NBC-M12MSD/ 2,0-93B/R4AC - Network cable

1407500

https://www.phoenixcontact.com/us/products/1407500

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Aluminum-coated foil, tinned copper braided shield), Advanced Shielding Technology, Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 2 m

Commercial data

Item number	1407500
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJN
Catalog page	Page 397 (C-2-2019)
GTIN	4046356778107
Weight per piece (including packing)	163 g
Weight per piece (excluding packing)	155.8 g
Customs tariff number	85444290
Country of origin	PL

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Technical data

Notes

General	This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 10.1 Cord Sets for Balanced Cabling
General	Further products with variable cable type and variable cable length can be found in the accessories section

Product properties

Product type	Data cable preassembled
Sensor type	PROFINET
Number of positions	4
Application	Standard
Shielded	yes

Insulation characteristics

Overvoltage category	I
Degree of pollution	2

Interfaces

Bus system	PROFINET
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT$^{®}$ 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)

Material specifications

Flammability rating according to UL 94	V2

Connector

Connection 1

Type	Plug straight M12 / IP67
Number of positions	4
Coding type	D (Data)

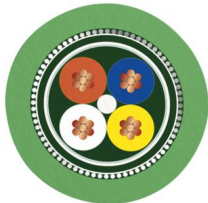|	
Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
	FKM (Seal)
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C

Connection 2

Type	Plug straight RJ45 / IP20
Number of positions	4
Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	PA (Housing)
Insertion/withdrawal cycles	≥ 750
Insulation resistance	≥ 100 MΩ
Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 80 °C

Cable/line

Cable length	2 m

PROFINET PVC stranded CAT5 [93B]

Dimensional drawing	
Cable weight	67 kg/km
UL AWM Style	21694
Number of positions	4
Shielded	yes
Cable type	PROFINET PVC stranded CAT5 [93B]
Conductor structure	1x4xAWG22/7, SF/TQ
Signal runtime	5.3 ns/m

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Signal speed	0.66 c
Conductor structure signal line	7x 0.25 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm²
Wire diameter incl. insulation	1.55 mm
External cable diameter	6.50 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	green RAL 6018
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE
Single wire, color	white, yellow, blue, orange
Thickness, outer sheath	approx. 0.90 mm
Overall twist	Star quad
Optical shield covering	85 %
Insulation resistance	≥ 500 MΩ*km
Coupling resistance	≤ 20.00 mΩ/m (at 10 MHz)
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±15 Ω (at 100 MHz)
Nominal voltage, cable	600 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000.00 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	7 x D
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	46 mm
Near end crosstalk attenuation (NEXT)	80 dB (with 1 MHz)
	76 dB (at 4 MHz)
	70 dB (at 10 MHz)
	65 dB (at 16 MHz)
	63 dB (at 20 MHz)
	60 dB (at 31.25 MHz)
	55 dB (at 62.5 MHz)
	50 dB (at 100 MHz)
Shield attenuation	2.1 dB (with 1 MHz)
	4 dB (at 4 MHz)
	6.3 dB (at 10 MHz)
	8 dB (at 16 MHz)
	9 dB (at 20 MHz)
	11.4 dB (at 31.25 MHz)
	16.5 dB (at 62.5 MHz)
	21.3 dB (at 100 MHz)
Flame resistance	according to UL 1685 (CSA FT 4)
Resistance to oil	Resistant to oil to a limited extent
Other resistance	UV resistant (According to UL 1581, Section 1200)

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Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)
	-40 °C ... 70 °C (Cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 60 °C

Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

M12

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

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Drawings

Schematic diagram

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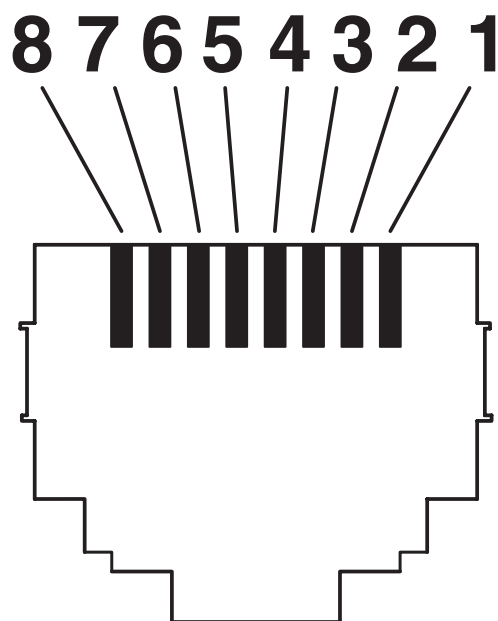
Connector pin assignment plug RJ45

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Circuit diagram

1	1 YE
3	2 OG
2	3 WH
4	6 BU

Schematic diagram

4   3

1   2
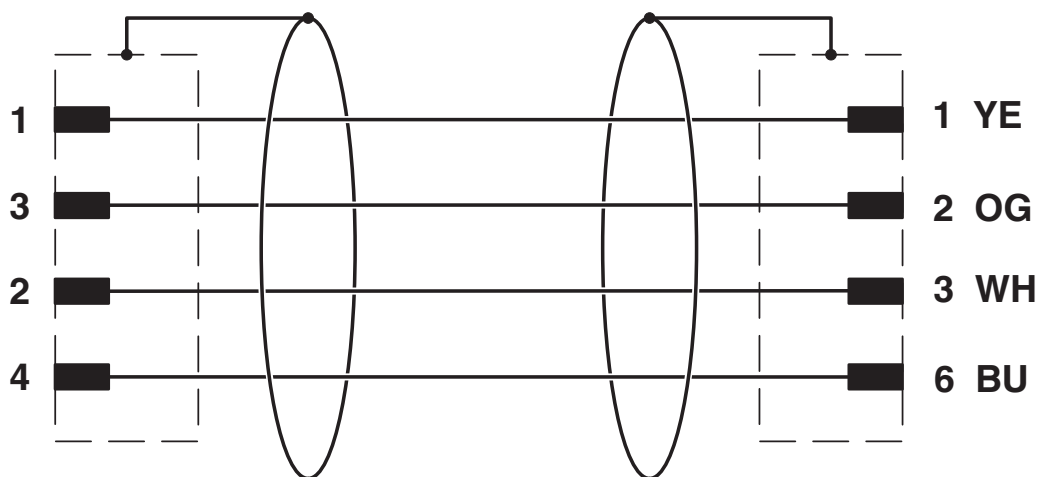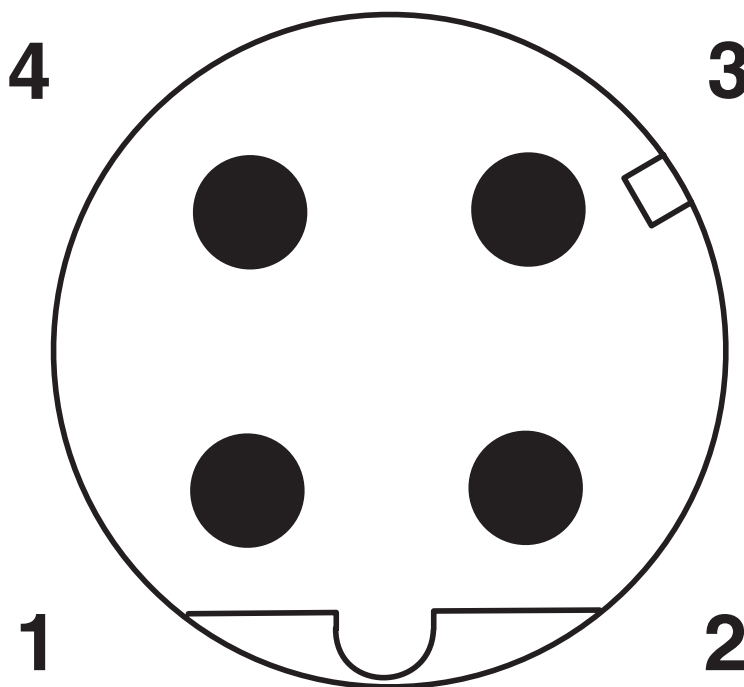
Pin assignment M12 male connector, 4-pos., D-coded, male side

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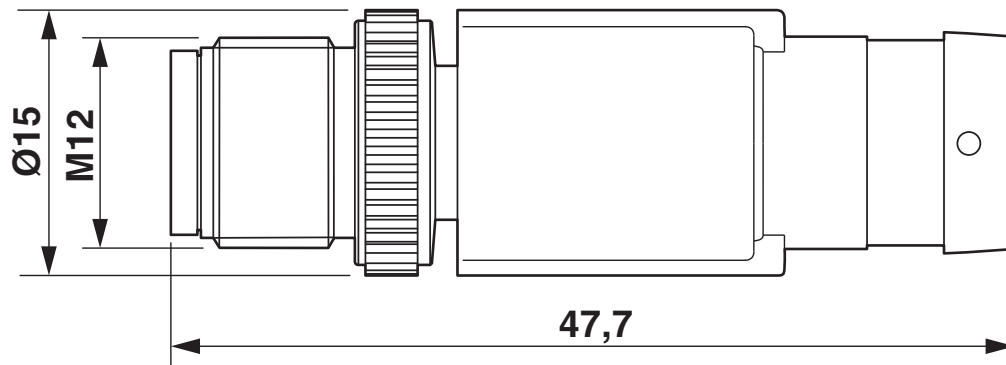
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Dimensional drawing

13,9   48,5   14,9
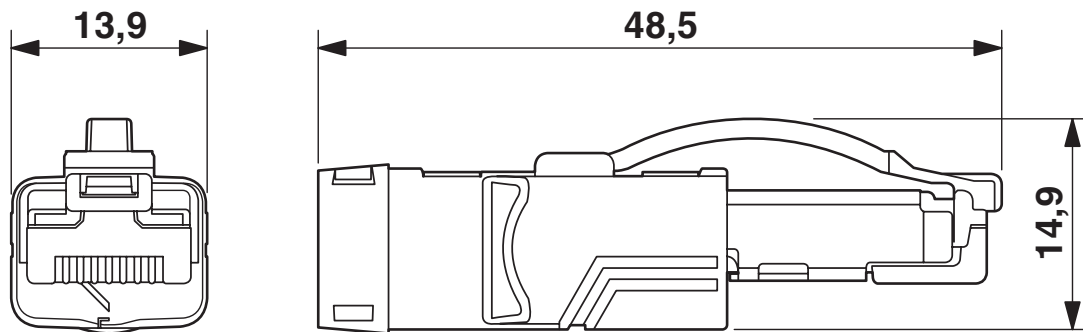
RJ45 connector, IP20

Dimensional drawing

Ø15   M12   47,7

Plug, M12 x 1, straight, shielded

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1407500

UL Listed
Approval ID: FILE E 335024

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	60 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
	60 V	0.5 A	-	-

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

cULus Listed

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Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001855

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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