

# SAC-5P-M12MS/ 0,5-924/M12FS - Bus system cable



1405989

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Bus system cable, CANopen®, DeviceNet™, 5-position, PVC, gray, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 0.5 m, Connector unshielded

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1405989                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF15                           |
| Product key                          | AF1IHE                         |
| GTIN                                 | 4046356800396                  |
| Weight per piece (including packing) | 51.4 g                         |
| Weight per piece (excluding packing) | 53.1 g                         |
| Customs tariff number                | 85444290                       |
| Country of origin                    | US                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard, U.S. cables   |
| 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 <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                |

### Connector

#### Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 5                 |

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|             |              |
|-------------|--------------|
| Coding type | A (Standard) |
|-------------|--------------|

## Connection 2

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

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 0.5 m |
|--------------|-------|

CANopen®/DeviceNet™, PVC, gray [924]

|                                     |                                                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing                 |  |
| Cable weight                        |                                                                                     |
| UL AWM Style                        | 2464 (80°C/300 V)                                                                   |
| Number of positions                 | 4                                                                                   |
| Shielded                            | yes                                                                                 |
| Cable type                          | CANopen®/DeviceNet™, PVC, gray [924]                                                |
| Conductor structure                 | 2xAWG22 (Signal) + 2xAWG22 (Power)                                                  |
| Signal runtime                      | 4.46 ns/m                                                                           |
| Conductor structure signal line     | 19x 0.15 mm                                                                         |
| AWG signal line                     | 22                                                                                  |
| Conductor structure, voltage supply | 19x 0.15 mm                                                                         |
| AWG power supply                    | 22                                                                                  |
| Conductor cross section             | 2x 0.34 mm² (Signal line)<br>2x 0.34 mm² (Power supply)                             |
| Wire diameter incl. insulation      | 1.27 mm ±0.05 mm (Signal line)<br>2.24 mm ±0.13 mm (Power supply)                   |
| External cable diameter             | 6.90 mm ±0.13 mm                                                                    |
| Outer sheath, material              | PVC                                                                                 |
| External sheath, color              | gray                                                                                |
| Conductor material                  | Bare Cu litz wires                                                                  |
| Material wire insulation            | Foamed PE (Signal line)<br>PVC (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 inside                                  |
| Overall twist                       | 2 pairs around a drain wire in the center to the core                               |
| Insulation resistance               | ≥ 59.38 Ω*m (Signal line)                                                           |

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|                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
|                                               | ≥ 57.41 GΩ*km (Power supply)                 |
| Wave impedance                                | 120 Ω ±12 Ω                                  |
| Working capacitance                           | nom. 78.74 pF (per meter)                    |
| Minimum bending radius, flexible installation | 15 x D                                       |
| Smallest bending radius, movable installation | 104 mm                                       |
| Shield attenuation                            | 0.95 dB (f = 125 kHz)                        |
|                                               | 1.64 dB (f = 500 kHz)                        |
|                                               | 2.30 dB (f = 1 MHz)                          |
| Flame resistance                              | FT4                                          |
| Resistance to oil                             | yes                                          |
| Other resistance                              | UV resistant                                 |
| Special properties                            | UL standards PLTC and ITC                    |
| Ambient temperature (operation)               | -30 °C ... 75 °C (cable, fixed installation) |

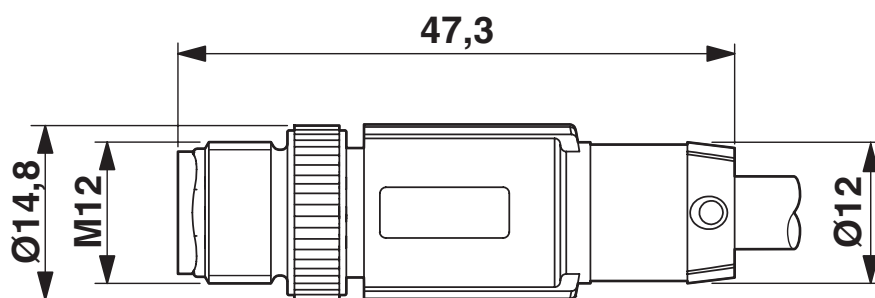
## Environmental and real-life conditions

### Ambient conditions

|                                                                   |                                  |
|-------------------------------------------------------------------|----------------------------------|
| Degree of protection                                              | IP65                             |
|                                                                   | IP67                             |
|                                                                   | IP68                             |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket) |

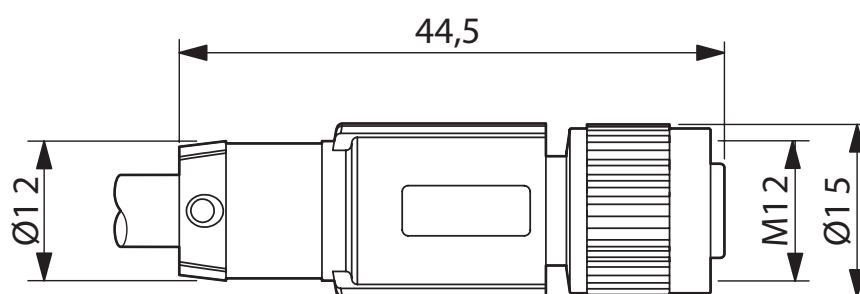
## Drawings

Dimensional drawing



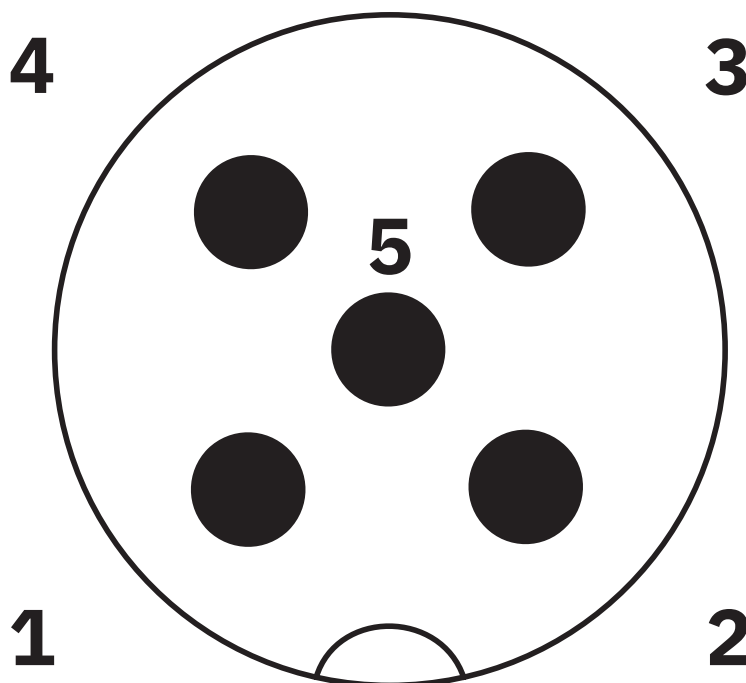
M12 x 1 plug, straight

Dimensional drawing



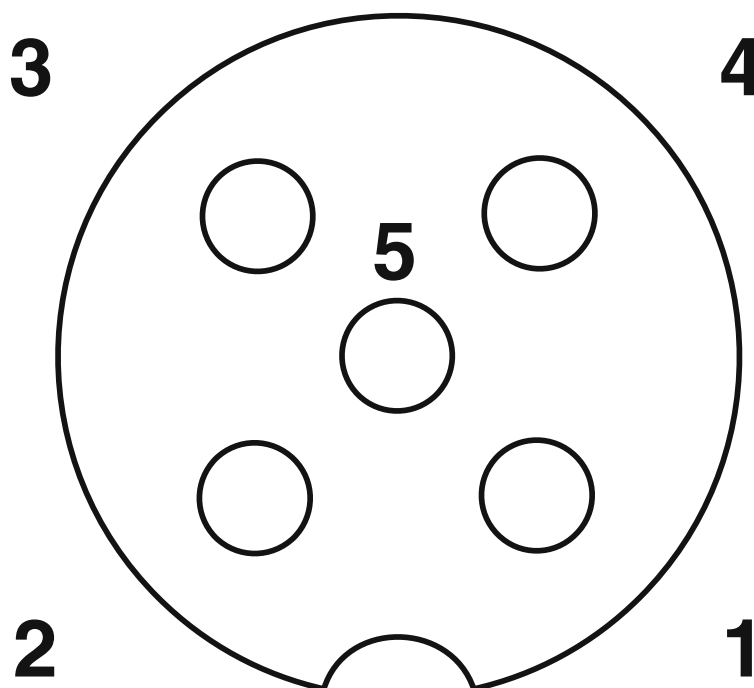
M12 x 1 socket, straight

Schematic diagram



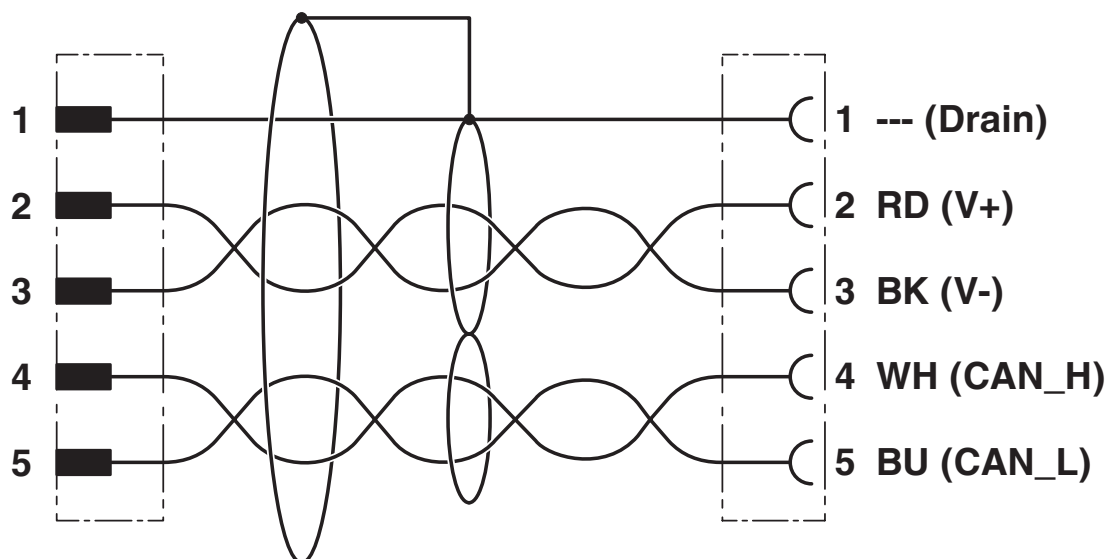
Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram



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

Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Approvals

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|  <b>UL Listed</b><br>Approval ID: FILE E 221474 |                                |                                |                   |                               |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                  | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                            |                                |                                |                   |                               |
|                                                                                                                                  | 125 V                          | 4 A                            | -                 | -                             |

|  <b>cUL Listed</b><br>Approval ID: FILE E 221474 |                                |                                |                   |                               |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                   | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                             |                                |                                |                   |                               |
|                                                                                                                                   | 125 V                          | 4 A                            | -                 | -                             |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 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.) | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA)(CAS: 123-77-3) |
| SCIP                                | 5edda8a7-5c7e-4dd9-bf3e-5cabae95cd00                                    |

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.552 kg CO2e |
|---------|---------------|

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