

# NBC-M12MSD/10,0-93B/M12MSD CMC - Network cable



1524394

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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: 10 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1524394       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJN        |
| GTIN                                 | 4046356021470 |
| Weight per piece (including packing) | 649.8 g       |
| Weight per piece (excluding packing) | 661.4 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## 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                |
| Sensor type         | PROFINET                |
| Number of positions | 4                       |
| Shielded            | yes                     |

### Interfaces

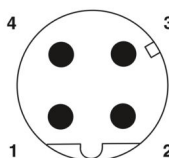
|                      |                                      |
|----------------------|--------------------------------------|
| Signal type/category | PROFINET CAT5 (IEC 11801), 100 Mbps  |
|                      | EtherCAT® CAT5 (IEC 11801), 100 Mbps |

### 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         | <br>Pin assignment M12 male connector, 4-pos., D-coded, male side |
| Type                        | M12 Plug, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D                                                                   |
| 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                                                                                                                                                 |

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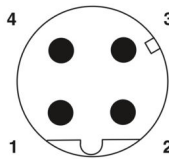


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|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Insulation resistance                  | ≥ 100 MΩ                  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

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|                                 |                  |
|---------------------------------|------------------|
|                                 | IP67             |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation            | M12 connector    |
| Standards/regulations           | IEC 61076-2-101  |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 10 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 mm <sup>2</sup>                                                            |  |
| 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)                           |  |

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

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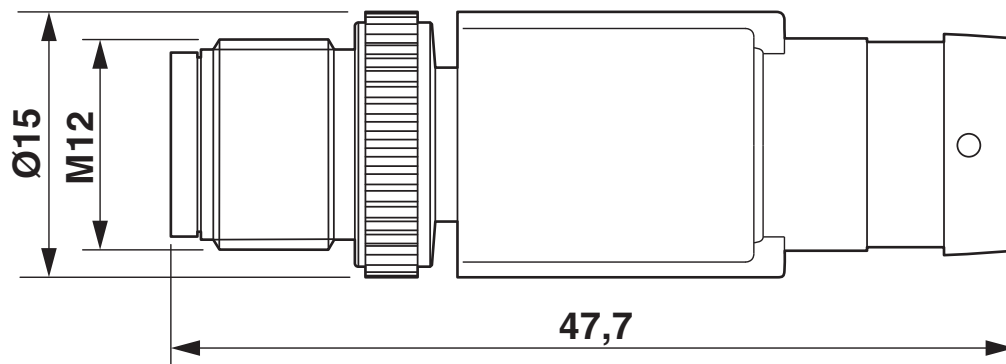


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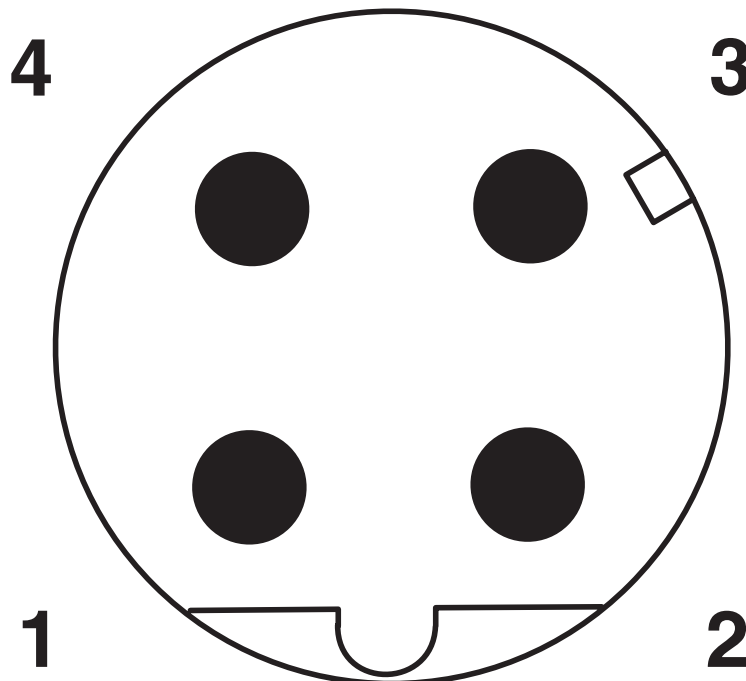
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



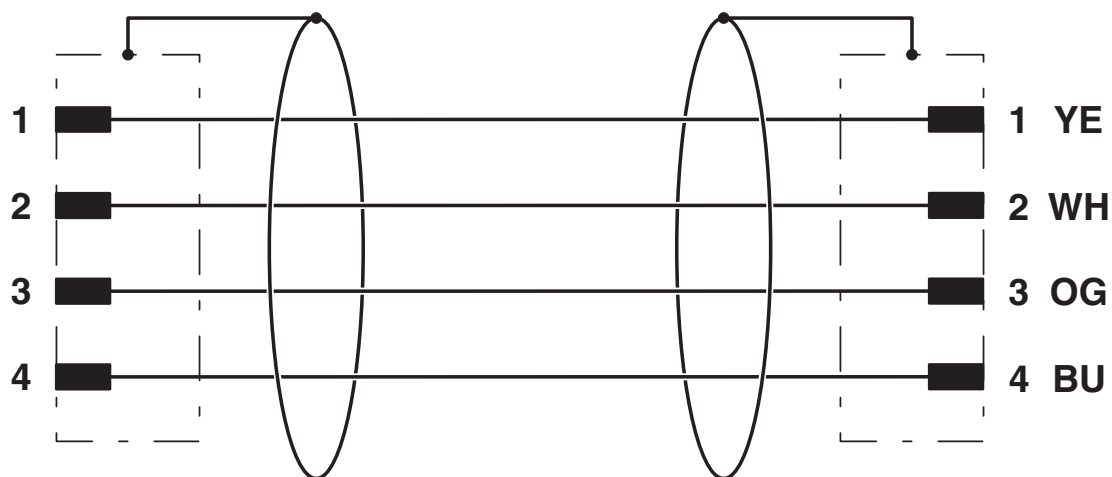
Pin assignment M12 male connector, 4-pos., D-coded, male side

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Circuit diagram



Contact assignment of the M12 plugs

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1524394>

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

|                                                                                                                               |                                |                                |                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|  <b>cULus Listed</b><br>Approval ID: E335024 |                                |                                |                   |                               |
|                                                                                                                               | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                         |                                |                                |                   |                               |
|                                                                                                                               | 250 V                          | 4 A                            | -                 | -                             |



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 3.653 kg CO2e                            |

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