

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: 2 m

## Commercial data

Item number	1038747
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	BF1CJN
GTIN	4055626592084
Weight per piece (including packing)	148.9 g
Weight per piece (excluding packing)	142.44 g
Customs tariff number	85444290
Country of origin	PL

## Technical data

### Notes

General	This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 10.1 Cord Sets for Balanced Cabling
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	PROFINET
Number of positions	4
Application	Standard
Shielded	yes

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

Bus system	PROFINET
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps EtherCAT <sup>®</sup> CAT5 (IEC 11801), 100 Mbps

### Signaling

Status display	No
Status display present	No

### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Transmission medium	Copper
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

### Material specifications

Flammability rating according to UL 94	V0
--	----

### Connector

#### Connection 1

Type	Plug straight M12 / IP67
Number of positions	4
Coding type	D (Data)

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
	FKM (Seal)
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	4
Insertion/withdrawal cycles	100


## Connection 2

Type	free cable end
------	----------------

## Cable/line

Cable length	2 m
--------------	-----

## PROFINET drag chain CAT5 [93C]

Dimensional drawing	
Cable weight	61 kg/km
Number of positions	4
Shielded	yes
Cable type	PROFINET drag chain CAT5 [93C]
Conductor structure	1x4xAWG22/7, SF/TQ
Signal runtime	5.3 ns/m
Signal speed	0.66 c
Conductor structure signal line	7x 0.25 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm <sup>2</sup>
Wire diameter incl. insulation	1.5 mm
External cable diameter	6.5 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	green RAL 6018

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE
Single wire, color	white, yellow, blue, orange
Thickness, outer sheath	approx. 0.9 mm
Overall twist	Star quad
Optical shield covering	85 %
Insulation resistance	≥ 500 MΩ*km
Coupling resistance	≤ 20.00 mΩ/m (at 10 MHz)
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±15 Ω (at 1 ... 100 MHz)
Nominal voltage, cable	600 V (UL rating)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	7.5 x D
Max. bending cycles	3000000
Tensile strength	≤ 150 N
Torsion force	± 30 °/m
Near end crosstalk attenuation (NEXT)	80 dB (with 1 MHz)
	76 dB (at 4 MHz)
	70 dB (at 10 MHz)
	65 dB (at 16 MHz)
	63 dB (at 20 MHz)
	60 dB (at 31.25 MHz)
	55 dB (at 62.5 MHz)
	50 dB (at 100 MHz)
Shield attenuation	2.1 dB (with 1 MHz)
	4 dB (at 4 MHz)
	6.3 dB (at 10 MHz)
	8 dB (at 16 MHz)
	9 dB (at 20 MHz)
	11.4 dB (at 31.25 MHz)
	16.5 dB (at 62.5 MHz)
	21.3 dB (at 100 MHz)
Halogen-free	yes
Flame resistance	according to IEC 60332-1-2
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	UV resistant
Special properties	Electrical properties in accordance with EN 50288-2-2
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)
	-40 °C ... 70 °C (Cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 60 °C

## Environmental and real-life conditions

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)

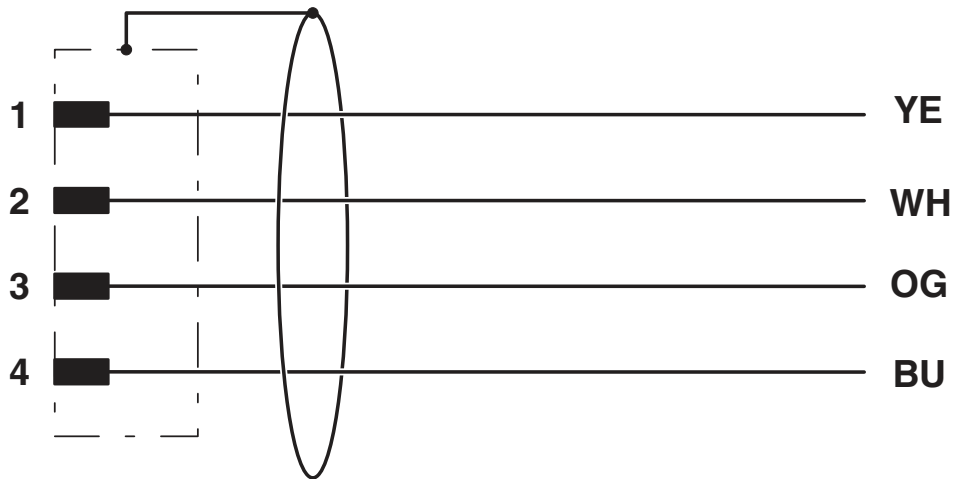
## Standards and regulations

### M12

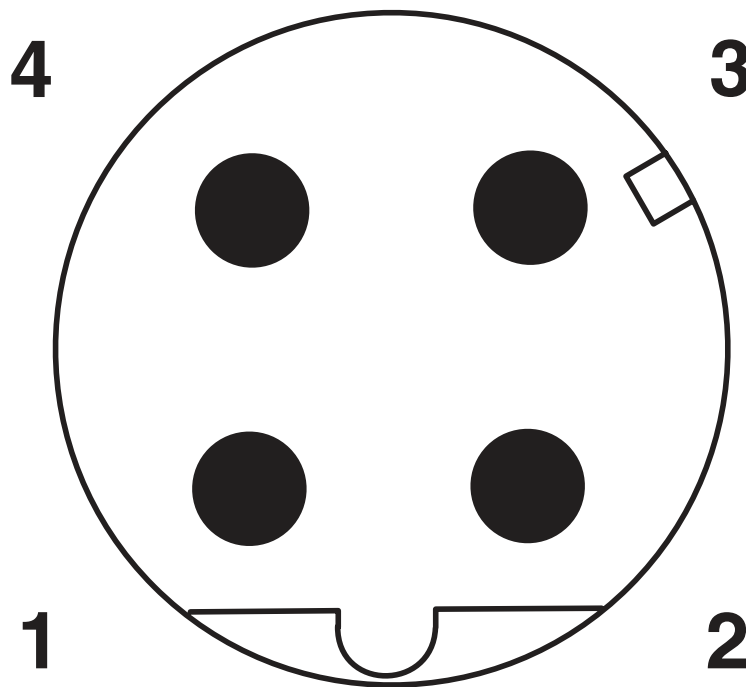
Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101

Drawings

Circuit diagram



Schematic diagram



Pin assignment M12 male connector, 4-pos., D-coded, male side

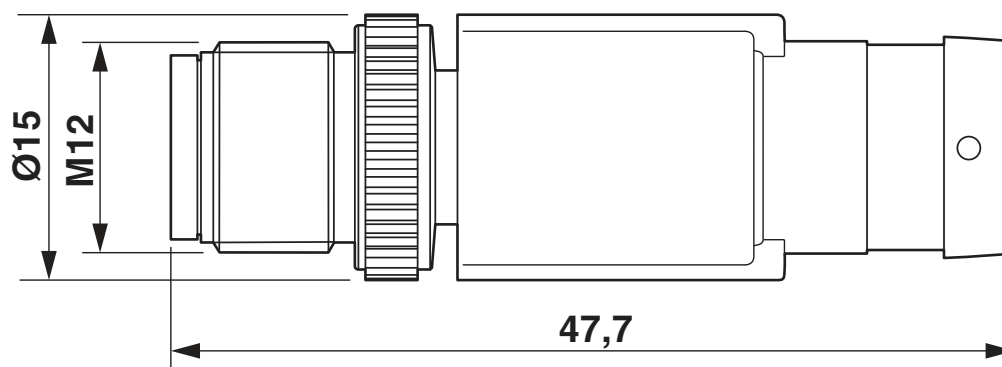
# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

Dimensional drawing



Plug, M12 x 1, straight, shielded

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1038747>



**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00385



# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC001855
----------	----------

### UNSPSC

UNSPSC 21.0	26121600
-------------	----------

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## Environmental product compliance

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

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## Accessories

### NBC-MSD SCO-PN/.../... - Network cable

1408640

<https://www.phoenixcontact.com/pc/products/1408640>



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12, coding: D SPEEDCON / IP67, on free cable end, cable length: Free input (0.2 ... 40.0 m)

---

### NBC-MRD SCO-PN/.../... - Network cable

1408633

<https://www.phoenixcontact.com/pc/products/1408633>



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12, coding: D SPEEDCON / IP67, on free cable end, cable length: Free input (0.2 ... 40.0 m)

## NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>



## NBC-FSD SCO-PN/.../... - Network cable

1408623

<https://www.phoenixcontact.com/pc/products/1408623>



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, Variable cable type, shielded, free cable end, on Socket straight M12, coding: D SPEEDCON / IP67, cable length: Free input (0.2 ... 40.0 m)

## NBC-FRD SCO-PN/.../... - Network cable

1408615

<https://www.phoenixcontact.com/pc/products/1408615>



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, Variable cable type, shielded, free cable end, on Socket angled M12, coding: D SPEEDCON / IP67, cable length: Free input (0.2 ... 40.0 m)

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/pc/products/1208429>



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

---

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

1212224

<https://www.phoenixcontact.com/pc/products/1212224>



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

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

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

1212600

<https://www.phoenixcontact.com/pc/products/1212600>



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

---

## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/pc/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

## NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>



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

1430873

<https://www.phoenixcontact.com/pc/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/pc/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



# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## CUTFOX 12 - Cable-cutting tool

1212128

<https://www.phoenixcontact.com/pc/products/1212128>



**Cable cutter**, for copper and aluminum up to 12 mm diameter (up to 35 mm<sup>2</sup>)

---

## CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/pc/products/1212207>



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



## NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>



## VS-CABLE-STRIP-VARIO - Stripping tool

1657407

<https://www.phoenixcontact.com/pc/products/1657407>

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



---

## MICROFOX-SP-1 - Diagonal cutter

1212487

<https://www.phoenixcontact.com/pc/products/1212487>

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



# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## WIREFOX 4 - Stripping tool

1212156

<https://www.phoenixcontact.com/pc/products/1212156>



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

---

## WIREFOX-E 4 - Stripping tool

1212704

<https://www.phoenixcontact.com/pc/products/1212704>



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

## NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>



## WIREFOX 10 - Stripping tool

1212150

<https://www.phoenixcontact.com/pc/products/1212150>



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

---

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

1422884

<https://www.phoenixcontact.com/pc/products/1422884>



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

## NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>



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

3240681

<https://www.phoenixcontact.com/pc/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

---

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

3240839

<https://www.phoenixcontact.com/pc/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

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12MSD-4QO SH PN - Data connector

1411068

<https://www.phoenixcontact.com/pc/products/1411068>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, halogen-free, shielded, Plug straight M12, D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

---

## SACC-M12MRD-4Q SH PN - Data connector

1554539

<https://www.phoenixcontact.com/pc/products/1554539>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm

# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12FSD-4QO SH PN - Data connector

1411071

<https://www.phoenixcontact.com/pc/products/1411071>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, halogen-free, shielded, Socket straight M12, D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

---

## SACC-M12FRD-4Q SH PN - Data connector

1554542

<https://www.phoenixcontact.com/pc/products/1554542>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm

# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-CC-4QO SH PN - Conductor connectors

1414416

<https://www.phoenixcontact.com/pc/products/1414416>



Cable connector, PROFINET CAT5 (100 Mbps), 4-pos., halogen-free, shielded, insulation displacement connection, housing material: zinc die-cast, nickel-plated, outer cable diameter of 5 mm ... 9.7 mm

---

## SACC-M12MSD-4PL SH PN - Connector

1424682

<https://www.phoenixcontact.com/pc/products/1424682>



Connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, D, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12MRD-4PL SH PN - Connector

1424684

<https://www.phoenixcontact.com/pc/products/1424684>



Connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, D, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

---

## SACC-M12FSD-4PL SH PN - Connector

1424683

<https://www.phoenixcontact.com/pc/products/1424683>



Connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, D, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm



# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12FRD-4PL SH PN - Connector

1424685

<https://www.phoenixcontact.com/pc/products/1424685>



Connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, D, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

---

## SACC-M12MSD-4CT-CM SH PN - Data connector

1422846

<https://www.phoenixcontact.com/pc/products/1422846>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, D, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12MRD-4CT-CM SH PN - Data connector

1422847

<https://www.phoenixcontact.com/pc/products/1422847>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, D, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

---

## SACC-M12FSD-4CT-CM SH PN - Data connector

1422848

<https://www.phoenixcontact.com/pc/products/1422848>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, D, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## SACC-M12FRD-4CT-CM SH PN - Data connector

1422849

<https://www.phoenixcontact.com/pc/products/1422849>



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, D, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

---

## VS-PN-RJ45-5-Q/IP20 - RJ45 connector

1658435

<https://www.phoenixcontact.com/pc/products/1658435>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 4, 100 Mbps, CAT5, material: Plastic, connection method: Insulation displacement connection, cable outlet: straight, color: traffic grey A RAL 7042, PROFINET

# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## CUC-IND-C1ZNI-S/R4IP8 - RJ45 connector

1421126

<https://www.phoenixcontact.com/pc/products/1421126>



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 23- 22, cable outlet: straight, color: green, Ethernet/PROFINET

---

## CUC-IND-C1ZNI-T/R4IP8 - RJ45 connector

1421128

<https://www.phoenixcontact.com/pc/products/1421128>



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 23- 22, cable outlet: angled, Ethernet/PROFINET

# NBC-M12MSD/ 2,0-93C - Network cable

1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## CUC-IND-C1ZNI-B/R4IP8 - RJ45 connector

1421127

<https://www.phoenixcontact.com/pc/products/1421127>



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 23- 22, cable outlet: angled, Ethernet/PROFINET

---

## CUC-V14-C1ZNI-S/R4P8 - RJ45 connector

1422664

<https://www.phoenixcontact.com/pc/products/1422664>



RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: straight, Ethernet

# NBC-M12MSD/ 2,0-93C - Network cable



1038747

<https://www.phoenixcontact.com/pc/products/1038747>

## CUC-V14-C1ZNI-T/R4P8 - RJ45 connector

1422667

<https://www.phoenixcontact.com/pc/products/1422667>



RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: angled, Ethernet

---

## CUC-V14-C1ZNI-B/R4P8 - RJ45 connector

1422665

<https://www.phoenixcontact.com/pc/products/1422665>



RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: angled, Ethernet

---

Phoenix Contact 2023 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstraße 8  
D-32825 Blomberg  
+49 (0) 5235-3 00  
[info@phoenixcontact.com](mailto:info@phoenixcontact.com)