

## Network cable - NBC-MSX/ 1,0-94F/R4QC SCO - 1407479

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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 Push Pull / IP67, cable length: 1 m



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 777582
GTIN	4046356777582
Weight per Piece (excluding packing)	99.000 g
Custom tariff number	85444210
Country of origin	Poland

### Technical data

#### Dimensions

Length of cable	1 m
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#### Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP67 (RJ45 connector)
Ambient temperature (operation)	-25 °C ... 90 °C (M12 connector)
	-40 °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

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## Technical data

### General data

Number of positions	8
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
	CC-Link IE CAT6 <sub>A</sub> , 10 Gbps
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	≥ 100 MΩ
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C

### Characteristics head 2

Head type	Plug straight RJ45 Push Pull / IP67
No. of positions (pin connector pattern)	8 (8)
Color	black
	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PC (Contact carriers)
	PA GF (Housing)
Insertion/withdrawal cycles	≥ 750
Ambient temperature (operation)	-40 °C ... 70 °C

### Standards and Regulations

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

### Cable

Cable type	Ethernet 10 Gbit
Cable type (abbreviation)	94F

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## Technical data

### Cable

UL AWM style	20963 (80°C/30 V)
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
Cable structure	4x2xAWG26/7; S/FTP
Conductor cross section	4x 2x 0.14 mm <sup>2</sup>
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 ±0.2 mm
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength GRP	≤ 100 N
Cable weight	42 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 290.00 Ω/km
Cable capacity	47 nF/km
Wave impedance	100 Ω ±5 Ω (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)

## Network cable - NBC-MSX/ 1,0-94F/R4QC SCO - 1407479

### Technical data

#### Cable

	36.3 dB (at 400 MHz)
	34.8 dB (at 500 MHz)
Power-summated near end crosstalk attenuation (PSNEXT)	72.3 dB (with 1 MHz)
	63.3 dB (at 4 MHz)
	58.8 dB (at 8 MHz)
	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)

# Network cable - NBC-MSX/ 1,0-94F/R4QC SCO - 1407479

## Technical data

### Cable

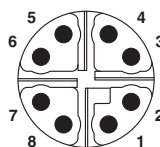
	20.7 dB (at 62.5 MHz)
	19 dB (at 100 MHz)
	16.4 dB (at 200 MHz)
	15.6 dB (at 250 MHz)
	15.6 dB (at 300 MHz)
	15.6 dB (at 400 MHz)
	15.6 dB (at 500 MHz)
Signal runtime	5.13 ns/m
Shield attenuation	≥ 80 dB (at 30 ... 100 MHz)
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	700 V (50 Hz, 1 min.)
Test 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

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

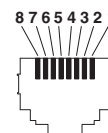
## Drawings

Schematic diagram



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

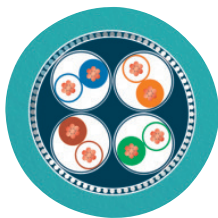
Schematic diagram



Connector pin assignment plug RJ45

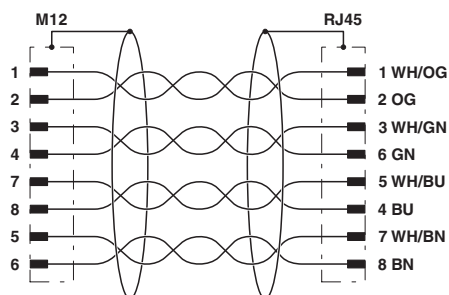
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Cable cross section



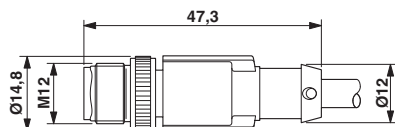
Ethernet 10 Gbit [94F]

Circuit diagram



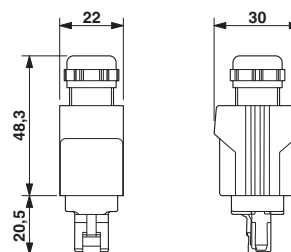
Contact assignment of the M12 and RJ45 plug

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



RJ45 Push-Pull connector, IP67

## Classifications

### eCl@ss

eCl@ss 4.0	27060307
eCl@ss 4.1	27060307
eCl@ss 5.0	27060307
eCl@ss 5.1	19030300
eCl@ss 6.0	27061800
eCl@ss 7.0	27061801
eCl@ss 8.0	27061801
eCl@ss 9.0	27060308

### ETIM

ETIM 3.0	EC000830
ETIM 4.0	EC001855
ETIM 5.0	EC002599
ETIM 6.0	EC000830

### UNSPSC

UNSPSC 6.01	26121616
UNSPSC 7.0901	26121616
UNSPSC 11	26121604

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### Classifications

#### UNSPSC

UNSPSC 12.01	31261501
UNSPSC 13.2	26121604

### Accessories

#### Accessories

#### Data cable preassembled

#### Network cable - NBC-MSX-R4RC SCO-10G/.../... - 1408646



Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), CC-Link IE CAT6<sub>A</sub> (10 Gbps), 8-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: X, on Plug straight RJ45 Push Pull / IP67, cable length: Free input (0.2 ... 40.0 m)

#### Network cable - NBC-MSX-R4QC SCO-10G/.../... - 1408645



Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), CC-Link IE CAT6<sub>A</sub> (10 Gbps), 8-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: X, on Plug straight RJ45 Push Pull / IP67, cable length: Free input (0.2 ... 40.0 m)

### Protective cap

#### Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



### Safety locking

#### Locking clip - SAC-M12-EXCLIP-M - 1558988

Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



### Screwdriver tools

## Network cable - NBC-MSX/ 1,0-94F/R4QC SCO - 1407479

### Accessories

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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Tool - SAC BIT M12-D15 - 1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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Torque screwdriver - TSD-M 1,2NM - 1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm