

# NBC-M12MSX/15,0-94F/M12MSX - Network cable



1421856

<https://www.phoenixcontact.com/us/products/1421856>

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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 (Advanced Shielding Technology), Plug straight M12, coding: X / IP67, on Plug straight M12, coding: X / IP67, cable length: 15 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1421856                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF04                           |
| Product key                          | AF1CMJ                         |
| GTIN                                 | 4055626285184                  |
| Weight per piece (including packing) | 742 g                          |
| Weight per piece (excluding packing) | 656.1 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| 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<br>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 speed                      | 10 Gbps           |
| 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                        | CuZn (Contact)  |
|                                 | Ni/Au (Contact surface)                                 |
|                                 | PA (Contact carrier)                                    |
|                                 | TPU, hardly inflammable, self-extinguishing (Grip body) |
|                                 | Zinc die-cast, nickel-plated (Screw connection)         |
| Insertion/withdrawal cycles     | ≥ 100   |
| Insulation resistance           | ≥ 100 MΩ  |
| Tightening torque               | 0.4 Nm  |
| Degree of protection            | IP67  |
| Ambient temperature (operation) | -25 °C ... 90 °C  |

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## Connection 2

|                                 |   |
|---------------------------------|---|
| Type                            | Plug straight M12 / IP67  |
| Number of positions             | 8   |
| Coding type                     | X (Data)  |
| Handle color                    | black   |
| Material                        | CuZn (Contact)<br>Ni/Au (Contact surface)<br>PP (Contact carrier)<br>TPU, hardly inflammable, self-extinguishing (Grip body)<br>Zinc die-cast, nickel-plated (Screw connection) |
| Insertion/withdrawal cycles     | ≥ 100   |
| Insulation resistance           | ≥ 100 MΩ  |
| Tightening torque               | 0.4 Nm  |
| Degree of protection            | IP67  |
| Ambient temperature (operation) | -25 °C ... 90 °C  |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 15 m |
|--------------|------|

## Ethernet 10 Gbit [94F]

|                                |  |
|--------------------------------|--|
| Dimensional drawing            |  |
| UL AWM Style                   | 21238 (80 °C / 600 V)  |
| Number of positions            | 8  |
| Shielded                       | yes  |
| Cable type                     | Ethernet 10 Gbit [94F]   |
| Conductor structure            | 4x2xAWG26/7; S/FTP   |
| AWG signal line                | 26   |
| Conductor cross-section        | 4x 2x 0.14 mm <sup>2</sup>   |
| Wire diameter incl. insulation | 1 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/blue-blue, white/orange-orange, white/green-green, white/brown-brown           |
| Twisted pairs                  | 2 cores to the pair  |

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|   |  |
|---|--|
| Overall twist                                 | 4 pairs for core                                       |
| Optical shield covering                       | 70 %   |
| Insulation resistance                         | $\geq 500 \text{ M}\Omega \cdot \text{km}$             |
| Loop resistance                               | $\leq 290.00 \text{ }\Omega/\text{km}$                 |
| Wave impedance                                | $100 \text{ }\Omega \pm 5 \text{ }\Omega$ (at 100 MHz) |
| Nominal voltage, cable                        | $\leq 100 \text{ V}$                                   |
| 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                     |
|   | according to CSA C 22.2 No. 210-FT1                    |
| Resistance to oil                             | in accordance with DIN EN 60811-404                    |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)           |
|   | -20 °C ... 80 °C (Cable, flexible installation)        |

## Environmental and real-life conditions

### Ambient conditions

|   |                                  |
|---|----------------------------------|
| Degree of protection  | IP65/IP67                        |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (M12 connector) |

## Standards and regulations

### M12

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

Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



Pin assignment of M12 plug, 8-pos., X-coded, pin side view

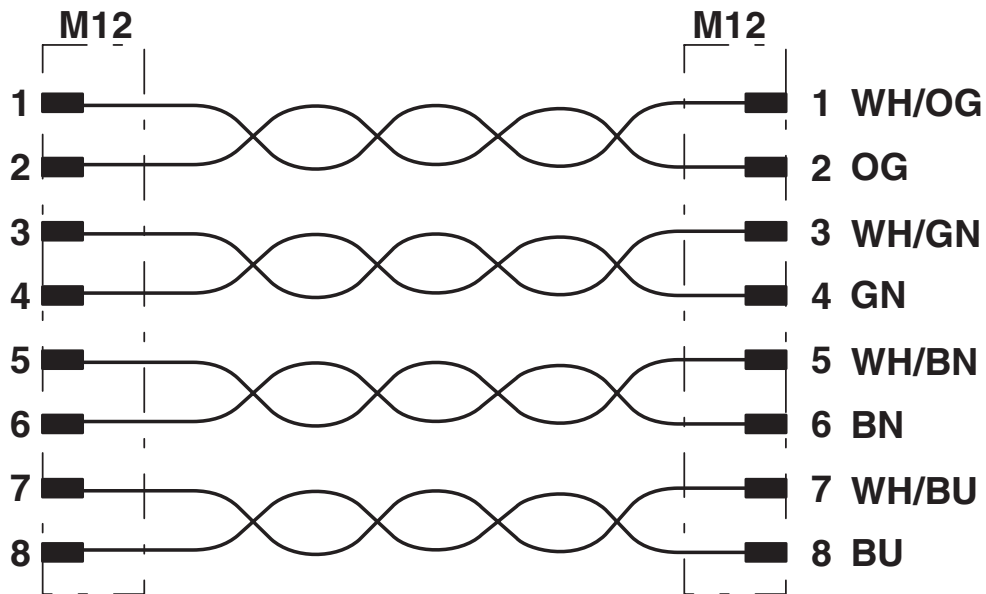
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Circuit diagram



Contact assignment of the M12 plugs

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## Approvals

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|  <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                  | 0.5 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                  | 0.5 A                 | -                 | -                           |

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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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