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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, shielded (Advanced Shielding Technology), Plug straight M12, coding: A, on free cable end, 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 | 1682650 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF03 |
| Product key | AF1CIA |
| GTIN | 4017918168933 |
| Weight per piece (including packing) | 65.9 g |
| Weight per piece (excluding packing) | 62.4 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

Technical data

Product properties

| | |
|----------------------|-----------------------|
| Product type | Sensor/actuator cable |
| Application | Standard |
| Number of positions | 3 |
| 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 | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage U_N | 48 V AC |
| | 60 V DC |

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 | |
|--------------|--|

SAC-3P-M12MS/ 1,5-PUR SH - Sensor/actuator cable

1682650

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| | |
|---------------------|-------------------|
| Type | Plug straight M12 |
| Number of positions | 3 |
| Coding type | A |

Connection 2

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

Cable/line

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

PUR halogen-free black [PUR]

| | |
|---|--|
| Cable weight | 31 kg/km |
| UL AWM Style | 20549 |
| Number of positions | 3 |
| Shielded | yes |
| 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 ² (Signal line) |
| Wire diameter incl. insulation | 1.27 mm ±0.02 mm (Signal line) |
| External cable diameter | 4.65 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) approx. 0.50 mm (Outer cable sheath) |
| Overall twist | 3 wires, twisted |
| Optical shield covering | 80 % |
| Max. conductor resistance | max. 58 Ω/km (at 20 °C) |
| Insulation resistance | ≥ 100 GΩ*km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage | ≥ 3000 V |
| Smallest bending radius, fixed installation | 23 mm |
| Smallest bending radius, movable installation | 47 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 10000000, Bending radius: 47 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s ² |
| 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 |
| 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 |

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| | |
|---------------------------------|--|
| Other resistance | hydrolysis and microbe resistant partly UV-resistant (in accordance with DIN EN ISO 4892-2-A) |
| Special properties | Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish |
| 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) |

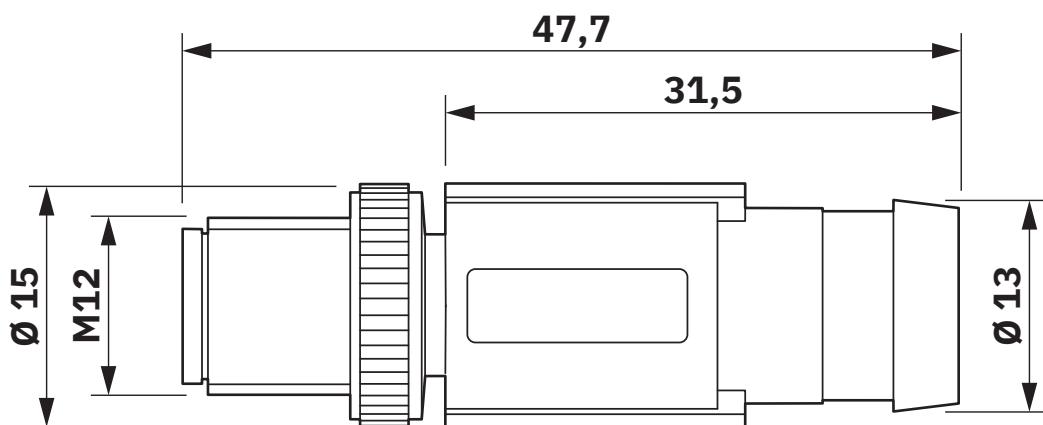
Standards and regulations

M12

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

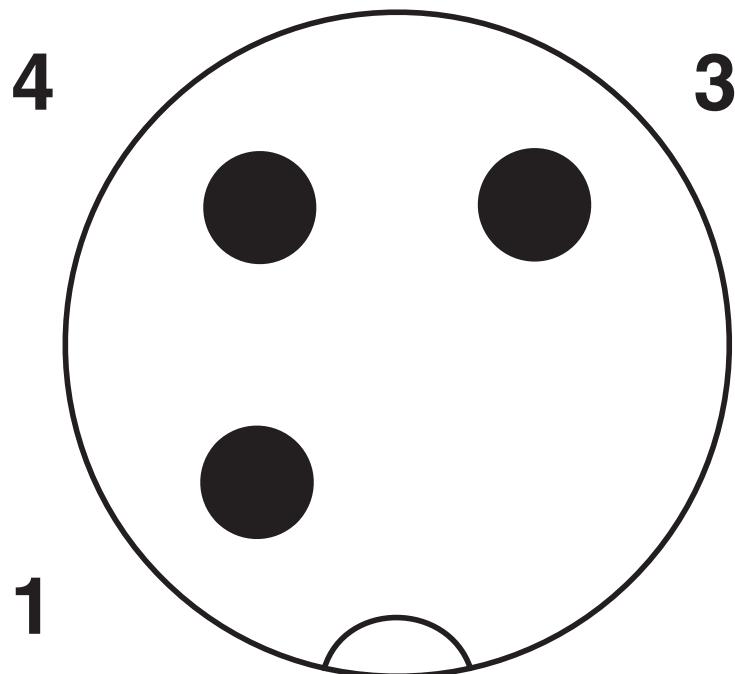
Drawings

Dimensional drawing



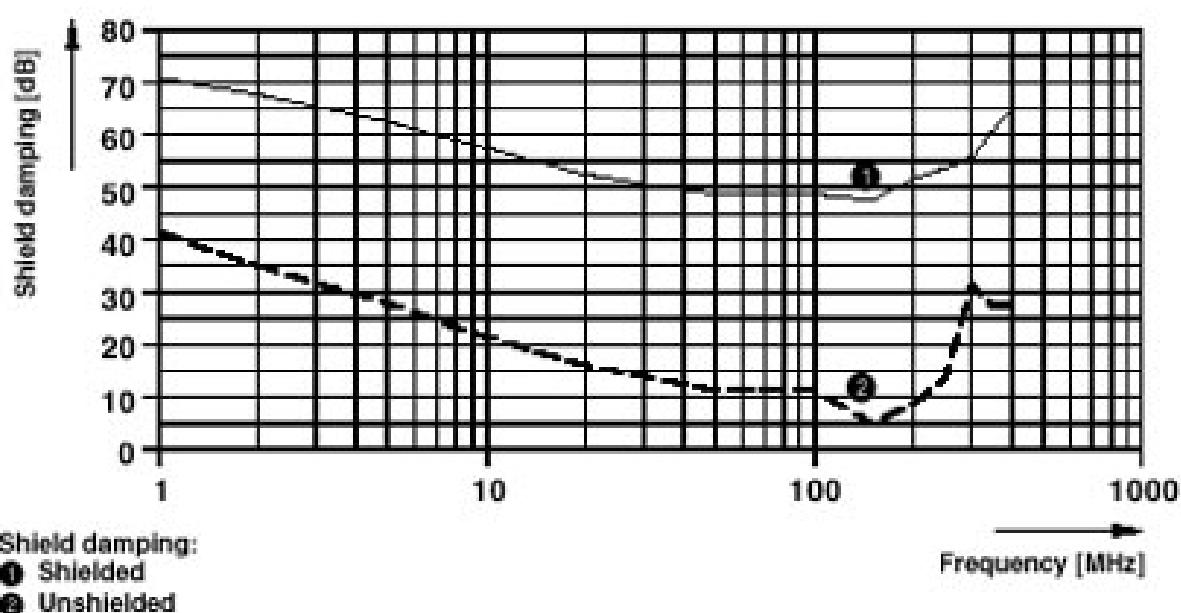
Plug, M12 x 1, straight, shielded

Schematic diagram



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

Diagram



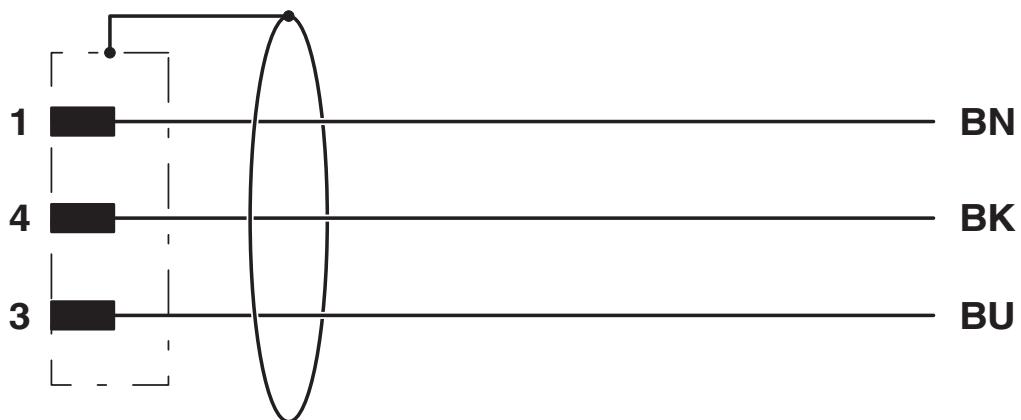
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Circuit diagram



Contact assignment of the M12 plug

Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1682650>

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

| cUL Listed | | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
|------------|--|-----------------------|-----------------------|-------------------|----------------------|
| keine | | | | | |
| | | 300 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 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% |
|-------------------------------------|----------------------------|

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