

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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

Commercial data

Item number	1407401
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJI
Catalog page	Page 199 (C-6-2019)
GTIN	4046356775298
Weight per piece (including packing)	124 g
Weight per piece (excluding packing)	119 g
Customs tariff number	85444290
Country of origin	PL

1407401

<https://www.phoenixcontact.com/us/products/1407401>

Technical data

Notes

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	Ethernet
Number of positions	4
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	D

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

Bus system	Ethernet
Signal type/category	Ethernet 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 characteristics (category)	CAT5 (IEC 11801:2002)

Material specifications

Flammability rating according to UL 94	V0
--	----

Connector

Connection 1

Type	Plug straight M12 / IP67
Number of positions	4
Coding type	D (Data)
Handle color	black
	CuZn (Contact)

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

Material	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


Connection 2

Type	Socket straight M12 / IP67
Number of positions	4
Coding type	D (Data)
Handle color	black
Material	CuZn (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

Cable/line

Cable length	2 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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

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	6.4 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	1.2 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 V (50 Hz, 1 min.)
Current carrying capacity of cable	2 A (according to DIN VDE 0891-1)
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)

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

	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)
Ambient temperature (installation)	-20 °C ... 80 °C

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65
	IP67

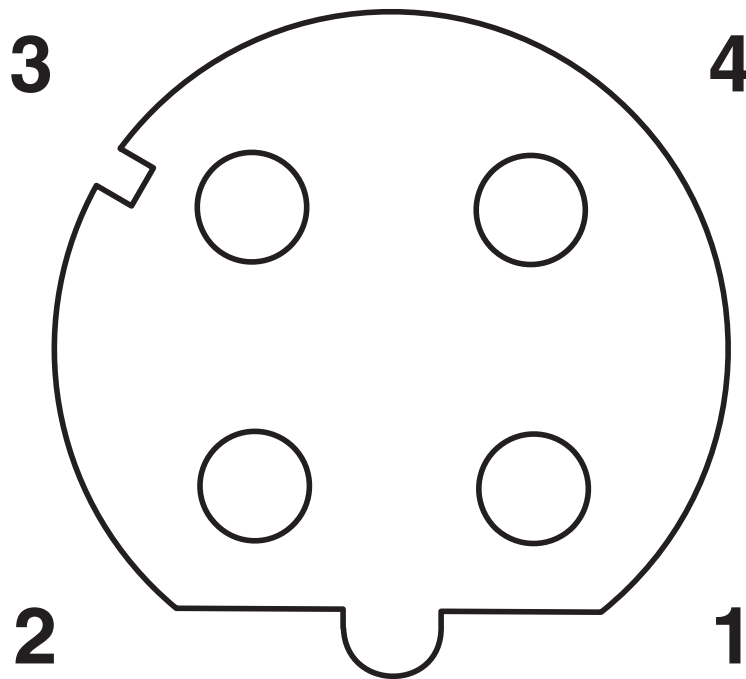
Standards and regulations

M12

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

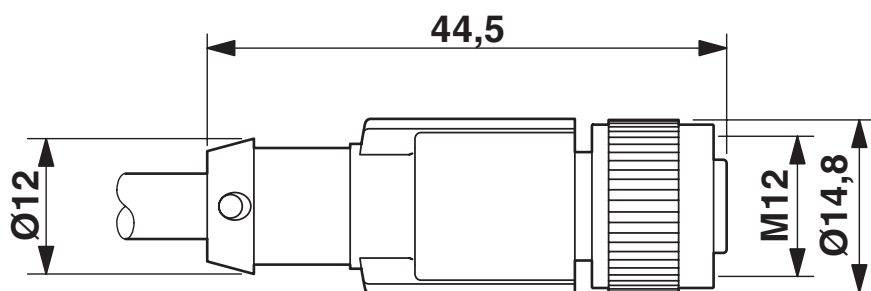
Drawings

Schematic diagram



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

Dimensional drawing



M12 x 1 socket, straight, shielded

1407401

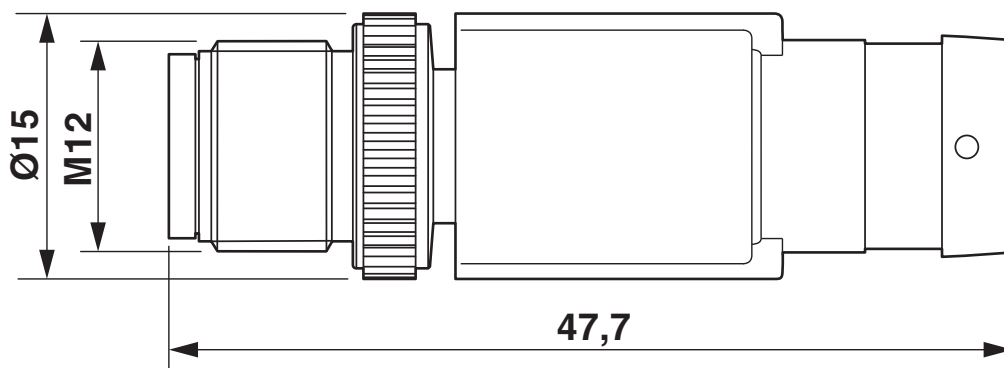
<https://www.phoenixcontact.com/us/products/1407401>

Schematic diagram



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

Dimensional drawing

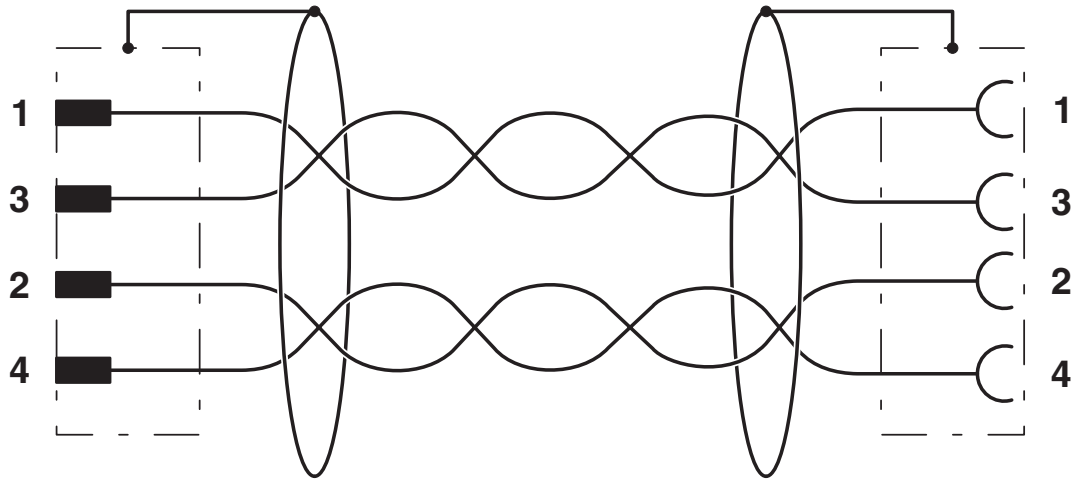


Plug, M12 x 1, straight, shielded

1407401

<https://www.phoenixcontact.com/us/products/1407401>

Circuit diagram





1407401

<https://www.phoenixcontact.com/us/products/1407401>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407401>

 UL Listed Approval ID: FILE E 335024				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	4 A	-	-

 cUL Listed Approval ID: FILE E 335024				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	4 A	-	-

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

cULus Listed	
---------------------	--

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001855
----------	----------

UNSPSC

UNSPSC 21.0	26121600
-------------	----------

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

Accessories

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

1408706

<https://www.phoenixcontact.com/us/products/1408706>



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

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

1408700

<https://www.phoenixcontact.com/us/products/1408700>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable

1407401

<https://www.phoenixcontact.com/us/products/1407401>



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

1408692

<https://www.phoenixcontact.com/us/products/1408692>



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

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

1408684

<https://www.phoenixcontact.com/us/products/1408684>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable

1407401

<https://www.phoenixcontact.com/us/products/1407401>



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

1408699

<https://www.phoenixcontact.com/us/products/1408699>



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

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

1408691

<https://www.phoenixcontact.com/us/products/1408691>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable

1407401

<https://www.phoenixcontact.com/us/products/1407401>



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

1408683

<https://www.phoenixcontact.com/us/products/1408683>



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

PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/us/products/1430873>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

SAC-M12-EXCLIP-M - Locking clip

1558988

<https://www.phoenixcontact.com/us/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

PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/us/products/1430899>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/us/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

TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/us/products/1208429>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/us/products/1212224>



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

TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/us/products/1212600>



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

NBC-M12MSD/ 2,0-93E/M12FSD - Network cable



1407401

<https://www.phoenixcontact.com/us/products/1407401>

SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/us/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

Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com