

# NBC-M12MSX-M12MSX-10G/.../... - Network cable



1408644

<https://www.phoenixcontact.com/pc/products/1408644>

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Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), CC-Link IE CAT6<sub>A</sub> (10 Gbps), 8-position, shielded (Advanced Shielding Technology), Plug straight M12, coding: X / IP67, on Plug straight M12, coding: X / IP67, cable length: Free input (0.2 m ... 85.0 m)

## Commercial data

Item number	1408644
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	AF1CMJ
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Notes

General	Further products with fixed cable length can be found in the accessories section
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### Product properties

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

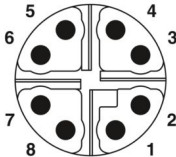
Status display	no
Status display present	no

### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	0.5 A
Transmission medium	Copper
Transmission speed	10 Gbps
Transmission characteristics (category)	CAT6 <sub>A</sub>

### 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

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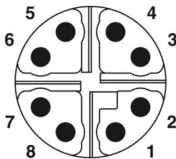


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Shielding	Advanced Shielding Technology
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
	CC-Link IE CAT6 <sub>A</sub> , 10 Gbps
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 Ω
Overvoltage category	II
Degree of pollution	3
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
	IP67
Ambient temperature (operation)	-25 °C ... 85 °C
Standard designation	M12 connector
Standards/regulations	IEC 61076-2-109

## Connection 2

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
	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
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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

## Cable/line

Cable length	Free input (0.2 m ... 85.0 m)
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### Ethernet 10 Gbit [94F]

UL AWM Style	21238 (80 °C / 600 V)
Number of positions	8
Shielded	yes
Cable type	Ethernet 10 Gbit [94F] 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
Overall twist	4 pairs for core
Shielding	Tinned copper braided shield
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 according to IEC 60332-1-2

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Flame resistance	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

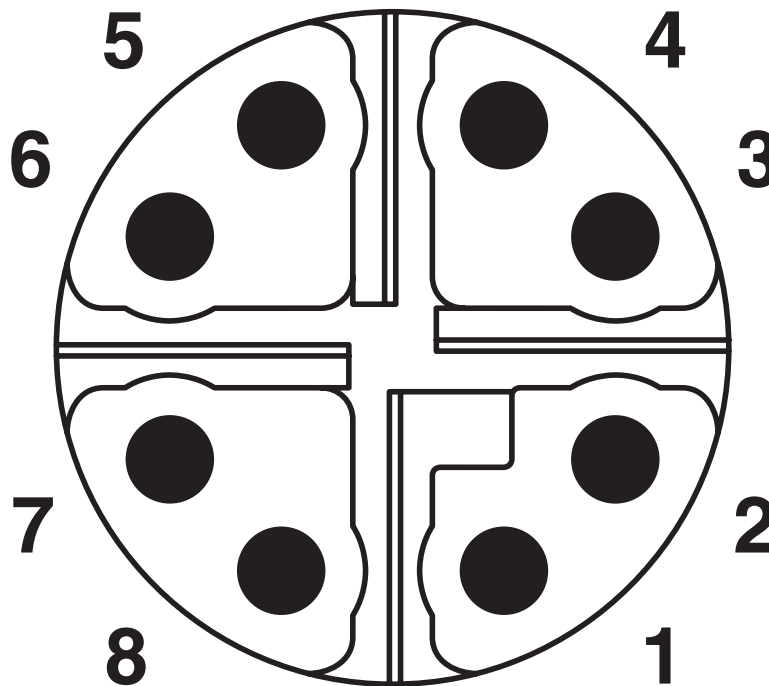
Drawings

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

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1408644>

 <b>UL Listed</b> 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	-	-

 <b>cUL Listed</b> 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	-	-

 <b>EAC-RoHS</b> 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
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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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