

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



1411507

<https://www.phoenixcontact.com/us/products/1411507>

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Network cable, Sercos CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on free cable end, cable length: 10 m

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1411507 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF04 |
| Product key | BF1CJO |
| GTIN | 4046356933711 |
| Weight per piece (including packing) | 673.3 g |
| Weight per piece (excluding packing) | 673.3 g |
| Customs tariff number | 85444210 |
| Country of origin | PL |

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Technical data

Product properties

| | |
|---------------------|-------------------------|
| Product type | Data cable preassembled |
| Sensor type | Sercos |
| Number of positions | 4 |
| Application | Standard |
| 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 | ≥ 100 |
| Contact resistance | $\leq 5 \text{ m}\Omega$ |
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Tightening torque | 0.4 Nm |
| Degree of protection | IP67 |
| Ambient temperature (operation) | -25 °C ... 90 °C |

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Connection 2

| | |
|---|-----------------|
| Type | free cable end |
| Stripping length of the sheath (free conductor end) | 45.00 mm ±10 mm |

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 mm ² |
| 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 |
| 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 | ≤ 120 Ω/km |
| Insulation resistance | ≥ 0.5 GΩ*km |
| Coupling resistance | ≤ 20.00 mΩ/m (at 10 Hz) |
| Wave impedance | 100 Ω ±15 Ω (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 |

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| | |
|---|---|
| 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) |

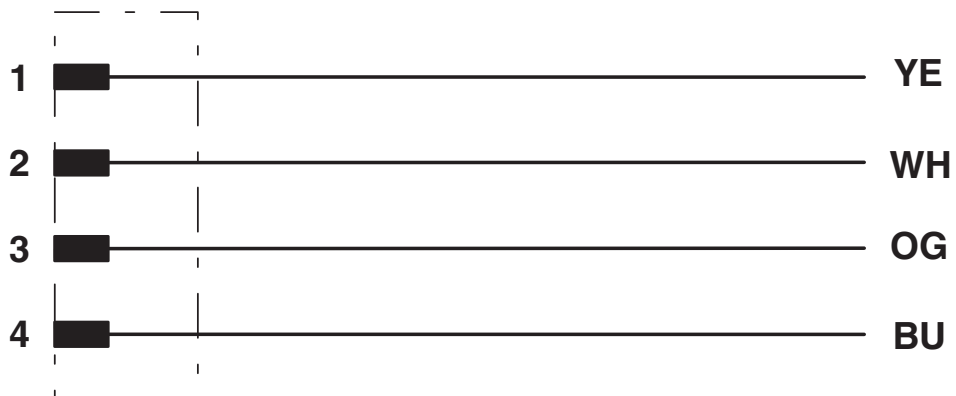
Standards and regulations

M12

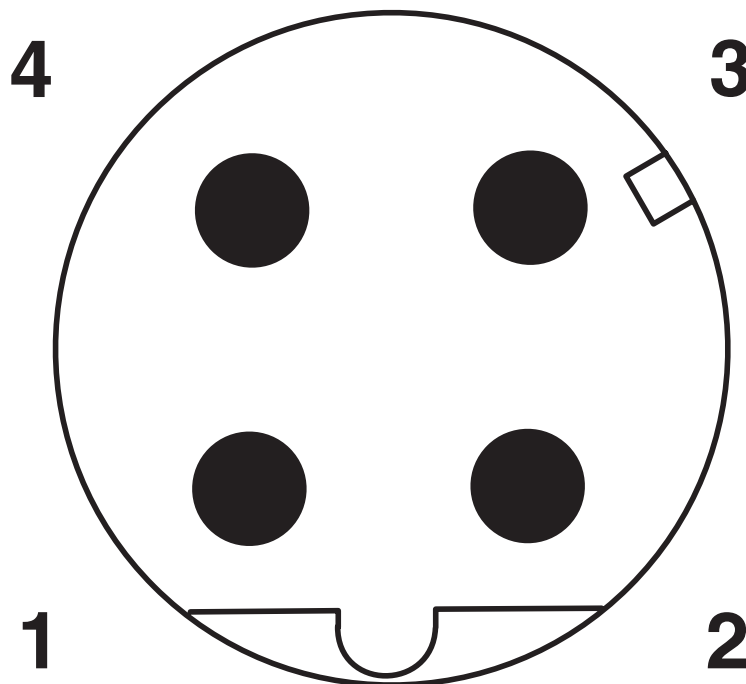
| | |
|--------------------------|-----------------|
| Standard designation | M12 connector |
| Standards/specifications | IEC 61076-2-101 |

Drawings

Circuit diagram



Schematic diagram



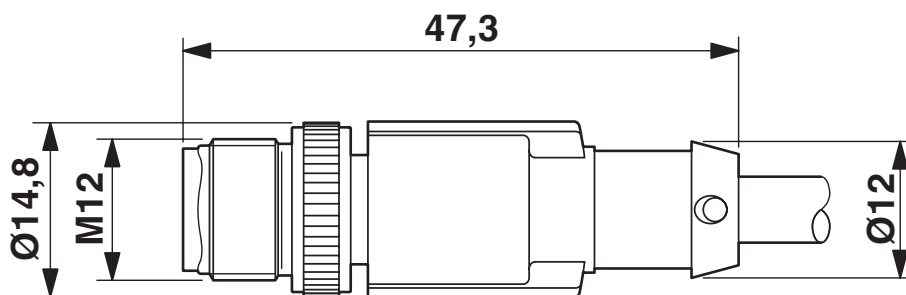
Pin assignment M12 male connector, 4-pos., D-coded, male side

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Dimensional drawing



Plug, M12 x 1, straight, shielded

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1411507>



EAC-RoHS

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

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Classifications

ECLASS

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

ETIM

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

UNSPSC

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

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Environmental product compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

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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



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WP-CTA POM 13,0 BK - Protective hose adapter

1422884

<https://www.phoenixcontact.com/us/products/1422884>



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

WP-PA HF 13,0 BK - Protective hose

3240681

<https://www.phoenixcontact.com/us/products/3240681>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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WP-PA HF-HB 13,0 BK - Protective hose

3240839

<https://www.phoenixcontact.com/us/products/3240839>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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

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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

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

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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

CUTFOX 12 - Cable-cutting tool

1212128

<https://www.phoenixcontact.com/us/products/1212128>



Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm²)

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CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/us/products/1212207>



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

VS-CABLE-STRIP-VARIO - Stripping tool

1657407

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

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



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MICROFOX-SP-1 - Diagonal cutter

1212487

<https://www.phoenixcontact.com/us/products/1212487>



Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

WIREFOX 4 - Stripping tool

1212156

<https://www.phoenixcontact.com/us/products/1212156>



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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WIREFOX-E 4 - Stripping tool

1212704

<https://www.phoenixcontact.com/us/products/1212704>



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

WIREFOX 10 - Stripping tool

1212150

<https://www.phoenixcontact.com/us/products/1212150>



Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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