

## Sensor/actuator cable - SAC-4P-M12MR/3,0-PUR/M12FR - 1668742

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Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12, coding: A, on Socket angled M12, coding: A, cable length: 3 m

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Our standard: robust halogen-free PUR cable



### Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 pc  |
| GTIN                                 | <br>4 017918 137281 |
| GTIN                                 | 4017918137281   |
| Weight per Piece (excluding packing) | 109.200 g   |
| Custom tariff number                 | 85444290  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 3 m |
|-----------------|-----|

#### Ambient conditions

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

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### Technical data

#### General

|                              |                               |
|------------------------------|-------------------------------|
| Rated current at 40°C        | 4 A                           |
| Rated voltage                | 250 V AC                      |
|                              | 250 V DC                      |
| Number of positions          | 4                             |
| Insulation resistance        | ≥ 10 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                         |
| 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   |

#### Standards and Regulations

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

#### Cable

|                                    |                            |
|------------------------------------|----------------------------|
| 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 <sup>2</sup>    |
| 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           |

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### Technical data

#### Cable

|   |   |
|---|---|
| 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 <sup>2</sup>   |
| 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  |
| 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  |
| 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                                 |
| 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 |
|------------|---|

# Sensor/actuator cable - SAC-4P-M12MR/3,0-PUR/M12FR - 1668742

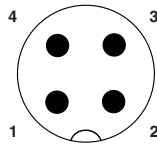
## Technical data

### Environmental Product Compliance

|  |  |
|--|--|
|  | No hazardous substances above threshold values |
|--|--|

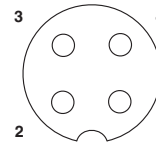
## Drawings

Schematic diagram



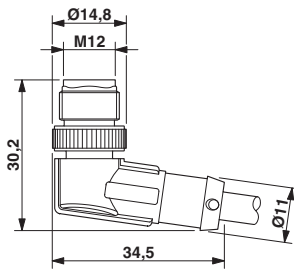
Pin assignment M12 plug, 4-pos., A-coded, view plug side

Schematic diagram



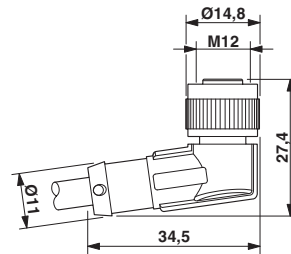
Pin assignment M12 socket, 4-pos., A-coded, view female side

Dimensional drawing



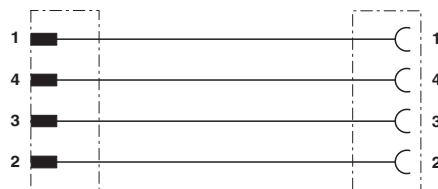
M12 x 1 male plug, angled

Dimensional drawing



M12 x 1 socket, angled

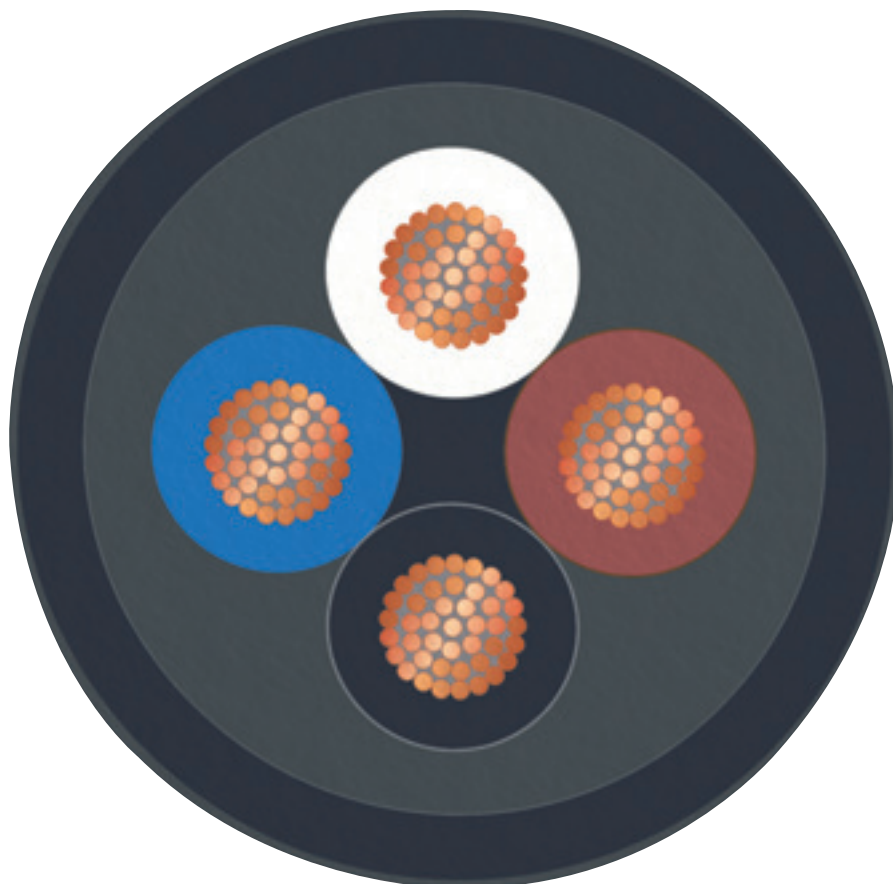
Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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Cable cross section



PUR halogen-free black [PUR]

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060311 |
| eCl@ss 11.0   | 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 9.0    | 27060311 |

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC001855 |
| ETIM 4.0 | 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 / EAC-RoHS / EAC / cULus Listed

#### Ex Approvals

### Approval details

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

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## Approvals

|                    |  |   |               |
|--------------------|--|---|---------------|
| cUL Listed         |  | <a href="http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm</a> | FILE E 221474 |
| Nominal voltage UN |  | 300 V   |               |
| Nominal current IN |  | 4 A   |               |

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

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

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

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### Accessories

Marker pen - B-STIFT - 1051993



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

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### 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

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### 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

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### 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

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## Sensor/actuator cable - SAC-4P-M12MR/3,0-PUR/M12FR - 1668742

### Accessories

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

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### 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

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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

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### 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

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



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

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### Accessories

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