

# SAC-5P- 5,0-PUR/M12FR - Sensor/actuator cable



1669877

<https://www.phoenixcontact.com/gb/products/1669877>

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Sensor/actuator cable, 5-position halogen-free, free cable end, on Socket angled M12, coding: A, cable length: 5 m

## Your advantages

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

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1669877             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF1CDA              |
| Product key                          | BF1CDA              |
| Catalog page                         | Page 201 (C-2-2019) |
| GTIN                                 | 4017918134778       |
| Weight per piece (including packing) | 172 g               |
| Weight per piece (excluding packing) | 159 g               |
| Customs tariff number                | 85444290            |
| Country of origin                    | PL                  |

## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 5                     |
| Application          | Standard              |
| No. of cable outlets | 1                     |
| Shielded             | no                    |
| Coding               | A                     |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Material specifications

|  |   |
|--|---|
| Flammability rating according to UL 94 | HB  |
| Seal material                          | NBR   |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Contact material                       | CuSn  |
| Contact surface material               | Ni/Au                                       |
| Contact carrier material               | TPU GF                                      |
| Material for screw connection          | Zinc die-cast, nickel-plated                |

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Contact resistance    | $\leq 5 \text{ m}\Omega$   |
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 48 V AC                    |
|                       | 60 V DC                    |
| Nominal current $I_N$ | 4 A                        |
| Protective circuit    | unwired                    |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Signaling

|                        |    |
|------------------------|----|
| Status display         | No |
| Status display present | No |

### Connection data

#### Conductor connection

|                   |                        |
|-------------------|------------------------|
| Tightening torque | 0.4 Nm (M12 connector) |
|-------------------|------------------------|

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## Connector

### Connection 1

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|


### Connection 2

|                     |                   |
|---------------------|-------------------|
| Type                | Socket angled M12 |
| Number of positions | 5                 |
| Coding type         | A                 |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 5 m |
|--------------|-----|

### PUR halogen-free black [PUR]

|   |   |
|---|---|
| Dimensional drawing                           |  |
| Cable weight                                  | 33 kg/km  |
| UL AWM Style                                  | 20549   |
| Number of positions                           | 5   |
| Shielded                                      | no  |
| Cable type                                    | PUR halogen-free black [PUR]  |
| Conductor structure signal line               | 42x 0.10 mm   |
| AWG signal line                               | 22  |
| Conductor cross section                       | 5x 0.34 mm <sup>2</sup> (Signal line)   |
| Wire diameter incl. insulation                | 1.27 mm 0.05 mm (Signal line)   |
| External cable diameter                       | 4.55 mm ±0.15 mm  |
| Outer sheath, material                        | PUR   |
| External sheath, color                        | black-gray RAL 7021   |
| Conductor material                            | Bare Cu litz wires  |
| Material wire insulation                      | PP  |
| Single wire, color                            | brown, white, blue, black, green-yellow   |
| Thickness, insulation                         | approx. 0.5 mm  |
| Max. conductor resistance                     | max. 58 Ω/km (at 20 °C)   |
| Insulation resistance                         | ≥ 16 GΩ*km (at 20 °C)   |
| Nominal voltage, cable                        | 300 V   |
| Test voltage                                  | 3000 V  |
| Smallest bending radius, fixed installation   | 23 mm   |
| Smallest bending radius, movable installation | 46 mm   |

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|                                 |   |
|---------------------------------|---|
| Max. bending cycles             | 4000000   |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815  |
| Flame resistance                | in accordance with UL 758/1581 FT2<br>DIN EN 60332-2-2 (20 s)   |
| Resistance to oil               | in accordance with DIN EN 60811-2-1   |
| Other resistance                | Highly resistant to acids, alkaline solutions and solvents<br>hydrolysis and microbe resistant<br>Resistant to salt water<br>partly UV-resistant in accordance with DIN EN ISO 4892-2-A |
| Special properties              | Flexible cable conduit capable<br>Silicone-free<br>Free of substances which would hinder coating with paint or varnish<br>flexible  |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)<br>-25 °C ... 80 °C (Cable, flexible installation)   |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65<br>IP67<br>IP68             |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

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## Drawings

Dimensional drawing



M12 x 1 socket, angled

Schematic diagram



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

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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/1669877>

|  |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  <b>UL Listed</b><br>Approval ID: FILE E 221474 | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|  | 125 V                 | 4 A                   | -                 | -                           |

|   |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|  <b>cUL Listed</b><br>Approval ID: FILE E 221474 | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|   | 125 V                 | 4 A                   | -                 | -                           |

|   |
|---|
|  <b>EAC-RoHS</b><br>Approval ID: RU D-DE.HB35.B.00387 |
|---|

|                     |
|---------------------|
| <b>cULus Listed</b> |
|---------------------|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060311 |
| ECLASS-12.0 | 27060311 |
| ECLASS-13.0 | 27060311 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

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

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## Accessories

### UCT-WMT (23X4) - Conductor marker

0801453

<https://www.phoenixcontact.com/gb/products/0801453>



Conductor marker, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 30

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### UC-WMT (23X4) - Conductor marker

0819411

<https://www.phoenixcontact.com/gb/products/0819411>



Conductor marker, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 24

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## US-WMT (23X4) - Cable marker

0828769

<https://www.phoenixcontact.com/gb/products/0828769>



Cable marker, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: slide-on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 56

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## WMTW (23X4)R - Cable marker

0831004

<https://www.phoenixcontact.com/gb/products/0831004>



Cable marker, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 3000

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

1422884

<https://www.phoenixcontact.com/gb/products/1422884>



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

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

3240681

<https://www.phoenixcontact.com/gb/products/3240681>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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

3240839

<https://www.phoenixcontact.com/gb/products/3240839>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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## PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/gb/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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## SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/gb/products/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

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## B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/gb/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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## CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/gb/products/1212207>



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

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## WIREFOX SAC-1 - Stripping tool

1212757

<https://www.phoenixcontact.com/gb/products/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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## WIREFOX SAC - Stripping tool

1212623

<https://www.phoenixcontact.com/gb/products/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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## WIREFOX 10 - Stripping tool

1212150

<https://www.phoenixcontact.com/gb/products/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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## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/gb/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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## TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/gb/products/1212224>



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

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/gb/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/gb/products/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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