

# SAC-3P-M12MS/ 1,0-PUR/M 8MS - Sensor/actuator cable



1403709

<https://www.phoenixcontact.com/us/products/1403709>

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Sensor/actuator cable, 3-pos., halogen-free PUR, RAL 7021 (black gray), straight M12 male plug, A-coded, to straight M8 male plug, cable length: 1 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1403709                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Product key                          | AF1CBA                         |
| GTIN                                 | 4046356664196                  |
| Weight per piece (including packing) | 32.172 g                       |
| Weight per piece (excluding packing) | 29.684 g                       |
| Country of origin                    | DE                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 3                     |
| 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                |
| Outer sheath, material                 | PUR                                         |
| Conductor material                     | Bare Cu litz wires                          |

### 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                        |
| Max. conductor resistance | 77.6 $\Omega/\text{m}$     |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
| Max. bending cycles         | 4000000    |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Connector

#### Connection 1

|      |                   |
|------|-------------------|
| Type | Plug straight M12 |
|------|-------------------|

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

## Connection 2

|                     |                  |
|---------------------|------------------|
| Type                | Plug straight M8 |
| Number of positions | 3                |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 1 m |
|--------------|-----|

## PUR halogen-free black [PUR]

|                                               |                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing                           |  |
| Cable weight                                  | 18 kg/km                                                                            |
| UL AWM Style                                  | 20549 / 10493 (80°C/300 V)                                                          |
| Number of positions                           | 3                                                                                   |
| Shielded                                      | no                                                                                  |
| Cable type                                    | PUR halogen-free black [PUR]                                                        |
| Conductor structure signal line               | 32x 0.10 mm                                                                         |
| AWG signal line                               | 24                                                                                  |
| Conductor cross-section                       | 3x 0.25 mm <sup>2</sup> (Signal line)                                               |
| Wire diameter incl. insulation                | 1.17 mm ±0.02 mm                                                                    |
| External cable diameter                       | 3.60 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)                                                         |
| Thickness, outer sheath                       | approx. 0.50 mm                                                                     |
| Overall twist                                 | 3 wires, twisted                                                                    |
| Length of twist, overall twist                | 40 mm                                                                               |
| Max. conductor resistance                     | ≤ 78 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   | 18 mm                                                                               |
| Smallest bending radius, movable installation | 36 mm                                                                               |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 44 mm,                               |

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|                                 |                                                                                  |
|---------------------------------|----------------------------------------------------------------------------------|
|                                 | 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                                         |
| 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                | hydrolysis and microbe resistant                                                 |
|                                 | Highly resistant to acids, alkaline solutions and solvents                       |
|                                 | Resistant to salt water                                                          |
|                                 | 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              |
| 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                                           |
|                                 | IP68                                           |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)               |
|                                 | -40 °C ... 80 °C (cable, fixed installation)   |
|                                 | -5 °C ... 80 °C (Cable, flexible installation) |

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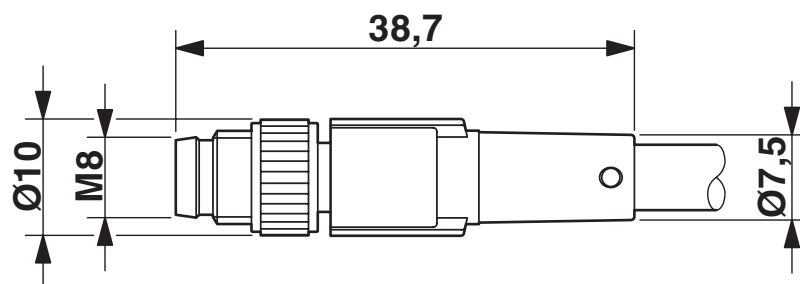
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing

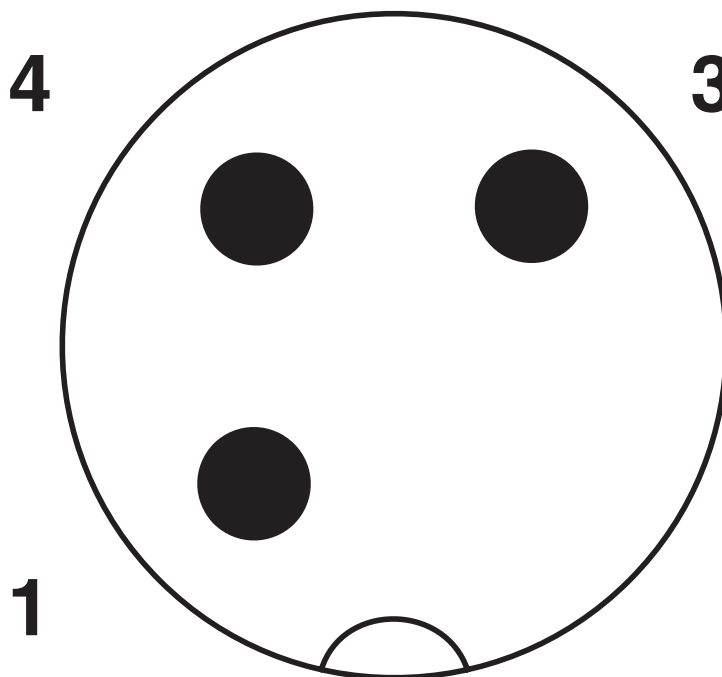


M8 x 1 male plug, straight version

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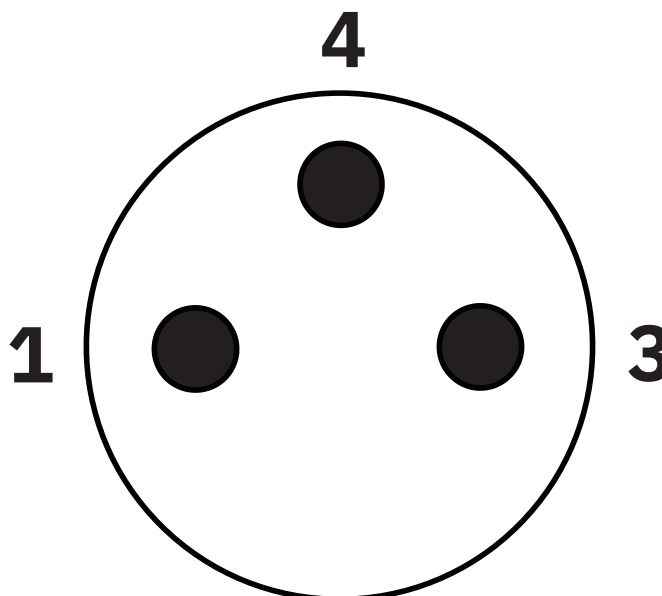
<https://www.phoenixcontact.com/us/products/1403709>

Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

Schematic diagram



Pin assignment M8 plug, 3-pos., view male side

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## Approvals

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|  <b>UL Listed</b><br>Approval ID: FILE E 221474 |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                            |                       |                       |                   |                             |
|                                                                                                                                  | 60 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 $\text{mm}^2$ |
| keine                                                                                                                             |                       |                       |                   |                             |
|                                                                                                                                   | 60 V                  | 4 A                   | -                 | -                           |

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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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