

# SAC-8P-M12MS/ 2,0-28X SH OD - Sensor/actuator cable



1407279

<https://www.phoenixcontact.com/us/products/1407279>

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Sensor/actuator cable, 8-position, PE-X/PE-X halogen-free, black-gray RAL 7021, shielded, Plug straight M12, coding: A, on free cable end, cable length: 2 m, for outdoor applications, with high-grade steel knurl

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C ... +105°C
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1407279                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF03                           |
| Product key                          | AF1CKA                         |
| GTIN                                 | 4046356773973                  |
| Weight per piece (including packing) | 185.6 g                        |
| Weight per piece (excluding packing) | 182 g                          |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | External areas        |
| Number of positions  | 8                     |
| No. of cable outlets | 1                     |
| Shielded             | yes                   |
| Coding               | A                     |

### Insulation characteristics

|                     |   |
|---------------------|---|
| Degree of pollution | 3 |
|---------------------|---|

### Material specifications

|  |                 |
|--|-----------------|
| Flammability rating according to UL 94 | V0              |
| Material of grip body                  | PP              |
| Contact material                       | CuSn            |
| Contact surface material               | Ni/Au           |
| Contact carrier material               | PP              |
| Material for screw connection          | Stainless steel |

### Electrical properties

|                                |          |
|--------------------------------|----------|
| Insulation resistance          | ≥ 100 MΩ |
| Nominal voltage U <sub>N</sub> | 30 V AC  |
|                                | 30 V DC  |
| Nominal current I <sub>N</sub> | 2 A      |

### Mechanical properties

#### Mechanical data

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

### Signaling

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

### Connection data

#### Conductor connection

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

### Connector

#### Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 8                 |

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


## Connection 2

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

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

### PE-X black [28X]

|                                 |  |
|---------------------------------|--|
| Dimensional drawing             |  |
| Cable weight                    | 81 kg/km   |
| Number of positions             | 8  |
| Shielded                        | yes  |
| Cable type                      | PE-X black [28X]   |
| Conductor structure signal line | 32x 0.10 mm  |
| AWG signal line                 | 24   |
| Conductor cross-section         | 8x 0.25 mm <sup>2</sup>  |
| Wire diameter incl. insulation  | 1.17 mm ±0.02 mm   |
| External cable diameter         | 7.25 mm ±0.3 mm  |
| Outer sheath, material          | PE-X   |
| External sheath, color          | black-gray RAL 7021  |
| Conductor material              | Bare Cu litz wires   |
| Material, filler                | PP yarn  |
| Material wire insulation        | PE-X   |
| Single wire, color              | white, brown, green, yellow, gray, pink, blue, red                                 |
| Thickness, insulation           | approx. 0.25 mm (Core insulation)  |
| Inner sheath thickness          | approx. 0.50 mm  |
| Thickness, outer sheath         | approx. 0.70 mm  |
| Overall twist                   | 8 wires around filler to the core  |
| Length of twist, overall twist  | 67 mm  |
| Optical shield covering         | 85 %   |
| Max. conductor resistance       | ≤ 78 Ω/km (at 20 °C)   |
| Insulation resistance           | ≥ 100 MΩ*km (at 20 °C)   |
| Working capacitance             | approx. 80 pF (Line-line)<br>approx. 125 pF (Line-shield)                          |
| Nominal voltage, cable          | ≤ 300 V AC   |
| Test voltage                    | ≥ 3000 V AC (Spark test)   |
| Test voltage Core/Shield        | ≥ 1000.00 V AC (for 10 s)  |

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|   |  |
|---|--|
| Minimum bending radius, fixed installation    | 5 x D  |
| Minimum bending radius, flexible installation | 10 x D   |
| Smallest bending radius, fixed installation   | 37 mm  |
| Smallest bending radius, movable installation | 73 mm  |
| Dynamic load capacity (bending)               | Max. bending cycles: 1000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup> |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815   |
|   | in accordance with DIN EN 50267-2-1  |
| Flame resistance                              | According to DIN EN 60332-1-2  |
|   | according to DIN EN 50266-2-5  |
| Resistance to oil                             | According to DIN EN 60811-2-1, 168 h at 100°C  |
|   | According to DIN EN 50306  |
| Other resistance                              | Resistance to fuels (according to IEC 60811, 168 h at 70°C)  |
|   | UV resistant (according to DIN VDE 0276-605)   |
| Special properties                            | Inductance approx. 0.48 mH/km  |
|   | Irradiated   |
| Ambient temperature (operation)               | -40 °C ... 105 °C (cable, fixed installation)  |
|   | -15 °C ... 105 °C (Cable, flexible installation)   |
|   | 20 °C ±5 °C (cable, drag chain applications)   |

## Environmental and real-life conditions

### Ambient conditions

|   |   |
|---|---|
| Degree of protection  | IP65  |
|   | IP67  |
|   | IP68  |
|   | IP69K   |
| Ambient temperature (operation) (male connector/female connector) | -40 °C ... 105 °C (Plug / socket)   |
| Ambient temperature (operation) (Operation)                       | -40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4)) |

## Standards and regulations

### M12

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

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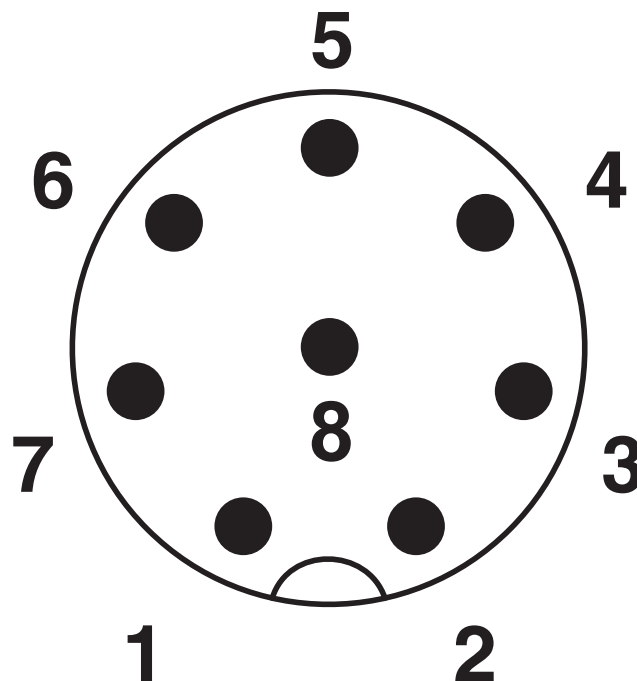
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



Pin assignment M12 plug, 8-pos., A-coded, view plug side

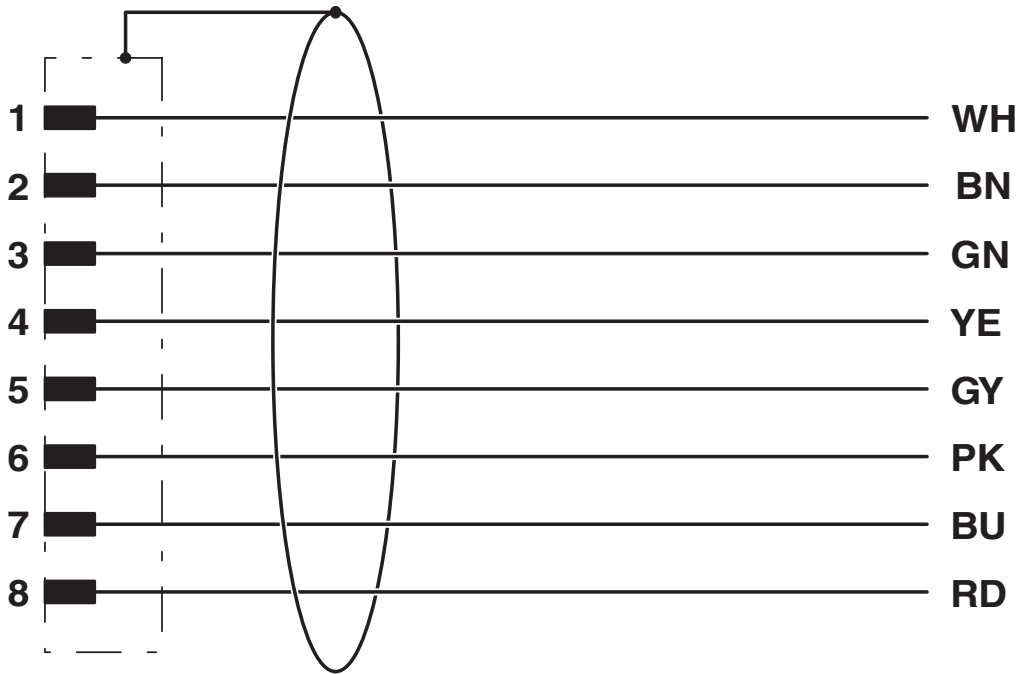
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Circuit diagram



Contact assignment of the M12 plug

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## Approvals

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### **DNV**

Approval ID: TAE00002K4



### **EAC-RoHS**

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

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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 | 3.394 kg CO2e |
|---------|---------------|

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