

# SAC-3P-M12MS/ 1,5-PVC/M12FR-2L - Sensor/actuator cable



1415523  
<https://www.phoenixcontact.com/us/products/1415523>

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Sensor/actuator cable, 3-position, PVC, black RAL 9005, Plug straight M12, coding: A, with 2 LEDs, on Socket angled M12, coding: A, with 2 LEDs, cable length: 1.5 m

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Convenient: increased machine availability thanks to quick and easy diagnostics

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1415523       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF03          |
| Product key                          | AF1CBA        |
| GTIN                                 | 4055626048987 |
| Weight per piece (including packing) | 61.32 g       |
| Weight per piece (excluding packing) | 61.3 g        |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard              |
| 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                |

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 24 V DC                    |
| Nominal current $I_N$ | 4 A                        |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Signaling

|                        |        |
|------------------------|--------|
| Status display         | 2 LEDs |
| Status display present | yes    |

### Connector

#### Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 3                 |
| Coding type         | A                 |

#### Connection 2

|      |                   |
|------|-------------------|
| Type | Socket angled M12 |
|------|-------------------|

# SAC-3P-M12MS/ 1,5-PVC/M12FR-2L - Sensor/actuator cable



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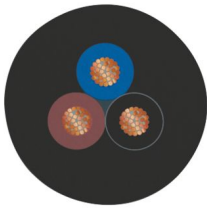
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|                     |   |
|---------------------|---|
| Number of positions | 3 |
| Coding type         | A |

## Cable/line

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

## PVC black [PVC]

|                                               |                                                                                                 |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------|
| Dimensional drawing                           |               |
| Cable weight                                  | 40 kg/km                                                                                        |
| UL AWM Style                                  | 2464 / 1729 (80°C/300 V)                                                                        |
| Number of positions                           | 3                                                                                               |
| Shielded                                      | no                                                                                              |
| Cable type                                    | PVC black [PVC]                                                                                 |
| Conductor structure signal line               | 19x 0.15 mm                                                                                     |
| AWG signal line                               | 22                                                                                              |
| Conductor cross section                       | 3x 0.34 mm² (Signal line)                                                                       |
| Wire diameter incl. insulation                | 1.26 mm ±0.05 mm                                                                                |
| External cable diameter                       | 4.30 mm ±0.2 mm                                                                                 |
| Outer sheath, material                        | PVC                                                                                             |
| External sheath, color                        | black RAL 9005                                                                                  |
| Conductor material                            | Bare Cu litz wires                                                                              |
| Material wire insulation                      | PVC                                                                                             |
| Single wire, color                            | brown, blue, black                                                                              |
| Thickness, insulation                         | ≥ 0.23 mm (Core insulation)                                                                     |
| Thickness, outer sheath                       | ≥ 0.76 mm                                                                                       |
| Overall twist                                 | 3 wires, twisted                                                                                |
| Max. conductor resistance                     | max. 57 Ω/km (at 20 °C)                                                                         |
| Insulation resistance                         | ≥ 100 MΩ*km (at 20 °C)                                                                          |
| Nominal voltage, cable                        | ≤ 300 V                                                                                         |
| Test voltage                                  | ≥ 2500 V                                                                                        |
| Minimum bending radius, fixed installation    | 5 x D                                                                                           |
| Minimum bending radius, flexible installation | 10 x D                                                                                          |
| Smallest bending radius, fixed installation   | 22 mm                                                                                           |
| Smallest bending radius, movable installation | 43 mm                                                                                           |
| Flame resistance                              | As per UL-Style 2464                                                                            |
| Ambient temperature (operation)               | -25 °C ... 80 °C (cable, fixed installation)<br>-10 °C ... 80 °C (Cable, flexible installation) |

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## 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) |

## Standards and regulations

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

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## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



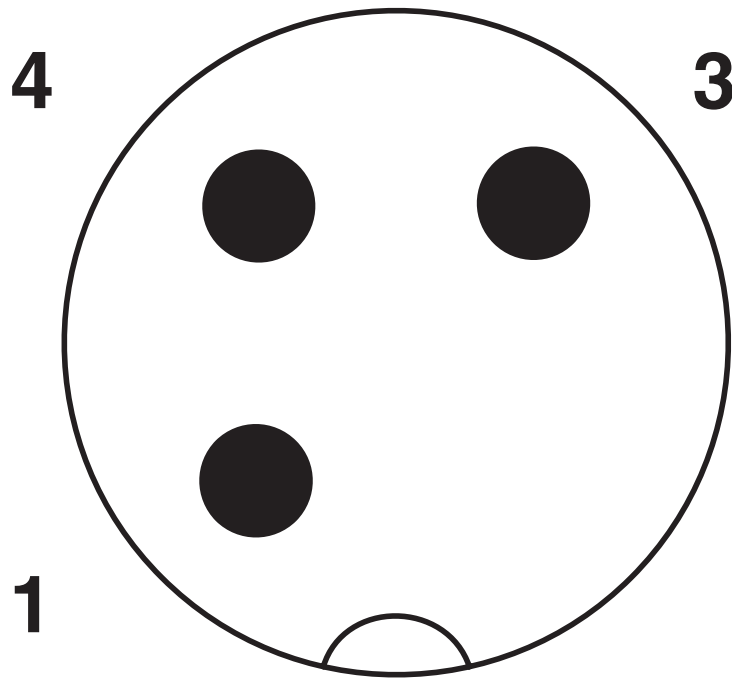
Socket M12 x 1, angled, with LED

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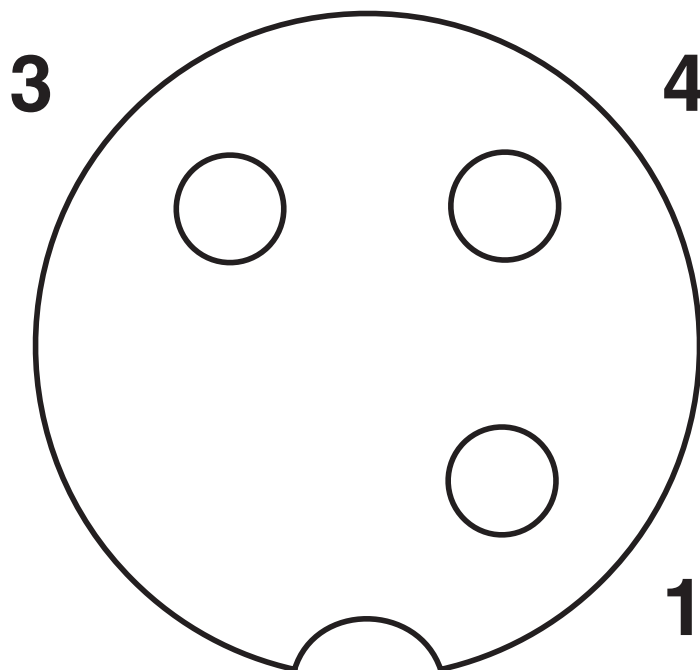
<https://www.phoenixcontact.com/us/products/1415523>

Schematic diagram



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

Schematic diagram



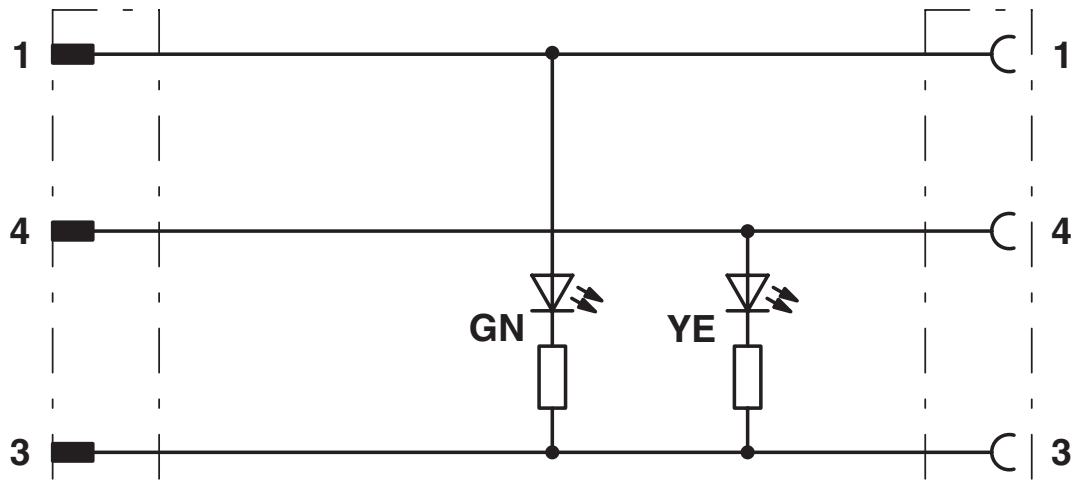
Pin assignment M12 socket, 3-pos., A-coded, view female side

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1415523>

|                                                                                                                                  |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|  <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                                                                                                                            |                       |                       |                   |                             |
|                                                                                                                                  | 24 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                                                                                                                             |                       |                       |                   |                             |
|                                                                                                                                   | 24 V                  | 4 A                   | -                 | -                           |

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

# SAC-3P-M12MS/ 1,5-PVC/M12FR-2L - Sensor/actuator cable



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
| ECLASS-15.0 | 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 | 0.444 kg CO2e |
|---------|---------------|

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