

# SAC-4P-M12MS/ 1,5-PUR P - Sensor/actuator cable



1442353

<https://www.phoenixcontact.com/us/products/1442353>

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Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12, coding: A, on free cable end, cable length: 1.5 m, with plastic knurl

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Save weight – our connectors with light plastic knurl

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1442353       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF03          |
| Product key                          | AF1CCA        |
| GTIN                                 | 4046356534925 |
| Weight per piece (including packing) | 45.5 g        |
| Weight per piece (excluding packing) | 44.9 g        |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard              |
| Number of positions  | 4                     |
| 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  |
| 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          | PA  |
| Outer sheath, material                 | PUR   |
| Conductor material                     | Bare Cu litz wires                          |

### Electrical properties

|                           |                            |
|---------------------------|----------------------------|
| Insulation resistance     | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$     | 250 V AC                   |
|                           | 250 V DC                   |
| Nominal current $I_N$     | 4 A                        |
| Max. conductor resistance | 58 $\Omega/\text{km}$      |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
| Max. bending cycles         | 4000000    |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Connection data

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

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## Connector

### Connection 1

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

### Connection 2

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

## Cable/line

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

### PUR halogen-free black [PUR]

|                                 |                              |
|---------------------------------|------------------------------|
| Dimensional drawing             |                              |
| Cable weight                    | 30 kg/km                     |
| UL AWM Style                    | 20549 / 10493 (80°C/300 V)   |
| Number of positions             | 4                            |
| Shielded                        | no                           |
| 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 mm² (Signal line)    |
| Wire diameter incl. insulation  | 1.27 mm ±0.02 mm             |
| External cable diameter         | 4.20 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, white, blue, black    |
| Thickness, insulation           | ≥ 0.21 mm                    |
| Thickness, outer sheath         | approx. 0.50 mm              |
| Overall twist                   | 4 wires, twisted             |
| Max. conductor resistance       | ≤ 58 Ω/km                    |
| Insulation resistance           | ≥ 1 GΩ*km                    |
| Nominal voltage, cable          | ≤ 300 V                      |
| Test voltage                    | ≥ 3000 V                     |

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|   |  |
|---|--|
| Minimum bending radius, fixed installation    | 5 x D  |
| Minimum bending radius, flexible installation | 10 x D   |
| Smallest bending radius, fixed installation   | 21 mm  |
| Smallest bending radius, movable installation | 42 mm  |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 42 mm, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup>                                       |
| Dynamic load capacity (torsion)               | Torsion: ±180 °/m, Torsion cycles: ≥2000000, Torsional frequency: 35 cycles/min.   |
| 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<br>hydrolysis and microbe resistant<br>partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)<br>Low adhesion<br>abrasion-resistant |
| Special properties                            | Flexible cable conduit capable<br>Silicone-free<br>Free of substances which would hinder coating with paint or varnish<br>flexible   |
| 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   |
|   | IP67   |
|   | IP68   |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket)               |
| Ambient temperature (operation) (Cable, fixed installation)       | -40 °C ... 80 °C (cable, fixed installation)   |
| Ambient temperature (operation) (Cable, flexible installation)    | -5 °C ... 80 °C (Cable, flexible installation) |

## Standards and regulations

### M12

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

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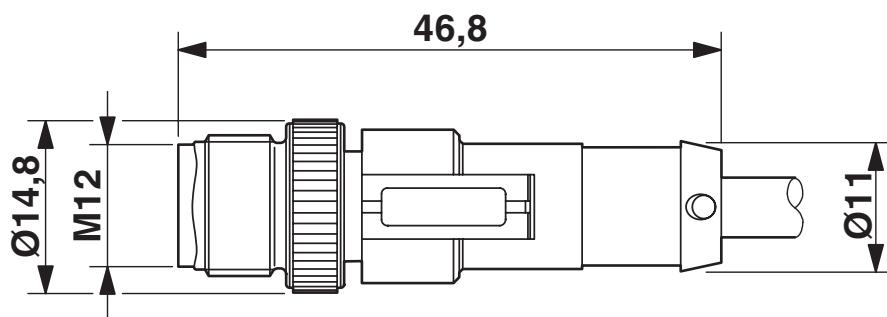


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## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

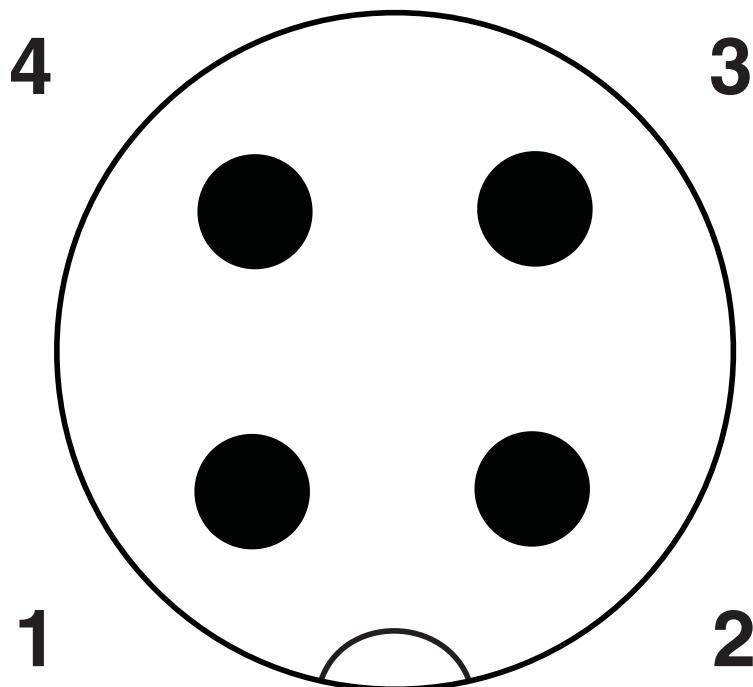
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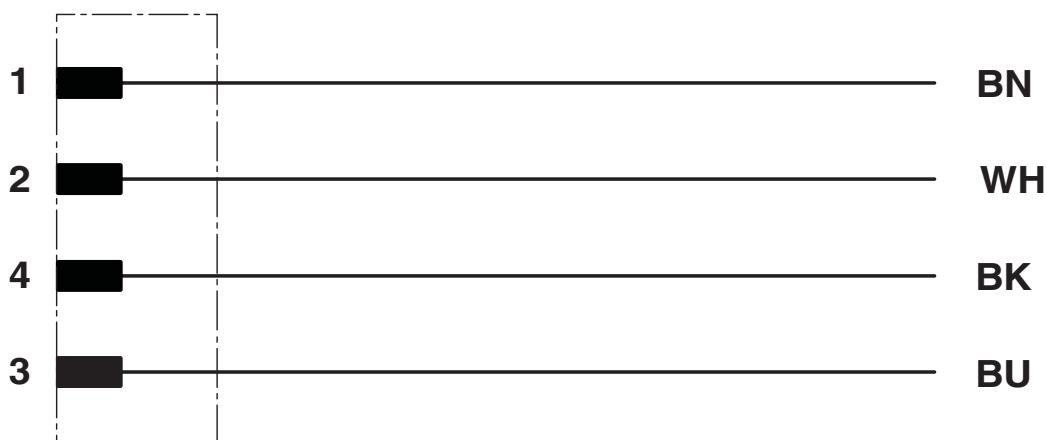


Schematic diagram



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

Circuit diagram



Contact assignment of the M12 plug

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## Approvals

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**UL Listed**

Approval ID: FILE E 221474

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|-------|-----------------------|-----------------------|-------------------|----------------------|
| keine | 300 V                 | 4 A                   | -                 | -                    |



**cUL Listed**

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|-------|-----------------------|-----------------------|-------------------|----------------------|
| keine | 300 V                 | 4 A                   | -                 | -                    |



**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
| ECLASS-15.0 | 27060311 |

### 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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.863 kg CO2e |
|---------|---------------|

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