

# SAC-4P-M12MR/ 1,5-542/M12FSSH - Sensor/actuator cable



1406180

<https://www.phoenixcontact.com/in/products/1406180>

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Sensor/actuator cable, 4-position, PVC, yellow, shielded, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: 1.5 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1406180                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF1                            |
| Product key                          | AF1IDB                         |
| GTIN                                 | 4046356798709                  |
| Weight per piece (including packing) | 63.1 g                         |
| Weight per piece (excluding packing) | 61.4 g                         |
| Customs tariff number                | 85444290                       |
| Country of origin                    | US                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard, U.S. cables |
| Number of positions  | 4                     |
| No. of cable outlets | 1                     |
| Shielded             | yes                   |
| Coding               | A                     |

### Insulation characteristics

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

### Material specifications

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 | HB                                          |
| 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

|                       |                           |
|-----------------------|---------------------------|
| Insulation resistance | $\geq 10 \text{ M}\Omega$ |
| 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

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

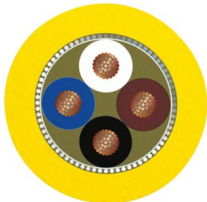
## Connection 2

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

## Cable/line

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

PVC yellow 105 °C [542]

|                                               |                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing                           |  |
| Cable weight                                  | 48 kg/km                                                                            |
| UL AWM Style                                  | 2517 (105 °C / 300 V)                                                               |
| Number of positions                           | 4                                                                                   |
| Shielded                                      | yes                                                                                 |
| 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                       | 5.50 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                                                                    |
| Optical shield covering                       | 85 %                                                                                |
| 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 | 12 x D                                                                              |
| Smallest bending radius, movable installation | 66 mm                                                                               |
| Flame resistance                              | FT4                                                                                 |
| Other resistance                              | UV resistant                                                                        |
| Special properties                            | UL standards PLTC and ITC                                                           |

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|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| 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                                           |
| 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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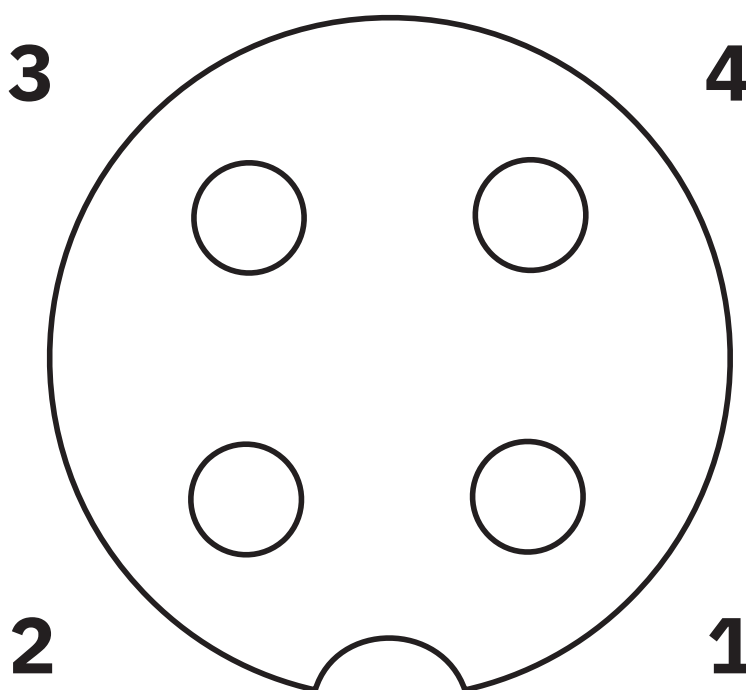


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## Drawings

Schematic diagram



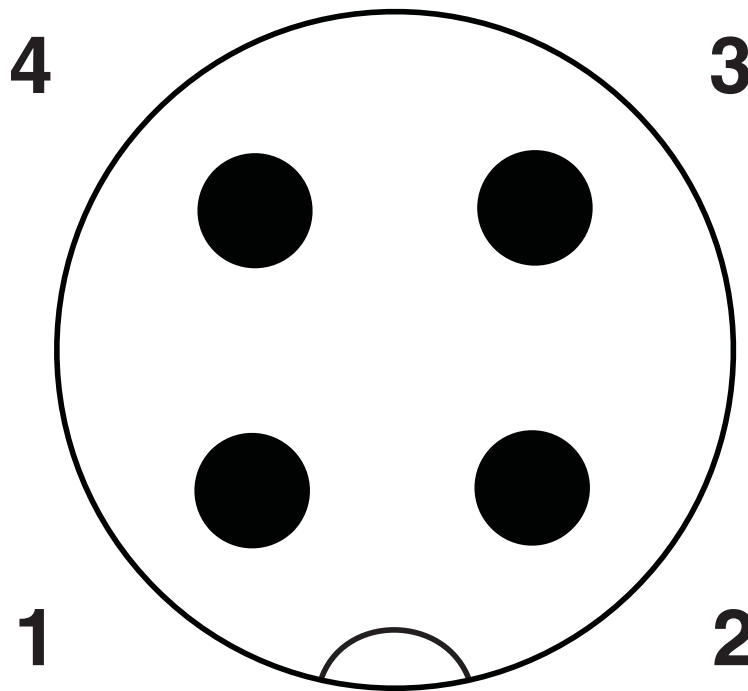
Pin assignment M12 socket, 4-pos., A-coded, view female side

# SAC-4P-M12MR/ 1,5-542/M12FSSH - Sensor/actuator cable

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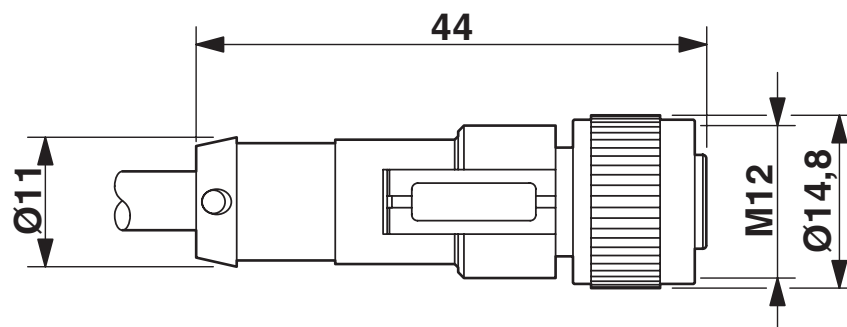
<https://www.phoenixcontact.com/in/products/1406180>

Schematic diagram



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

Dimensional drawing



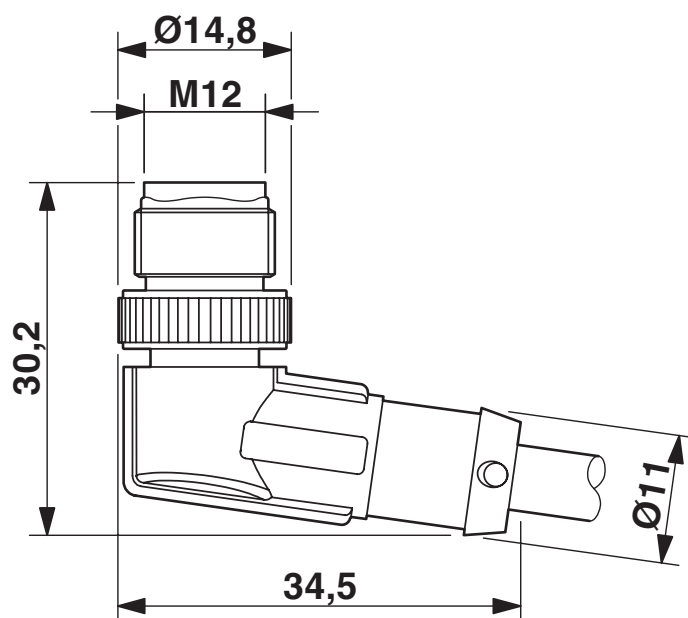
M12 x 1 socket, straight

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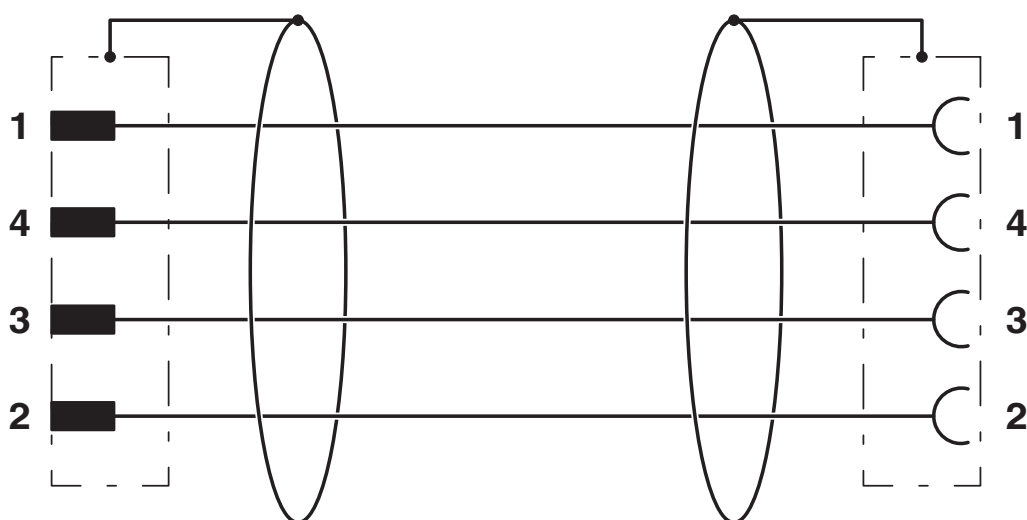
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Dimensional drawing



M12 x 1 male plug, angled

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/in/products/1406180>



### UL Listed

Approval ID: FILE E 221474

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 300 V                 | 4 A                   | -                 | -                           |



### cUL Listed

Approval ID: FILE E 221474

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 300 V                 | 4 A                   | -                 | -                           |



### EAC-RoHS

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

### cULus Listed



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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

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| 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                                 | 1.243 kg CO2e                            |

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## Accessories

### PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/in/products/1430873>

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



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### SAC-M12-EXCLIP-M - Locking clip

1558988

<https://www.phoenixcontact.com/in/products/1558988>

Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/in/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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## SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/in/products/1558991>

Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/in/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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## TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/in/products/1212224>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/in/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/in/products/1208432>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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