NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

1407485

https://www.phoenixcontact.com/us/products/1407485

PHŒNIX CONTACT

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Network cable, Ethernet CAT6$_A$ (10 Gbps), CC-Link IE CAT6$_A$ (10 Gbps), 8-position halogen-free, shielded (Advanced Shielding Technology), Plug straight M12, coding: X / IP67, on Plug straight M12, coding: X / IP67, cable length: 5 m

Commercial Data

Item number	1407485
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF04
Product Key	BF1CMJ
Catalog Page	Page 403 (C-2-2019)
GTIN	4046356777643
Weight per Piece (including packing)	270.2 g
Weight per Piece (excluding packing)	221.7 g
Customs tariff number	85444290
Country of origin	PL

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Technical Data

Notes

General	Further products with variable cable type and variable cable length can be found in the accessories section

Product properties

Product type	Data cable preassembled
Sensor type	Ethernet
Number of positions	8
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	X

Interfaces

Bus system	Ethernet
Signal type/category	Ethernet $CAT6_A$, 10 Gbps
	CC-Link IE $CAT6_A$, 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 characteristics (category)	$CAT6_A$

Material specifications

Color Handle area	black

Connector

Connection 1

Type	Plug straight M12 / IP67
Number of positions	8
Coding type	X (Data)
Handle color	black
Material	CuZn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)

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	Zinc die-cast, nickel-plated (Screw connection)
Insertion/withdrawal cycles	≥ 100
Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C
Number of positions	8
Insertion/withdrawal cycles	100

Connection 2

Type	Plug straight M12 / IP67
Number of positions	8
Coding type	X (Data)
Handle color	black
Material	CuZn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Insertion/withdrawal cycles	≥ 100
Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C
Number of positions	8
Degree of protection	IP67

Cable/line

Cable length	5 m

Ethernet 10 Gbit [94F]

Dimensional drawing	

Cable weight	42 kg/km
UL AWM Style	20963 (80°C/30 V)
Number of positions	8
Shielded	yes
Cable type	Ethernet 10 Gbit [94F]

Conductor structure	4x2xAWG26/7; S/FTP
Signal runtime	5.13 ns/m
Conductor structure signal line	7x 0.16 mm
AWG signal line	26
Conductor cross section	4x 2x 0.14 mm²
Wire diameter incl. insulation	1.04 mm
External cable diameter	6.4 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
Thickness, outer sheath	0.65 mm
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined foil
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)
Cable capacity	47 nF/km
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.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength	≤ 100 N
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)
	72.3 dB (with 1 MHz)

Power-summated near end crosstalk attenuation (PSNEXT)	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)
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)
	15.6 dB (at 400 MHz)
	15.6 dB (at 500 MHz)
Shield 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)

	≥ 80 dB (at 30 ... 100 MHz)
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2
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

Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

M12

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

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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Drawings

Circuit diagram

M12   M12

1	1 WH/OG
2	2 OG
3	3 WH/GN
4	4 GN
5	5 WH/BN
6	6 BN
7	7 WH/BU
8	8 BU
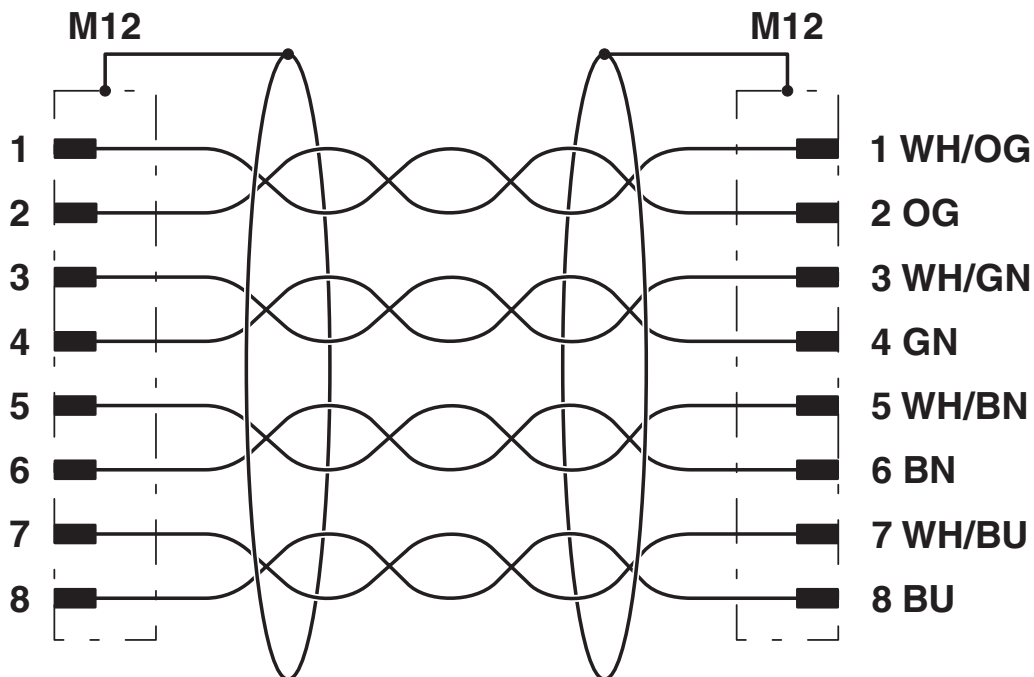
Schematic diagram

5   4
6   3

7   2
8   1
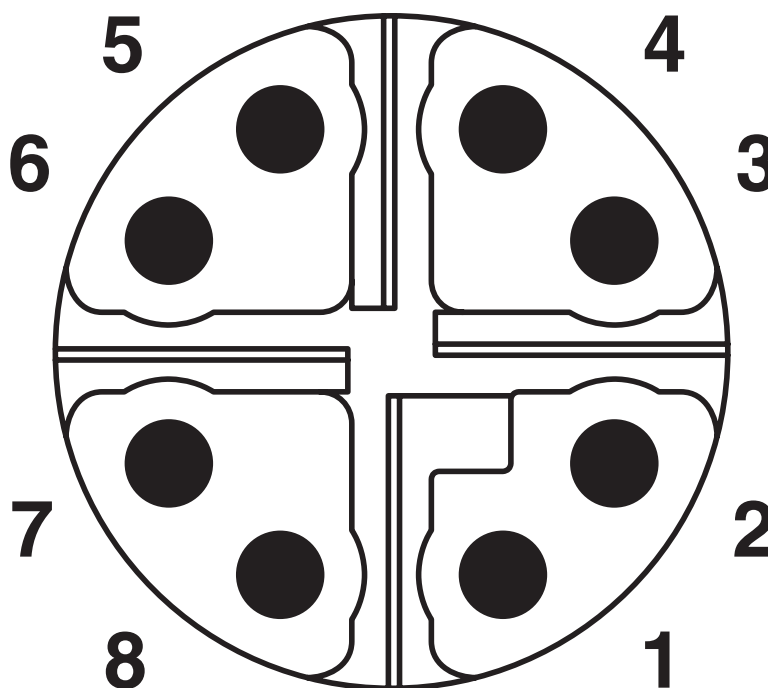
Pin assignment of M12 plug, 8-pos., X-coded, pin side view

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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Dimensional drawing

47,3

Ø14,8   M12   Ø12
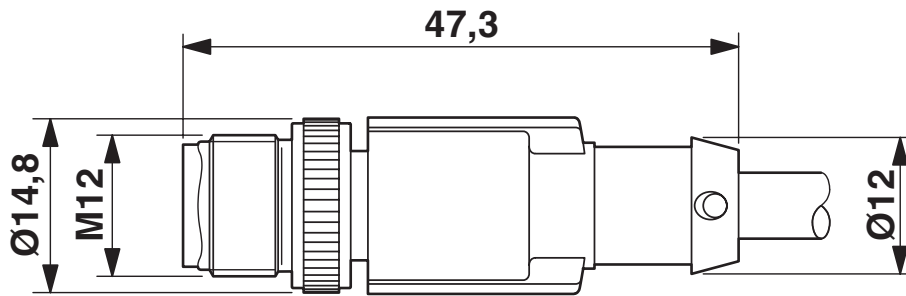
M12 SPEEDCON plug, straight, shielded

Approvals

💡 To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1407485

UL Listed
Approval ID: FILE E 335024

	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	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
	30 V	0.5 A	-	-

EAC-RoHS
Approval ID: RU D-DE.HB35.B.00387

cULus Listed

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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https://www.phoenixcontact.com/us/products/1407485

Classifications

ECLASS

ECLASS-11.0	27060307
ECLASS-12.0	27060307
ECLASS-13.0	27060307

ETIM

ETIM 8.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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https://www.phoenixcontact.com/us/products/1407485

Accessories

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

1408644

https://www.phoenixcontact.com/us/products/1408644

Network cable, Ethernet CAT6$_A$ (10 Gbps), CC-Link IE CAT6$_A$ (10 Gbps), 8-position, Variable cable type, shielded (Advanced Shielding Technology), Plug straight M12, coding: X / IP67, on Plug straight M12, coding: X / IP67, cable length: Free input (0.2 ... 40.0 m)

TSD 04 SAC - Torque screwdriver

1208429

https://www.phoenixcontact.com/us/products/1208429

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

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

1407485

https://www.phoenixcontact.com/us/products/1407485

TSD-M 1,2NM - Torque screwdriver

1212224

https://www.phoenixcontact.com/us/products/1212224

Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.
3 - 1.2 Nm

TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

https://www.phoenixcontact.com/us/products/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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SAC BIT M12-D15 - Tool

1208432

https://www.phoenixcontact.com/us/products/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

PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

https://www.phoenixcontact.com/us/products/1430873

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

SAC-M12-EXCLIP-M - Locking clip

1558988

https://www.phoenixcontact.com/us/products/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

CUTFOX 12 - Cable-cutting tool

1212128

https://www.phoenixcontact.com/us/products/1212128

Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm^2)

CUTFOX-S VDE - Diagonal cutter

1212207

https://www.phoenixcontact.com/us/products/1212207

Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

VS-CABLE-STRIP-VARIO - Stripping tool

1657407

https://www.phoenixcontact.com/us/products/1657407

Stripping tool, for the multi-level stripping of shielded cables

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

MICROFOX-SP-1 - Diagonal cutter

1212487

https://www.phoenixcontact.com/us/products/1212487

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

WIREFOX 4 - Stripping tool

1212156

https://www.phoenixcontact.com/us/products/1212156

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

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https://www.phoenixcontact.com/us/products/1407485

WIREFOX-E 4 - Stripping tool

1212704

https://www.phoenixcontact.com/us/products/1212704

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

WIREFOX 10 - Stripping tool

1212150

https://www.phoenixcontact.com/us/products/1212150

Stripping tool, for cables and conductors from 0.02 - 10 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

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WP-CTA POM 13,0 BK - Protective hose adapter

1422884

https://www.phoenixcontact.com/us/products/1422884

Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

WP-PA HF 13,0 BK - Protective hose

3240681

https://www.phoenixcontact.com/us/products/3240681

Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

1407485

https://www.phoenixcontact.com/us/products/1407485

WP-PA HF-HB 13,0 BK - Protective hose

3240839

https://www.phoenixcontact.com/us/products/3240839

Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

SACC-M12MSX-8QO SH ETH - Data connector

1411043

https://www.phoenixcontact.com/us/products/1411043

Data connector, Ethernet $CAT6_A$ (10 Gbps), 8-position, halogen-free, shielded, Plug straight M12, X, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

1407485

https://www.phoenixcontact.com/us/products/1407485

SACC-M12FSX-8QO SH ETH - Data connector

1414586

https://www.phoenixcontact.com/us/products/1414586

Data connector, Ethernet CAT6$_A$ (10 Gbps), 8-position, halogen-free, shielded, Socket straight M12, X, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

SACC-CC-8QO SH ETH - Conductor connectors

1414412

https://www.phoenixcontact.com/us/products/1414412

Cable connector, Ethernet CAT6$_A$ (10 Gbps), 8-pos., halogen-free, shielded, insulation displacement connection, housing material: zinc die-cast, nickel-plated, outer cable diameter of 5 mm ... 9.7 mm

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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VS-08-M12MS-10G-P SCO - Data connector

1417430

https://www.phoenixcontact.com/us/products/1417430

Data connector, Ethernet CAT6$_A$ (10 Gbps), 8-position, shielded, Plug straight M12 SPEEDCON, X, Piercecon® fast connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

VS-08-M12MR-10G-P SCO - Data connector

1417443

https://www.phoenixcontact.com/us/products/1417443

Data connector, Ethernet CAT6$_A$ (10 Gbps), 8-position, shielded, Plug angled M12 SPEEDCON, X, Piercecon® fast connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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SACC-M12MSX-8CT-CL SH - Data connector

1422844

https://www.phoenixcontact.com/us/products/1422844

Data connector, Ethernet CAT6$_A$ (10 Gbps), PROFINET CAT6$_A$ (10 Gbps), 8-position, shielded, Plug straight M12, X, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 6.5 mm ... 10 mm, without crimp contacts

SACC-M12MRX-8CT-CL SH - Data connector

1422845

https://www.phoenixcontact.com/us/products/1422845

Data connector, Ethernet CAT6$_A$ (10 Gbps), PROFINET CAT6$_A$ (10 Gbps), 8-position, shielded, Plug angled M12, X, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 6.5 mm ... 10 mm, without crimp contacts

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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VS-08-RJ45-10G/Q - RJ45 connector

1419001

https://www.phoenixcontact.com/us/products/1419001

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 10 Gbps, $CAT6_A$, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: straight, color: black, Ethernet

CUC-IND-C1ZNI-S/R4IE8 - RJ45 connector

1421607

https://www.phoenixcontact.com/us/products/1421607

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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CUC-IND-C1ZNI-T/R4IE8 - RJ45 connector

1421877

https://www.phoenixcontact.com/us/products/1421877

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

CUC-IND-C1ZNI-B/R4IE8 - RJ45 connector

1421876

https://www.phoenixcontact.com/us/products/1421876

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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CUC-V06-C1PGY-S/R4CEA:1 - RJ45 connector

1414406

https://www.phoenixcontact.com/us/products/1414406

RJ45 connector, design: RJ45, degree of protection: IP67, number of positions: 2, 10 Gbps, $CAT6_A$, material: Plastic, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: gray, Ethernet/PROFINET

CUC-V06-C1PBK-S/R4CEA:1 - RJ45 connector

1414410

https://www.phoenixcontact.com/us/products/1414410

RJ45 connector, design: RJ45, degree of protection: IP67, number of positions: 8, 10 Gbps, $CAT6_A$, material: Plastic, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: black, Ethernet/PROFINET

NBC-M12MSX/ 5,0-94F/M12MSX - Network cable

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VS-PPC-C1-RJ45-POBK-8I10G - RJ45 connector

1422205

https://www.phoenixcontact.com/us/products/1422205

RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 10 Gbps, CAT6$_A$, material: Plastic, connection method: Crimp connection, connection cross section: AWG 27- 24, cable outlet: straight, color: black, Ethernet

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