

SAC-4P-M12MS/2,0-28X/M12FSSHOD - Sensor/actuator cable



1454189

<https://www.phoenixcontact.com/us/products/1454189>

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

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C ... +105°C
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1454189 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF03 |
| Product key | AF1CJA |
| GTIN | 4046356568791 |
| Weight per piece (including packing) | 186.8 g |
| Weight per piece (excluding packing) | 186.3 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

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Technical data

Product properties

| | |
|----------------------|-----------------------|
| Product type | Sensor/actuator cable |
| Application | External areas |
| Number of positions | 4 |
| No. of cable outlets | 1 |
| Shielded | yes |
| Coding | A |

Insulation characteristics

| | |
|---------------------|---|
| Degree of pollution | 3 |
|---------------------|---|

Material specifications

| | |
|--|-----------------|
| Flammability rating according to UL 94 | V0 |
| Seal material | FPM |
| Material of grip body | PP |
| Contact material | CuSn |
| Contact surface material | Ni/Au |
| Contact carrier material | PP |
| Material for screw connection | Stainless steel |

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

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

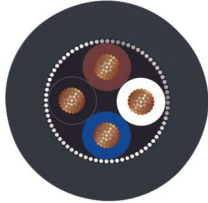
Connection 2

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

Cable/line

| | |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

PE-X black [28X]

| | |
|---------------------------------|---|
| Dimensional drawing |  |
| Cable weight | 74 kg/km |
| Number of positions | 4 |
| Shielded | yes |
| Cable type | PE-X black [28X] |
| Conductor structure signal line | 28x 0.15 mm |
| AWG signal line | 20 |
| Conductor cross-section | 4x 0.5 mm ² (Signal line) |
| Wire diameter incl. insulation | 1.6 mm ±0.05 mm (Signal line) |
| External cable diameter | 6.80 mm ±0.2 mm |
| Outer sheath, material | PE-X |
| External sheath, color | black-gray RAL 7021 |
| Conductor material | Bare Cu litz wires |
| Material wire insulation | PE-X |
| Single wire, color | brown, white, blue, black |
| Thickness, insulation | approx. 0.30 mm (Core insulation) approx. 0.70 mm (Outer cable sheath) approx. 0.45 mm (Inner sheath) |
| Overall twist | 4 wires, twisted |
| Length of twist, overall twist | 108.8 mm |
| Optical shield covering | 85 % |
| Max. conductor resistance | ≤ 39 Ω/km (at 20 °C) |
| Insulation resistance | ≥ 100 MΩ*km (at 20 °C) |

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| | |
|---|---|
| Cable capacity | ≤ 100 nF/km (Conductor-conductor, asymmetrical/touching) |
| | ≤ 85 nF/km (Conductor-conductor, symmetrical/star quad) |
| | ≤ 150 nF/km (Wire/shield) |
| Nominal voltage, cable | ≤ 300 V AC |
| Test voltage | ≥ 3000 V AC |
| Smallest bending radius, fixed installation | 34 mm |
| Smallest bending radius, movable installation | 68 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 1000000, Bending radius: 68 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s ² |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| Flame resistance | according to DIN 60332-1-2 |
| | according to DIN EN 50266-2-5 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | UV resistant (according to DIN VDE 0276-605) |
| Special properties | Irradiated |
| Ambient temperature (operation) | -40 °C ... 105 °C (cable, fixed installation) |
| | -15 °C ... 105 °C (Cable, flexible installation) |

Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

M12

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

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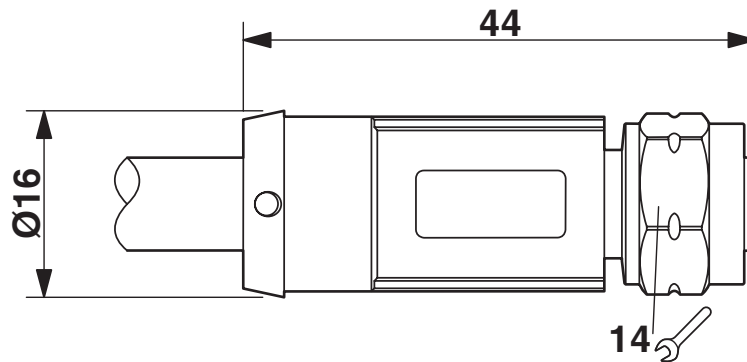
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



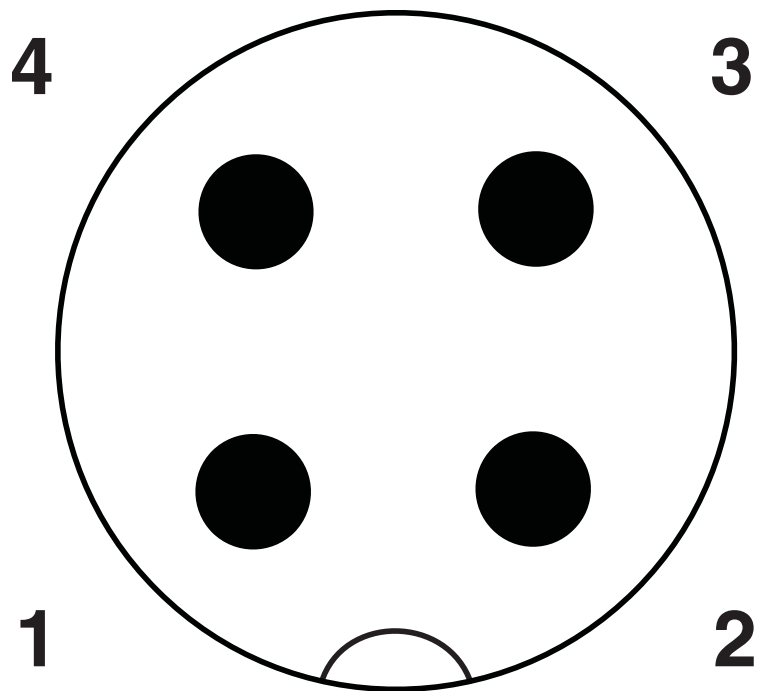
M12 x 1 socket, straight

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Schematic diagram



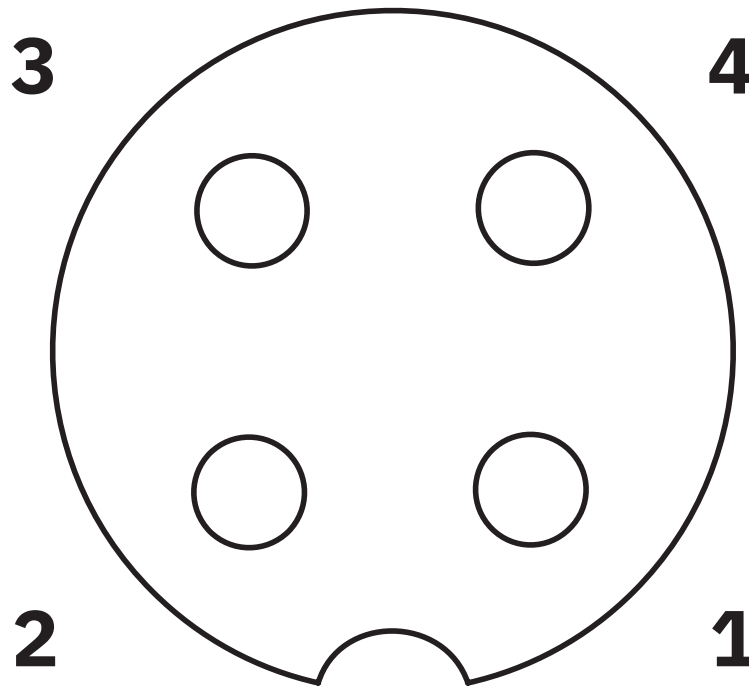
Pin assignment M12 plug, 4-pos., A-coded, view plug side

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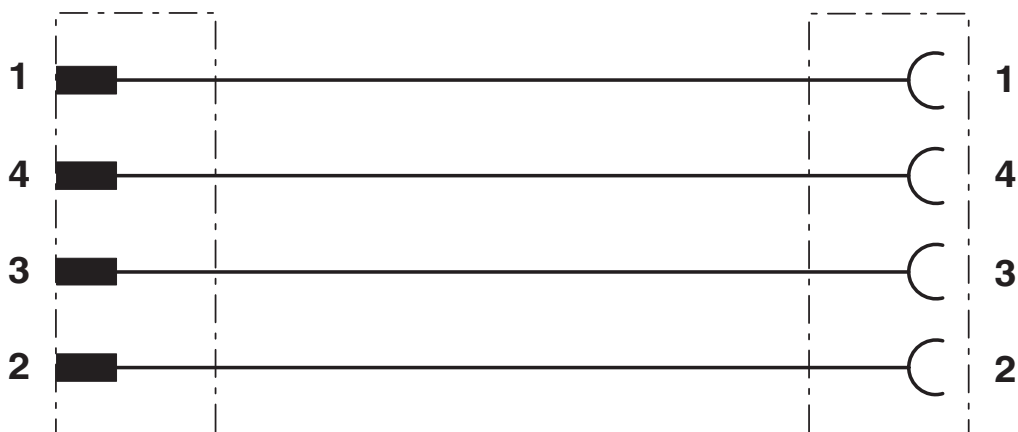
<https://www.phoenixcontact.com/us/products/1454189>

Schematic diagram



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

Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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Approvals

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DNV

Approval ID: TAE00002K4

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Classifications

ECLASS

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

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | 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% |
|-------------------------------------|----------------------------|

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 9.753 kg CO2e |
|---------|---------------|

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