

# NBC-M12MSX/20,0-94F CMC - Network cable



1440588

<https://www.phoenixcontact.com/us/products/1440588>

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Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021 (Advanced Shielding Technology), Plug straight M12, coding: X / IP65, on free cable end, cable length: 20 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1440588       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CMJ        |
| GTIN                                 | 4046356504508 |
| Weight per piece (including packing) | 989.6 g       |
| Weight per piece (excluding packing) | 918.6 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                       |
| Number of slots     | 1                       |
| Shielded            | yes                     |
| Coding              | X                       |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Interfaces

|                      |                                      |
|----------------------|--------------------------------------|
| Signal type/category | Ethernet CAT6 <sub>A</sub> , 10 Gbps |
|----------------------|--------------------------------------|

### Electrical properties

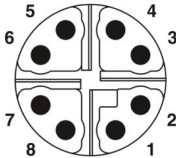
|   |                   |
|---|-------------------|
| Insulation resistance                   | 100 MΩ            |
| Nominal voltage U <sub>N</sub>          | 48 V AC           |
|   | 60 V DC           |
| Nominal current I <sub>N</sub>          | 0.5 A             |
| Transmission medium                     | Copper            |
| Transmission speed                      | 10 Gbps           |
| Transmission characteristics (category) | CAT6 <sub>A</sub> |

### Material specifications

|  |    |
|--|----|
| Flammability rating according to UL 94 | HB |
|--|----|

### Connector

#### Connection 1

|                      |  |
|----------------------|--|
| Dimensional drawing  |  <p>Pin assignment of M12 plug, 8-pos., X-coded, pin side view</p> |
| Type                 | M12 Plug, straight, 8-position, shielded (Advanced Shielding Technology), Keying: X  |
| Number of positions  | 8  |
| Shielded             | yes  |
| Shielding            | Advanced Shielding Technology  |
| Signal type/category | Ethernet CAT6 <sub>A</sub> , 10 Gbps   |

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|  |   |
|--|---|
|  | CC-Link IE CAT6 <sub>A</sub> , 10 Gbps      |
| Insertion/withdrawal cycles            | ≥ 100                                       |
| Insulation resistance                  | ≥ 100 Ω                                     |
| Overvoltage category                   | II  |
| Degree of pollution                    | 3   |
| Tightening torque                      | 0.4 Nm (M12 connector)                      |
| Material Contact                       | CuZn  |
| 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<br>IP67                                |
| Ambient temperature (operation)        | -25 °C ... 85 °C                            |
| Standard designation                   | M12 connector                               |
| Standards/regulations                  | IEC 61076-2-109                             |

## Connection 2

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

## Cable/line

|              |      |
|--------------|------|
| Cable length | 20 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  |

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|   |  |
|---|--|
| 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  |
| 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)  |
| 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   |
|   | 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      |
|                      | IP65/IP67 |

## Drawings

Dimensional drawing



Dimens. drawing: M12 connectors

Schematic diagram

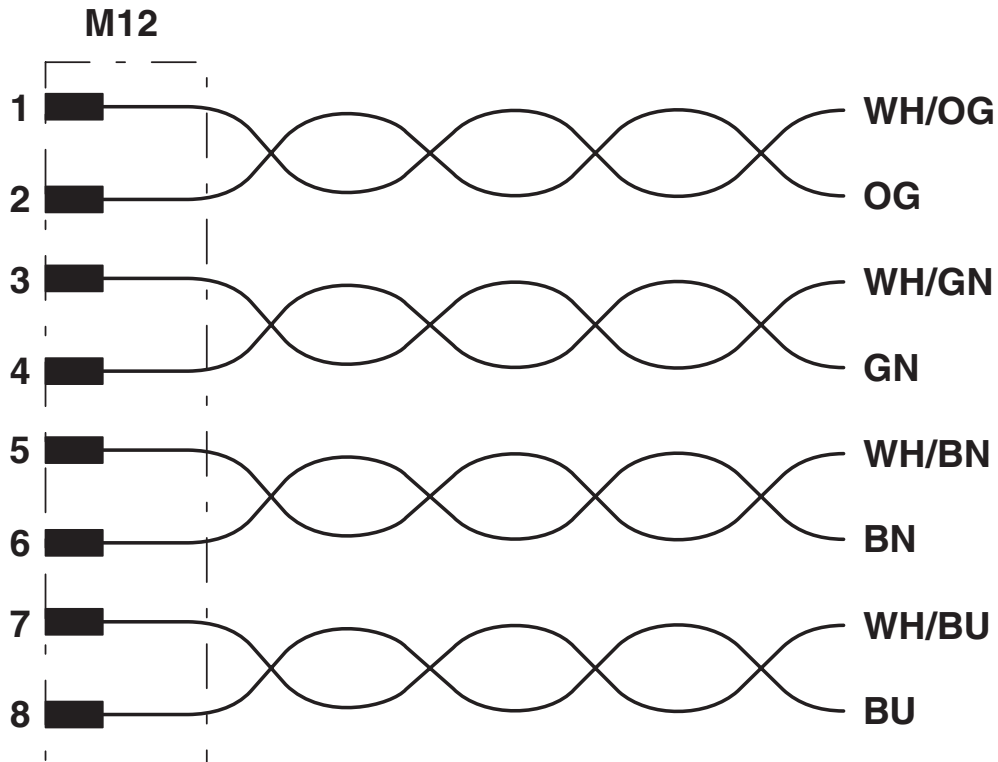


Pin assignment M12 plug, 8-pos., view plug side

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Circuit diagram



Contact assignment of the M12 plugs

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1440588>

|  <b>UL Recognized</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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |                |
|---------|----------------|
| CO2e kg | 16.013 kg CO2e |
|---------|----------------|

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