

NBC-M12MSD/15,0-93E/R4AC US - Network cable



1409862

<https://www.phoenixcontact.com/us/products/1409862>

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 15 m

Commercial data

Item number	1409862
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF15
Product key	AF1IHA
GTIN	4046356993029
Weight per piece (including packing)	638.8 g
Weight per piece (excluding packing)	630 g
Customs tariff number	85444290
Country of origin	DE

Technical data

Product properties

Product type	Data cable preassembled
Application	Standard, U.S. cables
Sensor type	Ethernet
Number of positions	4
Shielded	yes
Coding	D

Interfaces

Bus system	Ethernet
Signal type/category	Ethernet CAT5, 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 speed	100 Mbps
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

Connector

Connection 1

Type	Plug straight M12 / IP67
Coding type	D (Data)
Material	CuSn (Contact) Ni/Au (Contact surface) PA (Contact carrier) TPU, hardly inflammable, self-extinguishing (Grip body) Zinc die-cast, nickel-plated (Screw connection)
Degree of protection	IP67

Connection 2

Type	Plug straight RJ45 / IP20
Material	CuSn (Contact) Ni/Au (Contact surface) PA (Contact carrier) PA (Housing)
Degree of protection	IP20

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Cable/line

Cable length	15 m
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 ²
Wire diameter incl. insulation	0.98 mm
External cable diameter	6.40 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/orange-orange, white/green-green
Thickness, outer sheath	1.20 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	700.00 V (50 Hz, 1 min.)
Current carrying capacity of cable	2.00 A (according to DIN VDE 0891-1)

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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)
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)

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Ambient temperature (installation)	-20 °C ... 80 °C
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Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

M12

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

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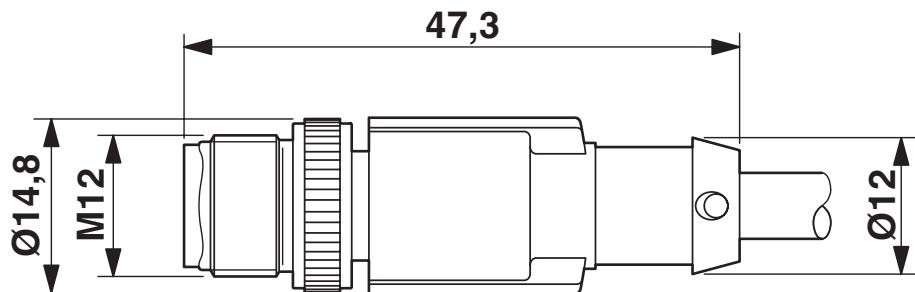


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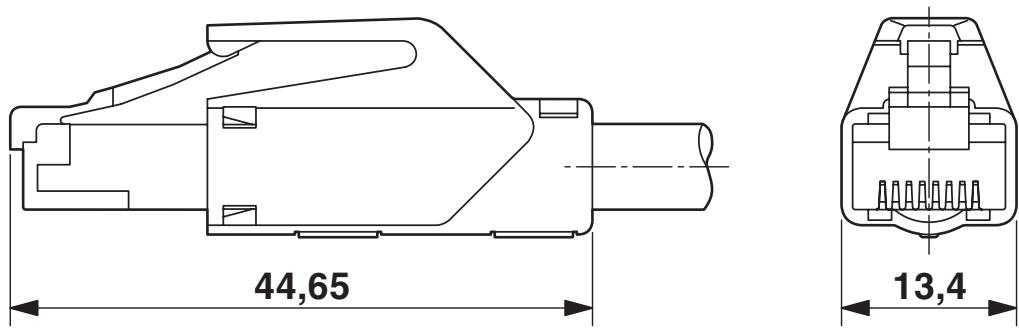
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



RJ45 connector, IP20

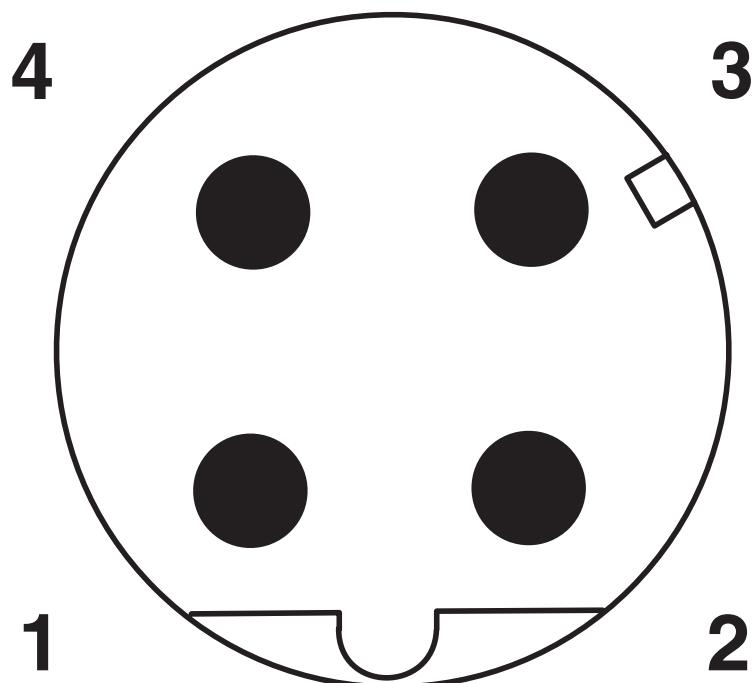
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Schematic diagram



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

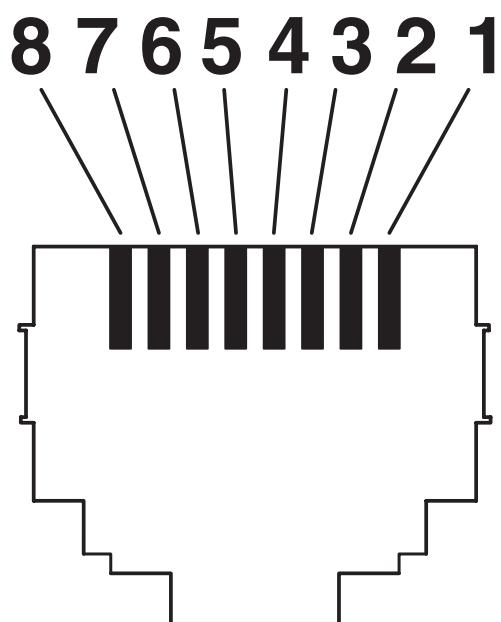
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Schematic diagram

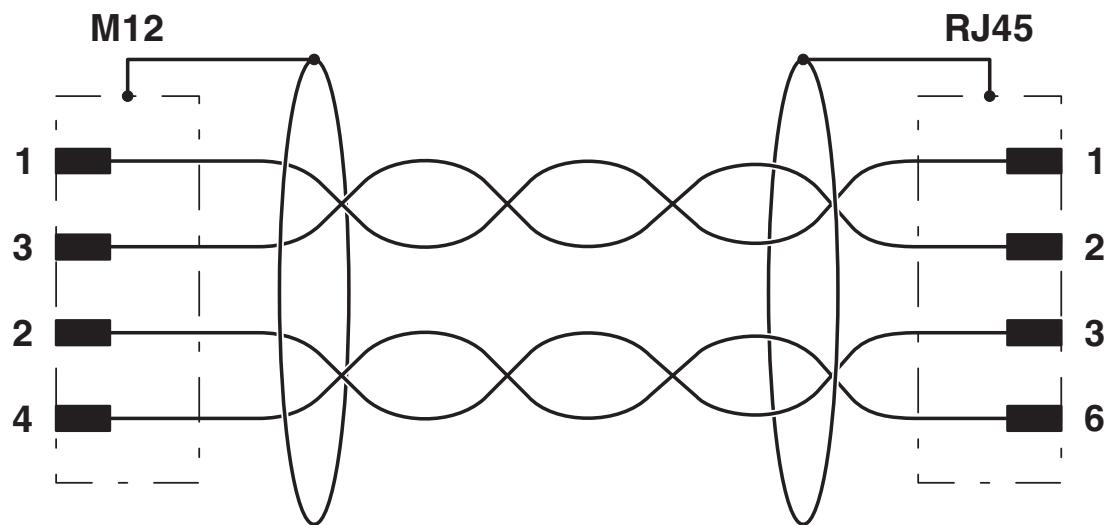


Connector pin assignment plug RJ45

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Circuit diagram



Contact assignment of the M12 and RJ45 plug

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Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1409862>

UL Listed Approval ID: FILE E 335024		Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine		30 V	0.5 A	-	-

EAC-RoHS Approval ID: RU D-DE.HB35.B.00387	
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cUL Listed Approval ID: FILE E 335024		Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine		30 V	0.5 A	-	-

Classifications

ECLASS

ECLASS-13.0	27060307
ECLASS-15.0	27060307

ETIM

ETIM 9.0	EC001855
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UNSPSC

UNSPSC 21.0	26121600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-50 An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
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EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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