

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Bus system cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, coding: D, on Socket straight M12, coding: D, cable length: 10 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1569566                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF04                           |
| Product key                          | BF1CJI                         |
| GTIN                                 | 4046356336475                  |
| Weight per piece (including packing) | 449.6 g                        |
| Weight per piece (excluding packing) | 439 g                          |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | Ethernet                |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Coding               | D                       |

### Insulation characteristics

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

### Interfaces

|                      |                         |
|----------------------|-------------------------|
| Bus system           | Ethernet                |
| Signal type/category | Ethernet CAT5, 100 Mbps |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | No |
| Status display present | No |

### Electrical properties

|                                         |                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------|
| Insulation resistance                   | $\geq 100 \text{ M}\Omega$                                                                   |
| Nominal voltage $U_N$                   | 48 V AC                                                                                      |
|                                         | 60 V DC                                                                                      |
| Nominal current $I_N$                   | 4 A (Plug/socket in accordance with IEC 61076-2-101, cable technical data is to be observed) |
| Transmission medium                     | Copper                                                                                       |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002)                                                                        |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Material specifications

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 | V0                                          |
| Seal material                          | NBR                                         |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Contact material                       | CuSn                                        |
| Contact surface material               | Ni/Au                                       |
| Contact carrier material               | PA 6.6                                      |
| Material for screw connection          | Zinc die-cast, nickel-plated                |

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

## Connector

### Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 4                 |
| Coding type         | D (Data)          |

### Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 4                   |
| Coding type         | D (Data)            |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 10 m |
|--------------|------|

### Ethernet flexible CAT5, 2-pair [93E]

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 42 kg/km                                                                             |
| UL AWM Style                    | 20963 (80°C/30 V)                                                                    |
| Wiring standards/regulations    | Electrical requirements EN 50288-2-2                                                 |
| Number of positions             | 4                                                                                    |
| Shielded                        | yes                                                                                  |
| Cable type                      | Ethernet flexible CAT5, 2-pair [93E]                                                 |
| Conductor structure             | 2x2xAWG26/7, SF/UTP                                                                  |
| Signal runtime                  | 5.3 ns/m                                                                             |
| Conductor structure signal line | 7x 0.16 mm                                                                           |
| AWG signal line                 | 26                                                                                   |
| Conductor cross section         | 2x 2x 0.14 mm <sup>2</sup>                                                           |
| Wire diameter incl. insulation  | 0.98 mm                                                                              |
| External cable diameter         | 6.40 mm ±0.2 mm                                                                      |
| Outer sheath, material          | PUR                                                                                  |
| External sheath, color          | water blue RAL 5021                                                                  |
| Conductor material              | Bare Cu litz wires                                                                   |
| Material wire insulation        | Foamed PE                                                                            |
| Single wire, color              | white/orange-orange, white/green-green                                               |
| Thickness, outer sheath         | 1.20 mm                                                                              |
| Twisted pairs                   | 2 cores to the pair                                                                  |

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

|                                                      |                                                                    |
|------------------------------------------------------|--------------------------------------------------------------------|
| Overall twist                                        | Two pairs with two fillers to the core                             |
| Optical shield covering                              | 70 %                                                               |
| Insulation resistance                                | $\geq 500 \text{ M}\Omega \cdot \text{km}$                         |
| Coupling resistance                                  | $\leq 100.00 \text{ m}\Omega/\text{m}$ (at 10 MHz)                 |
| Loop resistance                                      | $\leq 290.00 \text{ }\Omega/\text{km}$                             |
| Wave impedance                                       | $100 \text{ }\Omega \pm 5 \text{ }\Omega$ (at 100 MHz)             |
| Cable capacity                                       | approx. $45 \text{ nF}/\text{km}$ (at 1 kHz)                       |
| Nominal voltage, cable                               | $\leq 100 \text{ V}$ (Peak value, not for high-power applications) |
| Test voltage Core/Core                               | 700 V (50 Hz, 1 min.)                                              |
| Test voltage Core/Shield                             | 700.00 V (50 Hz, 1 min.)                                           |
| Current carrying capacity of cable                   | 2.00 A (according to DIN VDE 0891-1)                               |
| Minimum bending radius, fixed installation           | 4 x D                                                              |
| Minimum bending radius, flexible installation        | 8 x D                                                              |
| Smallest bending radius, fixed installation          | 26 mm                                                              |
| Smallest bending radius, movable installation        | 52 mm                                                              |
| Tensile strength                                     | $\leq 80 \text{ N}$                                                |
| Near end crosstalk attenuation (NEXT)                | 65.3 dB (with 1 MHz)                                               |
|                                                      | 56.3 dB (at 4 MHz)                                                 |
|                                                      | 50.3 dB (at 10 MHz)                                                |
|                                                      | 47.2 dB (at 16 MHz)                                                |
|                                                      | 45.8 dB (at 20 MHz)                                                |
|                                                      | 42.9 dB (at 31.25 MHz)                                             |
|                                                      | 38.4 dB (at 62.5 MHz)                                              |
|                                                      | 35.3 dB (at 100 MHz)                                               |
| Power-summed near end crosstalk attenuation (PSNEXT) | 62.3 dB (with 1 MHz)                                               |
|                                                      | 53.3 dB (at 4 MHz)                                                 |
|                                                      | 47.3 dB (at 10 MHz)                                                |
|                                                      | 44.2 dB (at 16 MHz)                                                |
|                                                      | 42.8 dB (at 20 MHz)                                                |
|                                                      | 39.9 dB (at 31.25 MHz)                                             |
|                                                      | 35.4 dB (at 62.5 MHz)                                              |
|                                                      | 32.3 dB (at 100 MHz)                                               |
| Return attenuation (RL)                              | 23 dB (at 4 MHz)                                                   |
|                                                      | 24.1 dB (at 8 MHz)                                                 |
|                                                      | 25 dB (at 10 MHz)                                                  |
|                                                      | 25 dB (at 16 MHz)                                                  |
|                                                      | 25 dB (at 20 MHz)                                                  |
|                                                      | 23.6 dB (at 31.25 MHz)                                             |
|                                                      | 21.5 dB (at 62.5 MHz)                                              |
|                                                      | 20.1 dB (at 100 MHz)                                               |
| Shield attenuation                                   | 3.2 dB (with 1 MHz)                                                |
|                                                      | 6 dB (at 4 MHz)                                                    |
|                                                      | 9.5 dB (at 10 MHz)                                                 |
|                                                      | 12.1 dB (at 16 MHz)                                                |

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

|                                    |                                                 |
|------------------------------------|-------------------------------------------------|
|                                    | 13.6 dB (at 20 MHz)                             |
|                                    | 17.1 dB (at 31.25 MHz)                          |
|                                    | 24.8 dB (at 62.5 MHz)                           |
|                                    | 32 dB (at 100 MHz)                              |
| Halogen-free                       | according to IEC 60754-1                        |
| Flame resistance                   | according to IEC 60332-1-2                      |
|                                    | in acc. to UL VW1                               |
|                                    | in accordance with UN ECE-R 118.03              |
| Resistance to oil                  | in accordance with EN 60811-2-1                 |
| Ambient temperature (operation)    | -40 °C ... 80 °C (cable, fixed installation)    |
|                                    | -20 °C ... 80 °C (Cable, flexible installation) |
| Ambient temperature (installation) | -20 °C ... 80 °C                                |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                               |
|---------------------------------|-----------------------------------------------|
| Degree of protection            | IP65                                          |
|                                 | IP67                                          |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)              |
|                                 | -20 °C ... 70 °C (cable, fixed installation)  |
|                                 | 0 °C ... 50 °C (Cable, flexible installation) |

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable

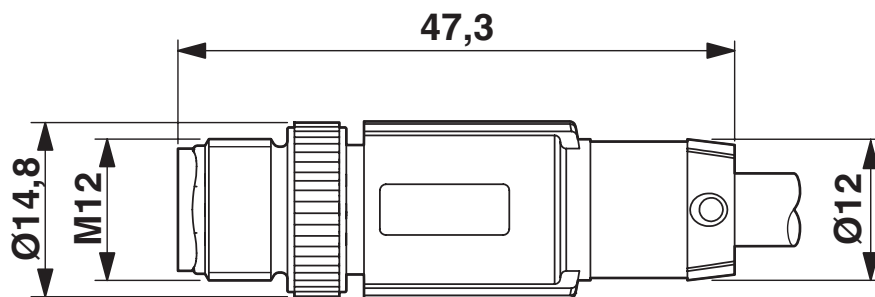


1569566

<https://www.phoenixcontact.com/us/products/1569566>

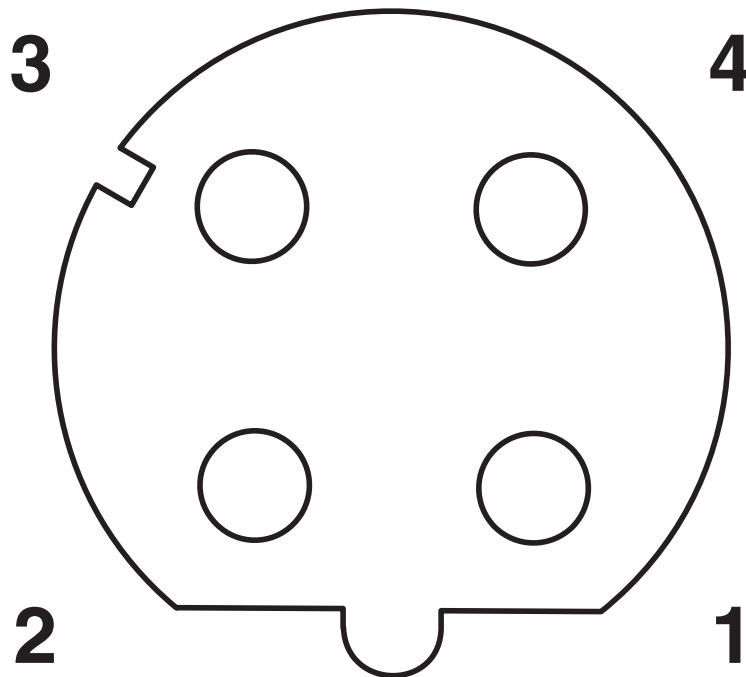
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



Pin assignment M12 socket, 4-pos., D-coded, female side

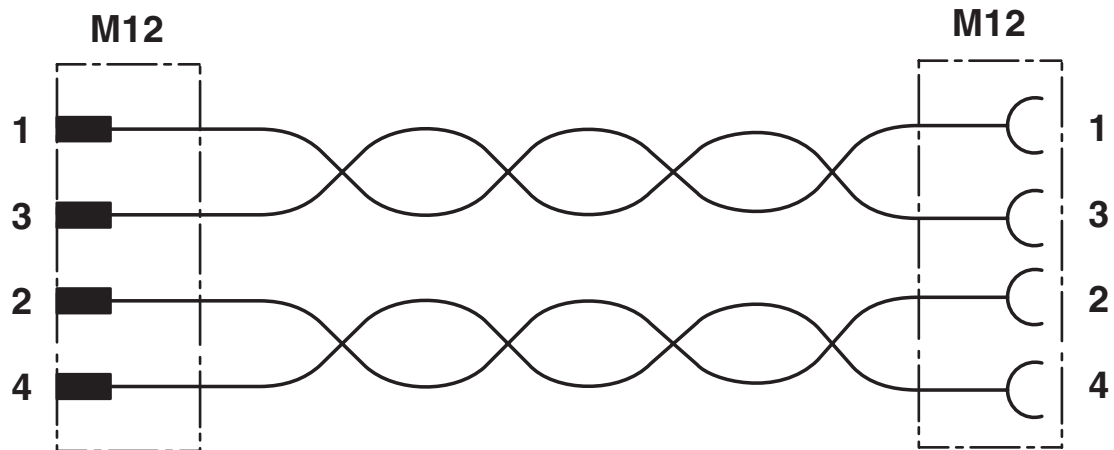
# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



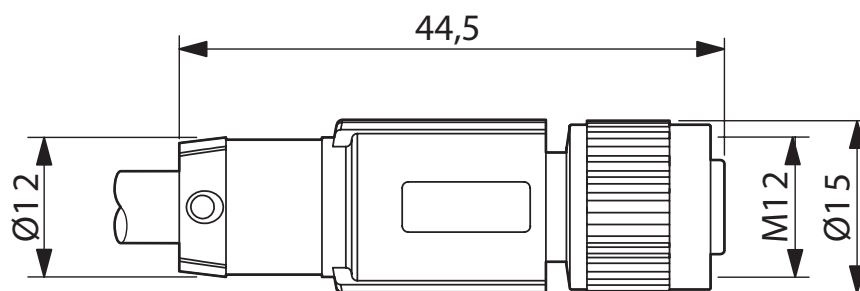
1569566

<https://www.phoenixcontact.com/us/products/1569566>

Circuit diagram



Dimensional drawing



M12 x 1 socket, straight, shielded

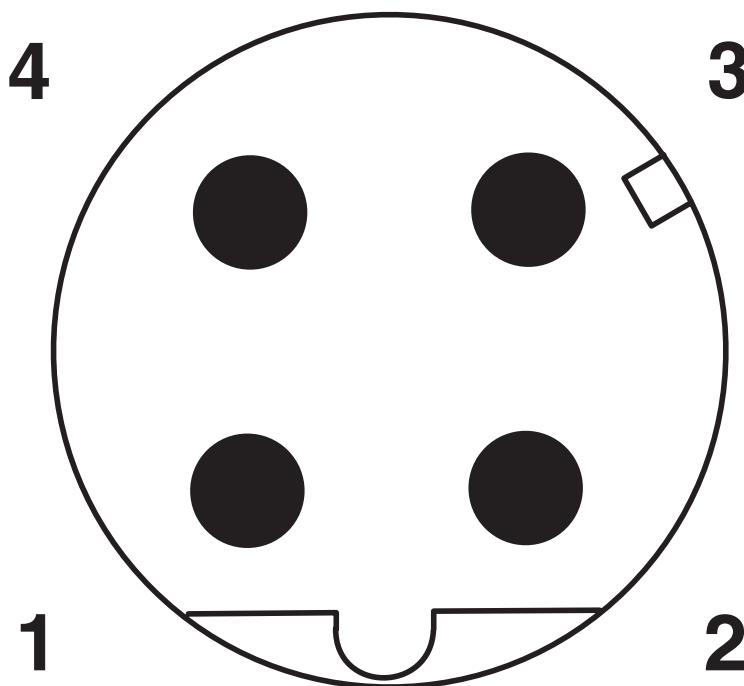
# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

Schematic diagram



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



# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1569566>



**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

# NBC-M12MSD/10,0-93E/M12FSD CMC - Bus system cable



1569566

<https://www.phoenixcontact.com/us/products/1569566>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

1569566  
<https://www.phoenixcontact.com/us/products/1569566>

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%               |

Phoenix Contact 2024 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)