

SAC-5P-M12MS/1,5-600/M12FS FB - Sensor/actuator cable



1404099  
<https://www.phoenixcontact.com/us/products/1404099>

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Sensor/actuator cable, 5-position, PP-EPDM halogen-free, gray RAL 7035, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 1.5 m, Hygienic design, with plastic knurl

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Contamination can be detected quickly – thanks to the light color

Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1404099             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | BF03                |
| Product key                          | AF1CDA              |
| Catalog page                         | Page 145 (C-4-2013) |
| GTIN                                 | 4046356751117       |
| Weight per piece (including packing) | 66 g                |
| Weight per piece (excluding packing) | 63.4 g              |
| Customs tariff number                | 85444290            |
| Country of origin                    | PL                  |

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## Technical data

### Product properties

|                      |                          |
|----------------------|--------------------------|
| Product type         | Sensor/actuator cable    |
| Application          | Food processing industry |
| Number of positions  | 5                        |
| No. of cable outlets | 1                        |
| Shielded             | no                       |
| Coding               | A                        |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Material specifications

|                               |               |
|-------------------------------|---------------|
| Seal material                 | FKM           |
| Material of grip body         | PP            |
| Contact material              | CuSn          |
| Contact surface material      | Ni/Au         |
| Contact carrier material      | PP            |
| Material for screw connection | Polypropylene |

### 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 |

### Connection data

#### Conductor connection

|                   |                        |
|-------------------|------------------------|
| Tightening torque | 0.4 Nm (M12 connector) |
|-------------------|------------------------|

### Connector

#### Connection 1

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

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|                     |   |
|---------------------|---|
| Number of positions | 5 |
| Coding type         | A |

## Connection 2

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

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 1.5 m |
|--------------|-------|

## Halogen-free PP gray [600]

|                                               |                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing                           |  |
| Cable weight                                  | 34 kg/km                                                                            |
| Number of positions                           | 5                                                                                   |
| Shielded                                      | no                                                                                  |
| Cable type                                    | Halogen-free PP gray [600]                                                          |
| 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                       | 5.00 mm ±0.15 mm                                                                    |
| Outer sheath, material                        | PP-EPDM                                                                             |
| External sheath, color                        | gray RAL 7035                                                                       |
| Conductor material                            | Bare Cu litz wires                                                                  |
| Material wire insulation                      | PP                                                                                  |
| Single wire, color                            | brown, white, blue, black, gray                                                     |
| Thickness, insulation                         | ≥ 0.21 mm (Core insulation)                                                         |
| Thickness, outer sheath                       | approx. 0.70 mm                                                                     |
| Overall twist                                 | 5 cores, twisted                                                                    |
| Length of twist, overall twist                | 55 mm                                                                               |
| Max. conductor resistance                     | 58 Ω/km (at 20 °C)                                                                  |
| Nominal voltage, cable                        | ≤ 300 V AC                                                                          |
| Test voltage                                  | ≥ 3000 V AC                                                                         |
| Minimum bending radius, fixed installation    | 5 x D                                                                               |
| Minimum bending radius, flexible installation | 10 x D                                                                              |
| Smallest bending radius, fixed installation   | 25 mm                                                                               |
| Smallest bending radius, movable installation | 50 mm                                                                               |

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|                                 |                                                                                                                                        |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Dynamic load capacity (bending) | Max. bending cycles: 4000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup> |
| Dynamic load capacity (torsion) | Torsion: ±270 °/m, Torsion cycles: ≥4000000, Torsional frequency: max.25 Torsion cycles/min                                            |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815                                                                                               |
| Other resistance                | Resistant to cold bending and cold impacts (according to DIN EN 60811-1-4 (-40 °C))                                                    |
| Special properties              | FDA compliant according to FDA 21 CFR 177.2600                                                                                         |
|                                 | highly flexible                                                                                                                        |
|                                 | Flexible cable conduit capable                                                                                                         |
| Ambient temperature (operation) | -40 °C ... 105 °C (cable, fixed installation)                                                                                          |
|                                 | -25 °C ... 105 °C (Cable, flexible installation)                                                                                       |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Degree of protection            | IP65                              |
|                                 | IP67                              |
|                                 | IP68                              |
|                                 | IP69K                             |
| Ambient temperature (operation) | -40 °C ... 105 °C (Plug / socket) |

## Standards and regulations

|                          |                      |
|--------------------------|----------------------|
| Standard designation     | M12 connector        |
| Standards/specifications | IEC 61076-2-101      |
| Standard designation     | Material conformance |
| Standards/specifications | FDA 21 CFR 177.2600  |

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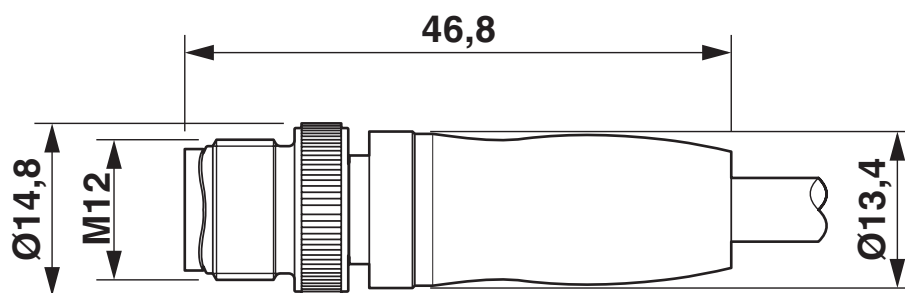


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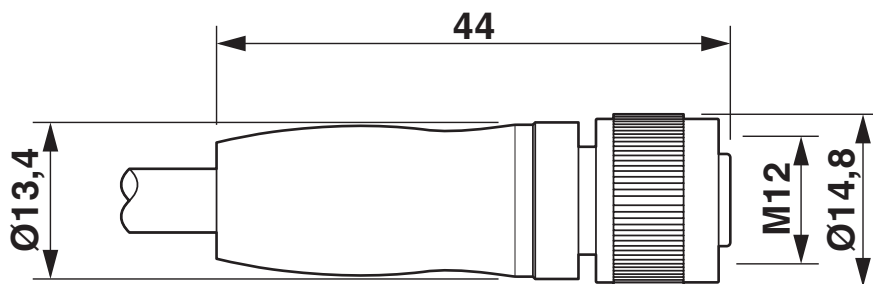
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, straight

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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 connector and the M12 socket

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## Approvals

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**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 0.726 kg CO2e                            |

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