

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

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 Plug straight M12, coding: D / IP67, cable length: 2 m

## Commercial data

Item number	1038738
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF04
Product key	BF1CJN
GTIN	4055626592077
Weight per piece (including packing)	190.44 g
Weight per piece (excluding packing)	190.44 g
Customs tariff number	85444290
Country of origin	PL

1038738

<https://www.phoenixcontact.com/us/products/1038738>

## 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
No. of cable outlets	1
Shielded	yes
Coding	D

### 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
------	--------------------------

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

Number of positions	4
Coding type	D (Data)
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	Plug straight M12 / IP67
Number of positions	4
Coding type	D (Data)
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
Ambient temperature (operation)	-25 °C ... 90 °C
Number of positions	4
Degree of protection	IP67

## Cable/line

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


PROFINET drag chain CAT5 [93C]

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

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
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)

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

	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

### Ambient conditions

Degree of protection	IP65
	IP67

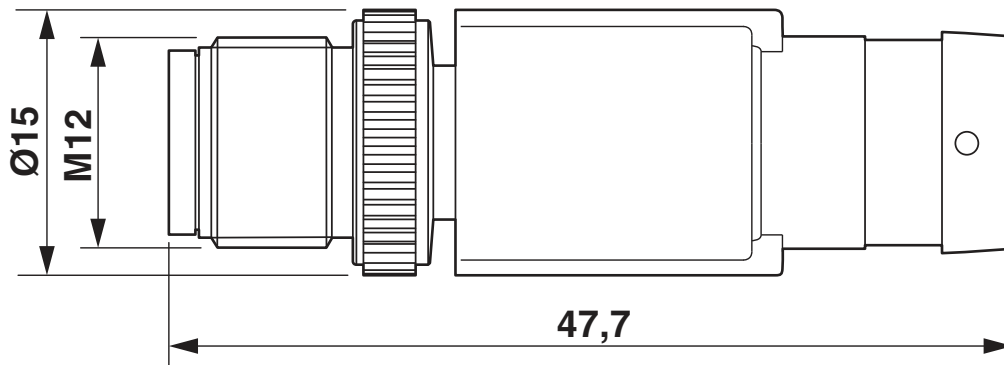
## Standards and regulations

### M12

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

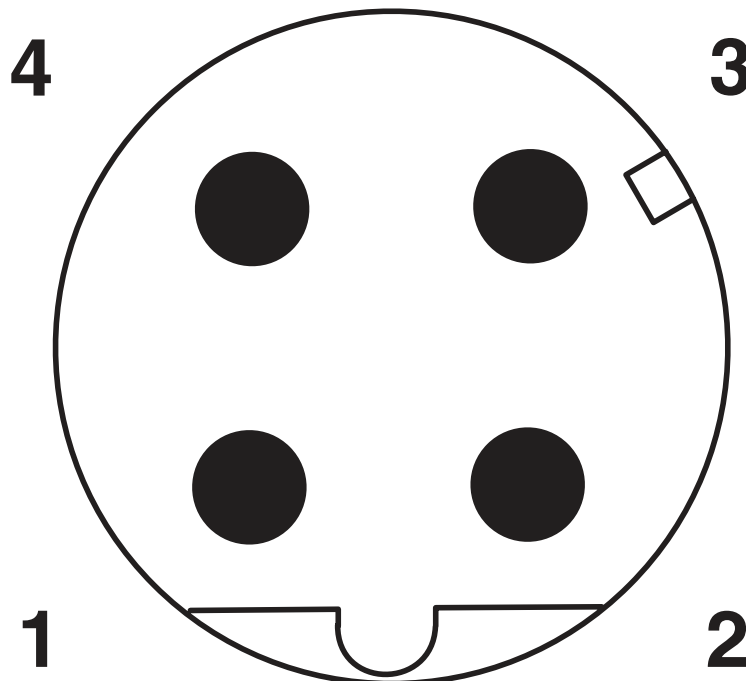
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram

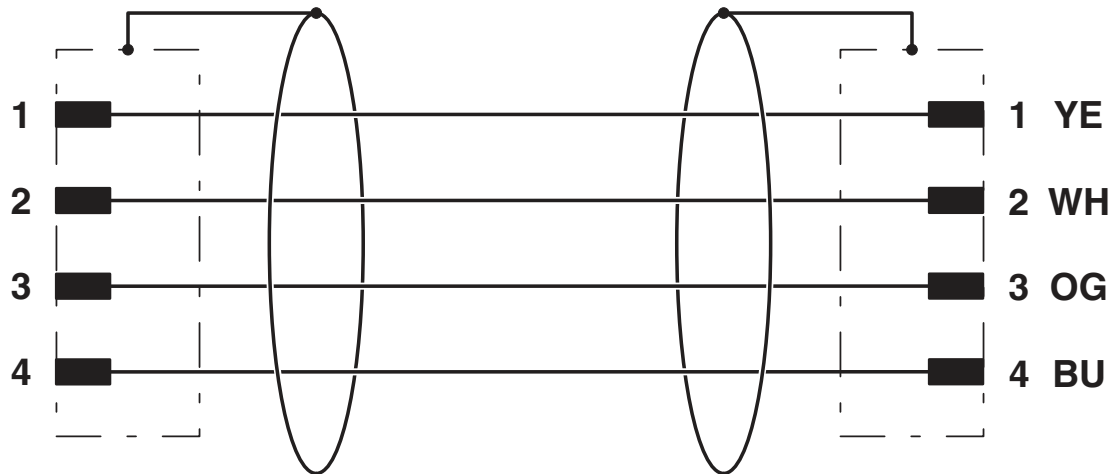


Pin assignment M12 male connector, 4-pos., D-coded, male side

1038738

<https://www.phoenixcontact.com/us/products/1038738>

Circuit diagram



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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1038738>



**EAC-RoHS**

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## 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/M12MSD - Network cable



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## Environmental product compliance

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

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## Accessories

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

1408634

<https://www.phoenixcontact.com/us/products/1408634>



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

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

1408625

<https://www.phoenixcontact.com/us/products/1408625>



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

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

1038738

<https://www.phoenixcontact.com/us/products/1038738>



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

1408624

<https://www.phoenixcontact.com/us/products/1408624>



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

---

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

1408617

<https://www.phoenixcontact.com/us/products/1408617>



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

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

1038738

<https://www.phoenixcontact.com/us/products/1038738>



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

1408608

<https://www.phoenixcontact.com/us/products/1408608>



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

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

1408616

<https://www.phoenixcontact.com/us/products/1408616>



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

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

1038738

<https://www.phoenixcontact.com/us/products/1038738>



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

1408607

<https://www.phoenixcontact.com/us/products/1408607>



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12, coding: D SPEEDCON / IP67, on Socket angled M12, coding: D SPEEDCON / 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-M12MSD/ 2,0-93C/M12MSD - Network cable



1038738

<https://www.phoenixcontact.com/us/products/1038738>

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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## 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



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



1038738

<https://www.phoenixcontact.com/us/products/1038738>

## 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

---

Phoenix Contact 2023 © - 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)