

NBC-M12MSX/20,0-94F/R4AC CMC - Network cable



1440656

<https://www.phoenixcontact.com/us/products/1440656>

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Network cable, Ethernet CAT6_A (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, Plug straight M12, coding: X / IP65, on Plug straight RJ45 / IP20, cable length: 20 m

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1440656 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | BF04 |
| Product key | AF1CMJ |
| GTIN | 4046356504577 |
| Weight per piece (including packing) | 960 g |
| Weight per piece (excluding packing) | 800 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 | I |
| Degree of pollution | 1 |

Interfaces

| | |
|----------------------|--------------------------------------|
| Signal type/category | Ethernet CAT6 _A , 10 Gbps |
|----------------------|--------------------------------------|

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 _A |

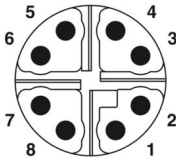
Mechanical properties

Mechanical data

| | |
|-----------------------------|------------|
| Insertion/withdrawal cycles | ≥ 100 |
|-----------------------------|------------|

Connector

Connection 1

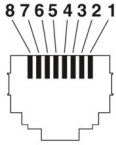
| | |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing |  <p>Pin assignment of M12 plug, 8-pos., X-coded, pin side view</p> |
| Type | M12 Plug, straight,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

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| | |
|----------------------------------------|--------------------------------------------------------------------------------|
| Signal type/category | Ethernet CAT6 _A , 10 Gbps CC-Link IE CAT6 _A , 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 IP67 |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-109 |

Connection 2

| | |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing |  <p>Connector pin assignment plug RJ45</p> |
| Type | RJ45 Plug, straight, 8-position |
| Number of positions | 8 |
| Signal type/category | Ethernet CAT6 _A , 10 Gbps CC-Link IE CAT6 _A , 10 Gbps |
| Insertion/withdrawal cycles | ≥ 750 |
| Insulation resistance | ≥ 100 Ω |
| Overvoltage category | I |
| Degree of pollution | 2 |
| Material Contact | CuSn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | PC |
| Material Housing | PA |
| Color (Housing) | gray |
| Flammability rating according to UL 94 | V2 |

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| | |
|---------------------------------|-----------------------|
| Degree of protection | IP20 (RJ45 connector) |
| Ambient temperature (operation) | -25 °C ... 60 °C |

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 ² |
| 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 |
| 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 |

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| | |
|---------------------------------|-------------------------------------------------|
| 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 (M12 connector) |
| | IP67 (M12 connector) |
| | IP20 (RJ45 connector) |

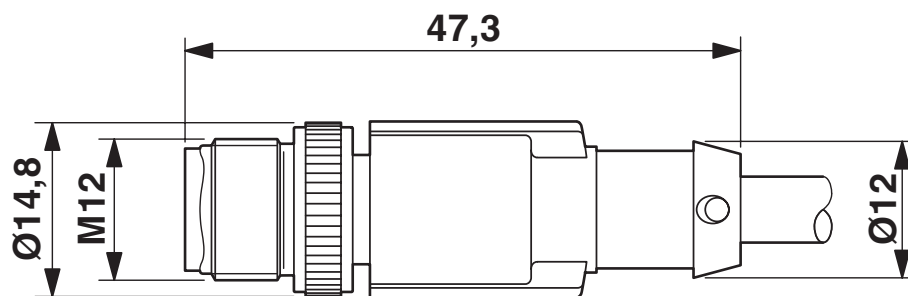
Drawings

Dimensional drawing



RJ45 connector dimensional drawing

Dimensional drawing



M12 connector dimensional drawing

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M12 Cat6_A, 8-pos. plug pin assignment, pin side view

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Schematic diagram



Connector pin assignment plug RJ45

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Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1440656>

|  UL Listed Approval ID: FILE E 335024 | | | | |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 30 V | 0.5 A | - | - |

|  cUL Listed Approval ID: FILE E 335024 | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section 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 | 16.107 kg CO2e |
|---------|----------------|

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