

# SAC-8P-P12MS/ 3,0-PUR/P12FS - Sensor/actuator cable



1649271

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Sensor/actuator cable, 8-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 Push Pull, coding: A, on Socket straight M12 Push Pull, coding: A, cable length: 3 m

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Save time, thanks to installation with push-pull fast locking

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1649271       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF03          |
| Product key                          | AF1CFA        |
| GTIN                                 | 4067923181885 |
| Weight per piece (including packing) | 162.6 g       |
| Weight per piece (excluding packing) | 162.6 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                     |                       |
|---------------------|-----------------------|
| Product type        | Sensor/actuator cable |
| Application         | Standard              |
| Number of positions | 8                     |
| Shielded            | no                    |

### Electrical properties

|                       |         |
|-----------------------|---------|
| Nominal voltage $U_N$ | 30 V AC |
|                       | 30 V DC |
| Nominal current $I_N$ | 2 A     |

### Connection data

#### Connection technology

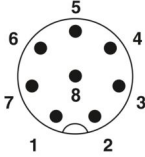
|                   |           |
|-------------------|-----------|
| Connection method | Push-Pull |
|-------------------|-----------|

#### Conductor connection

|                   |           |
|-------------------|-----------|
| Connection method | Push-Pull |
|-------------------|-----------|

### Connector

#### Connection 1

|                             |                                                                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing         |  <p>M12 Push-Pull male pin assignment, 8-pos., pin-side view</p> |
| Type                        | M12 Plug, straight, 8-position, Push Pull, Keying: A, Universal                                                                                      |
| Number of positions         | 8                                                                                                                                                    |
| Shielded                    | no                                                                                                                                                   |
| Signal type/category        | Universal                                                                                                                                            |
| Insertion/withdrawal cycles | $\geq 100$                                                                                                                                           |
| Insulation resistance       | $\geq 100 \Omega$                                                                                                                                    |
| Overvoltage category        | II                                                                                                                                                   |
| Degree of pollution         | 3                                                                                                                                                    |
| Material Contact            | CuSn                                                                                                                                                 |
| Material Contact surface    | Ni/Au                                                                                                                                                |
| Material Contact carrier    | PK                                                                                                                                                   |
| Material Grip body          | TPU, hardly inflammable, self-extinguishing                                                                                                          |
| Material Seal               | FKM                                                                                                                                                  |
| Material Release            | Die-cast zinc, nickel-plated                                                                                                                         |

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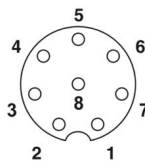


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|                                        |                  |
|----------------------------------------|------------------|
| Flammability rating according to UL 94 | V0               |
| Degree of protection                   | IP65             |
|                                        | IP67             |
| Ambient temperature (operation)        | -25 °C ... 85 °C |
| Standard designation                   | M12-Push-Pull    |
| Standards/regulations                  | IEC 61076-2-010  |

## Connection 2

|                                        |                                                                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing                    |  <p>Pin assignment M12 socket, 8-pos., A-coded, view female side</p> |
| Type                                   | M12 Socket, angled, 8-position, Push Pull, Keying: A, Universal                                                                                        |
| Number of positions                    | 8                                                                                                                                                      |
| Shielded                               | no                                                                                                                                                     |
| Signal type/category                   | Universal                                                                                                                                              |
| Insertion/withdrawal cycles            | ≥ 100                                                                                                                                                  |
| Insulation resistance                  | ≥ 100 MΩ                                                                                                                                               |
| Overvoltage category                   | II                                                                                                                                                     |
| Degree of pollution                    | 3                                                                                                                                                      |
| Material Contact                       | CuZn                                                                                                                                                   |
| Material Contact surface               | Ni/Au                                                                                                                                                  |
| Material Contact carrier               | PA                                                                                                                                                     |
| Material Grip body                     | TPU, hardly inflammable, self-extinguishing                                                                                                            |
| Material Seal                          | FKM                                                                                                                                                    |
| Material Release                       | Die-cast zinc, nickel-plated                                                                                                                           |
| Flammability rating according to UL 94 | V0                                                                                                                                                     |
| Degree of protection                   | IP65                                                                                                                                                   |
|                                        | IP67                                                                                                                                                   |
| Ambient temperature (operation)        | -25 °C ... 85 °C                                                                                                                                       |
| Standard designation                   | M12 connector                                                                                                                                          |
| Standards/regulations                  | IEC 61076-2-010                                                                                                                                        |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 3 m |
|--------------|-----|

PUR halogen-free black [PUR]

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|                                               |                                                                                                                                        |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing                           |                                                      |
| Cable weight                                  | 46 kg/km                                                                                                                               |
| UL AWM Style                                  | 20549 / 10493 (80°C/300 V)                                                                                                             |
| Number of positions                           | 8                                                                                                                                      |
| Shielded                                      | no                                                                                                                                     |
| Cable type                                    | PUR halogen-free black [PUR]                                                                                                           |
| Conductor structure signal line               | 32x 0.10 mm                                                                                                                            |
| AWG signal line                               | 24                                                                                                                                     |
| Conductor cross-section                       | 8x 0.25 mm <sup>2</sup> (Signal line)                                                                                                  |
| Wire diameter incl. insulation                | 1.17 mm ±0.02 mm                                                                                                                       |
| External cable diameter                       | 5.90 mm ±0.15 mm                                                                                                                       |
| Outer sheath, material                        | PUR                                                                                                                                    |
| External sheath, color                        | black-gray RAL 7021                                                                                                                    |
| Conductor material                            | Bare Cu litz wires                                                                                                                     |
| Material, filler                              | PE                                                                                                                                     |
| Material wire insulation                      | PP                                                                                                                                     |
| Single wire, color                            | white, brown, green, yellow, gray, pink, blue, red                                                                                     |
| Thickness, insulation                         | ≥ 0.21 mm                                                                                                                              |
| Thickness, outer sheath                       | approx. 0.80 mm                                                                                                                        |
| Overall twist                                 | 8 wires around filler to the core                                                                                                      |
| Max. conductor resistance                     | ≤ 78 Ω/km (at 20 °C)                                                                                                                   |
| Insulation resistance                         | ≥ 1 GΩ*km (at 20 °C)                                                                                                                   |
| Wave impedance                                | 100 Ω +15 % (with 1 MHz)                                                                                                               |
| Cable capacity                                | ≤ 70 pF/m                                                                                                                              |
| Nominal voltage, cable                        | ≤ 300 V                                                                                                                                |
| Test voltage                                  | ≥ 3000 V                                                                                                                               |
| Minimum bending radius, fixed installation    | 8 x D                                                                                                                                  |
| Minimum bending radius, flexible installation | 10 x D                                                                                                                                 |
| Smallest bending radius, fixed installation   | 48 mm                                                                                                                                  |
| Smallest bending radius, movable installation | 59 mm                                                                                                                                  |
| Dynamic load capacity (bending)               | Max. bending cycles: 10000000, Bending radius: 59 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup> |
| Dynamic load capacity (torsion)               | Torsion: ±180 °/m, Torsion cycles: ≥5000000, Torsional frequency: 35 cycles/min.                                                       |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815                                                                                               |
| Flame resistance                              | in accordance with UL 758/1581 FT2                                                                                                     |

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|                                 |                                                                     |
|---------------------------------|---------------------------------------------------------------------|
|                                 | According to DIN EN 60332-2-2 (20 s)                                |
| Resistance to oil               | in accordance with DIN EN 60811-2-1                                 |
| Other resistance                | Highly resistant to acids, alkaline solutions and solvents          |
|                                 | hydrolysis and microbe resistant                                    |
|                                 | partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)        |
|                                 | Low adhesion                                                        |
|                                 | abrasion-resistant                                                  |
| Special properties              | Flexible cable conduit capable                                      |
|                                 | Silicone-free                                                       |
|                                 | Free of substances which would hinder coating with paint or varnish |
|                                 | flexible                                                            |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)                        |
|                                 | -25 °C ... 80 °C (Cable, flexible installation)                     |

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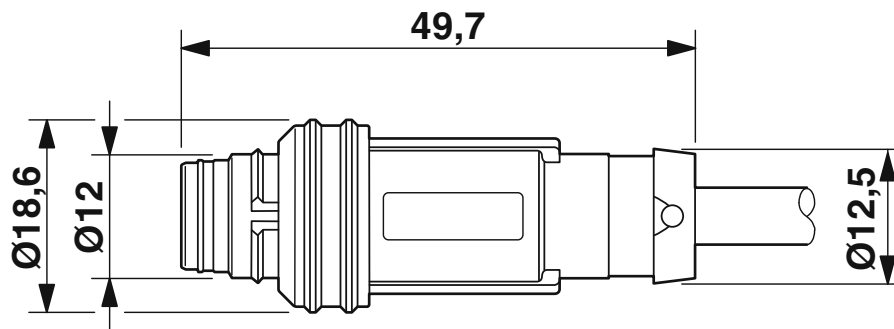


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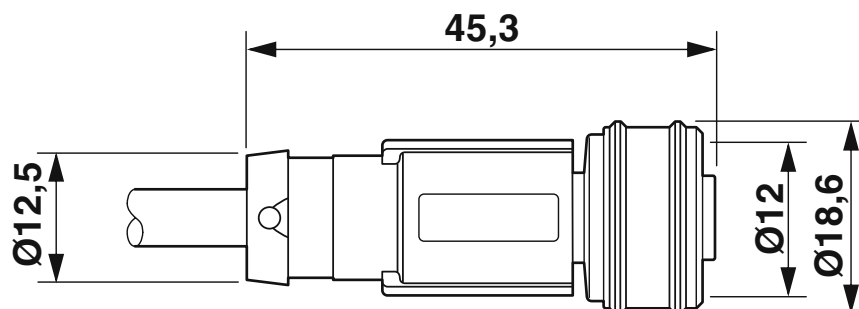
## Drawings

Dimensional drawing



M12 push-pull male connector, straight

Dimensional drawing



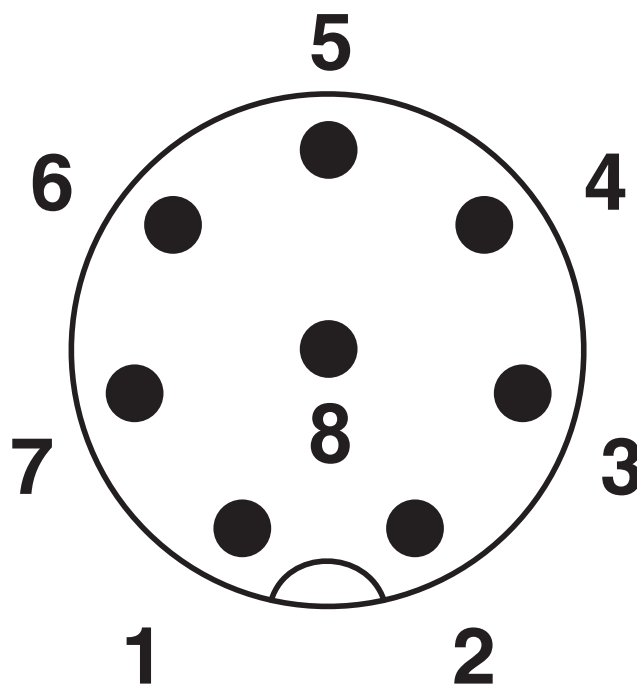
M12 push-pull female connector, straight

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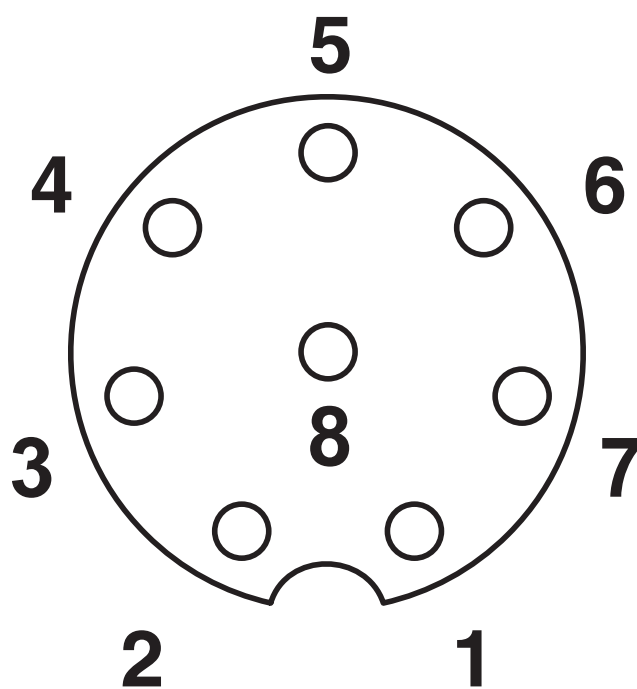
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Schematic diagram



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

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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## Classifications

### ECLASS

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

### ETIM

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

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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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