

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

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, Ethernet CAT5 (100 Mbps), 4-position, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Socket straight M12, coding: D / IP67, cable length: 10 m

## Commercial data

Item number	1407403
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJI
Catalog page	Page 199 (C-6-2019)
GTIN	4046356775311
Weight per piece (including packing)	447.4 g
Weight per piece (excluding packing)	435 g
Customs tariff number	85444210
Country of origin	PL

1407403

<https://www.phoenixcontact.com/us/products/1407403>

## 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	4
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	D

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

Bus system	Ethernet
Signal type/category	Ethernet 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)
Handle color	black
	CuZn (Contact)

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

Material	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


## Connection 2

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

## Cable/line

Cable length	10 m
--------------	------

## Ethernet flexible CAT5, 2-pair [93E]

Dimensional drawing	
Cable weight	42 kg/km
UL AWM Style	20963 (80°C/30 V)
Wiring standards/regulations	Electrical requirements EN 50288-2-2

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

Number of positions	4
Shielded	yes
Cable type	Ethernet flexible CAT5, 2-pair [93E]
Conductor structure	2x2xAWG26/7, SF/UTP
Signal runtime	5.3 ns/m
Conductor structure signal line	7x 0.16 mm
AWG signal line	26
Conductor cross section	2x 2x 0.14 mm <sup>2</sup>
Wire diameter incl. insulation	0.98 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/orange-orange, white/green-green
Thickness, outer sheath	1.2 mm
Twisted pairs	2 cores to the pair
Overall twist	Two pairs with two fillers to the core
Optical shield covering	70 %
Insulation resistance	≥ 500 MΩ*km
Coupling resistance	≤ 100.00 mΩ/m (at 10 MHz)
Loop resistance	≤ 290.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Cable capacity	approx. 45 nF/km (at 1 kHz)
Nominal voltage, cable	≤ 100 V (Peak value, not for high-power applications)
Test voltage Core/Core	700 V (50 Hz, 1 min.)
Test voltage Core/Shield	700 V (50 Hz, 1 min.)
Current carrying capacity of cable	2 A (according to DIN VDE 0891-1)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	52 mm
Tensile strength	≤ 80 N
Near end crosstalk attenuation (NEXT)	65.3 dB (with 1 MHz)
	56.3 dB (at 4 MHz)
	50.3 dB (at 10 MHz)
	47.2 dB (at 16 MHz)
	45.8 dB (at 20 MHz)
	42.9 dB (at 31.25 MHz)
	38.4 dB (at 62.5 MHz)
	35.3 dB (at 100 MHz)
Power-summed near end crosstalk attenuation (PSNEXT)	62.3 dB (with 1 MHz)
	53.3 dB (at 4 MHz)
	47.3 dB (at 10 MHz)

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

	44.2 dB (at 16 MHz)
	42.8 dB (at 20 MHz)
	39.9 dB (at 31.25 MHz)
	35.4 dB (at 62.5 MHz)
	32.3 dB (at 100 MHz)
Return attenuation (RL)	23 dB (at 4 MHz)
	24.1 dB (at 8 MHz)
	25 dB (at 10 MHz)
	25 dB (at 16 MHz)
	25 dB (at 20 MHz)
	23.6 dB (at 31.25 MHz)
	21.5 dB (at 62.5 MHz)
	20.1 dB (at 100 MHz)
Shield attenuation	3.2 dB (with 1 MHz)
	6 dB (at 4 MHz)
	9.5 dB (at 10 MHz)
	12.1 dB (at 16 MHz)
	13.6 dB (at 20 MHz)
	17.1 dB (at 31.25 MHz)
	24.8 dB (at 62.5 MHz)
	32 dB (at 100 MHz)
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2
	in acc. to UL VW1
	in accordance with UN ECE-R 118.03
Resistance to oil	in accordance with 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

## Standards and regulations

### M12

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

1407403

<https://www.phoenixcontact.com/us/products/1407403>

## Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram



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

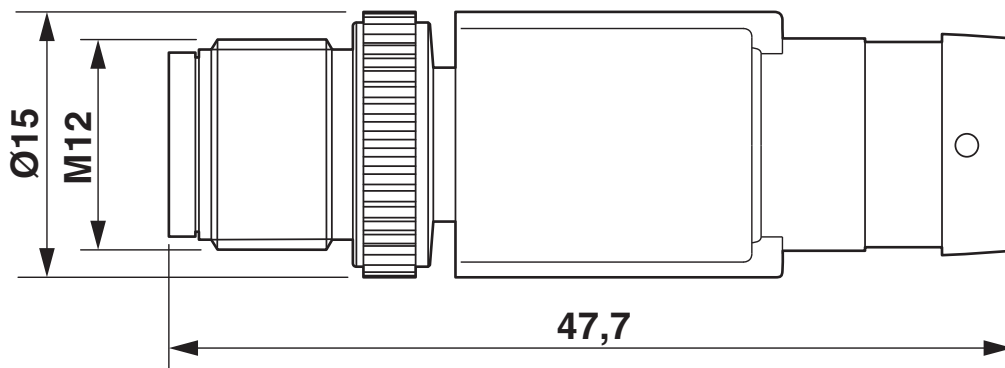
1407403

<https://www.phoenixcontact.com/us/products/1407403>

Circuit diagram



Dimensional drawing



Plug, M12 x 1, straight, shielded

1407403

<https://www.phoenixcontact.com/us/products/1407403>

Schematic diagram




Pin assignment M12 socket, 4-pos., D-coded, female side


1407403

<https://www.phoenixcontact.com/us/products/1407403>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407403>

 <b>UL Listed</b> Approval ID: FILE E 335024				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
	30 V	4 A	-	-

 <b>cUL Listed</b> Approval ID: FILE E 335024				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
	30 V	4 A	-	-

 <b>EAC-RoHS</b> Approval ID: RU D-DE.HB35.B.00387	
---	--

<b>cULus Listed</b>
---------------------

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC001855
----------	----------

### UNSPSC

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

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## Environmental product compliance

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

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## Accessories

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

1408706

<https://www.phoenixcontact.com/us/products/1408706>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Plug straight M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

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

1408700

<https://www.phoenixcontact.com/us/products/1408700>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Plug angled M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

# NBC-M12MSD/10,0-93E/M12FSD - Network cable

1407403

<https://www.phoenixcontact.com/us/products/1407403>



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

1408692

<https://www.phoenixcontact.com/us/products/1408692>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Socket straight M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

---

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

1408684

<https://www.phoenixcontact.com/us/products/1408684>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Socket angled M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

## NBC-M12MSD/10,0-93E/M12FSD - Network cable

1407403

<https://www.phoenixcontact.com/us/products/1407403>



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

1408699

<https://www.phoenixcontact.com/us/products/1408699>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12 SPEEDCON, coding: D / IP67, on Plug angled M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

---

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

1408691

<https://www.phoenixcontact.com/us/products/1408691>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12 SPEEDCON, coding: D / IP67, on Socket straight M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

## NBC-M12MSD/10,0-93E/M12FSD - Network cable

1407403

<https://www.phoenixcontact.com/us/products/1407403>



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

1408683

<https://www.phoenixcontact.com/us/products/1408683>



Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12 SPEEDCON, coding: D / IP67, on Socket angled M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

---

## 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

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## 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

---

## PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/us/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/us/products/1558991>



Locking clip for the socket 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

---

## 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-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## 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

# NBC-M12MSD/10,0-93E/M12FSD - Network cable



1407403

<https://www.phoenixcontact.com/us/products/1407403>

## 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

---

Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)