

## Network cable - NBC-MSX/10,0-94F/R4AC SCO - 1407474

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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, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: X, on Plug straight RJ45 / IP20, cable length: 10 m



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 776738
GTIN	4046356776738

### Technical data

#### Dimensions

Length of cable	10 m
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#### Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP20 (RJ45 connector)
Ambient temperature (operation)	-25 °C ... 90 °C (M12 connector)
	-20 °C ... 70 °C (RJ45 connector)

#### General data

Note	Further products with variable cable type and variable cable length can be found in the accessories section
Rated current at 40°C	0.5 A
Rated voltage	48 V AC
	60 V DC
Number of positions	8
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
	CC-Link IE CAT6 <sub>A</sub> , 10 Gbps

# Network cable - NBC-MSX/10,0-94F/R4AC SCO - 1407474

## Technical data

### General data

Standards/regulations	M12 connector IEC 61076-2-109
Contact material	CuSn
Contact carrier material	PP
Contact surface material	Ni/Au
Housing material	Plastic

### Characteristics head 1

Head type	Plug straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	8
Coding	X (Data)
Color	black
Material (component)	CuZn (Contact)
	Ni/Au (Contact surface)
	PP (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Insulation resistance	$\geq 100 \text{ M}\Omega$
Insertion/withdrawal cycles	$\geq 100$
Torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C

### Characteristics head 2

Head type	Plug straight RJ45 / IP20
No. of positions (pin connector pattern)	8 (8)
Color	gray
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PC (Contact carriers)
	PA (Housing)
Insertion/withdrawal cycles	$\geq 750$
Ambient temperature (operation)	-25 °C ... 60 °C

### Standards and Regulations

Standard designation	M12 connector
Standards/regulations	IEC 61076-2-109

### Cable

Cable type	Ethernet 10 Gbit
Cable type (abbreviation)	94F
UL AWM style	20963 (80 °C/30 V)
Signal type/category	Ethernet CAT6A, 10 Gbps
Cable structure	4x2xAWG26/7; S/FTP
Conductor cross section	4x 2 x 0.14 mm <sup>2</sup>

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## Technical data

### Cable

AWG signal line	26
Conductor structure signal line	7x 0.16 mm
Core diameter including insulation	1.04 mm
Wire colors	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined foil
Overall twist	4 pairs for core
Shielding	Tinned copper braided shield
Optical shield covering	70 %
External sheath, color	water blue RAL 5021
Outer sheath thickness	0.65 mm
External cable diameter D	6.4 mm $\pm 0.2$ mm
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength GRP	$\leq 100$ N
Cable weight	42 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 500$ M $\Omega$ *km
Loop resistance	$\leq 290.00$ $\Omega$ /km
Wave impedance	100 $\Omega$ $\pm 5$ $\Omega$ (at 100 MHz)
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)
	36.3 dB (at 400 MHz)
	34.8 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)

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## Technical data

### Cable

	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)
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)
Return loss (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)
	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)

# Network cable - NBC-MSX/10,0-94F/R4AC SCO - 1407474

## Technical data

### Cable

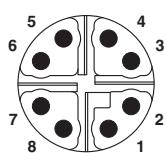
	15.6 dB (at 400 MHz)
	15.6 dB (at 500 MHz)
Signal runtime	5.13 ns/m
Shield attenuation	≥ 80 dB (at 30 ... 100 MHz)
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	700 V (50 Hz, 1 min.)
Test voltage Core/Shield	700 V (50 Hz, 1 min.)
Flame resistance	according to IEC 60332-1-2
Halogen-free	According to IEC 60754-1
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
Ambient temperature (storage/transport)	-20 °C ... 80 °C

### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

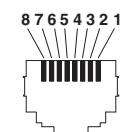
## Drawings

Schematic diagram



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

Schematic diagram



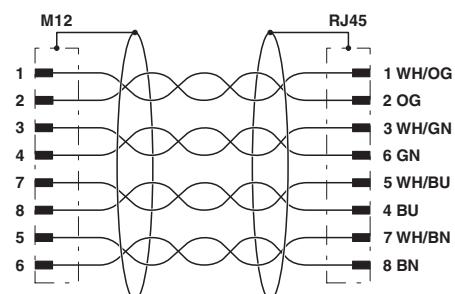
Connector pin assignment plug RJ45

Cable cross section



Ethernet 10 Gbit [94F]

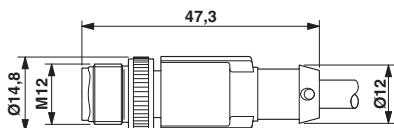
Circuit diagram



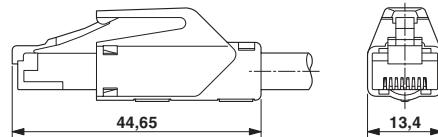
Contact assignment of the M12 and RJ45 plug

## Network cable - NBC-MSX/10,0-94F/R4AC SCO - 1407474

Dimensional drawing



Dimensional drawing



RJ45 connector, IP20

Plug, M12 x 1, straight, shielded

### Approvals

#### Approvals

Approvals

UL Listed

Ex Approvals

#### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 335024
Nominal current IN		0.5 A	
Nominal voltage UN		30 V	

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