

Network cable - NBC-MRD/ 2,0-93E/R4AC SCO US - 1406122

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

RoHS



Key Commercial Data

Packing unit	1 pc
Minimum order quantity	50 pc
GTIN	 4 046356 799270
GTIN	4046356799270

Technical data

Dimensions

Length of cable	2 m
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Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP20 (RJ45 connector)
Ambient temperature (operation)	-25 °C ... 85 °C (M12 connector)
	-25 °C ... 60 °C (RJ45 connector)

General data

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

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Technical data

General data

Contact surface material	Ni/Au
Housing material	Plastic
Degree of protection	IP67/IP20
Transmission characteristics (category)	CAT5

Characteristics head 1

Head type	Plug angled M12 / IP67
Coding	D (Data)
Shielded	yes
Outer sheath, material	PUR
External sheath, color	water blue RAL 5021
Type type, plug side	Plug angled
Type type, socket side	Plug, straight

Characteristics head 2

Head type	Plug straight RJ45 / IP20
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Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
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Cable

Cable type	Ethernet flexible CAT5, 2-pair
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 mm ²
AWG signal line	26
Conductor structure signal line	7x 0.16 mm
Core diameter including insulation	0.98 mm
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

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Technical data

Cable

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)	
	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

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Cable

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

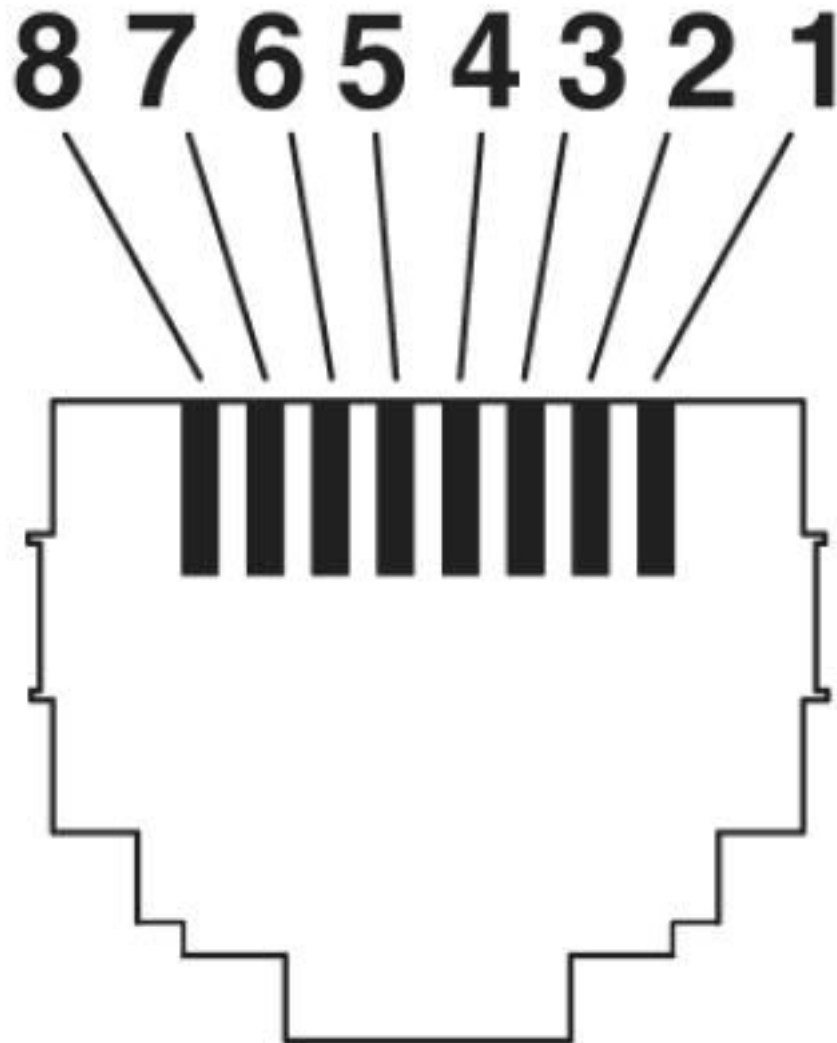
Environmental Product Compliance

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

Drawings

Network cable - NBC-MRD/ 2,0-93E/R4AC SCO US - 1406122

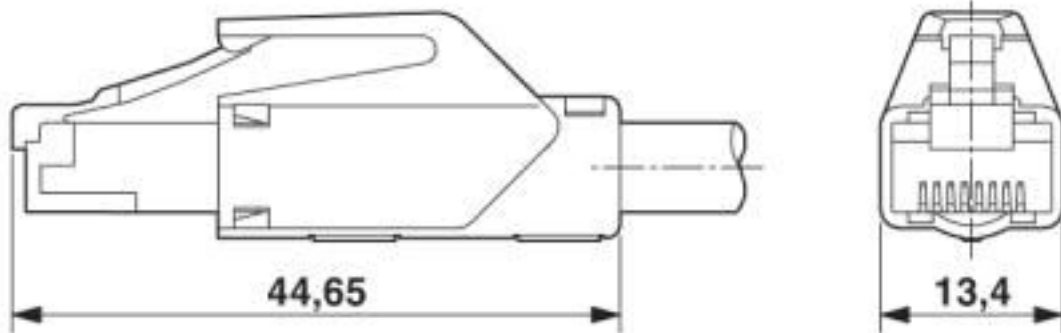
Schematic diagram



Connector pin assignment plug RJ45

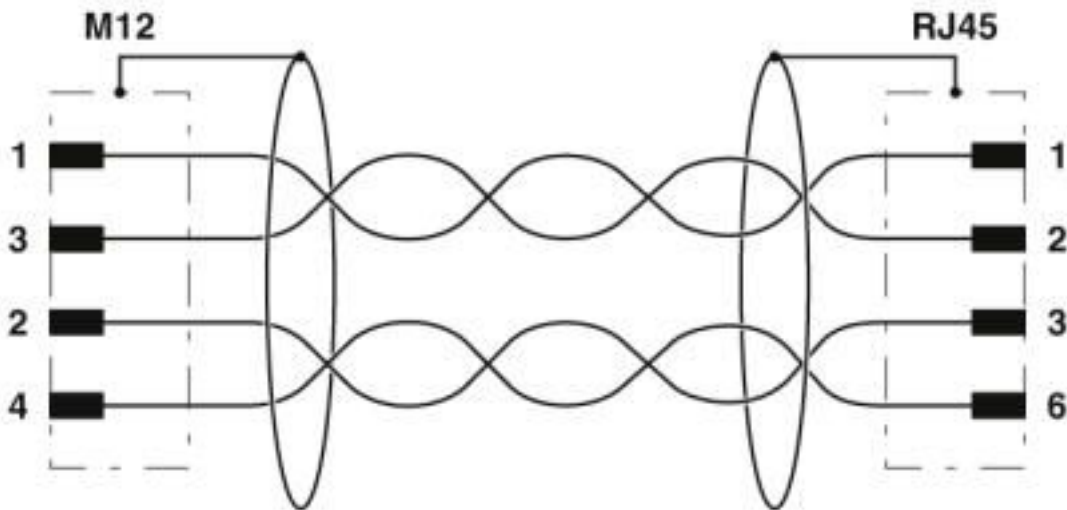
Network cable - NBC-MRD/ 2,0-93E/R4AC SCO US - 1406122

Dimensional drawing



RJ45 connector, IP20

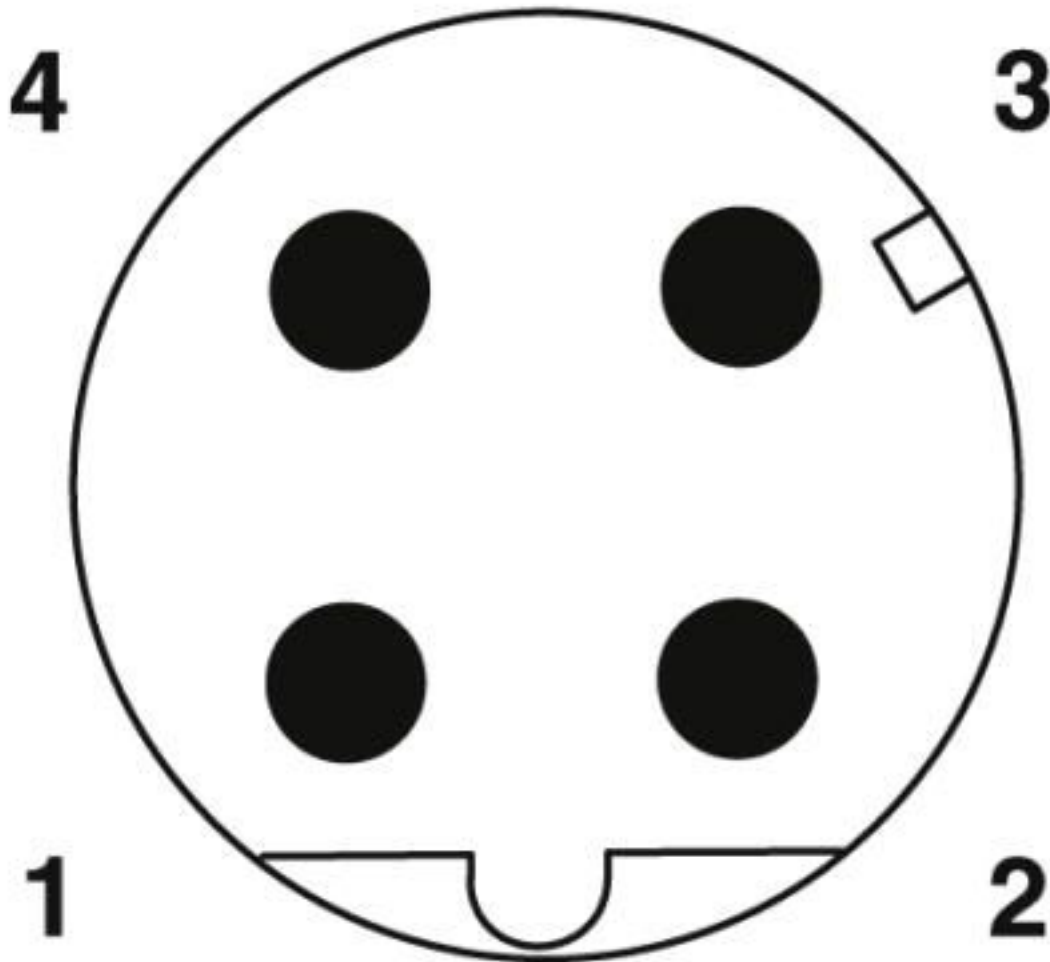
Circuit diagram



Contact assignment of the M12 and RJ45 plug

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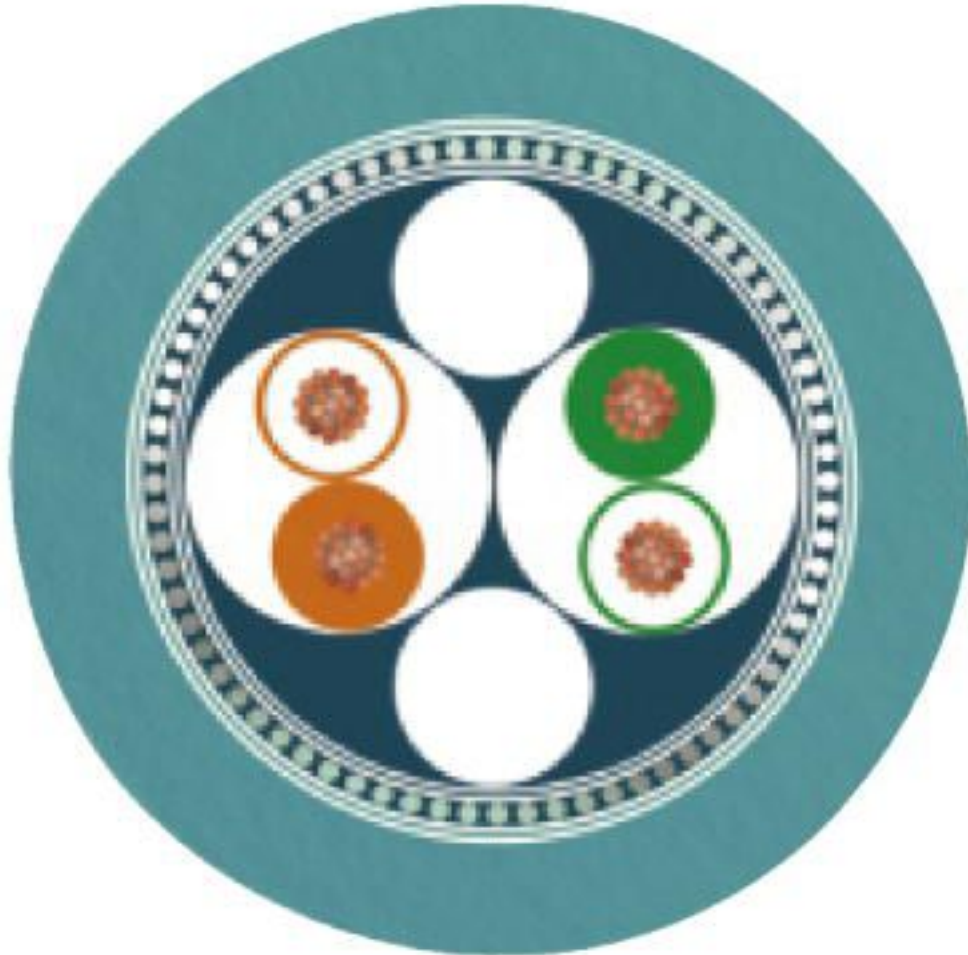
Schematic diagram



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

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Cable cross section



Ethernet flexible CAT5, 2-pair [93E]

Classifications

eCl@ss

eCl@ss 10.0.1	27060308
eCl@ss 4.0	24010400
eCl@ss 4.1	24010400
eCl@ss 5.0	19030300
eCl@ss 5.1	19030300
eCl@ss 6.0	27061800
eCl@ss 7.0	27061801
eCl@ss 8.0	27061801
eCl@ss 9.0	27060308

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Classifications

ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC002599
ETIM 6.0	EC000830
ETIM 7.0	EC003249

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501
UNSPSC 18.0	26121604
UNSPSC 19.0	26121604
UNSPSC 20.0	26121604
UNSPSC 21.0	26121604

Approvals


Approvals


Approvals

UL Listed / EAC-RoHS

Ex Approvals

Approval details

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		

EAC-RoHS		RU D- DE.HB35.B.00387
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PHOENIX CONTACT GmbH & Co. KG
Flachmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>

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