

# SAC-5P-M12MS/ 1,0-802/M12FR - Sensor/actuator cable



1454529

<https://www.phoenixcontact.com/us/products/1454529>

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Sensor/actuator cable, 5-position, PUR halogen-free, resistant to welding sparks, highly flexible, gray RAL 7001, Plug straight M12, coding: A, on Socket angled M12, coding: A, cable length: 1 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1454529                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Product key                          | AF1CDA                         |
| GTIN                                 | 4046356578226                  |
| Weight per piece (including packing) | 60.029 g                       |
| Weight per piece (excluding packing) | 22.22 g                        |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 5                     |
| No. of cable outlets | 1                     |
| 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                        |

### Signaling

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

### Connector

#### Connection 1

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

#### Connection 2

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

### Cable/line

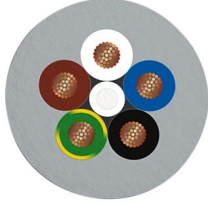
|              |     |
|--------------|-----|
| Cable length | 1 m |
|--------------|-----|

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PUR halogen-free highly flexible resistant to welding sparks gray 5th conductor green/yellow [802]

|   |   |
|---|---|
| Dimensional drawing                           |   |
| Note  | Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.  |
| Cable weight                                  | 38 kg/km  |
| UL AWM Style                                  | 20549   |
| Number of positions                           | 5   |
| Shielded                                      | no  |
| Cable type                                    | PUR halogen-free highly flexible resistant to welding sparks gray 5th conductor green/yellow [802]  |
| 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                | 1.3 mm ±0.05 mm (Signal line)   |
| External cable diameter                       | 5.10 mm ±0.2 mm   |
| Outer sheath, material                        | PUR   |
| External sheath, color                        | gray RAL 7001   |
| Conductor material                            | Bare Cu litz wires  |
| Material wire insulation                      | PP  |
| Single wire, color                            | brown, white, blue, black, green-yellow   |
| Overall twist                                 | 5 wires around filler to the core   |
| Max. conductor resistance                     | approx. 53 Ω/km   |
| Insulation resistance                         | ≥ 20 MΩ*km  |
| Nominal voltage, cable                        | 300 V   |
| Test voltage                                  | 1200 V  |
| Minimum bending radius, fixed installation    | 5 x D   |
| Minimum bending radius, flexible installation | 5 x D   |
| Smallest bending radius, fixed installation   | 26 mm   |
| Smallest bending radius, movable installation | 26 mm   |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 7,5 x D, Traversing path: 5 m, Traversing rate: 3.3 m/s, Acceleration: 5 m/s <sup>2</sup><br>Max. bending cycles: 15000000, Bending radius: 50 mm, Traversing path: 0.9 m, Traversing rate: 5 m/s, Acceleration: 30 m/s <sup>2</sup> |
| Dynamic load capacity (torsion)               | Torsion: ±360 °/m, Torsion cycles: 1000000, Torsional frequency: 35 cycles/min.   |
| Halogen-free                                  | The cable is halogen-free   |

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|                                 |  |
|---------------------------------|--|
| Flame resistance                | in accordance with UL 758/1581 FT2   |
| Resistance to oil               | in accordance with DIN EN 60811-2-1  |
| Other resistance                | Highly resistant to acids, alkaline solutions and solvents   |
|                                 | Silicone-free  |
| Special properties              | Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing |
|                                 | Free from silicone and cadmium   |
|                                 | 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) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket)               |
| Ambient temperature (operation) (Cable, fixed installation)       | -40 °C ... 80 °C (cable, fixed installation)   |
| Ambient temperature (operation) (Cable, flexible installation)    | -5 °C ... 80 °C (Cable, flexible installation) |

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## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, angled

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Schematic diagram



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

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001855 |
|-----------|----------|

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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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