

# NBC-M8MSD/ 5,0-93C/M8MSD - Network cable



1423709

<https://www.phoenixcontact.com/us/products/1423709>

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PUR halogen-free, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M8, coding: D / IP67, on Plug straight M8, coding: D / IP67, cable length: 5 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1423709       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF02          |
| Product key                          | AF1BJI        |
| GTIN                                 | 4055626569222 |
| Weight per piece (including packing) | 332.9 g       |
| Weight per piece (excluding packing) | 292.91 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 8.2 Connectors for Outside Environment (Balanced cabling) |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | PROFINET                |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Coding               | D                       |

### Interfaces

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

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Electrical properties

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

### Connector

#### Connection 1

|                     |                                                                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                | Plug straight M8 / IP67                                                                                                                                                     |
| Number of positions | 4                                                                                                                                                                           |
| Coding type         | D (Data)                                                                                                                                                                    |
| Shielded            | yes                                                                                                                                                                         |
| Handle color        | black                                                                                                                                                                       |
| Material            | CuSn (Contact)<br>Ni/Au (Contact surface)<br>PA 6.6 (Contact carrier)<br>TPU, hardly inflammable, self-extinguishing (Grip body)<br>Brass, nickel-plated (Screw connection) |

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|                                 |                  |
|---------------------------------|------------------|
| Insertion/withdrawal cycles     | ≥ 100            |
| Insulation resistance           | ≥ 100 MΩ         |
| Tightening torque               | 0.2 Nm           |
| Degree of protection            | IP67             |
| Ambient temperature (operation) | -25 °C ... 90 °C |

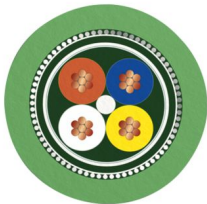
## Connection 2

|                                 |                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                            | Plug straight M8 / IP67                                                                                                                                                     |
| Number of positions             | 4                                                                                                                                                                           |
| Coding type                     | D (Data)                                                                                                                                                                    |
| Shielded                        | yes                                                                                                                                                                         |
| Handle color                    | black                                                                                                                                                                       |
| Material                        | CuSn (Contact)<br>Ni/Au (Contact surface)<br>PA 6.6 (Contact carrier)<br>TPU, hardly inflammable, self-extinguishing (Grip body)<br>Brass, 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                                                                                                                                                            |

## Cable/line

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

## PROFINET drag chain CAT5 [93C]

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing            |  |
| UL AWM Style                   | 20233 (80°C/300 V)                                                                   |
| Number of positions            | 4                                                                                    |
| Shielded                       | yes                                                                                  |
| Cable type                     | PROFINET drag chain CAT5 [93C]                                                       |
| Conductor structure            | 1x4xAWG22/7, SF/TQ                                                                   |
| AWG signal line                | 22                                                                                   |
| Conductor cross section        | 4x 0.34 mm²                                                                          |
| Wire diameter incl. insulation | 1.5 mm ±0.05 mm                                                                      |
| External cable diameter        | 6.50 mm ±0.2 mm                                                                      |
| Outer sheath, material         | PUR                                                                                  |

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|                                               |                                                                                                                                       |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 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                         | $\geq 500 \text{ M}\Omega \cdot \text{km}$                                                                                            |
| Loop resistance                               | $\leq 120.00 \text{ }\Omega/\text{km}$                                                                                                |
| Wave impedance                                | $100 \text{ }\Omega \pm 15 \text{ }\Omega$ (at 1 ... 100 MHz)                                                                         |
| Nominal voltage, cable                        | $\leq 300 \text{ V}$                                                                                                                  |
| 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    | 5 x D                                                                                                                                 |
| Minimum bending radius, flexible installation | 7.5 x D                                                                                                                               |
| Dynamic load capacity (bending)               | Max. bending cycles: 3000000, Bending radius: 200 mm, Traversing path: 10 m, Traversing rate: 4 m/s, Acceleration: 4 m/s <sup>2</sup> |
| Dynamic load capacity (torsion)               | Torsion: $\pm 30 \text{ }^\circ/\text{m}$                                                                                             |
| Halogen-free                                  | according to IEC 60754-1                                                                                                              |
| Flame resistance                              | according to IEC 60332-1-2                                                                                                            |
|                                               | in accordance with UN ECE-R 118.03                                                                                                    |
|                                               | according to CSA C 22.2 No. 210-FT1                                                                                                   |
| Resistance to oil                             | in accordance with DIN EN 60811-404                                                                                                   |
| Other resistance                              | UV resistant                                                                                                                          |
| Ambient temperature (operation)               | -40 °C ... 70 °C (cable, fixed installation)                                                                                          |
|                                               | -40 °C ... 70 °C (Cable, flexible installation)                                                                                       |

## Environmental and real-life conditions

### Ambient conditions

|                                                                   |                                  |
|-------------------------------------------------------------------|----------------------------------|
| Degree of protection                                              | IP65                             |
|                                                                   | IP67                             |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (M12 connector) |

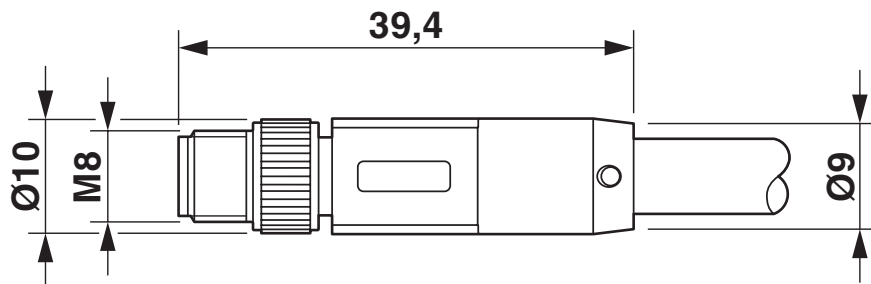
## Standards and regulations

### M8

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M8 connector    |
| Standards/specifications | IEC 61076-2-114 |

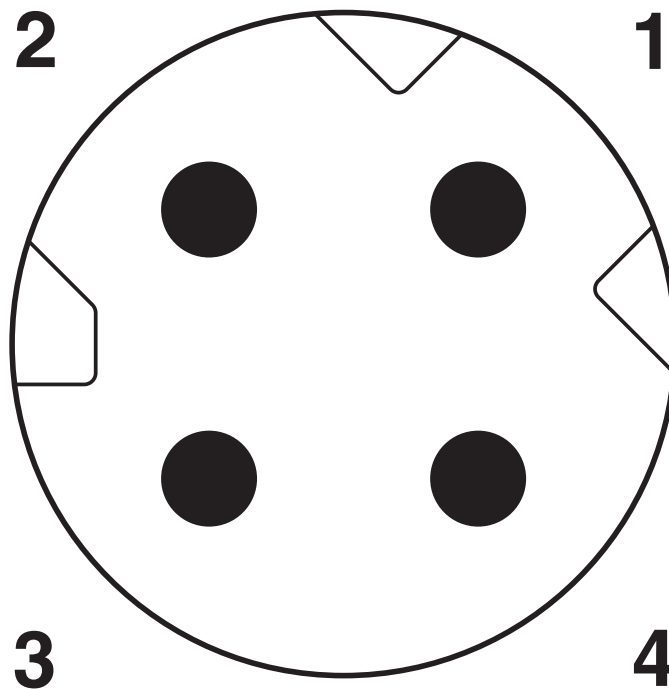
## Drawings

Dimensional drawing



Plug M8 x 1, straight, shielded

Schematic diagram

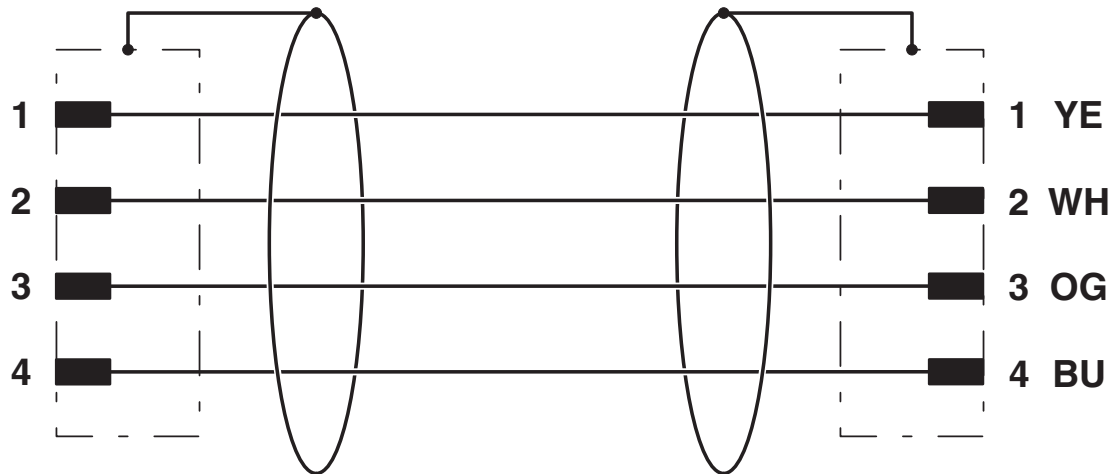


Pin assignment M8 male connector, 4-pos., D-coded, view of pin side

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Circuit diagram



Contact assignment of M8 plugs

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1423709>

|  <b>UL 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                                                                                                                      |                                |                                |                   |                               |
|                                                                                                                            | 30 V                           | 0.5 A                          | -                 | -                             |

|  <b>cUL 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                                                                                                                       |                                |                                |                   |                               |
|                                                                                                                             | 30 V                           | 0.5 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 |
|-------------|----------|



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%               |