

## Sensor/actuator cable - SAC-3P- 5,0-PUR/M12FR-2L - 1694415

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12, A-coded, with 2 LEDs, cable length: 5 m

### Why buy this product

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Our standard: robust halogen-free PUR cable
- ✓ Convenient: increased machine availability thanks to quick and easy diagnostics

RoHS

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 STK                                                                                                   |
| GTIN         | <br>4 017918 178284 |
| GTIN         | 4017918178284                                                                                           |
| Sales Key    | 02                                                                                                      |

### Technical data

#### Dimensions

|                                            |       |
|--------------------------------------------|-------|
| Length of cable                            | 5 m   |
| Stripping length of the free conductor end | 50 mm |

#### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |
| Degree of protection            | IP65                             |
|                                 | IP67                             |
|                                 | IP68                             |

#### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 4 A     |
| Rated voltage         | 24 V    |
|                       | 24 V DC |

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## Technical data

### General

|                              |                               |
|------------------------------|-------------------------------|
| Number of positions          | 3                             |
| Insulation resistance        | ≥ 100 MΩ                      |
| Coding                       | A - standard                  |
| Standards/regulations        | M12 connector IEC 61076-2-101 |
| Status display               | 2 LEDs                        |
| Protective circuit/component | Unwired                       |
| Overvoltage category         | II                            |
| Degree of pollution          | 3                             |
| Insertion/withdrawal cycles  | ≥ 100                         |
| Torque                       | 0.4 Nm (M12 connector)        |

### Material

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 | HB                                          |
| Contact material                       | CuSn                                        |
| Contact surface material               | Ni/Au                                       |
| Contact carrier material               | TPU GF                                      |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Material, knurls                       | Zinc die-cast, nickel-plated                |
| Sealing material                       | NBR                                         |

### Standards and Regulations

|                                        |                 |
|----------------------------------------|-----------------|
| Standard designation                   | M12 connector   |
| Standards/regulations                  | IEC 61076-2-101 |
| Flammability rating according to UL 94 | HB              |

### Cable

|                                               |                                       |
|-----------------------------------------------|---------------------------------------|
| Cable type                                    | PUR halogen-free black                |
| Cable type (abbreviation)                     | PUR                                   |
| Cable abbreviation                            | Li9Y11Y                               |
| UL AWM style                                  | 20549                                 |
| Conductor cross section                       | 3x 0.34 mm <sup>2</sup> (Signal line) |
| AWG signal line                               | 22                                    |
| Conductor structure signal line               | 42x 0.10 mm                           |
| Core diameter including insulation            | 1.27 mm ±0.02 mm (Signal line)        |
| Thickness, insulation                         | ≥ 0.21 mm (Core insulation)           |
|                                               | approx. 0.5 mm (Outer cable sheath)   |
| Wire colors                                   | brown, blue, black                    |
| Overall twist                                 | 3 wires, twisted                      |
| External sheath, color                        | black-gray RAL 7021                   |
| External cable diameter D                     | 3.85 mm ±0.15 mm                      |
| Smallest bending radius, fixed installation   | 19 mm                                 |
| Smallest bending radius, movable installation | 38 mm                                 |

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## Technical data

### Cable

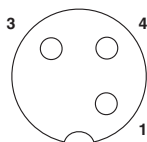
|                                 |                                                                     |
|---------------------------------|---------------------------------------------------------------------|
| Number of bending cycles        | 10000000                                                            |
| Bending radius                  | 44 mm                                                               |
| Traversing path                 | 10 m                                                                |
| Traversing rate                 | 3 m/s                                                               |
| Acceleration                    | 10 m/s <sup>2</sup>                                                 |
| Cable weight                    | 23 kg/km                                                            |
| Outer sheath, material          | PUR                                                                 |
| Material conductor insulation   | PP                                                                  |
| Conductor material              | Bare Cu litz wires                                                  |
| Insulation resistance           | ≥ 100 GΩ*km (at 20 °C)                                              |
| Conductor resistance            | max. 58 Ω/km (at 20 °C)                                             |
| Nominal voltage, cable          | ≤ 300 V                                                             |
| Test voltage, cable             | ≥ 3000 V                                                            |
| Special properties              | Flexible cable conduit capable                                      |
|                                 | Silicone-free                                                       |
|                                 | Free of substances which would hinder coating with paint or varnish |
| Flame resistance                | in accordance with UL 758/1581 FT2                                  |
|                                 | DIN EN 60332-2-2 (20 s)                                             |
| Halogen-free                    | in accordance with DIN VDE 0472 part 815                            |
| 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          |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)                        |
|                                 | -25 °C ... 80 °C (cable, flexible installation)                     |

### Environmental Product Compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

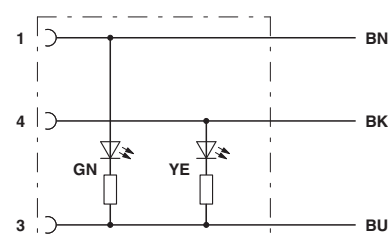
## Drawings

Schematic diagram



Pin assignment M12 socket, 3-pos., A-coded, view female side

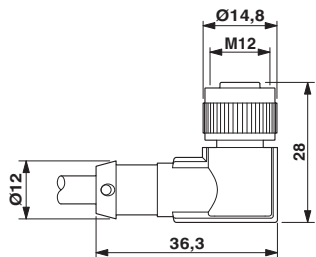
Circuit diagram



Contact assignment of M12 sockets with LED

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Dimensional drawing



Socket M12 x 1, angled, with LED

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / cULus Listed

Ex Approvals

Approval details

|                                |                                                                                     |                                                                                                                                                       |               |
|--------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| UL Listed                      |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 221474 |
|                                |                                                                                     |                                                                                                                                                       |               |
| Nominal current I <sub>N</sub> |                                                                                     | 4 A                                                                                                                                                   |               |
| Nominal voltage U <sub>N</sub> |                                                                                     | 24 V                                                                                                                                                  |               |

|                                |                                                                                     |                                                                                                                                                       |               |
|--------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| cUL Listed                     |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 221474 |
|                                |                                                                                     |                                                                                                                                                       |               |
| Nominal current I <sub>N</sub> |                                                                                     | 4 A                                                                                                                                                   |               |
| Nominal voltage U <sub>N</sub> |                                                                                     | 24 V                                                                                                                                                  |               |

|     |                                                                                     |               |
|-----|-------------------------------------------------------------------------------------|---------------|
| EAC |  | EAC-Zulassung |
|-----|-------------------------------------------------------------------------------------|---------------|

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### Approvals

cULus Listed



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