

# SAC-5P- 2,0-542/M12FS SH BK - Sensor/actuator cable



1406149

<https://www.phoenixcontact.com/us/products/1406149>

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Sensor/actuator cable, 5-position, PVC, yellow, shielded, free cable end, on Socket straight M12, coding: A, cable length: 2 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1406149       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF13          |
| Product key                          | AF1IDC        |
| GTIN                                 | 4046356799010 |
| Weight per piece (including packing) | 130.2 g       |
| Weight per piece (excluding packing) | 130.2 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 | free cable end |
|------|----------------|

## Connection 2

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

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 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   |
| Flame resistance                              | FT4   |
| Other resistance                              | UV resistant  |

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|                                 |   |
|---------------------------------|---|
| 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)               |
| Ambient temperature (operation) (Cable, fixed installation)       | -25 °C ... 80 °C (cable, fixed installation)   |
| Ambient temperature (operation) (Cable, flexible 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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## Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 socket

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## Approvals

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|  <b>UL Listed</b><br>Approval ID: FILE E 221474 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  |                       |                       |                   |                             |
|  | 125 V                 | 4 A                   | -                 | -                           |

|  <b>cUL Listed</b><br>Approval ID: FILE E 221474 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| 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 | 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 1.181 kg CO2e |
|---------|---------------|

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