

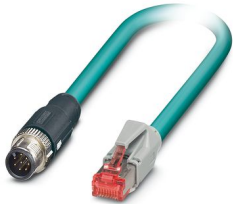
NBC-MS/10,0-94B/R4AC SCO - Network cable



1407417

<https://www.phoenixcontact.com/in/products/1407417>

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, shielded, Plug straight M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: 10 m

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 1407417 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF1 |
| Product key | BF1CMI |
| Catalog page | Page 401 (C-2-2019) |
| GTIN | 4046356775397 |
| Weight per piece (including packing) | 511 g |
| Weight per piece (excluding packing) | 481 g |
| Customs tariff number | 85444210 |
| Country of origin | PL |

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Technical data

Notes

| | |
|---------|---|
| General | Further products with variable cable type and variable cable length can be found in the accessories section |
|---------|---|

Product properties

| | |
|---------------------|-------------------------|
| Product type | Data cable preassembled |
| Sensor type | Ethernet |
| Number of positions | 8 |
| Application | Standard |
| Shielded | yes |
| Coding | A |

Interfaces

| | |
|----------------------|--|
| Bus system | Ethernet |
| Signal type/category | Ethernet CAT5 (based on IEC 11801), 1 Gbps |

Signaling

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

Electrical properties

| | |
|---|-----------------------|
| Nominal voltage U_N | 30 V AC |
| | 30 V DC |
| Nominal current I_N | 1 A |
| Transmission medium | Copper |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

Connector

Connection 1

| | |
|-----------------------------|--|
| Type | Plug straight M12 SPEEDCON / IP67 |
| Number of positions | 8 |
| Locking type | SPEEDCON |
| Coding type | A (Standard) |
| Handle color | black |
| Material | CuZn (Contact) |
| | Ni/Au (Contact surface) |
| | TPU GF (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 | $\geq 100 \text{ M}\Omega$ |

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| | |
|---------------------------------|------------------|
| Tightening torque | 0.4 Nm |
| Degree of protection | IP67 |
| Ambient temperature (operation) | -25 °C ... 90 °C |


Connection 2

| | |
|---------------------------------|---------------------------|
| Type | Plug straight RJ45 / IP20 |
| Number of positions | 8 (8) |
| Handle color | gray |
| Material | CuSn (Contact) |
| | Ni/Au (Contact surface) |
| | PC (Contact carriers) |
| | PA (Housing) |
| Insertion/withdrawal cycles | ≥ 750 |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 60 °C |

Cable/line

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

Ethernet flexible CAT5, 4-pair [94B]

| | |
|---------------------------------|--|
| Dimensional drawing |  |
| Cable weight | 47 kg/km |
| UL AWM Style | 20963 (80°C/30 V) |
| Number of positions | 8 |
| Shielded | yes |
| Cable type | Ethernet flexible CAT5, 4-pair [94B] |
| Conductor structure | 4x2xAWG26/7, SF/UTP |
| Signal runtime | 5.3 ns/m |
| Conductor structure signal line | 7x 0.16 mm |
| AWG signal line | 26 |
| Conductor cross section | 4x 2x 0.14 mm ² |
| Wire diameter incl. insulation | 0.96 mm |
| External cable diameter | 6.4 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/blue-blue, white/orange-orange, white/green-green, |

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| | |
|--|--|
| | white/brown-brown |
| Thickness, outer sheath | 1.05 mm |
| Twisted pairs | 2 cores to the pair |
| Overall twist | 4 pairs for core |
| Optical shield covering | 70 % |
| Insulation resistance | $\geq 5 \text{ G}\Omega \cdot \text{km}$ |
| 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 | 48 nF/km (at 1 kHz) |
| Nominal voltage, cable | $\leq 100 \text{ V}$ |
| Test voltage Core/Core | 700 V (50 Hz, 1 min.) |
| Test voltage Core/Shield | 700 V (50 Hz, 1 min.) |
| 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 | $\leq 100 \text{ N}$ |
| Near end crosstalk attenuation (NEXT) | 71.3 dB (with 1 MHz) |
| | 62.3 dB (at 4 MHz) |
| | 56.3 dB (at 10 MHz) |
| | 53.2 dB (at 16 MHz) |
| | 51.8 dB (at 20 MHz) |
| | 48.9 dB (at 31.25 MHz) |
| | 44.4 dB (at 62.5 MHz) |
| Power-summated near end crosstalk attenuation (PSNEXT) | 41.3 dB (at 100 MHz) |
| | 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) | |
| Return attenuation (RL) | 32.3 dB (at 100 MHz) |
| | 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) | |
| Shield attenuation | 20.1 dB (at 100 MHz) |
| | 3.2 dB (with 1 MHz) |
| | 6 dB (at 4 MHz) |

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| | |
|------------------------------------|---|
| | 9.5 dB (at 10 MHz) |
| | 12.1 dB (at 16 MHz) |
| | 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 |
| 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 (M12 connector) IP67 (M12 connector) IP20 (RJ45 connector) |
| Ambient temperature (operation) | -25 °C ... 90 °C (M12 connector) -20 °C ... 70 °C (RJ45 connector) |

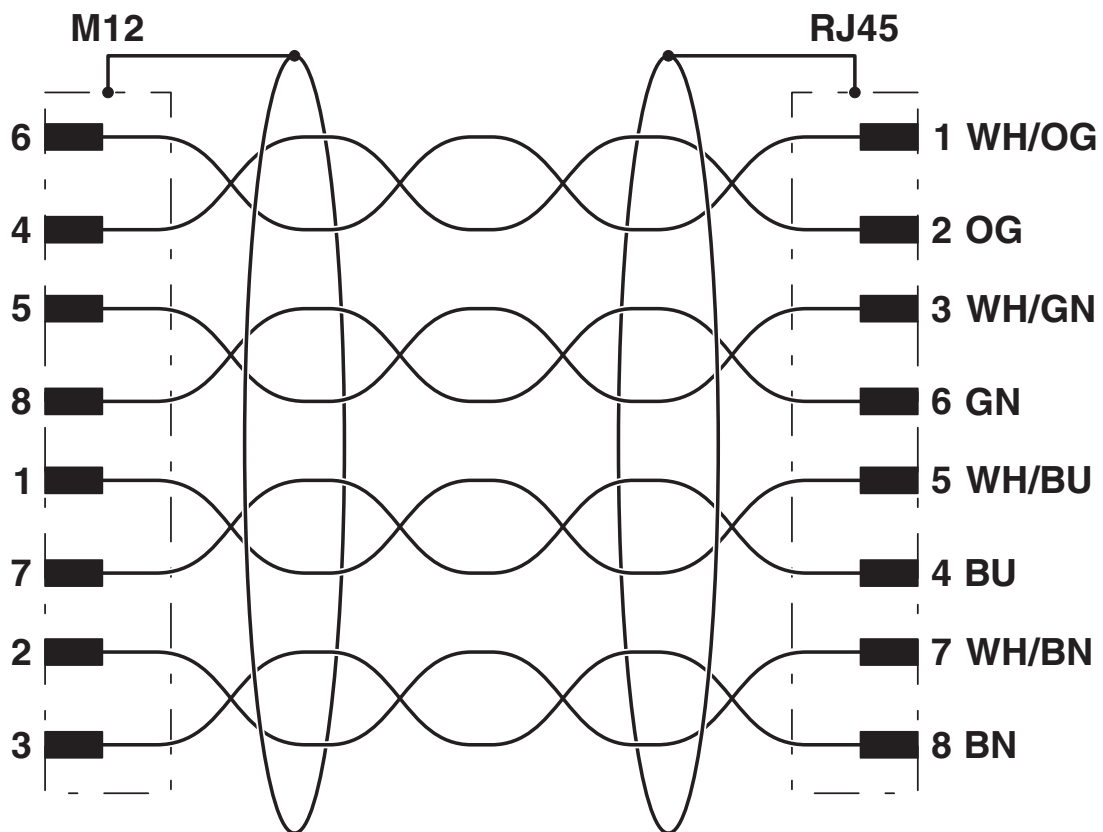
Standards and regulations

M12

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

Drawings

Circuit diagram



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Schematic diagram



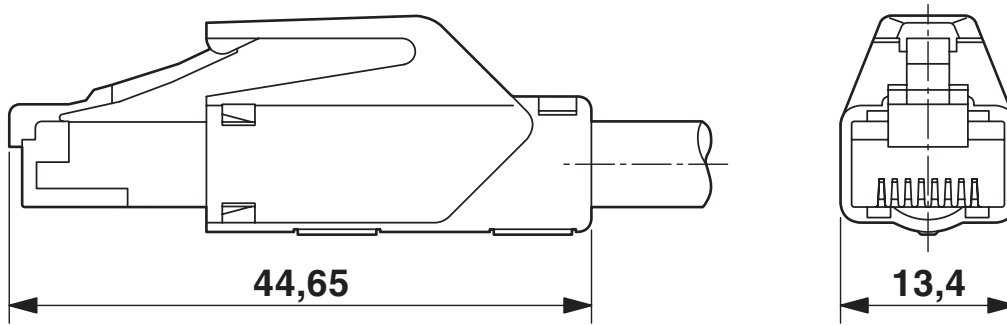
Connector pin assignment plug RJ45

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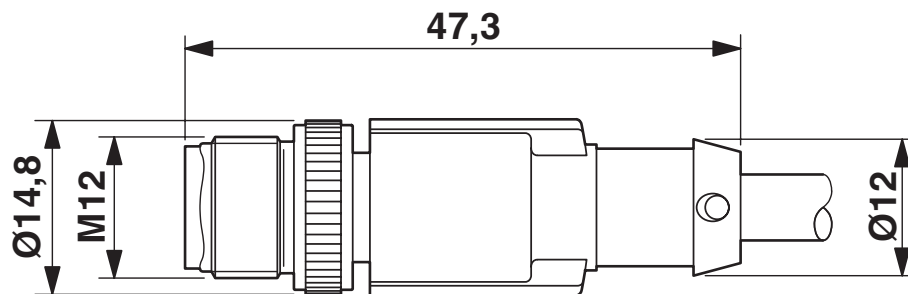
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Dimensional drawing



RJ45 connector, IP20

Dimensional drawing

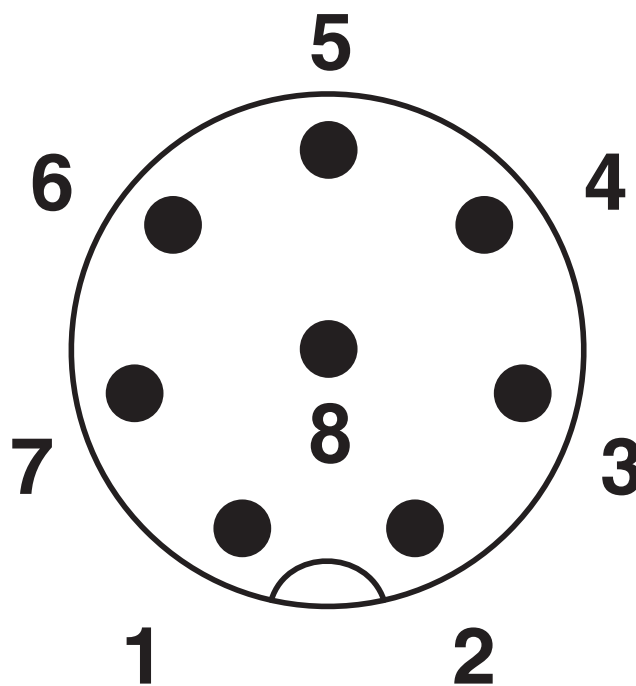


Plug, M12 x 1, straight, shielded

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Schematic diagram




Pin assignment M12 plug, 8-pos., A-coded, view plug side


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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1407417>

|  UL Listed Approval ID: FILE E 335024 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| | 30 V | 0.5 A | - | - |

|  cUL Listed Approval ID: FILE E 335024 | | | | |
|---|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| | 30 V | 0.5 A | - | - |

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

| cULus Listed | |
|---------------------|--|
|---------------------|--|

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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

NBC-MS-R4AC SCO-IE/.../... - Network cable

1408681

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug straight M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)

NBC-MR-R4AC SCO-IE/.../... - Network cable

1408674

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug angled M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)

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NBC-FS-R4AC SCO-IE/.../... - Network cable

1408664

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Socket straight M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)

NBC-FR-R4AC SCO-IE/.../... - Network cable

1408655

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Socket angled M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)

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PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/in/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/in/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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TSD 04 SAC - Torque screwdriver

1208429

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

TSD-M 1,2NM - Torque screwdriver

1212224

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

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TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/in/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/in/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

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