

1424680  
<https://www.phoenixcontact.com/pc/products/1424680>

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Data connector, PROFIBUS DP (12 Mbps), 2-position, shielded, Socket straight M12, coding: B, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Your advantages

- Time-saving Push-Lock connection: Tool-free connection and disconnection of conductors by opening the contact levers
- Intuitive connection: Easy assignment of individual litz wires with color-coded and numerical identification of the contact levers
- Integrated Push-in Technology: Wire rigid and pretreated conductors easily by means of simple, direct insertion
- Shock- and vibration-resistant connection: Proven spring-cage technology guarantees secure and reliable contacting
- Safely shielded: Reliable 360° shield connection even under extreme mechanical strain

Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1424680             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Product key                          | BF2CFC              |
| Catalog page                         | Page 422 (C-2-2019) |
| GTIN                                 | 4055626376073       |
| Weight per piece (including packing) | 41.2 g              |
| Weight per piece (excluding packing) | 41.2 g              |
| Customs tariff number                | 85366990            |
| Country of origin                    | DE                  |

# SACC-M12FSB-2PL SH PB - Data connector



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## Technical data

### Notes

|               |                                                                                                                                                                                                                                                      |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assembly note | <b>NOTE:</b> Observe the permissible bending radii when laying conductors, since the degree of protection may be put in jeopardy if the bending forces are too high. Alleviate mechanical loads upstream of the connector, e.g. by using cable ties. |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Mounting

|               |                                                                    |
|---------------|--------------------------------------------------------------------|
| Assembly note | The wires can be connected both with ferrules and without ferrules |
|---------------|--------------------------------------------------------------------|

### Product properties

|                      |                                 |
|----------------------|---------------------------------|
| Product type         | Circular connector (cable-side) |
| Application          | Data                            |
| Sensor type          | PROFIBUS DP                     |
| Number of positions  | 2                               |
| No. of cable outlets | 1                               |
| Shielded             | yes                             |
| Coding               | B                               |
| Cable outlet         | straight                        |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Dimensions

|                     |       |
|---------------------|-------|
| Dimensional drawing |       |
| Length              | 59 mm |

### External dimensions

|                  |               |
|------------------|---------------|
| Outside diameter | 4 mm ... 8 mm |
|------------------|---------------|

### Housing

|                  |       |
|------------------|-------|
| Diameter housing | 19 mm |
|------------------|-------|

### Material specifications

|                                        |                              |
|----------------------------------------|------------------------------|
| Material                               | TPE-U                        |
|                                        | PA 6                         |
| Flammability rating according to UL 94 | V0                           |
| Seal material                          | NBR                          |
| Material of grip body                  | Zinc die-cast, nickel-plated |

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|                               |                                                                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Contact material              | CuSn                                                                                                                                  |
| Contact surface material      | Ni/Au                                                                                                                                 |
| Contact carrier material      | PA 6.6                                                                                                                                |
| Material for screw connection | Zinc die-cast, nickel-plated                                                                                                          |
| Standards/regulations         | PA 6.6: Fire protection in rail vehicles - requirement sets R22, R23, R24, R25, and R26 acc. to DIN EN 45545-2 (Risk level HL1 - HL3) |
|                               | PA 6: Fire protection in rail vehicles - requirement sets R22, R23, and R24 acc. to DIN EN 45545-2 (Risk level HL1 - HL3)             |

## Connection data

### Conductor connection

|                                         |                                                                 |
|-----------------------------------------|-----------------------------------------------------------------|
| Connection method                       | Push-lock spring connection                                     |
| Connection cross section                | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> (without ferrule) |
|                                         | 0.08 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> (with ferrule)     |
|                                         | 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> (solid)           |
| Connection cross section AWG            | 26 ... 18 (without ferrule)                                     |
|                                         | 28 ... 20 (with ferrule)                                        |
| Stripping length of the individual wire | 7 mm                                                            |
| Tightening torque                       | 0.4 Nm (M12 knurl)                                              |
|                                         | 0.8 Nm (Connector with coupling sleeve)                         |
|                                         | 3 Nm (Pressure nut with coupling sleeve)                        |

### Pin assignment

|                                                           |            |
|-----------------------------------------------------------|------------|
| Contact   Color (signal designation)   Contact (optional) | 2 = GN (A) |
|                                                           | 4 = RD (B) |

## Electrical properties

|                                |                                                      |
|--------------------------------|------------------------------------------------------|
| Rated surge voltage            | 1.5 kV                                               |
| Contact resistance             | ≤ 5 mΩ                                               |
| Insulation resistance          | ≥ 100 MΩ                                             |
| Nominal voltage U <sub>N</sub> | 48 V AC                                              |
|                                | 60 V DC                                              |
| Nominal current I <sub>N</sub> | 4 A (2 A when using 0.14 mm <sup>2</sup> conductors) |

## Mechanical properties

### Mechanical data

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

## Connector

### Connection 1

|                   |          |
|-------------------|----------|
| Head design       | Socket   |
| Head cable outlet | straight |
| Head thread type  | M12      |

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|        |   |
|--------|---|
| Coding | B |
|--------|---|

## Cable/line

|                                         |                      |
|-----------------------------------------|----------------------|
| Signal type/category                    | PROFIBUS DP, 12 Mbps |
| Stripping length of the individual wire | 7 mm                 |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65                             |
|                                 | IP67                             |
| Ambient temperature (operation) | -40 °C ... 85 °C (Plug / socket) |

## Standards and regulations

### Testing

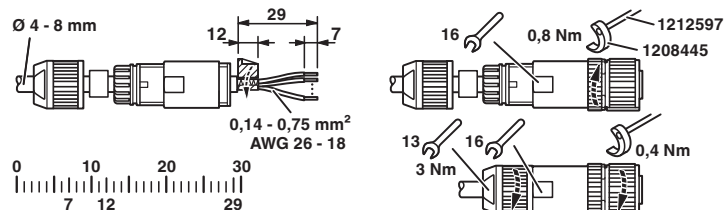
|                       |                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Standards/regulations | PA 6.6: Fire protection in rail vehicles - requirement sets R22, R23, R24, R25, and R26 acc. to DIN EN 45545-2 (Risk level HL1 - HL3) |
|                       | PA 6: Fire protection in rail vehicles - requirement sets R22, R23, and R24 acc. to DIN EN 45545-2 (Risk level HL1 - HL3)             |

### M12

|                          |                  |
|--------------------------|------------------|
| Standard designation     | M12 connector    |
| Standards/specifications | IEC 61076-2-101  |
| Standard designation     | Shock, vibration |
| Standards/specifications | EN 50155:2001    |

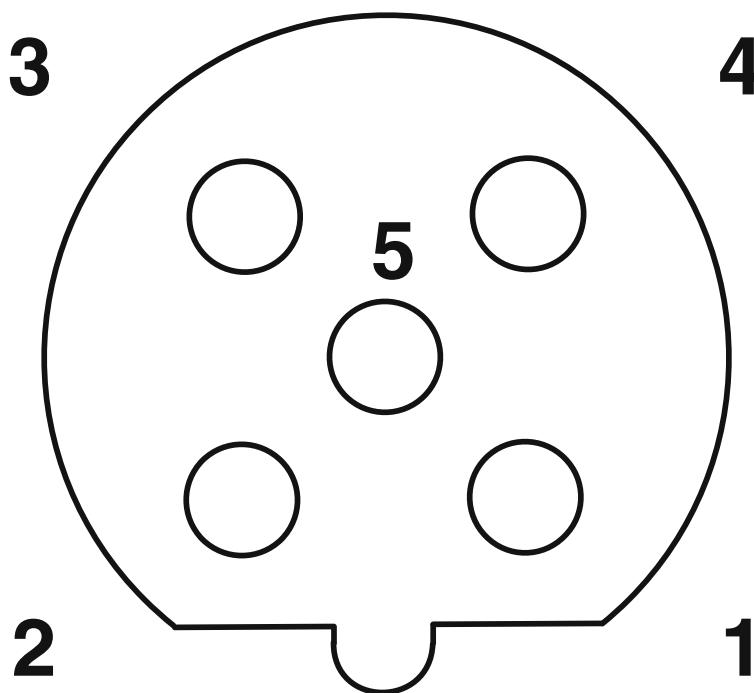
## Drawings

Functional drawing



Slide the pressure nut and sleeve housing along the cable, strip the cable, shorten the shield, strip the single wires, connect the wires, in the case of a straight sleeve housing gently twist the wires together, stick the shielding foil around the shortened shield, in the case of a cable outside diameter < 6 mm stick an additional shielding foil around the wire pack, screw the sleeve housing to the plug insert, screw the pressure nut tight.

Schematic diagram



Pin assignment M12 socket, 5-pos., B-coded, female side

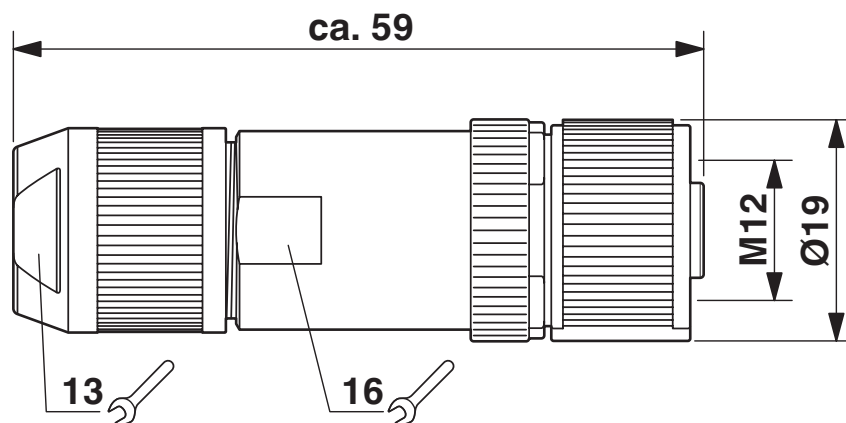
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Dimensional drawing



Socket M12-SPEEDCON, straight, shielded

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1424680>



**EAC**  
Approval ID: RU C-DE.BL08.B.00511

|                                                                                   |                                          |                       |                   |                             |
|-----------------------------------------------------------------------------------|------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>UL Listed</b><br>Approval ID: E221474 |                       |                   |                             |
|                                                                                   | Nominal voltage $U_N$                    | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                                                                   | 60 V                                     | 4 A                   | -                 | 26 - 18                     |

|                                                                                   |                                           |                       |                   |                             |
|-----------------------------------------------------------------------------------|-------------------------------------------|-----------------------|-------------------|-----------------------------|
|  | <b>cUL Listed</b><br>Approval ID: E221474 |                       |                   |                             |
|                                                                                   | Nominal voltage $U_N$                     | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                                                                   | 60 V                                      | 4 A                   | 26 - 18           | -                           |

**cULus Listed**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27440102 |
| ECLASS-12.0 | 27440116 |
| ECLASS-13.0 | 27440116 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002635 |
|----------|----------|

### 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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## Accessories

### PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/pc/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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### SAC-2P-910/... - Bus system cable

1511491

<https://www.phoenixcontact.com/pc/products/1511491>

Bus system cable, PROFIBUS, 2-position, PUR halogen-free, red lilac RAL 4001, shielded, free cable end, on free cable end, cable length: Free entry (0.5 ... 400 m)



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## ALU-SB - Shielding foil

1404531

<https://www.phoenixcontact.com/pc/products/1404531>

Shielding foil, for fixing the braided shield of shielded cables. Length: 4 cm, width: 1.2 cm



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## AI 0,25- 6 YE - Ferrule

3203024

<https://www.phoenixcontact.com/pc/products/3203024>

Ferrule, sleeve length: 6 mm, color: yellow



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## A 0,25- 7 - Ferrule

3202478

<https://www.phoenixcontact.com/pc/products/3202478>



Ferrule, color: silver

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## A 0,34- 7 - Ferrule

3009202

<https://www.phoenixcontact.com/pc/products/3009202>



Ferrule, color: silver

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## A 0,5 - 6 - Ferrule

3200218

<https://www.phoenixcontact.com/pc/products/3200218>



Ferrule, color: silver

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## AI 0,5 - 6 WH - Ferrule

3200687

<https://www.phoenixcontact.com/pc/products/3200687>



Ferrule, sleeve length: 6 mm, color: white

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## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/pc/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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## TSD 08 SAC - Torque screwdriver

1212597

<https://www.phoenixcontact.com/pc/products/1212597>



Torque screw driver with preset torque of 0.8 Nm, with 4 mm hexagon for accommodating SAC bits, two-component handle with non-slip grip

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## SACC BIT M12-D20 - Tool

1208445

<https://www.phoenixcontact.com/pc/products/1208445>

Nut for assembling M12 connectors for assembly with a knurl diameter of 20 mm, for 4 mm hexagonal drive



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## TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/pc/products/1212224>

Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm



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## TSD-M 3NM - Torque screwdriver

1212225

<https://www.phoenixcontact.com/pc/products/1212225>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 1.2 - 3 Nm

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/pc/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## VS-CABLE-STRIP-VARIO - Stripping tool

1657407

<https://www.phoenixcontact.com/pc/products/1657407>

Stripping tool, for the multi-level stripping of shielded cables



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## WIREFOX 2,5 - Stripping tool

1212368

<https://www.phoenixcontact.com/pc/products/1212368>



Stripping tool, for conductors and cables with a conductor cross section from 0.08 to 2.5 mm<sup>2</sup>, self-adjusting, stripping length adjustable up to 15 mm, cutting capacity up to 6 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid

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## CRIMPFOX 6H - Crimping pliers

1212046

<https://www.phoenixcontact.com/pc/products/1212046>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.14 mm<sup>2</sup> ... 6 mm<sup>2</sup>, unlockable pressure lock, lateral entry

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