

## Sensor/actuator cable - SAC-3P- 3,0-800/M12FR - 1456718

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Sensor/actuator cable, 3-position, PUR halogen-free, resistant to welding sparks, highly flexible, gray RAL 7001, free cable end, on Socket angled M12, coding: A, cable length: 3 m, for robots and drag chains

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Flexible: cable supports a high degree of torsion and bending
- ✓ Reliable solution for the body shop as cable is resistant to welding sparks

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 046356 593076 |
| GTIN         | 4046356593076                                                                                           |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 3 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   | 3        |
| Insulation resistance | ≥ 100 MΩ |

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## Technical data

### General

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

|                                                 |                                                                                                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 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                         | 3x 0.34 mm <sup>2</sup> (Signal line)                                                            |
| AWG signal line                                 | 22                                                                                               |
| Conductor structure signal line                 | 42x 0.10 mm                                                                                      |
| Core diameter including insulation              | 1.3 mm ±0.05 mm (Signal line)                                                                    |
| Wire colors                                     | brown, blue, black                                                                               |
| Overall twist                                   | 3 wires, twisted                                                                                 |
| External sheath, color                          | gray RAL 7001                                                                                    |
| External cable diameter D                       | 4.5 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                                                                                          |

## Sensor/actuator cable - SAC-3P- 3,0-800/M12FR - 1456718

### Technical data

#### Cable

|                                 |                                                                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Acceleration                    | 5 m/s <sup>2</sup>                                                                                                                   |
| Number of bending cycles        | 15000000                                                                                                                             |
| Bending radius                  | 50 mm                                                                                                                                |
| Traversing path                 | 0.9 m                                                                                                                                |
| Traversing rate                 | 5 m/s                                                                                                                                |
| Acceleration                    | 30 m/s <sup>2</sup>                                                                                                                  |
| Torsion force                   | ± 360 °/m (1 000 000 torsion cycles)                                                                                                 |
| Cable weight                    | 28.3 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 |
|                                 | 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)                                                                                      |

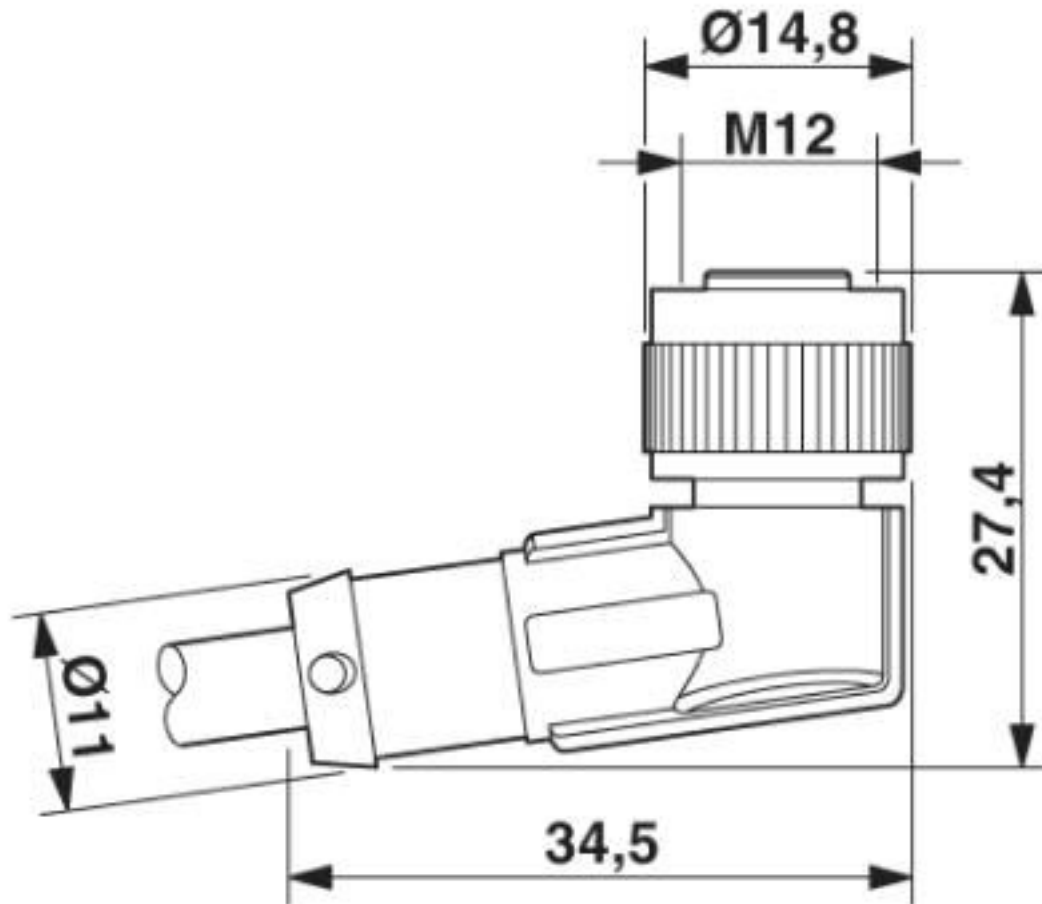
#### Environmental Product Compliance

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

#### Drawings

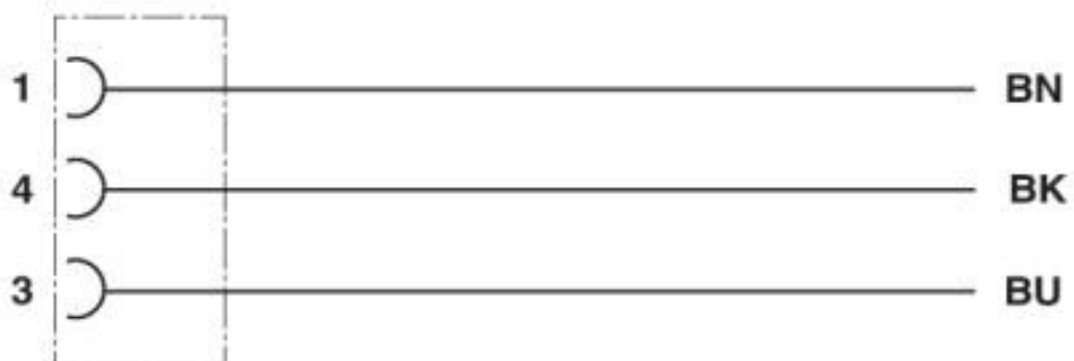
# Sensor/actuator cable - SAC-3P- 3,0-800/M12FR - 1456718

Dimensional drawing



M12 x 1 socket, angled

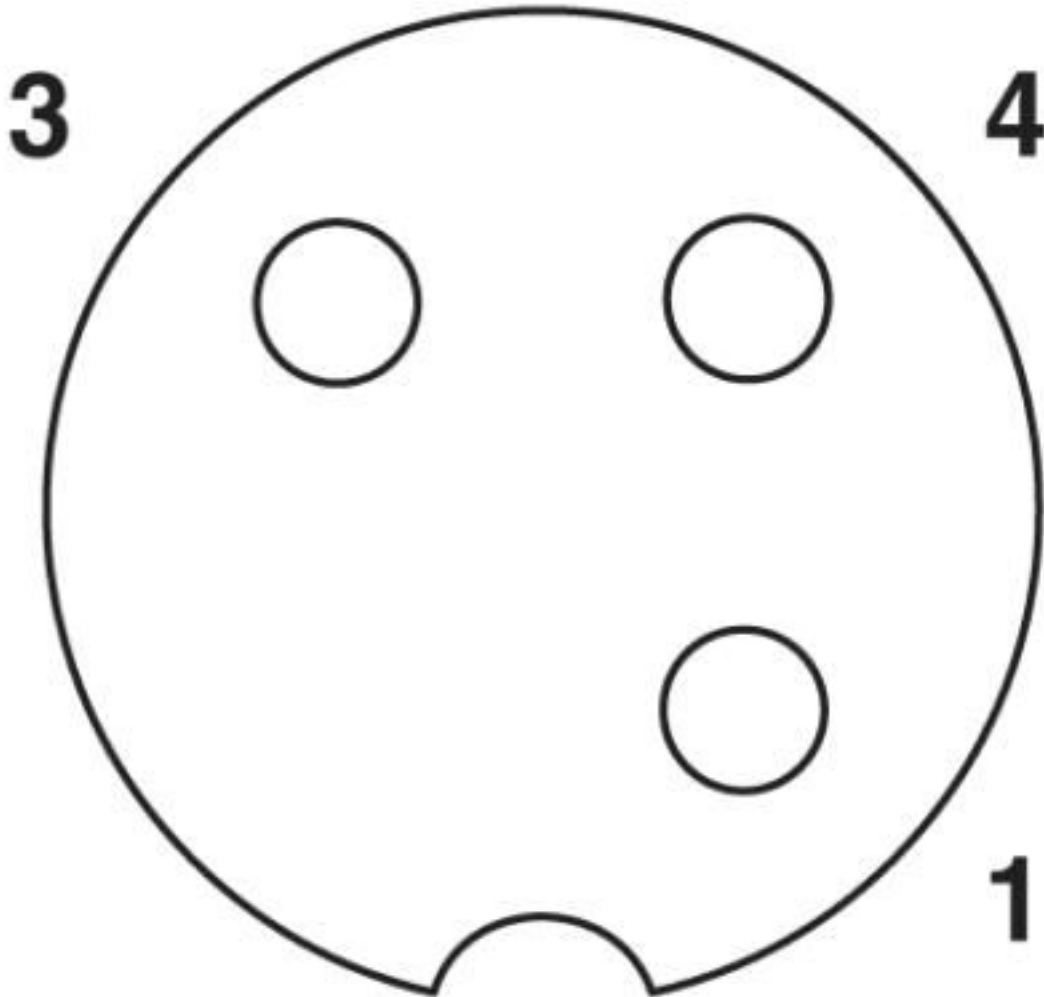
Circuit diagram



Contact assignment of the M12 socket

## Sensor/actuator cable - SAC-3P- 3,0-800/M12FR - 1456718

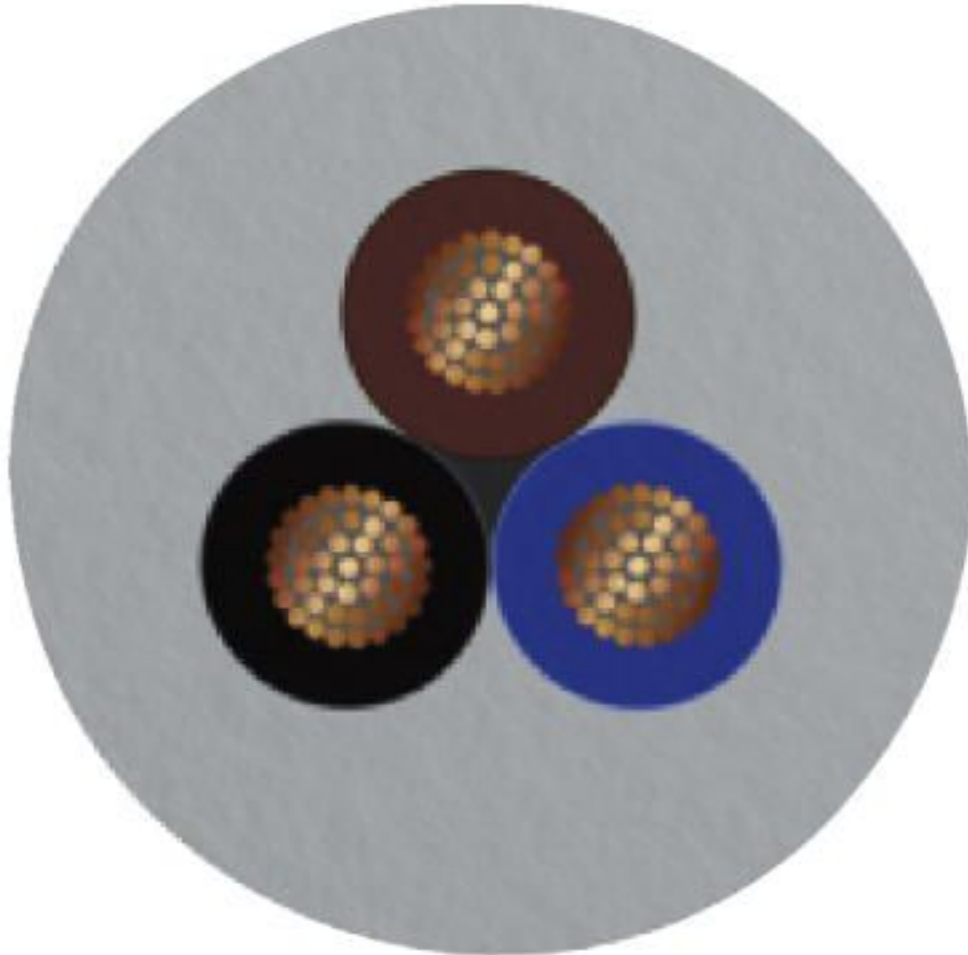
Schematic diagram



Pin assignment M12 socket, 3-pos., A-coded, view female side

## Sensor/actuator cable - SAC-3P- 3,0-800/M12FR - 1456718

Cable cross section



Gray, highly flexible PUR [800]

### 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 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 / 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                                                                                 |                                                                                                                                                       |               |

|                    |                                                                                     |                                                                                                                                                       |               |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| cUL 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

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

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

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

## Accessories

### Accessories

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



### Screwdriver tools

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

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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