# SAC-5P-M12MS/ 1,5-PUR/M12FS SH - Sensor/actuator cable

1500907

https://www.phoenixcontact.com/us/products/1500907

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Sensor/actuator cable, 5-position, PUR halogen-free, black-gray RAL 7021, shielded (Advanced Shielding Technology), Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 1.5 m

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

| | |
|---|---|
| Item number | 1500907 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF03 |
| Product key | AF1CKA |
| GTIN | 4017918618155 |
| Weight per piece (including packing) | 98 g |
| Weight per piece (excluding packing) | 90 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Sensor/actuator cable |
| Application | Standard |
| Number of positions | 5 |
| No. of cable outlets | 1 |
| Shielded | yes |
| 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 | ≥ 100 MΩ |
| Nominal voltage $U_N$ | 48 V AC |
| | 60 V DC |
| Nominal current $I_N$ | 4 A |

## Mechanical properties

### Mechanical data

| | |
|---|---|
| Insertion/withdrawal cycles | ≥ 100 |

## Signaling

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

## Connection data

### Conductor connection

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

## Connector

### Connection 1

| | |
|---|---|
| Type | M12 Plug, straight, 5-position, Keying: A |
| Number of positions | 5 |
| Shielded | yes |
| Insertion/withdrawal cycles | ≥ 100 |
| Material Contact | CuSn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | TPU |
| Material Grip body | TPU, hardly inflammable, self-extinguishing |
| Material Screw connection | Die-cast zinc, nickel-plated |
| Flammability rating according to UL 94 | HB |
| Degree of protection | IP65 |
| | IP67 |
| Ambient temperature (operation) | -25 °C ... 90 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

Connection 2

| | |
|---|---|
| Type | M12 Socket, straight, 5-position, Keying: A |
| Number of positions | 5 |
| Shielded | yes |
| Insertion/withdrawal cycles | ≥ 100 |
| Material Contact | CuSn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | TPU |
| Material Grip body | TPU, hardly inflammable, self-extinguishing |
| Material Seal | NBR |
| Material Screw connection | Die-cast zinc, nickel-plated |
| Flammability rating according to UL 94 | HB |
| Degree of protection | IP65 |
| | IP67 |
| Ambient temperature (operation) | -25 °C ... 90 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

## Cable/line

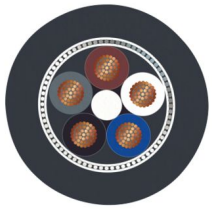
| | |
|---|---|
| Cable length | 1.5 m |

PUR halogen-free black [PUR]

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| | |
|---|---|
| Dimensional drawing |  |
| Cable weight | 43 kg/km |
| UL AWM Style | 20549 / 10493 (80°C/300 V) |
| Number of positions | 5 |
| Shielded | yes |
| Cable type | PUR halogen-free black [PUR] |
| Conductor structure signal line | 42x 0.10 mm |
| AWG signal line | 22 |
| Conductor cross-section | 5x 0.34 mm² (Signal line) |
| Wire diameter incl. insulation | 1.27 mm ±0.05 mm (Signal line) |
| External cable diameter | 5.30 mm ±0.25 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, gray |
| Thickness, insulation | ≥ 0.21 mm |
| Thickness, outer sheath | approx. 0.50 mm |
| Overall twist | 5 wires around filler to the core |
| Optical shield covering | 80 % |
| Max. conductor resistance | max. 57 Ω/km (at 20 °C) |
| Insulation resistance | 70 GΩ*km (at 20 °C) |
| Nominal voltage, cable | 300 V (at 20 °C) |
| Test voltage Core/Core | 3000 V (at 20 °C) |
| Smallest bending radius, fixed installation | 26 mm |
| Smallest bending radius, movable installation | 52 mm (up to +60 °C) |
| Dynamic load capacity (bending) | Max. bending cycles: 10000000, Bending radius: 52 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s² |
| Dynamic load capacity (torsion) | Torsion: ±180 °/m, Torsion cycles: ≥5000000, 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 |
| | Highly resistant to acids, alkaline solutions and solvents |

| | |
|---|---|
| Other resistance | hydrolysis and microbe resistant |
| | Resistant to salt water |
| | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A) |
| | abrasion-resistant |
| Special properties | Flexible cable conduit capable |
| | Silicone-free |
| | Free of substances which would hinder coating with paint or varnish |
| | Low adhesion surface |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

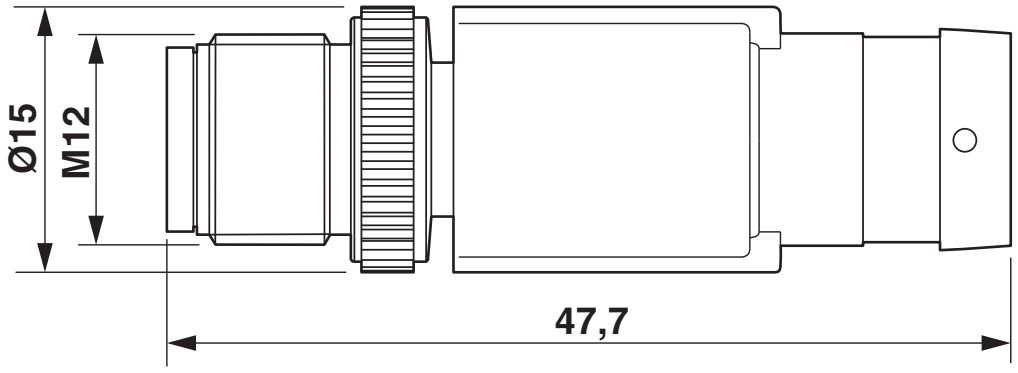
| | |
|---|---|
| Degree of protection | IP65 |
| | IP67 |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket) |
| Ambient temperature (operation) (Cable, fixed installation) | -25 °C ... 80 °C (cable, fixed installation) |
| Ambient temperature (operation) (Cable, flexible installation) | -5 °C ... 80 °C (Cable, flexible installation) |

## Standards and regulations

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

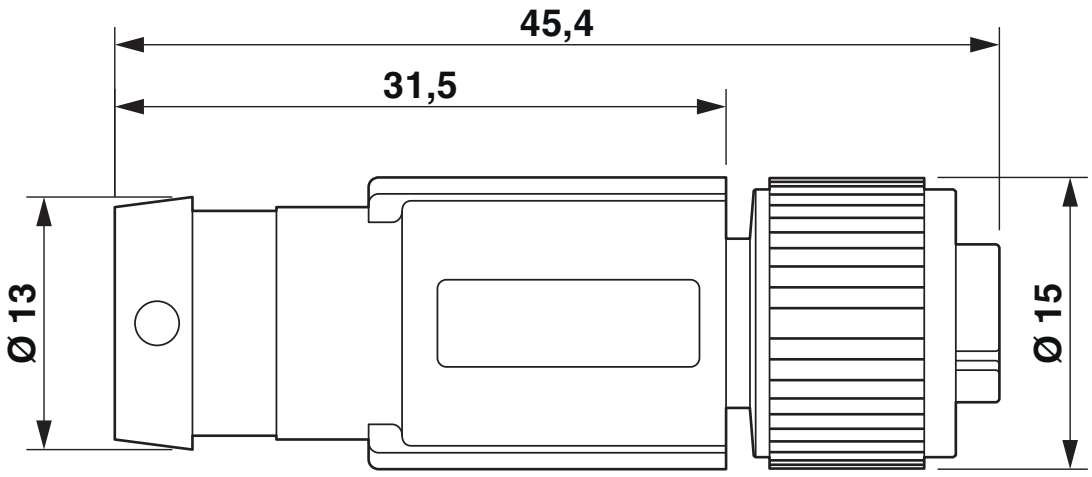
## Drawings

Dimensional drawing



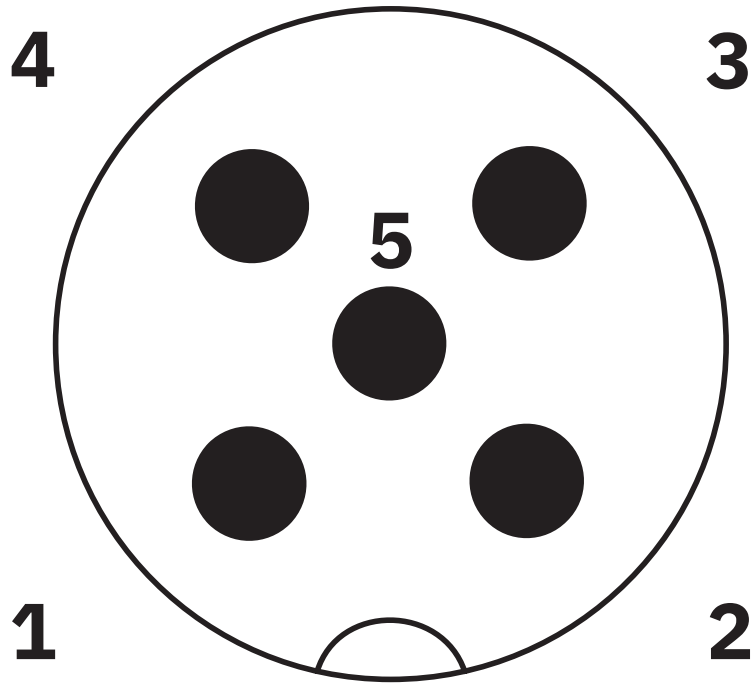

Plug, M12 x 1, straight, shielded

Dimensional drawing



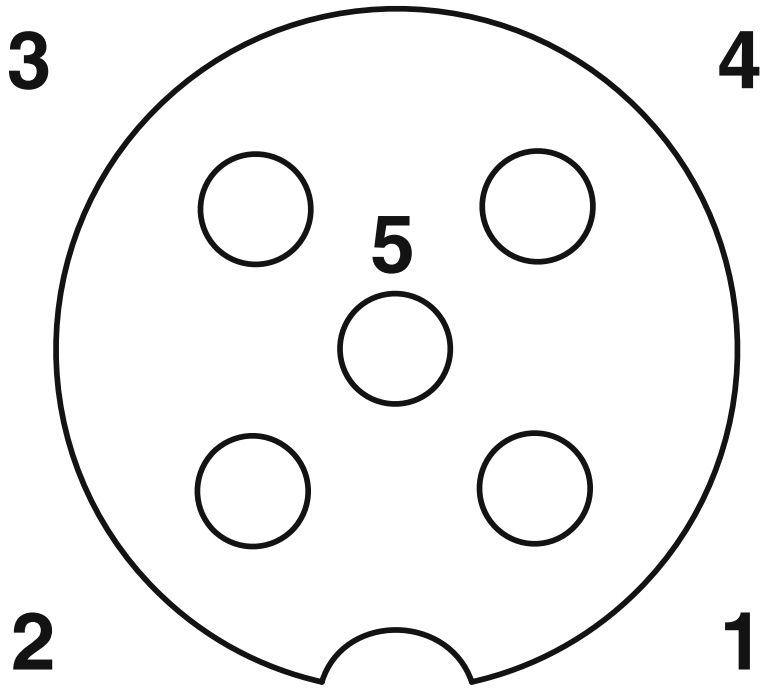

M12 x 1 socket, straight, shielded

Schematic diagram



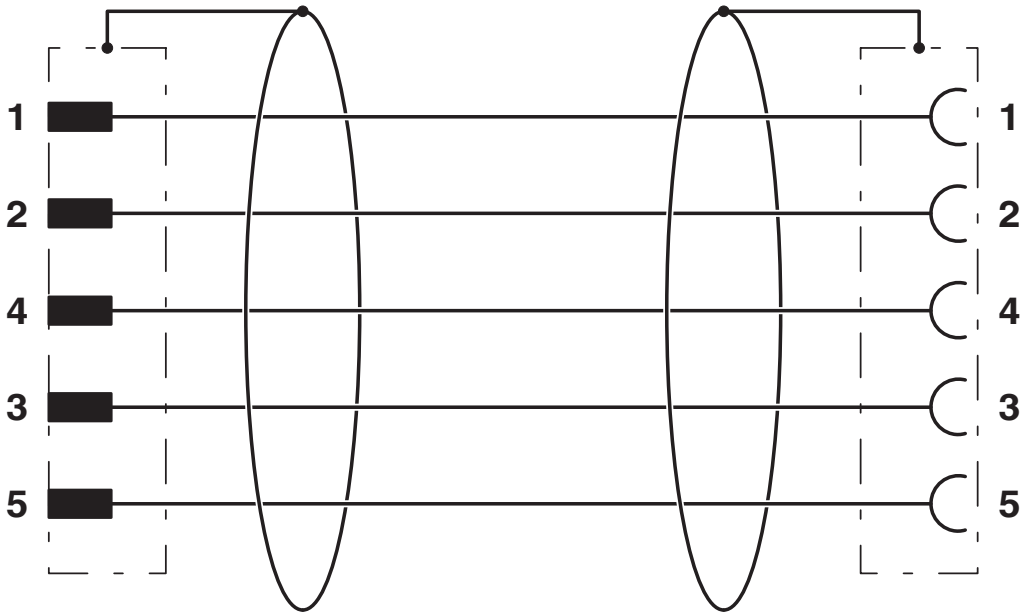

Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram




Pin assignment M12 socket, 5-pos., A-coded, socket side view

Circuit diagram




Contact assignment of the M12 plug and the M12 socket

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1500907

**UL Listed**
Approval ID: FILE E 221474

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 125 V | 4 A | - | - |

**cUL Listed**
Approval ID: FILE E 221474

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 125 V | 4 A | - | - |

**EAC-RoHS**
Approval ID: RU D-DE.HB35.B.00387

## Classifications

### ECLASS

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

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001855 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 26121600 |

## 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% |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 1.528 kg CO2e |


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