

SAC-3P- 1,5-PUR/M12FR-2L B - Sensor/actuator cable



1668250  
<https://www.phoenixcontact.com/us/products/1668250>

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12, coding: A, with 2 LEDs, PIN 2+4 bridged, cable length: 1.5 m

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Convenient: increased machine availability thanks to quick and easy diagnostics

Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1668250                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF03                           |
| Product key                          | BF1CBA                         |
| Catalog page                         | Page 188 (C-2-2019)            |
| GTIN                                 | 4017918137038                  |
| Weight per piece (including packing) | 44.2 g                         |
| Weight per piece (excluding packing) | 44 g                           |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard              |
| Number of positions  | 3                     |
| No. of cable outlets | 1                     |
| Shielded             | no                    |
| 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 $U_N$ | 24 V DC                    |
| Nominal current $I_N$ | 4 A                        |

### Mechanical properties

#### Mechanical data

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

### Signaling

|                        |        |
|------------------------|--------|
| Status display         | 2 LEDs |
| Status display present | Yes    |

### Connection data

#### Conductor connection

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

### Connector

#### Connection 1

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

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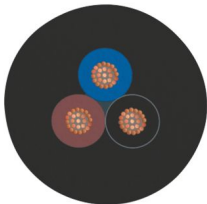
## Connection 2

|             |                   |
|-------------|-------------------|
| Type        | Socket angled M12 |
| Coding type | A                 |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 1.5 m |
|--------------|-------|

## PUR halogen-free black [PUR]

|                                               |                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------------------------|
| Dimensional drawing                           |  |
| Cable weight                                  | 23 kg/km                                                                           |
| UL AWM Style                                  | 20549                                                                              |
| Number of positions                           | 3                                                                                  |
| Shielded                                      | no                                                                                 |
| Cable type                                    | PUR halogen-free black [PUR]                                                       |
| Conductor structure signal line               | 42x 0.10 mm                                                                        |
| AWG signal line                               | 22                                                                                 |
| Conductor cross section                       | 3x 0.34 mm <sup>2</sup> (Signal line)                                              |
| Wire diameter incl. insulation                | 1.27 mm ±0.02 mm (Signal line)                                                     |
| External cable diameter                       | 3.85 mm ±0.15 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, blue, black                                                                 |
| Thickness, insulation                         | ≥ 0.21 mm (Core insulation)<br>approx. 0.50 mm (Outer cable sheath)                |
| Overall twist                                 | 3 wires, twisted                                                                   |
| Max. conductor resistance                     | max. 58 Ω/km (at 20 °C)                                                            |
| Insulation resistance                         | ≥ 100 GΩ*km (at 20 °C)                                                             |
| Nominal voltage, cable                        | ≤ 300 V                                                                            |
| Test voltage                                  | ≥ 3000 V                                                                           |
| Smallest bending radius, fixed installation   | 19 mm                                                                              |
| Smallest bending radius, movable installation | 38 mm                                                                              |
| Max. bending cycles                           | 10000000                                                                           |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                                           |
| Flame resistance                              | in accordance with UL 758/1581 FT2<br>DIN EN 60332-2-2 (20 s)                      |

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|                                 |                                                                     |
|---------------------------------|---------------------------------------------------------------------|
| 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                                    |
|                                 | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)        |
| Special properties              | Flexible cable conduit capable                                      |
|                                 | Silicone-free                                                       |
|                                 | Free of substances which would hinder coating with paint or varnish |
| 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                                           |
|                                 | IP68                                           |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)               |
|                                 | -40 °C ... 80 °C (cable, fixed installation)   |
|                                 | -5 °C ... 80 °C (Cable, flexible installation) |

## Standards and regulations

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

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)