

# SAC-3P-20,0-PUR/M12FS SH - Sensor/actuator cable



1405512

<https://www.phoenixcontact.com/nl/products/1405512>

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, shielded (Advanced Shielding Technology), free cable end, on Socket straight M12, coding: A, cable length: 20 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1405512                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 25 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AF1CIA                         |
| Product key                          | AF1CIA                         |
| GTIN                                 | 4046356747592                  |
| Weight per piece (including packing) | 628,4 g                        |
| Weight per piece (excluding packing) | 628,4 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

## Technical data

### Product properties

|                      |     |
|----------------------|-----|
| Number of positions  | 3   |
| 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 | 3                   |
| Coding type         | A                   |

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## Cable/line

|                                               |                                                                                                                                        |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Cable length                                  | 20 m                                                                                                                                   |
| PUR halogen-free black [PUR]                  |                                                                                                                                        |
| Cable weight                                  | 31 kg/km                                                                                                                               |
| UL AWM Style                                  | 20549                                                                                                                                  |
| Number of positions                           | 3                                                                                                                                      |
| Shielded                                      | yes                                                                                                                                    |
| Cable type                                    | PUR halogen-free black [PUR]                                                                                                           |
| Conductor structure signal line               | 42x 0.10 mm                                                                                                                            |
| AWG signal line                               | 22                                                                                                                                     |
| Conductor cross-section                       | 3x 0.34 mm <sup>2</sup> (Signal line)                                                                                                  |
| Wire diameter incl. insulation                | 1.27 mm ±0.02 mm (Signal line)                                                                                                         |
| External cable diameter                       | 4.65 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, blue, black                                                                                                                     |
| Thickness, insulation                         | ≥ 0.21 mm (Core insulation)                                                                                                            |
|                                               | approx. 0.50 mm (Outer cable sheath)                                                                                                   |
| Overall twist                                 | 3 wires, twisted                                                                                                                       |
| Optical shield covering                       | 80 %                                                                                                                                   |
| Max. conductor resistance                     | max. 58 Ω/km (at 20 °C)                                                                                                                |
| Insulation resistance                         | ≥ 100 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 | 47 mm                                                                                                                                  |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 47 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: ≥2000000, Torsional frequency: 35 cycles/min.                                                       |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                                                                                               |
| 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                                                                                                       |
|                                               | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)                                                                           |
| Special properties                            | Flexible cable conduit capable                                                                                                         |
|                                               | Silicone-free                                                                                                                          |
|                                               | Free of substances which would hinder coating with paint or varnish                                                                    |

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|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)    |
|                                 | -25 °C ... 80 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

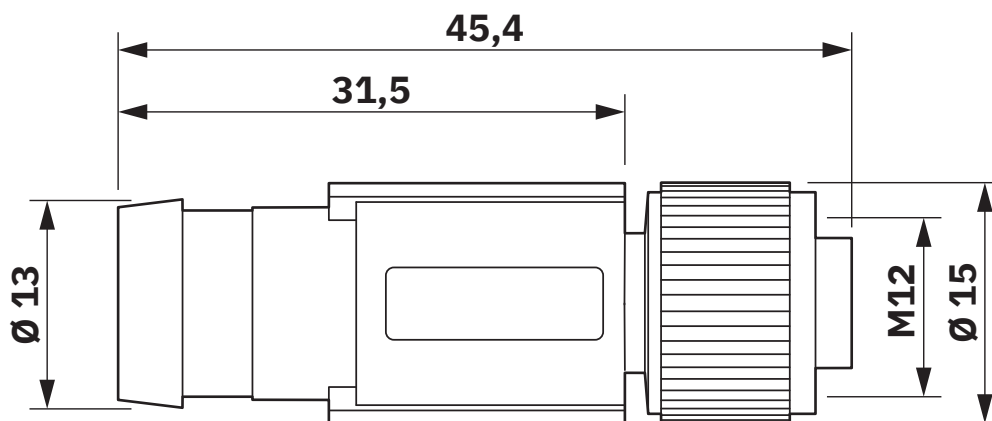
|                                 |                                                |
|---------------------------------|------------------------------------------------|
| Degree of protection            | IP65                                           |
|                                 | IP67                                           |
| 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 |

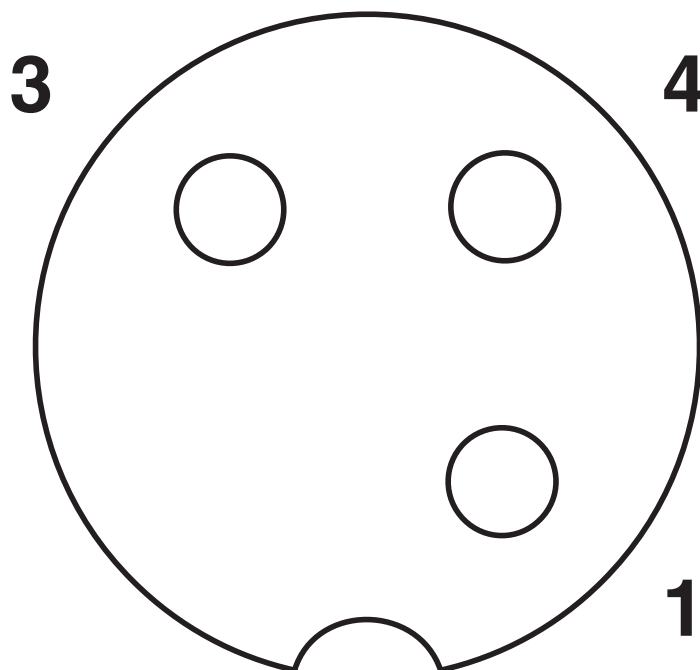
## Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram

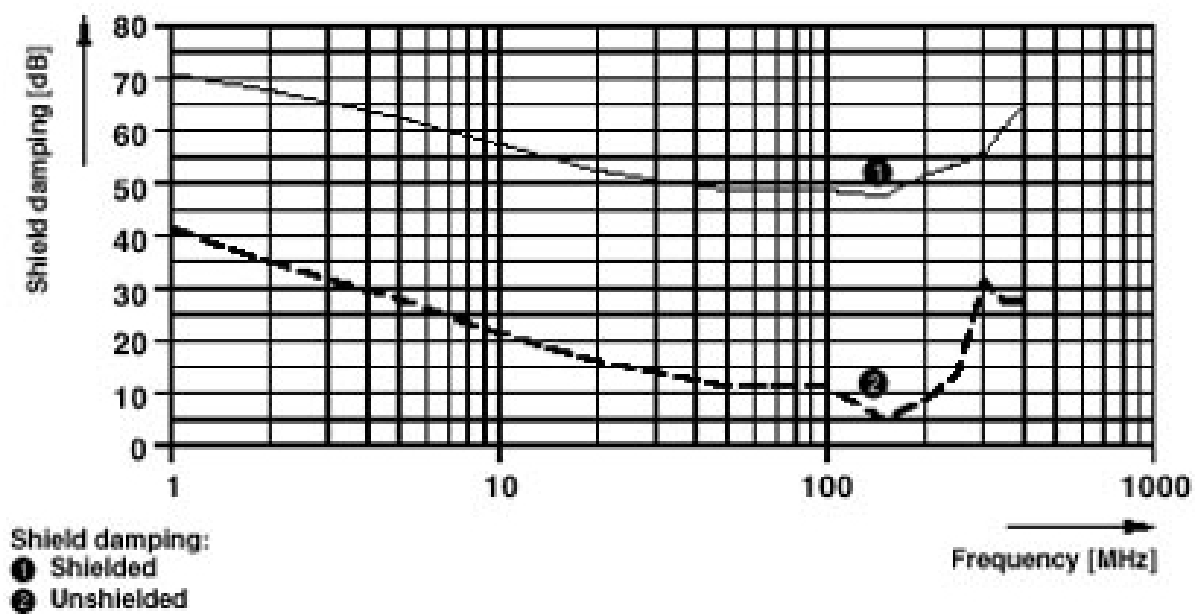


Pin assignment M12 socket, 3-pos., A-coded, view female side

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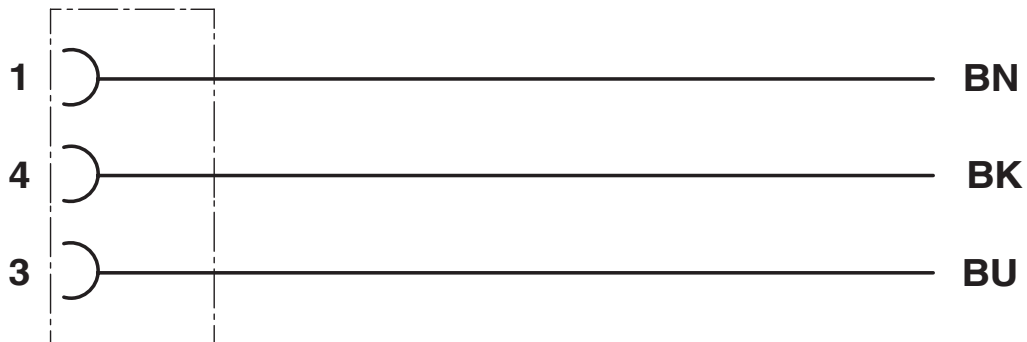
Diagram



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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 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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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