# NBC-M12MSD/ 5,0-93B/M12MSD CMC - Network cable

1524381

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight M12, coding: D / IP67, cable length: 5 m

## Commercial data

| | |
|---|---|
| Item number | 1524381 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF04 |
| Product key | AF1CJN |
| GTIN | 4046356021463 |
| Weight per piece (including packing) | 341 g |
| Weight per piece (excluding packing) | 350.8 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

## Technical data

### Notes

| | |
|---|---|
| General | This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 10.1 Cord Sets for Balanced Cabling |
| General | CMC - Conductor marker carrier - PATG |

### Product properties

| | |
|---|---|
| Product type | Data cable preassembled |
| Application | Standard |
| Number of positions | 4 |
| Shielded | yes |

### Interfaces

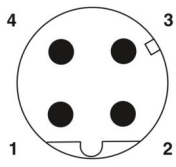
| | |
|---|---|
| Signal type/category | PROFINET CAT5 (IEC 11801), 100 Mbps |
| | EtherCAT® CAT5 (IEC 11801), 100 Mbps |

### Electrical properties

| | |
|---|---|
| Nominal voltage $U_N$ | 48 V AC |
| | 60 V DC |
| Nominal current $I_N$ | 4 A |
| Transmission medium | Copper |
| Transmission speed | 100 Mbps |

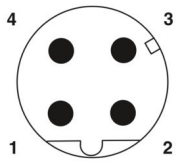
### Connector

Connection 1

| | |
|---|---|
| Dimensional drawing |  Pin assignment M12 male connector, 4-pos., D-coded, male side |
| Type | M12 Plug, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D, EtherCAT®, PROFINET |
| Number of positions | 4 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps |
| | PROFINET CAT5 (IEC 11801) |
| Insertion/withdrawal cycles | ≥ 100 |
| Insulation resistance | ≥ 100 MΩ |

| | |
|---|---|
| Overvoltage category | II |
| Degree of pollution | 3 |
| Tightening torque | 0.4 Nm |
| Material Contact | CuSn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | PA 6.6 |
| Material Screw connection | Die-cast zinc, nickel-plated |
| Material Grip body | TPU, hardly inflammable, self-extinguishing |
| Material Seal | FKM |
| Flammability rating according to UL 94 | V0 |
| Degree of protection | IP65 |
| | IP67 |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

Connection 2

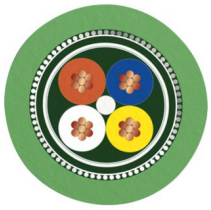
| | |
|---|---|
| Dimensional drawing |  Pin assignment M12 male connector, 4-pos., D-coded, male side |
| Type | M12 Plug, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D, EtherCAT®, PROFINET |
| Number of positions | 4 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps |
| | PROFINET CAT5 (IEC 11801) |
| Insertion/withdrawal cycles | ≥ 100 |
| Insulation resistance | ≥ 100 MΩ |
| Overvoltage category | II |
| Degree of pollution | 3 |
| Tightening torque | 0.4 Nm |
| Material Contact | CuSn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | PA 6.6 |
| Material Screw connection | Die-cast zinc, nickel-plated |
| Material Grip body | TPU, hardly inflammable, self-extinguishing |
| Material Seal | FKM |
| Flammability rating according to UL 94 | V0 |
| Degree of protection | IP65 |
| | IP67 |

| | |
|---|---|
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

## Cable/line

| | |
|---|---|
| Cable length | 5 m |

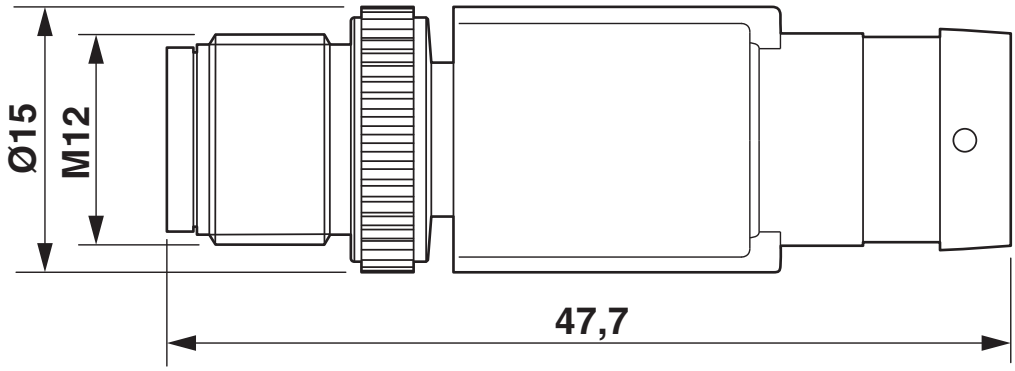
PROFINET PVC stranded CAT5 [93B]

| | |
|---|---|
| Dimensional drawing |  |
| UL AWM Style | 21695 (80 °C / 600 V) |
| Number of positions | 4 |
| Shielded | yes |
| Cable type | PROFINET PVC stranded CAT5 [93B] |
| Conductor structure | 1x4xAWG22/7, SF/TQ |
| AWG signal line | 22 |
| Conductor cross-section | 4x 0.34 mm² |
| Wire diameter incl. insulation | 1.5 mm ±0.1 mm |
| External cable diameter | 6.50 mm ±0.2 mm |
| Outer sheath, material | PVC |
| External sheath, color | green RAL 6018 |
| Conductor material | Tin-plated Cu litz wires |
| Material wire insulation | PE |
| Single wire, color | white, yellow, blue, orange |
| Overall twist | Star quad |
| Optical shield covering | 85 % |
| Insulation resistance | ≥ 5 GΩ*km |
| Loop resistance | ≤ 120.00 Ω/km |
| Wave impedance | 100 Ω ±5 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 | 4 x D |
| Minimum bending radius, flexible installation | 8 x D |
| Flame resistance | UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1) |
| | UL 1685 (CSA FT 4) |
| | UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2) |
| Resistance to oil | OIL RES I according to UL 2256 |

| | |
|---|---|
| Other resistance | UV resistant (according to UL 1581, Section 1200) |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -10 °C ... 70 °C (Cable, flexible installation) |

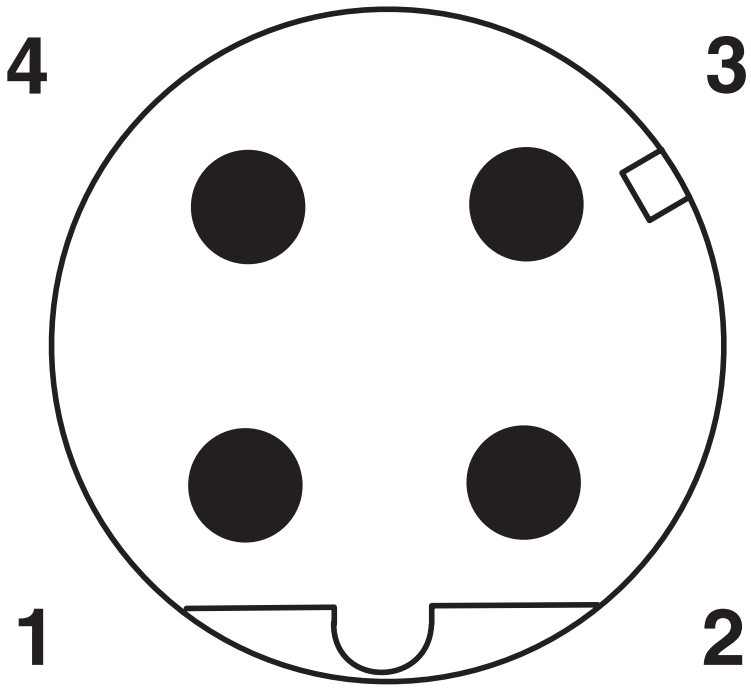
## Drawings

Dimensional drawing



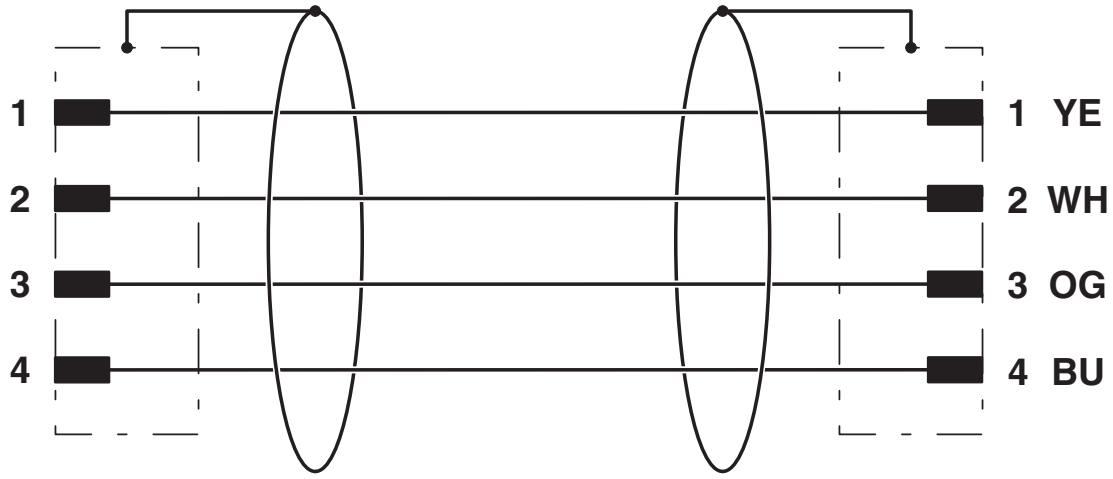

Plug, M12 x 1, straight, shielded

Schematic diagram




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

Circuit diagram




Contact assignment of the M12 plugs

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1524381

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

**cULus Listed**
Approval ID: E335024

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 250 V | 4 A | - | - |

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC002599 |

### 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% |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 4.757 kg CO2e |


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