

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

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, PROFINET CAT5 (100 Mbps), Ethernet CAT5 (100 Mbps), 4-position, PE-X halogen-free, black RAL 9005, shielded, Plug straight M12 SPEEDCON, coding: D / IP65, on Plug straight M12 SPEEDCON, coding: D / IP65, cable length: 5 m, For railway applications

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Securely locked by special vibration brake
- Resistant to temperature influences – tested for an extended temperature range and for resistance to temperature shocks
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

Commercial data

Item number	1407343
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CJN
Catalog page	Page 133 (C-4-2013)
GTIN	4046356774598
Weight per piece (including packing)	353 g
Weight per piece (excluding packing)	353 g
Customs tariff number	85444290
Country of origin	PL

1407343

<https://www.phoenixcontact.com/us/products/1407343>

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	Railway applications
Sensor type	PROFINET
Number of positions	4
No. of cable outlets	1
Shielded	yes
Coding	D

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

Bus system	PROFINET
	Ethernet
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	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 SPEEDCON / IP65
Number of positions	4
Locking type	SPEEDCON

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

Coding type	D (Data)
Shielded	yes
Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA 6.6 (Contact carriers)
	PA 6.6 (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Standards/regulations	PA 6.6: Fire protection in rail vehicles - requirement sets R22, R23, and R24 acc. to DIN EN 45545-2 (Risk level HL1 - HL3)
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP65
Ambient temperature (operation)	-40 °C ... 85 °C

Connection 2

Type	Plug straight M12 SPEEDCON / IP65
Number of positions	4
Locking type	SPEEDCON
Coding type	D (Data)
Shielded	yes
Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA 6.6 (Contact carriers)
	PA 6.6 (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Standards/regulations	PA 6.6: Fire protection in rail vehicles - requirement sets R22, R23, and R24 acc. to DIN EN 45545-2 (Risk level HL1 - HL3)
Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP65
Ambient temperature (operation)	-40 °C ... 85 °C

Cable/line

Cable length	5 m
--------------	-----


PROFINET RADOX[®] railway application CAT5 [937]

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

Dimensional drawing	
Cable weight	70 kg/km
Number of positions	4
Shielded	yes
Cable type	PROFINET RADOX [®] railway application CAT5 [937]
Conductor structure	1x4xAWG22/7, SF/TQ
Signal speed	75 c
Conductor structure signal line	7x 0.25 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm ²
Wire diameter incl. insulation	approx. 1.5 mm
External cable diameter	6.60 mm ±0.4 mm
Outer sheath, material	PE-X
External sheath, color	black RAL 9005
Conductor material	silver-plated Cu litz wires
Material wire insulation	Foamed PE
Single wire, color	white-blue, orange-yellow
Thickness, outer sheath	approx. 1.00 mm
Overall twist	Star quad
Max. conductor resistance	≤ 54.4 Ω/km
Coupling resistance	200.00 mΩ/m (f ≤ 30 MHz)
Wave impedance	100 Ω ±5 Ω (f = 100 MHz)
Working capacitance	≤ 65 pF (Line-line) ≤ 100 pF (Line-shield)
Nominal voltage, cable	300 V AC
Test voltage	2000 V AC (50 Hz, 5 minutes)
Minimum bending radius, fixed installation	6 x D
Smallest bending radius, fixed installation	40 mm
Near end crosstalk attenuation (NEXT)	73 dB (with 1 MHz) 70 dB (at 4 MHz) 65 dB (at 10 MHz) 57 dB (at 31.5 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz)
Return attenuation (RL)	25 dB (at 4 MHz) 30 dB (at 10 MHz) 30 dB (at 31.5 MHz)

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

	30 dB (at 62.5 MHz)
	28 dB (at 100 MHz)
Remote crosstalk attenuation (FEXT)	78 dB (with 1 MHz)
	77 dB (at 4 MHz)
	70 dB (at 10 MHz)
	65 dB (at 31.5 MHz)
	56 dB (at 62.5 MHz)
	48 dB (at 100 MHz)
Shield attenuation	2 dB (with 1 MHz)
	4.4 dB (at 4 MHz)
	7.4 dB (at 10 MHz)
	14 dB (at 31.5 MHz)
	20 dB (at 62.5 MHz)
	26 dB (at 100 MHz)
	40.00 dB (30 MHz ≤ f ≤ 100 MHz)
Halogen-free	in accordance with EN 50267-2-1
Flame resistance	EN 60332-1-2
	EN 50266
	EN 60332-3-25
	NF C32-070, 2.1
	NF C32-070, 2.2
	UL 1685, 12 (FT4)
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Fume corrosiveness	EN 50267-2-2
Fume toxicity	BS 6853 B.1
	EN 50305, 9.2
Concentration of fumes	BS 6853 D.8.7
	EN 61034-2
	UL 1685, 12 (FT4)
Resistance to oil	according to IRM 902, 72 h at 100 °C
Fire protection in rail vehicles	BS 6853 (Category Ia, Ib, II)
	GM/RT 2130 (Category Ia, Ib, II)
	EN 45545 (Risk level HL1 - HL3)
	DIN 5510 (Fire protection level 1, 2, 3, 4)
	NF F16-101 (Category A1, A2, B)
	NF F16-101 (Class C/F0)
	NFPA 130
	UNI CEI 11170 (Risk level LR1 - LR4)
Other resistance	Resistance to fuels (according to IRM 903, 168 h at 70 °C)
Ambient temperature (operation)	-50 °C ... 90 °C (cable, fixed installation)
	-40 °C ... 90 °C (Cable, flexible installation)
Ambient temperature (installation)	-25 °C ... 90 °C

Environmental and real-life conditions

1407343

<https://www.phoenixcontact.com/us/products/1407343>

Ambient conditions

Degree of protection	IP65
----------------------	------

Standards and regulations

M12

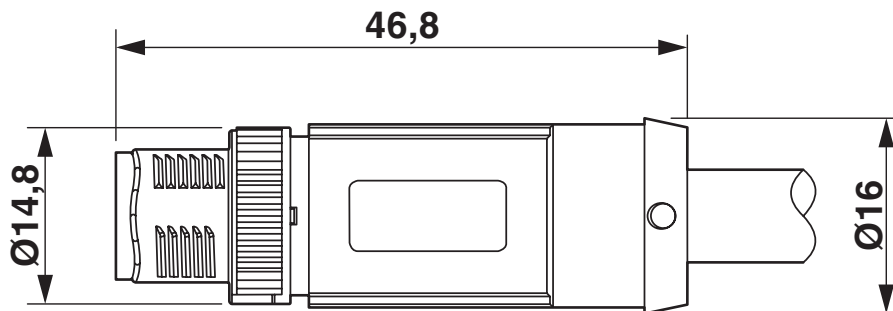
Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101
Standard designation	Shock, vibration
Standards/specifications	EN 50155

1407343

<https://www.phoenixcontact.com/us/products/1407343>

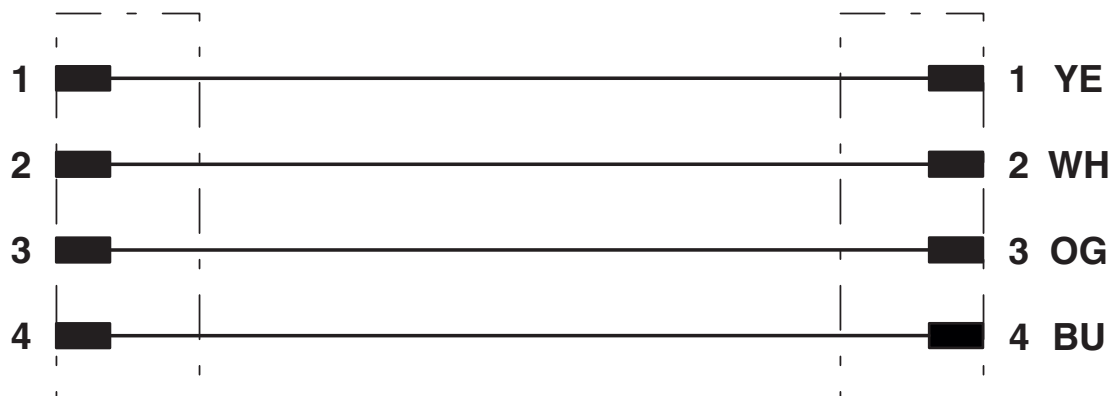
Drawings

Dimensional drawing



M12 SPEEDCON plug, straight, shielded

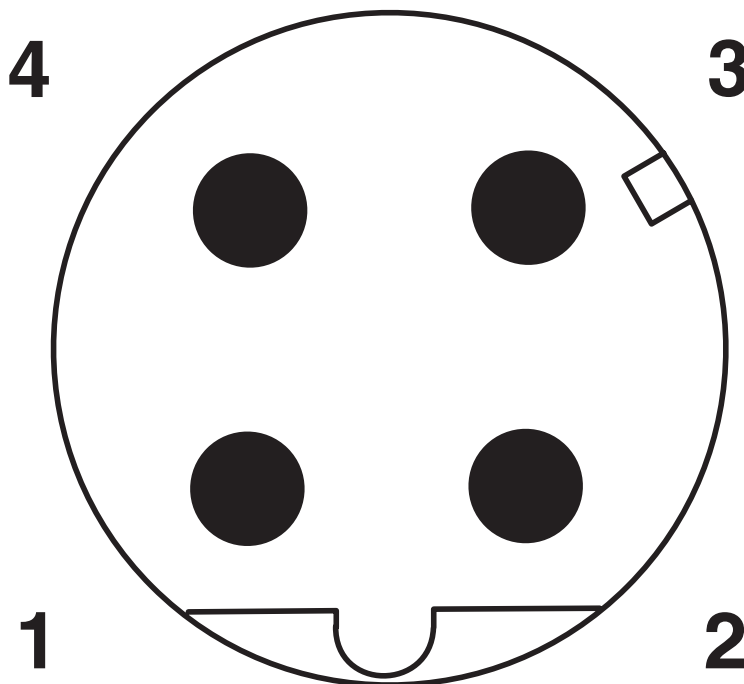
Circuit diagram



1407343

<https://www.phoenixcontact.com/us/products/1407343>

Schematic diagram



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

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407343>



EAC-RoHS

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

1407343

<https://www.phoenixcontact.com/us/products/1407343>

Classifications

ECLASS

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

ETIM

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

UNSPSC

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

1407343

<https://www.phoenixcontact.com/us/products/1407343>

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.)	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)
SCIP	ba8da5af-4c91-4c64-a955-294ae8c7afd7

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

Accessories

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

1412178

<https://www.phoenixcontact.com/us/products/1412178>



Network cable, PROFINET CAT5 (100 Mbps), Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP65, on free cable end, cable length: Free input (0.2 ... 40.0 m), For railway applications

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

1412179

<https://www.phoenixcontact.com/us/products/1412179>



Network cable, PROFINET CAT5 (100 Mbps), Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug angled M12 SPEEDCON, coding: D / IP65, on free cable end, cable length: Free input (0.2 ... 40.0 m), For railway applications

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable

1407343

<https://www.phoenixcontact.com/us/products/1407343>



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

1412177

<https://www.phoenixcontact.com/us/products/1412177>



Network cable, PROFINET CAT5 (100 Mbps), Ethernet CAT5 (100 Mbps), 4-position, shielded, Plug straight M12 SPEEDCON, coding: D / IP65, on Plug straight M12 SPEEDCON, coding: D / IP65, cable length: Free input (0.2 ... 40.0 m), For railway applications

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

1412181

<https://www.phoenixcontact.com/us/products/1412181>



Network cable, PROFINET CAT5 (100 Mbps), Ethernet CAT5 (100 Mbps), 4-position, shielded, free cable end, on Socket straight M12 SPEEDCON, coding: D / IP65, cable length: Free input (0.2 ... 40.0 m), For railway applications

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

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-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

KMK HP (25X6) - Cable marker carrier

0830720

<https://www.phoenixcontact.com/us/products/0830720>

Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable ties, cable diameter: ≥ 6 mm, lettering field size: 25 x 6 mm



KMK HP (29X8) - Cable marker carrier

0830721

<https://www.phoenixcontact.com/us/products/0830721>

Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable ties, cable diameter: ≥ 6 mm, lettering field size: 29 x 8 mm



NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

WMTB HF (40X12)R YE - Cable marker

0830408

<https://www.phoenixcontact.com/us/products/0830408>



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK E. 300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: Assembly with cable ties, cable diameter: ≥ 6 mm, lettering field size: 40 x 12 mm, Number of individual labels: 1000

WMTB HF (55X15)R YE - Cable marker

0830410

<https://www.phoenixcontact.com/us/products/0830410>



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK E. 300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: Assembly with cable ties, cable diameter: ≥ 6 mm, lettering field size: 55 x 15 mm, Number of individual labels: 1000

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

WMTB HF (55X25)R YE - Cable marker

0830412

<https://www.phoenixcontact.com/us/products/0830412>



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK E. 300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: Assembly with cable ties, cable diameter: ≥ 6 mm, lettering field size: 55 x 25 mm, Number of individual labels: 500

UCT-WMCO 5,4 (23X8) - Wire marking

0832105

<https://www.phoenixcontact.com/us/products/0832105>



Wire marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 4.7 ... 5.4 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

UCT-WMCO 6,1 (23X8) - Wire marking

0832106

<https://www.phoenixcontact.com/us/products/0832106>



Wire marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 5.4 ... 6.1 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

UCT-WMCO 6,8 (23X8) - Wire marking

0832107

<https://www.phoenixcontact.com/us/products/0832107>



Wire marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.1 ... 6.8 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

UCT-WMCO 7,5 (23X8) - Wire marking

0832108

<https://www.phoenixcontact.com/us/products/0832108>



Wire marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.8 ... 7.5 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

WMTB-AL (40X15) - Cable marker

0830524

<https://www.phoenixcontact.com/us/products/0830524>



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

WMTB-AL (60X15) - Cable marker

0830525

<https://www.phoenixcontact.com/us/products/0830525>



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm

LS-WMTB-AL (40X15) - Cable marker

0831501

<https://www.phoenixcontact.com/us/products/0831501>



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

LS-WMTB-AL (40X15) BK - Cable marker

0831509

<https://www.phoenixcontact.com/us/products/0831509>



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

LS-WMTB-AL (60X15) - Cable marker

0831502

<https://www.phoenixcontact.com/us/products/0831502>



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16

NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

LS-WMTB-AL (60X15) BK - Cable marker

0831510

<https://www.phoenixcontact.com/us/products/0831510>

Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16



LS-WMTB-AL (100X15) - Cable marker

0831503

<https://www.phoenixcontact.com/us/products/0831503>

Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8



NBC-MSD/ 5,0-937/MSD SCO RAIL - Network cable

1407343

<https://www.phoenixcontact.com/us/products/1407343>



LS-WMTB-AL (100X15) BK - Cable marker

0831511

<https://www.phoenixcontact.com/us/products/0831511>

Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable ties, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8



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-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

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-MSD/ 5,0-937/MSD SCO RAIL - Network cable



1407343

<https://www.phoenixcontact.com/us/products/1407343>

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

B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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