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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

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Sensor/Actuator cable, 3-position, PUR halogen-free, Black-gray RAL 7021, Free cable end, on Socket angled M12, A-coded, PIN 2+4 bridged, Cable length: 10 m

### Product Features

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Our standard: robust halogen-free PUR cable
- ✓ Efficient integration of bridging functions directly in the connector



### Key commercial data

|                                      |           |
|--------------------------------------|-----------|
| Packing unit                         | 1 PCE     |
| Weight per Piece (excluding packing) | 366.9 GRM |
| Custom tariff number                 | 85444290  |
| Country of origin                    | Poland    |

### Technical data

#### Dimensions

|  |       |
|--|-------|
| Length of cable                            | 10 m  |
| Stripping length of the free conductor end | 50 mm |

#### Ambient conditions

|                                 |  |
|---------------------------------|--|
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)               |
|                                 | -40 °C ... 80 °C (cable, fixed installation)   |
|                                 | -5 °C ... 80 °C (cable, flexible installation) |
| Degree of protection            | IP65   |
|                                 | IP67   |
|                                 | IP68   |

#### General

|                       |     |
|-----------------------|-----|
| Rated current at 40°C | 4 A |
|-----------------------|-----|

## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

### Technical data

#### General

|                              |                               |
|------------------------------|-------------------------------|
| Rated voltage                | 250 V                         |
| Number of positions          | 3                             |
| Contact resistance           | ≤ 5 mΩ                        |
| Insulation resistance        | ≥ 100 MΩ                      |
| Coding                       | A - standard                  |
| Standards/regulations        | M12 connector IEC 61076-2-101 |
| Status display               | No                            |
| Protective circuit/component | Unwired                       |
| Surge voltage category       | II                            |
| Pollution degree             | 3                             |
| Insertion/withdrawal cycles  | ≥ 100                         |
| Torque                       | 0.4 Nm (M12 connector)        |

#### Material

|   |   |
|---|---|
| Inflammability class 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   |

#### Cable

|   |                                       |
|---|---------------------------------------|
| Cable type                                  | PUR halogen-free black                |
| Cable type (abbreviation)                   | PUR                                   |
| Cable abbreviation                          | Li9Y11Y                               |
| 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          | 1.27 mm ±0.02 mm (signal line)        |
| Thickness, insulation                       | ≥ 0.21 mm (Core insulation)           |
|   | approx. 0.8 mm (Outer cable sheath)   |
| Wire colors                                 | brown, blue, black                    |
| Overall twist                               | 3 wires, twisted                      |
| External sheath, color                      | Black-gray RAL 7021                   |
| External cable diameter D                   | 4.4 mm ±0.15 mm                       |
| Smallest bending radius, fixed installation | 22 mm                                 |

## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

### Technical data

#### Cable

|   |   |
|---|---|
| Smallest bending radius, movable installation | 44 mm   |
| Number of bending cycles                      | 4000000   |
| Bending radius                                | 44 mm   |
| Traversing path                               | 10 m  |
| Traversing rate                               | 3 m/s   |
| Acceleration                                  | 10 m/s <sup>2</sup>   |
| Cable weight                                  | 26 kg/km  |
| Outer sheath, material                        | PUR   |
| Material conductor insulation                 | PP  |
| Conductor material                            | Bare Cu litz wires  |
| Insulation resistance                         | ≥ 100 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                               |
| 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          |
|   | hydrolysis and microbe resistant                                    |
|   | partly UV-resistant in accordance with DIN EN ISO 4892-2-A          |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)                        |
|   | -25 °C ... 80 °C (cable, flexible installation)                     |

### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27060306 |
| eCl@ss 4.1 | 27060306 |
| eCl@ss 5.0 | 27061801 |
| eCl@ss 5.1 | 27061801 |
| eCl@ss 6.0 | 27061801 |
| eCl@ss 7.0 | 27061801 |
| eCl@ss 8.0 | 27061801 |

# Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC001855 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 31251501 |
| UNSPSC 7.0901 | 31251501 |
| UNSPSC 11     | 31251501 |
| UNSPSC 12.01  | 31251501 |
| UNSPSC 13.2   | 31251501 |

## Approvals

### Approvals

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#### Approvals

UL Listed / cUL Listed / GOST / cULus Listed

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#### Ex Approvals

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#### Approvals submitted

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## Approval details

|   |       |
|---|-------|
| UL Listed  |       |
| Nominal current I <sub>N</sub>  | 4 A   |
| Nominal voltage U <sub>N</sub>  | 300 V |

# Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

## Approvals

|                    |       |
|--------------------|-------|
| cUL Listed         |       |
|                    |       |
| Nominal current IN | 4 A   |
| Nominal voltage UN | 300 V |

|      |  |
|------|--|
| GOST |  |
|------|--|

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

## Accessories

### Accessories

#### Conductor marking

Insert label - PABA WH/15 - 1013151



Insert label, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Thread on, Cable diameter: 0.6-50 mm, Lettering field: 15 x 4 mm

Insert label - PABA YE/15 - 1013698



Insert label, Strip, yellow, Unlabeled, Can be labeled with: Plotter, Mounting type: Thread on, Cable diameter: 0.6-50 mm, Lettering field: 15 x 4 mm

## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

### Accessories

Insert label - PABA RD/15 - 1013944



Insert label, Strip, red, Unlabeled, Can be labeled with: Plotter, Mounting type: Thread on, Cable diameter: 0.6-50 mm, Lettering field: 15 x 4 mm

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### Cutting tools

Cable-cutting tool - CUTFOX-S VDE - 1212207



Diagonal cutter for copper and aluminum conductors, VDE-tested

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### Marker carrier cable

Conductor marker carrier - PATG 2/15 - 1013038



Conductor marker carrier, transparent, Unlabeled, Mounting type: Slide on, Cable diameter: 2-4 mm, Lettering field: 4 x 15 mm

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Conductor marker carrier - PATG 3/15 - 1013041



Conductor marker carrier, transparent, Unlabeled, Mounting type: Slide on, Cable diameter: 4-7 mm, Lettering field: 4 x 15 mm

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Conductor marker carrier - PATG 4/15 - 1013054



Conductor marker carrier, transparent, Unlabeled, Mounting type: Slide on, Cable diameter: 6-10 mm, Lettering field: 4 x 15 mm

## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

### Accessories

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#### 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

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#### Protective cap

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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#### Safety locking

Fuse clip - SAC-M12-EXCLIP-F - 1558991



Fuse clip for the socket side of various M12 sensor/actuator connectors prevents plug-in connections being interrupted without using a tool

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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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## Sensor/Actuator cable - SAC-3P-10,0-PUR/M12FR B - 1681017

### Accessories

Tool - SAC BIT M12-D15 - 1208432



Nut for assembling sensor/actuator cables with M12 connector and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal drive

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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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### 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



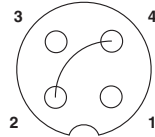
Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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## Accessories

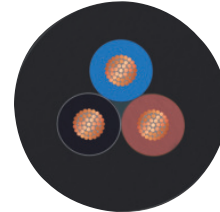
### Drawings

Schematic diagram



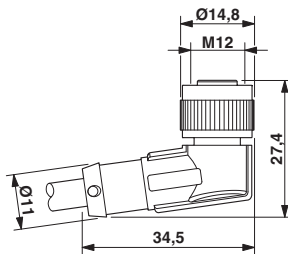
Pin assignment M12 socket, 3-pos., PIN  
2+4 bridged, A-coded, view female side

Cable cross section



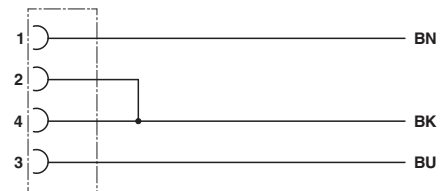
PUR halogen-free black [PUR]

Dimensioned drawing



M12 x 1 socket, angled

Circuit diagram



Contact assignment of the M12 socket