

## Bus system flat-type plug - SACC-E-M12MSD-4P-M16XL/0,5 - 1411578

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Bus system flat-type plug, PROFINET, 4-position, Plug, M12, D-coded, Front mounting, M16 x 1.5, Individual wires, cable length: 0.5 m, 0.34 mm<sup>2</sup>, TPE litz wire

The figure shows the 4-pos., A-coded version

### Your advantages

- ✓ Easy-to-install, optimized XL housing contour with wrench size 19
- ✓ Mechanical tightening limitation for long-term-stable gasket
- ✓ Pre-assembled with litz wires for immediate use
- ✓ Customer-specific assemblies and litz wire lengths available
- ✓ Sealed on the litz wire side for optimum leak-tightness
- ✓ All standard pin assignments and codings for signal, data, and power transmission with a uniform design-in design
- ✓ For high transmission safety: shield connection to the housing with optional EMC nut



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 046356 935449 |
| GTIN         | 4046356935449                                                                                           |

### Technical data

#### Dimensions

|                 |       |
|-----------------|-------|
| Length of cable | 0.5 m |
|-----------------|-------|

#### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 85 °C (Plug / socket) |
| Degree of protection            | IP67                             |

#### General

|      |                                                                                                                                                                                                                         |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | The electrical and mechanical data specified assume that the connector pair is correctly locked and mounted. If the connector is unlocked and if there is a danger of contamination, the connector must be sealed using |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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## Technical data

### General

|                             |                                                                                                                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration.                                                                                           |
|                             | This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 8.2 Connectors for Outside Environment (Balanced cabling) |
| Rated current at 40°C       | 4 A                                                                                                                                                                                                                  |
| Rated voltage               | 250 V                                                                                                                                                                                                                |
| Rated surge voltage         | 2.5 kV                                                                                                                                                                                                               |
| Number of positions         | 4                                                                                                                                                                                                                    |
| Insulation resistance       | ≥ 100 MΩ                                                                                                                                                                                                             |
| Coding                      | D - data                                                                                                                                                                                                             |
| Standards/regulations       | M12 connector IEC 61076-2-101                                                                                                                                                                                        |
| Signal type/category        | PROFINET                                                                                                                                                                                                             |
| Status display              | No                                                                                                                                                                                                                   |
| Overvoltage category        | II                                                                                                                                                                                                                   |
| Degree of pollution         | 3                                                                                                                                                                                                                    |
| Connection method           | Individual wires                                                                                                                                                                                                     |
| Insertion/withdrawal cycles | > 100                                                                                                                                                                                                                |
| Torque                      | 0.8 Nm ... 1.3 Nm (Installation-side)                                                                                                                                                                                |
| Mounting type               | Front mounting M16 x 1.5 Tightening limitation                                                                                                                                                                       |

### Material

|                                        |                              |
|----------------------------------------|------------------------------|
| Flammability rating according to UL 94 | V0                           |
| Contact material                       | CuZn                         |
| Contact surface material               | Au                           |
| Contact carrier material               | PA 6.6                       |
| Material, knurls                       | Zinc die-cast, nickel-plated |
| Sealing material                       | FKM                          |

### Cable

|                                    |                               |
|------------------------------------|-------------------------------|
| Cable type                         | TPE litz wire                 |
| Conductor cross section            | 0.34 mm²                      |
| AWG signal line                    | 22                            |
| Conductor structure signal line    | 7x 0.25 mm                    |
| Core diameter including insulation | 1.2 mm ±0.07 mm               |
| Thickness, insulation              | 0.21 mm                       |
| Wire colors                        | Yellow, orange, white, blue   |
| Material conductor insulation      | TPE                           |
| Conductor material                 | Tin-plated Cu litz wires      |
| Standards/specifications           | M12 connector IEC 61076-2-101 |
| Insulation resistance              | ≥ 20 MΩ*km                    |
| Conductor resistance               | ≤ 57.6 mΩ/m                   |

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## Technical data

### Cable

|                                         |                                                 |
|-----------------------------------------|-------------------------------------------------|
| Transmission characteristics (category) | CAT5 (IEC 11801:2002)                           |
| Nominal voltage, cable                  | 300 V                                           |
| Test voltage, cable                     | 2000 V AC                                       |
| Ambient temperature (operation)         | -40 °C ... 85 °C (cable, fixed installation)    |
|                                         | -25 °C ... 85 °C (cable, flexible installation) |

### Standards and Regulations

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards/specifications               | M12 connector IEC 61076-2-101                                                                                                                                                                                                                                                                                                                                                                                                      |
| Flammability rating according to UL 94 | V0                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Safety note                            | WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.                                                                                                                                                                                                                                                                                 |
|                                        | • WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.                                                                                                                                                                                                                    |
|                                        | • WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product. |
|                                        | • The products are suitable for applications in plant, controller, and electrical device engineering.                                                                                                                                                                                                                                                                                                                              |
|                                        | • When operating the connectors in outdoor applications, they must be separately protected against environmental influences.                                                                                                                                                                                                                                                                                                       |
|                                        | • Assembled products may not be manipulated or improperly opened.                                                                                                                                                                                                                                                                                                                                                                  |
|                                        | • Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> ).                                                                                                                                                                                      |
|                                        | • When using the product in direct connection with third-party manufacturers, the user is responsible.                                                                                                                                                                                                                                                                                                                             |
|                                        | • For operating voltages > 50 V AC, conductive connector housings must be grounded                                                                                                                                                                                                                                                                                                                                                 |
|                                        | • Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.                                                                                                                                                                                                                                                                                                |
|                                        | • Observe the corresponding technical data. You will find information: <ul style="list-style-type: none"> <li>o On the product</li> <li>o On the packing label</li> <li>o In the supplied documentation</li> <li>o Online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> under the product</li> </ul>                                                                                        |
|                                        | • Only use tools recommended by Phoenix Contact                                                                                                                                                                                                                                                                                                                                                                                    |
|                                        | • Use a protective cap to protect connectors that are not in use. The suitable accessories are available online in the accessory section of the product at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a>                                                                                                                                                                                       |
|                                        | • Ensure that the protective or functional ground has been properly connected.                                                                                                                                                                                                                                                                                                                                                     |
|                                        | • VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector                                                                                                                                                                                                                                                                                            |

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Technical data

Standards and Regulations

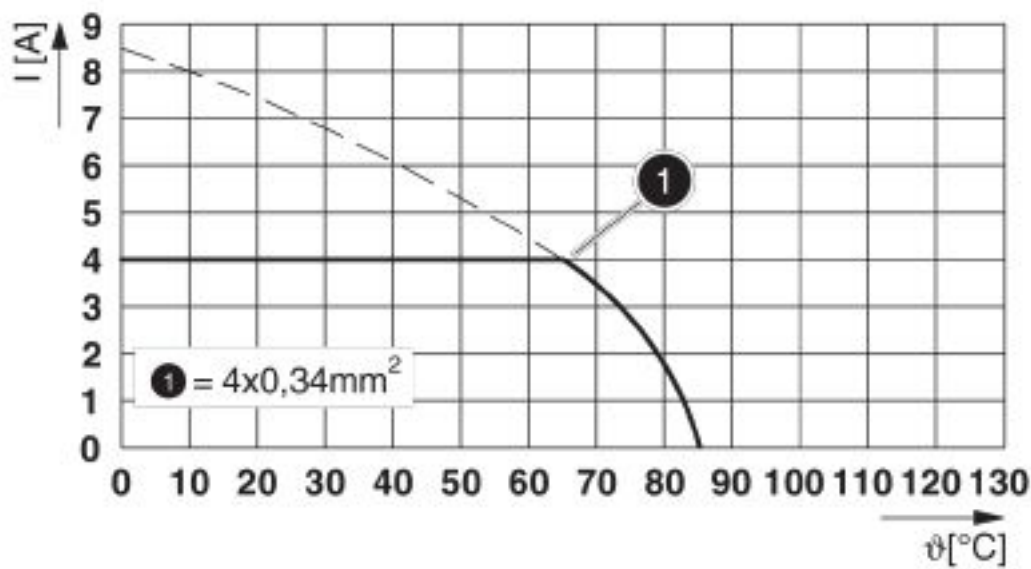
|  |                                                                                                                                                                                                                                                                                      |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>The connector warms up in normal operation. Depending on the ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).</li></ul> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| China RoHS | Environmentally Friendly Use Period = 50 years                                                      |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

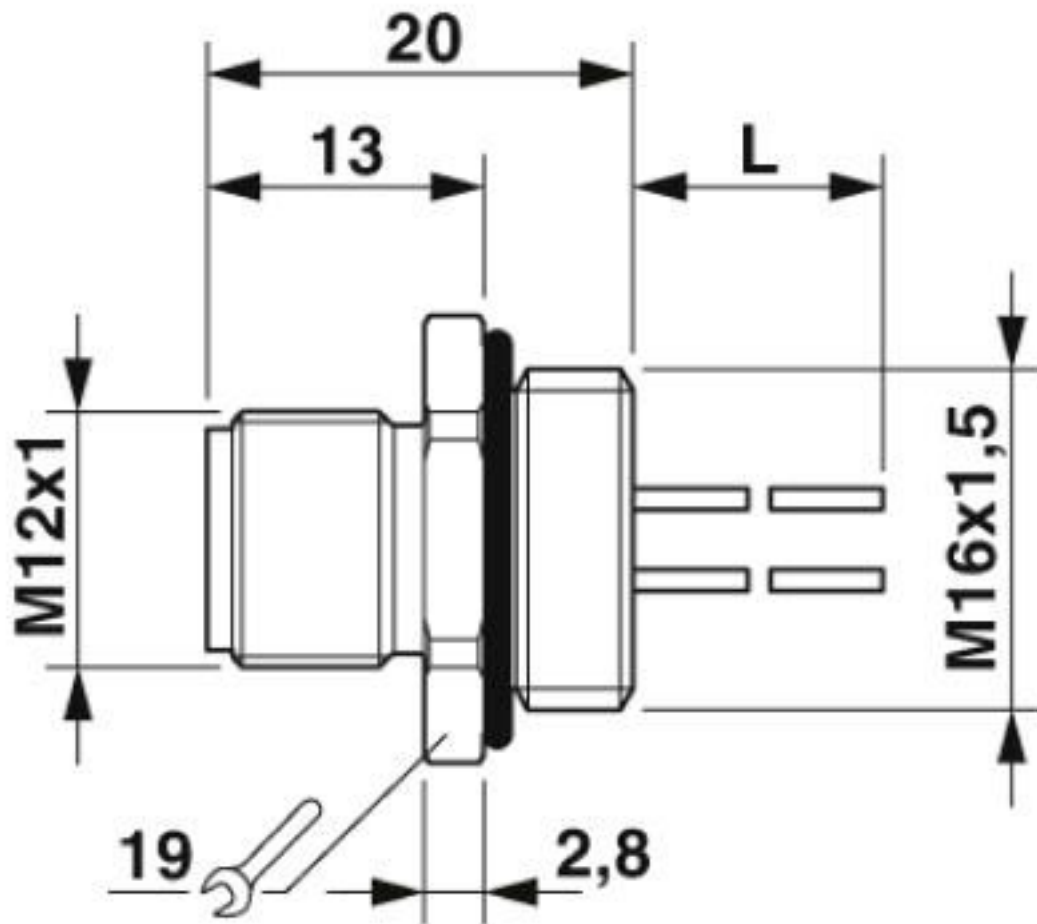
Diagram



I = current strength, T = ambient temperature

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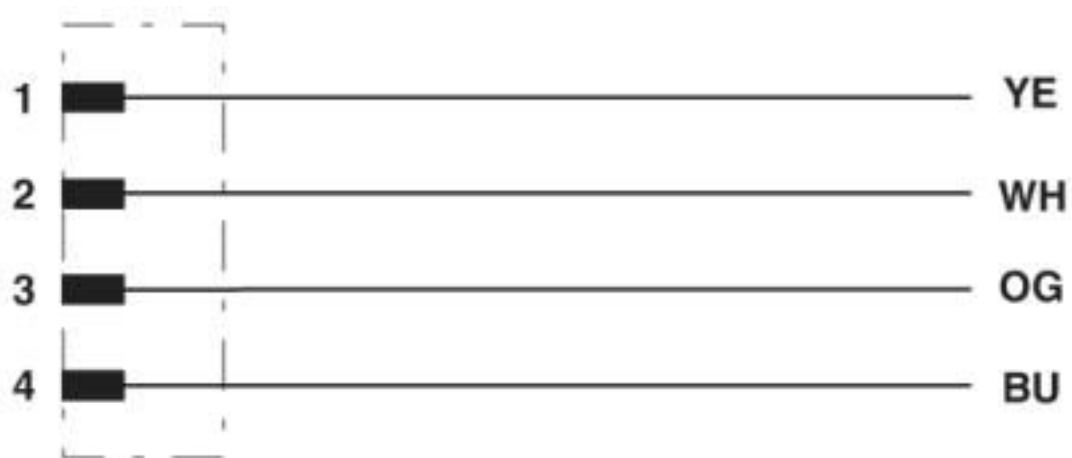
Dimensional drawing



M12 flush-type connector

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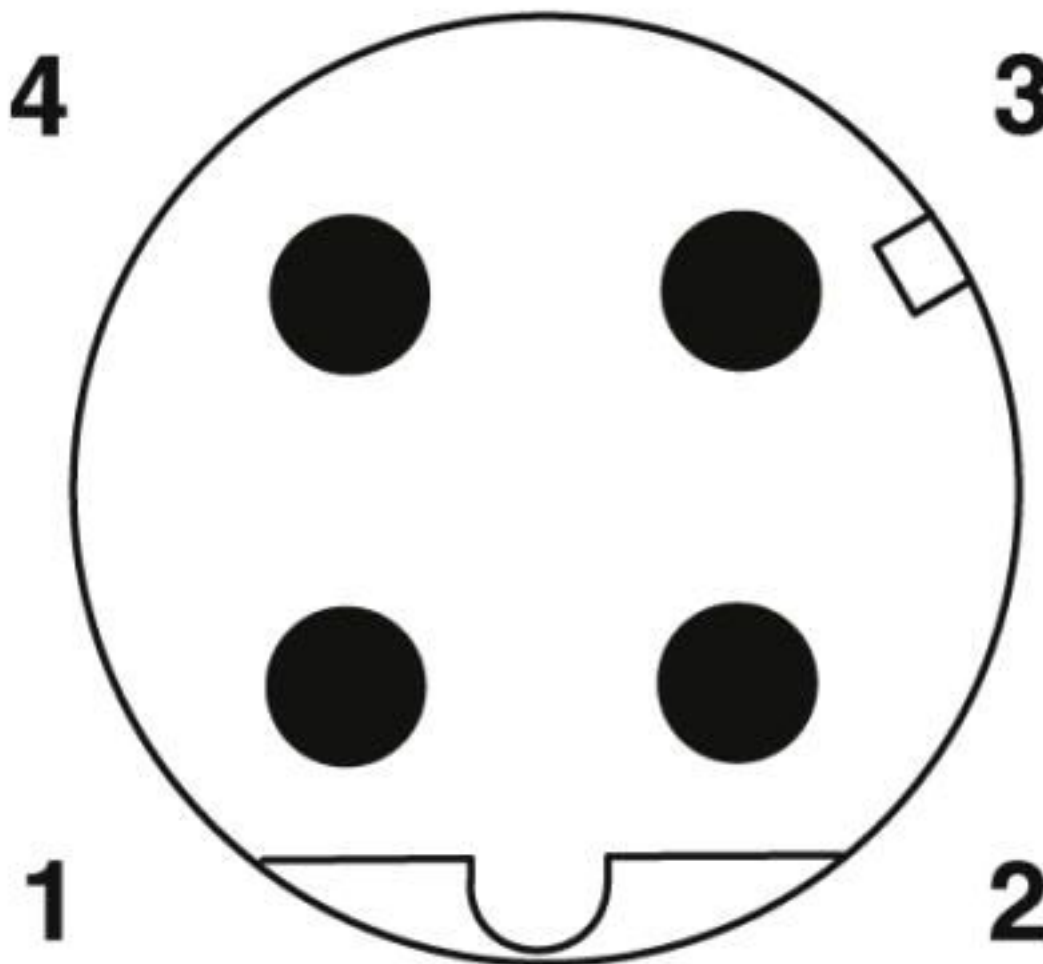
Circuit diagram



Contact assignment of the M12 plugs

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Schematic diagram



Pin assignment M12 male connector, 4-pos., D-coded, male side

### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440102 |
| eCl@ss 4.0    | 27140800 |
| eCl@ss 4.1    | 27140800 |
| eCl@ss 5.0    | 27143400 |
| eCl@ss 5.1    | 27143400 |
| eCl@ss 6.0    | 27279200 |
| eCl@ss 7.0    | 27440103 |
| eCl@ss 8.0    | 27440103 |
| eCl@ss 9.0    | 27440102 |

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### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC002061 |
| ETIM 5.0 | EC002061 |
| ETIM 6.0 | EC002061 |

#### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121413 |
| UNSPSC 18.0 | 39121413 |
| UNSPSC 19.0 | 39121413 |
| UNSPSC 20.0 | 39121413 |
| UNSPSC 21.0 | 39121413 |

### Approvals

#### Approvals

#### Approvals

EAC / cULus Recognized

#### Ex Approvals

#### Approval details

|     |                                                                                     |         |
|-----|-------------------------------------------------------------------------------------|---------|
| EAC |  | B.01687 |
|-----|-------------------------------------------------------------------------------------|---------|

|                    |                                                                                     |                                                                                                                                                                        |
|--------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cULus Recognized   |  | <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> E221474-20140616 |
| Nominal voltage UN | 250 V                                                                               |                                                                                                                                                                        |
| Nominal current IN | 4 A                                                                                 |                                                                                                                                                                        |
| mm²/AWG/kcmil      | 22-20                                                                               |                                                                                                                                                                        |

### Accessories

#### Accessories

Circular connectors (device side)

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### Accessories

Flat nut - SACC-E-MU-M16 - 1504097



Flat nut with M16 thread

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### Protective cap

Sealing cap - PROT-M12 FS - 1560251



M12 sealing cap for unoccupied M12 plugs of the sensor/actuator cable, flush-type plugs and I/O devices in the field

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Sealing cap - PROT-M12 FS-M - 1430488



M12 metal sealing cap for unoccupied M12 plugs of the sensor/actuator cable, flush-type plugs and I/O devices in the field

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