

## Sensor/actuator cable - SAC-4P-3,0-600/M12FR-3L FB - 1404020

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Sensor/actuator cable, 4-position, PP-EPDM halogen-free, gray RAL 7035, free cable end, on Socket angled M12, coding: A, with 3 LEDs, cable length: 3 m, Hygienic design, with plastic knurl

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Easy to clean, thanks to the special hygienic design
- ✓ Contamination can be detected quickly – thanks to the light color
- ✓ Convenient: increased machine availability thanks to quick and easy diagnostics

### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4046356677653 |

### Technical data

#### Dimensions

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

#### Ambient conditions

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Ambient temperature (operation) | -40 °C ... 105 °C (Plug / socket) |
| Degree of protection            | IP65                              |
|                                 | IP67                              |
|                                 | IP68                              |
|                                 | IP69K                             |

#### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 4 A     |
| Rated voltage         | 24 V DC |
| Number of positions   | 4       |

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## Technical data

### General

|                              |  |
|------------------------------|--|
| Insulation resistance        | ≥ 100 MΩ                                 |
| Coding                       | A - standard                             |
| Standards/regulations        | M12 connector IEC 61076-2-101            |
|                              | Material conformance FDA 21 CFR 177.2600 |
| Status display               | 3 LEDs                                   |
| Protective circuit/component | unwired                                  |
| Overvoltage category         | II                                       |
| Degree of pollution          | 3  |
| Insertion/withdrawal cycles  | ≥ 100                                    |
| Torque                       | 0.4 Nm (M12 connector)                   |

### Material

|                          |               |
|--------------------------|---------------|
| Contact material         | CuSn          |
| Contact surface material | Ni/Au         |
| Contact carrier material | PP            |
| Material of grip body    | PP            |
| Material, knurls         | Polypropylene |
| Sealing material         | FKM           |

### Standards and Regulations

|                          |  |
|--------------------------|--|
| Standards/specifications | M12 connector IEC 61076-2-101            |
|                          | Material conformance FDA 21 CFR 177.2600 |

### Cable

|   |                                       |
|---|---------------------------------------|
| Cable type                                      | Halogen-free PP gray                  |
| Cable type (abbreviation)                       | 600                                   |
| Cable abbreviation                              | Li9Y9Y                                |
| Conductor cross section                         | 4x 0.34 mm <sup>2</sup> (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)           |
| Wire colors                                     | brown, white, blue, black             |
| Overall twist                                   | 4 wires, twisted                      |
| Length of twist, overall twist                  | 48 mm                                 |
| External sheath, color                          | gray RAL 7035                         |
| Outer sheath thickness                          | approx. 0.8 mm                        |
| External cable diameter D                       | 4.7 mm ±0.15 mm                       |
| Minimum bending radius, fixed installation      | 5 x D                                 |
| Minimum bending radius, flexible installation   | 10 x D                                |
| Number of bending cycles                        | 4000000                               |
| Minimum bending radius, drag chain applications | 10 x D                                |

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### Technical data

#### Cable

|                                 |   |
|---------------------------------|---|
| Traversing path                 | 10 m  |
| Traversing rate                 | 3 m/s   |
| Acceleration                    | 10 m/s <sup>2</sup>   |
| Torsion force                   | ± 270 °/m (4,000,000 torsion cycles, max. 25 torsion cycles/min)                  |
| Cable weight                    | 30 kg/km  |
| Outer sheath, material          | PP-EPDM   |
| Material conductor insulation   | PP  |
| Conductor material              | Bare Cu litz wires  |
| Conductor resistance            | 58 Ω/km (at 20 °C)  |
| Nominal voltage, cable          | ≤ 300 V AC  |
| Test voltage, cable             | ≥ 3000 V AC (Spark test)  |
| Special properties              | FDA compliant according to FDA 21 CFR 177.2600                                    |
|                                 | highly flexible   |
|                                 | Flexible cable conduit capable  |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815  |
| Other resistance                | Resistant to cold bending and cold impacts According to DIN EN 60811-1-4 (-40 °C) |
| Ambient temperature (operation) | -40 °C ... 105 °C (cable, fixed installation)                                     |
|                                 | -25 °C ... 105 °C (cable, flexible installation)                                  |

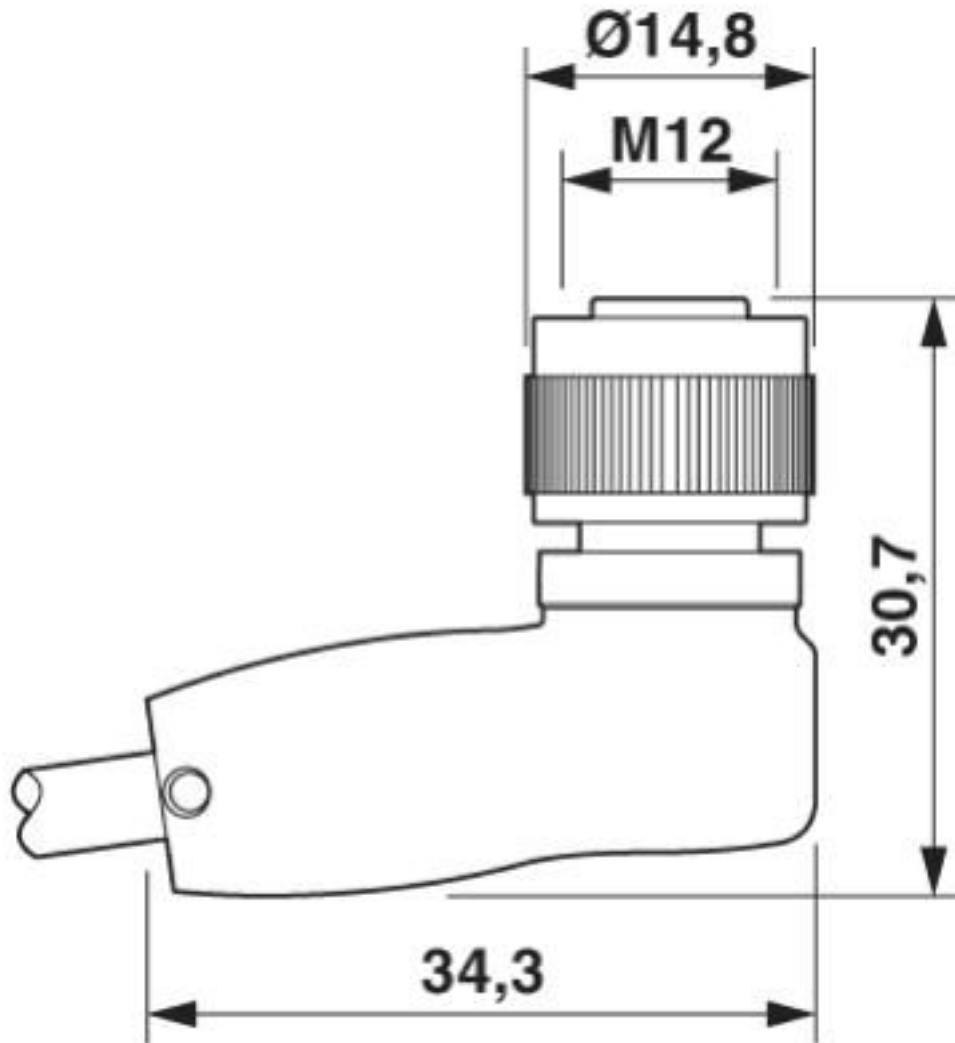
#### Environmental Product Compliance

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

#### Drawings

# Sensor/actuator cable - SAC-4P-3,0-600/M12FR-3L FB - 1404020

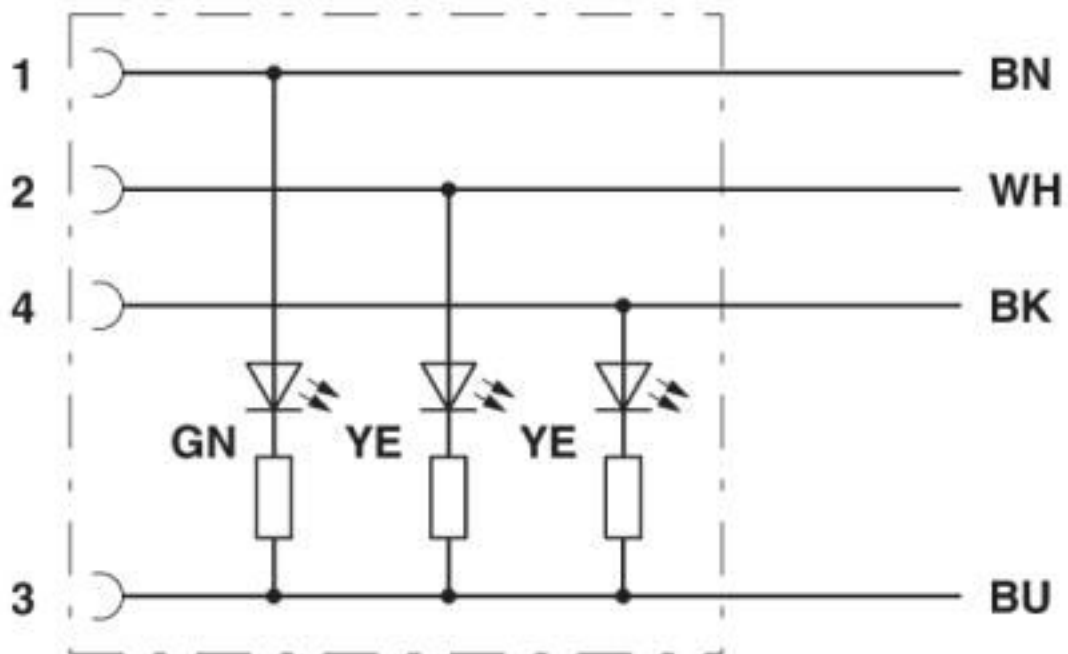
Dimensional drawing



Socket M12 x 1, angled, with LED

# Sensor/actuator cable - SAC-4P-3,0-600/M12FR-3L FB - 1404020

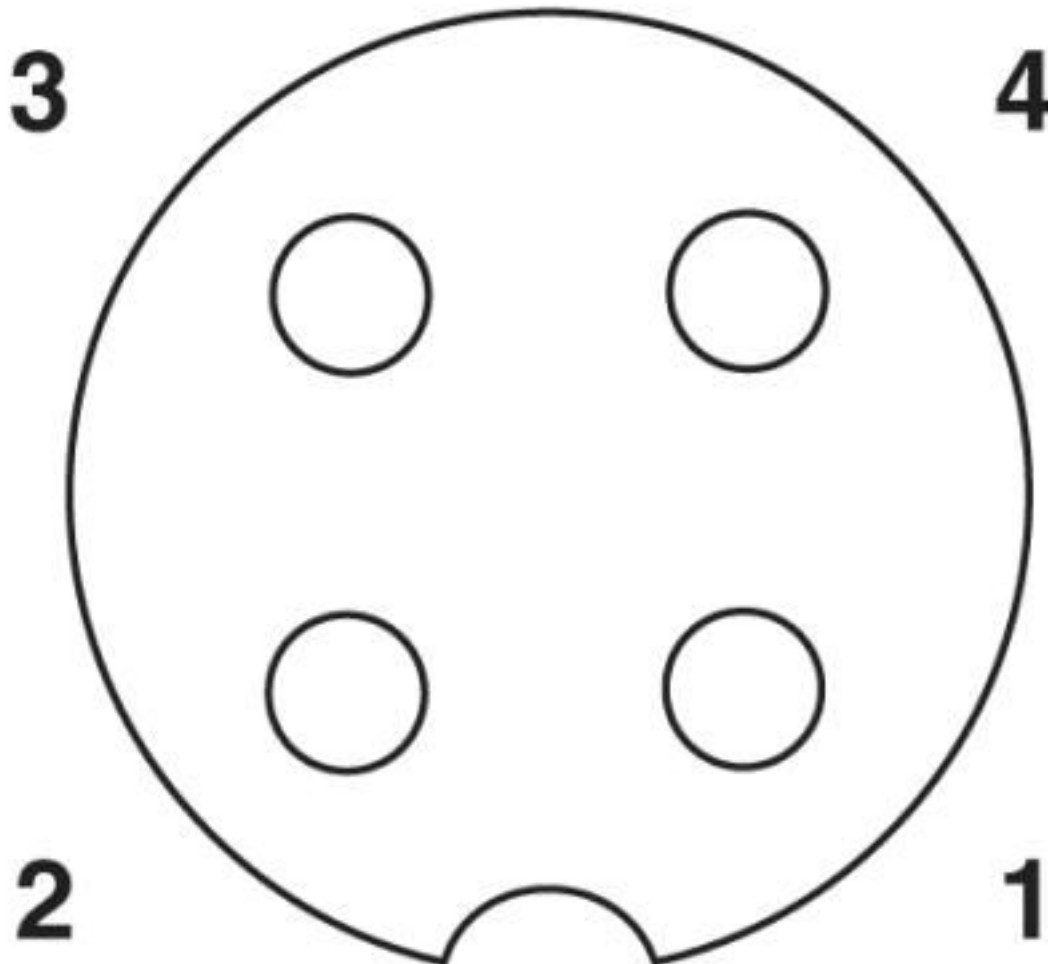
Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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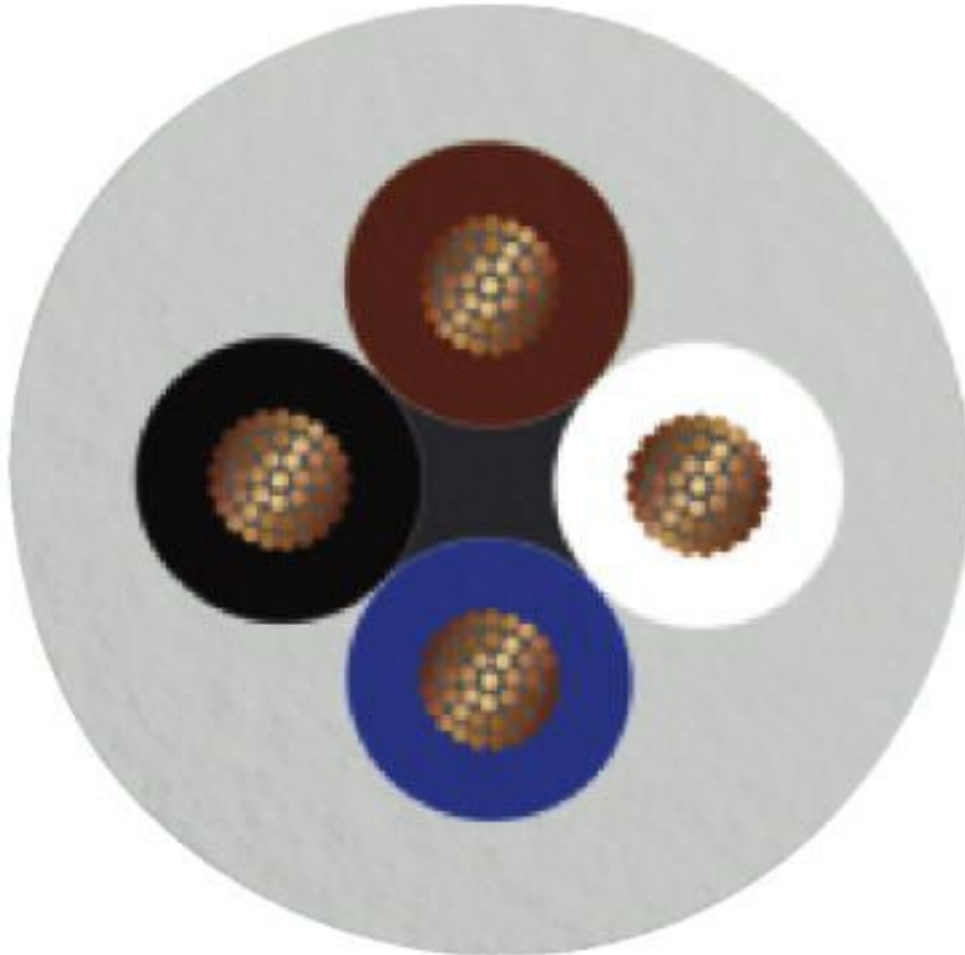
Schematic diagram



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

## Sensor/actuator cable - SAC-4P-3,0-600/M12FR-3L FB - 1404020

Cable cross section



Halogen-free PP gray [600]

### 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 |

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## Classifications

### ETIM

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

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Approvals

EAC-RoHS / EAC

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Ex Approvals

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### Approval details

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

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

## Accessories

Accessories

Cutting tools



## Sensor/actuator cable - SAC-4P-3,0-600/M12FR-3L FB - 1404020

### Accessories

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

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### Stripping tool

Stripping tool - WIREFOX SAC - 1212623



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from  $\varnothing$  of 4.4 to 7 mm, any stripping length

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Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

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