

# NBC-P12MSD/ 1,0-93E - Network cable



1476008

<https://www.phoenixcontact.com/gb/products/1476008>

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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 Push Pull, coding: D / IP67, on free cable end, cable length: 1 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1476008       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AF1CJJ        |
| Product key                          | AF1CJJ        |
| GTIN                                 | 4063151889715 |
| Weight per piece (including packing) | 61.1 g        |
| Weight per piece (excluding packing) | 22.22 g       |
| 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                     |

### Interfaces

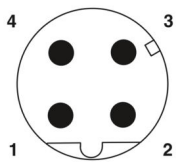
|                      |                                     |
|----------------------|-------------------------------------|
| Signal type/category | Ethernet CAT5 (IEC 11801), 100 Mbps |
|----------------------|-------------------------------------|

### Electrical properties

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

### 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), Push Pull, 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                                                                                                                                                     |
| Material Contact                       | CuSn                                                                                                                                                  |
| Material Contact surface               | Ni/Au                                                                                                                                                 |
| Material Contact carrier               | PK                                                                                                                                                    |
| Material Grip body                     | TPU, hardly inflammable, self-extinguishing                                                                                                           |
| Material Seal                          | FKM                                                                                                                                                   |
| Flammability rating according to UL 94 | V0                                                                                                                                                    |

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|                                 |                  |
|---------------------------------|------------------|
| Degree of protection            | IP65             |
|                                 | IP67             |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation            | M12 connector    |
| Standards/regulations           | IEC 61076-2-010  |

## Connection 2

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 1 m |
|--------------|-----|

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

|                                 |                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 42 kg/km                                                                            |
| UL AWM Style                    | 20963 (80°C/30 V)                                                                   |
| Wiring standards/regulations    | Electrical requirements EN 50288-2-2                                                |
| Number of positions             | 4                                                                                   |
| Shielded                        | yes                                                                                 |
| Cable type                      | Ethernet flexible CAT5, 2-pair [93E]                                                |
| Conductor structure             | 2x2xAWG26/7, SF/UTP                                                                 |
| Signal runtime                  | 5.3 ns/m                                                                            |
| Conductor structure signal line | 7x 0.16 mm                                                                          |
| AWG signal line                 | 26                                                                                  |
| Conductor cross section         | 2x 2x 0.14 mm <sup>2</sup>                                                          |
| Wire diameter incl. insulation  | 0.98 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                                              |
| Thickness, outer sheath         | 1.20 mm                                                                             |
| Twisted pairs                   | 2 cores to the pair                                                                 |
| Overall twist                   | Two pairs with two fillers to the core                                              |
| Optical shield covering         | 70 %                                                                                |
| Insulation resistance           | ≥ 500 MΩ*km                                                                         |
| Coupling resistance             | ≤ 100.00 mΩ/m (at 10 MHz)                                                           |

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|                                                        |                                                       |
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| Loop resistance                                        | ≤ 290.00 Ω/km                                         |
| Wave impedance                                         | 100 Ω ±5 Ω (at 100 MHz)                               |
| Cable capacity                                         | approx. 45 nF/km (at 1 kHz)                           |
| Nominal voltage, cable                                 | ≤ 100 V (Peak value, not for high-power applications) |
| Test voltage Core/Core                                 | 700 V (50 Hz, 1 min.)                                 |
| Test voltage Core/Shield                               | 700.00 V (50 Hz, 1 min.)                              |
| Current carrying capacity of cable                     | 2.00 A (according to DIN VDE 0891-1)                  |
| 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          | 52 mm                                                 |
| Tensile strength                                       | ≤ 80 N                                                |
| Near end crosstalk attenuation (NEXT)                  | 65.3 dB (with 1 MHz)                                  |
|                                                        | 56.3 dB (at 4 MHz)                                    |
|                                                        | 50.3 dB (at 10 MHz)                                   |
|                                                        | 47.2 dB (at 16 MHz)                                   |
|                                                        | 45.8 dB (at 20 MHz)                                   |
|                                                        | 42.9 dB (at 31.25 MHz)                                |
|                                                        | 38.4 dB (at 62.5 MHz)                                 |
|                                                        | 35.3 dB (at 100 MHz)                                  |
| Power-summated near end crosstalk attenuation (PSNEXT) | 62.3 dB (with 1 MHz)                                  |
|                                                        | 53.3 dB (at 4 MHz)                                    |
|                                                        | 47.3 dB (at 10 MHz)                                   |
|                                                        | 44.2 dB (at 16 MHz)                                   |
|                                                        | 42.8 dB (at 20 MHz)                                   |
|                                                        | 39.9 dB (at 31.25 MHz)                                |
|                                                        | 35.4 dB (at 62.5 MHz)                                 |
|                                                        | 32.3 dB (at 100 MHz)                                  |
| Return attenuation (RL)                                | 23 dB (at 4 MHz)                                      |
|                                                        | 24.1 dB (at 8 MHz)                                    |
|                                                        | 25 dB (at 10 MHz)                                     |
|                                                        | 25 dB (at 16 MHz)                                     |
|                                                        | 25 dB (at 20 MHz)                                     |
|                                                        | 23.6 dB (at 31.25 MHz)                                |
|                                                        | 21.5 dB (at 62.5 MHz)                                 |
|                                                        | 20.1 dB (at 100 MHz)                                  |
| Shield attenuation                                     | 3.2 dB (with 1 MHz)                                   |
|                                                        | 6 dB (at 4 MHz)                                       |
|                                                        | 9.5 dB (at 10 MHz)                                    |
|                                                        | 12.1 dB (at 16 MHz)                                   |
|                                                        | 13.6 dB (at 20 MHz)                                   |
|                                                        | 17.1 dB (at 31.25 MHz)                                |
|                                                        | 24.8 dB (at 62.5 MHz)                                 |
|                                                        | 32 dB (at 100 MHz)                                    |

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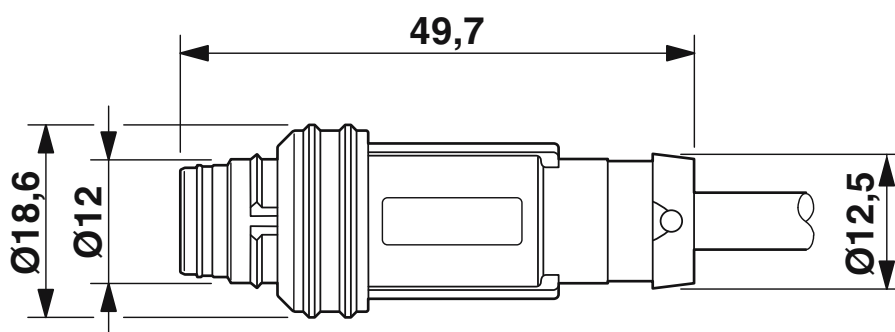
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|                                    |                                                 |
|------------------------------------|-------------------------------------------------|
| Halogen-free                       | according to IEC 60754-1                        |
| Flame resistance                   | according to IEC 60332-1-2                      |
|                                    | in acc. to UL VW1                               |
|                                    | in accordance with UN ECE-R 118.03              |
| Resistance to oil                  | in accordance with EN 60811-2-1                 |
| Ambient temperature (operation)    | -40 °C ... 80 °C (cable, fixed installation)    |
|                                    | -20 °C ... 80 °C (Cable, flexible installation) |
| Ambient temperature (installation) | -20 °C ... 80 °C                                |

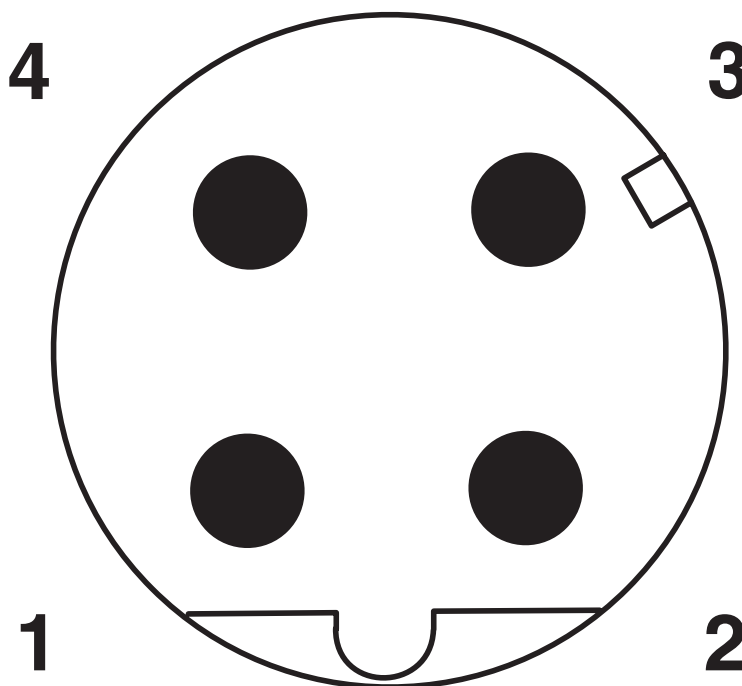
## Drawings

Dimensional drawing



M12 push-pull male connector, straight

Schematic diagram

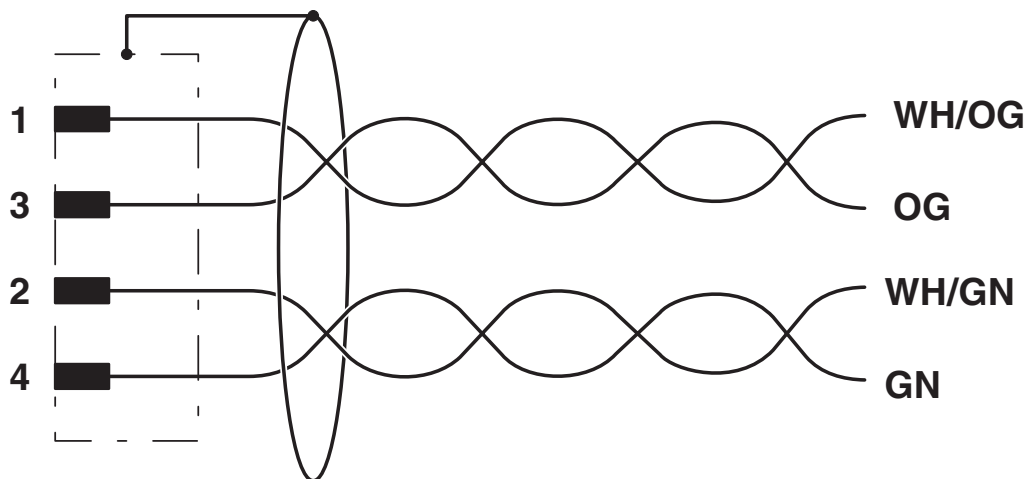


Pin assignment M12 male connector, 4-pos., D-coded, male side

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Circuit diagram



Contact assignment of the M12 plug

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/1476008>

|  <b>cULus Listed</b><br>Approval ID: E335024 | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                               | 30 V                  | 4 A                   | -                 | -                           |

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

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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                                 | 0.597 kg CO2e                            |

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