

SAC-4P-M12MS/ 0,5-542/M12FS BK - Sensor/actuator cable



1406221  
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Sensor/actuator cable, 4-position, PVC, yellow, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 0.5 m

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1406221       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF13          |
| Product key                          | BF1ICB        |
| GTIN                                 | 4046356798303 |
| Weight per piece (including packing) | 36.6 g        |
| Weight per piece (excluding packing) | 36.6 g        |
| Customs tariff number                | 85444290      |
| Country of origin                    | US            |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Number of positions  | 4                     |
| Application          | Standard, U.S. cables |
| 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                 | PVC                                         |

### Electrical properties

|                       |                           |
|-----------------------|---------------------------|
| Contact resistance    | $\leq 5 \text{ m}\Omega$  |
| Insulation resistance | $\geq 10 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 250 V AC                  |
|                       | 250 V DC                  |
| Nominal current $I_N$ | 4 A                       |
| Protective circuit    | unwired                   |

### 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) |
|-------------------|------------------------|

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## Connector

### Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 4                 |
| Coding type         | A                 |

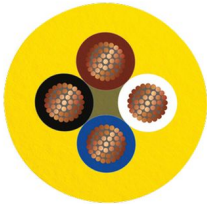
### Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 4                   |
| Coding type         | A                   |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 0.5 m |
|--------------|-------|

### PVC yellow 105 °C [542]

|                                               |                                                                                      |
|-----------------------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing                           |  |
| Cable weight                                  | 36 kg/km                                                                             |
| UL AWM Style                                  | 2517 (105 °C / 300 V)                                                                |
| Number of positions                           | 4                                                                                    |
| Shielded                                      | no                                                                                   |
| Cable type                                    | PVC yellow 105 °C [542]                                                              |
| Conductor structure signal line               | 30x 1.30 mm                                                                          |
| AWG signal line                               | 22                                                                                   |
| Wire diameter incl. insulation                | 1.27 mm ±0.03 mm                                                                     |
| External cable diameter                       | 5.00 mm ±0.2 mm                                                                      |
| Outer sheath, material                        | PVC                                                                                  |
| External sheath, color                        | yellow                                                                               |
| Conductor material                            | Tin-plated Cu litz wires                                                             |
| Material wire insulation                      | PVC                                                                                  |
| Single wire, color                            | brown, blue, black, white                                                            |
| Overall twist                                 | 4 wires, twisted                                                                     |
| Max. conductor resistance                     | max. 50.5 Ω/km (20 °C)                                                               |
| Insulation resistance                         | ≥ (550 M Ohms/m @ 500V)                                                              |
| Nominal voltage, cable                        | 300 V                                                                                |
| Minimum bending radius, flexible installation | 8 x D                                                                                |
| Smallest bending radius, movable installation | 40 mm                                                                                |

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|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Flame resistance                | FT4                                             |
| Other resistance                | UV resistant                                    |
| Special properties              | UL standards PLTC and ITC                       |
| Ambient temperature (operation) | -30 °C ... 105 °C (cable, fixed installation)   |
|                                 | -5 °C ... 105 °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) |

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

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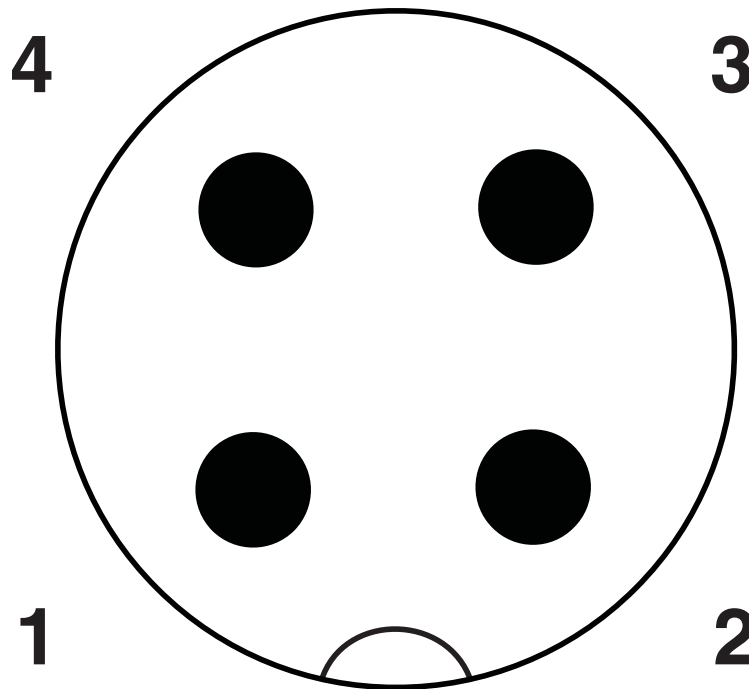


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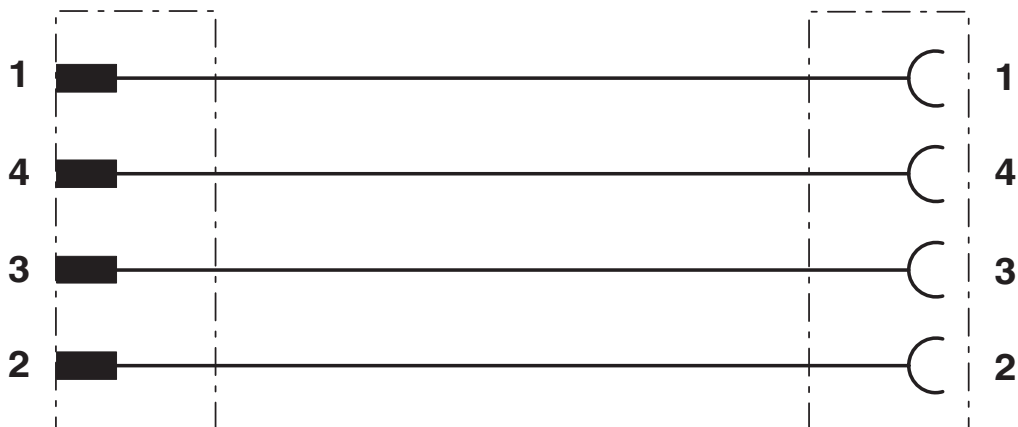
## Drawings

Schematic diagram



Pin assignment M12 plug, 4-pos., A-coded, view plug side

Circuit diagram



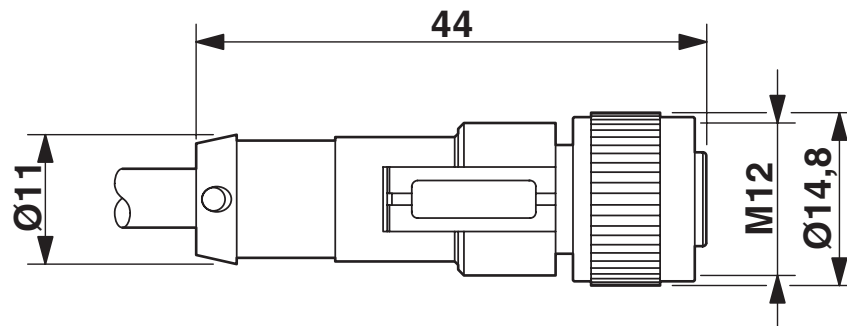
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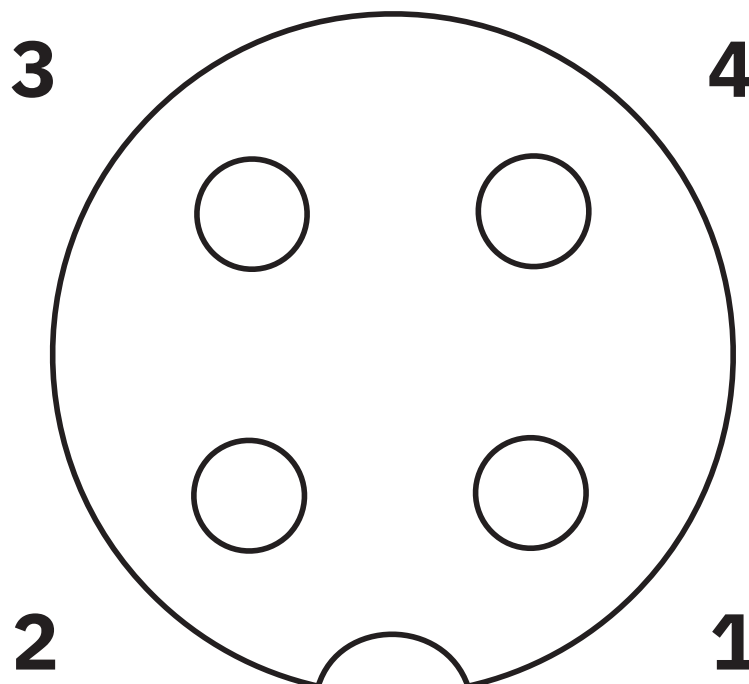
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Dimensional drawing



M12 x 1 socket, straight

Schematic diagram



Pin assignment M12 socket, 4-pos., A-coded, view female side

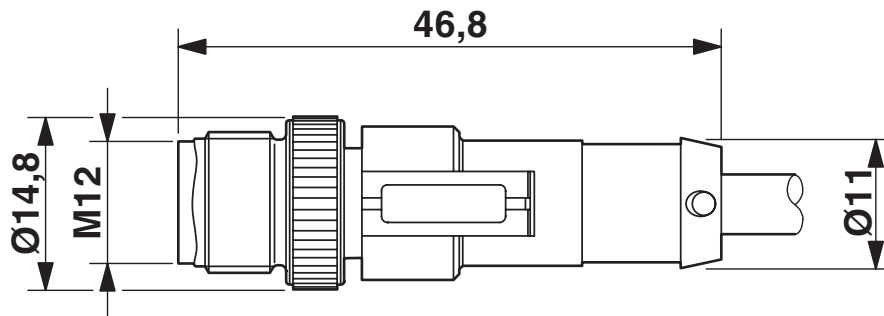
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Dimensional drawing



Plug, M12 x 1, straight

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1406221>

|  |                                                |                                |                   |                               |
|--|------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <b>UL Listed</b><br>Approval ID: FILE E 221474 |                                |                   |                               |
|  | Nominal voltage U <sub>N</sub>                 | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
|  | 300 V                                          | 4 A                            | -                 | -                             |

|  |                                                 |                                |                   |                               |
|--|-------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <b>cUL Listed</b><br>Approval ID: FILE E 221474 |                                |                   |                               |
|  | Nominal voltage U <sub>N</sub>                  | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
|  | 300 V                                           | 4 A                            | -                 | -                             |

|                     |
|---------------------|
| <b>cULus Listed</b> |
|---------------------|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060311 |
| ECLASS-12.0 | 27060311 |
| ECLASS-13.0 | 27060311 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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