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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, 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                          | 1694392             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF03                |
| Product key                          | BF1CBA              |
| Catalog page                         | Page 188 (C-2-2019) |
| GTIN                                 | 4017918178260       |
| Weight per piece (including packing) | 44.2 g              |
| Weight per piece (excluding packing) | 42.2 g              |
| Customs tariff number                | 85444290            |
| Country of origin                    | PL                  |

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



1694392

<https://www.phoenixcontact.com/us/products/1694392>

## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 3                     |
| Application          | Standard              |
| 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

|                       |                            |
|-----------------------|----------------------------|
| Contact resistance    | $\leq 5 \text{ m}\Omega$   |
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 24 V DC                    |
| Nominal current $I_N$ | 4 A                        |
| Protective circuit    | unwired                    |

### 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

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## Connection 1

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

## Connection 2

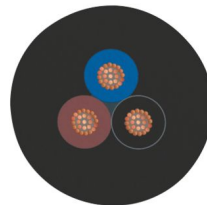
|                     |                   |
|---------------------|-------------------|
| Type                | Socket angled M12 |
| Number of positions | 3                 |
| Coding type         | A                 |

## 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                                                               |

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|                                 |                                                                                                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                                                  |
| Resistance to oil               | in accordance with DIN EN 60811-2-1                                                                                                                            |
| Other resistance                | Highly resistant to acids, alkaline solutions and solvents<br>hydrolysis and microbe resistant<br>partly UV-resistant (in accordance with DIN EN ISO 4892-2-A) |
| Special properties              | Flexible cable conduit capable<br>Silicone-free<br>Free of substances which would hinder coating with paint or varnish                                         |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)<br>-25 °C ... 80 °C (Cable, flexible installation)                                                                |

## Environmental and real-life conditions

### Ambient conditions

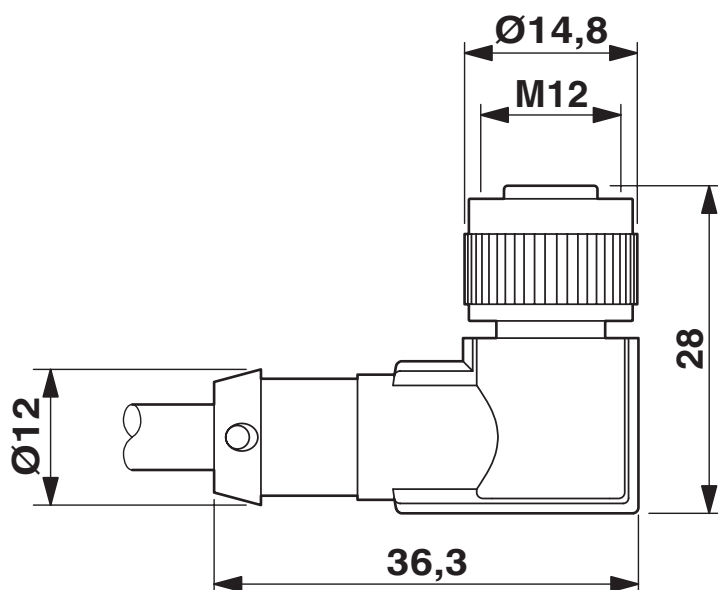
|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65<br>IP67<br>IP68             |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |

## Standards and regulations

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

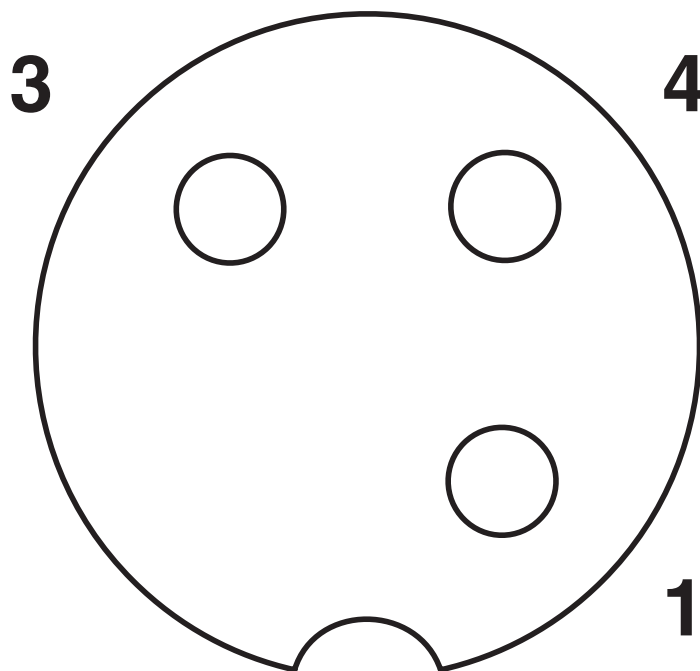
## Drawings

Dimensional drawing



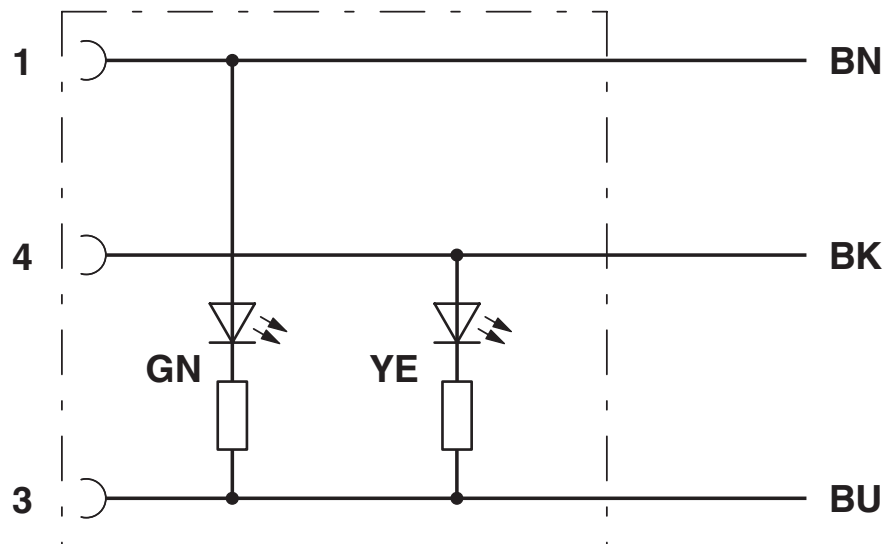
Socket M12 x 1, angled, with LED

Schematic diagram



Pin assignment M12 socket, 3-pos., A-coded, view female side

Circuit diagram



Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1694392>

|                                                                                   |                                                |                                |                   |                               |
|-----------------------------------------------------------------------------------|------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <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> |
|                                                                                   | 24 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> |
|                                                                                   | 24 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 |
|-------------|----------|



Environmental product compliance

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

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