

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

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Sensor/actuator cable, 5-position, PVC, black RAL 9005, free cable end, on Socket angled M12, coding: A, cable length: 1.5 m

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components

RoHS

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 055626 050478 |
| GTIN         | 4055626050478                                                                                           |

### Technical data

#### Dimensions

|                 |       |
|-----------------|-------|
| Length of cable | 1.5 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         | 48 V AC                       |
|                       | 60 V DC                       |
| Number of positions   | 5                             |
| Insulation resistance | ≥ 100 MΩ                      |
| Coding                | A - standard                  |
| Standards/regulations | M12 connector IEC 61076-2-101 |

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## Technical data

### General

|                              |         |
|------------------------------|---------|
| Status display               | No      |
| Protective circuit/component | unwired |
| Overvoltage category         | II      |
| Degree of pollution          | 3       |
| Insertion/withdrawal cycles  | ≥ 100   |

### 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

|                                               |                                         |
|-----------------------------------------------|-----------------------------------------|
| Cable type                                    | PVC black                               |
| Cable type (abbreviation)                     | PVC                                     |
| Cable abbreviation                            | LiYY                                    |
| UL AWM style                                  | 2464 / 1729 (80°C/300 V)                |
| Conductor cross section                       | 5x 0.34 mm <sup>2</sup> (Signal line)   |
| AWG signal line                               | 22                                      |
| Conductor structure signal line               | 19x 0.15 mm                             |
| Core diameter including insulation            | 1.26 mm ±0.05 mm                        |
| Thickness, insulation                         | ≥ 0.23 mm (Core insulation)             |
| Wire colors                                   | brown, white, blue, black, green-yellow |
| Overall twist                                 | 5 wires around filler to the core       |
| External sheath, color                        | black RAL 9005                          |
| Outer sheath thickness                        | ≥ 0.76 mm                               |
| External cable diameter D                     | 5 mm ±0.15 mm                           |
| Minimum bending radius, fixed installation    | 5 x D                                   |
| Minimum bending radius, flexible installation | 10 x D                                  |
| Cable weight                                  | 51 kg/km                                |
| Outer sheath, material                        | PVC                                     |
| Material conductor insulation                 | PVC                                     |
| Conductor material                            | Bare Cu litz wires                      |
| Insulation resistance                         | ≥ 200 MΩ*km (at 20 °C)                  |
| Conductor resistance                          | max. 57 Ω/km (at 20 °C)                 |

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

### Technical data

#### Cable

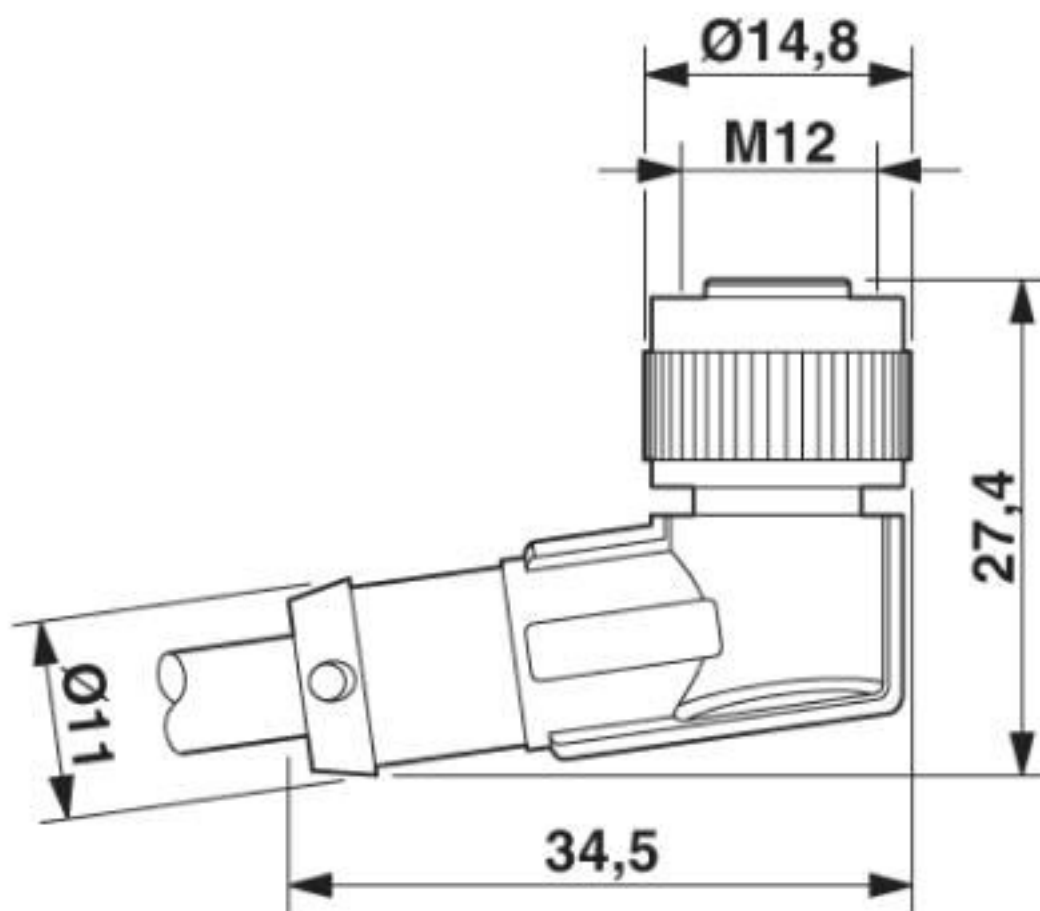
|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Nominal voltage, cable          | ≤ 300 V                                         |
| Test voltage, cable             | ≥ 3000 V                                        |
| Flame resistance                | As per UL-Style 2464                            |
| 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

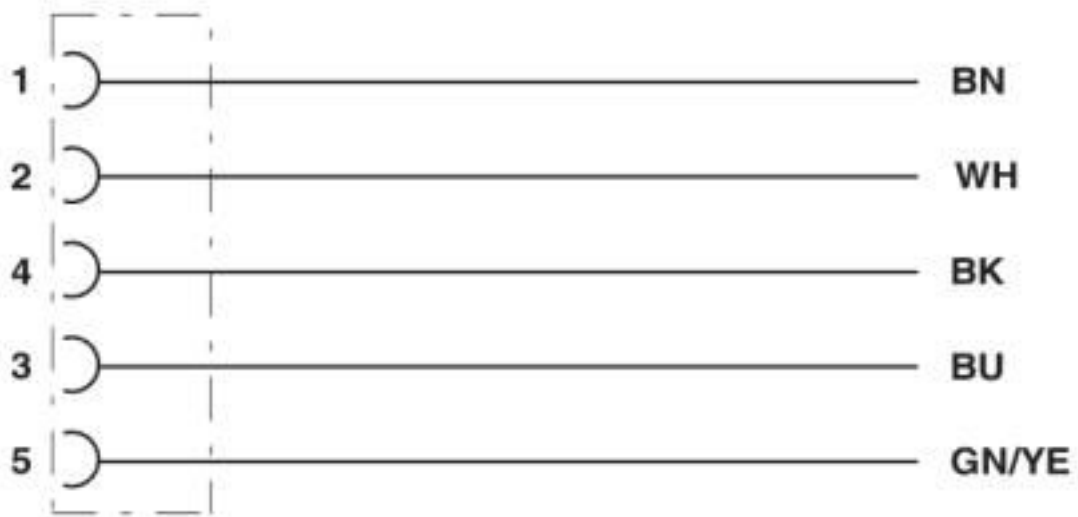
Dimensional drawing



M12 x 1 socket, angled

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

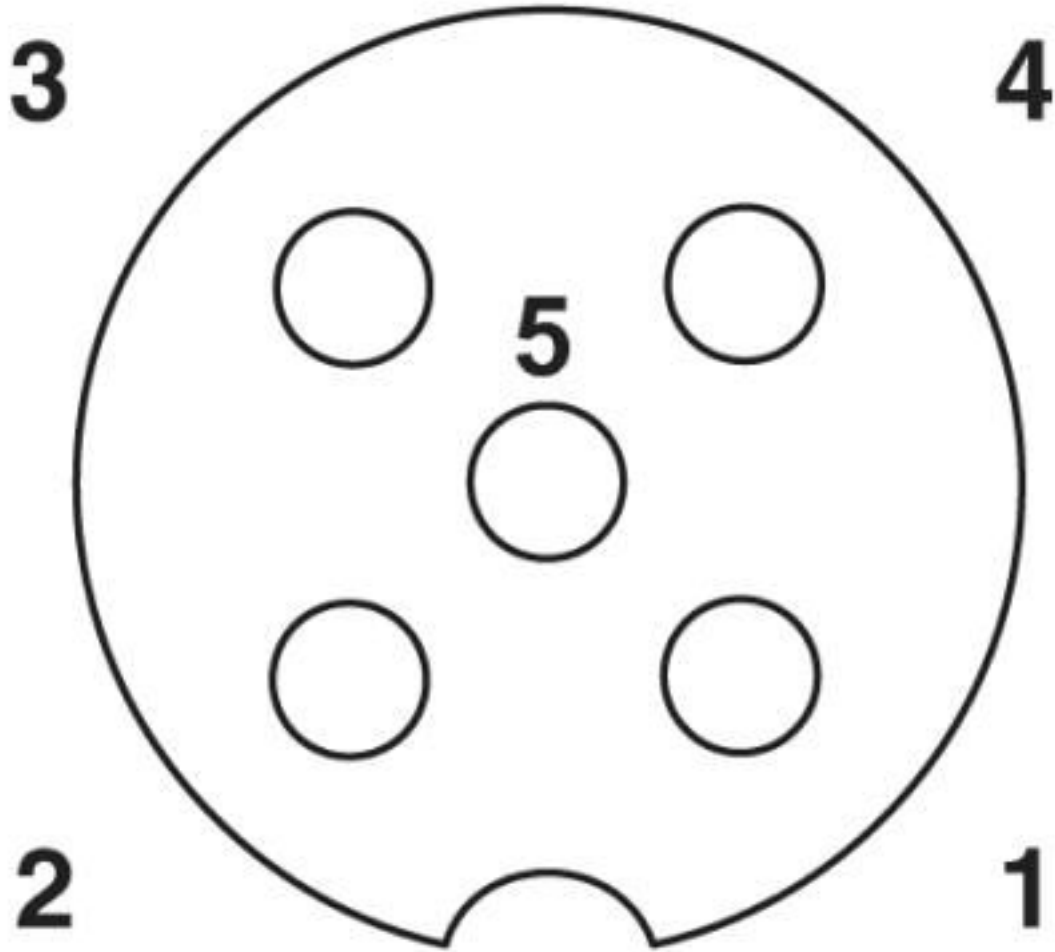
Circuit diagram



Contact assignment of the M12 sockets

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

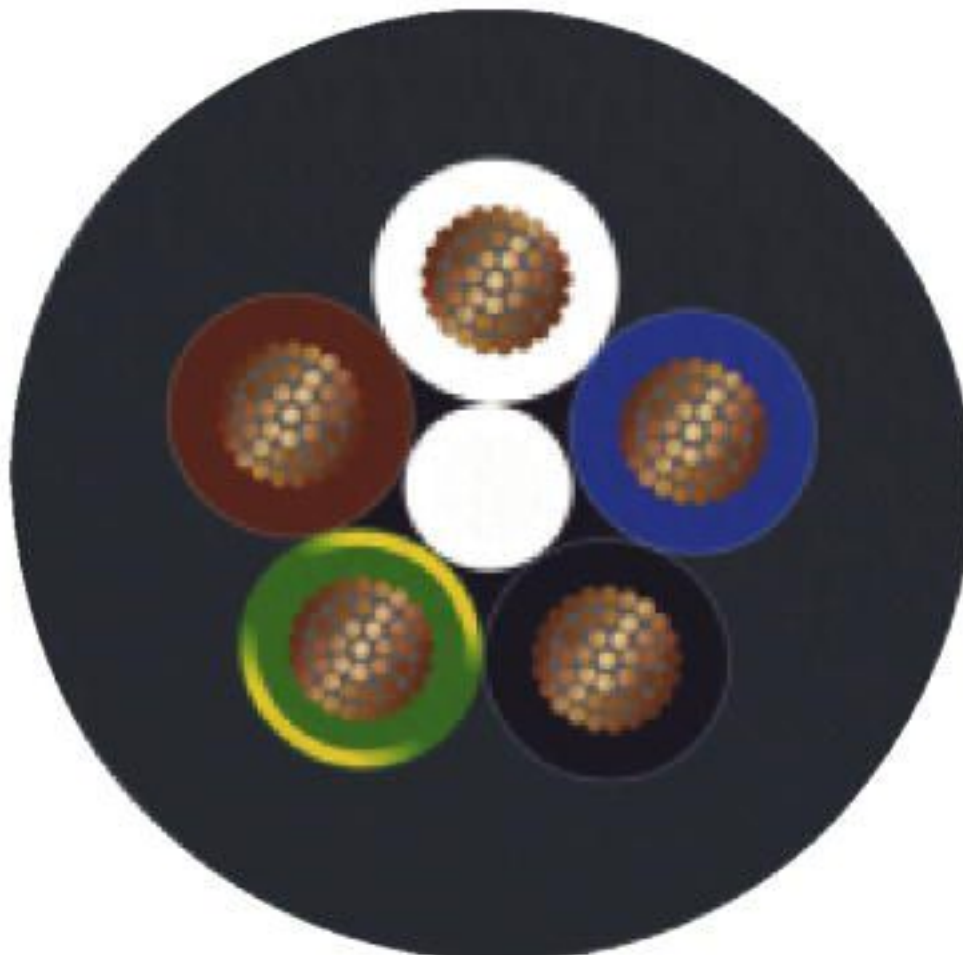
Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, socket side view

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

Cable cross section



PVC black [PVC]

### 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 5.0 | EC001855 |
| ETIM 6.0 | EC001855 |
| ETIM 7.0 | EC001855 |

#### UNSPSC

|             |          |
|-------------|----------|
| 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 | 125 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 | 125 V                                                                               |                                                                                                                                                       |               |
| Nominal current IN | 4 A                                                                                 |                                                                                                                                                       |               |

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

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

### Approvals

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

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

### 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-5P- 1,5-PVC/M12FR - 1415686

### Accessories

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#### Cutting tools

Diagonal cutter - CUTFOX-S VDE - 1212207



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

#### 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

#### 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

#### Safety locking

Locking clip - SAC-M12-EXCLIP-F - 1558991



Locking clip for the socket 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

#### Screwdriver tools

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## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

### Accessories

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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### 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

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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

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Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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### Torque tool

## Sensor/actuator cable - SAC-5P- 1,5-PVC/M12FR - 1415686

### 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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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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