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Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

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Assembled PROFINET cable, CAT5e, shielded, star quad, AWG 22 stranded (19-wire), RAL 6018 (yellow green), free cable end to M12 flush-type socket, rear/screw mounting with M16 thread, line, length: 2 m

Your advantages

☑ Pre-assembled with cables in various standard lengths for immediate use

☑ Customer-specific assemblies and cable lengths can be supplied

☑ Sealed on the cable side for optimum tightness of seal

☑ Cable designs for all common networks and fieldbuses

☑ For high transmission safety: shield connection to the housing with optional EMC nut

RoHS

Key Commercial Data

Packing unit	1 pc
GTIN	‖‖‖ 4 046356 473453
GTIN	4046356473453

Technical data

Dimensions

Length of cable	5 m

Ambient conditions

Degree of protection	IP67 (When plugged in)
	IP65 (When plugged in)
Ambient temperature (operation)	-25 °C ... 85 °C (Plug / socket)
	-40 °C ... 85 °C (without mechanical actuation)

General data

Note	The electrical and mechanical data specified assume that the connector pair is correctly locked and mounted. If the connector is unlocked and if there is a danger of contamination, the connector must be sealed using a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration.

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Technical data

General data

Rated current at 40°C	4 A (Plug/socket in accordance with IEC 61076-2-101, cable technical data is to be observed)
Rated voltage	250 V
Rated surge voltage	2.5 kV
Number of positions	4
Signal type/category	PROFINET CAT5 (IEC 11801:2002), 100 Mbps
Standards/regulations	M12 connector IEC 61076-2-101
Overvoltage category	II
Degree of pollution	3
Alternative short product description	PROFINET cable
Contact carrier material	PA 6.6
Contact surface material	Ni/Au
Degree of protection	IP65/IP67
Transmission characteristics (category)	CAT5

Characteristics head 1

Shielded	yes
External sheath, color	green RAL 6018

Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
Flammability rating according to UL 94	V0

Cable

Cable type	PROFINET robot CAT5
Cable type (abbreviation)	93R
UL AWM style	20233 (80°C/300 V)
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT® CAT5 (IEC 11801), 100 Mbps
Cable structure	1x4xAWG22/19; S/TQ
Conductor cross section	4x 0.34 mm²
AWG signal line	22
Conductor structure signal line	19x 0.15 mm
Core diameter including insulation	1.5 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	green RAL 6018
Outer sheath thickness	approx. 1 mm
External cable diameter D	6.5 mm ±0.2 mm
Minimum bending radius, fixed installation	5 x D

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Technical data

Cable

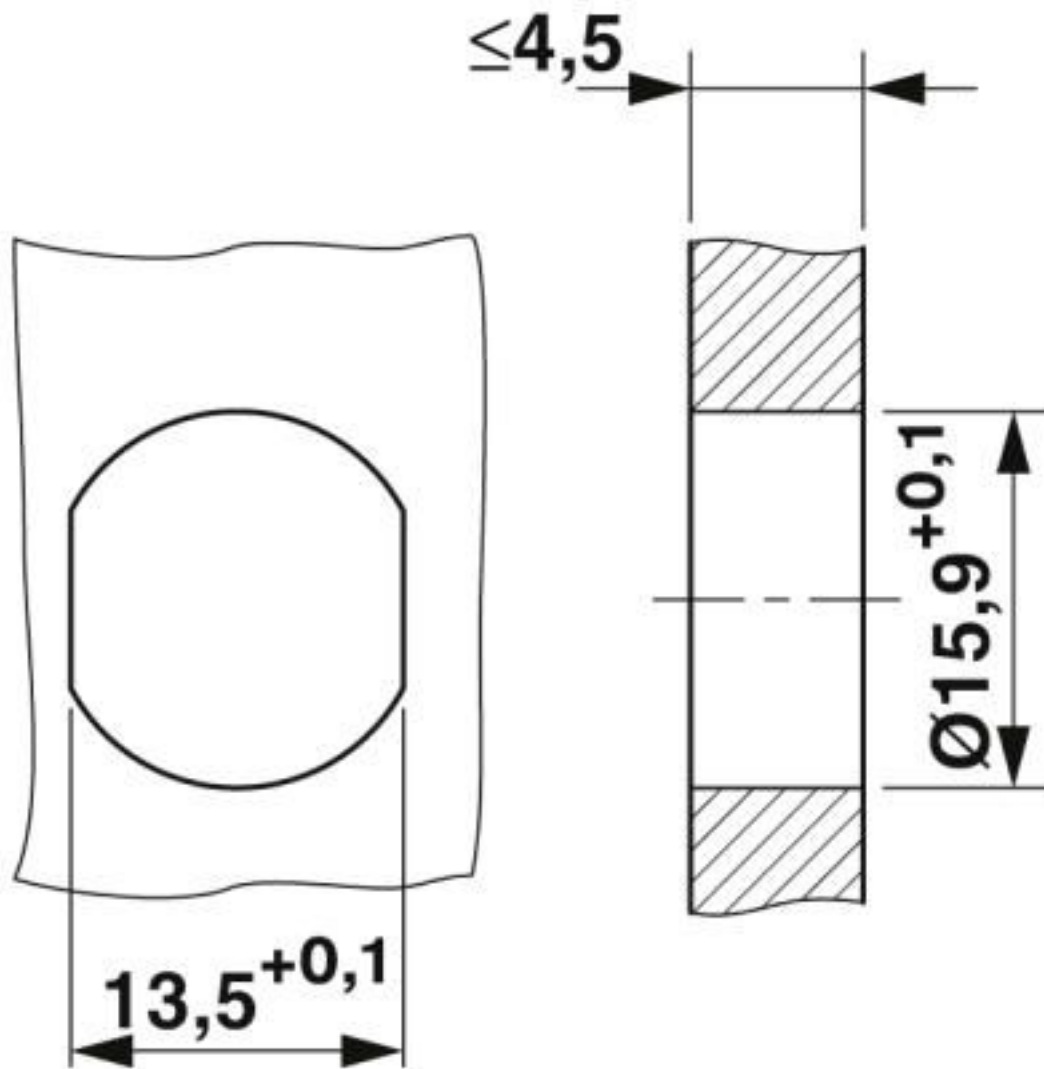|	
Torsion force	± 180 °/m (1 000 000 torsion cycles)
Cable weight	55 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Attenuation	2.9 dB (with 1 MHz)
	5 dB (at 4 MHz)
	8.1 dB (at 10 MHz)
	10.4 dB (at 16 MHz)
	11.9 dB (at 20 MHz)
	15.5 dB (at 31.25 MHz)
	26.5 dB (at 62.5 MHz)
	41 dB (at 100 MHz)
Signal runtime	4.8 ns/m
Nominal voltage, cable	300 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	according to IEC 60332-1-2
Halogen-free	according to IEC 60754-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	UV resistant According to UL 1581, Section 1200
Ambient temperature (operation)	-40 °C ... 80 °C
	-40 °C ... 80 °C
Ambient temperature (installation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings
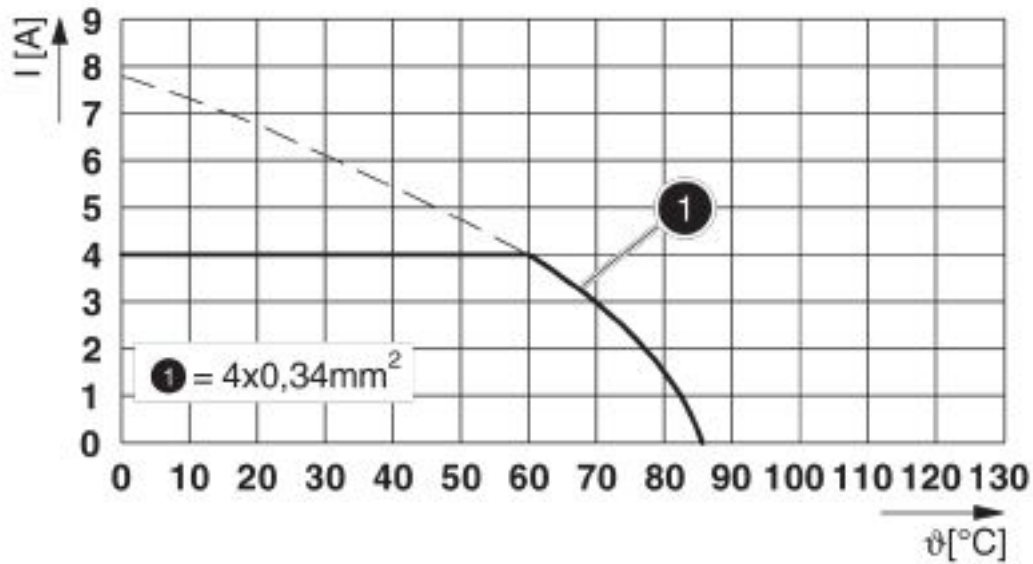
Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Dimensional drawing

≤4,5

Ø15,9 +0,1

13,5 +0,1

Housing cutout for M16 fastening thread, mounting panel with feed-through hole (alternatively with surface as protection against rotation)
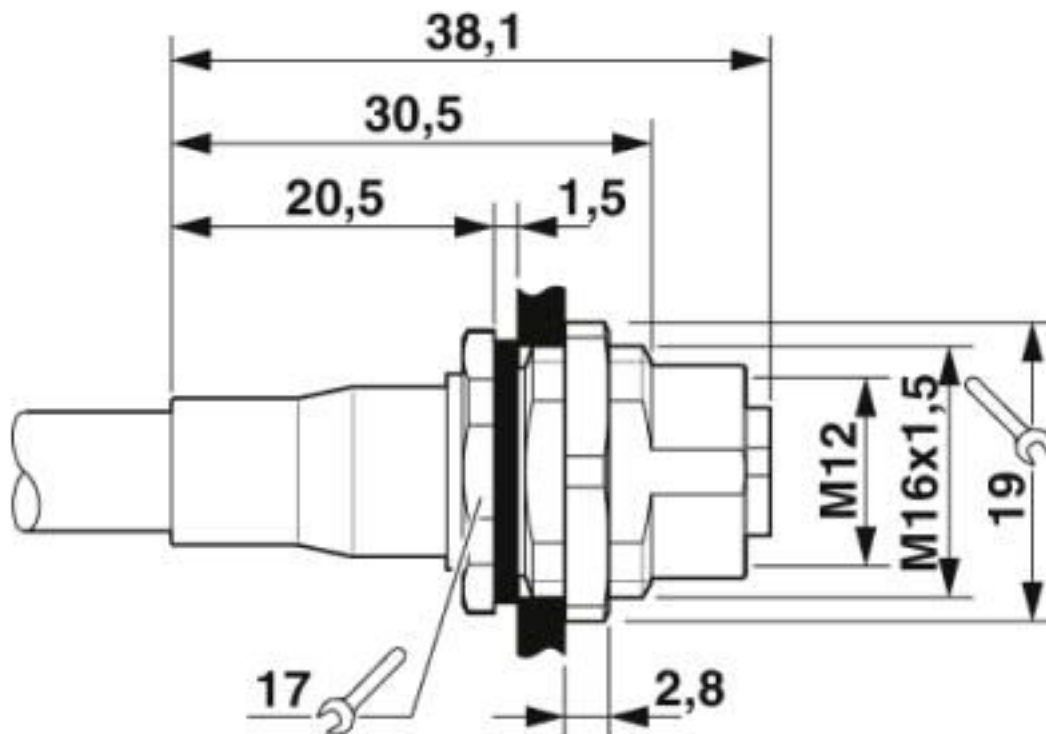
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Diagram

I = current strength, T = ambient temperature
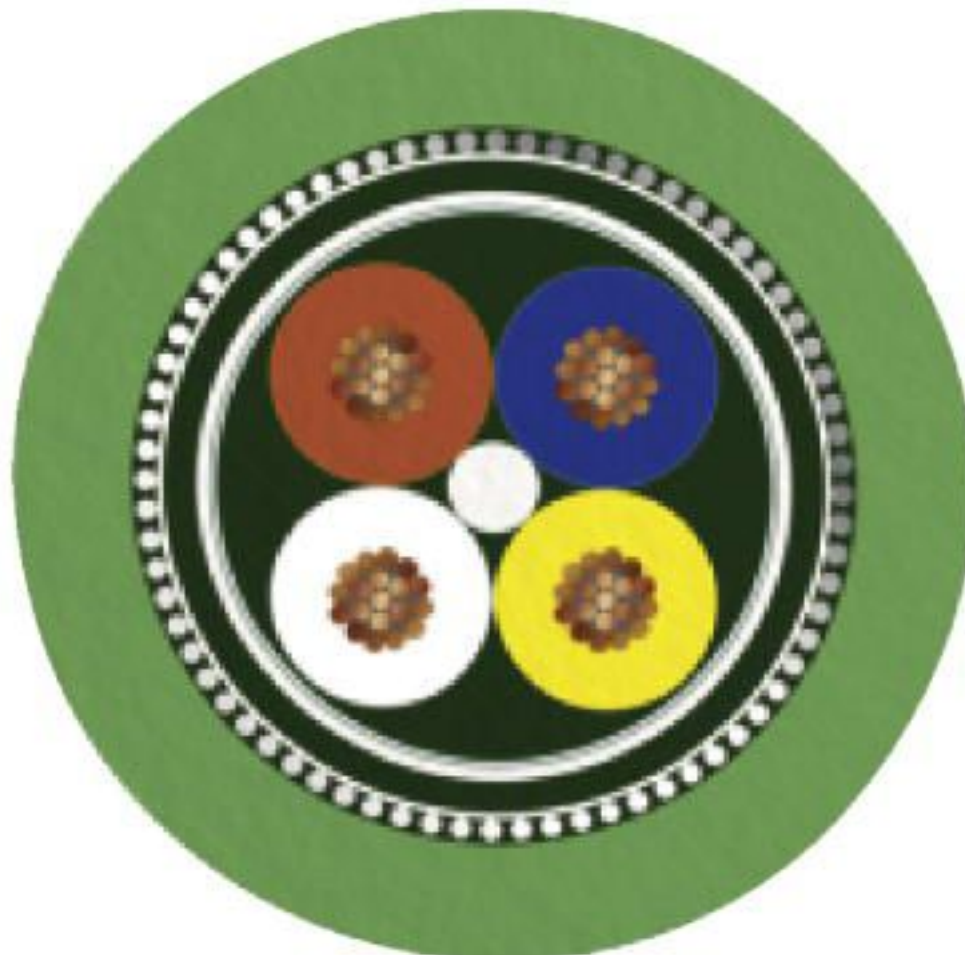
Dimensional drawing

M12 flush-type connector

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Cable cross section

PROFINET robot CAT5 [93R]

Classifications

eCl@ss

eCl@ss 10.0.1	27060308
eCl@ss 4.0	24010400
eCl@ss 4.1	24010400
eCl@ss 5.0	19030300
eCl@ss 5.1	19030300
eCl@ss 6.0	27060300
eCl@ss 7.0	27060308
eCl@ss 8.0	27060308
eCl@ss 9.0	27060308

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Classifications

ETIM

ETIM 4.0	EC000830
ETIM 5.0	EC002599
ETIM 6.0	EC001262
ETIM 7.0	EC001262

UNSPSC

UNSPSC 6.01	26121616
UNSPSC 7.0901	26121616
UNSPSC 11	26121604
UNSPSC 12.01	31261501
UNSPSC 13.2	26121604
UNSPSC 18.0	26121604
UNSPSC 19.0	26121604
UNSPSC 20.0	26121604
UNSPSC 21.0	26121604

Approvals

Approvals

Approvals

EAC

Ex Approvals

Approval details

EAC	EAC	19060508

Accessories

Accessories

Cable connector

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Conductor connectors - SACC-CC-4QO SH PN - 1414416

Cable connector, PROFINET 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

Circular connector (cable-side)

Data connector - SACC-MSD-4QO SH PN SCO - 1411068

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

Data connector - SACC-M12MRD-4Q SH PN - 1554539

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

Data connector - SACC-FSD-4QO SH PN SCO - 1411071

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

Data connector - SACC-M12FRD-4Q SH PN - 1554542

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Data connector - SACC-M12MSD-4PL SH PN - 1424682

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector - SACC-M12MRD-4PL SH PN - 1424684

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector - SACC-M12FSD-4PL SH PN - 1424683

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector - SACC-M12FRD-4PL SH PN - 1424685

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector - SACC-M12MSD-4CT-CM SH PN - 1422846

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Data connector - SACC-M12MRD-4CT-CM SH PN - 1422847

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Data connector - SACC-M12FSD-4CT-CM SH PN - 1422848

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Data connector - SACC-M12FRD-4CT-CM SH PN - 1422849

Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Corrugated pipe

Protective hose - WP-PA HF 13,0 BK - 3240681

Polyamide protective hose, inflammability class V0, UV resistant

Protective hose - WP-PA HF-HB 13,0 BK - 3240839

Polyamide protective hose, inflammability class HB, UV resistant

Cutting tools

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Cable-cutting tool - CUTFOX 12 - 1212128

Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm²)

Diagonal cutter - CUTFOX-S VDE - 1212207

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

Data plug

RJ45 connector - VS-PN-RJ45-5-Q/IP20 - 1658435

RJ45 connector, degree of protection: IP20, number of positions: 4, 100 Mbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, cable outlet: straight, color: traffic grey A RAL 7042

RJ45 connector - CUC-IND-C1ZNI-S/R4IP8 - 1421126

RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: straight, color: green

RJ45 connector - CUC-IND-C1ZNI-T/R4IP8 - 1421128

RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: angled

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

RJ45 connector - CUC-IND-C1ZNI-B/R4IP8 - 1421127

RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 23- 22, cable outlet: angled

RJ45 connector - CUC-V14-C1ZNI-S/R4P8 - 1422664

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-T/R4P8 - 1422667

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-B/R4P8 - 1422665

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

Electronics pliers

Diagonal cutter - MICROFOX-SP-1 - 1212487

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

Plug for cable screw gland

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Screw plug - SACC-M16-SEALING PLUG SET - 1453368

M16 screw plug for unused M12 housing cutouts

Screw plug - PROT-M12 - 1680539

An M12 screw plug for the unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors

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Screw plug - PROT-M12 SH - 1503302

An M12 screw plug for the unoccupied M12 sockets of the shielded sensor/actuator cable, boxes and flush-type connectors

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Screw plug - PROT-M12 FB - 1555538

M12 high-grade steel screw plug, for unoccupied M12 sockets of the sensor/actuator cables, boxes and flush-type connectors for the food industry

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Seal

Flat gasket - SACC-M16-SEAL CLM - 1430394

M16 flat gasket, for rear mounting of M12 flush-type connectors with M16 fastening thread

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Stripping tool

Network cable - VS-OE-M12FSBP-93R-LI/2,0 - 1416263

Accessories

Stripping tool - WIREFOX 4 - 1212156

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

Stripping tool - WIREFOX-E 4 - 1212704

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

Stripping tool - WIREFOX 10 - 1212150

Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

Stripping tool - VS-CABLE-STRIP-VARIO - 1657407

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

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884

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

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