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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

1553938

https://www.phoenixcontact.com/gb/products/1553938

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: D, on Socket straight M12 / IP67, coding: D, cable length: 2 m

Commercial Data

Item number	1553938
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1CJN
Product Key	BF1CJN
GTIN	4046356161787
Weight per Piece (including packing)	171 g
Weight per Piece (excluding packing)	171 g
Customs tariff number	85444290
Country of origin	PL

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1553938

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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
General	CMC - Conductor marker carrier - PATG

Product properties

Product type	Data cable preassembled
Number of positions	4
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	D - data

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
	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT® CAT5 (IEC 11801), 100 Mbps

LED 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

Material specifications

Flammability rating according to UL 94	V0

Connector

Header 1

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1553938

https://www.phoenixcontact.com/gb/products/1553938

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
Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C

Head 2

Type	Socket 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
Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Ambient temperature (operation)	-25 °C ... 90 °C

Cable / line

Cable length	2 m
Cable weight	67 kg/km
UL AWM Style	21694
Number of positions	4
Shielded	yes
Cable type	PROFINET PVC stranded CAT5 [93B]
Signal runtime	5.3 ns/m
Signal speed	0.66 c
Conductor structure signal line	7x 0.25 mm

Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

1553938

https://www.phoenixcontact.com/gb/products/1553938

AWG signal line	22
Conductor cross section	4x 0.34 mm²
Wire diameter incl. insulation	1.55 mm
External cable diameter	6.5 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. 0.9 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 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	7 x D
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
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)
	-40 °C ... 70 °C (Cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 60 °C

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Cable structure

Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT® CAT5 (IEC 11801), 100 Mbps

Ambient conditions

Degree of protection	IP65
	IP67
	IP68

Standards and regulations

M12

Standards/specifications	IEC 61076-2-101

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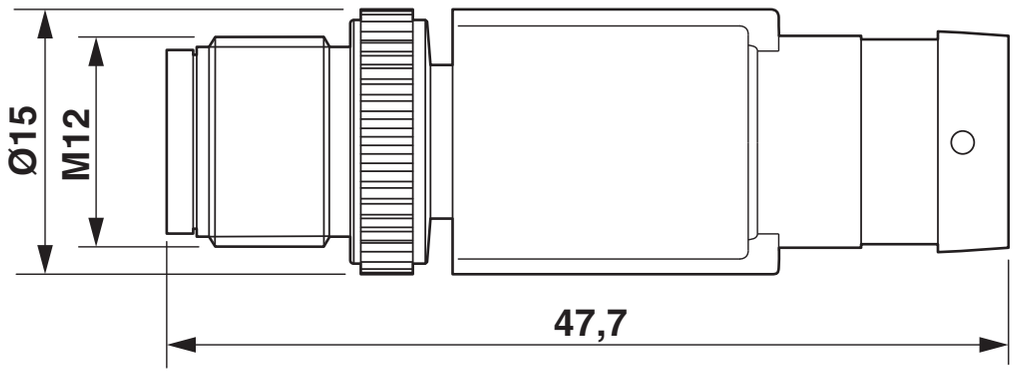
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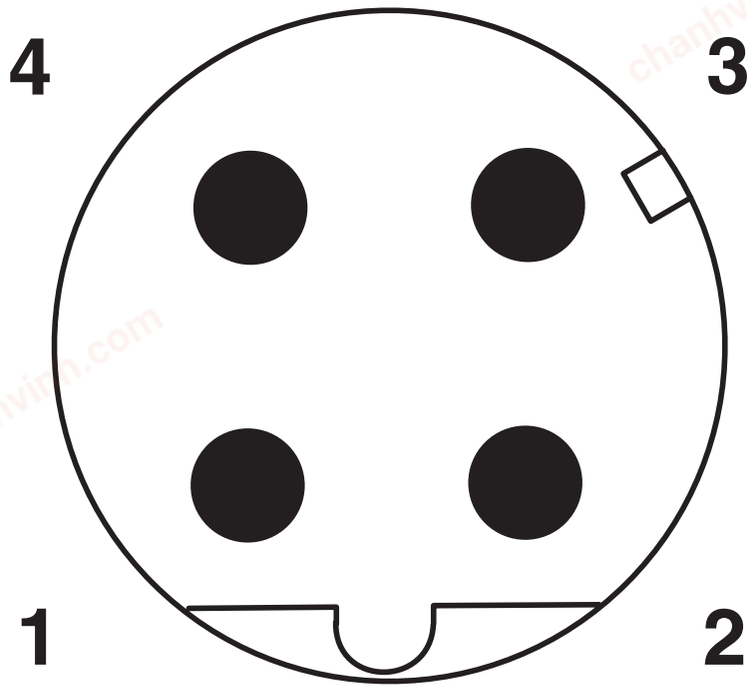
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



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

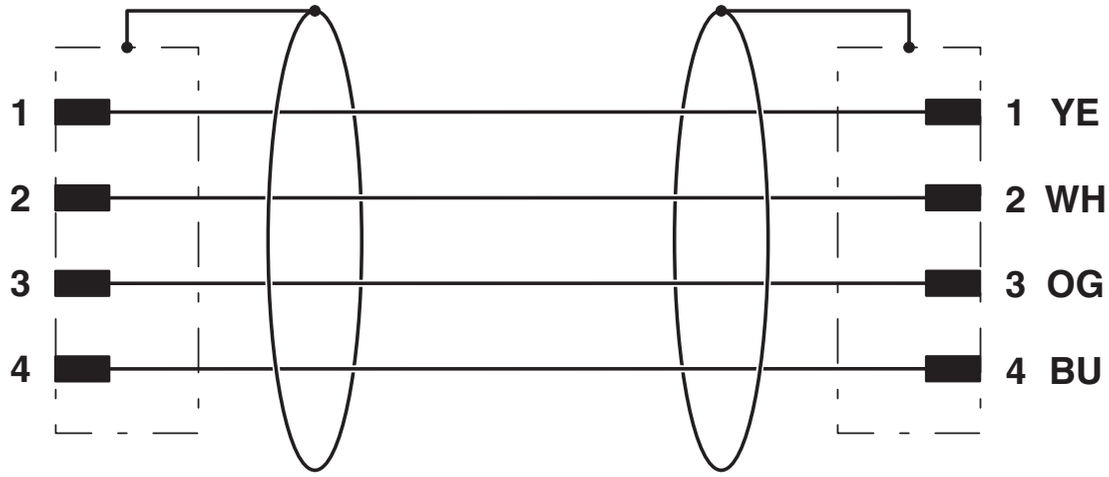
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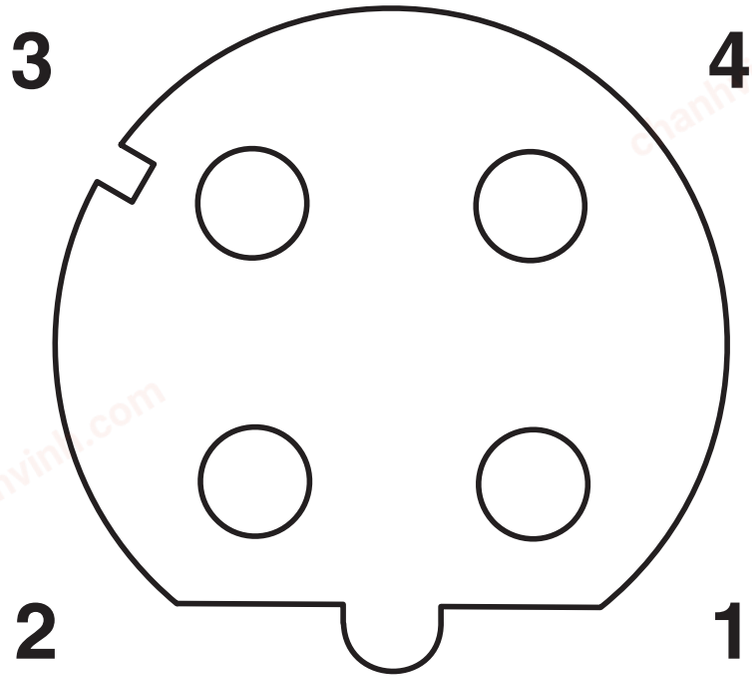
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Circuit diagram



Contact assignment of the M12 plugs

Schematic diagram



Pin assignment M12 socket, 4-pos., D-coded, female side

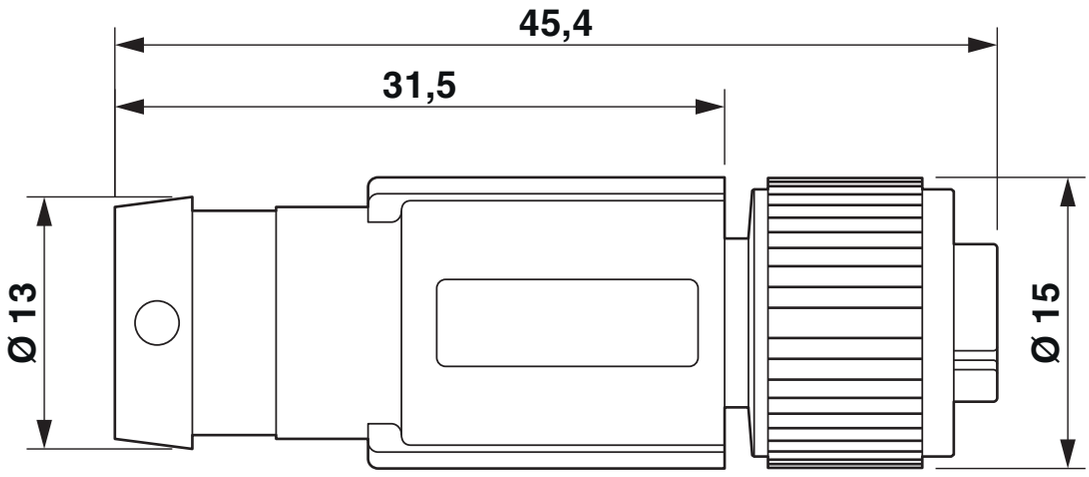
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Dimensional drawing



M12 x 1 socket, straight, shielded

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Approvals

EAC

EAC

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Classifications

ECLASS

ECLASS-9.0	27060311
ECLASS-10.0.1	27060311
ECLASS-11.0	27060307

ETIM

ETIM 8.0	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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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Accessories

Network cable

Network cable - NBC-MSD-MSD SCO-PN/.../... - 1408634

https://www.phoenixcontact.com/gb/products/1408634



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug straight M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

https://www.phoenixcontact.com/gb/products/1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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Network cable

Network cable - NBC-MSD-MRD SCO-PN/.../... - 1408625

https://www.phoenixcontact.com/gb/products/1408625



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Plug angled M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Torque screwdriver

Torque screwdriver - TSD-M 1,2NM - 1212224

https://www.phoenixcontact.com/gb/products/1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Network cable

Network cable - NBC-MRD-MRD SCO-PN/.../... - 1408624

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12 SPEEDCON / IP67, coding: D, on Plug angled M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Adapter insert

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600

https://www.phoenixcontact.com/gb/products/1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Network cable

Network cable - NBC-MSD-FSD SCO-PN/.../... - 1408617

https://www.phoenixcontact.com/gb/products/1408617



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Tool

Tool - SAC BIT M12-D15 - 1208432

https://www.phoenixcontact.com/gb/products/1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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Network cable

Network cable - NBC-MSD-FRD SCO-PN/.../... - 1408608

https://www.phoenixcontact.com/gb/products/1408608



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: D, on Socket angled M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Sealing cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

https://www.phoenixcontact.com/gb/products/1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Network cable

Network cable - NBC-MRD-FSD SCO-PN/.../... - 1408616

https://www.phoenixcontact.com/gb/products/1408616



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12 SPEEDCON / IP67, coding: D, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Locking clip

Locking clip - SAC-M12-EXCLIP-M - 1558988

https://www.phoenixcontact.com/gb/products/1558988



Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Network cable

Network cable - NBC-MRD-FRD SCO-PN/.../... - 1408607

https://www.phoenixcontact.com/gb/products/1408607



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug angled M12 SPEEDCON / IP67, coding: D, on Socket angled M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)

Screw plug

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

https://www.phoenixcontact.com/gb/products/1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



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Network cable - NBC-M12MSD/ 2,0-93B/M12FSD CMC

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Locking clip

Locking clip - SAC-M12-EXCLIP-F - 1558991

https://www.phoenixcontact.com/gb/products/1558991



Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

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