PHŒNIX CONTACT

Network cable - NBC-MSD/ 2,0-93E/R4AC SCO - 1407361

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug straight RJ45 / IP20, cable length: 2 m

RoHS Ethernet SPEEDCON LOCKING

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 774895
GTIN	4046356774895

Technical data

Dimensions

Length of cable	2 m

Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP20 (RJ45 connector)

General data

Note	Further products with variable cable type and variable cable length can be found in the accessories section
Rated current at 40°C	1 A
Rated voltage	48 V AC
	60 V DC
Number of positions	4
Signal type/category	Ethernet CAT5 (IEC 11801), 100 Mbps
Standards/regulations	M12 connector IEC 61076-2-101
Contact material	CuSn
Contact carrier material	TPU GF
Contact surface material	Ni/Au

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Technical data

General data

Housing material	Plastic

Characteristics head 1

Head type	Plug straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	4
Coding	D (Data)
Color	black
Material (component)	CuZn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Insulation resistance	≥ 100 MΩ
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C

Characteristics head 2

Head type	Plug straight RJ45 / IP20
No. of positions (pin connector pattern)	4 (8)
Color	gray
	gray / black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PC (Contact carriers)
	PA (Housing)
Insertion/withdrawal cycles	≥ 750
Ambient temperature (operation)	-25 °C ... 60 °C

Standards and Regulations

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

Cable

Cable type	PUR ETHERNET 2x2 FLEX
Cable type (abbreviation)	93E
UL AWM style	20963 (80°C/30 V)
Signal type/category	Ethernet CAT5 (IEC 11801), 100 Mbps
Cable structure	2x2xAWG26/7; SF/UTP
Conductor cross section	2x 2x 0.14 mm²
AWG signal line	26
Conductor structure signal line	7x 0.16 mm
Core diameter including insulation	0.98 mm

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Technical data

Cable

Wire colors	white/orange-orange, white/green-green
Twisted pairs	2 cores to the pair
Overall twist	Two pairs with two fillers to the core
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	70 %
External sheath, color	water blue RAL 5021
Outer sheath thickness	1.2 mm
External cable diameter D	6.4 mm ±0.2 mm
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength GRP	≤ 80 N
Cable weight	42 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Bare Cu litz wires
Standards/specifications	Electrical requirements EN 50288-2-2
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 290.00 Ω/km
Cable capacity	approx. 45 nF/km (at 1 kHz)
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
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-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)
Attenuation	3.2 dB (with 1 MHz)
	6 dB (at 4 MHz)
	9.5 dB (at 10 MHz)
	12.1 dB (at 16 MHz)

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Cable

|	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)
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)
Signal runtime	5.3 ns/m
Coupling resistance	≤ 100.00 mΩ/m (at 10 MHz)
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)
Flame resistance	according to IEC 60332-1-2
	in acc. to UL VW1
Halogen-free	according to IEC 60754-1
Resistance to oil	according to 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
Ambient temperature (storage/transport)	-20 °C ... 80 °C

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

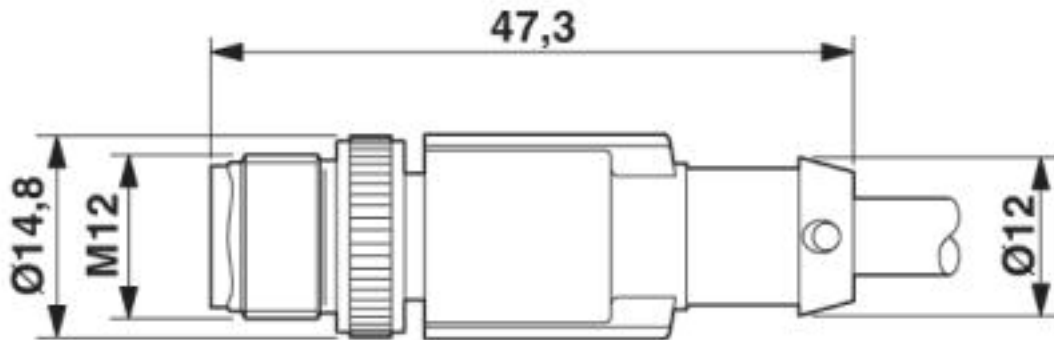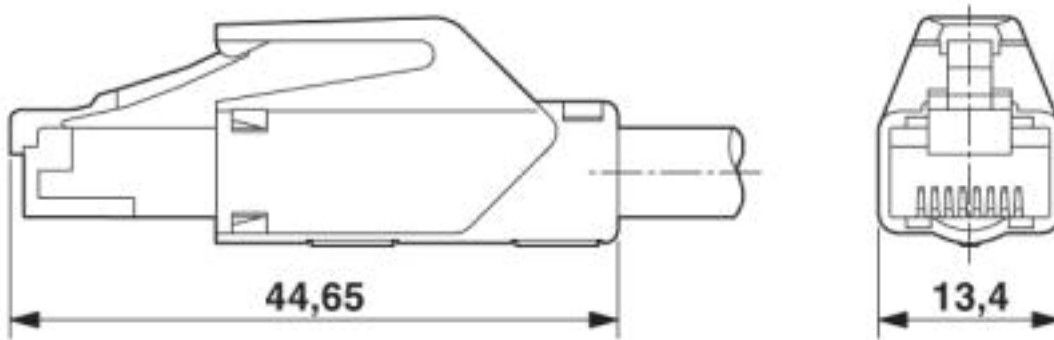# Network cable - NBC-MSD/ 2,0-93E/R4AC SCO - 1407361

Schematic diagram

8 7 6 5 4 3 2 1
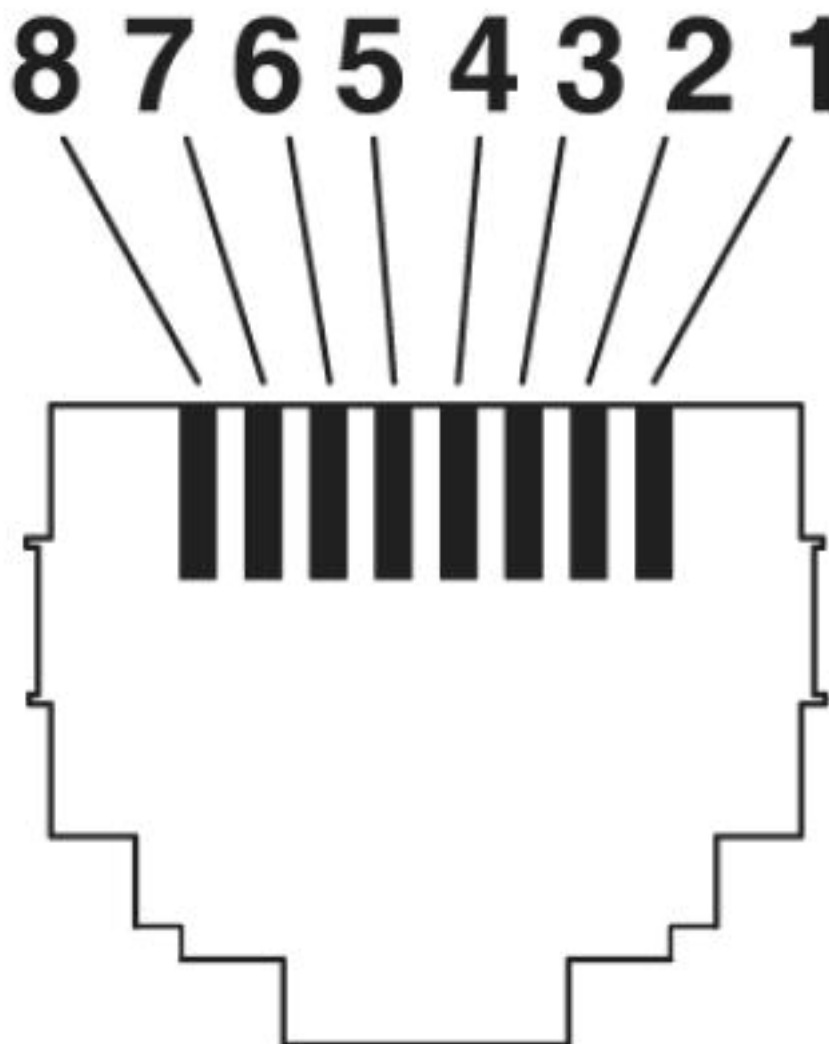
Connector pin assignment plug RJ45

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Dimensional drawing

47,3

Ø14,8 M12 Ø12

Plug, M12 x 1, straight, shielded

Dimensional drawing

44,65

13,4

RJ45 connector, IP20

Circuit diagram

M12   RJ45

1 ─────────────── 1
3 ─────────────── 2
2 ─────────────── 3
4 ─────────────── 6
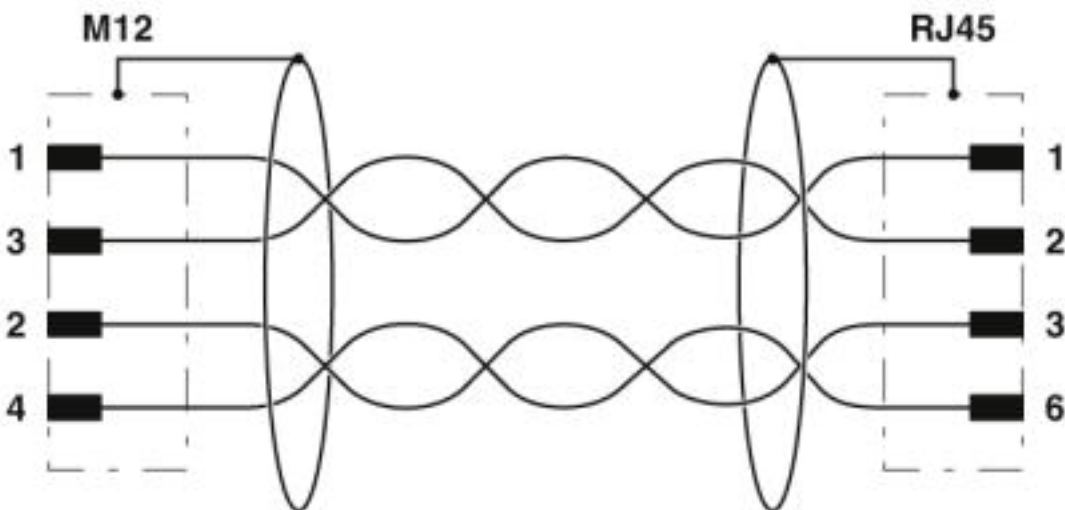
Contact assignment of the M12 and RJ45 plug

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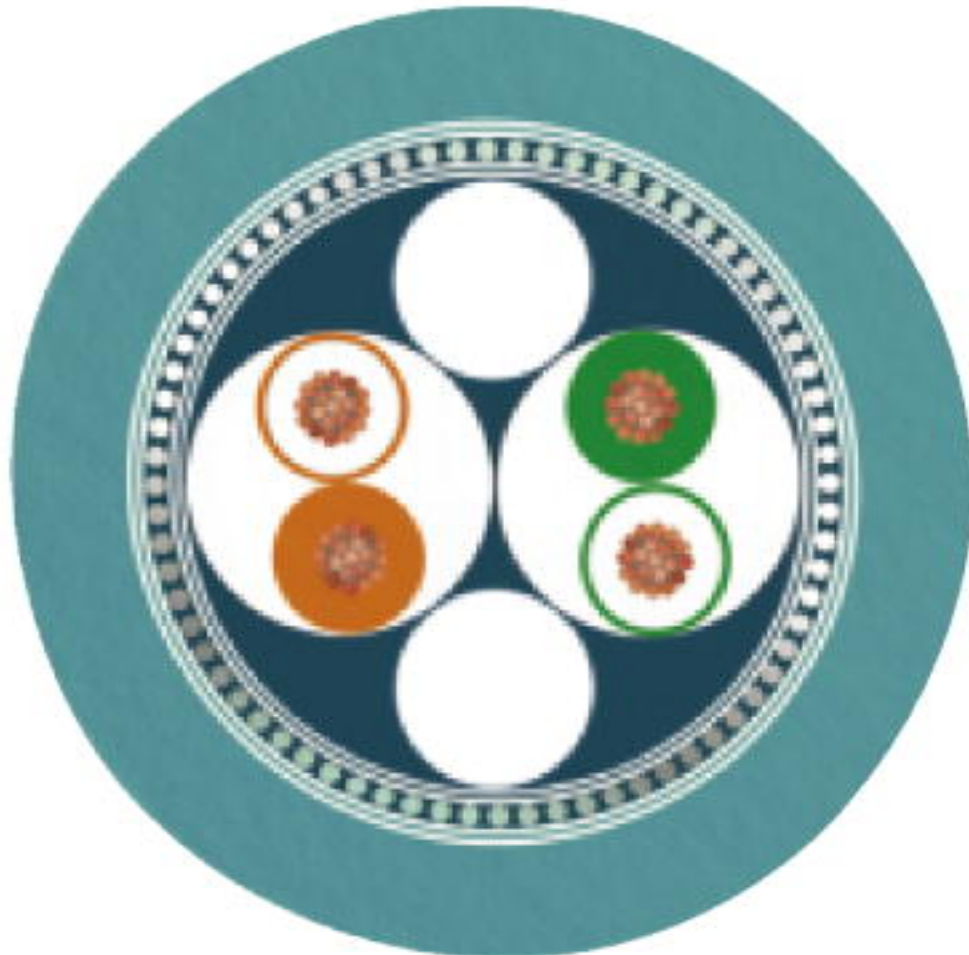# Network cable - NBC-MSD/ 2,0-93E/R4AC SCO - 1407361

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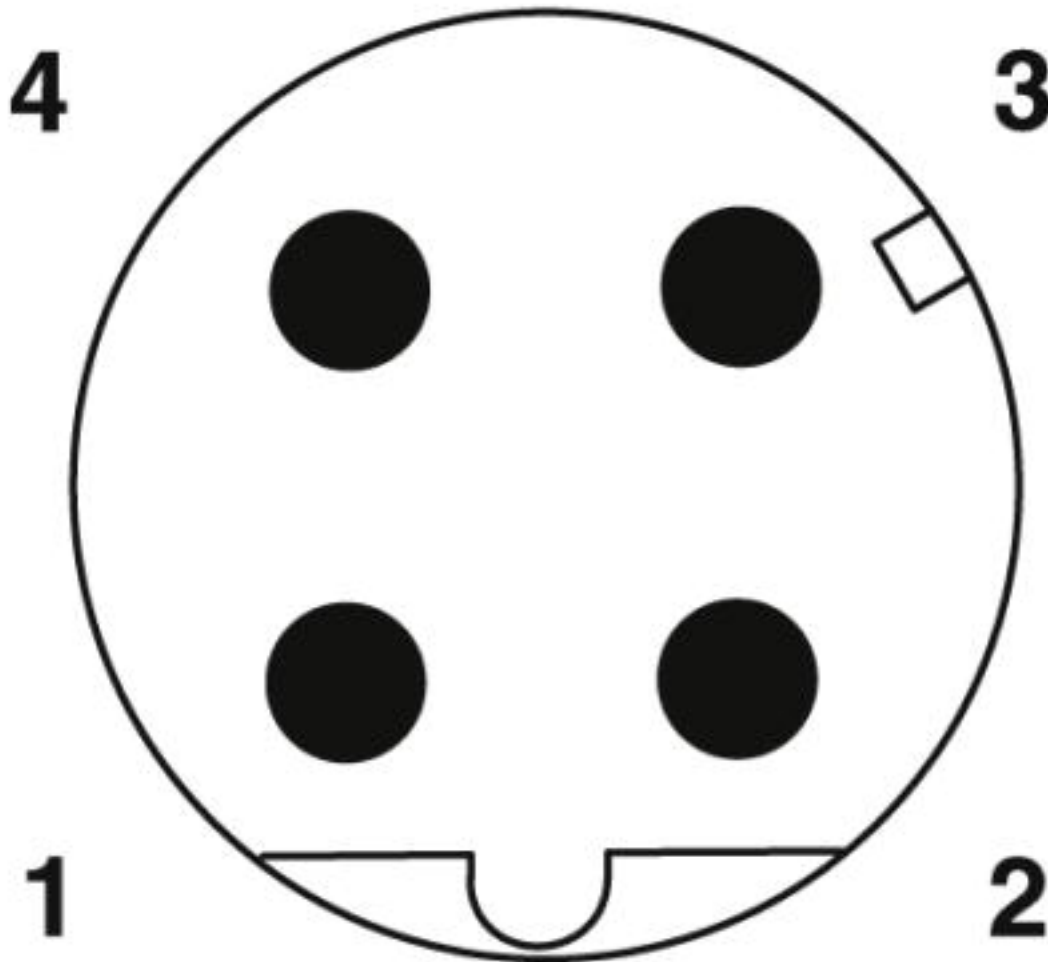
Pin assignment M12 male connector, 4-pos., D-coded, male side

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Cable cross section

PUR ETHERNET 2x2 FLEX [93E]

Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

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Approvals

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 335024

Nominal voltage UN	30 V
Nominal current IN	0.5 A

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 335024

Nominal voltage UN	30 V
Nominal current IN	0.5 A

cULus Listed	