

# NBC-P12MSD/ 0,3-93E/P12FSD - Network cable



1224258

<https://www.phoenixcontact.com/us/products/1224258>

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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 Socket straight M12 Push Pull, coding: D / IP67, cable length: 0.3 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1224258       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJJ        |
| GTIN                                 | 4063151315191 |
| Weight per piece (including packing) | 50.84 g       |
| Weight per piece (excluding packing) | 22.22 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

## 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   |
| 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), 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                                                                                                                                                       |

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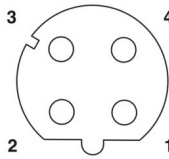


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|                                        |                  |
|----------------------------------------|------------------|
| Flammability rating according to UL 94 | V0               |
| Degree of protection                   | IP65             |
|                                        | IP67             |
| Ambient temperature (operation)        | -25 °C ... 85 °C |
| Standard designation                   | M12 connector    |
| Standards/regulations                  | IEC 61076-2-010  |

## 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), 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               | PA 6.6                                                                                                                                            |
| 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 61076-2-010                                                                                                                                   |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 0.3 m |
|--------------|-------|

Ethernet flexible CAT5, 2-pair [93E]

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|                                               |                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------------------------|
| 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                                                         |
|                                               | in accordance with UN ECE-R 118.03                                                 |
|                                               | UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)                               |
|                                               | 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)                                       |
|                                               | -30 °C ... 70 °C (Cable, flexible installation)                                    |

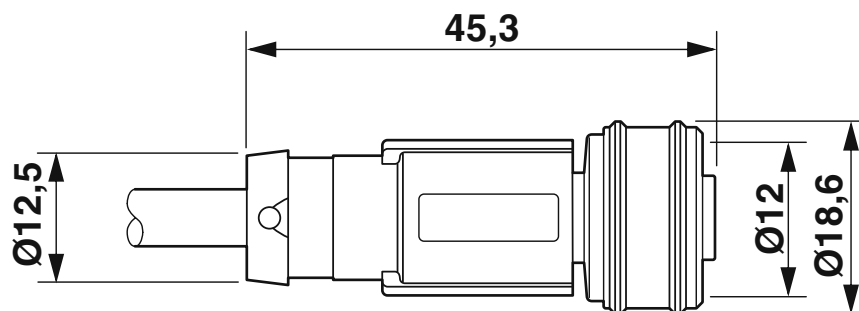
## Drawings

Dimensional drawing



M12 push-pull male connector, straight

Dimensional drawing

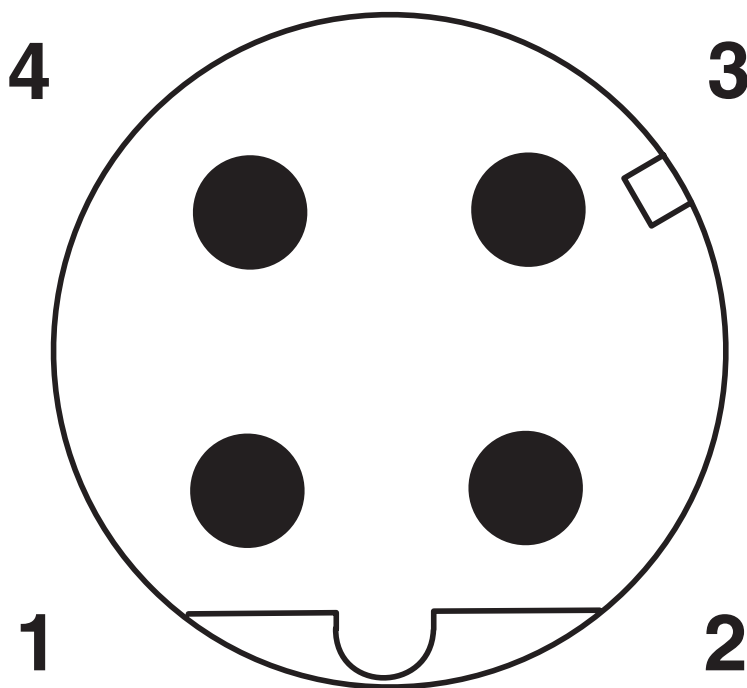


M12 push-pull female connector, straight

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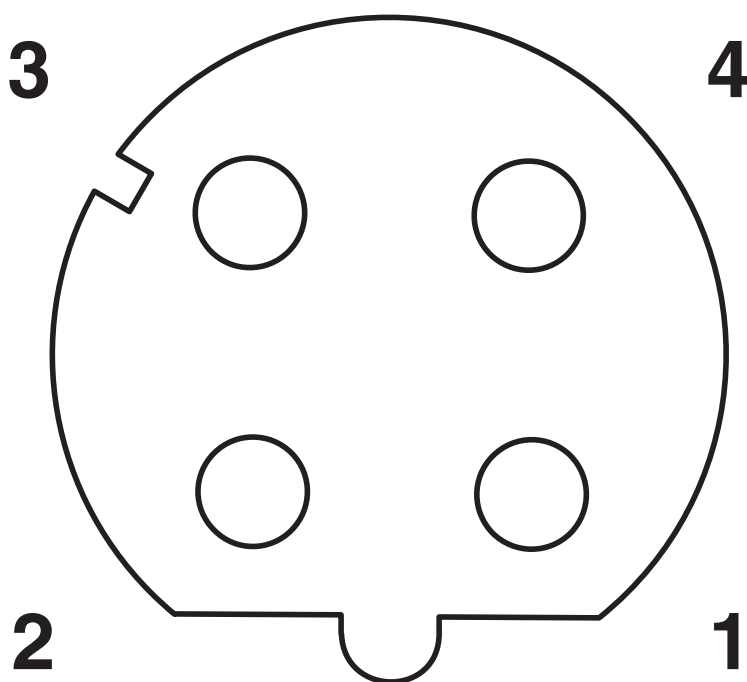
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Schematic diagram



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

Schematic diagram

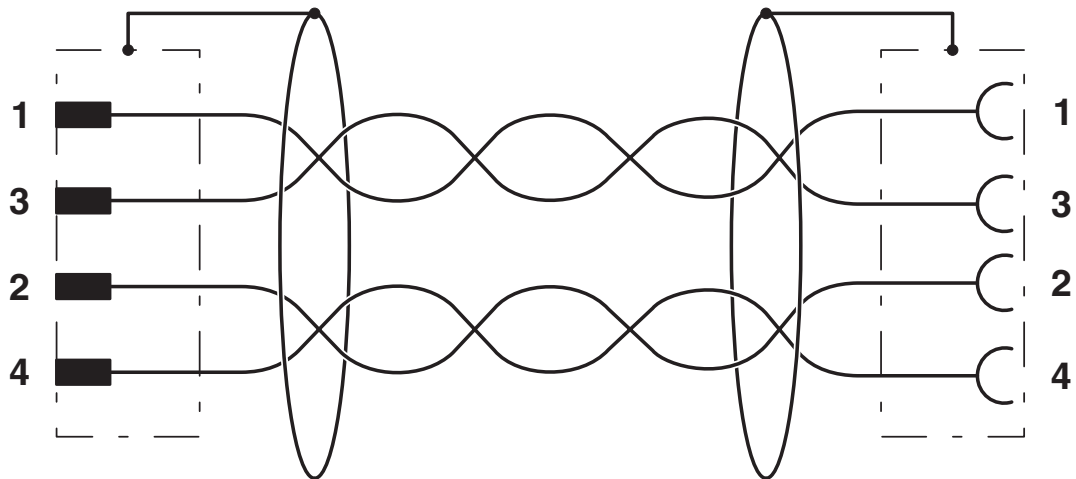


Pin assignment M12 socket, 4-pos., D-coded, female side

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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/1224258>

|                                                                                                                                          |                                |                                |                   |                               |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
| <div><b>cULus Listed</b><br/>Approval ID: E335024</div> |                                |                                |                   |                               |
|                                                                                                                                          | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                                    |                                |                                |                   |                               |
|                                                                                                                                          | 30 V                           | 4 A                            | -                 | -                             |

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## Classifications

### ECLASS

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

### ETIM

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

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% |
|-------------------------------------|----------------------------|