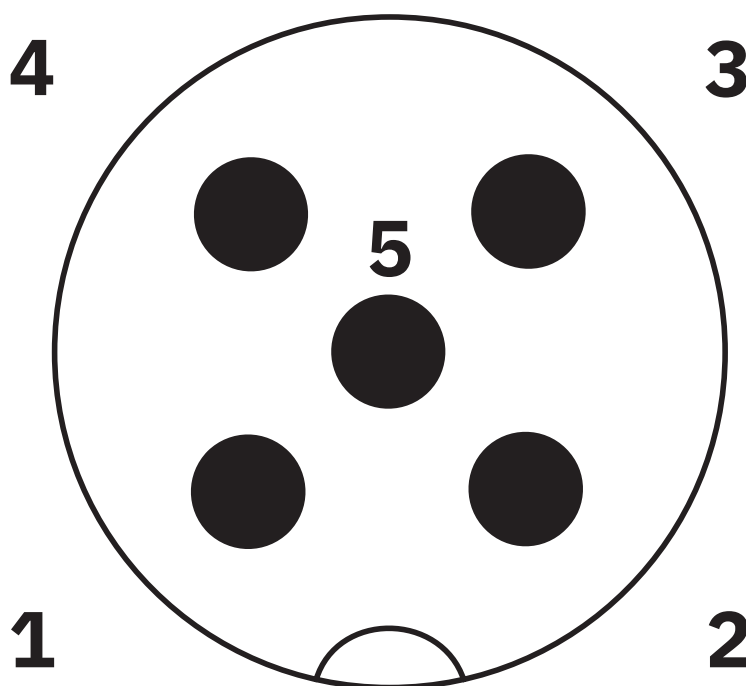
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Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |

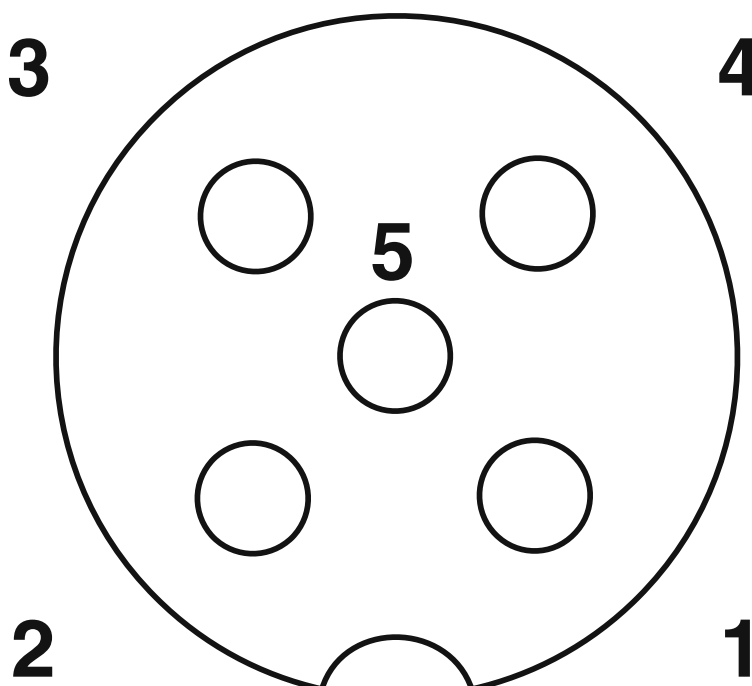
## Drawings

Schematic diagram



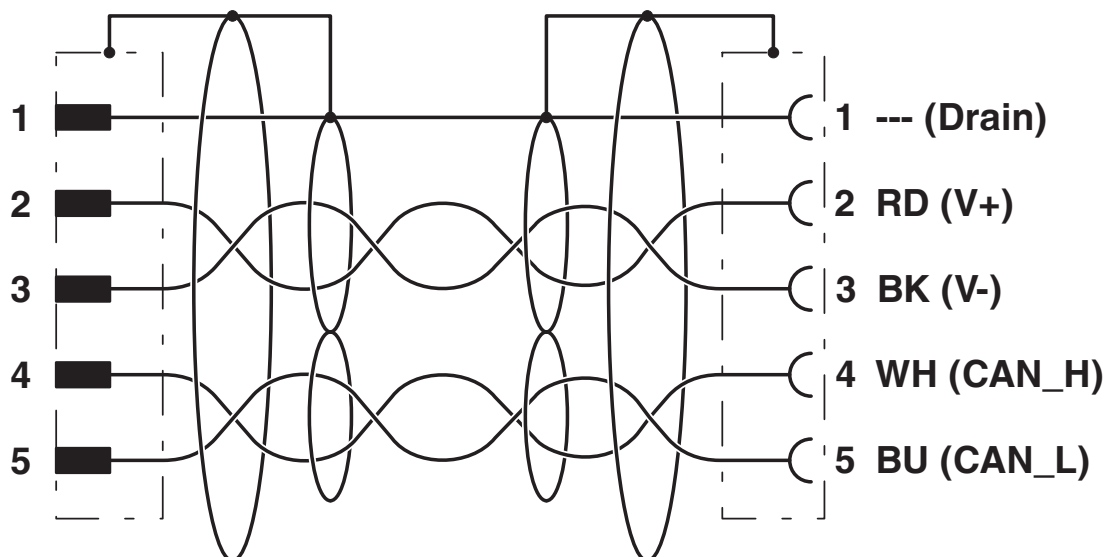
Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram

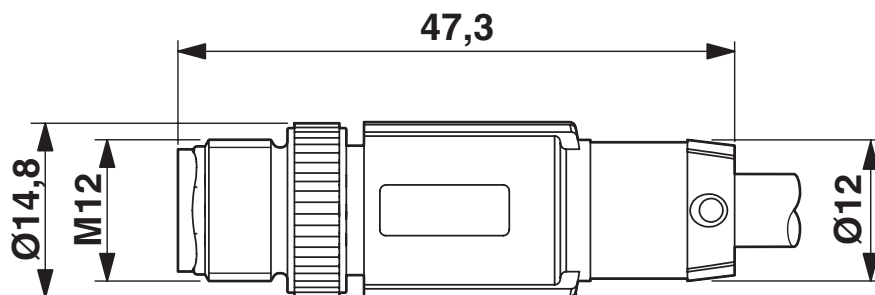


Pin assignment M12 socket, 5-pos., A-coded, socket side view

Circuit diagram



Dimensional drawing



Plug, M12 x 1, straight, shielded

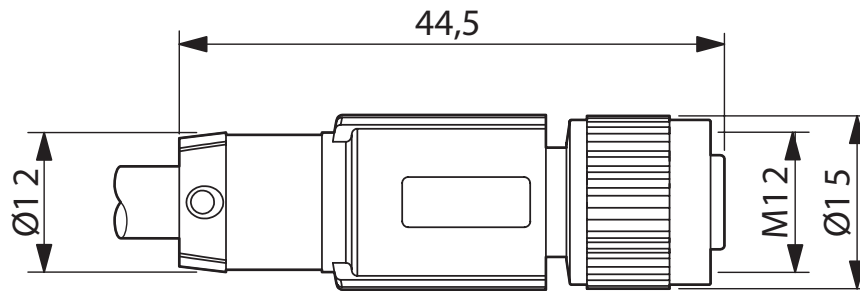
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Dimensional drawing



M12 x 1 socket, straight, shielded

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1518261>

|  |                                                |                       |                   |                             |
|--|------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>UL Listed</b><br>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                   | -                 | -                           |

|  |                                                 |                       |                   |                             |
|--|-------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>cUL Listed</b><br>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                   | -                 | -                           |

|  |                                                      |  |  |  |
|--|------------------------------------------------------|--|--|--|
|  | <b>EAC-RoHS</b><br>Approval ID: RU D-DE.HB35.B.00387 |  |  |  |
|  |                                                      |  |  |  |

|                     |  |  |  |  |
|---------------------|--|--|--|--|
| <b>cULus Listed</b> |  |  |  |  |
|---------------------|--|--|--|--|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 0.372 kg CO2e                            |

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