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Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, shielded (Tinned copper braided shield), free cable end, on Socket straight M12, coding: A, cable length: 10 m

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1500716             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF03                |
| Product key                          | BF1CJA              |
| Catalog page                         | Page 199 (C-2-2019) |
| GTIN                                 | 4017918610777       |
| Weight per piece (including packing) | 393.066 g           |
| Weight per piece (excluding packing) | 381.1 g             |
| Customs tariff number                | 85444290            |
| Country of origin                    | PL                  |

## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 4                     |
| Application          | Standard              |
| No. of cable outlets | 1                     |
| Shielded             | yes                   |
| Coding               | A                     |

### Insulation characteristics

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

### 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                |

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 48 V AC                    |
|                       | 60 V DC                    |
| Nominal current $I_N$ | 4 A                        |
| Protective circuit    | unwired                    |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Signaling

|                        |    |
|------------------------|----|
| Status display         | No |
| Status display present | No |

### Connection data

#### Conductor connection

|                   |                        |
|-------------------|------------------------|
| Tightening torque | 0.4 Nm (M12 connector) |
|-------------------|------------------------|

### Connector

# SAC-4P-10,0-PUR/M12FS SH - Sensor/actuator cable



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## Connection 1

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

## Connection 2

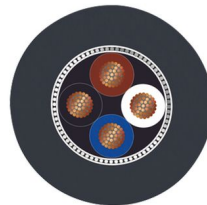
|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 4                   |
| Coding type         | A                   |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 10 m |
|--------------|------|

## PUR halogen-free black [PUR]

### Dimensional drawing



|                                 |                                                             |
|---------------------------------|-------------------------------------------------------------|
| Cable weight                    | 36 kg/km                                                    |
| UL AWM Style                    | 20549 / 10493 (80°C/300 V)                                  |
| Number of positions             | 4                                                           |
| Shielded                        | yes                                                         |
| Cable type                      | PUR halogen-free black [PUR]                                |
| Conductor structure signal line | 42x 0.10 mm                                                 |
| AWG signal line                 | 22                                                          |
| Conductor cross section         | 4x 0.34 mm <sup>2</sup> (Signal line)                       |
| Wire diameter incl. insulation  | 1.27 mm ±0.02 mm (Signal line)                              |
| External cable diameter         | 4.95 mm ±0.2 mm                                             |
| Outer sheath, material          | PUR                                                         |
| External sheath, color          | black-gray RAL 7021                                         |
| Conductor material              | Bare Cu litz wires                                          |
| Material wire insulation        | PP                                                          |
| Single wire, color              | brown, white, blue, black                                   |
| Thickness, insulation           | ≥ 0.21 mm                                                   |
| Thickness, outer sheath         | approx. 0.50 mm                                             |
| Overall twist                   | 4 wires, twisted                                            |
| Optical shield covering         | 80 %                                                        |
| Max. conductor resistance       | max. 58 Ω/km (at 20 °C)                                     |
| Insulation resistance           | ≥ 100 GΩ*km (at 20 °C)                                      |
| Wave impedance                  | ≥ 62 Ω (f = 10 MHz)                                         |
| Cable capacity                  | ≤ 80 pF/m (Conductor-Conductor)<br>≤ 135 pF/m (Wire/shield) |

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|                                               |                                                                     |
|-----------------------------------------------|---------------------------------------------------------------------|
| Nominal voltage, cable                        | ≤ 300 V                                                             |
| Test voltage                                  | ≥ 3000 V                                                            |
| Minimum bending radius, fixed installation    | 5 x D                                                               |
| Minimum bending radius, flexible installation | 10 x D                                                              |
| Smallest bending radius, fixed installation   | 25 mm                                                               |
| Smallest bending radius, movable installation | 50 mm                                                               |
| Max. bending cycles                           | 10000000                                                            |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                            |
|                                               | in accordance with DIN EN 50267-2-1                                 |
| Flame resistance                              | in accordance with UL 758/1581 FT2                                  |
|                                               | DIN EN 60332-2-2 (20 s)                                             |
| Resistance to oil                             | in accordance with DIN EN 60811-2-1                                 |
| Other resistance                              | Highly resistant to acids, alkaline solutions and solvents          |
|                                               | hydrolysis and microbe resistant                                    |
|                                               | Resistant to salt water                                             |
|                                               | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)        |
|                                               | abrasion-resistant                                                  |
| Special properties                            | Flexible cable conduit capable                                      |
|                                               | Silicone-free                                                       |
|                                               | Free of substances which would hinder coating with paint or varnish |
|                                               | Low adhesion surface                                                |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)                        |
|                                               | -25 °C ... 80 °C (Cable, flexible installation)                     |

## Environmental and real-life conditions

### Ambient conditions

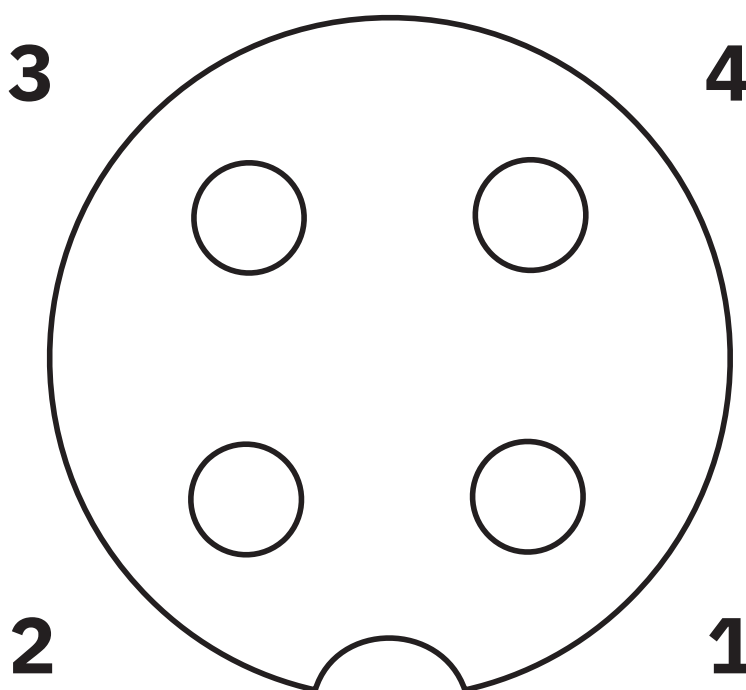
|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65                             |
|                                 | IP67                             |
| Ambient temperature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

## Standards and regulations

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

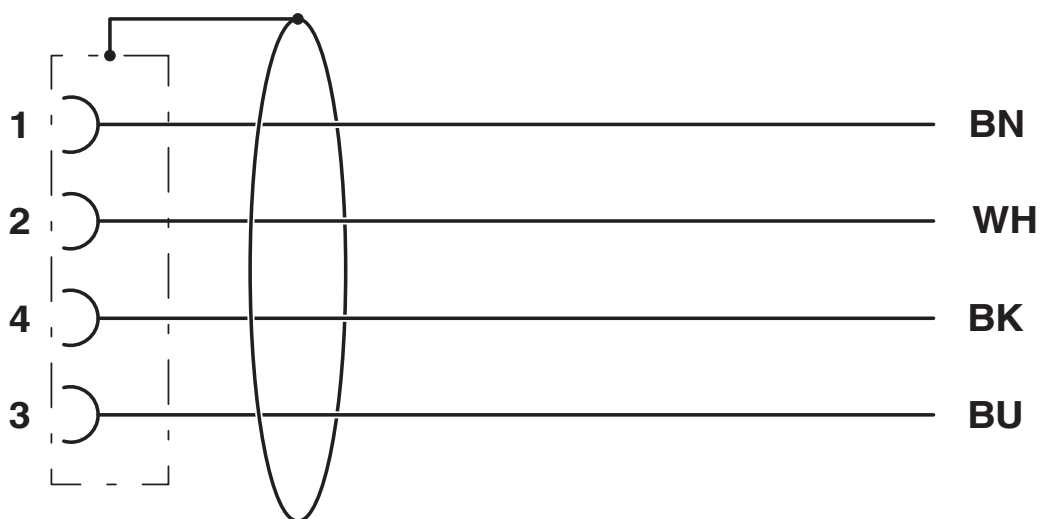
## Drawings

Schematic diagram



Pin assignment M12 socket, 4-pos., A-coded, view female side

Circuit diagram



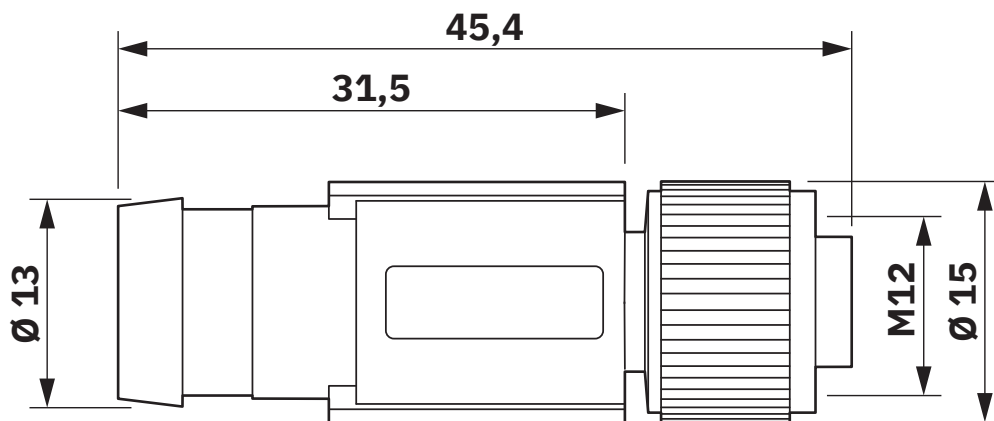
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Dimensional drawing

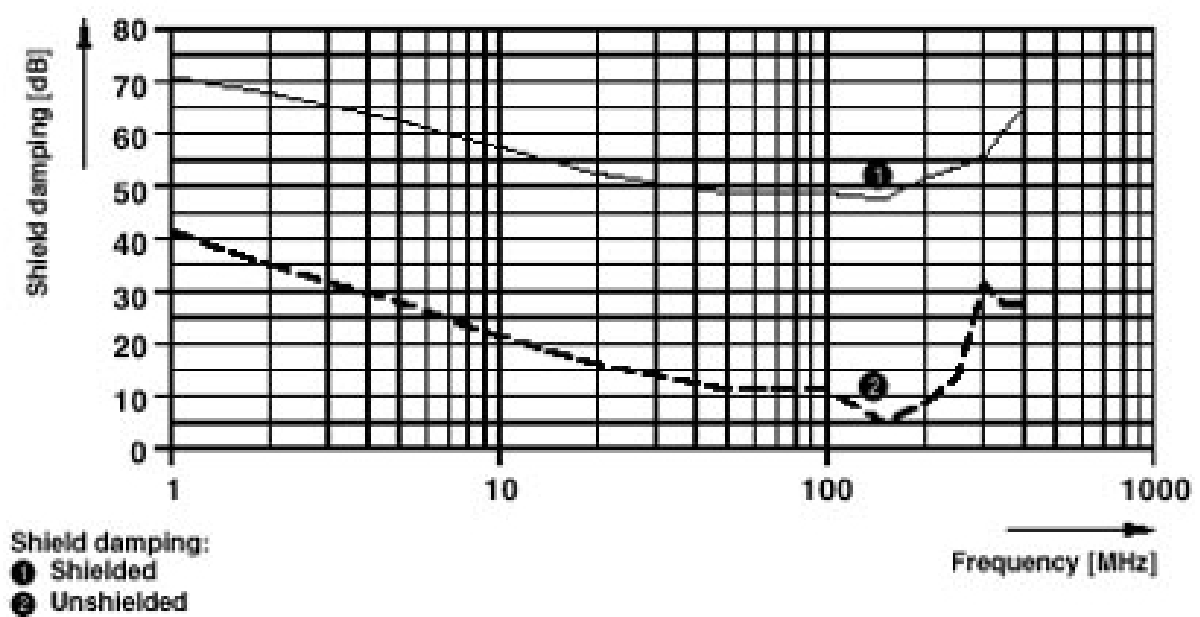


M12 x 1 socket, straight, shielded

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Diagram



# SAC-4P-10,0-PUR/M12FS SH - Sensor/actuator cable



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1500716>

|  |                                                |                                |                   |                               |
|--|------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <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> |
|  | 300 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> |
|  | 300 V                                           | 4 A                            | -                 | -                             |

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

|                     |  |  |  |  |
|---------------------|--|--|--|--|
| <b>cULus Listed</b> |  |  |  |  |
|---------------------|--|--|--|--|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060311 |
| ECLASS-12.0 | 27060311 |
| ECLASS-13.0 | 27060311 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

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

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