

# SAC-5P-M12MR/ 5,0-PUR SH - Sensor/actuator cable



1682773

<https://www.phoenixcontact.com/au/products/1682773>

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Sensor/actuator cable, 5-position, PUR halogen-free, black-gray RAL 7021, shielded (Advanced Shielding Technology), Plug angled M12, coding: A, on free cable end, cable length: 5 m

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1682773             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | AF1CKA              |
| Product key                          | AF1CKA              |
| Catalog page                         | Page 204 (C-2-2019) |
| GTIN                                 | 4017918169084       |
| Weight per piece (including packing) | 232.1 g             |
| Weight per piece (excluding packing) | 232.1 g             |
| Customs tariff number                | 85444290            |
| Country of origin                    | PL                  |

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## Technical data

### Product properties

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

### Insulation characteristics

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

### Material specifications

|  |   |
|--|---|
| Flammability rating according to UL 94 | HB  |
| 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

|                       |                            |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 48 V AC                    |
|                       | 60 V DC                    |
| Nominal current $I_N$ | 4 A                        |

### 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) |
|-------------------|------------------------|

### Connector

#### Connection 1

|      |                 |
|------|-----------------|
| Type | Plug angled M12 |
|------|-----------------|

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|                     |   |
|---------------------|---|
| Number of positions | 5 |
| Coding type         | A |

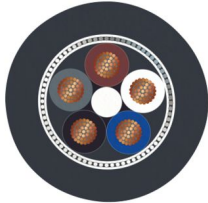
## Connection 2

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

## Cable/line

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

## PUR halogen-free black [PUR]

|   |   |
|---|---|
| Dimensional drawing                           |                                     |
| Cable weight                                  | 43 kg/km  |
| UL AWM Style                                  | 20549 / 10493 (80°C/300 V)  |
| Number of positions                           | 5   |
| Shielded                                      | yes   |
| 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 ±0.02 mm (Signal line)  |
| External cable diameter                       | 5.25 mm ±0.2 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, gray   |
| Thickness, insulation                         | ≥ 0.21 mm   |
| Thickness, outer sheath                       | approx. 0.50 mm   |
| Overall twist                                 | 5 wires around filler to the core   |
| Optical shield covering                       | 80 %  |
| Max. conductor resistance                     | max. 57 Ω/km (at 20 °C)   |
| Insulation resistance                         | 70 GΩ*km (at 20 °C)   |
| Nominal voltage, cable                        | 300 V (at 20 °C)  |
| Test voltage Core/Core                        | 3000 V (at 20 °C)   |
| Smallest bending radius, fixed installation   | 26 mm   |
| Smallest bending radius, movable installation | 52 mm (up to +60 °C)  |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 52 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 |

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|                                 |  |
|---------------------------------|--|
|                                 | m/s <sup>2</sup>   |
| Dynamic load capacity (torsion) | Torsion: $\pm 180$ °/m, Torsion cycles: $\geq 2000000$ , Torsional frequency: 35 cycles/min. |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815   |
|                                 | in accordance with DIN EN 50267-2-1  |
| Flame resistance                | in accordance with UL 758/1581 FT2   |
|                                 | 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                                   |
|                                 | hydrolysis and microbe resistant   |
|                                 | Resistant to salt water  |
|                                 | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)                                 |
|                                 | abrasion-resistant   |
| Special properties              | Flexible cable conduit capable   |
|                                 | Silicone-free  |
|                                 | Free of substances which would hinder coating with paint or varnish                          |
|                                 | Low adhesion surface   |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)   |
|                                 | -25 °C ... 80 °C (Cable, flexible installation)  |

## Environmental and real-life conditions

### Ambient conditions

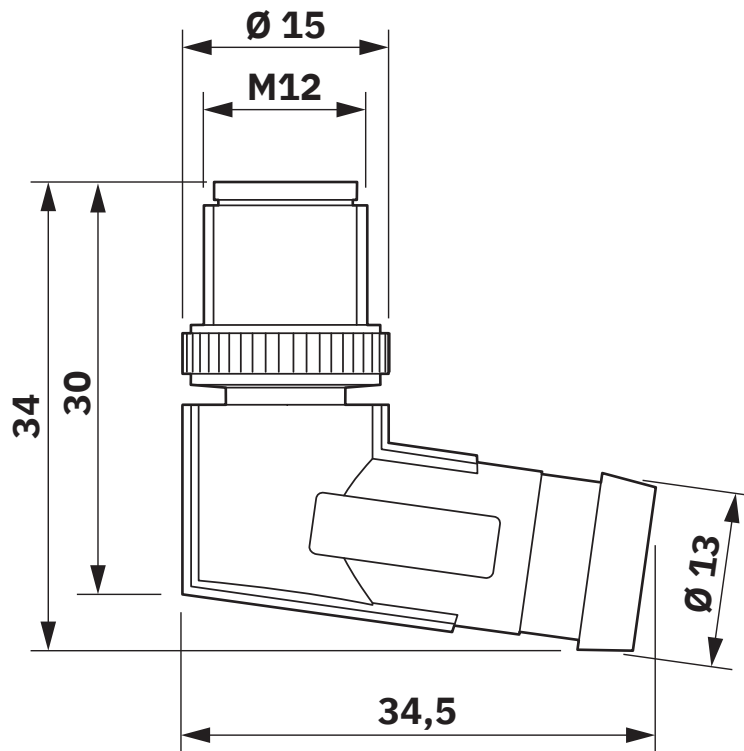
|   |  |
|---|--|
| Degree of protection  | IP65   |
|   | IP67   |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket)               |
| Ambient temperature (operation) (Cable, fixed installation)       | -25 °C ... 80 °C (cable, fixed installation)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

## Standards and regulations

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

## Drawings

Dimensional drawing



M12 x 1 male plug, angled, shielded

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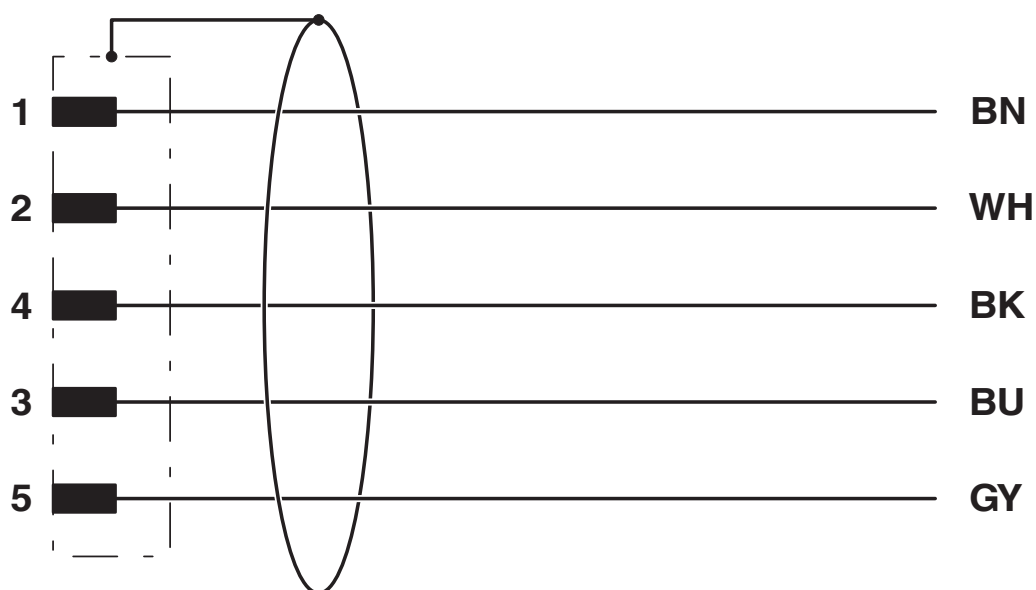
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Schematic diagram



Pin assignment M12 male connector, 5-pos., A-coded, male side

Circuit diagram



Contact assignment of the M12 plug

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/au/products/1682773>



### UL Listed

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                   | -                 | -                           |



### cUL Listed

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                   | -                 | -                           |



### EAC-RoHS

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
|-------------|----------|

### ETIM

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

### UNSPSC

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



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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

### China RoHS

|  |  |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E                                   |
|  | No hazardous substances above the limits |

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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