

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12 SPEEDCON, coding: A, on Valve connector CI (9.4 mm), with 1 LED, connected with Z diode, cable length: 3 m

## Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Robust valve connector with Zener diode as protective circuit
- ✓ Save time, thanks to installation with SPEEDCON fast locking system
- ✓ Convenient: increased machine availability thanks to quick and easy diagnostics
- ✓ Our standard: robust halogen-free PUR cable



## Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 pc  |
| GTIN         | <br>4 046356 413916 |
| GTIN         | 4046356413916   |

## Technical data

### Dimensions

|                               |         |
|-------------------------------|---------|
| Length of cable               | 3 m     |
| Central screw valve connector | M3 x 29 |

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |
|                                 | -20 °C ... 85 °C (valve plug)    |
| Degree of protection            | IP65                             |
|                                 | IP67                             |

### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 4 A     |
| Rated voltage         | 24 V AC |
|                       | 24 V DC |

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## Technical data

### General

|                              |  |
|------------------------------|--|
| Number of positions          | 3  |
| Insulation resistance        | ≥ 100 MΩ   |
| Coding                       | A - standard                                       |
| Standards/regulations        | M12 connector IEC 61076-2-101                      |
| Status display               | 1 LED  |
| Protective circuit/component | Z diode  |
| Pulse power $W_{max}$        | 40 W (at 100 μs square-wave pulse)                 |
| Terminal voltage             | 70 V (at 2 mA constant current)                    |
| Reverse voltage              | 50 V   |
| Overvoltage category         | III  |
| Degree of pollution          | 3  |
| Insertion/withdrawal cycles  | ≥ 100 (M12 connector)                              |
| Torque                       | 0.4 Nm (M12 connector)<br>0.6 Nm (Valve 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                          |
| Valve plug contact material            | CuSn                         |
| Valve plug contact surface material    | Sn                           |
| Valve plug contact insert material     | PA 6.6                       |
| Material housing valve plug            | TPU                          |
| Material, knurls                       | Zinc die-cast, nickel-plated |
| Sealing material                       | TPU (Seal molded)            |

### 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                          |
| Conductor cross section            | 3x 0.5 mm <sup>2</sup>         |
| AWG signal line                    | 20                             |
| Conductor structure signal line    | 28x 0.15 mm                    |
| Core diameter including insulation | 1.5 mm ±0.05 mm (Signal line)  |
| Wire colors                        | black 1, black 2, green/yellow |

## Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

### Technical data

#### Cable

|   |  |
|---|--|
| Overall twist                               | 3 wires, twisted   |
| External sheath, color                      | black-gray RAL 7021  |
| External cable diameter D                   | 4.5 mm ±0.2 mm   |
| Smallest bending radius, fixed installation | 22.5 mm  |
| 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>  |
| Outer sheath, material                      | PUR  |
| Material conductor insulation               | PP   |
| Conductor material                          | Bare Cu litz wires   |
| Insulation resistance                       | min. 20 MΩ*km  |
| Conductor resistance                        | 39 Ω/km (at 20 °C)   |
| Nominal voltage, cable                      | ≤ 300 V  |
| Test voltage, cable                         | ≥ 1200 V   |
| Flame resistance                            | according to DIN VDE 0482                                  |
|   | According to DIN EN 50265-2-1                              |
| Halogen-free                                | in accordance with DIN VDE 0472 part 815                   |
| Other resistance                            | largely oil-resistant                                      |
|   | partly UV-resistant in accordance with DIN EN ISO 4892-2-A |
| Ambient temperature (operation)             | -40 °C ... 80 °C (cable, fixed installation)               |
|   | -20 °C ... 80 °C (cable, flexible installation)            |

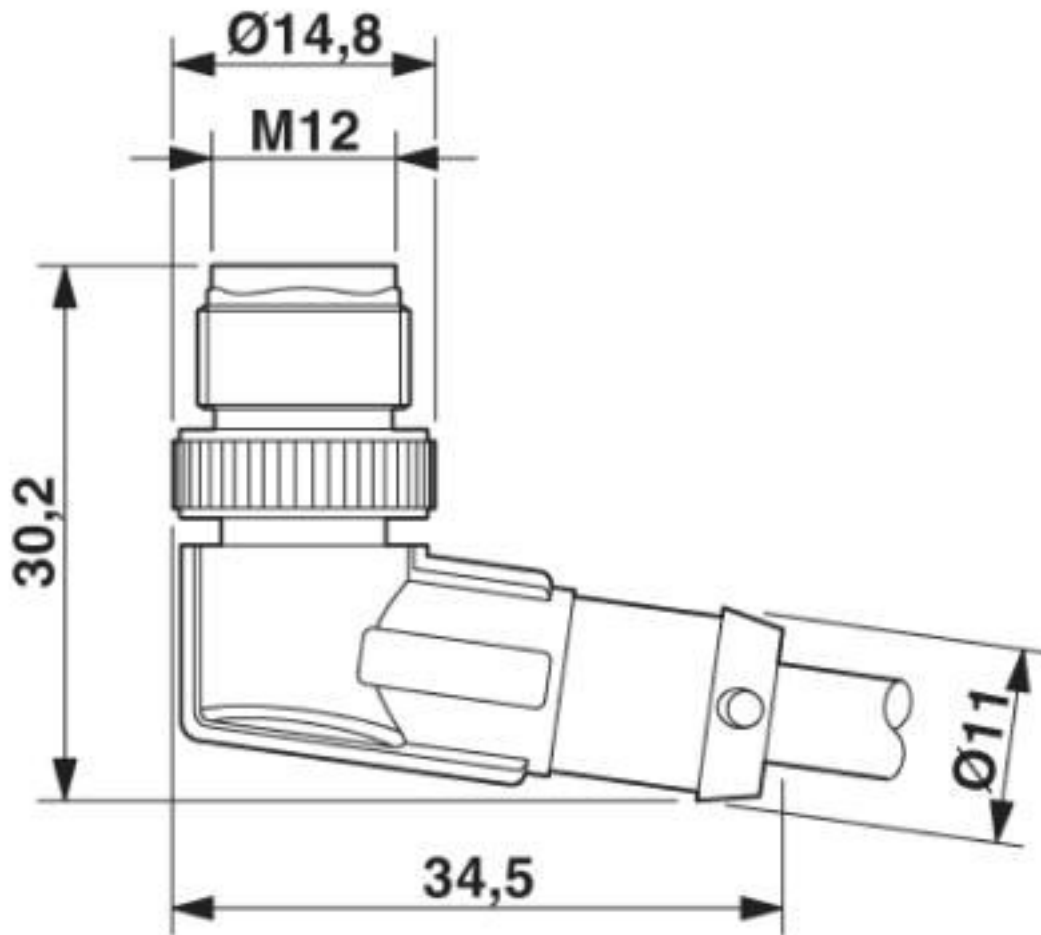
#### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

#### Drawings

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

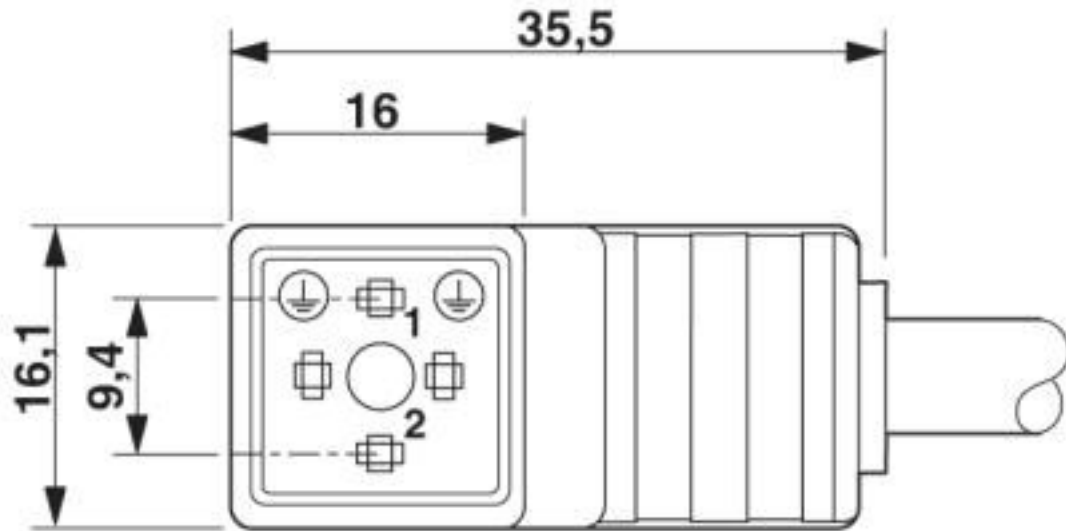
Dimensional drawing



M12 x 1 male plug, angled

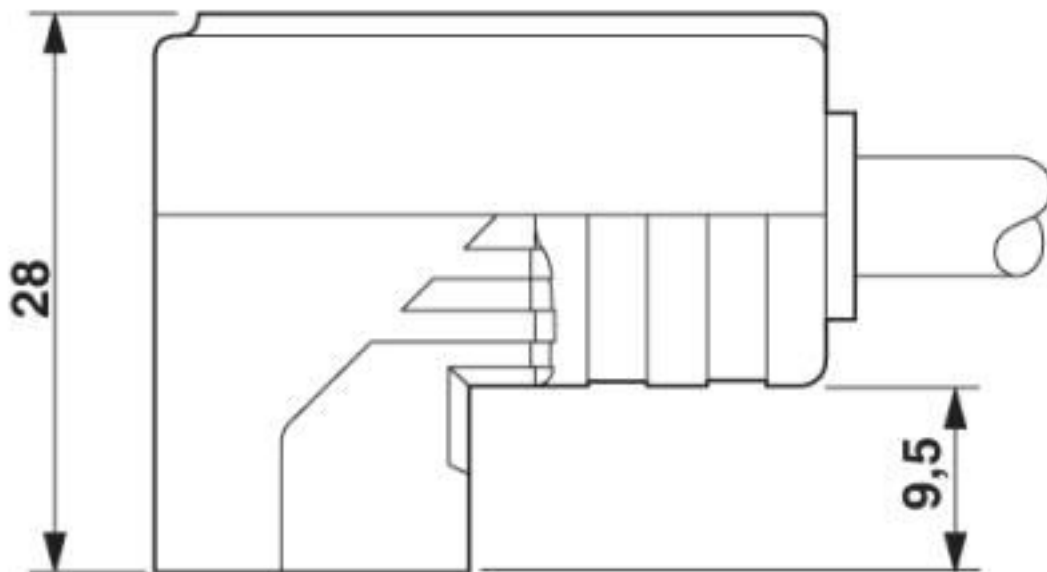
# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

Dimensional drawing



Valve connector, type CI

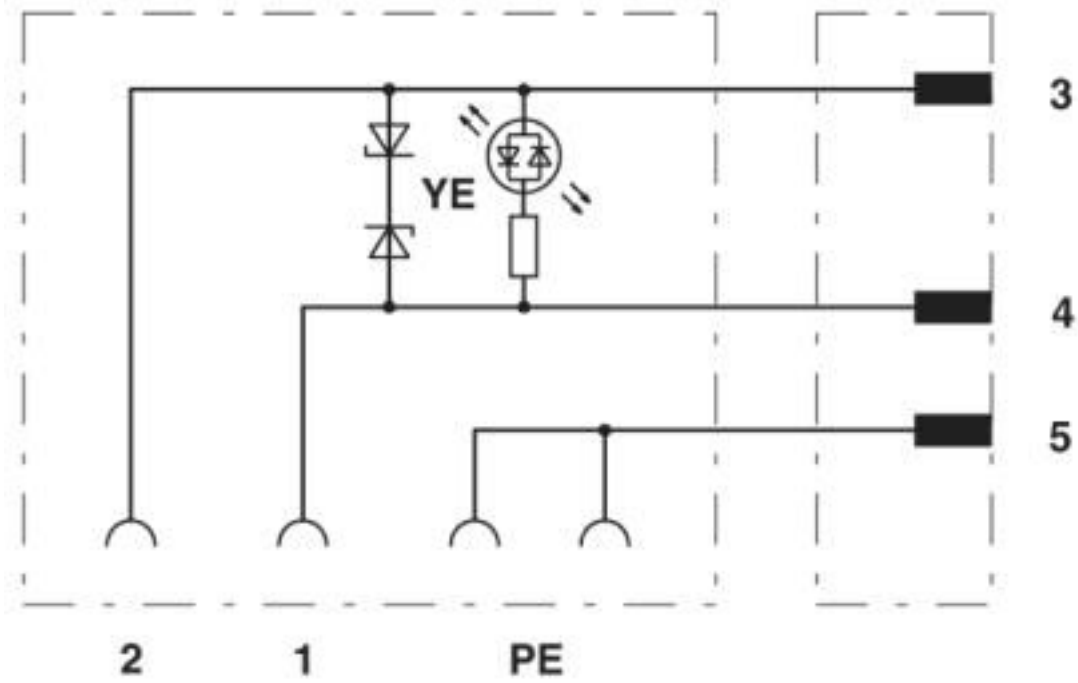
Dimensional drawing



Valve connector, type CI, side view

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

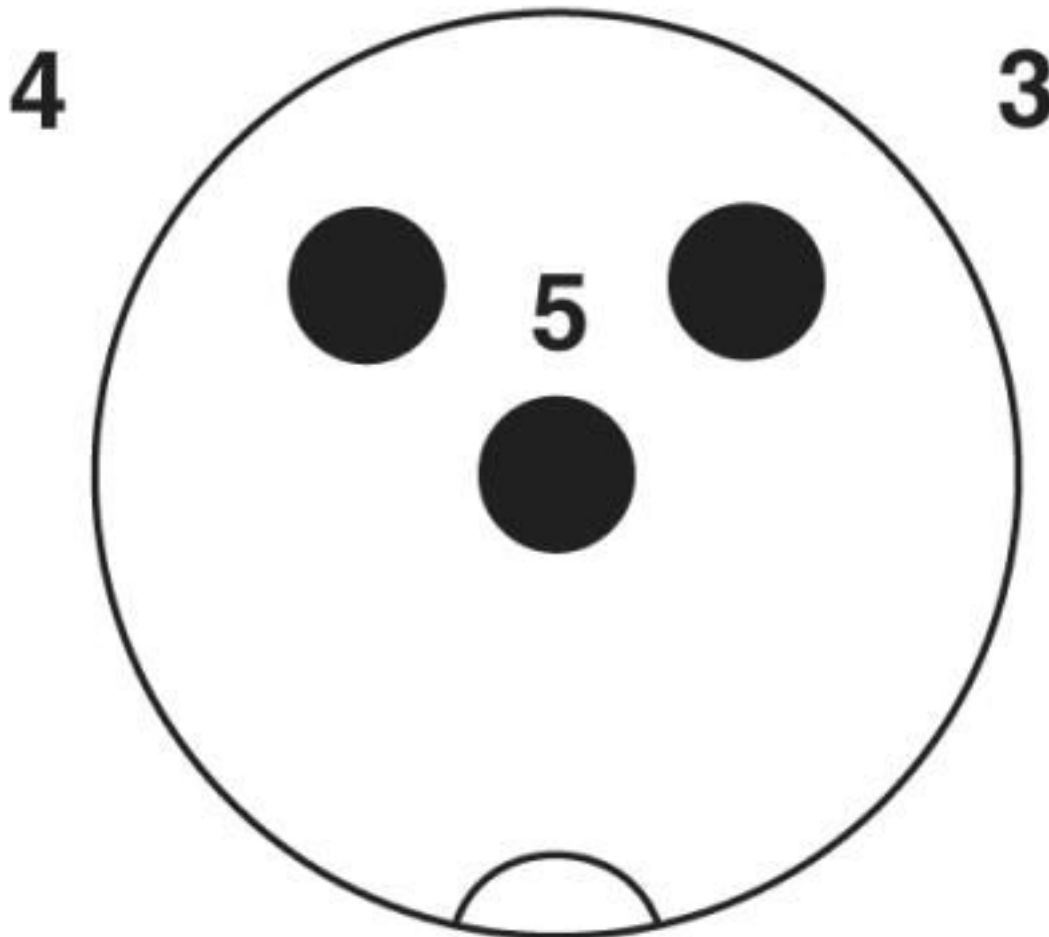
Circuit diagram



Contact assignment of M12 plug and valve connector

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

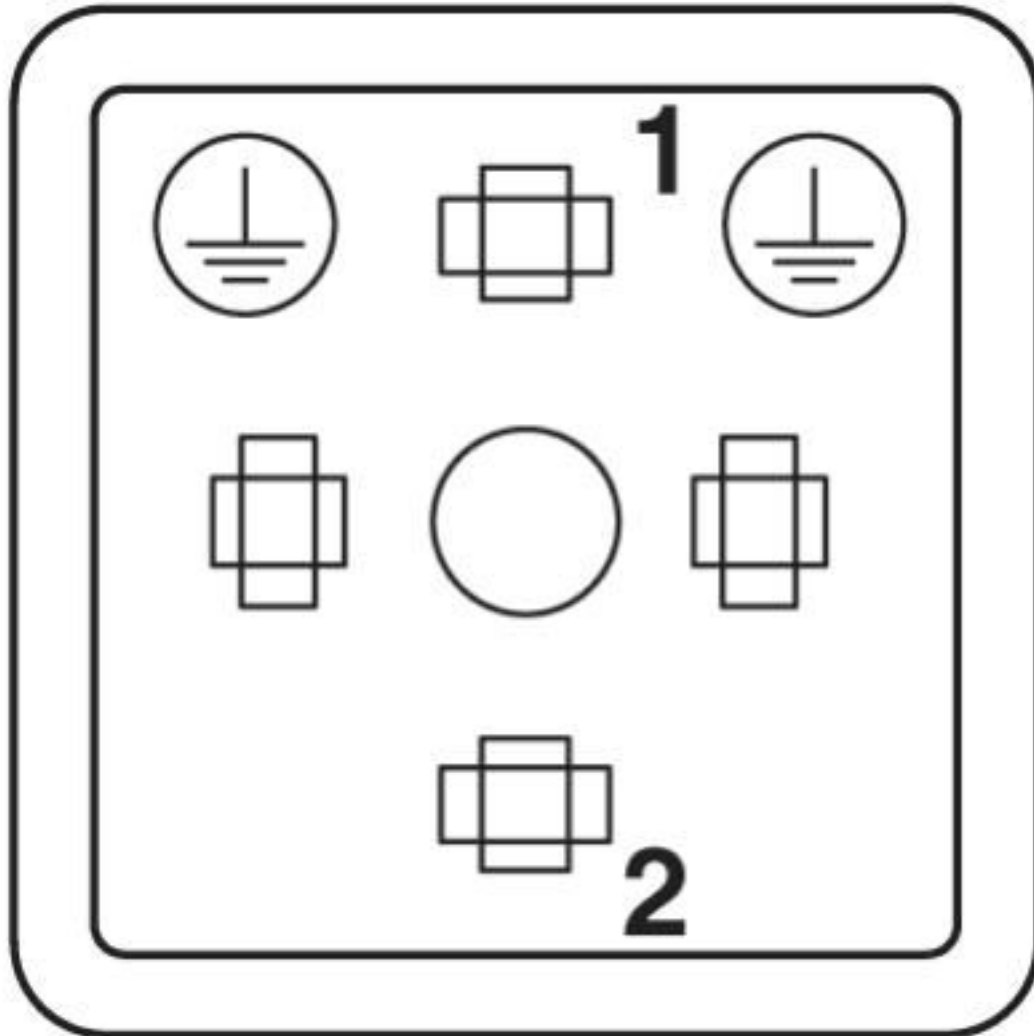
Schematic diagram



Pin assignment M12 plug, 3-pos., valve connector

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

Schematic diagram

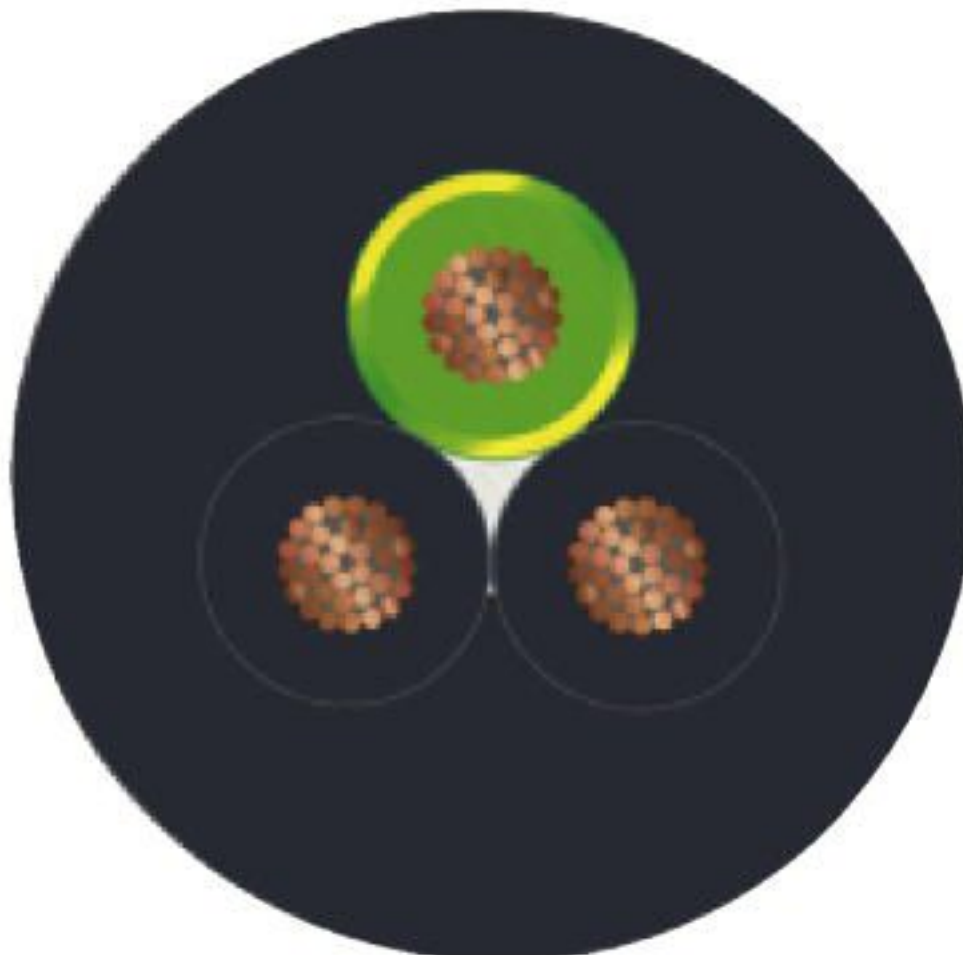


Valve connector connector pin assignment, type CI



# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

Cable cross section



PUR halogen-free black [PUR]

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060312 |
| 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    | 27060312 |

# Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

## 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

#### Approvals

CSAus / EAC-RoHS / EAC

#### Ex Approvals

### Approval details

|                    |   |   |       |
|--------------------|---|---|-------|
| CSAus              |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 13631 |
| Nominal voltage UN | 24 V  |   |       |
| Nominal current IN | 4 A   |   |       |

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

## Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

### Approvals

EAC



RU C-  
DE.BL08.B.00286

### 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

#### Mounting material

Screw - SAC-V-SCREW-M3-29 KNURL - 1403779



Fillister head screw with plastic knurl, M3 x 40

#### Protective cap

## Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

### Accessories

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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### Screwdriver tools

Screw insert - SF-BIT-PH 1-70 - 1212582



Screw bit, PH crosshead, E6.3-1/4" drive, size: PH 1 x 70 mm, hardened, suitable for holder according to DIN 3126-F6.3/ISO 1173

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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

## Sensor/actuator cable - SAC-3P-MR/ 3,0-PUR/CI-1L-Z SCO - 1435661

### Accessories

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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