

# SAC-5P-M12MS/20,0-542/M12FSSH - Sensor/actuator cable



1417911

<https://www.phoenixcontact.com/us/products/1417911>

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Sensor/actuator cable, 5-position, PVC, yellow, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 20 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1417911                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF13                           |
| Product key                          | AF1IDC                         |
| GTIN                                 | 4055626211305                  |
| 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

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard, U.S. cables |
| Number of positions  | 5                     |
| 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                                          |
| 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

#### Conductor connection

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

### Connector

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## Connection 1

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

## Connection 2

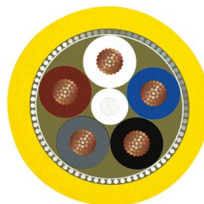
|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 5                   |
| Coding type         | A                   |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 20 m |
|--------------|------|

## PVC yellow 105 °C [542]

### Dimensional drawing



|                                               |                                   |
|-----------------------------------------------|-----------------------------------|
| Cable weight                                  | 57 kg/km                          |
| UL AWM Style                                  | 2517 (105 °C / 300 V)             |
| Number of positions                           | 5                                 |
| 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                       | 5.90 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 |
| 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 | 71 mm                             |

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



M12 x 1 socket, straight, shielded

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Schematic diagram



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

Schematic diagram



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

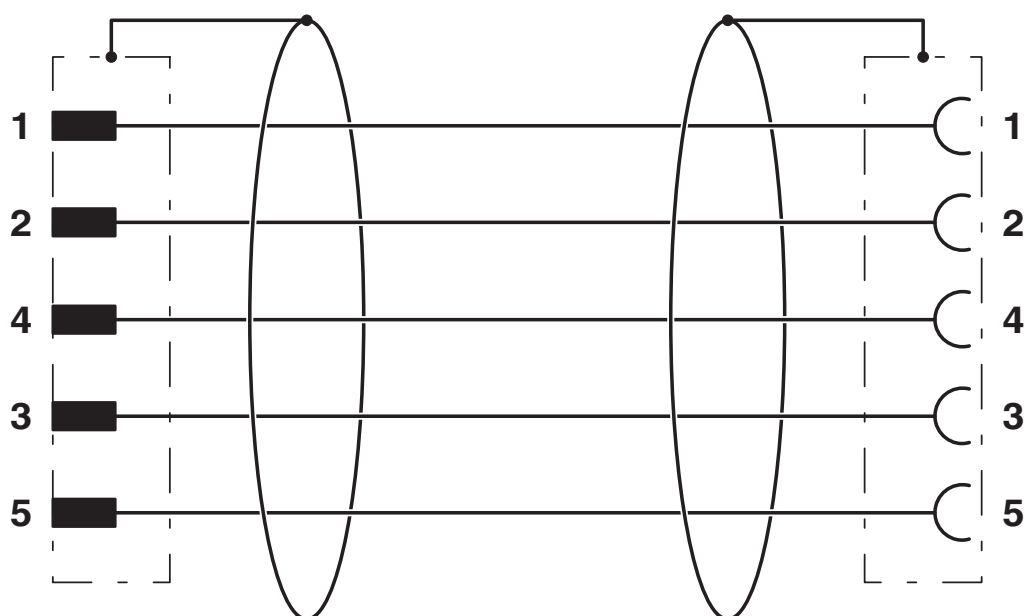
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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Approvals

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|  <b>UL Listed</b><br>Approval ID: FILE E 221474 |                                |                                |                   |                               |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                  | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                            |                                |                                |                   |                               |
|                                                                                                                                  | 125 V                          | 4 A                            | -                 | -                             |

|  <b>cUL Listed</b><br>Approval ID: FILE E 221474 |                                |                                |                   |                               |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                   | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                             |                                |                                |                   |                               |
|                                                                                                                                   | 125 V                          | 4 A                            | -                 | -                             |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
| ECLASS-15.0 | 27060311 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001855 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 31251501 |
|-------------|----------|

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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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