

# NBC- 2,0-93E/M12FSD - Network cable



1407381

<https://www.phoenixcontact.com/us/products/1407381>

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), free cable end, on Socket straight M12, coding: D / IP67, cable length: 2 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1407381       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJI        |
| GTIN                                 | 4046356775090 |
| Weight per piece (including packing) | 108.1 g       |
| Weight per piece (excluding packing) | 108.1 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                |
| Sensor type         | Ethernet                |
| Number of positions | 4                       |
| Shielded            | yes                     |

### Interfaces

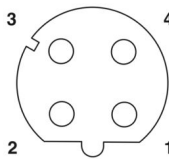
|                      |                                     |
|----------------------|-------------------------------------|
| Signal type/category | Ethernet CAT5 (IEC 11801), 100 Mbps |
|----------------------|-------------------------------------|

### 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 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                                                                                                                                                |

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|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| 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

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

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

## 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                              |

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

## Environmental and real-life conditions

### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|----------------------|------|

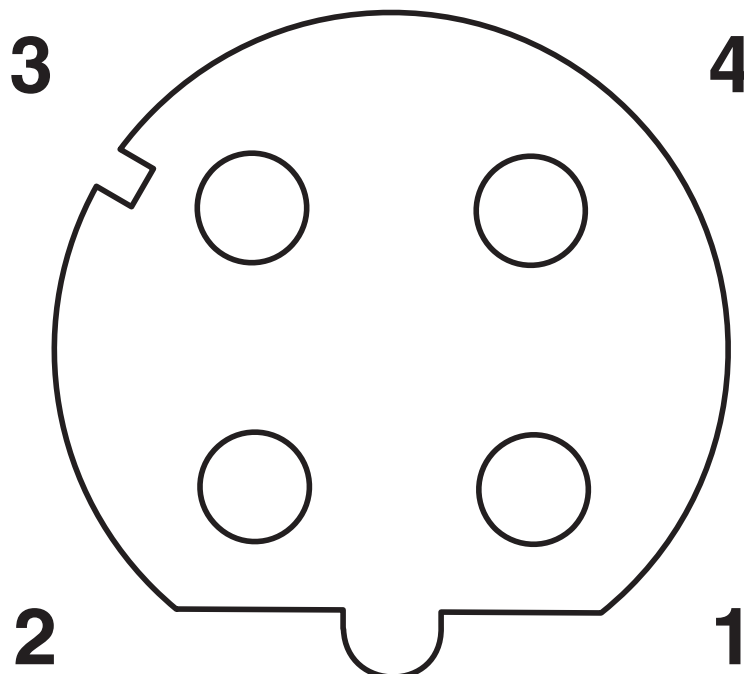
## Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram

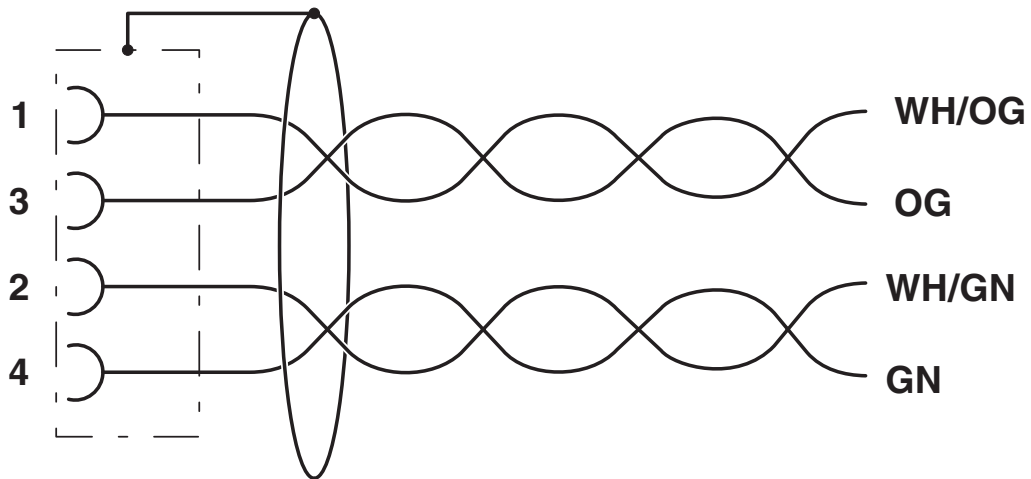


Pin assignment M12 socket, 4-pos., D-coded, female side

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Circuit diagram



Contact assignment of the M12 socket

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407381>

|                                                                                                                                       |                                |                                |                   |                               |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|  <b>cUL Recognized</b><br>Approval ID: FILE E 335024 |                                |                                |                   |                               |
|                                                                                                                                       | 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                            | -                 | -                             |

|                                                                                                                                      |                                |                                |                   |                               |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|  <b>UL Recognized</b><br>Approval ID: FILE E 335024 |                                |                                |                   |                               |
|                                                                                                                                      | 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                            | -                 | -                             |

|                                                                                                                                          |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  <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 |

### 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%               |

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)