

# Network cable - NBC-M12MSD/10,0-93B/M12MSD



1407527

<https://www.phoenixcontact.com/gb/products/1407527>

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

## Commercial Data

Item number	1407527
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1CJN
Product Key	BF1CJN
Catalog Page	Page 198 (C-6-2019)
GTIN	4046356778329
Weight per Piece (including packing)	685 g
Weight per Piece (excluding packing)	657.3 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
Number of positions	4
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	D - data

### 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
	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT <sup>®</sup> CAT5 (IEC 11801), 100 Mbps

### LED signaling

Status display	No
Status display present	No

### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Transmission medium	Copper

### Material specifications

Color Handle area	black
Flammability rating according to UL 94	V0

### Connector

Connection 1

# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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

## 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

## Cable / line

Cable length	10 m
Cable weight	67 kg/km
UL AWM Style	21694
Number of positions	4
Shielded	yes
Cable type	PROFINET PVC stranded CAT5 [93B]
Signal runtime	5.3 ns/m
Signal speed	0.66 c
Conductor structure signal line	7x 0.25 mm

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AWG signal line	22
Conductor cross section	4x 0.34 mm <sup>2</sup>
Wire diameter incl. insulation	1.55 mm
External cable diameter	6.5 mm ±0.2 mm
Outer sheath, material	PVC
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 100 MHz)
Nominal voltage, cable	600 V
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	3 x D
Minimum bending radius, flexible installation	7 x D
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)
Flame resistance	according to UL 1685 (CSA FT 4)
Resistance to oil	Resistant to oil to a limited extent
Other resistance	UV resistant According to UL 1581, Section 1200
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation) -40 °C ... 70 °C (Cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 60 °C
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps

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	EtherCAT® CAT5 (IEC 11801), 100 Mbps
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## Ambient conditions

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

## Standards and regulations

M12

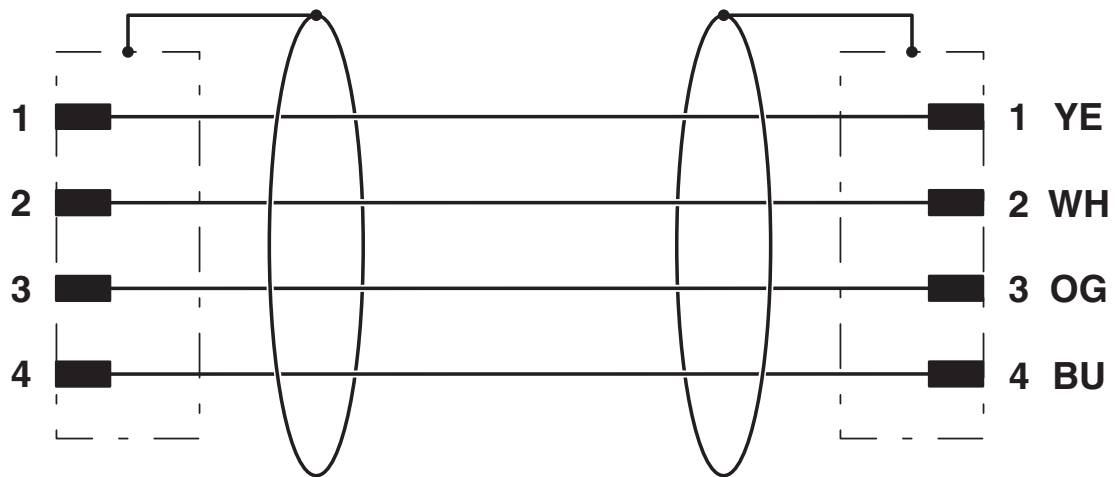
Standards/specifications	IEC 61076-2-101
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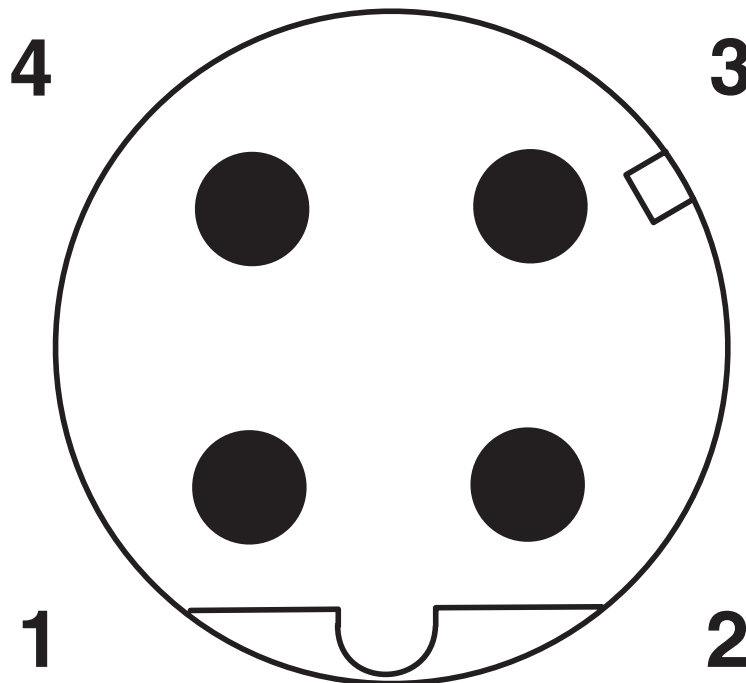
## Drawings

Circuit diagram



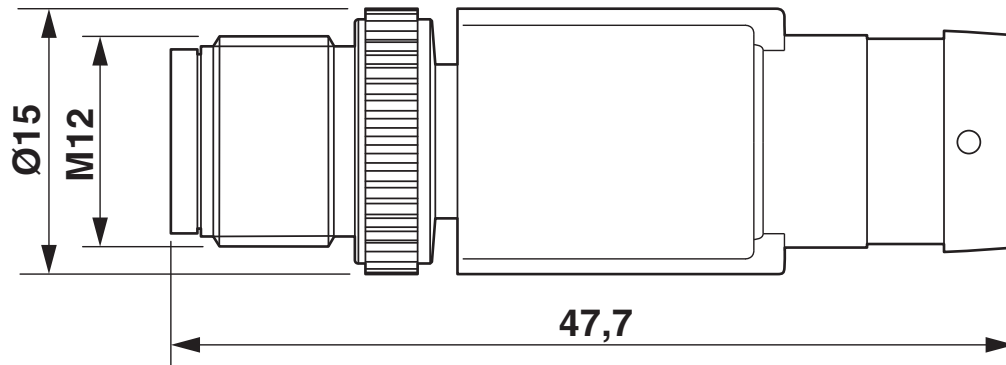
Contact assignment of the M12 plugs

Schematic diagram



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

Dimensional drawing



Plug, M12 x 1, straight, shielded


# Network cable - NBC-M12MSD/10,0-93B/M12MSD





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## Approvals

 <b>UL Listed</b> Approval ID: FILE E 335024				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	250 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 $\text{mm}^2$
	250 V	4 A	-	-

 <b>EAC</b> Approval ID: RU D-DE.HB35.B.00387				
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<b>cULus Listed</b>				
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# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC001855
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### 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-M12MSD/10,0-93B/M12MSD



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## Accessories

### Network cable

Network cable - NBC-MSD-MSD SCO-PN/.../... - 1408634

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



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

### Network cable

Network cable - NBC-MSD-MRD SCO-PN/.../... - 1408625

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



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

# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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## Network cable

Network cable - NBC-MRD-MRD SCO-PN/.../... - 1408624

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



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

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## Network cable

Network cable - NBC-MSD-FSD SCO-PN/.../... - 1408617

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



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

# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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## Network cable

Network cable - NBC-MSD-FRD SCO-PN/.../... - 1408608

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



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

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## Network cable

Network cable - NBC-MRD-FSD SCO-PN/.../... - 1408616

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



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

# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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## Network cable

Network cable - NBC-MRD-FRD SCO-PN/.../... - 1408607

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



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

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## 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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## 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

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## 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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## 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

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## 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



# Network cable - NBC-M12MSD/10,0-93B/M12MSD



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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



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