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

1407357

https://www.phoenixcontact.com/us/products/1407357

PHŒNIX CONTACT

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, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: 2 m

Commercial data

Item number	1407357
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJI
Catalog page	Page 199 (C-6-2019)
GTIN	4046356774857
Weight per piece (including packing)	107 g
Weight per piece (excluding packing)	104 g
Customs tariff number	85444210
Country of origin	PL

1407357

https://www.phoenixcontact.com/us/products/1407357

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
Application	Standard
Sensor type	Ethernet
Number of positions	4
Shielded	yes

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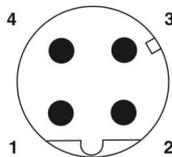
Dimensional drawing	Pin assignment M12 male connector, 4-pos., D-coded, male side

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

1407357

https://www.phoenixcontact.com/us/products/1407357

Type	M12 Plug, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D
Number of positions	4
Shielded	yes
Shielding	Advanced Shielding Technology
Signal type/category	Ethernet CAT5 (IEC 11801), 100 Mbps
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Overvoltage category	II
Degree of pollution	3
Tightening torque	0.4 Nm
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material for screw connection	Zinc die-cast, nickel-plated
Seal material	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 free cable end

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
Number of positions	4
Shielded	yes
Cable type	Ethernet flexible CAT5, 2-pair [93E]
Conductor structure	2x2xAWG26/7, SF/UTP

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

1407357

https://www.phoenixcontact.com/us/products/1407357

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 mm²
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)
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-summated 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)

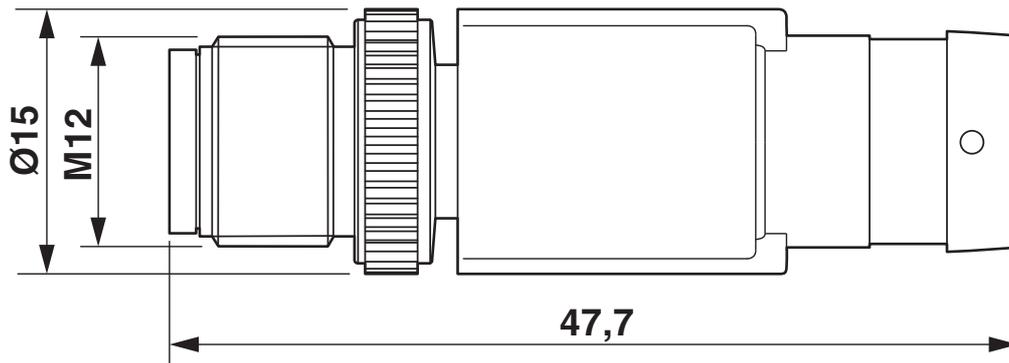|		32.3 dB (at 100 MHz)
Return attenuation (RL)		23 dB (at 4 MHz)
		24.1 dB (at 8 MHz)
		25 dB (at 10 MHz)
		25 dB (at 16 MHz)
		25 dB (at 20 MHz)
		23.6 dB (at 31.25 MHz)
		21.5 dB (at 62.5 MHz)
		20.1 dB (at 100 MHz)
Shield attenuation		3.2 dB (with 1 MHz)
		6 dB (at 4 MHz)
		9.5 dB (at 10 MHz)
		12.1 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)
Ambient temperature (installation)		-20 °C ... 80 °C

Standards and regulations

M12

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

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

1407357

https://www.phoenixcontact.com/us/products/1407357

Drawings

Dimensional drawing

Ø15 M12

47,7

Plug, M12 x 1, straight, shielded

Circuit diagram

1 — WH/OG

3 — OG

2 — WH/GN

4 — GN

NBC-M12MSD/ 2,0-93E - Network cable
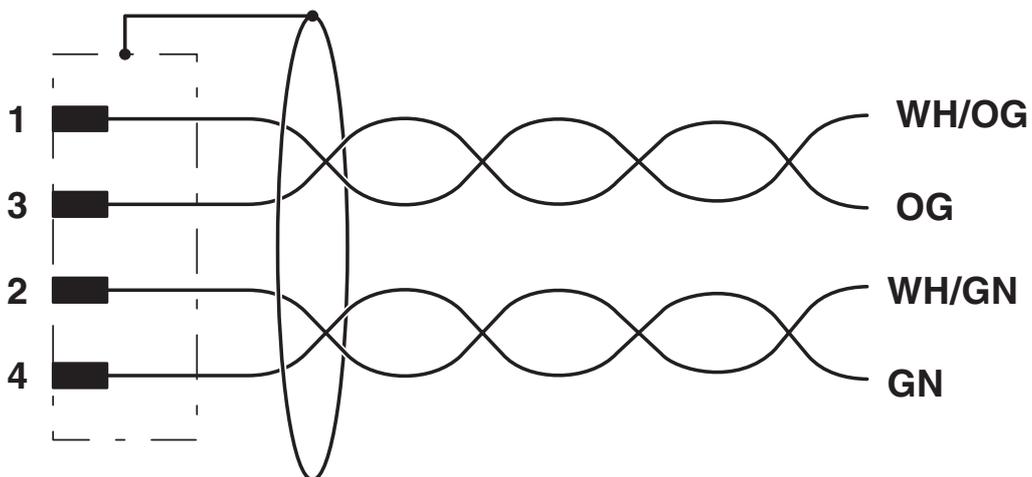
1407357

https://www.phoenixcontact.com/us/products/1407357

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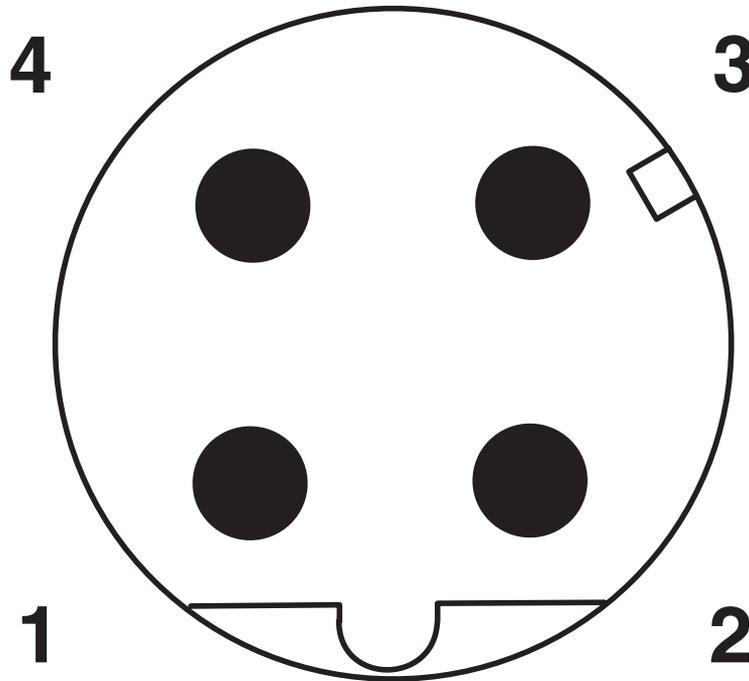
Pin assignment M12 male connector, 4-pos., D-coded, male side

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1407357

cUL Recognized
Approval ID: FILE E 335024

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	4 A	-	-

UL Recognized
Approval ID: FILE E 335024

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	4 A	-	-

cULus Recognized

Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

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%

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

1407357

https://www.phoenixcontact.com/us/products/1407357

Accessories

NBC-M12MSD/.../... - Network cable

1408713

https://www.phoenixcontact.com/us/products/1408713

Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on free cable end, cable length: Free input (0.2 ... 40.0 m)

NBC-M12MRD/.../... - Network cable

1408705

https://www.phoenixcontact.com/us/products/1408705

Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Plug angled M12 SPEEDCON, coding: D / IP67, on free cable end, cable length: Free input (0.2 ... 40.0 m)

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

1407357

https://www.phoenixcontact.com/us/products/1407357

NBC-M12FSD/.../... - Network cable

1408697

https://www.phoenixcontact.com/us/products/1408697

Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), free cable end, on Socket straight M12, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

NBC-M12FRD/.../... - Network cable

1408690

https://www.phoenixcontact.com/us/products/1408690

Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, free cable end, on Socket angled M12 SPEEDCON, coding: D / IP67, cable length: Free input (0.2 ... 40.0 m)

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

1407357

https://www.phoenixcontact.com/us/products/1407357

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

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

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

WP-CTA POM 13,0 BK - Protective hose adapter

Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

WP-PA HF 13,0 BK - Protective hose

Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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

1407357

https://www.phoenixcontact.com/us/products/1407357

WP-PA HF-HB 13,0 BK - Protective hose

3240839

https://www.phoenixcontact.com/us/products/3240839

Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

SACC-M12MSD-4QO SH ETH - Data connector

1411066

https://www.phoenixcontact.com/us/products/1411066

Data connector, Ethernet CAT5 (100 Mbps), 4-position, halogen-free, shielded, Plug straight M12, coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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

1407357

https://www.phoenixcontact.com/us/products/1407357

SACC-M12MRD-4Q SH - Data connector

1553624

https://www.phoenixcontact.com/us/products/1553624

Data connector, Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, coding: D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm

SACC-M12FSD-4QO SH ETH - Data connector

1411069

https://www.phoenixcontact.com/us/products/1411069

Data connector, Ethernet CAT5 (100 Mbps), 4-position, halogen-free, shielded, Socket straight M12, coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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

1407357

https://www.phoenixcontact.com/us/products/1407357

SACC-M12FRD-4Q SH - Data connector

1553637

https://www.phoenixcontact.com/us/products/1553637

Data connector, Ethernet CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, coding: D, Insulation displacement connection, knurl material: Brass, nickel-plated, external cable diameter 4 mm ... 8 mm

SACC-CC-4QO SH ETH - Conductor connector

1414415

https://www.phoenixcontact.com/us/products/1414415

Cable connector, Ethernet CAT5 (100 Mbps), 4-pos., halogen-free, shielded, insulation displacement connection, housing material: zinc die-cast, nickel-plated, outer cable diameter of 5 mm ... 9.7 mm

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

1407357

https://www.phoenixcontact.com/us/products/1407357

VS-08-RJ45-5-Q/IP20 - RJ45 connector

1656725

https://www.phoenixcontact.com/us/products/1656725

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042, Ethernet

VS-08-RJ45-5-Q/IP20 BK - RJ45 connector

1658008

https://www.phoenixcontact.com/us/products/1658008

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: black, Ethernet

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

1407357

https://www.phoenixcontact.com/us/products/1407357

CUC-IND-C1ZNI-S/R4IE8 - RJ45 connector

1421607

https://www.phoenixcontact.com/us/products/1421607

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

CUC-IND-C1ZNI-T/R4IE8 - RJ45 connector

1421877

https://www.phoenixcontact.com/us/products/1421877

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

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

1407357

https://www.phoenixcontact.com/us/products/1407357

CUC-IND-C1ZNI-B/R4IE8 - RJ45 connector

1421876

https://www.phoenixcontact.com/us/products/1421876

RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: Insulation displacement connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

CUC-V06-C1PGY-S/R4CE8:1 - RJ45 connector

1414383

https://www.phoenixcontact.com/us/products/1414383

RJ45 connector, design: RJ45, degree of protection: IP67, number of positions: 8, 1 Gbps, CAT6, material: Plastic, connection method: Crimp connection, connection cross section: AWG 27- 24, cable outlet: straight, color: gray, Ethernet/PROFINET

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

1407357

https://www.phoenixcontact.com/us/products/1407357

CUC-V06-C1PBK-S/R4CE8:1 - RJ45 connector

1414408

https://www.phoenixcontact.com/us/products/1414408

RJ45 connector, design: RJ45, degree of protection: IP67, number of positions: 8, 1 Gbps, CAT6, material: Plastic, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: black, Ethernet/PROFINET

CUC-V14-C1ZNI-S/R4E8 - RJ45 connector

1422661

https://www.phoenixcontact.com/us/products/1422661

RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: straight, Ethernet

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

1407357

https://www.phoenixcontact.com/us/products/1407357

CUC-V14-C1ZNI-T/R4E8 - RJ45 connector

1422663

https://www.phoenixcontact.com/us/products/1422663

RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

CUC-V14-C1ZNI-B/R4E8 - RJ45 connector

1422662

https://www.phoenixcontact.com/us/products/1422662

RJ45 connector, degree of protection: IP65/IP67, number of positions: 8, 1 Gbps, CAT5, material: Metal, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

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

1407357

https://www.phoenixcontact.com/us/products/1407357

VS-PPC-C1-RJ45-POBK-PG9-4Q5 - RJ45 connector

1608126

https://www.phoenixcontact.com/us/products/1608126

RJ45 connector, degree of protection: IP65/IP67, number of positions: 4, CAT5 (IEC 11801:2002), material: Plastic, connection method: IDC fast connection, connection cross section: AWG 26- 22, cable outlet: straight, color: black, Ethernet

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 - Network cable

1407357

https://www.phoenixcontact.com/us/products/1407357

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 - Network cable

1407357

https://www.phoenixcontact.com/us/products/1407357

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

CUTFOX 12 - Cable-cutting tool

1212128

https://www.phoenixcontact.com/us/products/1212128

Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm^2)

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

1407357

https://www.phoenixcontact.com/us/products/1407357

CUTFOX-S VDE - Diagonal cutter

1212207

https://www.phoenixcontact.com/us/products/1212207

Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

VS-CABLE-STRIP-VARIO - Stripping tool

1657407

https://www.phoenixcontact.com/us/products/1657407

Stripping tool, for the multi-level stripping of shielded cables

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

1407357

https://www.phoenixcontact.com/us/products/1407357

MICROFOX-SP-1 - Diagonal cutter

1212487

https://www.phoenixcontact.com/us/products/1212487

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

WIREFOX 4 - Stripping tool

1212156

https://www.phoenixcontact.com/us/products/1212156

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

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

1407357

https://www.phoenixcontact.com/us/products/1407357

WIREFOX-E 4 - Stripping tool

1212704

https://www.phoenixcontact.com/us/products/1212704

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

WIREFOX 10 - Stripping tool

1212150

https://www.phoenixcontact.com/us/products/1212150

Stripping tool, for cables and conductors from 0.02 - 10 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade