

SAC-HZ-5P-M12MR/ 1,5-542/M12FS - Sensor/actuator cable



1409608  
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Sensor/actuator cable, 5-position, PVC, yellow, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: 1.5 m



Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1409608                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF13                           |
| Product key                          | AF1IGC                         |
| GTIN                                 | 4055626018614                  |
| Weight per piece (including packing) | 110.1 g                        |
| Weight per piece (excluding packing) | 110 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  | 5                                   |
| No. of cable outlets | 1                                   |
| Shielded             | no                                  |
| 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 | $\geq 100 \text{ M}\Omega$ |
| 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

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## Conductor connection

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

## Connector

### Connection 1

|                     |                 |
|---------------------|-----------------|
| Type                | Plug angled M12 |
| Number of positions | 5               |
| Coding type         | A               |

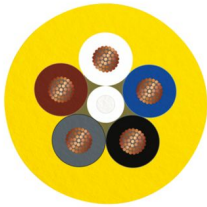
### Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 5                   |
| Coding type         | A                   |

## Cable/line

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

### PVC yellow 105 °C [542]

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 43 kg/km                                                                             |
| UL AWM Style                    | 2517 (105 °C / 300 V)                                                                |
| Number of positions             | 5                                                                                    |
| Shielded                        | no                                                                                   |
| 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         | 5.40 mm ±0.2 mm                                                                      |
| Outer sheath, material          | PVC                                                                                  |
| External sheath, color          | yellow                                                                               |
| Conductor material              | Tin-plated Cu litz wires                                                             |
| Material, filler                | PP                                                                                   |
| Material wire insulation        | PVC                                                                                  |
| Single wire, color              | brown, blue, black, white, gray                                                      |
| Overall twist                   | 5 wires around filler to the core                                                    |
| Max. conductor resistance       | max. 50.5 Ω/km (20 °C)                                                               |
| Insulation resistance           | ≥ (550 M Ohms/m @ 500V)                                                              |

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|                                               |                                                 |
|-----------------------------------------------|-------------------------------------------------|
| Nominal voltage, cable                        | 300 V                                           |
| Minimum bending radius, flexible installation | 8 x D                                           |
| Smallest bending radius, movable installation | 44 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)   |
|                                               | -5 °C ... 105 °C (Cable, flexible installation) |

## 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) |

## 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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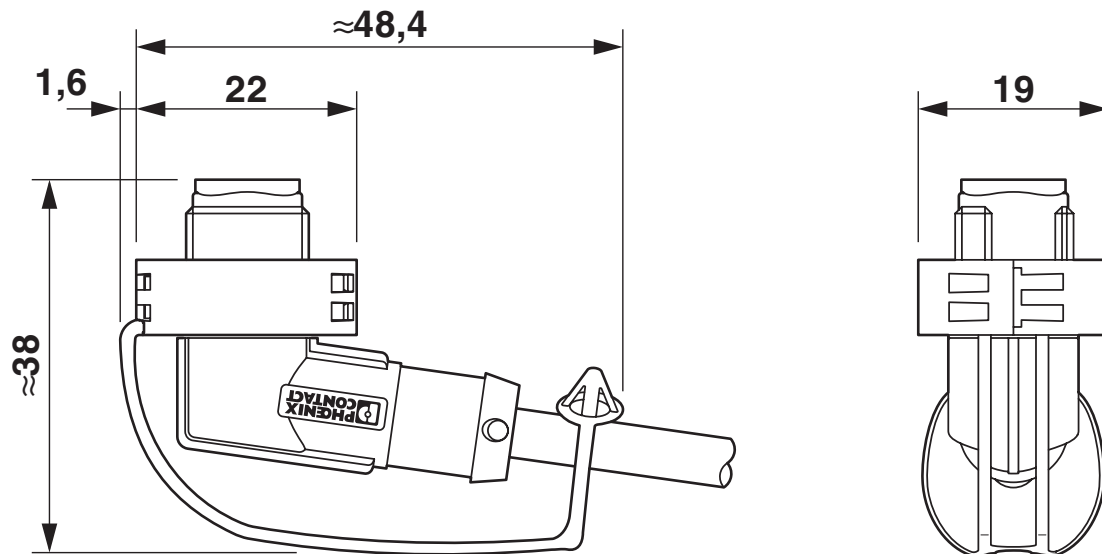


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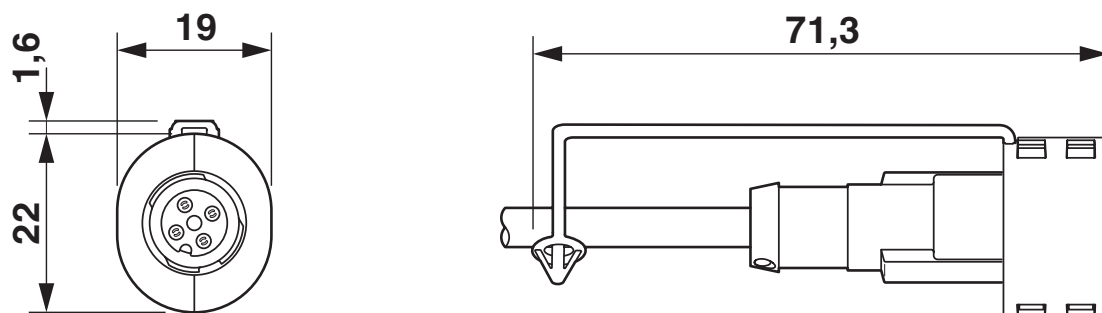
## Drawings

Dimensional drawing



EXCLIP mounted plug

Dimensional drawing



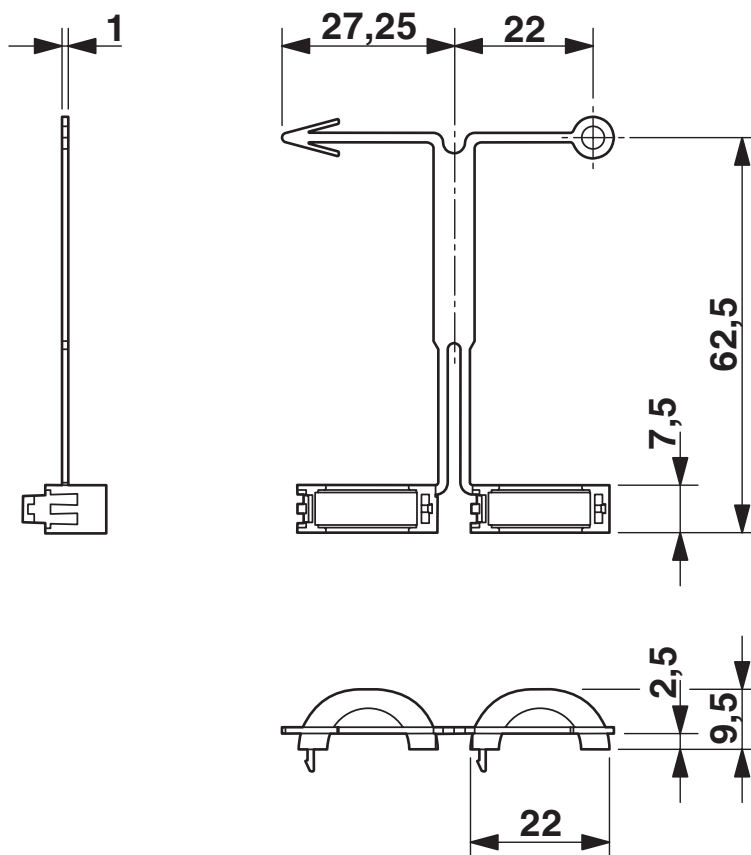
EXCLIP mounted socket

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Dimensional drawing



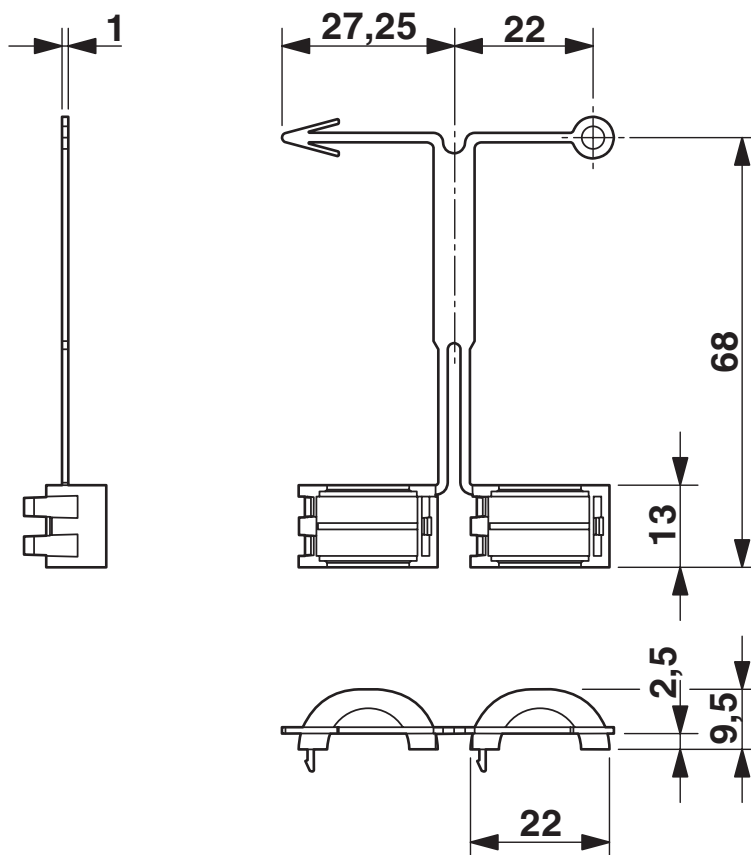
EXCLIP plug

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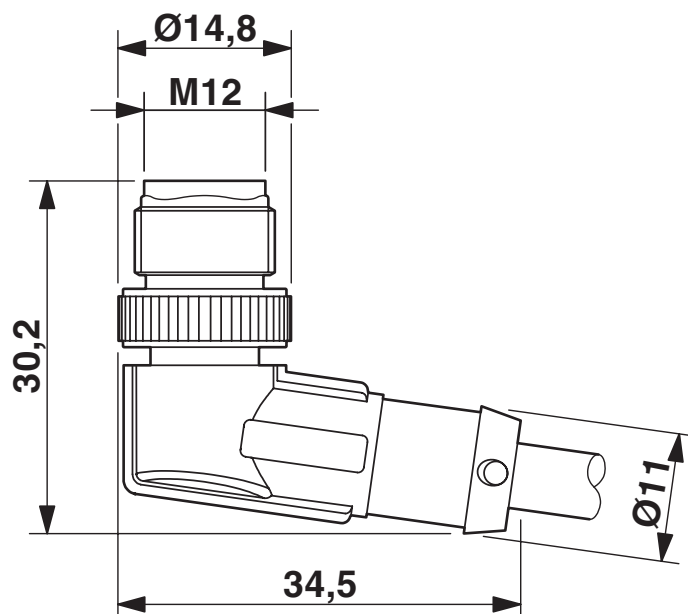
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Dimensional drawing



EXCLIP socket

Dimensional drawing



M12 x 1 male plug, angled

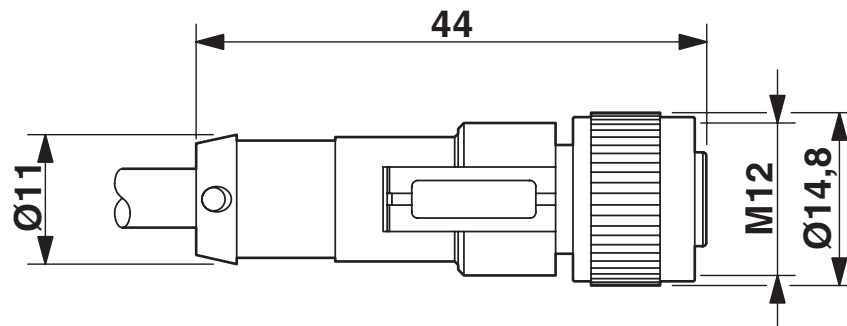
# SAC-HZ-5P-M12MR/ 1,5-542/M12FS - Sensor/actuator cable



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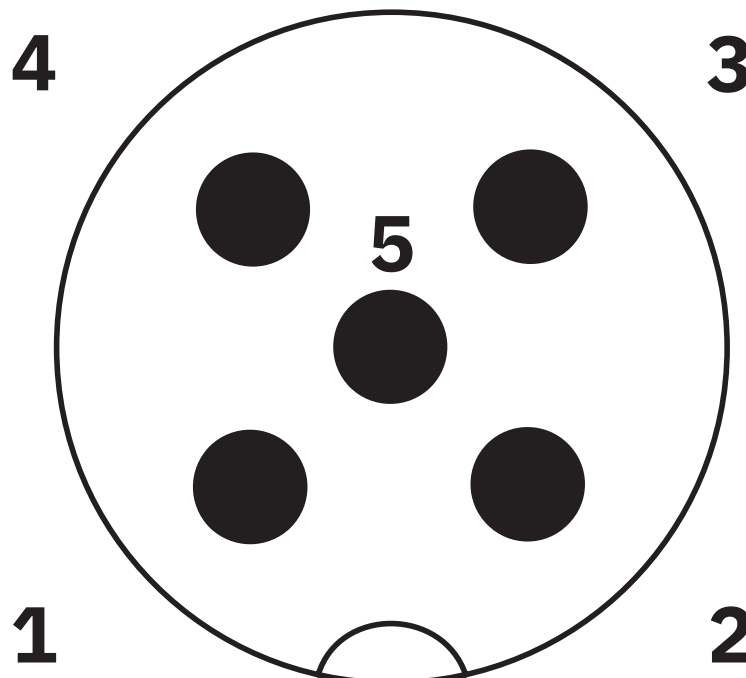
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Dimensional drawing



M12 x 1 socket, straight

Schematic diagram



Pin assignment M12 male connector, 5-pos., A-coded, male side



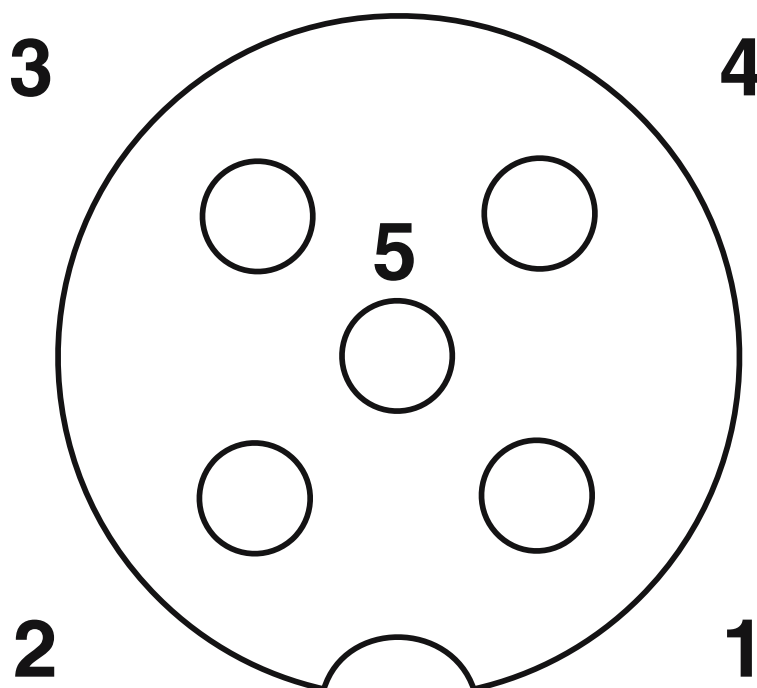
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Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, view female side

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/1409608>

| keine | <div> <b>cUL Listed</b><br/>Approval ID: FILE E 359524</div> |                       |                   |                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|-----------------------------|
|       | Nominal voltage $U_N$                                                                                                                         | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|       | 150 V                                                                                                                                         | 4 A                   | -                 | -                           |

| keine | <div> <b>UL Listed</b><br/>Approval ID: FILE E 359524</div> |                       |                   |                             |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|-----------------------------|
|       | Nominal voltage $U_N$                                                                                                                        | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|       | 150 V                                                                                                                                        | 4 A                   | -                 | -                           |

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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% |
|-------------------------------------|----------------------------|

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