

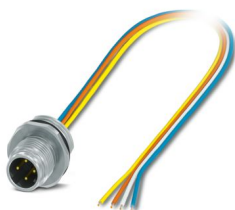
# SACC-E-MSD-4CON-M16/0,5 PP - Device connector front mounting



1027688

<https://www.phoenixcontact.com/us/products/1027688>

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Device connector front mounting, PROFINET CAT5 (IEC 11801:2002), 4-position, Pin, straight, M12-Push-pull external locking, coding: D, on free cable end, Front mounting, M16 x 1.5, Individual wires, cable length: 0.5 m, 0.34 mm<sup>2</sup>, TPE litz wire, potted, Item is lead-free in accordance with RoHS II without Exemption 6c (Pb < 0.1 %)

## Your advantages

- Established M12 standard for secure transmission of signals, data, and power
- Easy and quick cabling of devices and systems in hard-to-reach areas
- Manufacturer-independent M12 push-pull locking system for maximum availability
- Reliable shield connection even under extreme mechanical strain

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1027688       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AB24          |
| Product key                          | ABQCAB        |
| GTIN                                 | 4055626533988 |
| Weight per piece (including packing) | 31.2 g        |
| Weight per piece (excluding packing) | 19.947 g      |
| Customs tariff number                | 85444290      |
| Country of origin                    | DE            |

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## Technical data

### Notes

|                    |  |
|--------------------|--|
| Notes on operation | 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 a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration. |
| Notes on operation | 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)   |
| General            | Contact connection method: Crimp connection  |

### Safety note

|             |  |
|-------------|--|
| Safety note | <p>WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.</p> <ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li><li>• The products are suitable for applications in plant, controller, and electrical device engineering.</li><li>• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.</li><li>• Assembled products may not be manipulated or improperly opened.</li><li>• 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>).</li><li>• When using the product in direct connection with third-party manufacturers, the user is responsible.</li><li>• For operating voltages &gt; 50 V AC, conductive connector housings must be grounded</li><li>• Ensure that the protective or functional ground has been properly connected.</li><li>• 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</li><li>• Only use tools recommended by Phoenix Contact</li><li>• The installation notes/Design In documents online on the download page at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> must be</li></ul> |
|-------------|--|

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observed for this product.

- Operate the connector only when it is fully plugged in and interlocked.

- Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.

- Observe the minimum bending radius of the cable. Lay the cable without twisting it.

- 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).

## Mounting

Mounting type

Front mounting M16 x 1.5

## Product properties

Product type

Circular connectors (device side)

Application

Data, signals

Sensor type

PROFINET

Number of positions

4

No. of cable outlets

1

Shielded

no

Coding

D

Thread type

M12

## Insulation characteristics

Overvoltage category

II

Degree of pollution

3

## Material specifications

Material

Brass, nickel-plated

Material Molding compound

PUR (potted)

Flammability rating according to UL 94

V0

Seal material

FKM

Material of grip body

Brass, nickel-plated

Contact material

CuZn

Contact surface material

Ni/Au

Contact carrier material

PA 6.6

Material for screw connection

Brass, nickel-plated

Conductor material

Tin-plated Cu litz wires

## Electrical properties

Rated surge voltage

2.5 kV

Contact resistance

≤ 3 mΩ

Insulation resistance

≥ 100 MΩ

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|   |                       |
|---|-----------------------|
| Nominal voltage $U_N$                   | 250 V (AC)            |
|   | 250 V (DC)            |
| Nominal current $I_N$                   | 4 A                   |
| Transmission medium                     | Copper                |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |
| Max. conductor resistance               | 57.6 mΩ/m             |

## Connection data

### Conductor connection

|                         |                                   |
|-------------------------|-----------------------------------|
| Connection method       | Individual wires                  |
| Contact connection type | Pin                               |
| Conductor cross section | 0.34 mm <sup>2</sup>              |
| Tightening torque       | 3 Nm ... 4 Nm (Installation-side) |

## Mechanical properties

### Mechanical data

|                             |       |
|-----------------------------|-------|
| Insertion/withdrawal cycles | > 100 |
|-----------------------------|-------|

## Connector

### Connection 1

|                   |                            |
|-------------------|----------------------------|
| Head design       | Pin                        |
| Head cable outlet | straight                   |
| Head thread type  | M12                        |
| Head locking type | Push-pull external locking |
| Coding            | D                          |

### Connection 2

|             |                |
|-------------|----------------|
| Head design | free cable end |
|-------------|----------------|

## Cable/line

|                                 |                                |
|---------------------------------|--------------------------------|
| Cable length                    | 0.5 m                          |
| Cable type                      | TPE litz wire                  |
| Signal type/category            | PROFINET CAT5 (IEC 11801:2002) |
| Wire diameter incl. insulation  | 1.2 mm ±0.07 mm                |
| Single wire, color              | yellow, orange, white, blue    |
| Cable cross section             | 0.34 mm <sup>2</sup>           |
| Conductor material              | Tin-plated Cu litz wires       |
| Conductor structure signal line | 7x 0.25 mm                     |
| AWG signal line                 | 22                             |
| Material wire insulation        | TPE                            |
| Thickness, insulation           | 0.21 mm (Core insulation)      |
| Nominal voltage, cable          | 300 V                          |

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|                                 |   |
|---------------------------------|---|
| Test voltage, cable             | 3000 V AC                                       |
| Cable resistance                | $\leq 57.6 \text{ m}\Omega/\text{m}$            |
| Cable insulation resistance     | $\geq 20 \text{ M}\Omega \cdot \text{km}$       |
| Ambient temperature (operation) | -40 °C ... 85 °C (cable, fixed installation)    |
|                                 | -25 °C ... 85 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

|   |   |
|---|---|
| Degree of protection  | IP67 (When plugged in)                          |
|   | IP65 (When plugged in)                          |
|   | IP65/IP67                                       |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 85 °C (Plug / socket)                |
|   | -40 °C ... 85 °C (without mechanical actuation) |
| Ambient temperature (operation) (Cable, flexible installation)    | -25 °C ... 85 °C (Cable, flexible installation) |
| Ambient temperature (operation) (Cable, fixed installation)       | -40 °C ... 85 °C (cable, fixed installation)    |

## Standards and regulations

|                          |                              |
|--------------------------|------------------------------|
| Standard designation     | M12 circular connector       |
| Standards/specifications | based on IEC 61076-2-010     |
| Note                     | Push-pull                    |
| Standard designation     | M12 circular connector       |
| Standards/specifications | according to IEC 61076-2-101 |
| Standard designation     | Shock, vibration             |
| Standards/specifications | according to EN 50155        |
| Standard designation     | Shock, vibration             |
| Standards/specifications | according to EN 61373:2011   |

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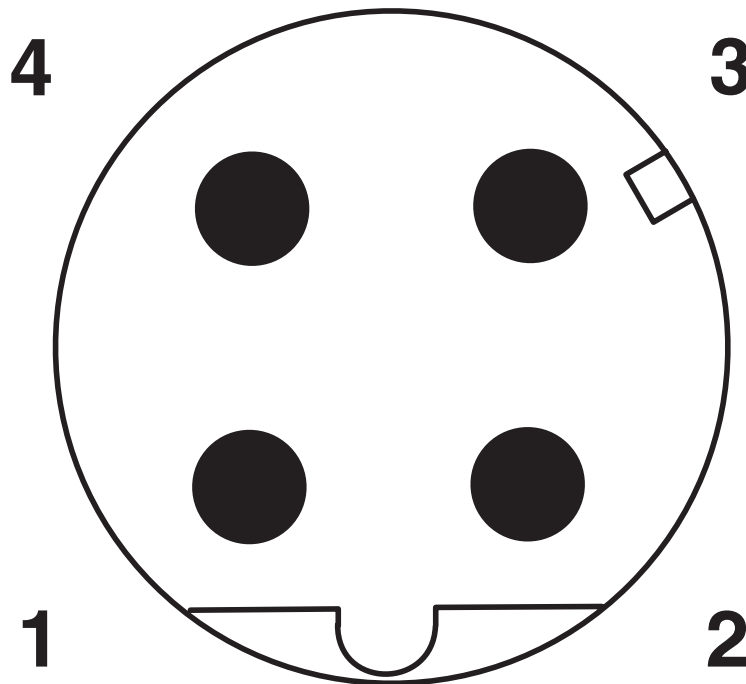


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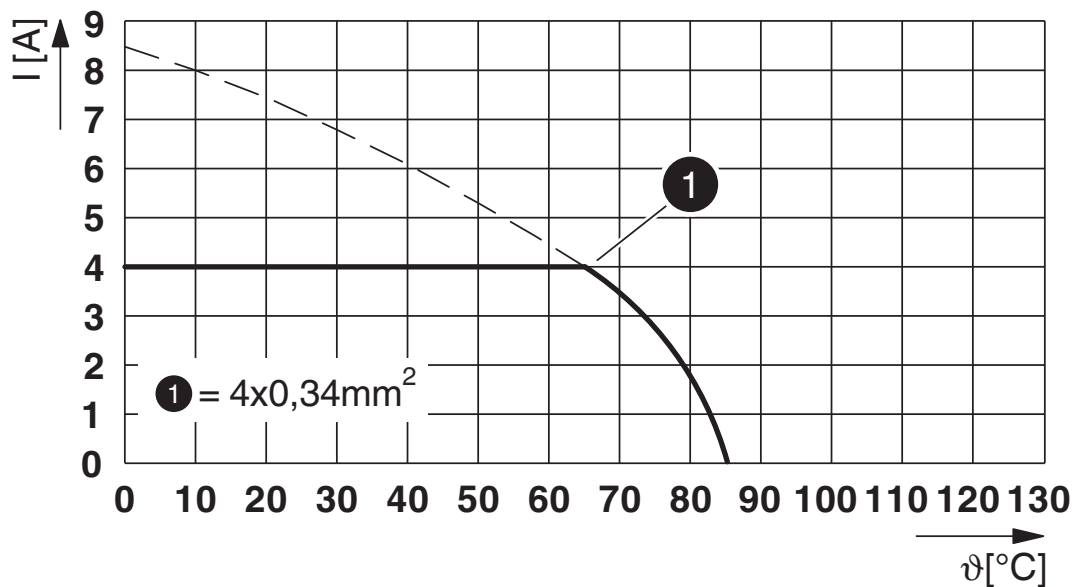
## Drawings

Schematic diagram



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

Diagram



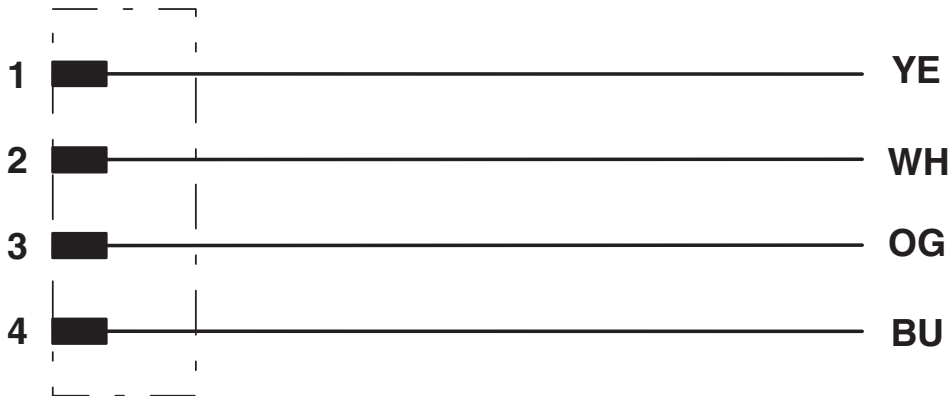
I = current strength, T = ambient temperature

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Circuit diagram




Contact assignment of the M12 plugs

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Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1027688>

|   |  |                       |                   |                             |
|---|--|-----------------------|-------------------|-----------------------------|
|  | <b>cULus Recognized</b><br>Approval ID: E221474-20140616 |                       |                   |                             |
|   | Nominal voltage $U_N$                                    | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|   | 250 V  | 4 A                   | 22 - 20           | -                           |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27440103 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC003570 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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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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