

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Sensor/actuator cable, 4-position, PE-X/PE-X halogen-free, black-gray RAL 7021, shielded, Plug straight M12, coding: A, on free cable end, cable length: 2 m, for outdoor applications, with high-grade steel knurl

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Corrosion protection for all exposed metal parts, thanks to the use of stainless steel type 1.4404
- ✓ Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C to +105°C
- ✓ Reliable signal transmission – 360° shielding in environments with electromagnetic interference

RoHS

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 046356 568739 |
| GTIN         | 4046356568739                                                                                           |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 2 m |
|-----------------|-----|

#### Ambient conditions

|                                 |                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------|
| Ambient temperature (operation) | -40 °C ... 105 °C (Plug / socket)                                                 |
|                                 | -40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4)) |
| Degree of protection            | IP65                                                                              |
|                                 | IP67                                                                              |
|                                 | IP68                                                                              |
|                                 | IP69K                                                                             |

#### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 4 A     |
| Rated voltage         | 48 V AC |

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

### Technical data

#### General

|                              |                               |
|------------------------------|-------------------------------|
|                              | 60 V DC                       |
| Number of positions          | 4                             |
| Insulation resistance        | $\geq 100 \text{ M}\Omega$    |
| Coding                       | A - standard                  |
| Standards/regulations        | M12 connector IEC 61076-2-101 |
| Status display               | No                            |
| Protective circuit/component | unwired                       |
| Degree of pollution          | 3                             |
| Insertion/withdrawal cycles  | $\geq 100$                    |
| Torque                       | 0.4 Nm (M12 connector)        |

#### Material

|                                        |                 |
|----------------------------------------|-----------------|
| Flammability rating according to UL 94 | V0              |
| Contact material                       | CuSn            |
| Contact surface material               | Ni/Au           |
| Contact carrier material               | PP              |
| Material of grip body                  | PP              |
| Material, knurls                       | Stainless steel |
| Sealing material                       | FPM             |

#### Standards and Regulations

|                                        |                               |
|----------------------------------------|-------------------------------|
| Standards/specifications               | M12 connector IEC 61076-2-101 |
| Flammability rating according to UL 94 | V0                            |

#### Cable

|                                    |                                      |
|------------------------------------|--------------------------------------|
| Cable type                         | PE-X black                           |
| Cable type (abbreviation)          | 28X                                  |
| Cable abbreviation                 | Li2X2X-C-VI-2X                       |
| Conductor cross section            | 4x 0.5 mm <sup>2</sup> (Signal line) |
| AWG signal line                    | 20                                   |
| Conductor structure signal line    | 28x 0.15 mm                          |
| Core diameter including insulation | 1.6 mm $\pm$ 0.05 mm (Signal line)   |
| Thickness, insulation              | approx. 0.3 mm (Core insulation)     |
|                                    | approx. 0.7 mm (Outer cable sheath)  |
|                                    | approx. 0.45 mm (Inner sheath)       |
| Wire colors                        | brown, white, blue, black            |
| Overall twist                      | 4 wires, twisted                     |
| Length of twist, overall twist     | 108.8 mm                             |
| Shielding                          | Braided copper wires                 |
| Optical shield covering            | 85 %                                 |
| External sheath, color             | black-gray RAL 7021                  |
| External cable diameter D          | 6.8 mm $\pm$ 0.2 mm                  |

# Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

## Technical data

### Cable

|                                               |                                                          |
|-----------------------------------------------|----------------------------------------------------------|
| Smallest bending radius, fixed installation   | 34 mm                                                    |
| Smallest bending radius, movable installation | 68 mm                                                    |
| Number of bending cycles                      | 1000000                                                  |
| Bending radius                                | 68 mm                                                    |
| Traversing path                               | 10 m                                                     |
| Traversing rate                               | 3 m/s                                                    |
| Acceleration                                  | 10 m/s <sup>2</sup>                                      |
| Cable weight                                  | 74 kg/km                                                 |
| Outer sheath, material                        | PE-X                                                     |
| Material, inner sheath                        | PE-X                                                     |
| Material conductor insulation                 | PE-X                                                     |
| Conductor material                            | Bare Cu litz wires                                       |
| Insulation resistance                         | ≥ 100 MΩ*km (at 20 °C)                                   |
| Conductor resistance                          | ≤ 39 Ω/km (at 20 °C)                                     |
| Cable capacity                                | ≤ 100 nF/km (Conductor-conductor, asymmetrical/touching) |
|                                               | ≤ 85 nF/km (Conductor-conductor, symmetrical/star quad)  |
|                                               | ≤ 150 nF/km (Wire/shield)                                |
| Conductor inductance                          | 0.64 mH/km (at 1 kHz)                                    |
|                                               | 0.46 mH/km (at 10 MHz)                                   |
| Nominal voltage, cable                        | ≤ 300 V AC                                               |
| Test voltage, cable                           | ≥ 3000 V AC                                              |
| Special properties                            | Irradiated                                               |
| Flame resistance                              | according to DIN 60332-1-2                               |
|                                               | according to DIN EN 50266-2-5                            |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                 |
| Resistance to oil                             | in accordance with DIN EN 60811-2-1                      |
| Other resistance                              | UV resistant according to DIN VDE 0276-605               |
| Ambient temperature (operation)               | -40 °C ... 105 °C (cable, fixed installation)            |
|                                               | -15 °C ... 105 °C (cable, flexible installation)         |

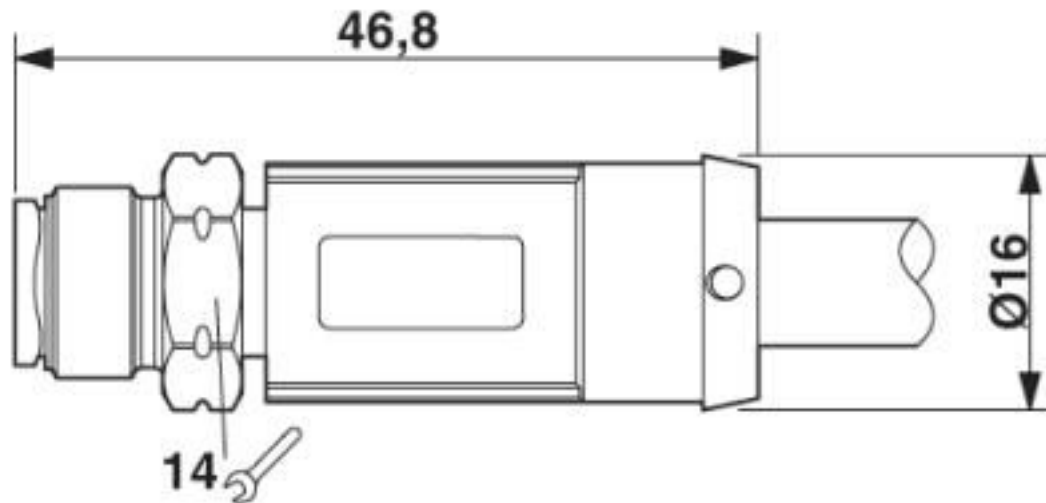
### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1                                                                                      |
| China RoHS | Environmentally Friendly Use Period = 50 years                                                      |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

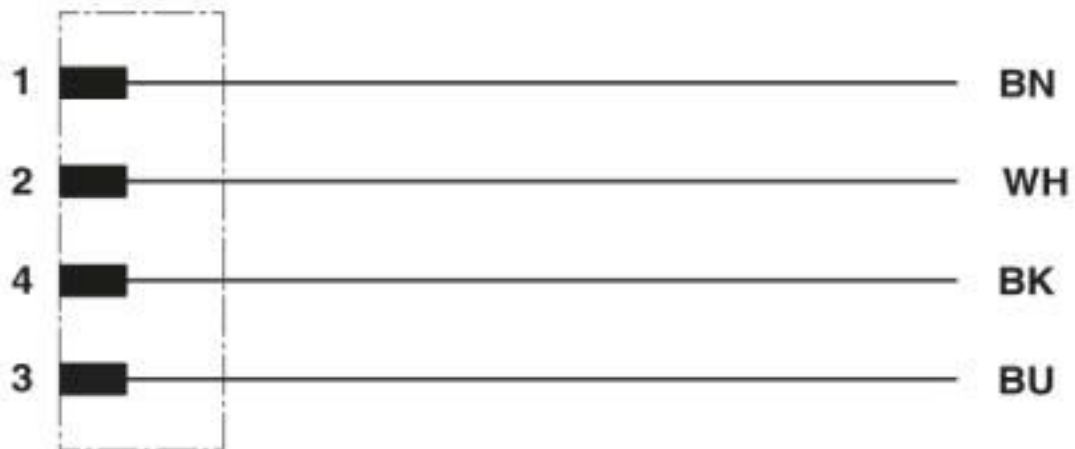
## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

Dimensional drawing



Plug, M12 x 1, straight, shielded

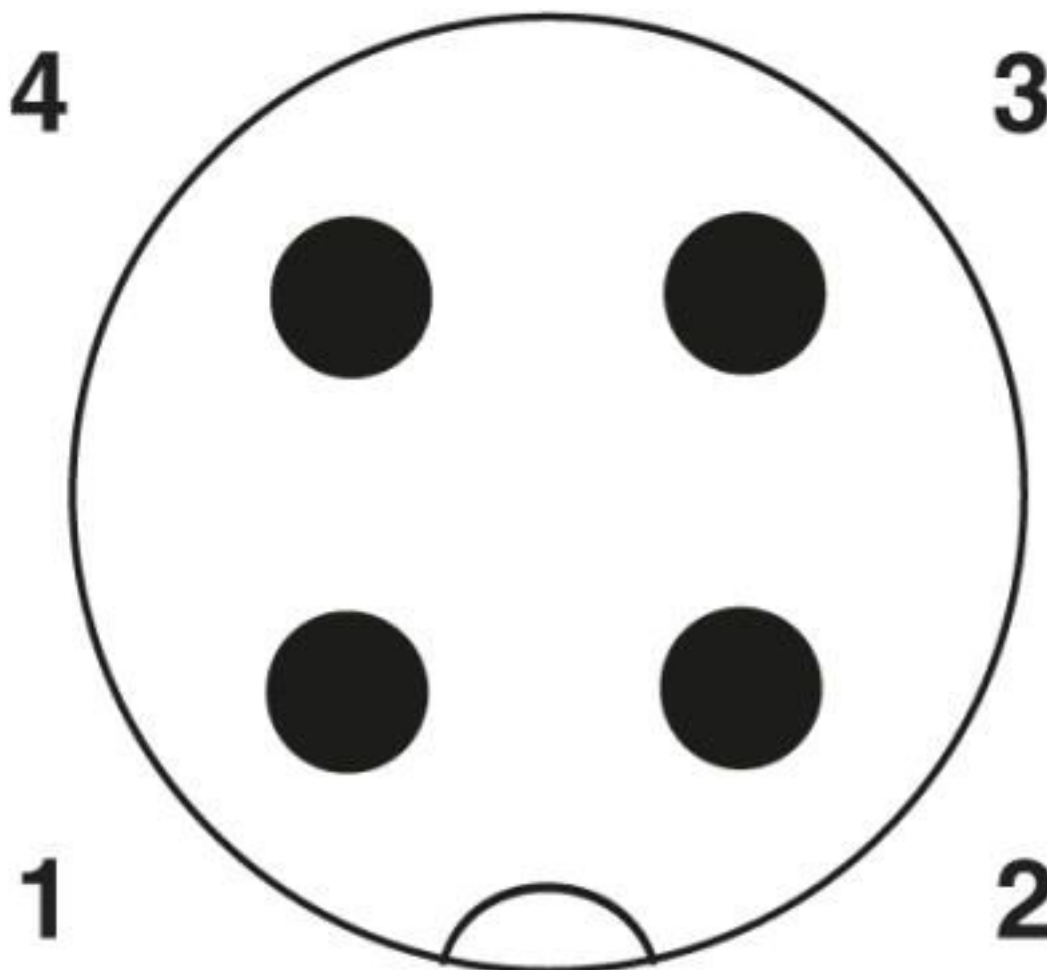
Circuit diagram



Contact assignment of the M12 plug

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

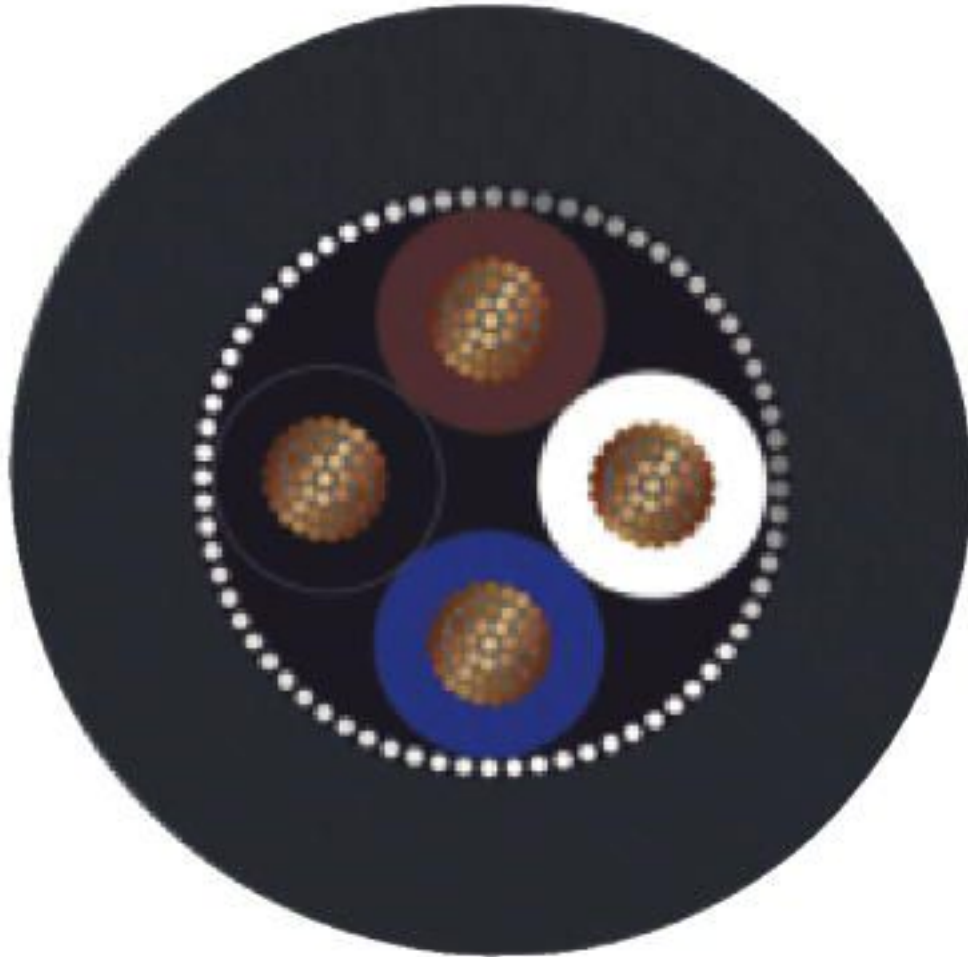
Schematic diagram



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

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

Cable cross section



PE-X black [28X]

### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060311 |
| eCl@ss 4.0    | 27060300 |
| eCl@ss 4.1    | 27060300 |
| eCl@ss 5.0    | 27061800 |
| eCl@ss 5.1    | 27061800 |
| eCl@ss 6.0    | 27279200 |
| eCl@ss 7.0    | 27279218 |
| eCl@ss 8.0    | 27279218 |
| eCl@ss 9.0    | 27060311 |

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |
| ETIM 6.0 | EC001855 |
| ETIM 7.0 | EC001855 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 31251501 |
| UNSPSC 7.0901 | 31251501 |
| UNSPSC 11     | 31251501 |
| UNSPSC 12.01  | 31251501 |
| UNSPSC 13.2   | 31251501 |
| UNSPSC 19.0   | 31251501 |
| UNSPSC 20.0   | 31251501 |
| UNSPSC 21.0   | 31251501 |

### Approvals

#### Approvals

#### Approvals

DNV GL / EAC-RoHS / EAC

#### Ex Approvals

#### Approval details

|        |                                                                                     |                                                                                   |            |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|
| DNV GL |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAE00002K4 |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|

|          |                                                                                     |                          |
|----------|-------------------------------------------------------------------------------------|--------------------------|
| EAC-RoHS |  | RU D-<br>DE.HB35.B.00387 |
|----------|-------------------------------------------------------------------------------------|--------------------------|

|     |                                                                                     |                          |
|-----|-------------------------------------------------------------------------------------|--------------------------|
| EAC |  | RU C-<br>DE.BL08.B.00286 |
|-----|-------------------------------------------------------------------------------------|--------------------------|

### Accessories

#### Accessories

## Sensor/actuator cable - SAC-4P-M12MS/ 2,0-28X SH OD - 1454121

### Accessories

#### Circular connector (cable-side)

Connector - SACC-M12FS-5CON-DM 5-8 SH VA - 1440041



Connector, 5-position, shielded, Socket straight M12, Coding: A, Screw connection, knurl material: Stainless steel 1.4404, cable gland M16, external cable diameter 5.5 mm ... 8.6 mm

---

#### Screwdriver tools

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

---

Adapter - SAC BIT M12-W14 - 1212513



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive

---

#### Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

---

Torque screwdriver - TSD-M 1,2NM - 1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm



Phoenix Contact 2020 © - all rights reserved  
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Phoenix Contact:](#)

[1454121](#)