

# SAC-5P-M12MS/ 3,0-920/M12FS - Bus system cable



1514100

<https://www.phoenixcontact.com/au/products/1514100>

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, red lilac RAL 4001, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 3 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1514100       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AF1CKD        |
| Product key                          | AF1CKD        |
| GTIN                                 | 4017918914868 |
| Weight per piece (including packing) | 210.2 g       |
| Weight per piece (excluding packing) | 210.2 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Sensor type          | CANopen®                |
| Number of positions  | 5                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| 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

|                       |          |
|-----------------------|----------|
| Insulation resistance | ≥ 100 MΩ |
| Nominal voltage $U_N$ | 48 V AC  |
|                       | 60 V DC  |
| Nominal current $I_N$ | 4 A      |

### Mechanical properties

#### Mechanical data

|                             |       |
|-----------------------------|-------|
| Insertion/withdrawal cycles | ≥ 100 |
|-----------------------------|-------|

### 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                |

### Connector

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## Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 5                 |
| Coding type         | A (Standard)      |

## Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 5                   |
| Coding type         | A (Standard)        |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 3 m |
|--------------|-----|

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

|                                |                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing            |  |
| 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                                                               |
| 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         | red lilac RAL 4001                                                                  |
| Conductor material             | Tin-plated Cu litz wires                                                            |
| Material wire insulation       | Foamed PE (Data cable)<br>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 %                                                                                |

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|                                               |                                                                                                                                                                                          |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insulation resistance                         | ≥ 5 GΩ*km (Data cable)                                                                                                                                                                   |
|                                               | ≥ 5 GΩ*km (Power supply)                                                                                                                                                                 |
| Wave impedance                                | 120 Ω ±10 % (with 1 MHz)                                                                                                                                                                 |
| 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    | 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/s², 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                              | 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)                                                                                                                                        |

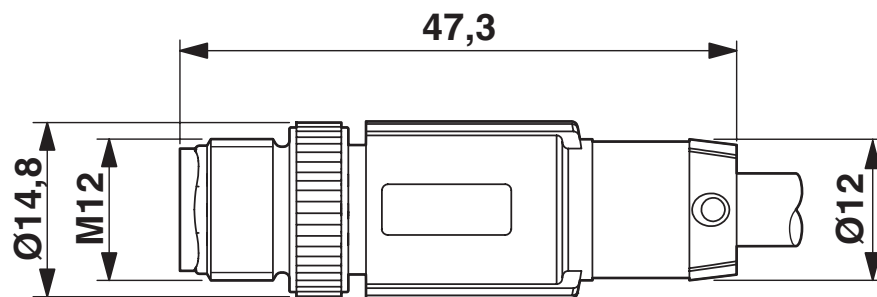
## Environmental and real-life conditions

### Ambient conditions

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Degree of protection            | IP65                                            |
|                                 | IP67                                            |
|                                 | IP68                                            |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)                |
|                                 | -40 °C ... 80 °C (cable, fixed installation)    |
|                                 | -20 °C ... 75 °C (Cable, flexible installation) |

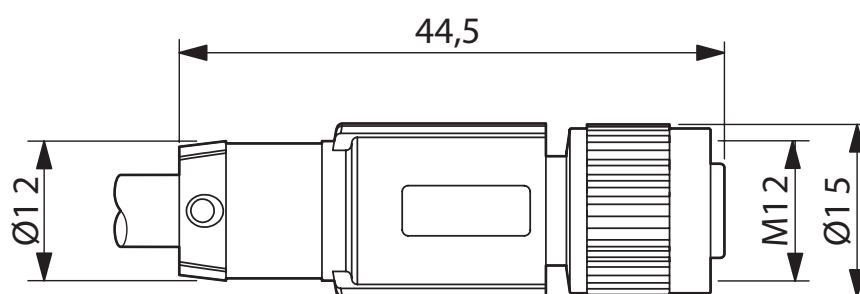
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



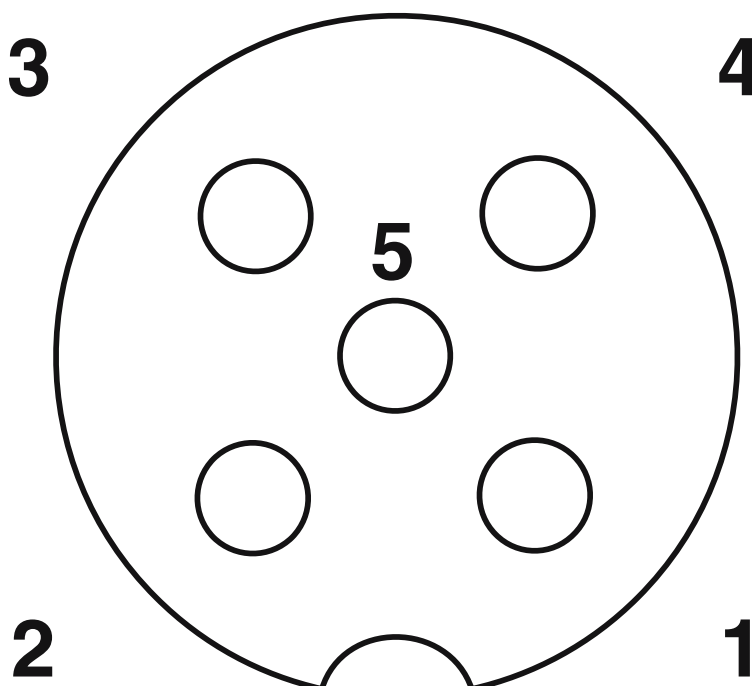
M12 x 1 socket, straight, shielded

Schematic diagram



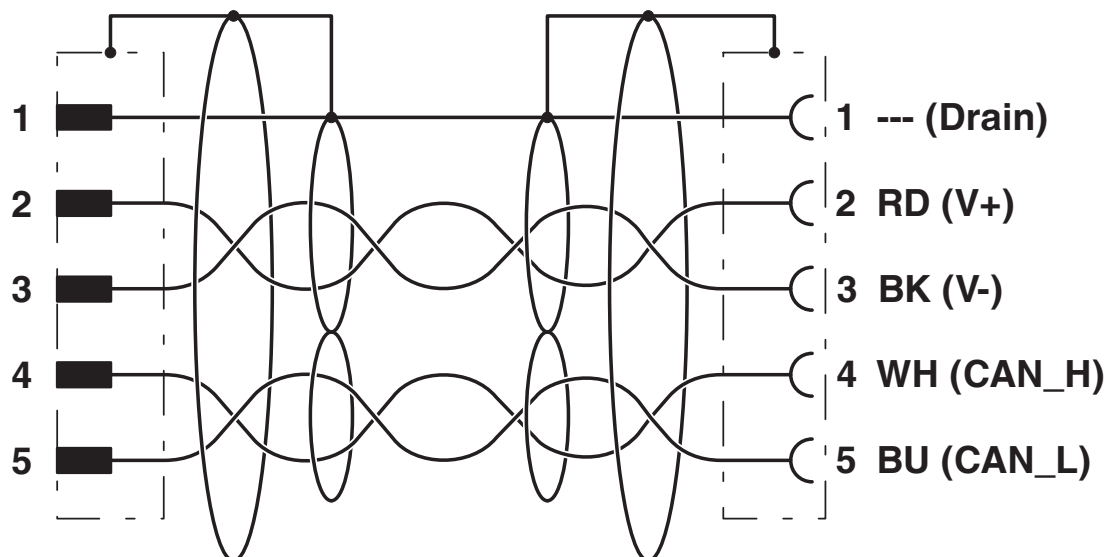
Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram



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

Circuit diagram



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 |
|-------------|----------|

### 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 | 1.042 kg CO2e |
|---------|---------------|

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