

# SAC-HZ-3P-M12MR/ 5,0-542 SH BK - Sensor/actuator cable



1409496

<https://www.phoenixcontact.com/in/products/1409496>

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Sensor/actuator cable, 3-position, PVC, yellow, shielded, Plug angled M12, coding: A, on free cable end, cable length: 5 m



## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1409496                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 10 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF1                            |
| Product key                          | AF1IGA                         |
| GTIN                                 | 4055626017600                  |
| 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

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| 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 | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 48 V AC                    |
|                       | 60 V DC                    |
| Nominal current $I_N$ | 4 A                        |

### Signaling

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

### Connection data

#### Conductor connection

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

### Connector

#### Connection 1

|      |                 |
|------|-----------------|
| Type | Plug angled M12 |
|------|-----------------|

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|             |   |
|-------------|---|
| Coding type | A |
|-------------|---|

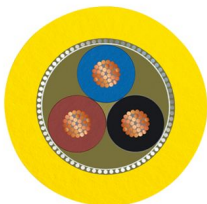
## Connection 2

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 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                                                                                 |
| 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

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## Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65                             |
|                                 | IP67                             |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |

## 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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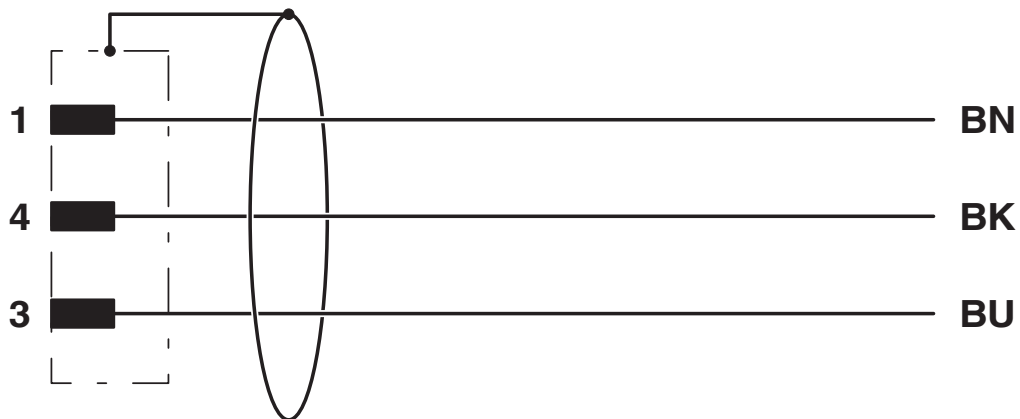


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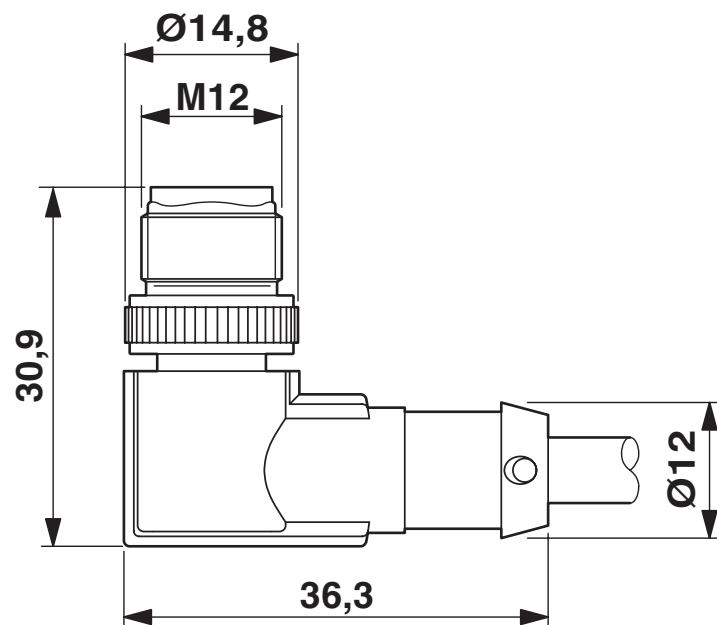
## Drawings

Circuit diagram



Contact assignment of the M12 plug

Dimensional drawing



M12 x 1 male plug, angled, shielded

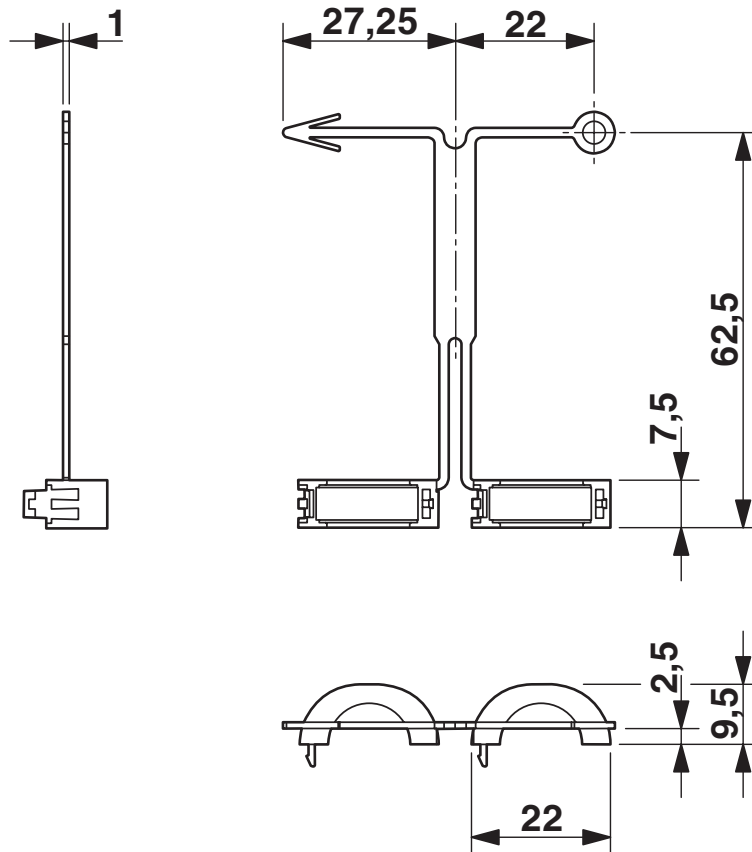
# SAC-HZ-3P-M12MR/ 5,0-542 SH BK - Sensor/actuator cable



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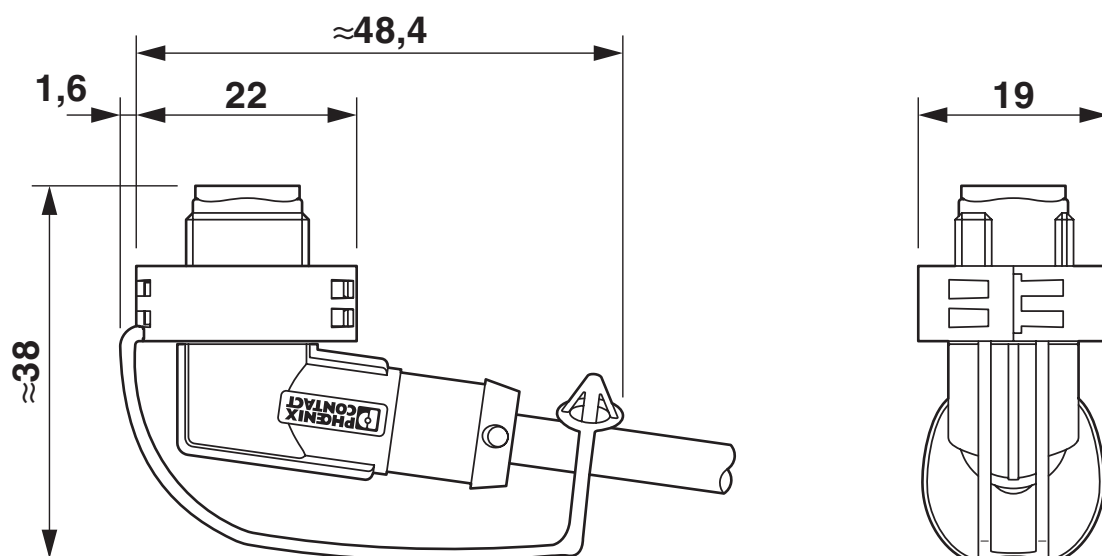
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Dimensional drawing



EXCLIP plug

Dimensional drawing



EXCLIP mounted plug

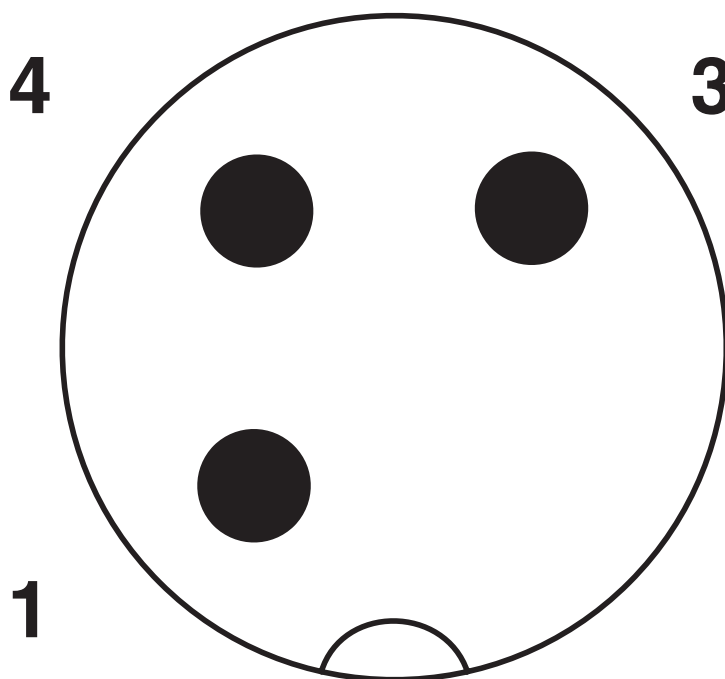
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Schematic diagram



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

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## Approvals

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### EAC-RoHS

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



### cUL Listed

Approval ID: FILE E 359524

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 150 V                 | 4 A                   | -                 | -                           |



### UL Listed

Approval ID: FILE E 359524

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 150 V                 | 4 A                   | -                 | -                           |

### 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%               |

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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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## 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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