

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



1436097

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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 free cable end and free cable end, cable length: 5 m, Connector unshielded, Shield connected to pin 1

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1436097       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF10          |
| Product key                          | AF1GAD        |
| GTIN                                 | 4046356432344 |
| Weight per piece (including packing) | 601.9 g       |
| Weight per piece (excluding packing) | 601.9 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                     |                         |
|---------------------|-------------------------|
| Product type        | Data cable preassembled |
| Application         | Standard                |
| Number of positions | 5                       |
| Shielded            | no                      |
| Coding              | A                       |

### Insulation characteristics

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

### Interfaces

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

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

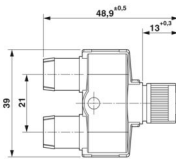
### Electrical properties

|                       |                    |
|-----------------------|--------------------|
| Insulation resistance | ≥ 100 MΩ           |
| Nominal voltage $U_N$ | 48 V AC<br>60 V DC |
| Nominal current $I_N$ | 4 A                |
| Transmission medium   | Copper             |

### Material specifications

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

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

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## Connection data

### Connection 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                            | 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 | free cable end |
|------|----------------|


### Connection 3

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 5 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 mm <sup>2</sup> (Data cable)<br>2x 0.34 mm <sup>2</sup> (Power supply)<br>1x 0.34 mm <sup>2</sup> (Drain wire) |

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|   |  |
|---|--|
| 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  |
| 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)   |
| 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)   |
| Special properties                            | Flexible cable conduit capable   |
| 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 |

## Standards and regulations

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

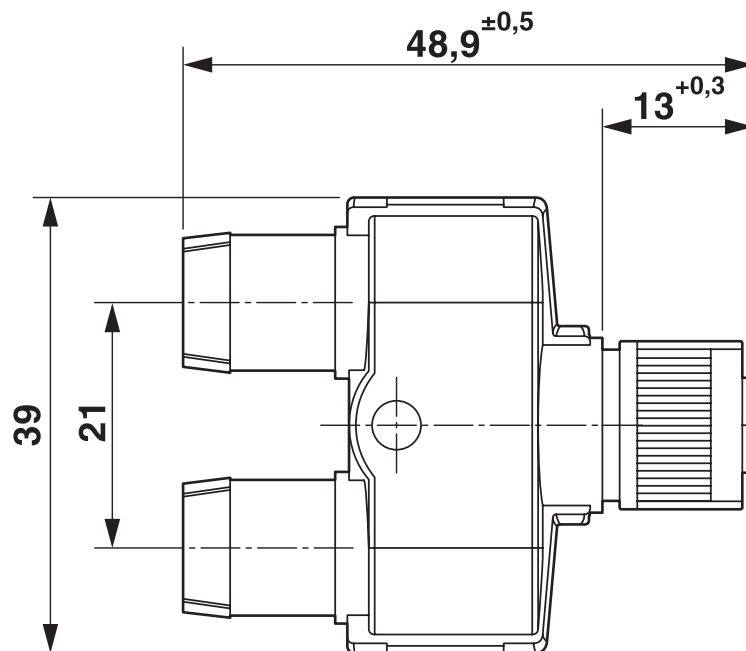
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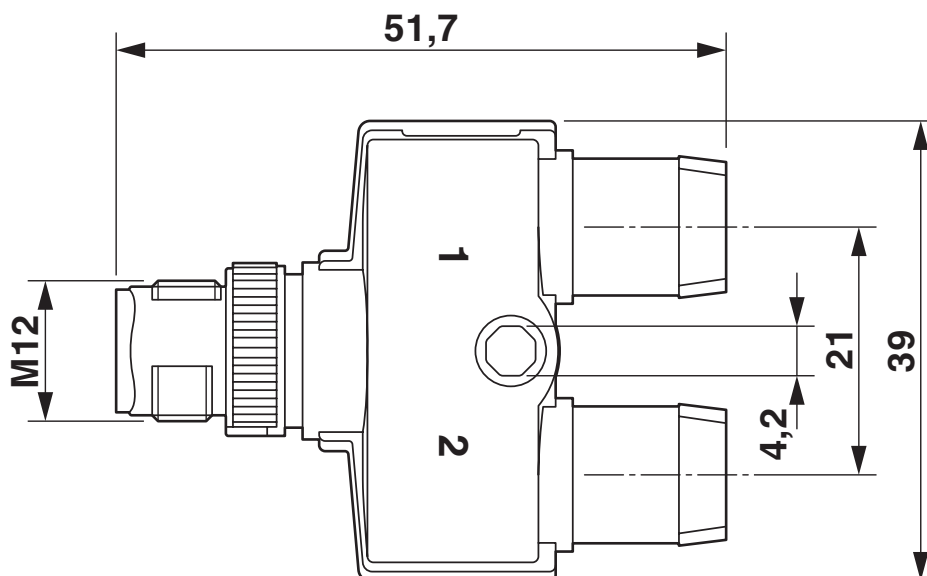
## Drawings

Dimensional drawing



The figure shows the variant with socket

Dimensional drawing



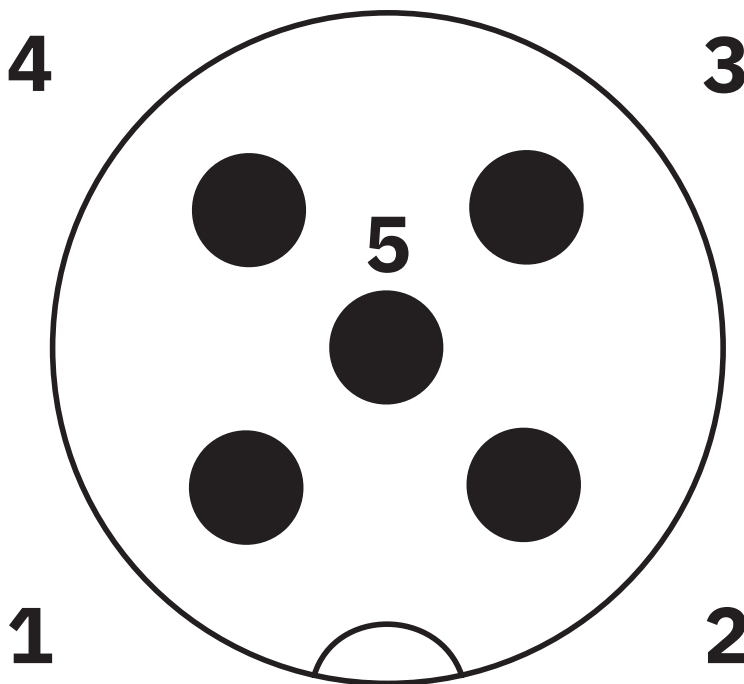
M12 SPEEDCON Y plugs

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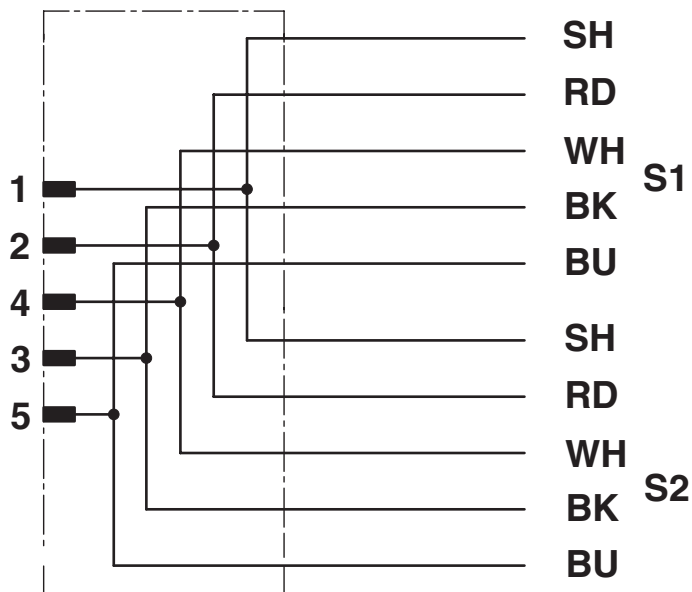
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Schematic diagram



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

Circuit diagram



Contact assignment of the M12 plug

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1436097>

|  <b>UL Listed</b><br>Approval ID: FILE E 221474 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  |                       |                       |                   |                             |
|  | 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 $\text{mm}^2$ |
| keine   |                       |                       |                   |                             |
|   | 125 V                 | 4 A                   | -                 | -                           |

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

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## Classifications

### ECLASS

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

### 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 2.692 kg CO2e |
|---------|---------------|

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