

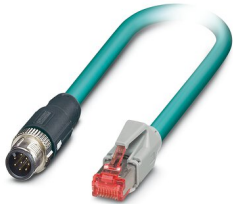
NBC-MS/ 2,0-94B/R4AC SCO - Network cable



1407415

<https://www.phoenixcontact.com/in/products/1407415>

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Network cable, Ethernet CAT5 (1 Gbps), 8-position halogen-free, shielded, Plug straight M12, coding: A SPEEDCON / IP67, on Plug straight RJ45 / IP20, cable length: 2 m

Commercial Data

Item number	1407415
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1
Product Key	BF1CMI
Catalog Page	Page 401 (C-2-2019)
GTIN	4046356775373
Weight per Piece (including packing)	125 g
Weight per Piece (excluding packing)	125 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
Number of positions	8
Application	Standard
Shielded	yes
Coding	A

Interfaces

Bus system	Ethernet
Signal type/category	Ethernet CAT5 (on the basis of IEC 11801), 1 Gbps

Signaling

Status display	No
Status display present	No

Electrical properties

Nominal voltage U_N	30 V AC
	30 V DC
Nominal current I_N	1 A
Transmission medium	Copper

Material specifications

Color Handle area	gray / black
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Connector

Connection 1

Type	Plug straight M12 SPEEDCON / IP67
Number of positions	8
Coding type	A (Standard)
Handle color	black
Material	CuZn (Contact)
	Ni/Au (Contact surface)
	TPU GF (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Insertion/withdrawal cycles	≥ 100
Contact resistance	$\leq 5 \text{ m}\Omega$
Insulation resistance	$\geq 100 \text{ M}\Omega$

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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 / IP20
Number of positions	8 (8)
Handle color	gray
Material	CuSn (Contact) Ni/Au (Contact surface) PC (Contact carriers) PA (Housing)
Insertion/withdrawal cycles	≥ 750
Ambient temperature (operation)	-25 °C ... 60 °C

Cable/line

Cable length	2 m
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Ethernet flexible CAT5, 4-pair [94B]

Dimensional drawing	
Cable weight	47 kg/km
UL AWM Style	20963 (80°C/30 V)
Number of positions	8
Shielded	yes
Cable type	Ethernet flexible CAT5, 4-pair [94B]
Conductor structure	4x2xAWG26/7; SF/UTP
Signal runtime	5.3 ns/m
Conductor structure signal line	7x 0.16 mm
AWG signal line	26
Conductor cross section	4x 2x 0.14 mm ²
Wire diameter incl. insulation	0.96 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/blue-blue, white/orange-orange, white/green-green, white/brown-brown

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Thickness, outer sheath	1.05 mm
Twisted pairs	2 cores to the pair
Overall twist	4 pairs for core
Optical shield covering	70 %
Insulation resistance	≥ 5 GΩ*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	48 nF/km (at 1 kHz)
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	700 V (50 Hz, 1 min.)
Test voltage Core/Shield	700 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength	≤ 100 N
Near end crosstalk attenuation (NEXT)	71.3 dB (with 1 MHz)
	62.3 dB (at 4 MHz)
	56.3 dB (at 10 MHz)
	53.2 dB (at 16 MHz)
	51.8 dB (at 20 MHz)
	48.9 dB (at 31.25 MHz)
	44.4 dB (at 62.5 MHz)
	41.3 dB (at 100 MHz)
Power-summated 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 loss (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)

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	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
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)
	IP20 (RJ45 connector)
Ambient temperature (operation)	-25 °C ... 90 °C (M12 connector)
	-20 °C ... 70 °C (RJ45 connector)

Standards and regulations

M12

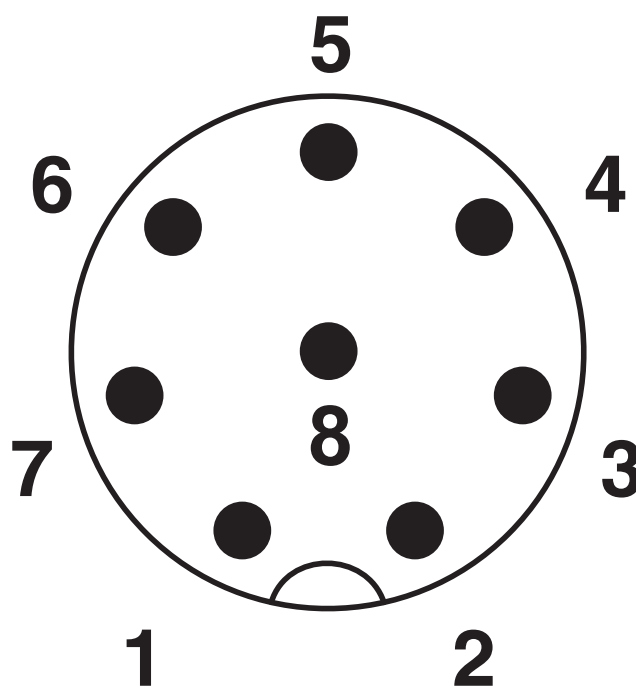
Standards/specifications	IEC 61076-2-101
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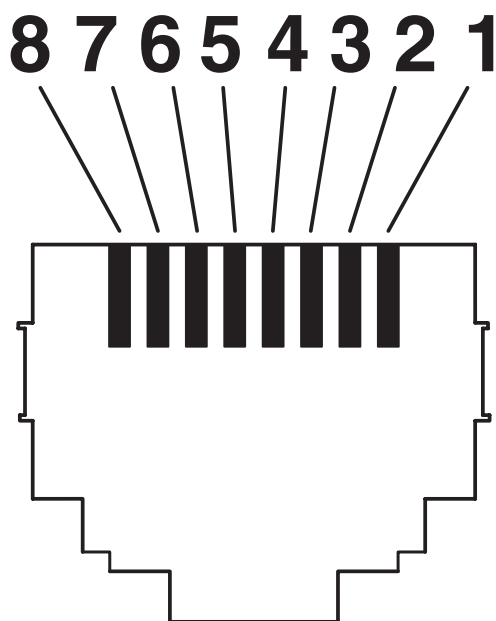
Drawings

Schematic diagram



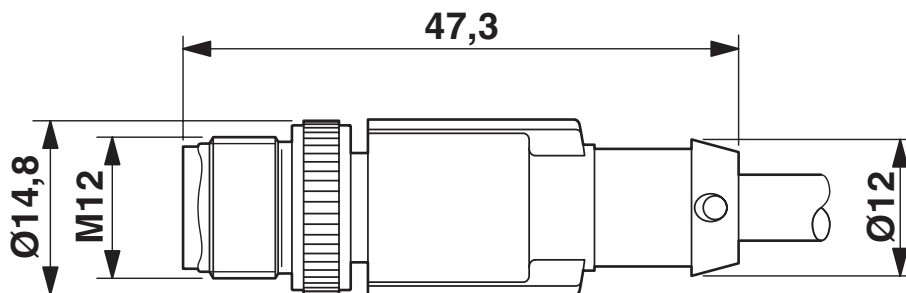
Pin assignment M12 plug, 8-pos., A-coded, view plug side

Schematic diagram



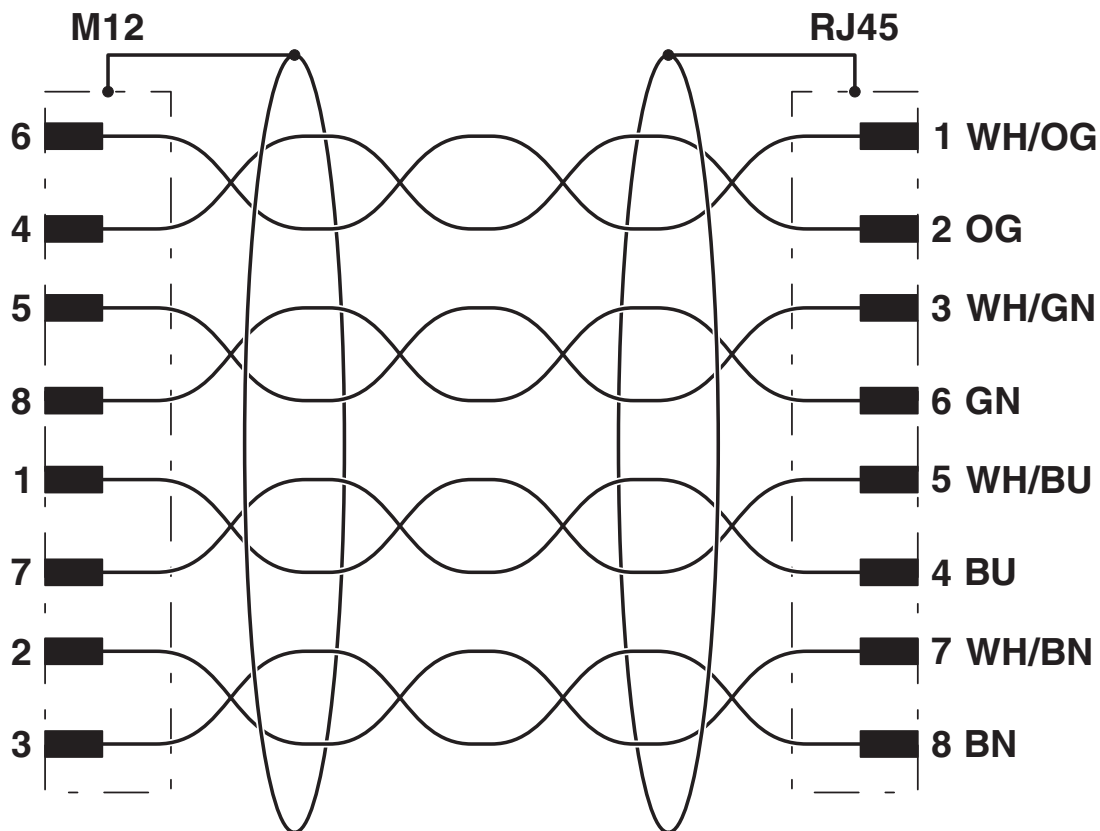
Connector pin assignment plug RJ45

Dimensional drawing



Plug, M12 x 1, straight, shielded

Circuit diagram



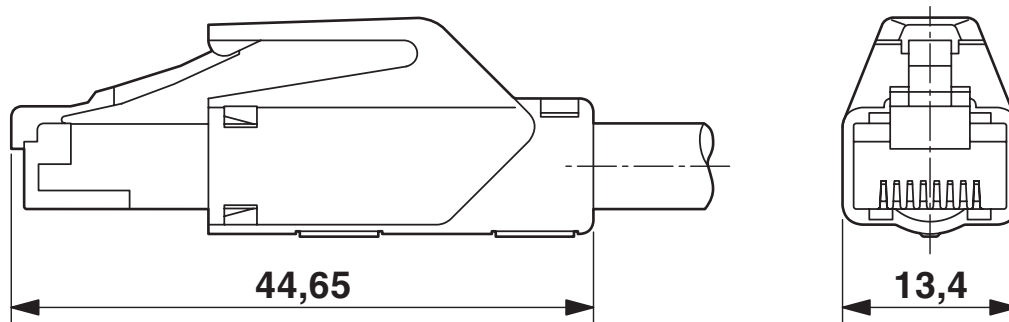
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Dimensional drawing





RJ45 connector, IP20


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Approvals

 UL Listed Approval ID: FILE E 335024				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	30 V	0.5 A	-	-

 cUL Listed Approval ID: FILE E 335024				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	30 V	0.5 A	-	-

 EAC 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 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

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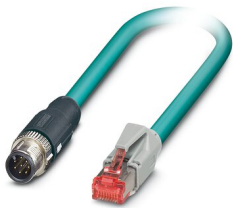
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Accessories

NBC-MS-R4AC SCO-IE/.../... - Network cable

1408681

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NBC-MR-R4AC SCO-IE/.../... - Network cable

1408674

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug angled M12, coding: A SPEEDCON / IP67, on Plug straight RJ45 / IP20, cable length: Free input (0.2 ... 40.0 m)

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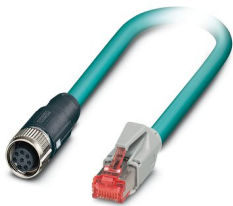
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NBC-FS-R4AC SCO-IE/.../... - Network cable

1408664

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug straight RJ45 / IP20, on Socket straight M12, coding: A SPEEDCON / IP67, cable length: Free input (0.2 ... 40.0 m)

NBC-FR-R4AC SCO-IE/.../... - Network cable

1408655

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug straight RJ45 / IP20, on Socket angled M12, coding: A SPEEDCON / IP67, cable length: Free input (0.2 ... 40.0 m)

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TSD 04 SAC - Torque screwdriver

1208429

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

TSD-M 1,2NM - Torque screwdriver

1212224

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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/in/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/in/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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PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

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