

# SAC-5PY-F/2X 2,0-920 - Bus system cable



1436123

<https://www.phoenixcontact.com/us/products/1436123>

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Bus system cable, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, PUR halogen-free, red lilac RAL 4001, shielded (Tinned copper braided shield), Socket straight M12 SPEEDCON, coding: A, on free cable end and free cable end, cable length: 2 m, Connector unshielded, Shield connected to pin 1

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1436123             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF10                |
| Product key                          | BF1GAD              |
| Catalog page                         | Page 434 (C-2-2019) |
| GTIN                                 | 4046356432375       |
| Weight per piece (including packing) | 265 g               |
| Weight per piece (excluding packing) | 265 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 <sup>®</sup>    |
| Number of positions | 5                       |
| Shielded            | no                      |
| Coding              | A                       |

### Insulation characteristics

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

### Interfaces

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

### 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                |

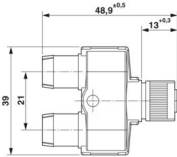
### Dimensions

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|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Center distance     | 21 mm                                                                              |

## Connection data

|                                                           |                               |
|-----------------------------------------------------------|-------------------------------|
| Pin assignment                                            |                               |
| Contact   Color (signal designation)   Contact (optional) | 1 (Distributor)   SR (shield) |
|                                                           | 2 (Distributor)   RD (V+)     |
|                                                           | 3 (Distributor)   BK (V-)     |
|                                                           | 4 (Distributor)   WH (CAN_H)  |
|                                                           | 5 (Distributor)   BU (CAN_L)  |

## Connector

|                                 |                              |
|---------------------------------|------------------------------|
| Connection 1                    |                              |
| Type                            | Socket straight M12 SPEEDCON |
| Number of positions             | 5                            |
| Locking type                    | SPEEDCON                     |
| Coding type                     | A (Standard)                 |
| Ambient temperature (operation) | -25 °C ... 90 °C             |
| Connection 2                    |                              |
| Type                            | free cable end               |
| Connection 3                    |                              |
| Type                            | free cable end               |

## Cable/line

|                                                                  |                                                                                      |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Cable length                                                     | 2 m                                                                                  |
| CANopen <sup>®</sup> /DeviceNet <sup>™</sup> , PUR, violet [920] |                                                                                      |
| Dimensional drawing                                              |  |
| Cable weight                                                     | 90 kg/km                                                                             |
| UL AWM Style                                                     | 21198 (80°C/300 V)                                                                   |
| Number of positions                                              | 4                                                                                    |

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|                                               |                                                                  |
|-----------------------------------------------|------------------------------------------------------------------|
| Shielded                                      | yes                                                              |
| Cable type                                    | CANopen <sup>®</sup> /DeviceNet <sup>™</sup> , 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 mm <sup>2</sup> (Data cable)                             |
|                                               | 2x 0.34 mm <sup>2</sup> (Power supply)                           |
|                                               | 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                                                            |
| Max. bending cycles                           | 5000000                                                          |
| 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                                                     |
|                                               | -40 °C ... 80 °C (cable, fixed installation)                     |

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|                                 |                                                   |
|---------------------------------|---------------------------------------------------|
| Ambient temperature (operation) | -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

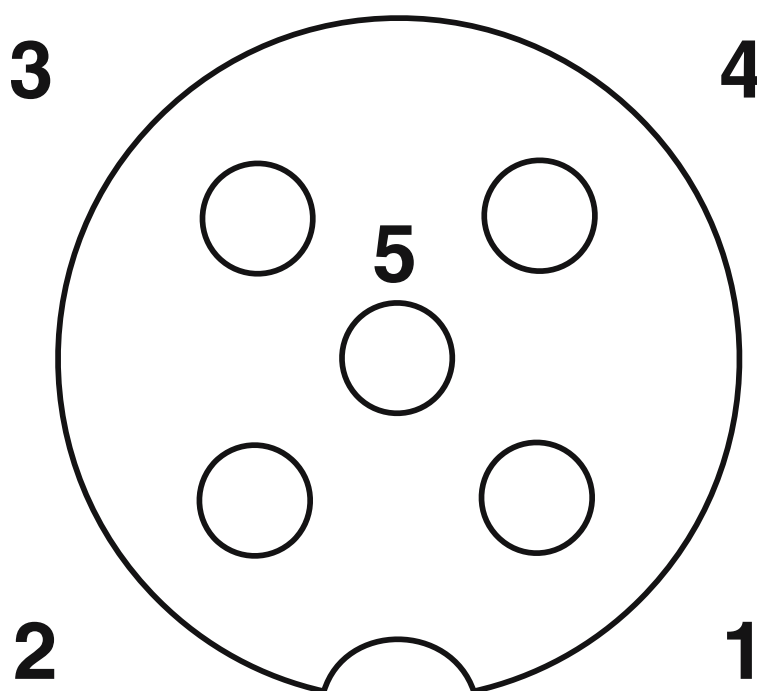
|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

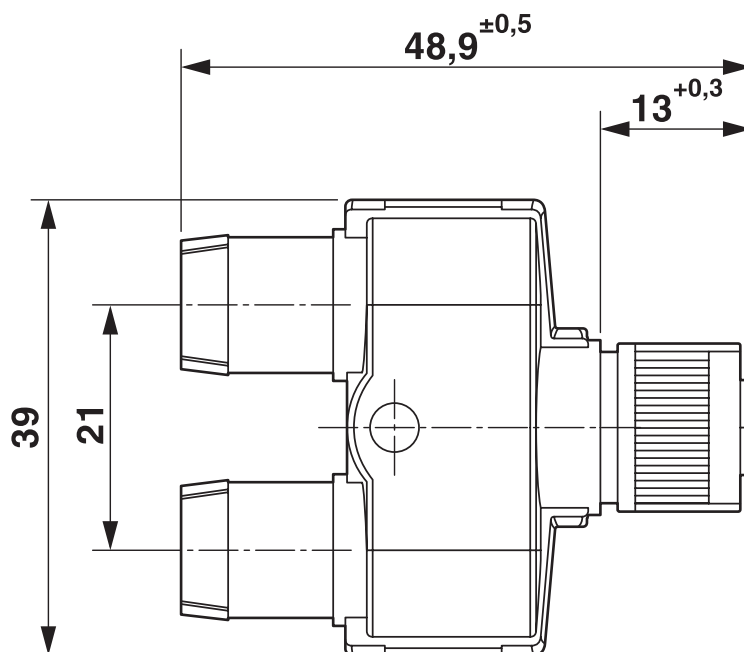
## Drawings

Schematic diagram



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

Dimensional drawing



M12-SPEEDCON socket, Y-distributor

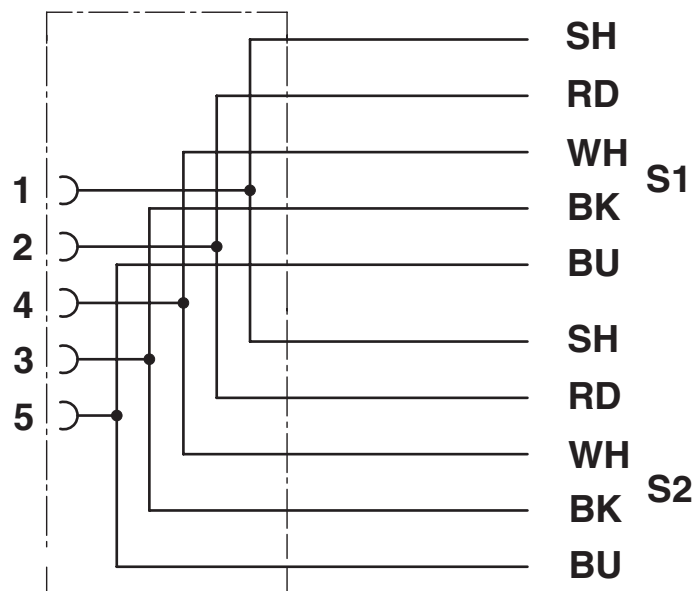
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Circuit diagram



# SAC-5PY-F/2X 2,0-920 - Bus system cable



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1436123>

|  |                                                |                       |                   |                             |
|--|------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <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> |
|---------------------|



# SAC-5PY-F/2X 2,0-920 - Bus system cable



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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%               |

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## Accessories

### PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/us/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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### SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/us/products/1558991>

Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## SACC-M12FS-5PL SH DN - Data connector

1424672

<https://www.phoenixcontact.com/us/products/1424672>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, shielded, Socket straight M12, coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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## SACC-M12MS-5PL SH DN - Data connector

1424670

<https://www.phoenixcontact.com/us/products/1424670>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, shielded, Plug straight M12, coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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## SACC-M12FR-5PL SH DN - Data connector

1424673

<https://www.phoenixcontact.com/us/products/1424673>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, shielded, Socket angled M12, coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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## SACC-M12MR-5PL SH DN - Data connector

1424671

<https://www.phoenixcontact.com/us/products/1424671>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, shielded, Plug angled M12, coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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## SACC-M12FS-5QO SH DN - Data connector

1422760

<https://www.phoenixcontact.com/us/products/1422760>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, halogen-free, shielded, Socket straight M12, coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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## SACC-M12MS-5QO SH DN - Data connector

1422759

<https://www.phoenixcontact.com/us/products/1422759>



Data connector, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, halogen-free, shielded, Plug straight M12, coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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## SAC-5PH-M-F/2XF SH1 SCO - H distributor

1417414

<https://www.phoenixcontact.com/us/products/1417414>



H distributor, 5-position, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Thread M12 not rotatable, Parallel distributor

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## SAC-5P-M12T/2XM12 VP - T distributor

1541186

<https://www.phoenixcontact.com/us/products/1541186>



T distributor, 5-position, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Parallel distributor

# SAC-5PY-F/2X 2,0-920 - Bus system cable

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<https://www.phoenixcontact.com/us/products/1436123>



## SAC-5PT-F/F-M VP - T distributor

1424712

<https://www.phoenixcontact.com/us/products/1424712>



T distributor, CANopen<sup>®</sup>, DeviceNet<sup>™</sup>, 5-position, Socket straight M12, coding: A, on Socket straight M12, coding: A and Plug straight M12, coding: A, Parallel distributor

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## SAC-5P-M12MS CAN TR - Termination resistor

1507816

<https://www.phoenixcontact.com/us/products/1507816>



Terminating resistor CANopen<sup>®</sup>/DeviceNet<sup>™</sup> M12



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## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/us/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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## TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/us/products/1212224>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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<https://www.phoenixcontact.com/us/products/1436123>

## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/us/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/us/products/1208432>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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