

# SAC-3P-M 8MS/ 3,5-PUR/4P-M 8FR - Sensor/actuator cable



1501414

<https://www.phoenixcontact.com/us/products/1501414>

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug straight M8, coding: A, on Socket angled M8, cable length: 3.5 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1501414                        |
| Packing unit                         | 5 pc                           |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Product key                          | AF1BBA                         |
| GTIN                                 | 4017918614195                  |
| Weight per piece (including packing) | 94.91 g                        |
| Weight per piece (excluding packing) | 77.35 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     | $\geq 100 \text{ G}\Omega$ |
| Nominal voltage $U_N$     | 48 V AC                    |
|                           | 60 V DC                    |
| Nominal current $I_N$     | 4 A                        |
| Max. conductor resistance | 78 $\Omega/\text{km}$      |

### Mechanical properties

#### Mechanical data

|                     |         |
|---------------------|---------|
| Max. bending cycles | 4000000 |
|---------------------|---------|

### Signaling

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

### Connector

#### Connection 1

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

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

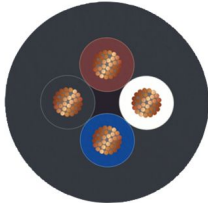
## Connection 2

|                     |                  |
|---------------------|------------------|
| Type                | Socket angled M8 |
| Number of positions | 3                |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 3.5 m |
|--------------|-------|

## PUR halogen-free black [PUR]

|   |   |
|---|---|
| Dimensional drawing                           |   |
| Cable weight                                  | 23 kg/km  |
| UL AWM Style                                  | 20549 / 10493 (80°C/300 V)  |
| Number of positions                           | 4   |
| Shielded                                      | no  |
| Cable type                                    | PUR halogen-free black [PUR]  |
| Conductor structure signal line               | 32x 0.10 mm   |
| AWG signal line                               | 24  |
| Conductor cross-section                       | 4x 0.25 mm <sup>2</sup> (Signal line)   |
| Wire diameter incl. insulation                | 1.17 mm ±0.02 mm (Signal line)  |
| External cable diameter                       | 3.95 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, white, blue, black   |
| Thickness, insulation                         | ≥ 0.21 mm (Core insulation)<br>approx. 0.50 mm (Outer cable sheath)   |
| Overall twist                                 | 4 wires, twisted  |
| Max. conductor resistance                     | max. 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   | 20 mm   |
| Smallest bending radius, movable installation | 40 mm   |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 44 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 5 m/s <sup>2</sup> |

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|                                 |  |
|---------------------------------|--|
| Dynamic load capacity (torsion) | Torsion: $\pm 180$ °/m, Torsion cycles: $\geq 5000000$ , Torsional frequency: 35 cycles/min.   |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815   |
| Flame resistance                | in accordance with UL 758/1581 FT2<br>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<br>hydrolysis and microbe resistant<br>partly UV-resistant (in accordance with DIN EN ISO 4892-2-A) |
| Special properties              | Flexible cable conduit capable<br>Silicone-free<br>Free of substances which would hinder coating with paint or varnish   |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)<br>-25 °C ... 80 °C (Cable, flexible installation)  |

## Environmental and real-life conditions

### Ambient conditions

|                                 |  |
|---------------------------------|--|
| Degree of protection            | IP65<br>IP67<br>IP68   |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)<br>-40 °C ... 80 °C (cable, fixed installation)<br>-5 °C ... 80 °C (Cable, flexible installation) |

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## Drawings

Dimensional drawing



M8 x 1 male plug, straight version

Dimensional drawing



Socket M8 x 1, angled

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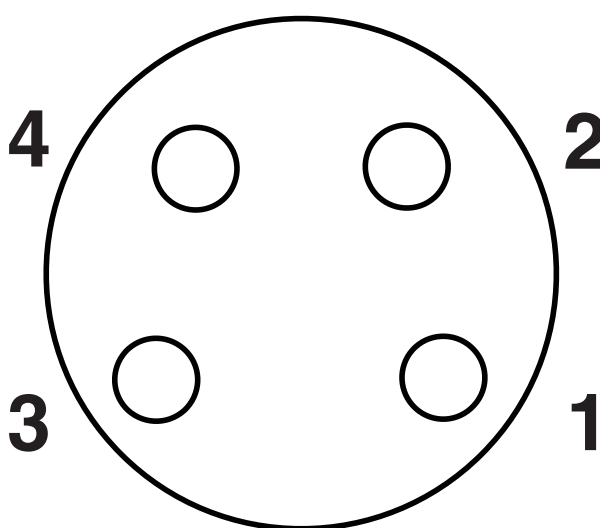
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Schematic diagram



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

Schematic diagram



Pin assignment M8 socket, 4-pos., view female side

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Schematic diagram



Layout of connector pin assignments

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1501414>

|  <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                   | -                 | -                           |

|  <b>EAC-RoHS</b><br>Approval ID: RU D-DE.HB35.B.00387 |  |
|--|--|
|--|--|

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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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