

# NBC-MSD/ 1,0-93E/R4MC SCO - Network cable



1407364

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: 1 m

## Commercial data

Item number	1407364
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJI
Catalog page	Page 399 (C-2-2019)
GTIN	4046356774925
Weight per piece (including packing)	85.6 g
Weight per piece (excluding packing)	85.6 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
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### Product properties

Product type	Data cable preassembled
Sensor type	Ethernet
Number of positions	4
Application	Standard
Shielded	yes
Coding	D

### 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 $I_N$	1 A
Transmission medium	Copper
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

### Connector

#### Connection 1

Type	Plug straight M12 SPEEDCON / IP67
Number of positions	4
Locking type	SPEEDCON
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)
Insertion/withdrawal cycles	≥ 100
Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ

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Tightening torque	0.4 Nm
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C


## Connection 2

Type	Plug straight RJ45 Clip locking / IP67
Number of positions	4 (8)
Locking type	Clip locking
Handle color	gray
Material	CuSn (Contact) Ni/Au (Contact surface) PC (Contact carriers) PA (Housing)
Insertion/withdrawal cycles	≥ 750
Degree of protection	IP67
Ambient temperature (operation)	-20 °C ... 70 °C

## Cable/line

Cable length	1 m
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## 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
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

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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)
	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)

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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 (M12 connector)
	IP67 (M12 connector)
	IP67 (RJ45 connector)
	IP65/IP67

## Standards and regulations

### M12

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

# NBC-MSD/ 1,0-93E/R4MC SCO - Network cable

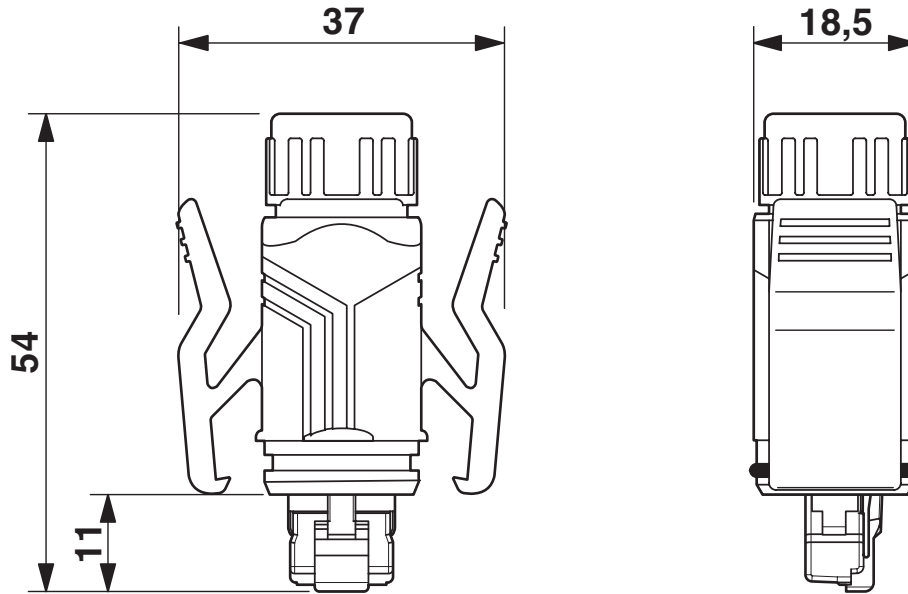


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## Drawings

Dimensional drawing



RJ45-connector, IP67

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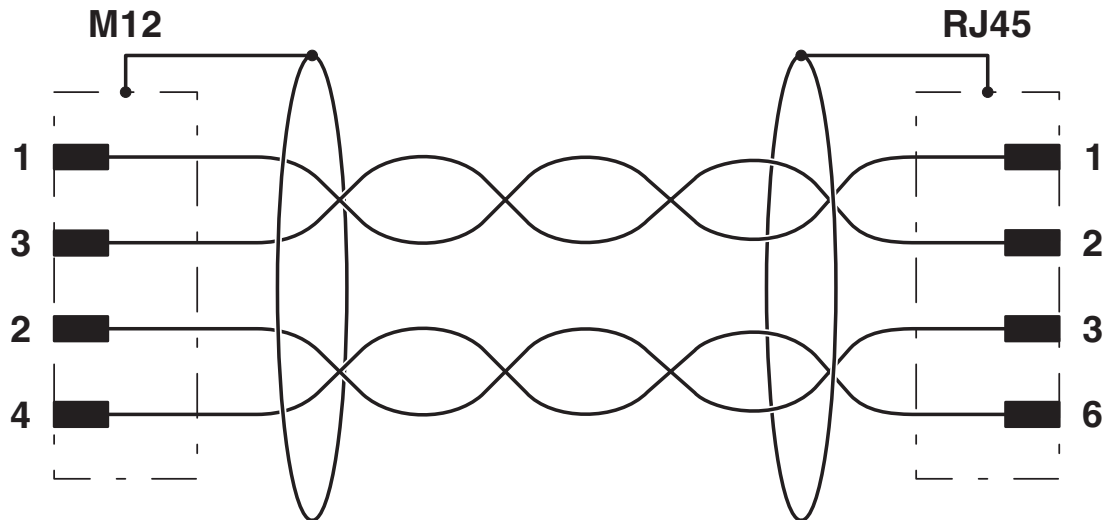
<https://www.phoenixcontact.com/us/products/1407364>

Schematic diagram

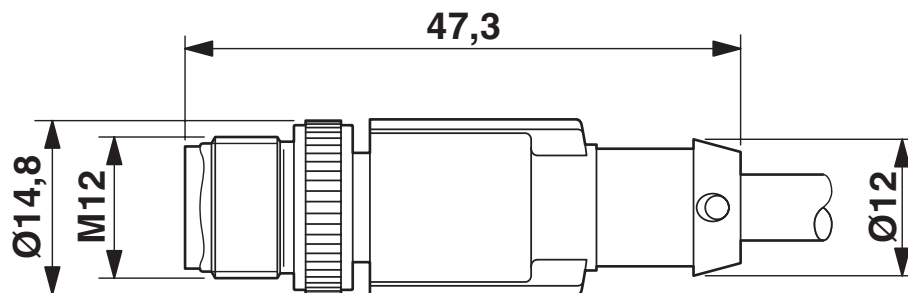


Connector pin assignment plug RJ45

Circuit diagram



Dimensional drawing

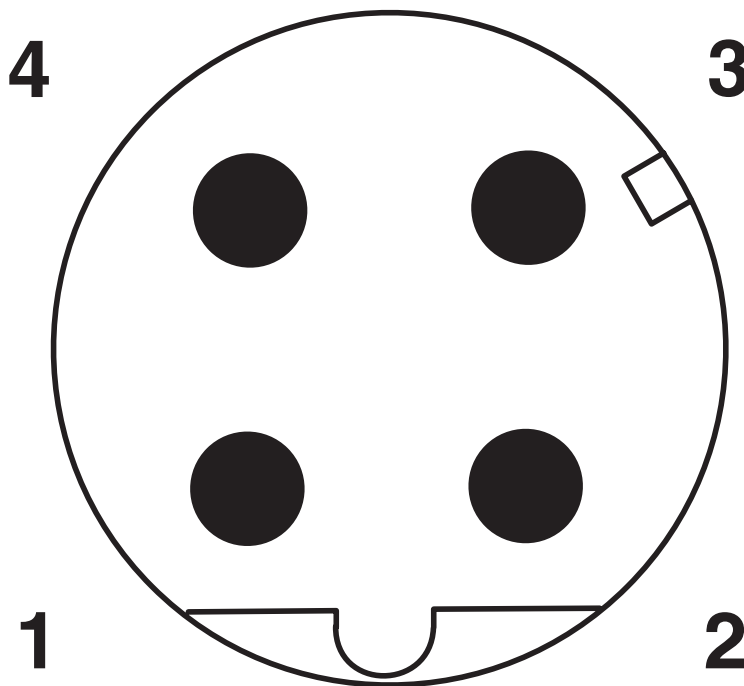


Plug, M12 x 1, straight, shielded

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Schematic diagram



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

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407364>



**EAC-RoHS**

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

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## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	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

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## Accessories

### NBC-MSD-R4MC SCO/.../... - Network cable

1408710

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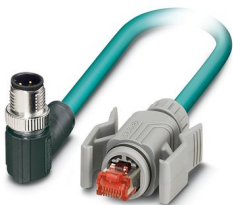


Network cable, Ethernet CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: Free input (0.2 ... 40.0 m)

### NBC-MRD-R4MC SCO/.../... - Network cable

1408703

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: Free input (0.2 ... 40.0 m)

## NBC-MSD/ 1,0-93E/R4MC SCO - Network cable

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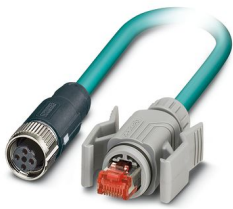
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## NBC-FSD-R4MC SCO/.../... - Network cable

1408695

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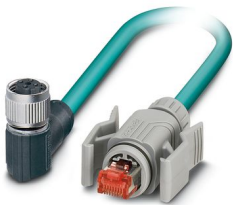
Network cable, Ethernet CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Socket straight M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: Free input (0.2 ... 40.0 m)

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## NBC-FRD-R4MC SCO/.../... - Network cable

1408688

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Socket angled M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: Free input (0.2 ... 40.0 m)

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## 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



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## 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



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## 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

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## 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

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## 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

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## 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

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