

1411536  
<https://www.phoenixcontact.com/us/products/1411536>

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.



Network cable, Sercos CAT5 (100 Mbps), 4-position, PVC/PVC, signal red RAL 3020, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Plug straight M12 SPEEDCON, coding: D / IP67, cable length: 10 m

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1411536       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | BF1CJO        |
| GTIN                                 | 4046356933797 |
| Weight per piece (including packing) | 701 g         |
| Weight per piece (excluding packing) | 701 g         |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

## Technical data

## Product properties

|                     |                         |
|---------------------|-------------------------|
| Product type        | Data cable preassembled |
| Application         | Standard                |
| Sensor type         | Sercos                  |
| Number of positions | 4                       |
| Shielded            | yes                     |
| Coding              | D                       |

## Interfaces

|                      |                                   |
|----------------------|-----------------------------------|
| Bus system           | Sercos III                        |
| Signal type/category | Sercos CAT5 (IEC 11801), 100 Mbps |

## Signaling

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

## Electrical properties

|   |                       |
|---|-----------------------|
| Nominal voltage $U_N$                   | 48 V AC               |
|   | 60 V DC               |
| Nominal current $I_N$                   | 4 A                   |
| Transmission medium                     | Copper                |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

## Connector

## Connection 1

|                                 |  |
|---------------------------------|--|
| Type                            | Plug straight M12 SPEEDCON / IP67                  |
| Number of positions             | 4  |
| Locking type                    | SPEEDCON   |
| Coding type                     | D (Data)   |
| Handle color                    | black  |
| Material                        | CuSn (Contact)                                     |
|                                 | Ni/Au (Contact surface)                            |
|                                 | PA (Contact carriers)                              |
|                                 | TPU, hardly inflammable, self-extinguishing (Grip) |
|                                 | Zinc die-cast, nickel-plated (Screw connection)    |
| Insertion/withdrawal cycles     | $\geq 100$   |
| Insulation resistance           | $\geq 100 \text{ M}\Omega$                         |
| Tightening torque               | 0.4 Nm   |
| Degree of protection            | IP67   |
| Ambient temperature (operation) | -25 °C ... 90 °C                                   |

## Connection 2

# NBC-MSD/10,0-93K/MSD SCO - Network cable



1411536


<https://www.phoenixcontact.com/us/products/1411536>

|                                 |  |
|---------------------------------|--|
| Type                            | Plug straight M12 SPEEDCON / IP67  |
| Number of positions             | 4  |
| Locking type                    | SPEEDCON   |
| Coding type                     | D (Data)   |
| Handle color                    | black  |
| Material                        | CuSn (Contact)<br>Ni/Au (Contact surface)<br>Zinc die-cast, nickel-plated (Screw connection)<br>Zinc die-cast, nickel-plated (Screw connection)<br>TPU, hardly inflammable, self-extinguishing (Grip)<br>PA (Contact carriers)<br>TPU, hardly inflammable, self-extinguishing (Grip) |
| Insertion/withdrawal cycles     | ≥ 100  |
| Insulation resistance           | ≥ 100 MΩ   |
| Tightening torque               | 0.4 Nm   |
| Degree of protection            | IP67   |
| Ambient temperature (operation) | -25 °C ... 90 °C   |

## Cable/line

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

## Sercos III [93K]

|                                 |  |
|---------------------------------|--|
| Dimensional drawing             |  |
| Cable weight                    | 68 kg/km   |
| UL AWM Style                    | 21694 (60 °C / 600 V)  |
| Number of positions             | 4  |
| Shielded                        | yes  |
| Cable type                      | Sercos III [93K]   |
| Conductor structure             | 1x4xAWG22/7, SF/TQ   |
| Signal runtime                  | 5.3 ns/m   |
| Conductor structure signal line | 7x 0.25 mm   |
| AWG signal line                 | 22   |
| Conductor cross section         | 4x 0.34 mm²  |
| Wire diameter incl. insulation  | approx. 1.55 mm  |
| External cable diameter         | 6.50 mm ±0.2 mm  |
| Outer sheath, material          | PVC  |
| External sheath, color          | signal red RAL 3020  |

# NBC-MSD/10,0-93K/MSD SCO - Network cable



1411536

<https://www.phoenixcontact.com/us/products/1411536>

|   |   |
|---|---|
| Conductor material                            | Tin-plated Cu litz wires                          |
| Material wire insulation                      | PE  |
| Single wire, color                            | white, yellow, blue, orange                       |
| Thickness, outer sheath                       | approx. 0.90 mm                                   |
| Type of pair shielding                        | Aluminum-lined polyester foil                     |
| Overall twist                                 | Star quad   |
| Max. conductor resistance                     | $\leq 120 \Omega/\text{km}$                       |
| Insulation resistance                         | $\geq 0.5 \text{ G}\Omega \cdot \text{km}$        |
| Coupling resistance                           | $\leq 20.00 \text{ m}\Omega/\text{m}$ (at 10 Hz)  |
| Wave impedance                                | $100 \Omega \pm 15 \Omega$ (at 100 MHz)           |
| Nominal voltage, cable                        | 600 V   |
| Test voltage Core/Core                        | 2000 V (50 Hz, 1 min.)                            |
| Test voltage Core/Shield                      | 2000.00 V (50 Hz, 1 min.)                         |
| Minimum bending radius, fixed installation    | 3 x D   |
| Minimum bending radius, flexible installation | 7 x D   |
| Smallest bending radius, fixed installation   | 20 mm   |
| Smallest bending radius, movable installation | 46 mm   |
| Flame resistance                              | according to UL 1685 (CSA FT 4)                   |
| Resistance to oil                             | Resistant to oil to a limited extent              |
| Other resistance                              | UV resistant (According to UL 1581, Section 1200) |
| Ambient temperature (operation)               | -40 °C ... 70 °C (cable, fixed installation)      |
|   | -40 °C ... 70 °C (Cable, flexible installation)   |
| Ambient temperature (installation)            | -20 °C ... 60 °C                                  |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65 (M12 connector)             |
|                                 | IP67 (M12 connector)             |
|                                 | IP65/IP67                        |
| Ambient temperature (operation) | -25 °C ... 90 °C (M12 connector) |

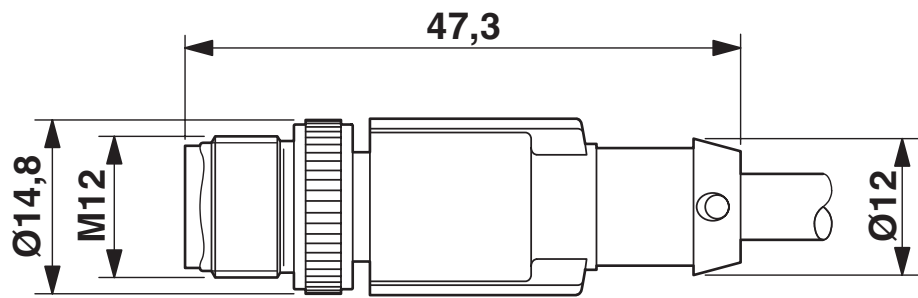
## Standards and regulations

### M12

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

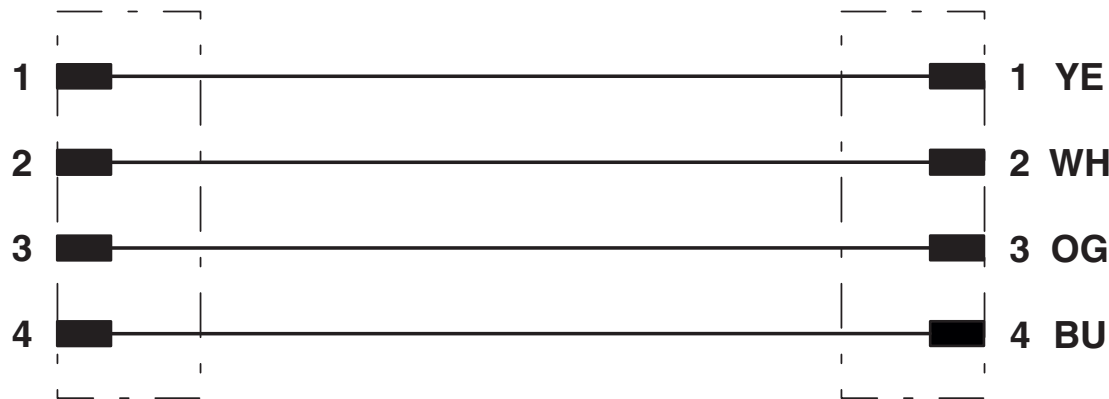
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

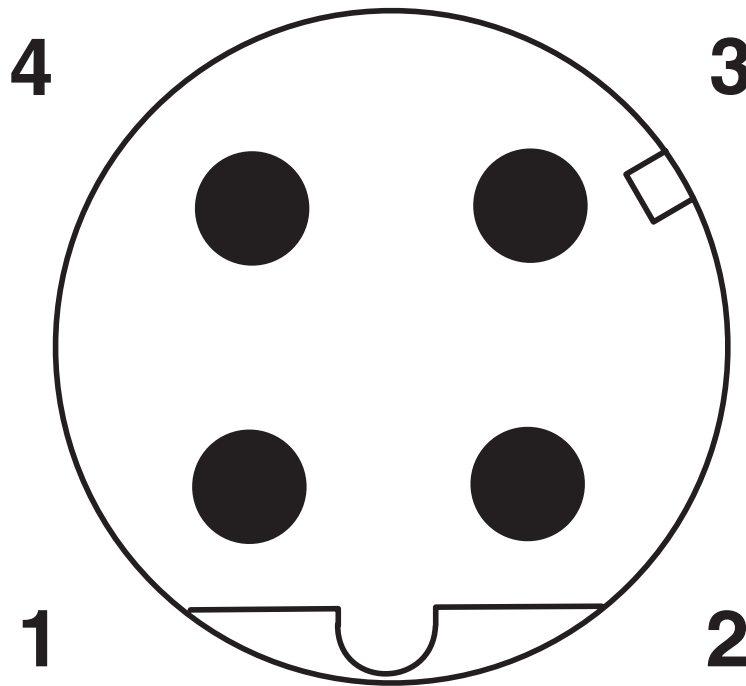
Circuit diagram



1411536

<https://www.phoenixcontact.com/us/products/1411536>

Schematic diagram



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

# NBC-MSD/10,0-93K/MSD SCO - Network cable




1411536


<https://www.phoenixcontact.com/us/products/1411536>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1411536>



**EAC-RoHS**  
Approval ID: RU D-DE.HB35.B.00387

|   |   |                       |                   |                             |
|---|---|-----------------------|-------------------|-----------------------------|
|  | <b>cULus Listed</b><br>Approval ID: NBC-M12MSD Series |                       |                   |                             |
|   | Nominal voltage $U_N$                                 | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|   | 250 V   | 4 A                   | -                 | -                           |



1411536

<https://www.phoenixcontact.com/us/products/1411536>

Classifications

ECLASS

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

ETIM

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

UNSPSC

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



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%               |

# NBC-MSD/10,0-93K/MSD SCO - Network cable



1411536

<https://www.phoenixcontact.com/us/products/1411536>

## Accessories

### PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/us/products/1430873>

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



---

### SAC-M12-EXCLIP-M - Locking clip

1558988

<https://www.phoenixcontact.com/us/products/1558988>

Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



## NBC-MSD/10,0-93K/MSD SCO - Network cable

1411536

<https://www.phoenixcontact.com/us/products/1411536>



## TSD 04 SAC - Torque screwdriver

1208429

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



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

---

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

1212224

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



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

# NBC-MSD/10,0-93K/MSD SCO - Network cable



1411536

<https://www.phoenixcontact.com/us/products/1411536>

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

1212600

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



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

---

## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/us/products/1208432>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

---

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)