

# NBC-M12MSX/ 1,0-94F - Network cable



1407467

<https://www.phoenixcontact.com/pc/products/1407467>

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Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), CC-Link IE CAT6<sub>A</sub> (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Tinned copper braided shield), Advanced Shielding Technology, Plug straight M12, coding: X / IP67, on free cable end, cable length: 1 m

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1407467             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Product key                          | BF1CMJ              |
| Catalog page                         | Page 403 (C-2-2019) |
| GTIN                                 | 4046356775885       |
| Weight per piece (including packing) | 75.1 g              |
| Weight per piece (excluding packing) | 68.4 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  | 8                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Coding               | X                       |

### Interfaces

|                      |                                        |
|----------------------|----------------------------------------|
| Bus system           | Ethernet                               |
| Signal type/category | Ethernet CAT6 <sub>A</sub> , 10 Gbps   |
|                      | CC-Link IE CAT6 <sub>A</sub> , 10 Gbps |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | No |
| Status display present | No |

### Electrical properties

|                                         |                   |
|-----------------------------------------|-------------------|
| Nominal voltage $U_N$                   | 48 V AC           |
|                                         | 60 V DC           |
| Nominal current $I_N$                   | 0.5 A             |
| Transmission medium                     | Copper            |
| Transmission characteristics (category) | CAT6 <sub>A</sub> |

### Connector

#### Connection 1

|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| Type                        | Plug straight M12 / IP67                           |
| Number of positions         | 8                                                  |
| Coding type                 | X (Data)                                           |
| Handle color                | black                                              |
| Material                    | CuSn (Contact)                                     |
|                             | Ni/Au (Contact surface)                            |
|                             | PA (Contact carriers)                              |
|                             | TPU, hardly inflammable, self-extinguishing (Grip) |
|                             | Zinc die-cast, nickel-plated (Screw connection)    |
| Insertion/withdrawal cycles | ≥ 100                                              |
| Insulation resistance       | ≥ 100 MΩ                                           |

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|                                 |                  |
|---------------------------------|------------------|
| Tightening torque               | 0.4 Nm           |
| Degree of protection            | IP67             |
| Ambient temperature (operation) | -25 °C ... 90 °C |

## Connection 2

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

## Cable/line

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

## Ethernet 10 Gbit [94F]

|                                 |                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 42 kg/km                                                                            |
| UL AWM Style                    | 20963 (80°C/30 V)                                                                   |
| Number of positions             | 8                                                                                   |
| Shielded                        | yes                                                                                 |
| Cable type                      | Ethernet 10 Gbit [94F]                                                              |
| Conductor structure             | 4x2xAWG26/7; S/FTP                                                                  |
| Signal runtime                  | 5.13 ns/m                                                                           |
| Conductor structure signal line | 7x 0.16 mm                                                                          |
| AWG signal line                 | 26                                                                                  |
| Conductor cross section         | 4x 2x 0.14 mm <sup>2</sup>                                                          |
| Wire diameter incl. insulation  | 1.04 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/blue-blue, white/orange-orange, white/green-green, white/brown-brown          |
| Thickness, outer sheath         | 0.65 mm                                                                             |
| Twisted pairs                   | 2 cores to the pair                                                                 |
| Type of pair shielding          | Aluminum-lined foil                                                                 |
| Overall twist                   | 4 pairs for core                                                                    |
| Optical shield covering         | 70 %                                                                                |
| Insulation resistance           | ≥ 500 MΩ*km                                                                         |
| Loop resistance                 | ≤ 290.00 Ω/km                                                                       |
| Wave impedance                  | 100 Ω ±5 Ω (at 100 MHz)                                                             |

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|                                                      |                          |
|------------------------------------------------------|--------------------------|
| Cable capacity                                       | 47 nF/km                 |
| Nominal voltage, cable                               | ≤ 100 V                  |
| Test voltage Core/Core                               | 700 V (50 Hz, 1 min.)    |
| Test voltage Core/Shield                             | 700.00 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        | 52 mm                    |
| Tensile strength                                     | ≤ 100 N                  |
| Near end crosstalk attenuation (NEXT)                | 75.3 dB (with 1 MHz)     |
|                                                      | 66.3 dB (at 4 MHz)       |
|                                                      | 61.8 dB (at 8 MHz)       |
|                                                      | 60.3 dB (at 10 MHz)      |
|                                                      | 57.2 dB (at 16 MHz)      |
|                                                      | 55.8 dB (at 20 MHz)      |
|                                                      | 54.3 dB (at 25 MHz)      |
|                                                      | 52.8 dB (at 31.25 MHz)   |
|                                                      | 48.4 dB (at 62.5 MHz)    |
|                                                      | 45.3 dB (at 100 MHz)     |
|                                                      | 40.8 dB (at 200 MHz)     |
|                                                      | 39.3 dB (at 250 MHz)     |
|                                                      | 38.1 dB (at 300 MHz)     |
|                                                      | 38.1 dB (at 400 MHz)     |
|                                                      | 38.1 dB (at 500 MHz)     |
| Power-summed near end crosstalk attenuation (PSNEXT) | 72.3 dB (with 1 MHz)     |
|                                                      | 63.3 dB (at 4 MHz)       |
|                                                      | 58.8 dB (at 8 MHz)       |
|                                                      | 57.3 dB (at 10 MHz)      |
|                                                      | 54.2 dB (at 16 MHz)      |
|                                                      | 52.8 dB (at 20 MHz)      |
|                                                      | 51.3 dB (at 25 MHz)      |
|                                                      | 49.9 dB (at 31.25 MHz)   |
|                                                      | 45.4 dB (at 62.5 MHz)    |
|                                                      | 42.3 dB (at 100 MHz)     |
|                                                      | 37.8 dB (at 200 MHz)     |
|                                                      | 36.3 dB (at 250 MHz)     |
|                                                      | 35.1 dB (at 300 MHz)     |
|                                                      | 33.3 dB (at 400 MHz)     |
|                                                      | 31.8 dB (at 500 MHz)     |
| Return attenuation (RL)                              | 20 dB (with 1 MHz)       |
|                                                      | 23 dB (at 4 MHz)         |
|                                                      | 24.5 dB (at 8 MHz)       |
|                                                      | 25 dB (at 10 MHz)        |
|                                                      | 25 dB (at 16 MHz)        |

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|                                    |                                                 |
|------------------------------------|-------------------------------------------------|
|                                    | 25 dB (at 20 MHz)                               |
|                                    | 24.2 dB (at 25 MHz)                             |
|                                    | 23.3 dB (at 31.25 MHz)                          |
|                                    | 20.7 dB (at 62.5 MHz)                           |
|                                    | 19 dB (at 100 MHz)                              |
|                                    | 16.4 dB (at 200 MHz)                            |
|                                    | 15.6 dB (at 250 MHz)                            |
|                                    | 15.6 dB (at 300 MHz)                            |
|                                    | 15.6 dB (at 400 MHz)                            |
|                                    | 15.6 dB (at 500 MHz)                            |
| Shield attenuation                 | 3.1 dB (with 1 MHz)                             |
|                                    | 5.7 dB (at 4 MHz)                               |
|                                    | 8 dB (at 8 MHz)                                 |
|                                    | 8.9 dB (at 10 MHz)                              |
|                                    | 11.2 dB (at 16 MHz)                             |
|                                    | 12.6 dB (at 20 MHz)                             |
|                                    | 14.1 dB (at 25 MHz)                             |
|                                    | 15.8 dB (at 31.25 MHz)                          |
|                                    | 22.5 dB (at 62.5 MHz)                           |
|                                    | 28.7 dB (at 100 MHz)                            |
|                                    | 41.4 dB (at 200 MHz)                            |
|                                    | 46.6 dB (at 250 MHz)                            |
|                                    | 51.4 dB (at 300 MHz)                            |
|                                    | 60.1 dB (at 400 MHz)                            |
|                                    | 67.9 dB (at 500 MHz)                            |
|                                    | ≥ 80.00 dB (at 30 ... 100 MHz)                  |
| Halogen-free                       | according to IEC 60754-1                        |
| Flame resistance                   | according to IEC 60332-1-2                      |
| Resistance to oil                  | in accordance with DIN 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                                |

## Environmental and real-life conditions

### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |

## Standards and regulations

### M12

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-109 |

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