

## Bus system cable - SAC-5P-M12MS/ 4,0-920/M12FS - 1514472

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Bus system cable, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, PUR halogen-free, violet RAL 4001, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 4 m

RoHS

DeviceNet **CANopen**

### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 017918 918408 |
| GTIN                                 | 4017918918408                                                                                           |
| Weight per Piece (excluding packing) | 263.800 g                                                                                               |
| Custom tariff number                 | 85444290                                                                                                |
| Country of origin                    | Poland                                                                                                  |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 4 m |
|-----------------|-----|

#### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |
|                      | IP68 |

#### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 4 A     |
| Rated voltage         | 48 V AC |
|                       | 60 V DC |
| Number of positions   | 5       |

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## Technical data

### General

|                             |                            |
|-----------------------------|----------------------------|
| Insulation resistance       | $\geq 100 \text{ M}\Omega$ |
| Coding                      | A - standard               |
| Signal type/category        | CANopen <sup>®</sup>       |
|                             | DeviceNet <sup>™</sup>     |
| Status display              | No                         |
| Overvoltage category        | II                         |
| Degree of pollution         | 3                          |
| Insertion/withdrawal cycles | $\geq 100$                 |

### Material

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

### Standards and Regulations

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

### Cable

|                                     |                                                            |
|-------------------------------------|------------------------------------------------------------|
| Cable type                          | CANopen <sup>®</sup> /DeviceNet <sup>™</sup> , PUR, violet |
| Cable type (abbreviation)           | 920                                                        |
| UL AWM style                        | 21198 (80°C/300 V)                                         |
| Cable structure                     | 2xAWG24/19+2xAWG22/19                                      |
| 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)                       |
| AWG signal line                     | 24                                                         |
| AWG power supply                    | 22                                                         |
| Conductor structure signal line     | 19x 0.13 mm                                                |
| Conductor structure, voltage supply | 19x 0.15 mm                                                |
| Core diameter including insulation  | 1.95 mm $\pm$ 0.05 mm (Data cable)                         |
|                                     | 1.4 mm $\pm$ 0.05 mm (Power supply)                        |
| Wire colors                         | 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      |

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## Technical data

### Cable

|                                                 |                                                                    |
|-------------------------------------------------|--------------------------------------------------------------------|
| Shielding                                       | Tinned copper braided shield                                       |
| Optical shield covering                         | 80 %                                                               |
| External sheath, color                          | violet RAL 4001                                                    |
| External cable diameter D                       | 6.7 mm $\pm$ 0.3 mm                                                |
| Minimum bending radius, fixed installation      | 5 x D                                                              |
| Minimum bending radius, flexible installation   | 10 x D                                                             |
| Number of bending cycles                        | 5000000                                                            |
| Bending radius                                  | 70 mm                                                              |
| Minimum bending radius, drag chain applications | 10 x D                                                             |
| Traversing path                                 | 4.5 m                                                              |
| Traversing rate                                 | 3 m/s                                                              |
| Acceleration                                    | 3 m/s <sup>2</sup>                                                 |
| Cable weight                                    | 90 kg/km                                                           |
| Outer sheath, material                          | PUR                                                                |
| Material conductor insulation                   | Foamed PE (Data cable)                                             |
|                                                 | PE (Power supply)                                                  |
| Conductor material                              | Tin-plated Cu litz wires                                           |
| Insulation resistance                           | $\geq 5 \text{ G}\Omega\cdot\text{km}$ (Data cable)                |
|                                                 | $\geq 5 \text{ G}\Omega\cdot\text{km}$ (Power supply)              |
| Loop resistance                                 | $\leq 181.80 \text{ }\Omega/\text{km}$ (Data cable)                |
|                                                 | $\leq 114.80 \text{ }\Omega/\text{km}$ (Power supply)              |
| Cable capacity                                  | nom. 40 nF/km (Data cable)                                         |
| Wave impedance                                  | 120 $\Omega \pm 10 \%$ (with 1 MHz)                                |
| 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)                              |
| 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 V (50 Hz, 1 min.)                                             |
| Flame resistance                                | UL 1581, Sec. 1060 (FT-1)                                          |
|                                                 | IEC 60332-1                                                        |
|                                                 | in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)               |
| Halogen-free                                    | in accordance with DIN VDE 0472 part 815                           |
|                                                 | according to IEC 60754-1                                           |
| Other resistance                                | Low adhesion                                                       |
| Ambient temperature (operation)                 | -40 °C ... 80 °C (cable, fixed installation)                       |
|                                                 | -20 °C ... 80 °C (cable, flexible installation)                    |

## Bus system cable - SAC-5P-M12MS/ 4,0-920/M12FS - 1514472

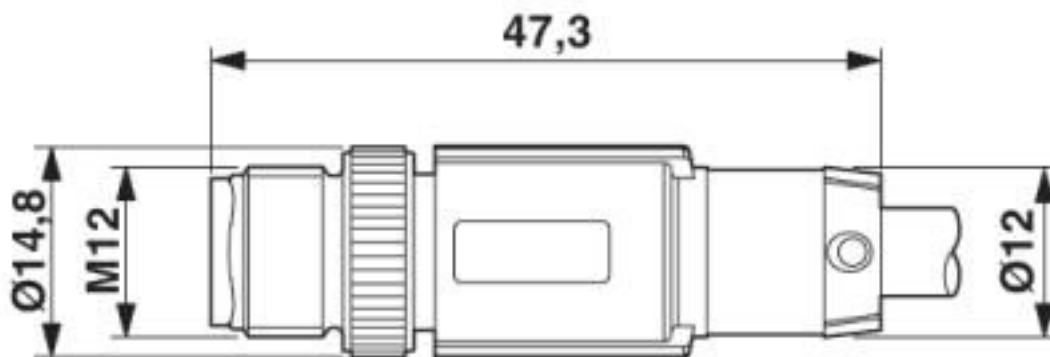
### Technical data

#### Environmental Product Compliance

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

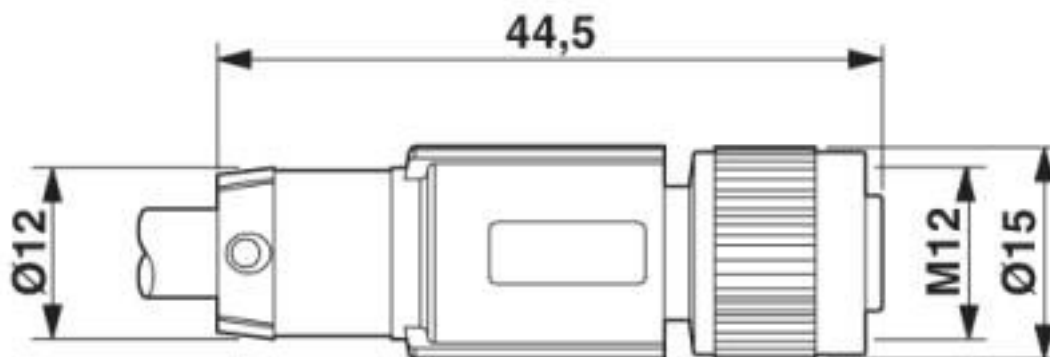
### Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

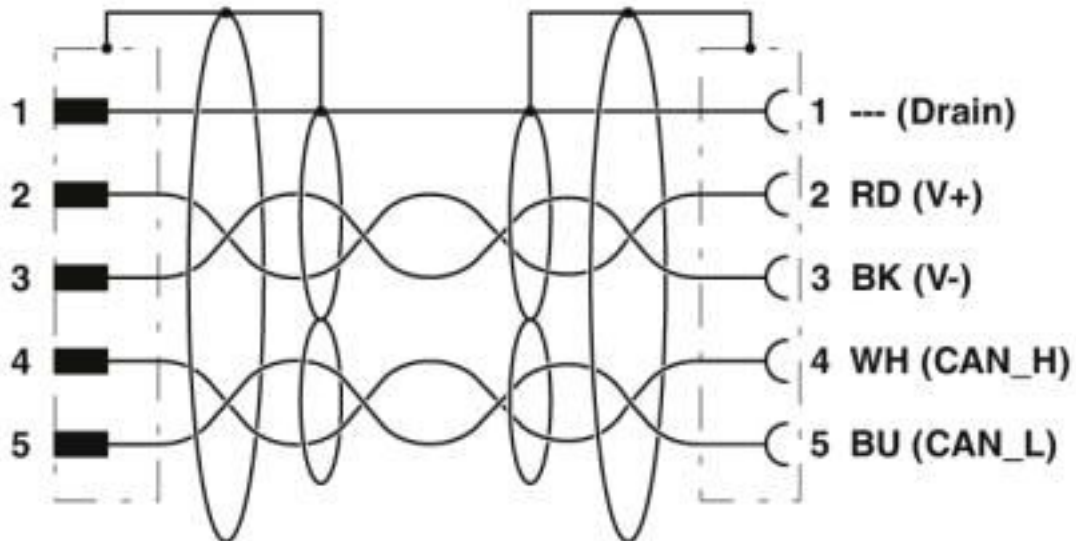
Dimensional drawing



M12 x 1 socket, straight, shielded

## Bus system cable - SAC-5P-M12MS/ 4,0-920/M12FS - 1514472

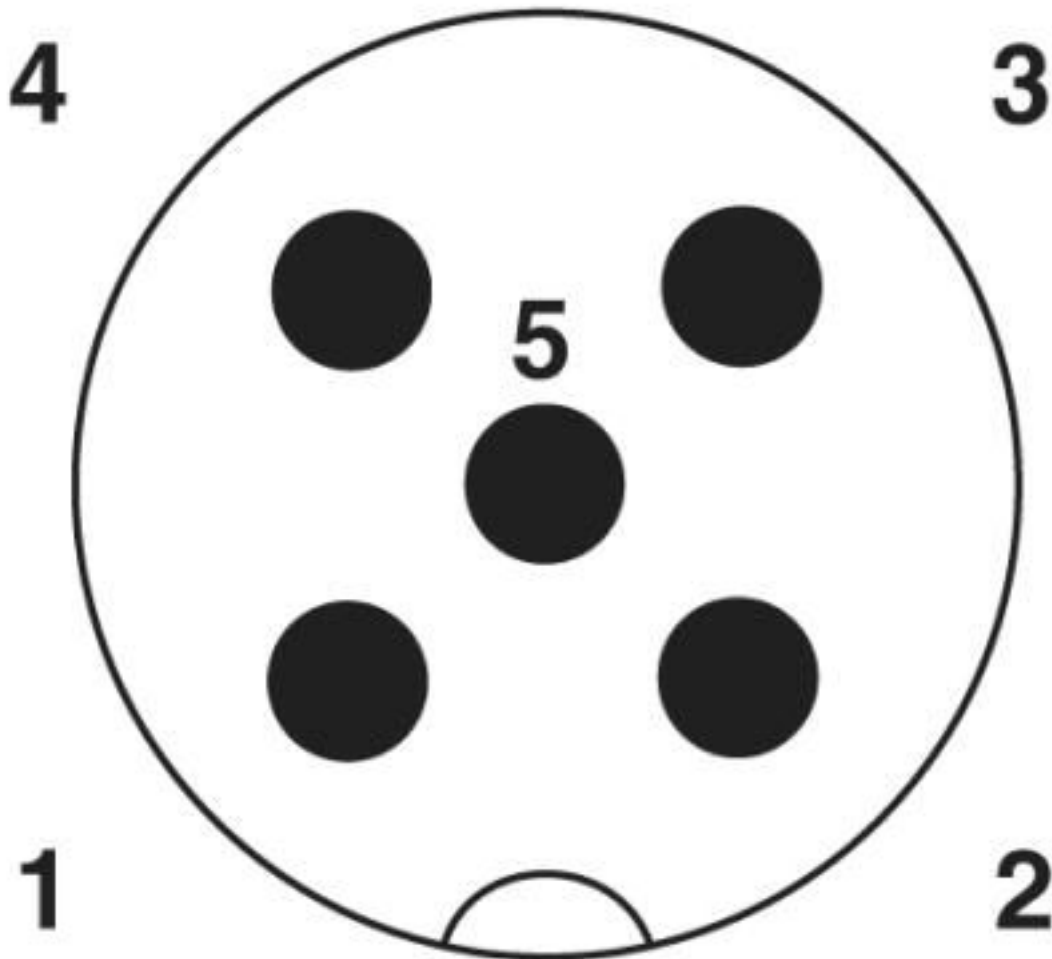
Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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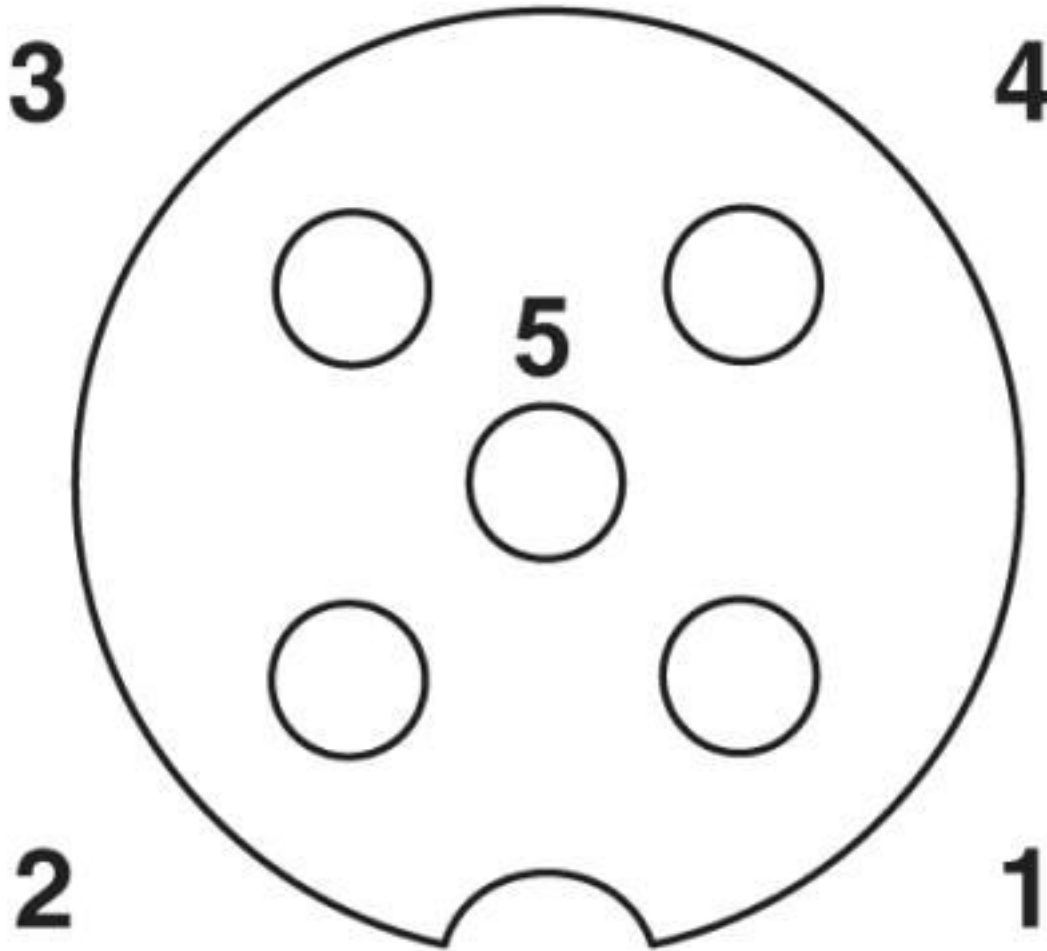
Schematic diagram



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

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Schematic diagram



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

Bus system cable - SAC-5P-M12MS/ 4,0-920/M12FS - 1514472

Cable cross section



CANopen<sup>®</sup>/DeviceNet<sup>™</sup>, PUR, violet [920]

Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060311 |
| eCl@ss 4.0    | 27060300 |
| eCl@ss 4.1    | 27060300 |
| eCl@ss 5.0    | 27061800 |
| eCl@ss 5.1    | 27061800 |
| eCl@ss 6.0    | 27279200 |
| eCl@ss 7.0    | 27279218 |

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### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 8.0 | 27279218 |
| eCl@ss 9.0 | 27060311 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC001855 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |
| ETIM 6.0 | EC001855 |
| ETIM 7.0 | EC001855 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 31251501 |
| UNSPSC 7.0901 | 31251501 |
| UNSPSC 11     | 31251501 |
| UNSPSC 12.01  | 31251501 |
| UNSPSC 13.2   | 31251501 |
| UNSPSC 19.0   | 31251501 |
| UNSPSC 20.0   | 31251501 |
| UNSPSC 21.0   | 31251501 |

### Approvals

#### Approvals

#### Approvals

#### EAC-RoHS

#### Ex Approvals

#### Approval details

|          |                                                                                     |                          |
|----------|-------------------------------------------------------------------------------------|--------------------------|
| EAC-RoHS |  | RU D-<br>DE.HB35.B.00387 |
|----------|-------------------------------------------------------------------------------------|--------------------------|

