

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

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, Variable cable type, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: Free input (0.2 ... 40.0 m)

Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Flexible solutions - configurable materials with variable cable types and cable lengths

Key Commercial Data

| | |
|------------------------|-------|
| Packing unit | 1 pc |
| Minimum order quantity | 25 pc |

Technical data

Dimensions

| | |
|-----------------|-----------------------------|
| Length of cable | Free input (0.2 ... 40.0 m) |
|-----------------|-----------------------------|

Ambient conditions

| | |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |
| Degree of protection | IP65 |
| | IP67 |
| | IP68 |

General

| | |
|------------------------------|-------------------------------|
| Rated current at 40°C | 4 A |
| Rated voltage | 250 V AC |
| | 250 V DC |
| Number of positions | 4 |
| Insulation resistance | ≥ 100 MΩ |
| Coding | A - standard |
| Standards/regulations | M12 connector IEC 61076-2-101 |
| Status display | No |
| Protective circuit/component | unwired |
| Overvoltage category | II |
| Degree of pollution | 3 |
| Insertion/withdrawal cycles | ≥ 100 |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

General

| | |
|--------|------------------------|
| Torque | 0.4 Nm (M12 connector) |
|--------|------------------------|

Material

| | |
|--|---|
| Flammability rating according to UL 94 | HB |
| Contact material | CuSn |
| Contact surface material | Ni/Au |
| Contact carrier material | TPU GF |
| Material of grip body | TPU, hardly inflammable, self-extinguishing |
| Material, knurls | Zinc die-cast, nickel-plated |
| Sealing material | NBR |

Line characteristics

| | |
|------|---|
| Note | This item is a sensor/actuator cable with a freely selectable cable type. The technical data for all possible cable types is listed in the table below. |
|------|---|

Standards and Regulations

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

PUR/PVC yellow [140]

| | |
|---|----------------------------------|
| Cable type | PUR/PVC yellow |
| Cable type (abbreviation) | 140 |
| Cable abbreviation | LiYY-11Y |
| UL AWM style | 20549 |
| Conductor cross section | 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.5 mm ±0.05 mm |
| Thickness, insulation | approx. 0.3 mm (Core insulation) |
| | ≥ 0.38 mm (Outer cable sheath) |
| | approx. 0.35 mm (Inner sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | yellow |
| External cable diameter D | 5.2 mm ±0.2 mm |
| Smallest bending radius, fixed installation | 52 mm |
| Smallest bending radius, movable installation | 52 mm |
| Number of bending cycles | 2000000 |
| Bending radius | 52 mm |
| Traversing path | 5 m |
| Traversing rate | 3 m/s |
| Cable weight | 39 kg/km |
| Outer sheath, material | PUR |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR/PVC yellow [140]

| | |
|---------------------------------|--|
| Material, inner sheath | PVC |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Flame resistance | in accordance with DIN UL-Style 20549 |
| Ambient temperature (operation) | -25 °C ... 80 °C (cable, fixed installation) |
| | -5 °C ... 80 °C (cable, flexible installation) |

PUR irradiated halogen-free orange [150]

| | |
|---|------------------------------------|
| Cable type | PUR irradiated halogen-free orange |
| Cable type (abbreviation) | 150 |
| Cable abbreviation | D12YSL11X-OB |
| Conductor cross section | 4x 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 19x 0.15 mm |
| Core diameter including insulation | 1.05 mm ±0.05 mm (Signal line) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| Length of twist, overall twist | 27 mm |
| External sheath, color | orange RAL 2003 |
| External cable diameter D | 5.2 mm ±0.2 mm |
| Smallest bending radius, fixed installation | min. 15 mm |
| Smallest bending radius, movable installation | min. 30 mm |
| Number of bending cycles | 5000000 |
| Bending radius | 52 mm |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Torsion force | ± 360 °/m |
| Outer sheath, material | PUR |
| Material conductor insulation | PE |
| Conductor material | Bare Cu litz wires |
| Conductor resistance | max. 57 Ω/km |
| Nominal voltage, cable | 320 V (AC) |
| Test voltage, cable | 2500 V (50 Hz, 5 minutes) |
| Special properties | Silicone-free |
| | Irradiated |
| Halogen-free | The cable is halogen-free |
| Other resistance | hydrolysis and microbe resistant |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR irradiated halogen-free orange [150]

| | |
|---------------------------------|--|
| | Resistant to welding splashes |
| Ambient temperature (operation) | -50 °C ... 105 °C (cable, fixed installation) |
| | -40 °C ... 105 °C (cable, flexible installation) |

PUR irradiated halogen-free yellow [160]

| | |
|---|--|
| Cable type | PUR irradiated halogen-free yellow |
| Cable type (abbreviation) | 160 |
| Cable abbreviation | D12YSL11X-OB |
| Conductor cross section | 4x 0.34 mm ² (Signal line) |
| AWG signal line | 22 |
| Conductor structure signal line | 19x 0.15 mm |
| Core diameter including insulation | 1.05 mm ±0.05 mm (Signal line) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| Length of twist, overall twist | 27 mm |
| External sheath, color | yellow |
| External cable diameter D | 5.2 mm ±0.2 mm |
| Smallest bending radius, fixed installation | min. 15 mm |
| Smallest bending radius, movable installation | min. 30 mm |
| Number of bending cycles | 5000000 |
| Bending radius | 52 mm |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Torsion force | 360 °/m |
| Outer sheath, material | PUR |
| Material conductor insulation | PE |
| Conductor material | Bare Cu litz wires |
| Conductor resistance | ≤ 57 Ω/km |
| Nominal voltage, cable | 320 V AC |
| Test voltage, cable | 2500 V AC (50 Hz, 5 minutes) |
| Special properties | Silicone-free |
| | Irradiated |
| Flame resistance | DIN VDE 0472 part 804, test type B |
| Halogen-free | The cable is halogen-free |
| Other resistance | hydrolysis and microbe resistant |
| Ambient temperature (operation) | -50 °C ... 105 °C (cable, fixed installation) |
| | -40 °C ... 105 °C (cable, flexible installation) |

PUR halogen-free orange [180]

| | |
|---------------------------|-------------------------|
| Cable type | PUR halogen-free orange |
| Cable type (abbreviation) | 180 |
| Cable abbreviation | Li9Y-11Y |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR halogen-free orange [180]

| | |
|---|---|
| UL AWM style | 20549 |
| Conductor cross section | 4x 0.34 mm ² (Signal line) |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.27 mm ±0.02 mm (Signal line) |
| Thickness, insulation | ≥ 0.21 mm (Core insulation) |
| | approx. 0.8 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | orange RAL 2003 |
| External cable diameter D | 4.7 mm ±0.15 mm |
| Smallest bending radius, fixed installation | 23.5 mm |
| Smallest bending radius, movable installation | 47 mm |
| Number of bending cycles | 4000000 |
| Bending radius | 47 mm |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Acceleration | 10 m/s ² |
| Cable weight | 30 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PP |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Special properties | Free of substances which would hinder coating with paint or varnish |
| Flame resistance | in accordance with UL 758/1581 FT2 |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| | in accordance with DIN EN 50267-2-1 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | Resistant to salt water |
| | hydrolysis and microbe resistant |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PUR POWER 0.75 mm² black [186]

| | |
|---------------------------|--------------------------------------|
| Cable type | PUR POWER 0.75 mm ² black |
| Cable type (abbreviation) | 186 |
| Cable abbreviation | LiY11Y |
| UL AWM style | 20549 / 1061 (80°C/300 V) |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR POWER 0.75 mm² black [186]

| | |
|---|--|
| Conductor cross section | 4x 0.75 mm ² (power line) |
| AWG signal line | 18 |
| Conductor structure signal line | 42x 0.15 mm |
| Core diameter including insulation | 1.75 mm ±0.05 mm |
| Thickness, insulation | ≥ 0.23 mm (Core insulation) |
| | ≥ 0.76 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | black-gray RAL 7021 |
| External cable diameter D | 5.9 mm ±0.15 mm |
| Smallest bending radius, movable installation | 59 mm |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Number of bending cycles | 2000000 |
| Bending radius | 59 mm |
| Traversing path | 5 m |
| Traversing rate | 3 m/s |
| Acceleration | 5 m/s ² |
| Cable weight | 57 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 MΩ*km (at 20 °C) |
| Conductor resistance | max. 26 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Flame resistance | according to UL 758/1581 (horizontal) |
| | in accordance with UL 758/1581 FT2 |
| Resistance to oil | According to DIN EN 60811-2-1, 168 h at 100°C |
| Other resistance | hydrolysis and microbe resistant |
| | Low adhesion |
| | abrasion-resistant |
| | Resistant to salt water |
| Ambient temperature (operation) | -25 °C ... 80 °C (cable, fixed installation) |
| | -5 °C ... 80 °C (cable, flexible installation) |

PUR halogen-free yellow [240]

| | |
|---------------------------|-------------------------|
| Cable type | PUR halogen-free yellow |
| Cable type (abbreviation) | 240 |
| Cable abbreviation | Li9Y11Y |
| Conductor cross section | 4x 0.34 mm ² |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR halogen-free yellow [240]

| | |
|---|---|
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.27 mm ±0.02 mm |
| Thickness, insulation | ≥ 0.21 mm (Core insulation) |
| | approx. 0.8 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| Length of twist, overall twist | 49.5 mm |
| External sheath, color | yellow |
| External cable diameter D | 4.7 mm ±0.15 mm |
| Smallest bending radius, fixed installation | 23.5 mm |
| Smallest bending radius, movable installation | 47 mm |
| Number of bending cycles | 4000000 |
| Bending radius | 47 mm |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Acceleration | 10 m/s ² |
| Cable weight | 30 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PP |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Special properties | Flexible cable conduit capable |
| | Silicone-free |
| | Free of substances which would hinder coating with paint or varnish |
| Flame resistance | in accordance with DIN UL-Style 20549 |
| | in accordance with FT1 as per UL 758 |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| | in accordance with DIN EN 50267-2-1 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | Highly resistant to acids, alkaline solutions and solvents |
| | hydrolysis and microbe resistant |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PUR halogen-free gray [280]

| | |
|---------------------------|-----------------------|
| Cable type | PUR halogen-free gray |
| Cable type (abbreviation) | 280 |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR halogen-free gray [280]

| | |
|---|---|
| Cable abbreviation | Li9Y11Y-HF |
| UL AWM style | 20549 / 10493 (80°C/300 V) |
| Conductor cross section | 4x 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.27 mm ±0.02 mm |
| Thickness, insulation | ≥ 0.21 mm |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | gray RAL 7001 |
| Outer sheath thickness | approx. 0.5 mm |
| External cable diameter D | 4.2 mm ±0.15 mm |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Number of bending cycles | 10000000 |
| Minimum bending radius, drag chain applications | 10 x D |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Acceleration | 10 m/s ² |
| Cable weight | 30 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PP |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km |
| Conductor resistance | ≤ 58 Ω/km |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Special properties | Flexible cable conduit capable |
| | Silicone-free |
| | Free of substances which would hinder coating with paint or varnish |
| | flexible |
| Flame resistance | in accordance with UL 758/1581 FT2 |
| | DIN EN 60332-2-2 (20 s) |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| | in accordance with DIN EN 50267-2-1 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | Highly resistant to acids, alkaline solutions and solvents |
| | hydrolysis and microbe resistant |
| | partly UV-resistant in accordance with DIN EN ISO 4892-2-A |
| | Low adhesion |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR halogen-free gray [280]

| | |
|---------------------------------|---|
| | abrasion-resistant |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PVC gray [500]

| | |
|---|---|
| Cable type | PVC gray |
| Cable type (abbreviation) | 500 |
| Cable abbreviation | LiYY |
| Conductor cross section | 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.45 mm ±0.02 mm |
| Thickness, insulation | ≥ 0.23 mm (Core insulation) |
| | ≥ 0.76 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | gray RAL 7001 |
| External cable diameter D | 5.2 mm ±0.15 mm |
| Smallest bending radius, fixed installation | 26 mm |
| Smallest bending radius, movable installation | 52 mm |
| Cable weight | 40 kg/km |
| Outer sheath, material | PVC |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V (AC) |
| Test voltage, cable | ≥ 3000 V (AC) |
| Flame resistance | in accordance with FT1 as per UL 758 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PVC yellow [540]

| | |
|------------------------------------|-----------------------------|
| Cable type | PVC yellow |
| Cable type (abbreviation) | 540 |
| Cable abbreviation | LiYY |
| Conductor cross section | 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.45 mm ±0.05 mm |
| Thickness, insulation | ≥ 0.23 mm (Core insulation) |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PVC yellow [540]

| | |
|---------------------------------|---|
| | ≥ 0.76 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | yellow |
| External cable diameter D | 5.2 mm ±0.15 mm |
| Cable weight | 40 kg/km |
| Outer sheath, material | PVC |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V (AC) |
| Test voltage, cable | ≥ 3000 V |
| Flame resistance | As per UL-Style 2464 |
| | according to UL 758/1581 FT1 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PVC yellow 105 °C [542]

| | |
|------------------------------------|--------------------------------|
| Cable type | PVC yellow 105 °C |
| Cable type (abbreviation) | 542 |
| Cable abbreviation | LiYY |
| Conductor cross section | 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.55 mm ±0.05 mm |
| Thickness, insulation | ≥ 0.38 mm (Core insulation) |
| | ≥ 0.76 mm (Outer cable sheath) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | yellow |
| External cable diameter D | 5.5 mm ±0.2 mm |
| Cable weight | 43 kg/km |
| Outer sheath, material | PVC |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 100 MΩ*km (at 20 °C) |
| Conductor resistance | ≤ 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PVC yellow 105 °C [542]

| | |
|---------------------------------|---|
| Flame resistance | in accordance with UL-Style 2517 |
| | in acc. to UL VW1 |
| Ambient temperature (operation) | -25 °C ... 105 °C (cable, fixed installation) |

Gray, highly flexible PUR [800]

| | |
|---|--|
| Note | Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments. |
| Cable type | Gray, highly flexible PUR |
| Cable type (abbreviation) | 800 |
| Cable abbreviation | LiF9Y11Y |
| UL AWM style | 20549 |
| Conductor cross section | 4x 0.34 mm ² (Signal line) |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.3 mm ±0.05 mm (Signal line) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | gray RAL 7001 |
| External cable diameter D | 4.8 mm ±0.2 mm |
| Minimum bending radius, fixed installation | 4 x D |
| Minimum bending radius, flexible installation | 7.5 x D |
| Number of bending cycles | 10000000 |
| Minimum bending radius, drag chain applications | 7,5 x D |
| Traversing path | 5 m |
| Traversing rate | 3.3 m/s |
| Acceleration | 5 m/s ² |
| Number of bending cycles | 15000000 |
| Bending radius | 50 mm |
| Traversing path | 0.9 m |
| Traversing rate | 5 m/s |
| Acceleration | 30 m/s ² |
| Torsion force | ± 360 °/m (1 000 000 torsion cycles) |
| Cable weight | 33.5 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PP |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 20 MΩ*km |
| Conductor resistance | approx. 53 Ω/km |
| Nominal voltage, cable | 300 V |
| Test voltage, cable | 2000 V |
| Special properties | Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

Gray, highly flexible PUR [800]

| | |
|---------------------------------|---|
| | Free from silicone and cadmium |
| | Free of substances which would hinder coating with paint or varnish |
| Flame resistance | in accordance with UL 758/1581 FT2 |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | Highly resistant to acids, alkaline solutions and solvents |
| | Silicone-free |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PUR halogen-free black [PUR]

| | |
|---|--------------------------------|
| Cable type | PUR halogen-free black |
| Cable type (abbreviation) | PUR |
| Cable abbreviation | Li9Y11Y-HF |
| UL AWM style | 20549 / 10493 (80°C/300 V) |
| Conductor cross section | 4x 0.34 mm ² |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.27 mm ±0.02 mm |
| Thickness, insulation | ≥ 0.21 mm |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | black-gray RAL 7021 |
| Outer sheath thickness | approx. 0.5 mm |
| External cable diameter D | 4.2 mm ±0.15 mm |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Number of bending cycles | 10000000 |
| Minimum bending radius, drag chain applications | 10 x D |
| Traversing path | 10 m |
| Traversing rate | 3 m/s |
| Acceleration | 10 m/s ² |
| Cable weight | 30 kg/km |
| Outer sheath, material | PUR |
| Material conductor insulation | PP |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 1 GΩ*km |
| Conductor resistance | ≤ 58 Ω/km |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |
| Special properties | Flexible cable conduit capable |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PUR halogen-free black [PUR]

| | |
|---------------------------------|---|
| | Silicone-free |
| | Free of substances which would hinder coating with paint or varnish |
| | flexible |
| Flame resistance | in accordance with UL 758/1581 FT2 |
| | DIN EN 60332-2-2 (20 s) |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| | in accordance with DIN EN 50267-2-1 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | Highly resistant to acids, alkaline solutions and solvents |
| | hydrolysis and microbe resistant |
| | partly UV-resistant in accordance with DIN EN ISO 4892-2-A |
| | Low adhesion |
| | abrasion-resistant |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

PVC black [PVC]

| | |
|---|---------------------------------------|
| Cable type | PVC black |
| Cable type (abbreviation) | PVC |
| Cable abbreviation | LiYY |
| UL AWM style | 2464 / 1729 (80°C/300 V) |
| Conductor cross section | 4x 0.34 mm ² (Signal line) |
| AWG signal line | 22 |
| Conductor structure signal line | 42x 0.10 mm |
| Core diameter including insulation | 1.45 mm ±0.02 mm |
| Thickness, insulation | ≥ 0.23 mm (Core insulation) |
| Wire colors | brown, white, blue, black |
| Overall twist | 4 wires, twisted |
| External sheath, color | black RAL 9005 |
| Outer sheath thickness | ≥ 0.76 mm |
| External cable diameter D | 5.2 mm ±0.15 mm |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Cable weight | 40 kg/km |
| Outer sheath, material | PVC |
| Material conductor insulation | PVC |
| Conductor material | Bare Cu litz wires |
| Insulation resistance | ≥ 200 MΩ*km (at 20 °C) |
| Conductor resistance | max. 58 Ω/km (at 20 °C) |
| Nominal voltage, cable | ≤ 300 V |
| Test voltage, cable | ≥ 3000 V |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Technical data

PVC black [PVC]

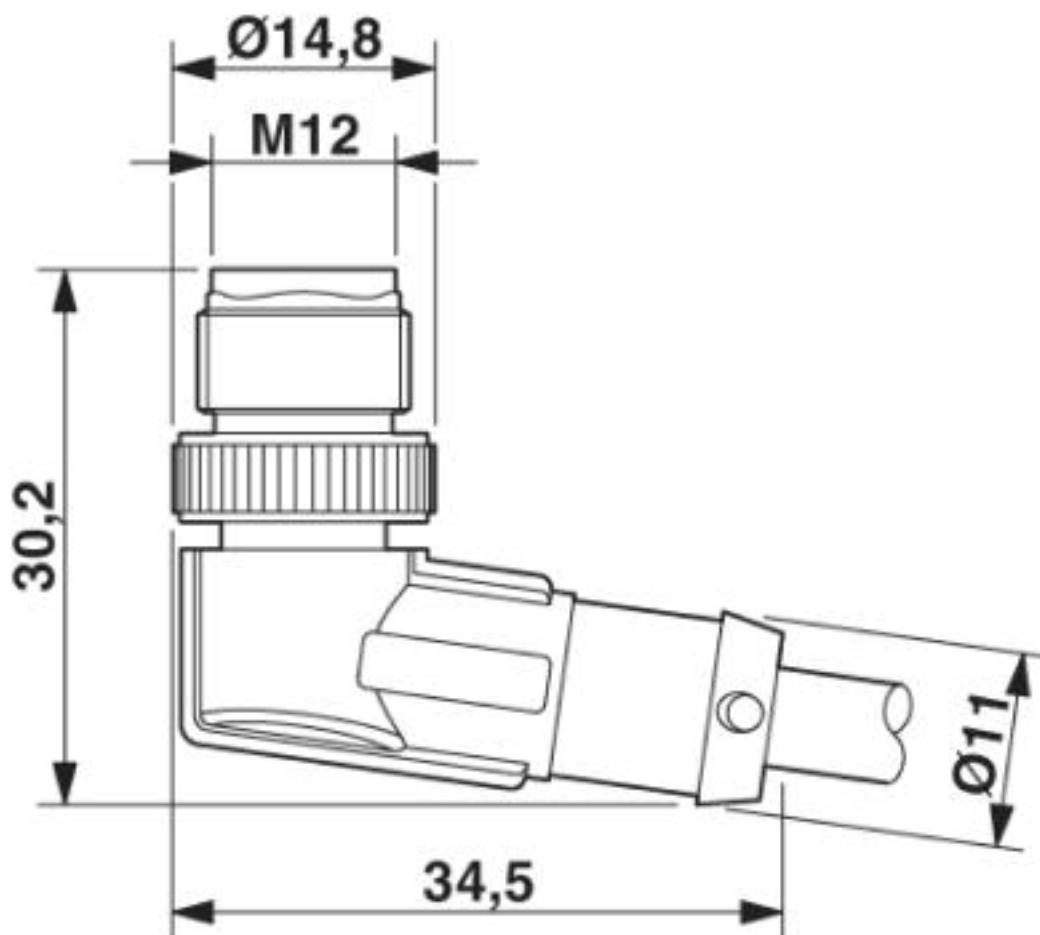
| | |
|---------------------------------|---|
| Flame resistance | according to UL 758/1581 FT1 |
| | According to UL 758/1581 (Cable Flame) |
| | According to DIN EN 60332-1-2 |
| Resistance to oil | according to DIN EN 60811-2-1, 168 h at 60 °C |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (cable, flexible installation) |

Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

Drawings

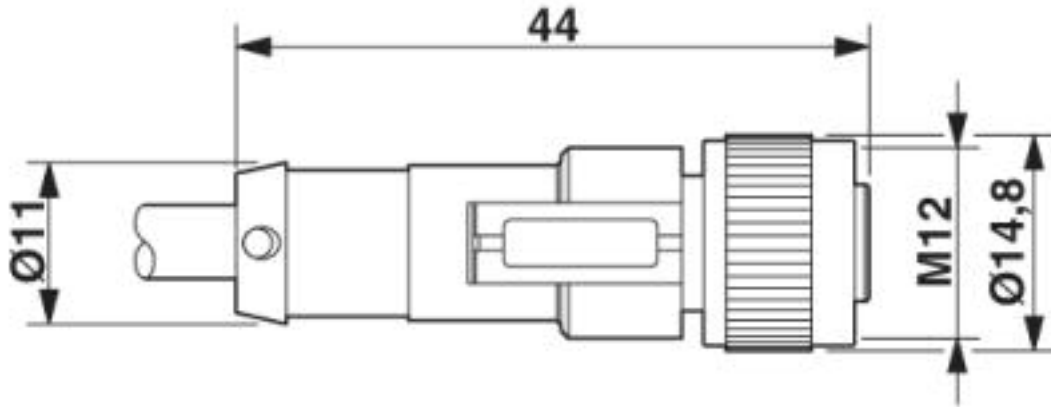
Dimensional drawing



M12 x 1 male plug, angled

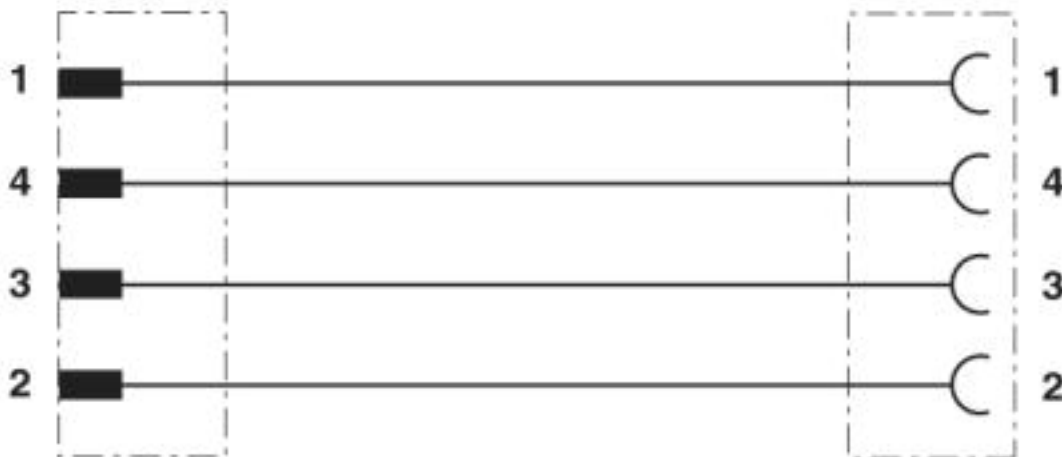
Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Dimensional drawing



M12 x 1 socket, straight

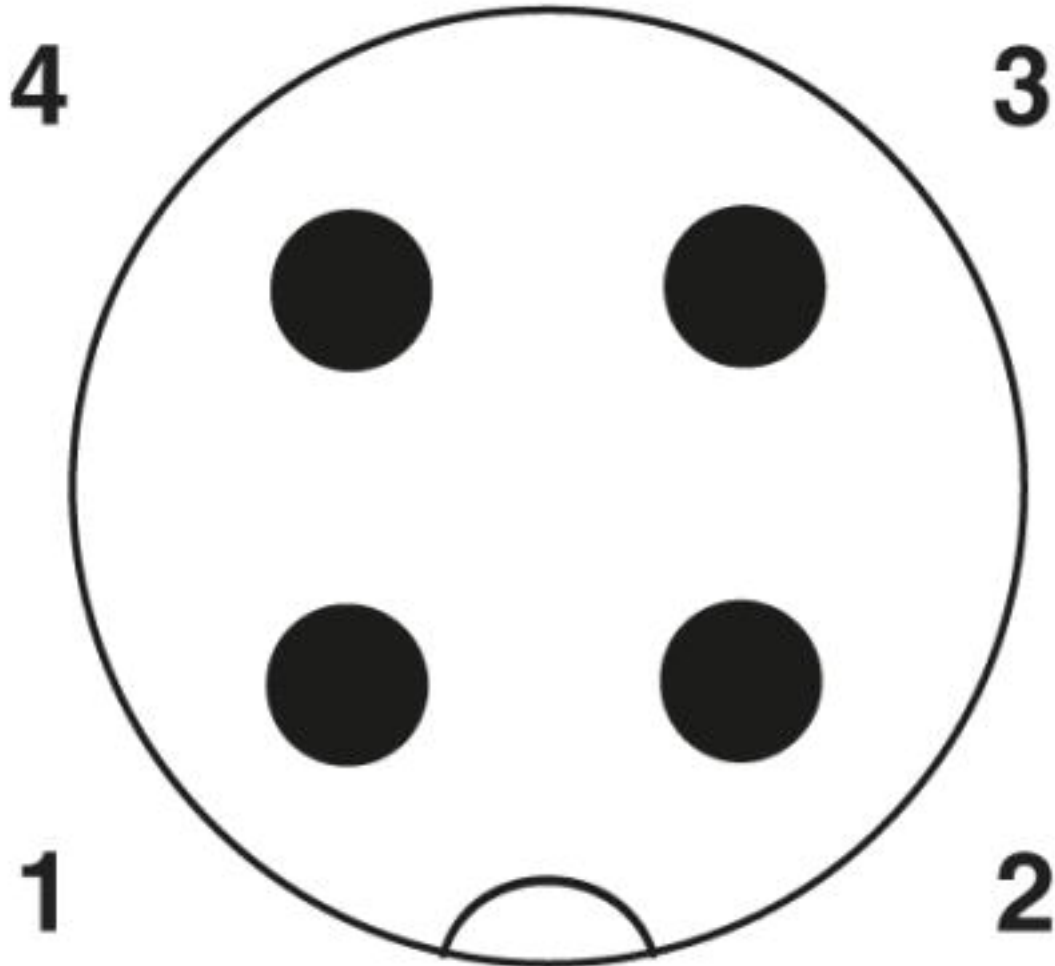
Circuit diagram



Contact assignment of the M12 plug and the M12 socket

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

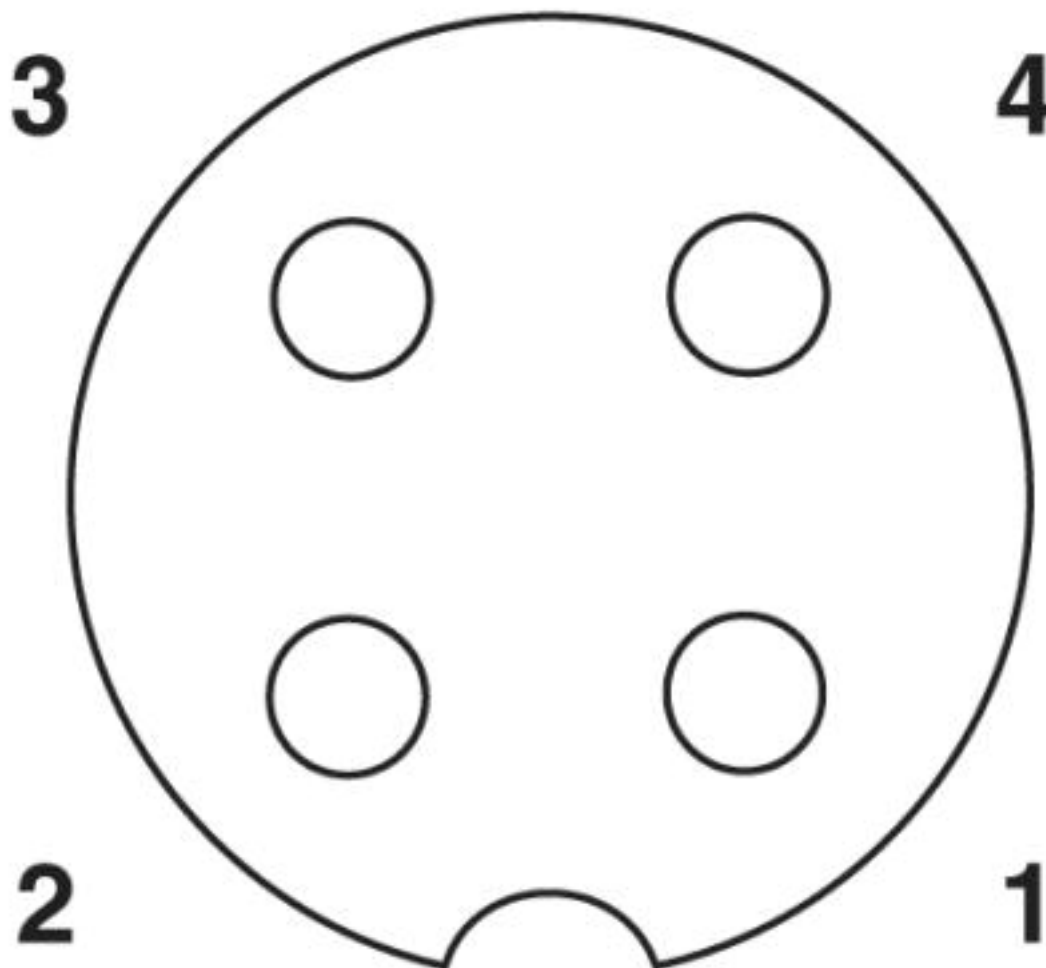
Schematic diagram



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

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

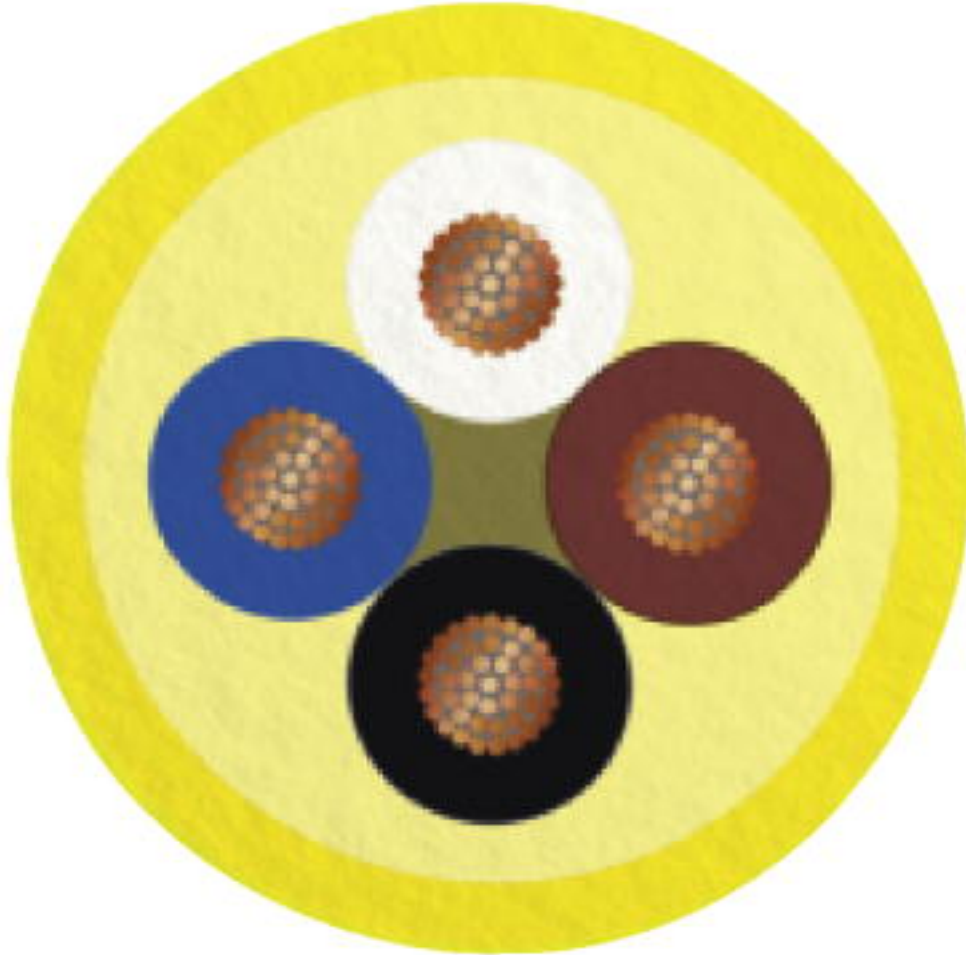
Schematic diagram



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

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

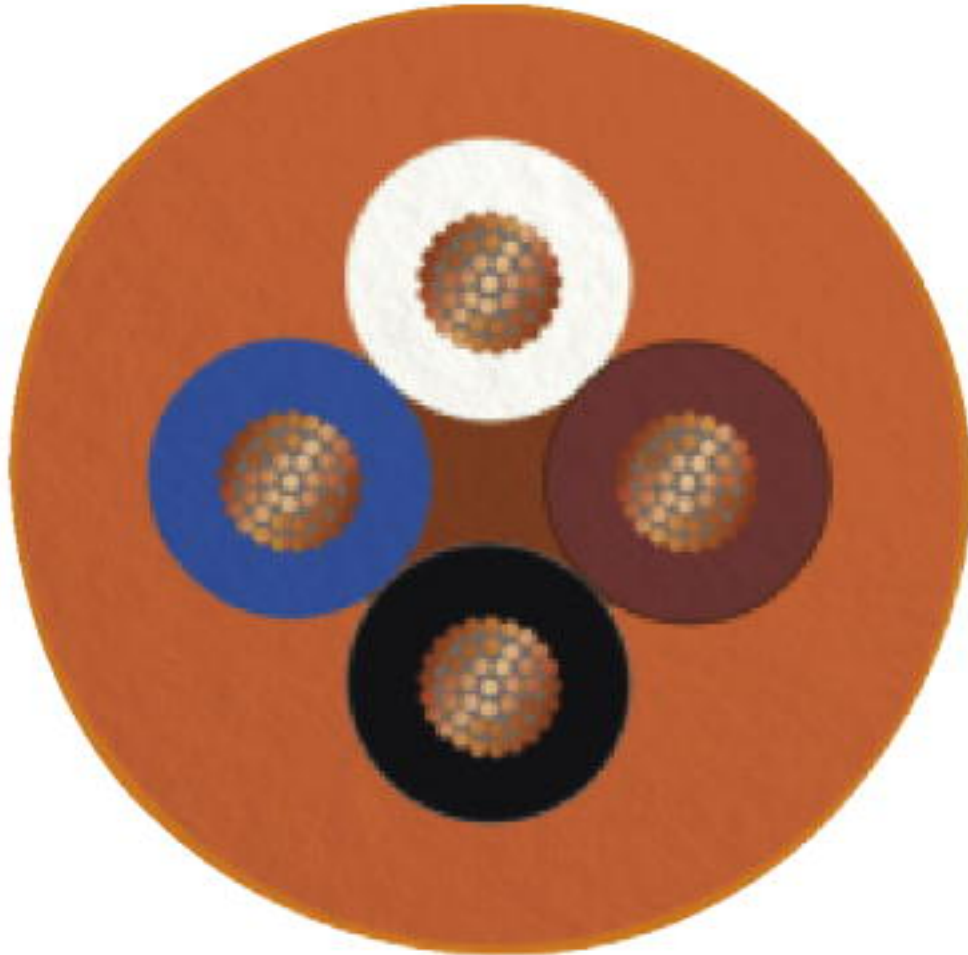
Cable cross section



PUR/PVC yellow [140]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

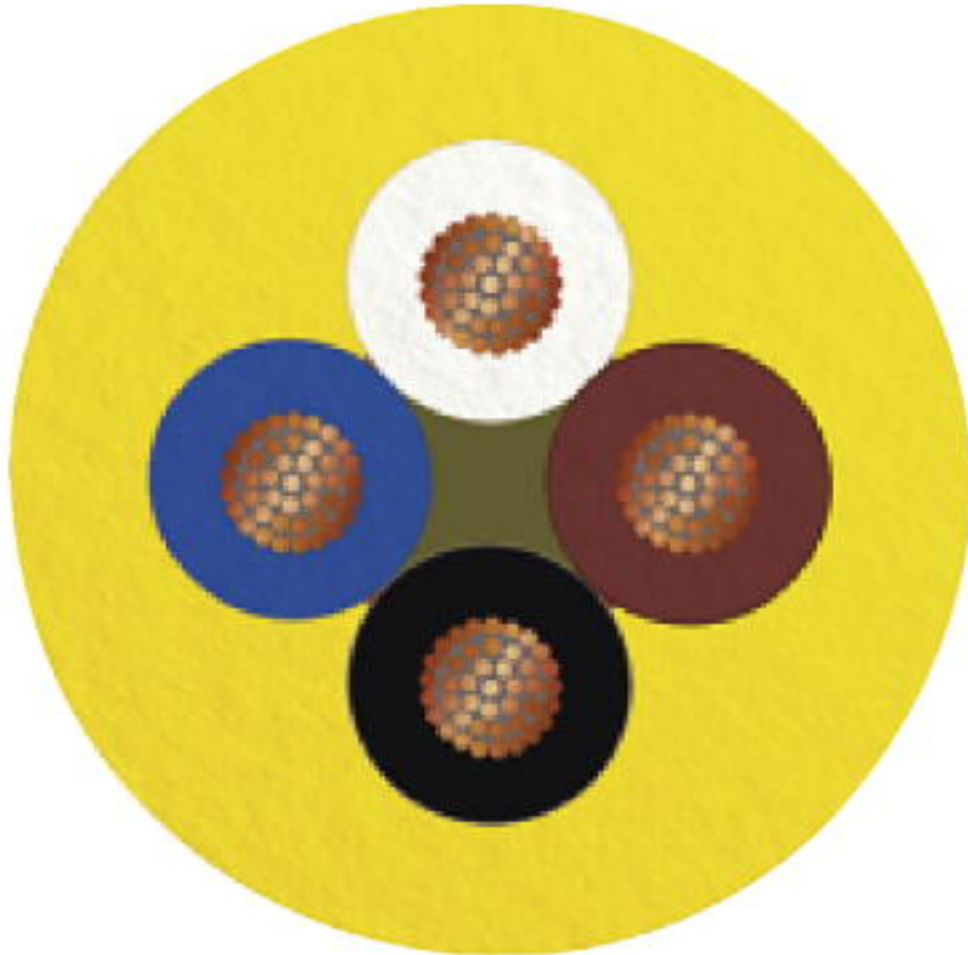
Cable cross section



PUR irradiated halogen-free orange [150]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

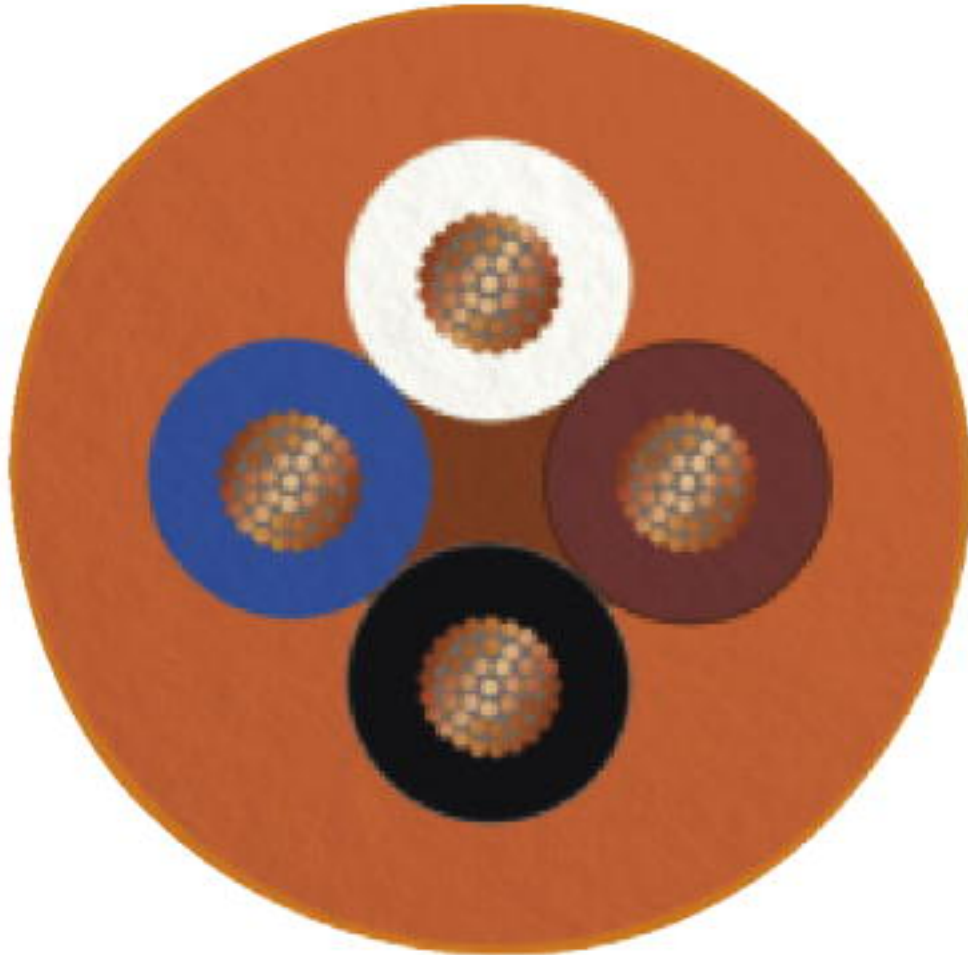
Cable cross section



PUR irradiated halogen-free yellow [160]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

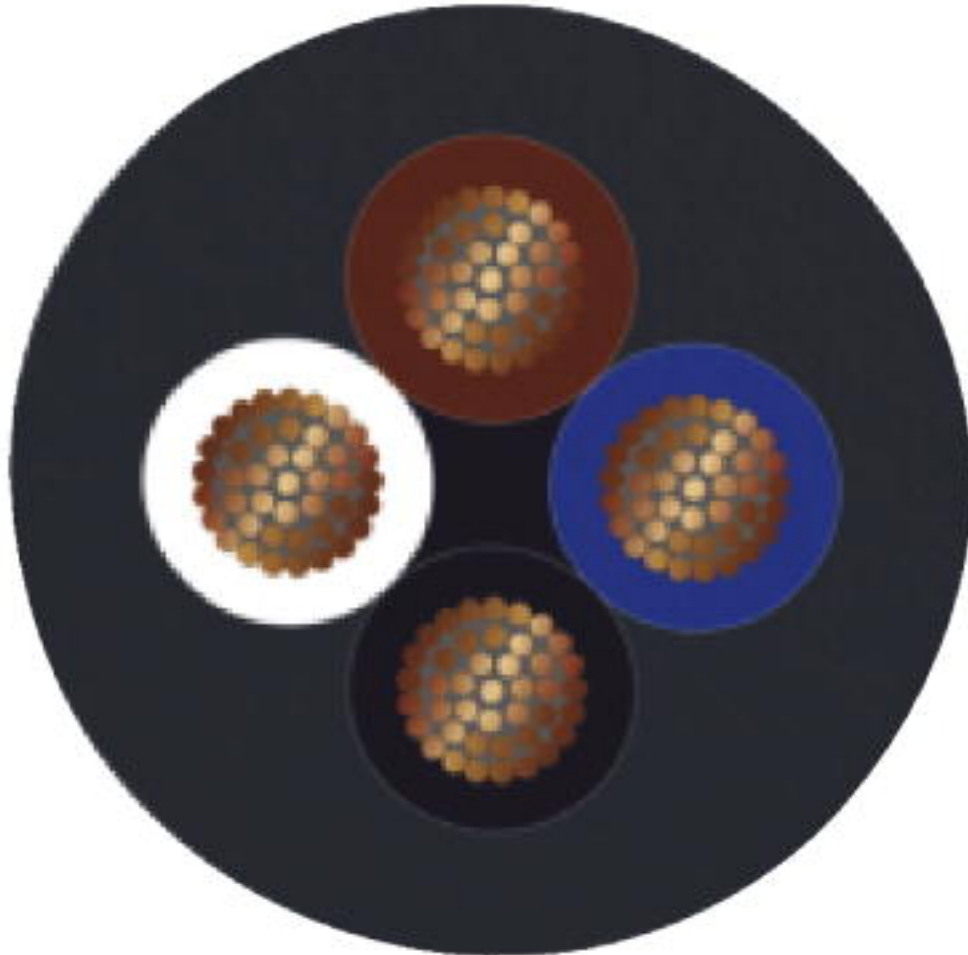
Cable cross section



PUR halogen-free orange [180]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

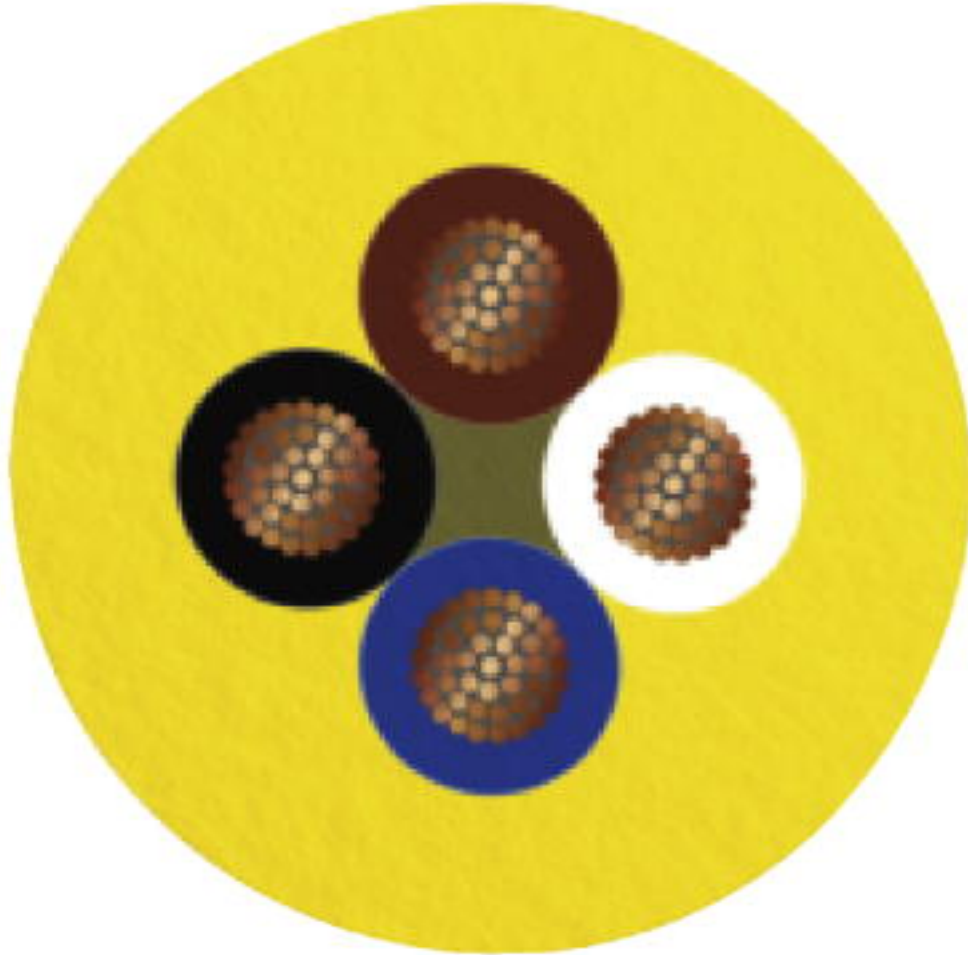
Cable cross section



PUR POWER 0.75 mm² black [186]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

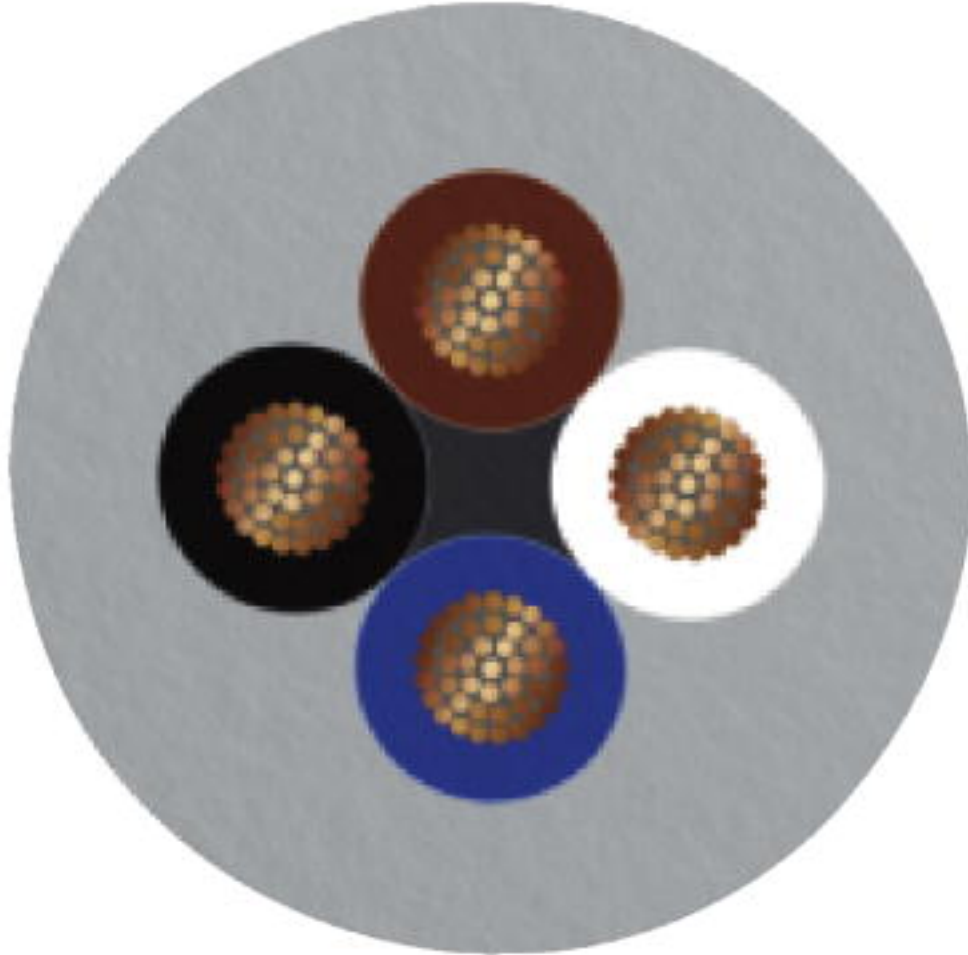
Cable cross section



PUR halogen-free yellow [240]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

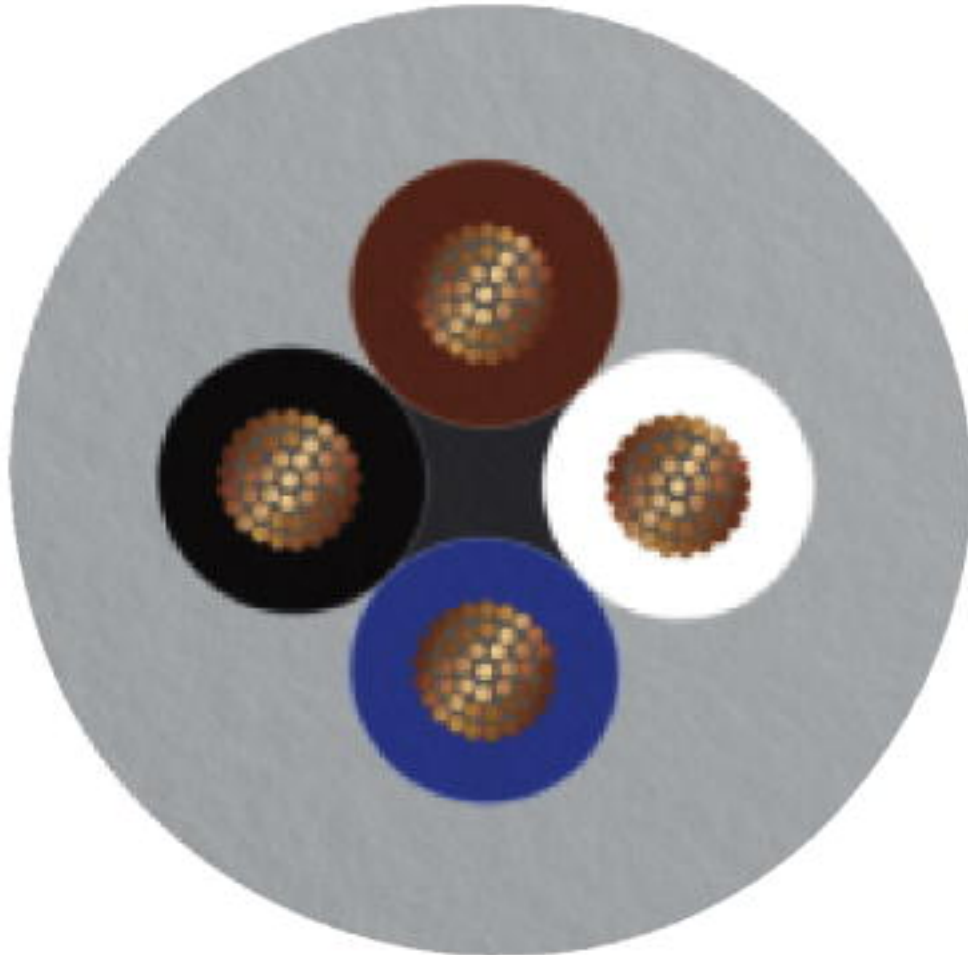
Cable cross section



PUR halogen-free gray [280]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

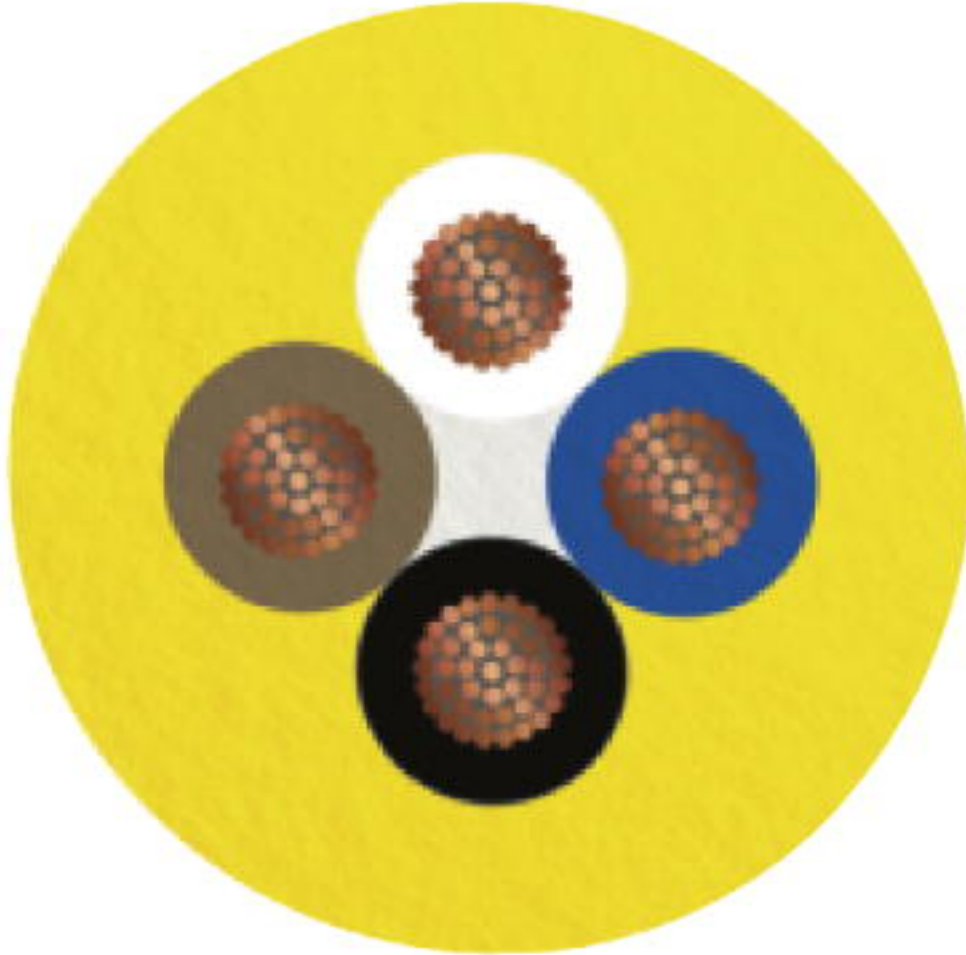
Cable cross section



PVC gray [500]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

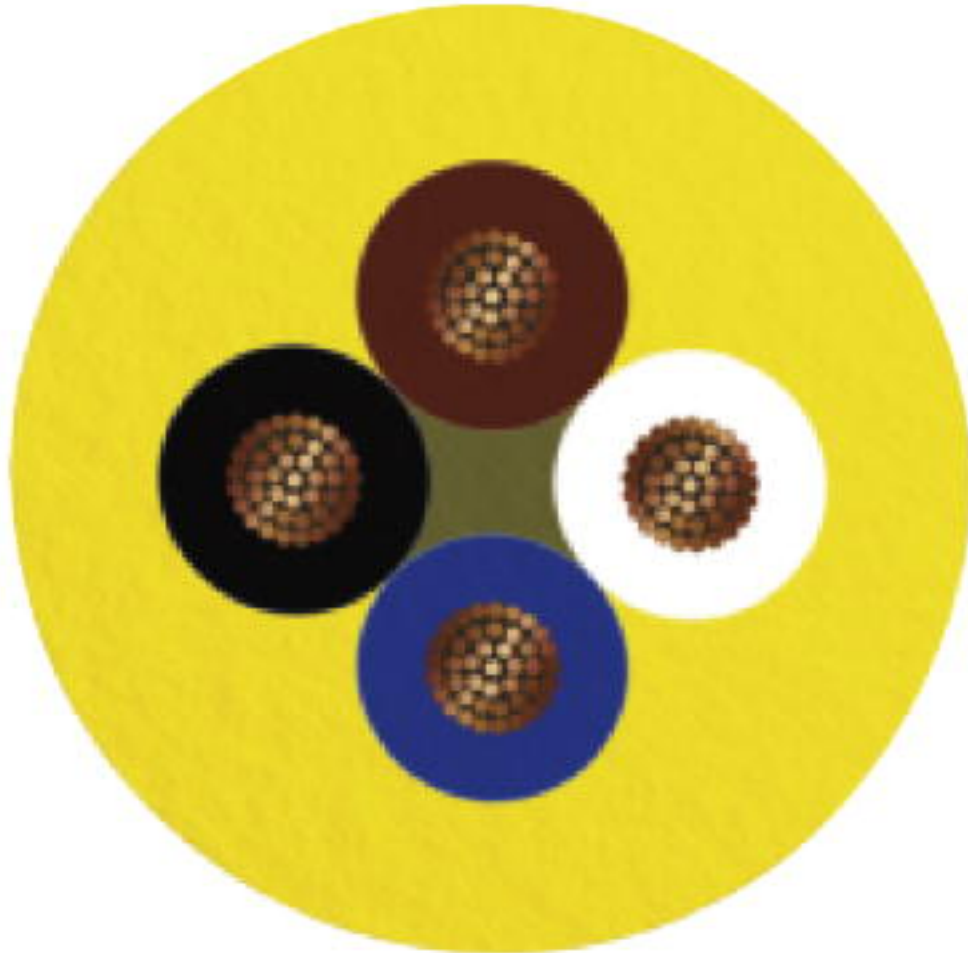
Cable cross section



PVC yellow [540]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

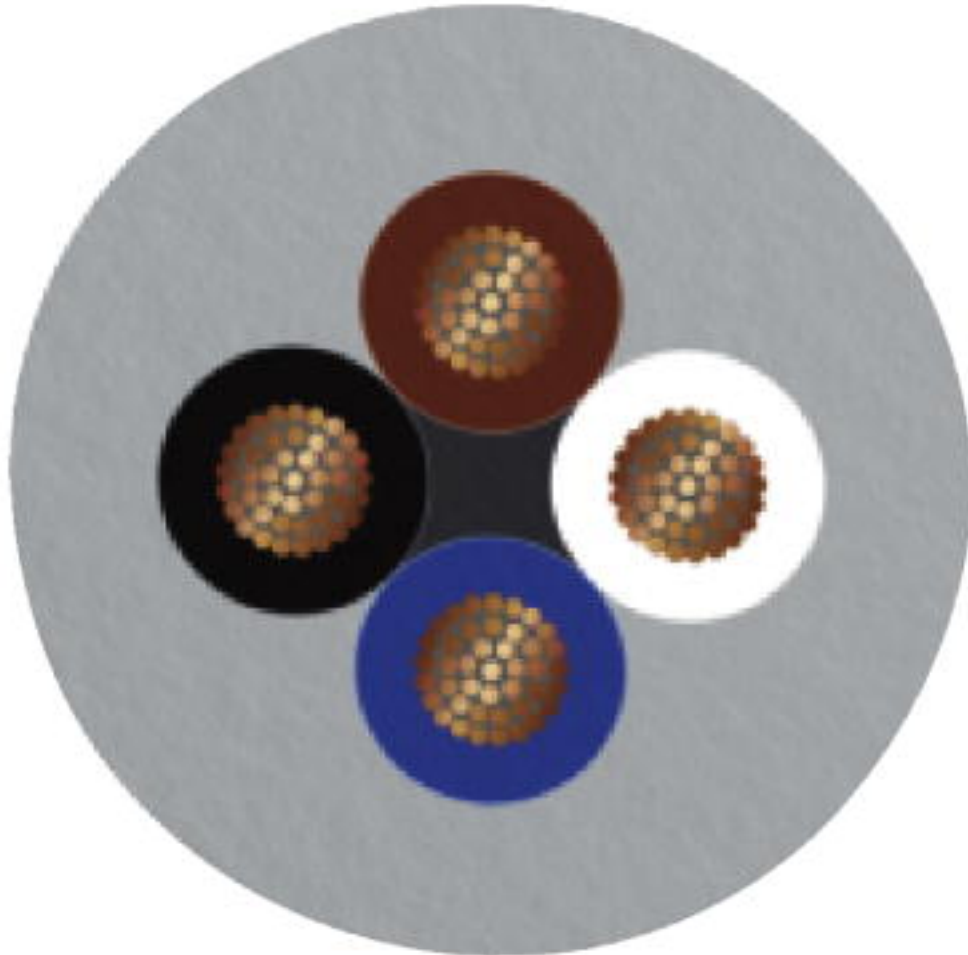
Cable cross section



PVC yellow 105 °C [542]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

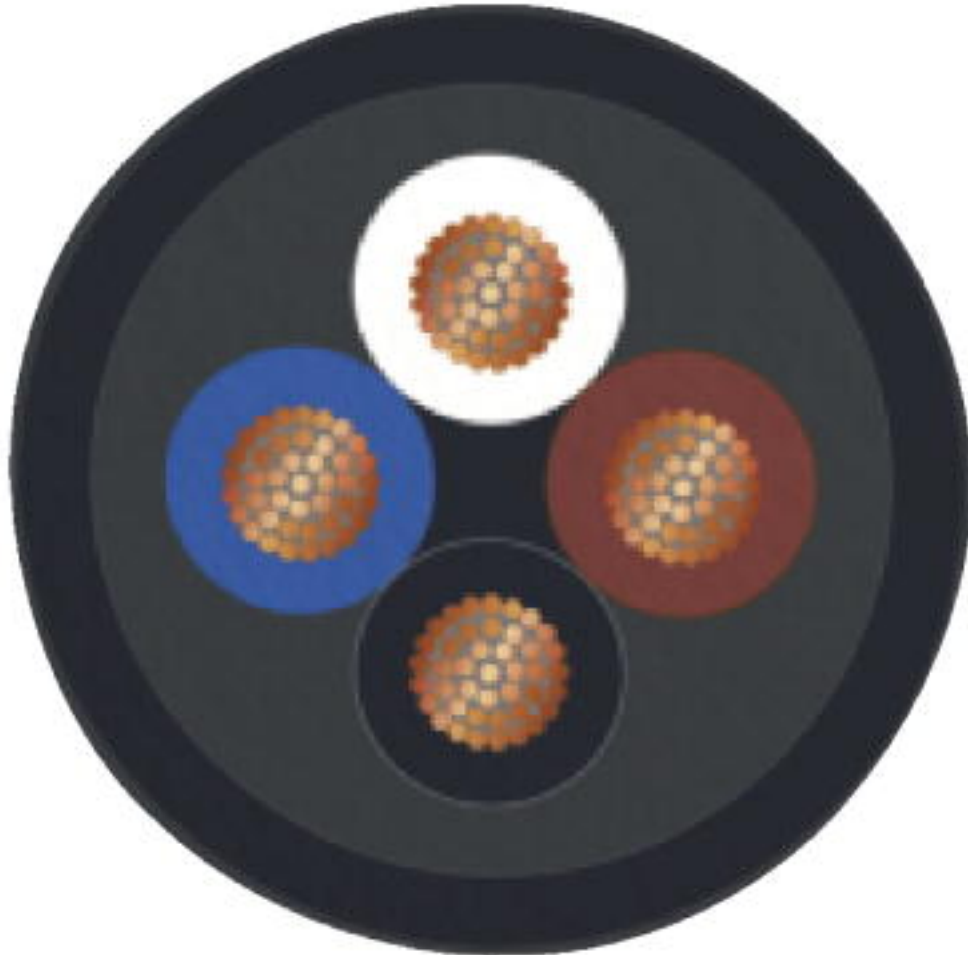
Cable cross section



Gray, highly flexible PUR [800]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

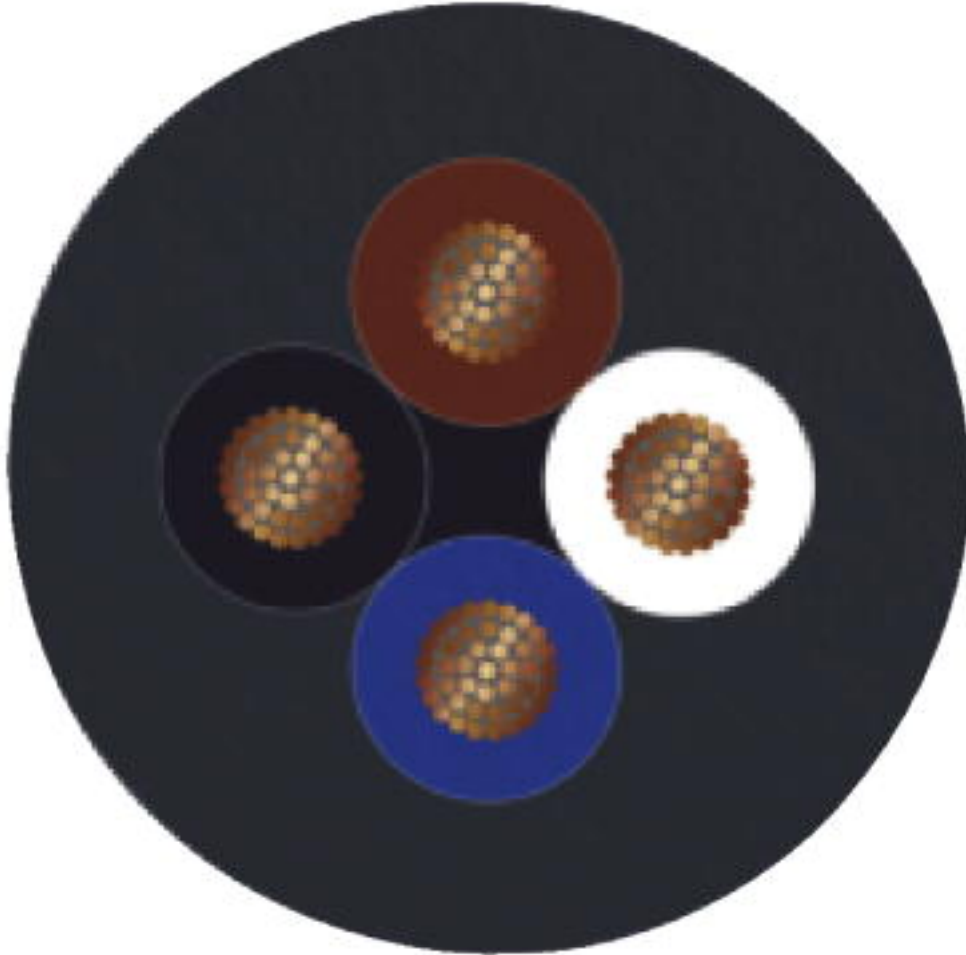
Cable cross section



PUR halogen-free black [PUR]

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Cable cross section



PVC black [PVC]

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-M12MR-M12FS/.../... - 1697030

Classifications

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC001855 |
| 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

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

| | | | |
|--------------------|-------|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 221474 |
| Nominal voltage UN | 300 V | | |
| Nominal current IN | 4 A | | |

| | | | |
|--------------------|-------|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 221474 |
| Nominal voltage UN | 300 V | | |

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Approvals

| | |
|--------------------------------|-----|
| Nominal current I _N | 4 A |
|--------------------------------|-----|

| | |
|--------------|--|
| cULus Listed | |
|--------------|--|

Accessories

Accessories

Conductor marking

Insert label - PABA WH/23 - 1013779



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Insert label - PABA YE/23 - 1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Plug for cable screw gland

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Accessories

Protective cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



Safety locking

Locking clip - SAC-M12-EXCLIP-M - 1558988



Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

Locking clip - SAC-M12-EXCLIP-F - 1558991



Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

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

Tool - SAC BIT M12-D15 - 1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

Torque tool

Sensor/actuator cable - SAC-4P-M12MR-M12FS/.../... - 1697030

Accessories

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>