

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



1682773

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

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Sensor/actuator cable, 5-position, PUR halogen-free, black-gray RAL 7021, shielded, 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                            | 02                  |
| Product key                          | BF1CKA              |
| 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                     |

### Data management status

|                  |    |
|------------------|----|
| Article revision | 16 |
|------------------|----|

### 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

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## Connection 1

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

## Connection 2

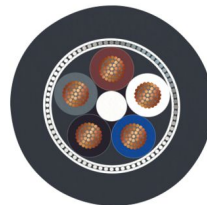
|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## 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                                 |

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|                                               |                                                                     |
|-----------------------------------------------|---------------------------------------------------------------------|
| Smallest bending radius, movable installation | 52 mm (up to +60 °C)                                                |
| Max. bending cycles                           | 10000000                                                            |
| Bending radius                                | 52 mm                                                               |
| Traversing path                               | 10 m                                                                |
| Traversing rate                               | 3 m/s                                                               |
| Acceleration                                  | 10 m/s <sup>2</sup>                                                 |
| 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

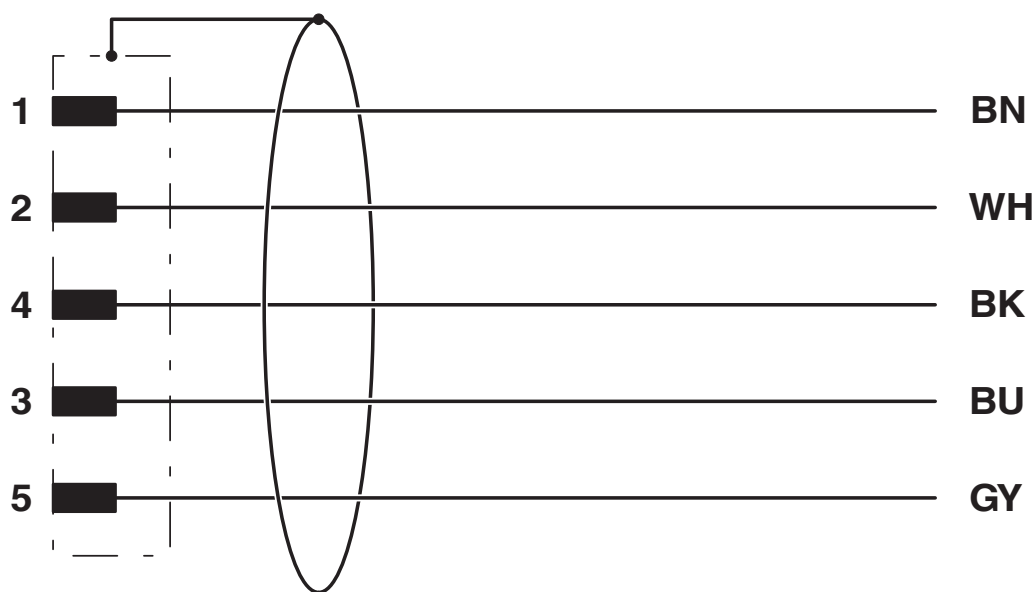
|                                 |                                                |
|---------------------------------|------------------------------------------------|
| Degree of protection            | IP65                                           |
|                                 | IP67     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

## Standards and regulations

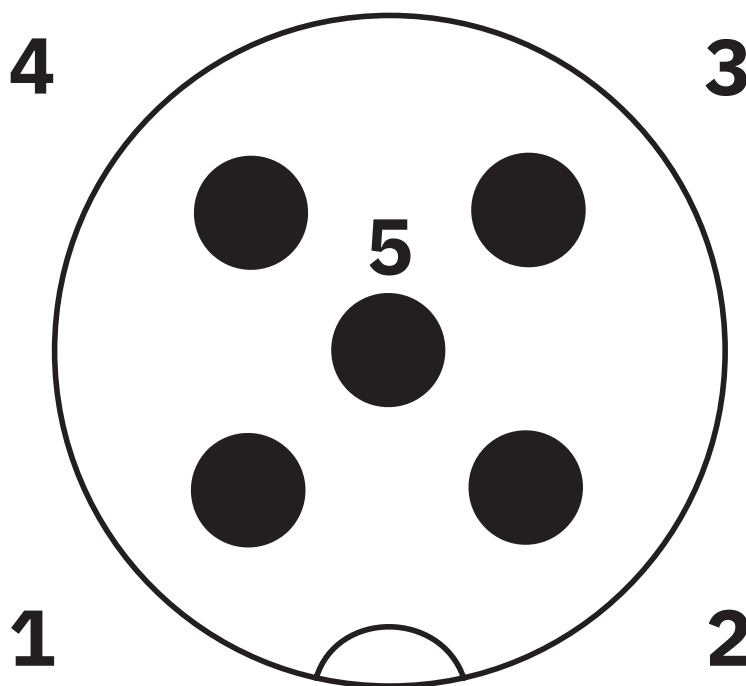
|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

## Drawings

Circuit diagram



Schematic diagram



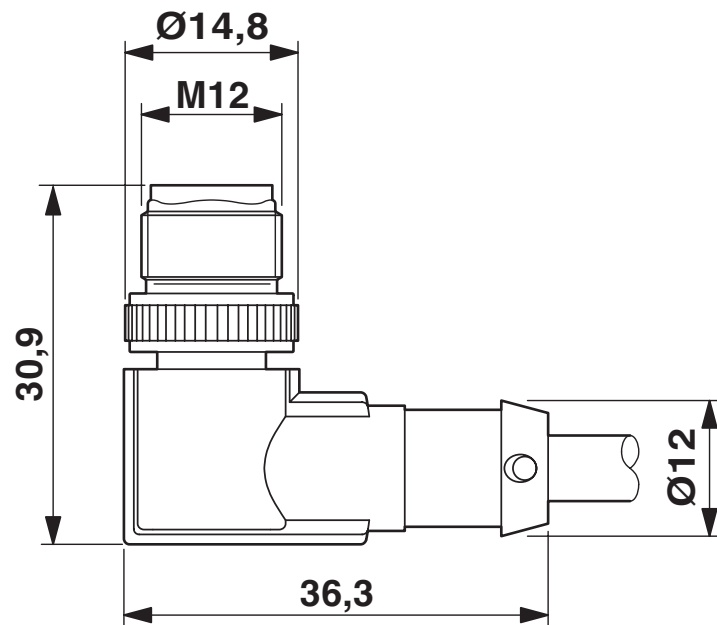
Pin assignment M12 male connector, 5-pos., A-coded, male side

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Dimensional drawing



M12 x 1 male plug, angled, shielded

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## Approvals

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

|  |                                                |                       |                   |                             |
|--|------------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <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

### 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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