

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Socket straight M12, coding: D / IP67, cable length: 10 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1407403       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJI        |
| GTIN                                 | 4046356775311 |
| Weight per piece (including packing) | 486.5 g       |
| Weight per piece (excluding packing) | 435 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 |
| Application         | Standard                |
| Number of positions | 4                       |
| Shielded            | yes                     |

### Interfaces

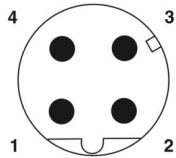
|                      |                                     |
|----------------------|-------------------------------------|
| Signal type/category | Ethernet CAT5 (IEC 11801), 100 Mbps |
|----------------------|-------------------------------------|

### 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         |  <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        | Ethernet CAT5 (IEC 11801), 100 Mbps   |
| Insertion/withdrawal cycles | $\geq 100$  |
| Insulation resistance       | $\geq 100 \text{ M}\Omega$  |
| Overvoltage category        | II  |
| Degree of pollution         | 3   |
| Tightening torque           | 0.4 Nm  |
| Material Contact            | CuSn  |
| Material Contact surface    | Ni/Au   |

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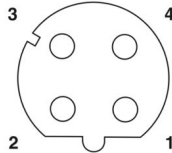


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|  |   |
|--|---|
| Material Contact carrier               | PA 6.6                                      |
| Material Screw connection              | Die-cast zinc, nickel-plated                |
| Material Grip body                     | TPU, hardly 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 socket, 4-pos., D-coded, female side</p> |
| Type                                   | M12 Socket, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D  |
| Number of positions                    | 4  |
| Shielded                               | yes  |
| Shielding                              | Advanced Shielding Technology  |
| Signal type/category                   | Ethernet CAT5 (IEC 11801), 100 Mbps  |
| 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 | 10 m |
|--------------|------|


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## Ethernet flexible CAT5, 2-pair [93E]

|   |  |
|---|--|
| Dimensional drawing                           |    |
| UL AWM Style                                  | 21238 (80 °C / 600 V)  |
| Number of positions                           | 4  |
| Shielded                                      | yes  |
| Cable type                                    | Ethernet flexible CAT5, 2-pair [93E]   |
| Conductor structure                           | 2x2xAWG26/7, SF/UTP  |
| AWG signal line                               | 26   |
| Conductor cross-section                       | 2x 2x 0.14 mm <sup>2</sup>   |
| Wire diameter incl. insulation                | 0.95 mm ±0.05 mm   |
| External cable diameter                       | 6.40 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/orange-orange, white/green-green   |
| Twisted pairs                                 | 2 cores to the pair  |
| Overall twist                                 | Two pairs with two fillers to the core   |
| Optical shield covering                       | 70 %   |
| Insulation resistance                         | ≥ 5 GΩ*km  |
| Loop resistance                               | ≤ 280.00 Ω/km  |
| Wave impedance                                | 100 Ω ±5 Ω (at 100 MHz)  |
| Nominal voltage, cable                        | ≤ 100 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  |
| Smallest bending radius, fixed installation   | 26 mm  |
| Smallest bending radius, movable installation | 51 mm  |
| Halogen-free                                  | according to IEC 60754-1   |
| Flame resistance                              | according to IEC 60332-1-2<br>in accordance with UN ECE-R 118.03<br>UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)<br>UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2) |
| Resistance to oil                             | in accordance with IEC 60811-404   |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)   |

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-30 °C ... 70 °C (Cable, flexible installation)

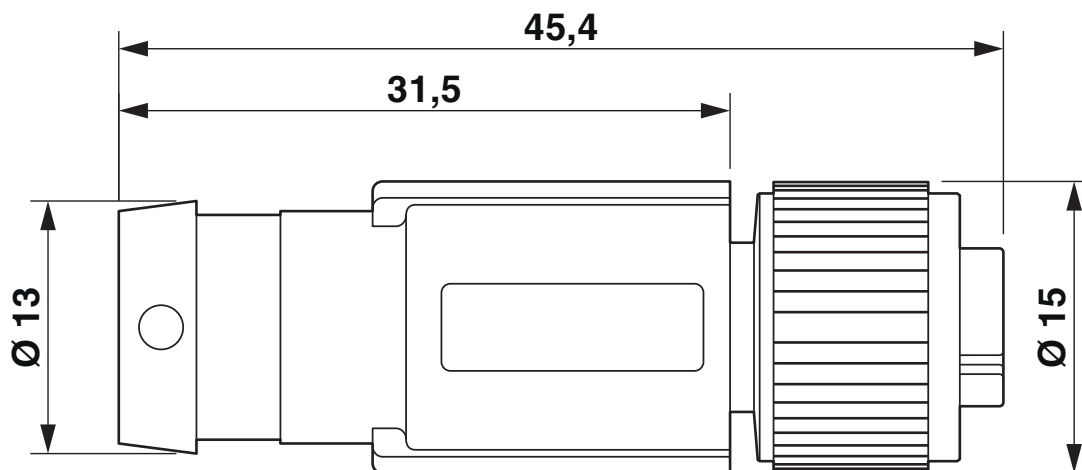
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, straight, shielded

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Schematic diagram



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

Schematic diagram

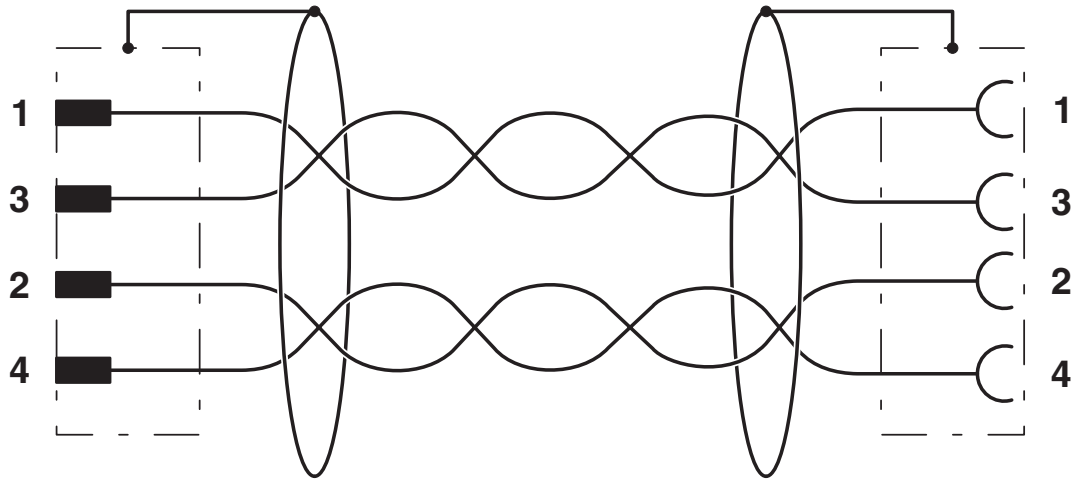


Pin assignment M12 socket, 4-pos., D-coded, female side

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Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407403>

|  <b>UL Listed</b><br>Approval ID: FILE E 335024 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  |                       |                       |                   |                             |
|  | 30 V                  | 4 A                   | -                 | -                           |

|  <b>cUL Listed</b><br>Approval ID: FILE E 335024 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine   |                       |                       |                   |                             |
|   | 30 V                  | 4 A                   | -                 | -                           |

|  <b>EAC-RoHS</b><br>Approval ID: RU D-DE.HB35.B.00387 |  |
|--|--|
|--|--|

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## Classifications

### ECLASS

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

### 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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