

NBC-M12MRD/10,0-93C - Network cable



1416744

<https://www.phoenixcontact.com/us/products/1416744>

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PUR halogen-free, green RAL 6018, shielded (Advanced Shielding Technology), Plug angled M12, coding: D / IP67, on free cable end, cable length: 10 m

Commercial data

Item number	1416744
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	AF1CJN
GTIN	4055626076331
Weight per piece (including packing)	660.2 g
Weight per piece (excluding packing)	642.2 g
Country of origin	PL

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
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Product properties

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

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

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	4 A
Transmission medium	Copper
Transmission speed	100 Mbps
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

Material specifications

Flammability rating according to UL 94	V0
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Connector

Connection 1

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Dimensional drawing	 Pin assignment M12 male connector, 4-pos., D-coded, male side
Type	M12 Plug, angled, 4-position, shielded (Advanced Shielding Technology), Keying: D
Number of positions	4
Shielded	yes
Shielding	Advanced Shielding Technology
Signal type/category	EtherCAT® CAT5 (IEC 11801), 100 Mbps PROFINET CAT5 (IEC 11801)
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Overvoltage category	II
Degree of pollution	3
Tightening torque	0.4 Nm
Material Contact	CuSn
Material Contact surface	Ni/Au
Material Contact carrier	PA 6.6
Material Screw connection	Die-cast zinc, nickel-plated
Material Grip body	TPU, hardly inflammable, self-extinguishing
Material Seal	FKM
Flammability rating according to UL 94	V0
Degree of protection	IP65 IP67
Ambient temperature (operation)	-25 °C ... 85 °C
Standard designation	M12 connector
Standards/regulations	IEC 61076-2-101

Connection 2

Type	free cable end
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Cable/line

Cable length	10 m
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PROFINET drag chain CAT5 [93C]

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Dimensional drawing	
UL AWM Style	20233 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	PROFINET drag chain CAT5 [93C]
Conductor structure	1x4xAWG22/7, SF/TQ
AWG signal line	22
Conductor cross section	4x 0.34 mm ²
Wire diameter incl. insulation	1.5 mm ±0.05 mm
External cable diameter	6.50 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	green RAL 6018
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE
Single wire, color	white, yellow, blue, orange
Overall twist	Star quad
Optical shield covering	85 %
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±15 Ω (at 1 ... 100 MHz)
Nominal voltage, cable	≤ 300 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	5 x D
Minimum bending radius, flexible installation	7.5 x D
Dynamic load capacity (bending)	Max. bending cycles: 3000000, Bending radius: 200 mm, Traversing path: 10 m, Traversing rate: 4 m/s, Acceleration: 4 m/s ²
Dynamic load capacity (torsion)	Torsion: ±30 °/m
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2 in accordance with UN ECE-R 118.03 according to CSA C 22.2 No. 210-FT1
Resistance to oil	in accordance with DIN EN 60811-404
Other resistance	UV resistant
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation) -40 °C ... 70 °C (Cable, flexible installation)

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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65
	IP67

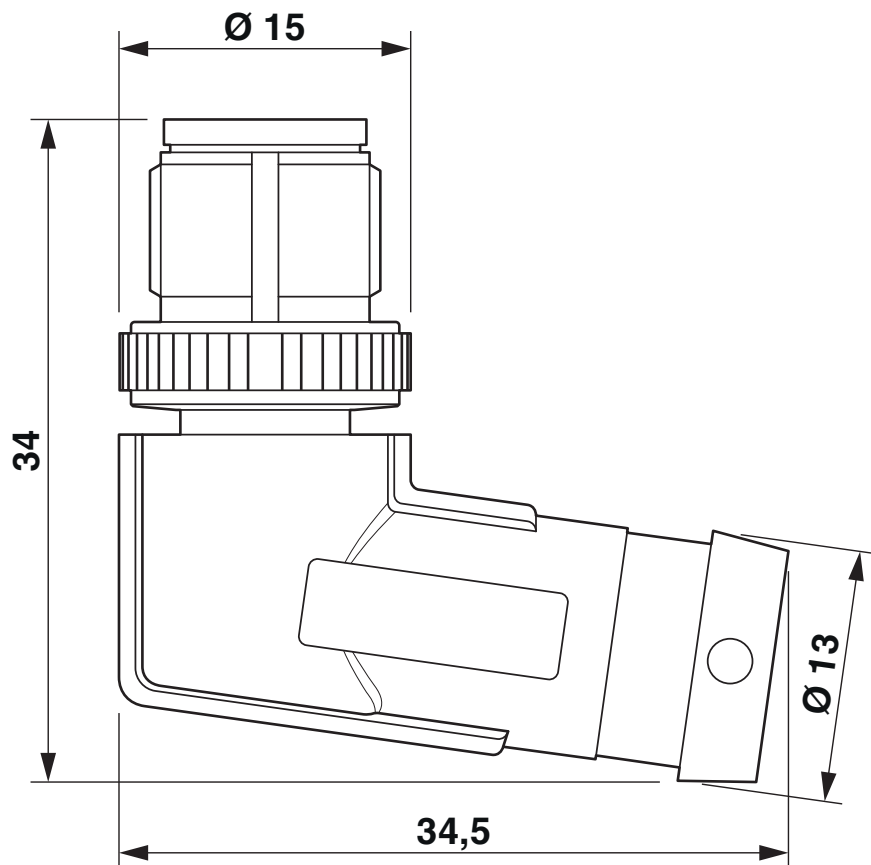
Standards and regulations

M12

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

Drawings

Dimensional drawing



M12 x 1 male plug, angled, shielded

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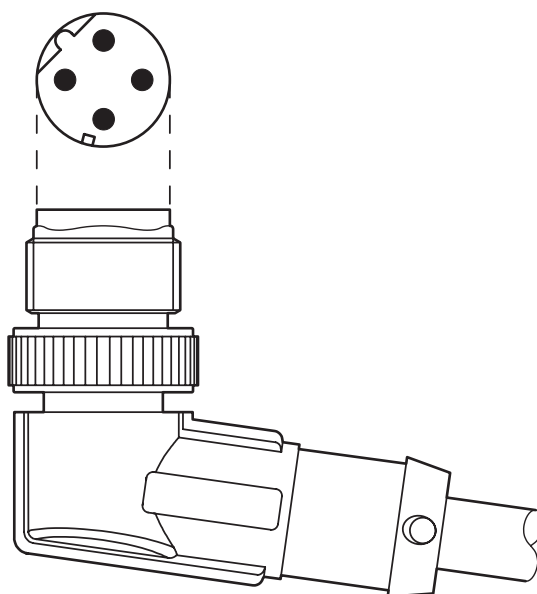
<https://www.phoenixcontact.com/us/products/1416744>

Schematic diagram



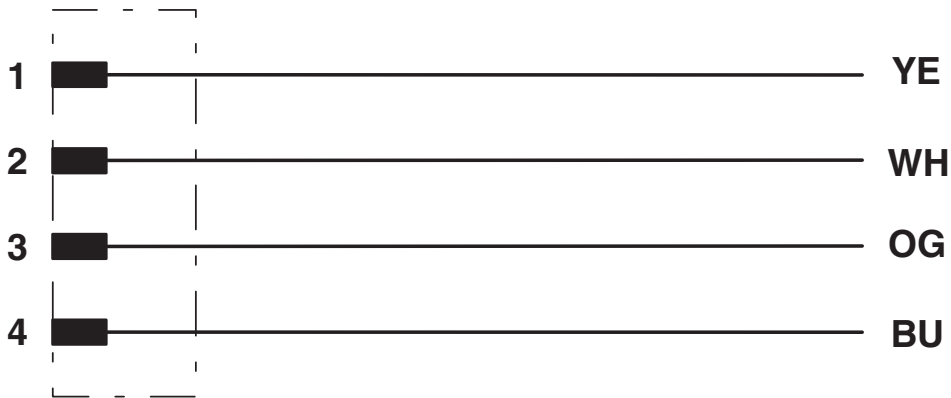
Pin assignment M12 male connector, 4-pos., D-coded, male side

Schematic diagram



Arrangement of the pin assignment, M12 plug, angled

Circuit diagram



Contact assignment of the M12 plug

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Approvals

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

	cULus Listed Approval ID: E335024			
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	250 V	4 A	-	-

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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
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

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