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# NBC-M 8MS/ 1,5-93C/R4AC CH-MA - Network cable

1157865

https://www.phoenixcontact.com/in/products/1157865

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Network cable, Ethernet (100 Mbps), PROFINET (100 Mbps), EtherCAT® (100 Mbps), 4-position, PUR/FRNC halogen-free, green RAL 6018, shielded, Plug straight M8, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: 1.5 m, Customer version

## Commercial data

| | |
|---|---|
| Item number | 1157865 |
| Packing unit | 1 pc |
| Minimum order quantity | 100 pc |
| Note | Made to order (non-returnable) |
| Sales key | ***** |
| Product key | AF1BJI |
| GTIN | 4063151163761 |
| Weight per piece (including packing) | 111.2 g |
| Weight per piece (excluding packing) | 111.2 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

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## Technical data

### Product properties

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

### Interfaces

| | |
|---|---|
| Bus system | Ethernet |
| Signal type/category | Ethernet, 100 Mbps |
| | PROFINET, 100 Mbps |
| | EtherCAT®, 100 Mbps |

### 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 |

### Connector

Connection 1

| | |
|---|---|
| Type | Plug straight M8 / IP67 |
| Number of positions | 4 |
| Coding type | A (Standard) |
| Handle color | black |
| Material | CuSn (Contact) |
| | Ni/Au (Contact surface) |
| | TPU GF (Contact carriers) |
| | TPU, hardly inflammable, self-extinguishing (Grip body) |
| | Zinc die-cast, nickel-plated (Screw connection) |
| Insertion/withdrawal cycles | ≥ 100 |
| Insulation resistance | ≥ 100 MΩ |
| Tightening torque | 0.2 Nm |
| Degree of protection | IP67 |
| Ambient temperature (operation) | -25 °C ... 90 °C |

Connection 2

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| | |
|---|---|
| Type | Plug straight RJ45 / IP20 |
| Number of positions | 4 (8) |
| Handle color | black |
| Material | CuSn (Contact) |
| | Ni/Au (Contact surface) |
| | PA (Contact carriers) |
| | PA (Housing) |
| Insertion/withdrawal cycles | ≥ 750 |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 80 °C |

## Cable/line

| | |
|---|---|
| Cable length | 1.5 m |

PROFINET drag chain CAT5 [93C]

| | |
|---|---|
| Dimensional drawing |  |
| Cable weight | 61 kg/km |
| Shielded | yes |
| Cable type | PROFINET drag chain CAT5 [93C] |
| Conductor structure | 1x4xAWG22/7, SF/TQ |
| Signal runtime | 5.3 ns/m |
| Signal speed | 0.66 c |
| Conductor structure signal line | 7x 0.25 mm |
| AWG signal line | 22 |
| Conductor cross section | 4x 0.34 mm² |
| Wire diameter incl. insulation | 1.5 mm |
| External cable diameter | 6.50 mm ±0.2 mm |
| Outer sheath, material | PUR |
| External sheath, color | green RAL 6018 |
| 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 |
| Overall twist | Star quad |
| Optical shield covering | 85 % |
| Insulation resistance | ≥ 500 MΩ*km |
| Coupling resistance | ≤ 20.00 mΩ/m (at 10 MHz) |

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| | |
|---|---|
| Loop resistance | ≤ 120.00 Ω/km |
| Wave impedance | 100 Ω ±15 Ω (at 1 ... 100 MHz) |
| Nominal voltage, cable | 600 V (UL rating) |
| 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 | 5 x D |
| Minimum bending radius, flexible installation | 7.5 x D |
| Smallest bending radius, fixed installation | 33 mm |
| Smallest bending radius, movable installation | 49 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 3000000, Bending radius: 100 mm, Traversing path: 10 m, Traversing rate: 4 m/s, Acceleration: 4 m/s² |
| Tensile strength | ≤ 150 N |
| Dynamic load capacity (torsion) | Torsion: ±30 °/m |
| Near end crosstalk attenuation (NEXT) | 80 dB (with 1 MHz) |
| | 76 dB (at 4 MHz) |
| | 70 dB (at 10 MHz) |
| | 65 dB (at 16 MHz) |
| | 63 dB (at 20 MHz) |
| | 60 dB (at 31.25 MHz) |
| | 55 dB (at 62.5 MHz) |
| | 50 dB (at 100 MHz) |
| Shield attenuation | 2.1 dB (with 1 MHz) |
| | 4 dB (at 4 MHz) |
| | 6.3 dB (at 10 MHz) |
| | 8 dB (at 16 MHz) |
| | 9 dB (at 20 MHz) |
| | 11.4 dB (at 31.25 MHz) |
| | 16.5 dB (at 62.5 MHz) |
| | 21.3 dB (at 100 MHz) |
| Halogen-free | yes |
| Flame resistance | according to IEC 60332-1-2 |
| | in accordance with UN ECE-R 118.03 |
| Resistance to oil | in accordance with DIN EN 60811-2-1 |
| Other resistance | UV resistant |
| Special properties | Electrical properties in accordance with EN 50288-2-2 |
| 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 (M8 connectors) |
| | IP67 (M8 connectors) |

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| | |
|---|---|
| | IP20 (RJ45 connector) |
| Ambient temperature (operation) | -25 °C ... 90 °C (M8 connectors) |
| | -25 °C ... 60 °C (RJ45 connector) |

## Standards and regulations

M8

| | |
|---|---|
| Standard designation | M8 connector |
| Standards/specifications | IEC 61076-2-104 |

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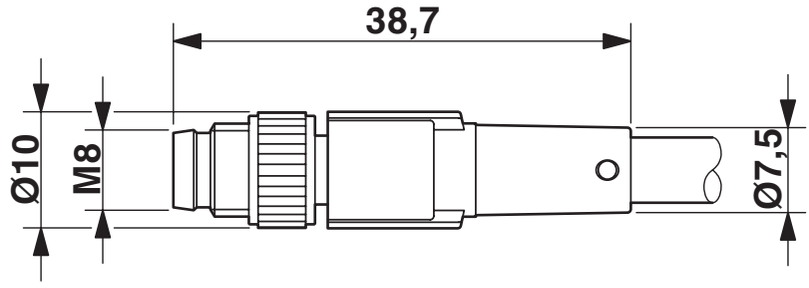
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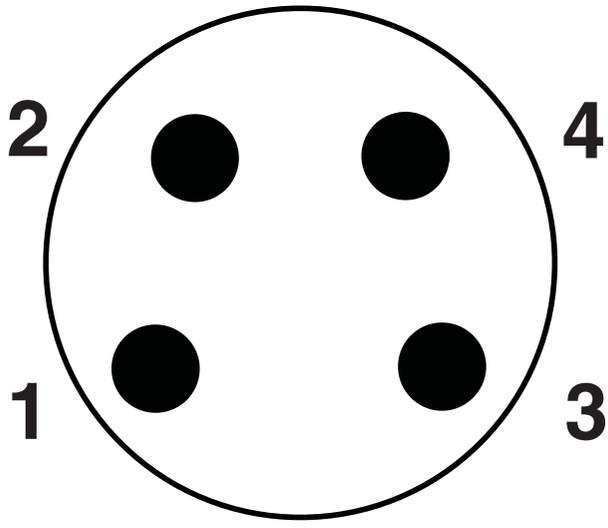
## Drawings

Dimensional drawing




M8 x 1 male plug, straight version

Schematic diagram




Pin assignment M8 plug, 4-pos., view male side

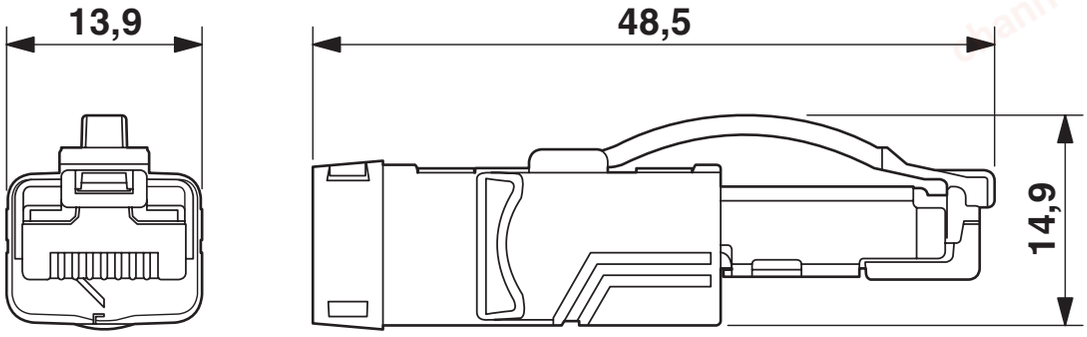
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Dimensional drawing




RJ45 connector, IP20

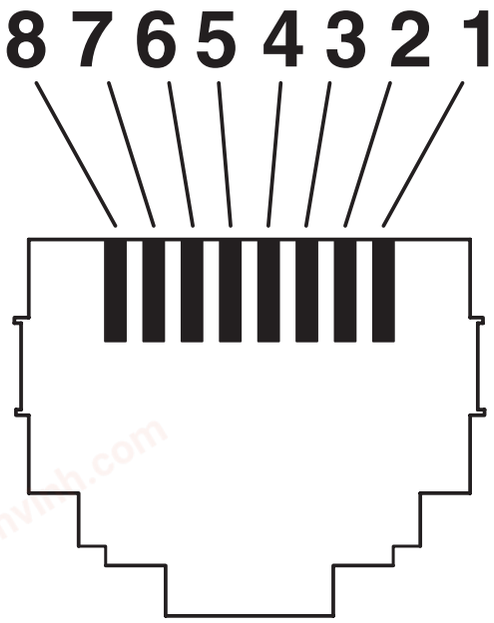
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# NBC-M 8MS/ 1,5-93C/R4AC CH-MA - Network cable

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Schematic diagram




Connector pin assignment plug RJ45

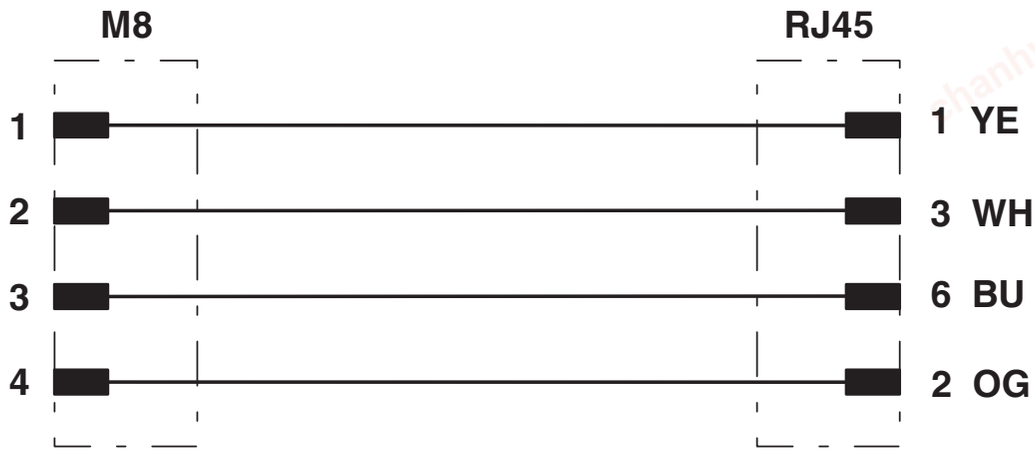
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Circuit diagram




Contact assignment of the M8 and RJ45 plug

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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

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-M 8 FS-PA-CHAIN - Sealing cap

1430857

https://www.phoenixcontact.com/in/products/1430857

M8 sealing cap made of plastic with fixing band for sensor cables, for M8 plugs



### TSD 02 SAC - Torque screwdriver

1208487

https://www.phoenixcontact.com/in/products/1208487

Torque screwdriver, with preset torque of 0.2 Nm and 4 mm hexagonal drive for M8 connectors



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## SAC BIT M8-D10 - Tool

1208461

https://www.phoenixcontact.com/in/products/1208461




Nut for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive

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