

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

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Sensor/Actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, A-coded, on free cable end, Cable length: 5 m

### Why buy this product

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Save time, thanks to installation with SPEEDCON fast locking system
- ✓ Our standard: robust halogen-free PUR cable



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 STK                                                                                                   |
| GTIN                                 | <br>4 017918 961206 |
| GTIN                                 | 4017918961206                                                                                           |
| Weight per Piece (excluding packing) | 157.600 g                                                                                               |
| Custom tariff number                 | 85444290                                                                                                |
| Country of origin                    | Poland                                                                                                  |

### Technical data

#### Dimensions

|                                            |       |
|--------------------------------------------|-------|
| Length of cable                            | 5 m   |
| Stripping length of the free conductor end | 50 mm |

#### Ambient conditions

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

# Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

## Technical data

### Ambient conditions

|  |      |
|--|------|
|  | IP68 |
|--|------|

### General

|                              |                               |
|------------------------------|-------------------------------|
| Rated current at 40°C        | 4 A                           |
| Rated voltage                | 250 V                         |
| Number of positions          | 4                             |
| Insulation resistance        | ≥ 100 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                |

### Standards and Regulations

|                                        |                 |
|----------------------------------------|-----------------|
| Standard designation                   | M12 connector   |
| Standards/regulations                  | 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                  |

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## Technical data

### Cable

|                                                 |                                                                     |
|-------------------------------------------------|---------------------------------------------------------------------|
| Wire colors                                     | brown, white, blue, black                                           |
| Overall twist                                   | 4 wires, twisted                                                    |
| External sheath, color                          | black-gray RAL 7021                                                 |
| Outer sheath thickness                          | approx. 0.8 mm                                                      |
| External cable diameter D                       | 4.7 mm ±0.15 mm                                                     |
| Smallest bending radius, fixed installation     | 23.5 mm                                                             |
| Smallest bending radius, movable installation   | 47 mm                                                               |
| Minimum bending radius, fixed installation      | 5 x D                                                               |
| Minimum bending radius, flexible installation   | 10 x D                                                              |
| Number of bending cycles                        | 4000000                                                             |
| Bending radius                                  | 47 mm                                                               |
| 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 |
|                                                 | stranded                                                            |
| Flame resistance                                | according to UL 758/1581 (horizontal)                               |
|                                                 | in accordance with UL 758/1581 FT2                                  |
| 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                                 |
| 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                                                  |

Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

Technical data

Cable

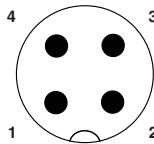
|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)    |
|                                 | -25 °C ... 80 °C (cable, flexible installation) |

Environmental Product Compliance

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

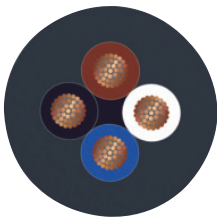
Drawings

Schematic diagram



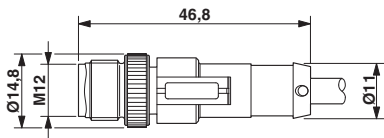
Pin assignment M12 plug, 4-pos., A-coded, view plug side

Cable cross section



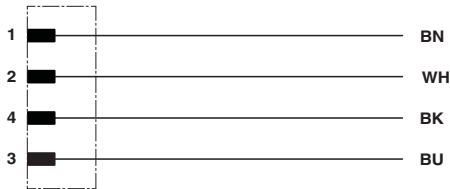
PUR halogen-free black [PUR]

Dimensional drawing



Plug, M12 x 1, straight, shielded

Circuit diagram



Contact assignment of the M12 plug

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 |

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### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 8.0 | 27279218 |
| eCl@ss 9.0 | 27060311 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC001855 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |
| ETIM 6.0 | EC001855 |

#### UNSPSC

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

### Approvals

#### Approvals

#### Approvals

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

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### 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 current I <sub>N</sub> | 4 A                                                                               |                                                                                                                                                         |               |
| Nominal voltage U <sub>N</sub> | 300 V                                                                             |                                                                                                                                                         |               |

|     |                                                                                   |               |
|-----|-----------------------------------------------------------------------------------|---------------|
| EAC |  | EAC-Zulassung |
|-----|-----------------------------------------------------------------------------------|---------------|

|              |                                                                                   |
|--------------|-----------------------------------------------------------------------------------|
| 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: 1.5-35 mm, Lettering field: 23 x 4 mm

Insert label - PABA YE/23 - 1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, Mounting type: Thread on, Cable diameter: 1.5-35 mm, Lettering field: 23 x 4 mm

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### Accessories

Insert label - PABA WH/15 - 1013151



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-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: CMS-P1-PLOTTER, Mounting type: Thread on, Cable diameter: 0.6-50 mm, Lettering field: 15 x 4 mm

Insert label - PABA RD/15 - 1013944



Insert label, Strip, red, unlabeled, can be labeled with: CMS-P1-PLOTTER, Mounting type: Thread on, Cable diameter: 0.6-50 mm, Lettering field: 15 x 4 mm

### Corrugated pipe

Protective hose - WP-PA HF 13,0 BK - 3240681



Polyamide protective hose, inflammability class V0, UV resistant

Protective hose - WP-PA HF-HB 13,0 BK - 3240839



Polyamide protective hose, inflammability class HB, UV resistant

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### Accessories

#### Cutting tools

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for copper and aluminum conductors, VDE 1000 V AC/ 1500 V DC-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: 15 x 4 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: 15 x 4 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: 15 x 4 mm

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#### Marker pen

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### 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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### 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 sockets

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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

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

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### Accessories

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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### Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from Ø of 3.2 to 4.4 mm, any stripping length

Stripping tool - WIREFOX SAC - 1212623



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

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

## Sensor/Actuator cable - SAC-4P-MS/ 5,0-PUR SCO - 1518821

### Accessories

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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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Protective hose adapter - WP-CTA POM 13,0 BK - 1422884



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

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