

# SAC-HZ-3P-M12MR/1,5-542/M12FSSH - Sensor/actuator cable



1409517

<https://www.phoenixcontact.com/us/products/1409517>

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Sensor/actuator cable, 3-position, PVC, yellow, shielded, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: 1.5 m



## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1409517                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF13                           |
| Product key                          | AF11GA                         |
| GTIN                                 | 4055626017716                  |
| Weight per piece (including packing) | 22.22 g                        |
| Weight per piece (excluding packing) | 22.22 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | US                             |

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## Technical data

### Notes

|         |   |
|---------|---|
| General | These cable assemblies are UL/cUL listed for use in Class I, Division 2 (CID2) hazardous locations. |
|---------|---|

### Product properties

|                      |                                     |
|----------------------|-------------------------------------|
| Product type         | Sensor/actuator cable               |
| Application          | U.S. cables for hazardous locations |
| Number of positions  | 3                                   |
| No. of cable outlets | 1                                   |
| Shielded             | yes                                 |
| Coding               | A                                   |

### Insulation characteristics

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

### Material specifications

|  |   |
|--|---|
| Material                               | TPE-U (Locking clip)                        |
| 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

|                       |          |
|-----------------------|----------|
| Insulation resistance | ≥ 100 MΩ |
| Nominal voltage $U_N$ | 48 V AC  |
|                       | 60 V DC  |
| Nominal current $I_N$ | 4 A      |

### Mechanical properties

#### Mechanical data

|                             |       |
|-----------------------------|-------|
| Insertion/withdrawal cycles | ≥ 100 |
|-----------------------------|-------|

### Signaling

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

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## Connection data

### Conductor connection

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

## Connector

### Connection 1

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

### Connection 2

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

## Cable/line

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

### PVC yellow 105 °C [542]

|                                 |  |
|---------------------------------|--|
| Dimensional drawing             |  |
| Cable weight                    | 40 kg/km   |
| UL AWM Style                    | 2517 (105 °C / 300 V)  |
| Number of positions             | 3  |
| Shielded                        | yes  |
| Cable type                      | PVC yellow 105 °C [542]  |
| Conductor structure signal line | 7x 0.25 mm   |
| AWG signal line                 | 22   |
| Wire diameter incl. insulation  | 1.27 mm ±0.03 mm   |
| External cable diameter         | 5.20 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   |
| Overall twist                   | 3 wires, twisted   |

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|   |  |
|---|--|
| 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 | 63 mm  |
| Flame resistance                              | FT4  |
| Other resistance                              | UV resistant   |
| Special properties                            | UL standards PLTC and ITC  |
| Ambient temperature (operation)               | -30 °C ... 105 °C (cable, fixed installation)<br>-5 °C ... 105 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

|   |                                  |
|---|----------------------------------|
| Degree of protection  | IP65<br>IP67<br>IP68             |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket) |
| Ambient temperature (operation) (Locking clip)                    | -40 °C ... 65 °C (Locking clip)  |

## Approvals

### Conformity/Approvals

|                  |                                    |
|------------------|------------------------------------|
| UL, USA / Canada | Class I, Div. 2, Groups A, B, C, D |
|------------------|------------------------------------|

## Standards and regulations

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

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## Drawings

Dimensional drawing



EXCLIP mounted plug

Dimensional drawing



EXCLIP mounted socket

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Dimensional drawing



EXCLIP plug

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Dimensional drawing



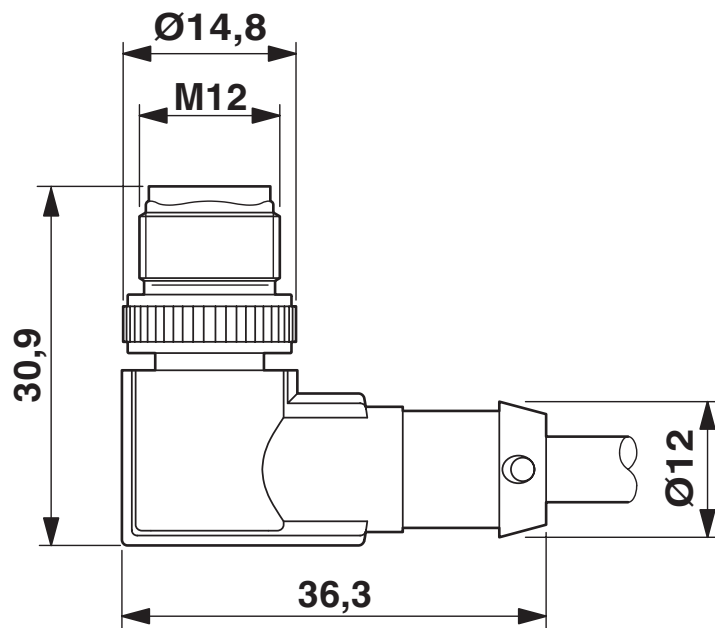
EXCLIP socket

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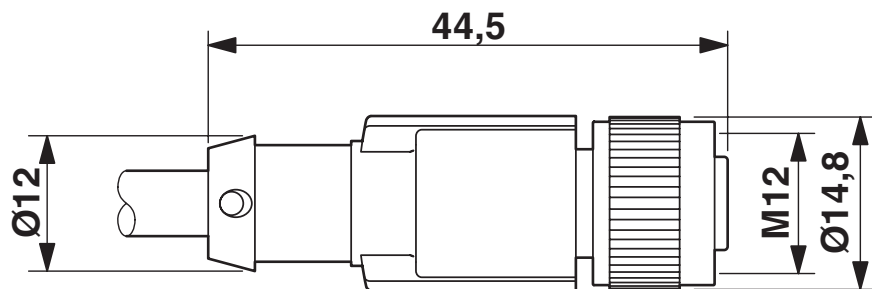
<https://www.phoenixcontact.com/us/products/1409517>

Dimensional drawing



Plug, M12 x 1, angled, shielded

Dimensional drawing



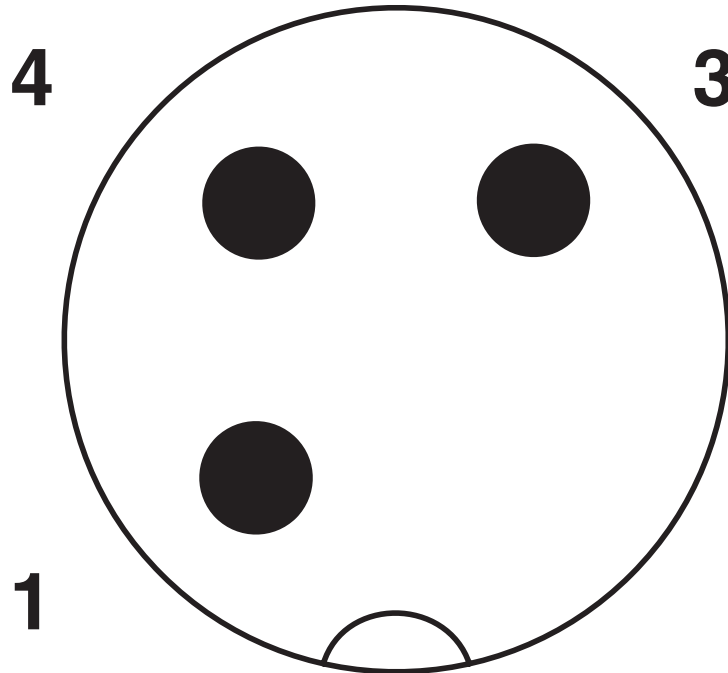
M12 x 1 socket, straight, shielded

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Schematic diagram



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

Schematic diagram



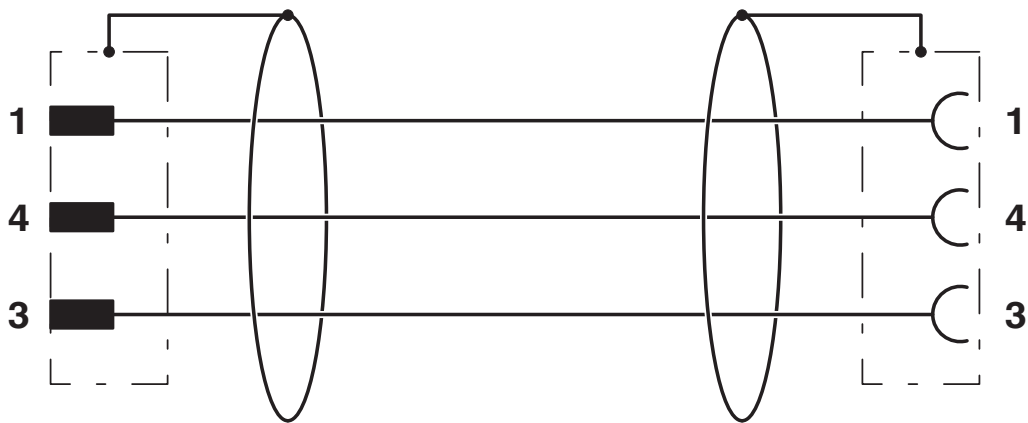
Pin assignment M12 socket, 3-pos., A-coded, view female side

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## 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

### 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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