

# SAC-3P-P12MR/ 1,5-PUR/P12FS - Sensor/actuator cable



1224009

<https://www.phoenixcontact.com/us/products/1224009>

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Sensor/actuator cable, 3-position halogen-free, Plug angled M12, coding: A Push Pull, connected with unwired, on Socket straight M12, coding: A Push Pull, cable length: 1.5 m

## Your advantages

- Easy and safe: 100% electrically tested plug-in components
- Save time, thanks to installation with push-pull fast locking

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1224009       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF06          |
| Product key                          | BF1CBC        |
| GTIN                                 | 4063151314132 |
| Weight per piece (including packing) | 62.7 g        |
| Weight per piece (excluding packing) | 62 g          |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## 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

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Material                               | PK                                          |
|                                        | PA                                          |
| Flammability rating according to UL 94 | V0                                          |
| Seal material                          | FKM                                         |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Contact material                       | CuSn                                        |
| Contact surface material               | Ni/Au                                       |
| Material for screw connection          | Brass, nickel-plated                        |

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Contact resistance    | $\leq 5 \text{ m}\Omega$   |
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 250 V AC                   |
|                       | 250 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 |

### Connector

#### Connection 1

|      |                           |
|------|---------------------------|
| Type | Plug angled M12 Push Pull |
|------|---------------------------|

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|                     |           |
|---------------------|-----------|
| Number of positions | 3         |
| Coding type         | A         |
| Number of positions | 3         |
| Locking type        | Push Pull |

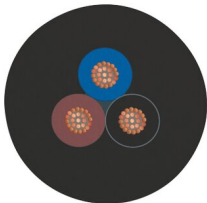
## Connection 2

|                     |                               |
|---------------------|-------------------------------|
| Type                | Socket straight M12 Push Pull |
| Number of positions | 3                             |
| Coding type         | A                             |
| Number of positions | 3                             |
| Locking type        | Push Pull                     |

## 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. 0.5 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                                                                              |

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|                                               |                                                                                                                                                              |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                                                |
| 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                     |
| Ambient temperature (operation) | -25 °C ... 85 °C (Plug / socket) |

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12-Push-Pull   |
| Standards/specifications | IEC 61076-2-010 |

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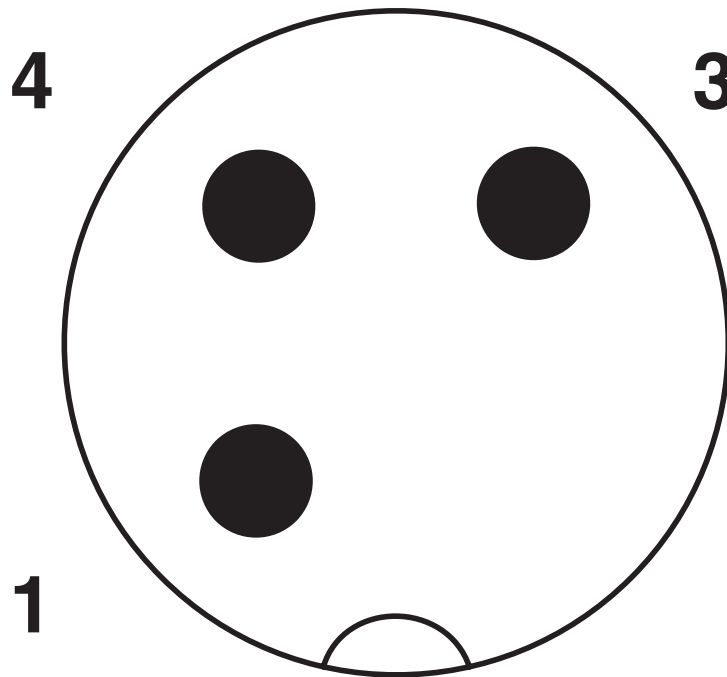


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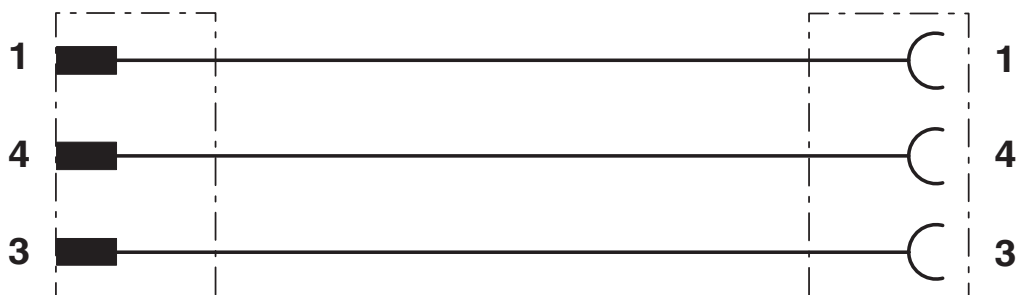
## Drawings

Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

Circuit diagram

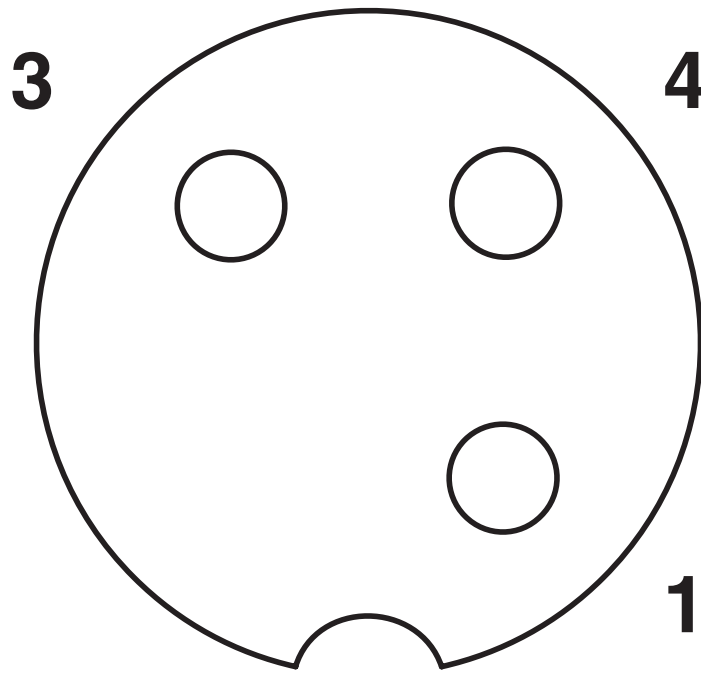


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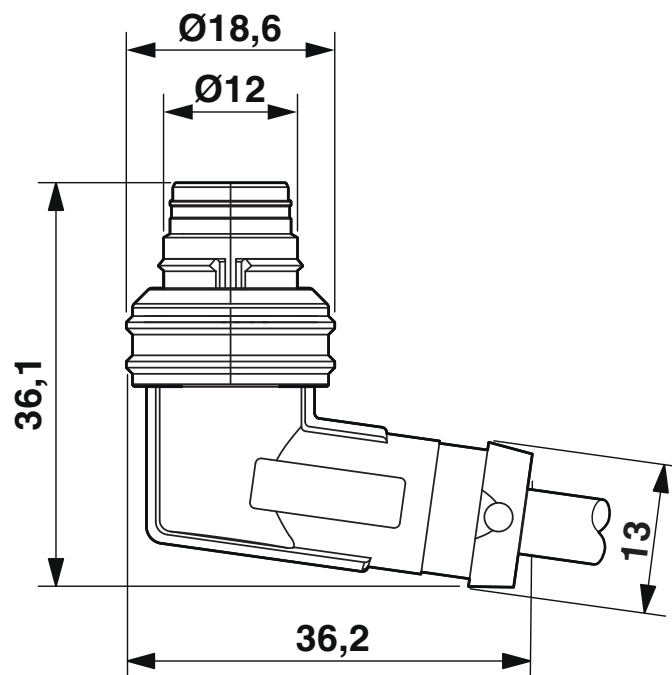
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Schematic diagram



Pin assignment socket M 12

Dimensional drawing



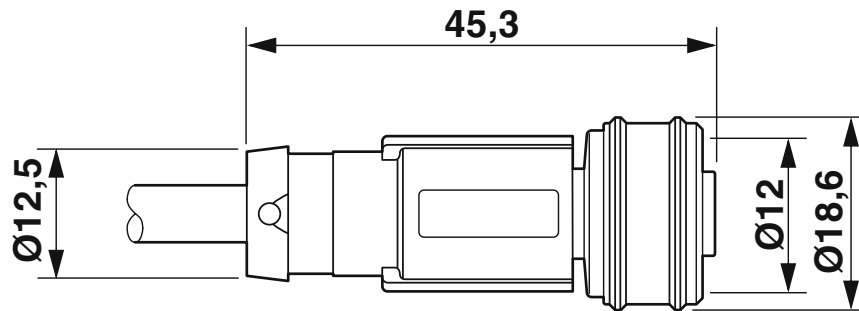
M12 push-pull male connector, angled

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Dimensional drawing



M12 push-pull female connector, straight

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | 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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