

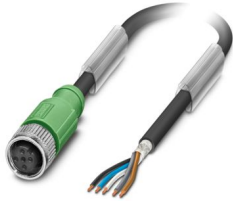
# SAC-5P-35,0-PUR/M12FS SH - Sensor/actuator cable



1413002

<https://www.phoenixcontact.com/us/products/1413002>

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Sensor/actuator cable, 5-position, PUR halogen-free, black-gray RAL 7021, shielded, free cable end, on Socket straight M12, coding: A, cable length: 35 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                          | 1413002       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 10 pc         |
| Product key                          | AF1CKA        |
| GTIN                                 | 4046356981453 |
| Weight per piece (including packing) | 1,681 g       |
| Weight per piece (excluding packing) | 1,681 g       |
| 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  |
| 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

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

### Connector

#### Connection 1

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

#### Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 5                   |

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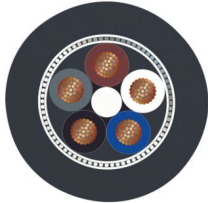
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|             |   |
|-------------|---|
| Coding type | A |
|-------------|---|

## Cable/line

|              |      |
|--------------|------|
| Cable length | 35 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 m/s <sup>2</sup> |
| Dynamic load capacity (torsion)               | Torsion: ±180 °/m, Torsion cycles: ≥5000000, Torsional frequency: 35 cycles/min.   |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815   |

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|                                 |   |
|---------------------------------|---|
|                                 | 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 socket, straight, shielded

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 socket

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
| ECLASS-15.0 | 27060311 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 31251501 |
|-------------|----------|

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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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