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Network cable - NBC-M12MSX/ 2,0-94F

1407468

https://www.phoenixcontact.com/gb/products/1407468

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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 / IP67, coding: X, on free cable end, coding: X, cable length: 2 m

Commercial Data

Item number	1407468
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1CMJ
Product Key	BF1CMJ
Catalog Page	Page 403 (C-2-2019)
GTIN	4046356775892
Weight per Piece (including packing)	120 g
Weight per Piece (excluding packing)	89.68 g
Customs tariff number	85444210
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
Number of positions	8
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	X - data

Interfaces

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

LED 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

Material specifications

Color Handle area	black
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA
Cable gland material	Zinc die-cast, nickel-plated

Connector

Connection 1

Type	Plug straight M12 / IP67
Number of positions	8
Coding type	X (Data)

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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
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C

Connection 2

Type	free cable end
Coding type	X (Data)
Tightening torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C

Cable / line

Cable length	2 m
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]
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

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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)
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)
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)

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	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
Signal type/category	Ethernet $CAT6_A$, 10 Gbps
	CC-Link IE $CAT6_A$, 10 Gbps

Ambient conditions

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

Standards and regulations

M12

Standards/specifications	IEC 61076-2-109

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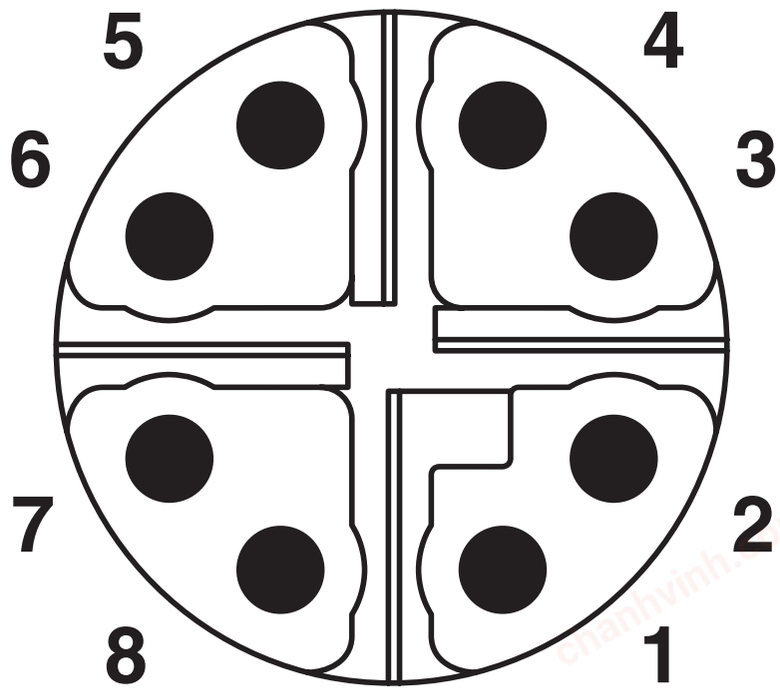
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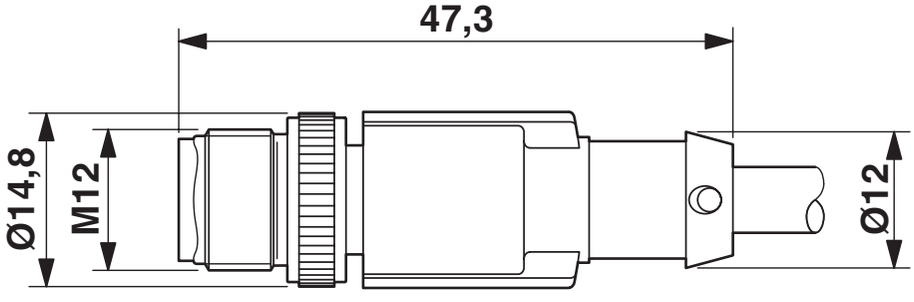
Drawings

Schematic diagram



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

Dimensional drawing



Plug, M12 x 1, straight, shielded

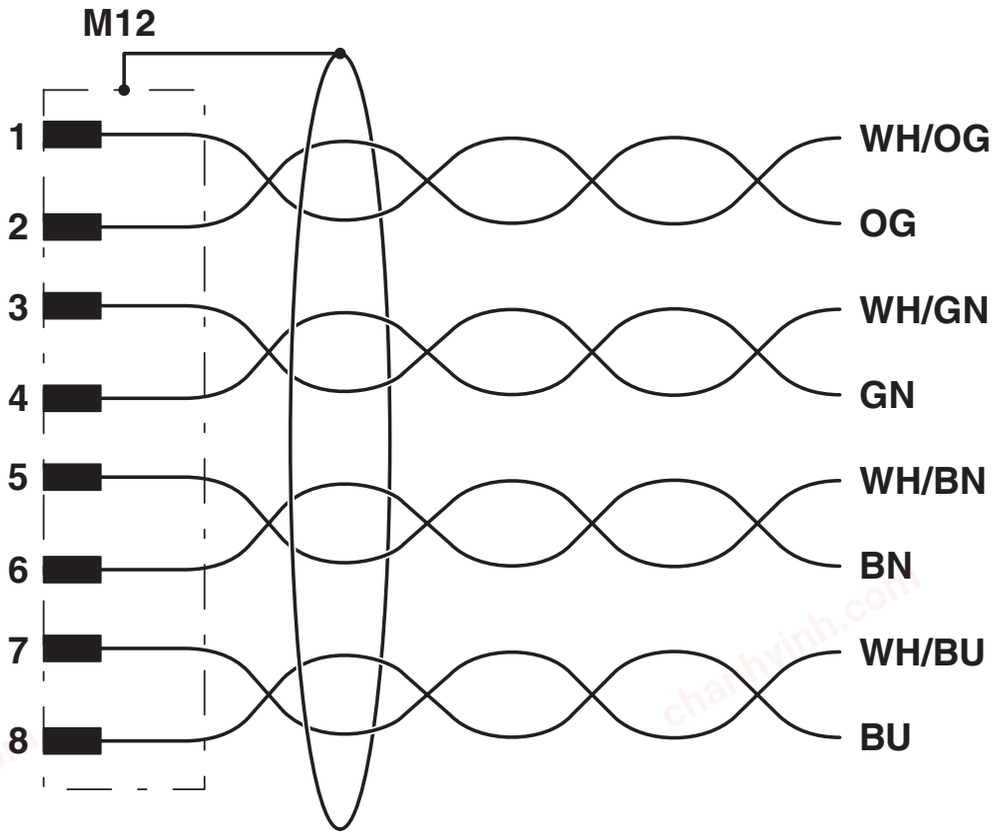
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Circuit diagram



Contact assignment of the M12 plug

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Approvals

cUL Recognized
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	-	-

UL Recognized
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
Approval ID: RU D-DE.HB35.B.00387

cULus Recognized

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Classifications

ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

ETIM

ETIM 8.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

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Environmental Product Compliance

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

Network cable - NBC-M12MSX/ 2,0-94F

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https://www.phoenixcontact.com/gb/products/1407468

Accessories

Network cable

Network cable - NBC-M12MSX-10G/.../... - 1408648

https://www.phoenixcontact.com/gb/products/1408648



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 / IP67, coding: X, on free cable end, cable length: Free input (0.2 ... 40.0 m)

Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

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



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

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Network cable - NBC-M12MSX/ 2,0-94F

1407468

https://www.phoenixcontact.com/gb/products/1407468

Torque screwdriver

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

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



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

Adapter insert

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

https://www.phoenixcontact.com/gb/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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Network cable - NBC-M12MSX/ 2,0-94F

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https://www.phoenixcontact.com/gb/products/1407468

Tool

Tool - SAC BIT M12-D15 - 1208432

https://www.phoenixcontact.com/gb/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

Sealing cap

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

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

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



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Network cable - NBC-M12MSX/ 2,0-94F

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Locking clip

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

https://www.phoenixcontact.com/gb/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

Cable-cutting tool

Cable-cutting tool - CUTFOX 12 - 1212128

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



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

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Network cable - NBC-M12MSX/ 2,0-94F

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https://www.phoenixcontact.com/gb/products/1407468

Diagonal cutter

Diagonal cutter - CUTFOX-S VDE - 1212207

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



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

Stripping tool

Stripping tool - VS-CABLE-STRIP-VARIO - 1657407

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

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



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Diagonal cutter

Diagonal cutter - MICROFOX-SP-1 - 1212487

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



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

Stripping tool

Stripping tool - WIREFOX 4 - 1212156

https://www.phoenixcontact.com/gb/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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Stripping tool

Stripping tool - WIREFOX-E 4 - 1212704

https://www.phoenixcontact.com/gb/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

Stripping tool

Stripping tool - WIREFOX 10 - 1212150

https://www.phoenixcontact.com/gb/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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Protective hose adapter

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884

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



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

Protective hose

Protective hose - WP-PA HF 13,0 BK - 3240681

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



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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Network cable - NBC-M12MSX/ 2,0-94F

1407468

https://www.phoenixcontact.com/gb/products/1407468

Protective hose

Protective hose - WP-PA HF-HB 13,0 BK - 3240839

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



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

Data connector

Data connector - SACC-M12MSX-8QO SH ETH - 1411043

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



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

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Network cable - NBC-M12MSX/ 2,0-94F

1407468

https://www.phoenixcontact.com/gb/products/1407468

Data connector

Data connector - SACC-M12FSX-8QO SH ETH - 1414586

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



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

Conductor connectors

Conductor connectors - SACC-CC-8QO SH ETH - 1414412

https://www.phoenixcontact.com/gb/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

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Network cable - NBC-M12MSX/ 2,0-94F

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Data connector

Data connector - VS-08-M12MS-10G-P SCO - 1417430

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



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

Data connector

Data connector - VS-08-M12MR-10G-P SCO - 1417443

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



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

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Network cable - NBC-M12MSX/ 2,0-94F

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Data connector

Data connector - SACC-M12MSX-8CT-CL SH - 1422844

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



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

Data connector

Data connector - SACC-M12MRX-8CT-CL SH - 1422845

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



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

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RJ45 connector

RJ45 connector - VS-08-RJ45-10G/Q - 1419001

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



RJ45 connector, IP20, CAT6$_A$, 8-pos., with QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors, color: black

RJ45 connector

RJ45 connector - CUC-IND-C1ZNI-S/R4IE8 - 1421607

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



RJ45 connector, type: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

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Network cable - NBC-M12MSX/ 2,0-94F

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RJ45 connector

RJ45 connector - CUC-IND-C1ZNI-T/R4IE8 - 1421877

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



RJ45 connector, type: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

RJ45 connector

RJ45 connector - CUC-IND-C1ZNI-B/R4IE8 - 1421876

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



RJ45 connector, type: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

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Network cable - NBC-M12MSX/ 2,0-94F

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RJ45 connector

RJ45 connector - CUC-V06-C1PGY-S/R4CEA:1 - 1414406

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



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

RJ45 connector

RJ45 connector - CUC-V06-C1PBK-S/R4CEA:1 - 1414410

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



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

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Network cable - NBC-M12MSX/ 2,0-94F

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RJ45 connector

RJ45 connector - VS-PPC-C1-RJ45-POBK-8I10G - 1422205

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



RJ45 connector, IP67, with push/pull interlocking (Version 14), plastic housing, for 10 Gbps, for 24 ... 27 AWG stranded conductors

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PHOENIX CONTACT Ltd
Halesfield 13, Telford
Shropshire, TF7 4PG
01952 681700
info@phoenixcontact.co.uk