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Flush-type socket - VS-FSBPYS-OE-94H/5,0 SCO - 1407507

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Hybrid flush-type socket, Ethernet, 8-pos., M12-SPEEDCON, rear/screw mounting with M16 thread, 360° shield connection with connected shielded hybrid cable

M12 panel feed-through, rear mounting

Your advantages

- ☑ Pre-assembled with cables in various standard lengths for immediate use
- ☑ Customer-specific assemblies and cable lengths can be supplied
- ☑ Cable designs for all common networks and fieldbuses
- ☑ For high transmission safety: shield connection to the housing with optional EMC nut

RoHS

Ethernet SPEEDCON

Key Commercial Data

Packing unit	1 pc
Minimum order quantity	30 pc
GTIN	4046356807890
GTIN	4046356807890

Technical data

Dimensions

Length of cable	5 m

Ambient conditions

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

General

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

Rated current at 40°C	0.5 A (Data)
	6 A (Power)
Rated voltage	48 V AC (Power and data)
	50 V DC (Power and data)
Rated surge voltage	0.8 kV
Number of positions	8
Insulation resistance	≥ 100 MΩ
Coding	Y - hybrid
Standards/regulations	M12 connector IEC 61076-2-113
Signal type/category	Ethernet hybrid CAT5 (IEC 11801:2002), 100 Mbps
Overvoltage category	III
Degree of pollution	3
Insertion/withdrawal cycles	≥ 100
Torque	2 Nm ... 3 Nm
Mounting type	Rear mounting M16 x 1.5
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

Material

Flammability rating according to UL 94	V0
Contact material	CuZn
Contact surface material	Au
Contact carrier material	PPA
Material	Zinc die-cast (nickel-plated)
Sealing material	FKM

Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-113
Flammability rating according to UL 94	V0
Safety note	WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.
	• WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.
	• WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.
	• The products are suitable for applications in plant, controller, and electrical device engineering.
	• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.
	• Assembled products may not be manipulated or improperly opened.

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Standards and Regulations

	• Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at phoenixcontact.com/products).
	• When using the product in direct connection with third-party manufacturers, the user is responsible.
	• For operating voltages > 50 V AC, conductive connector housings must be grounded
	• Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.
	• Observe the corresponding technical data. You will find information: o On the product o On the packing label o In the supplied documentation o Online at phoenixcontact.com/products under the product
	• Only use tools recommended by Phoenix Contact
	• Use a protective cap to protect connectors that are not in use. The suitable accessories are available online in the accessory section of the product at phoenixcontact.com/products
	• Ensure that the protective or functional ground has been properly connected.
	• VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector
	• The connector warms up in normal operation. Depending on the ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).

Cable

Cable type	Ethernet hybrid
Cable type (abbreviation)	94H
UL AWM style	20963 (80°C/30 V)
Signal type/category	Ethernet hybrid CAT5 (IEC 11801), 100 Mbps
Cable structure	1x4xAWG26+1x4xAWG20
Conductor cross section	4x 0.15 mm² (Data)
	4x 0.6 mm² (Power)
AWG signal line	26
AWG power supply	20
Conductor structure signal line	19x 0.10 mm
Conductor structure, voltage supply	19x 0.20 mm
Core diameter including insulation	1.05 mm (Data)
	1.4 mm (Power)
Wire colors	White/orange, orange, white/green, green, white, blue, brown, black
Overall twist	1 star quad and 4 wires with 2 fillers
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	black RAL 9005
External cable diameter D	7.6 mm ±0.2 mm

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Technical data

Cable

Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	2000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	4.5 m
Traversing rate	3 m/s
Acceleration	3 m/s²
Tensile strength GRP	70 N (in accordance with DIN EN 50565-1 for flexible installation)
	240 N (in accordance with DIN EN 50565-1 for fixed installation)
Cable weight	87 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP (Data)
	PP (Power)
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq$ 5 GΩ*km
Loop resistance	$\leq$ 280.00 Ω/km (Data)
	$\leq$ 34.60 Ω/km (Power)
Working capacitance	nom. 50 nF (per kilometer)
Wave impedance	100 Ω ±15 Ω (4 MHz ... 100 MHz)
Near end crosstalk attenuation (NEXT)	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)
Attenuation	6 dB (at 4 MHz)
	9.5 dB (at 10 MHz)
	12.1 dB (at 16 MHz)
	13.5 dB (at 20 MHz)
	17.1 dB (at 31.25 MHz)
	24.8 dB (at 62.5 MHz)
	32 dB (at 100 MHz)
Shield attenuation	$\geq$ 80 dB (30 MHz ... 125 MHz)
Differential impedance	100 Ω ±5 % (at 100 MHz)
Nominal voltage, cable	$\leq$ 50 V (Peak value, not for high-power applications)
Test voltage Core/Core	1500 V (50 Hz, 1 min.)
Test voltage Core/Shield	1500 V (50 Hz, 1 min.)
Special properties	Free of substances which would hinder coating with paint or varnish
	Silicone-free

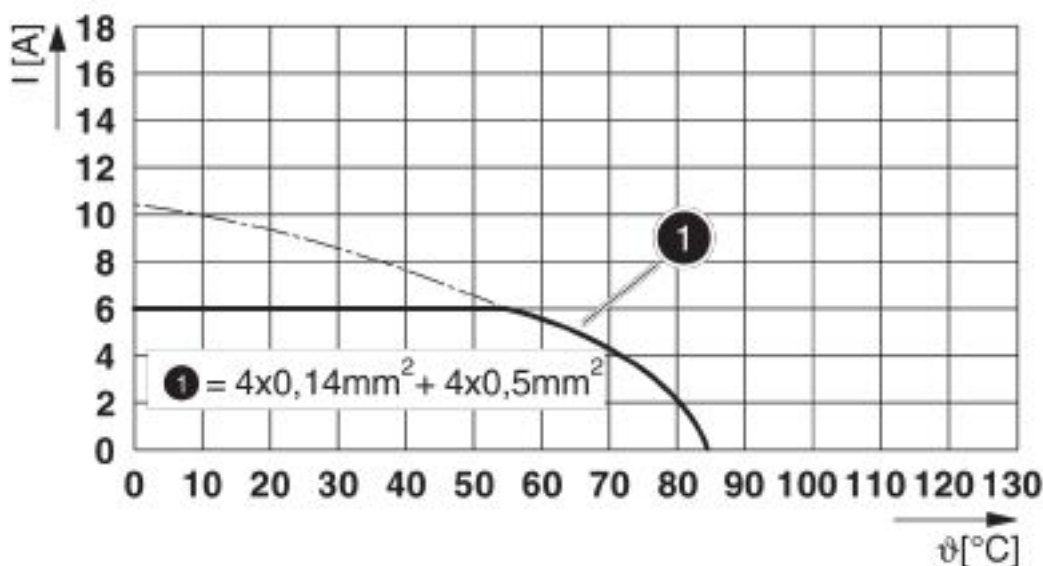# Flush-type socket - VS-FSBPYS-OE-94H/5,0 SCO - 1407507

Technical data

Cable

Flame resistance	in acc. with UL 1581, section 1061
Halogen-free	according to IEC 60754
	in accordance with DIN VDE 0472 part 815
Resistance to oil	according to IEC 60811-2-1
	according to VDE 0282 Part 10
Other resistance	Low adhesion
Ambient temperature (operation)	-40 °C ... 90 °C (cable, fixed installation)
	-30 °C ... 70 °C (cable, flexible installation)

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Diagram

$1 = 4 \times 0{,}14\,mm^2 + 4 \times 0{,}5\,mm^2$
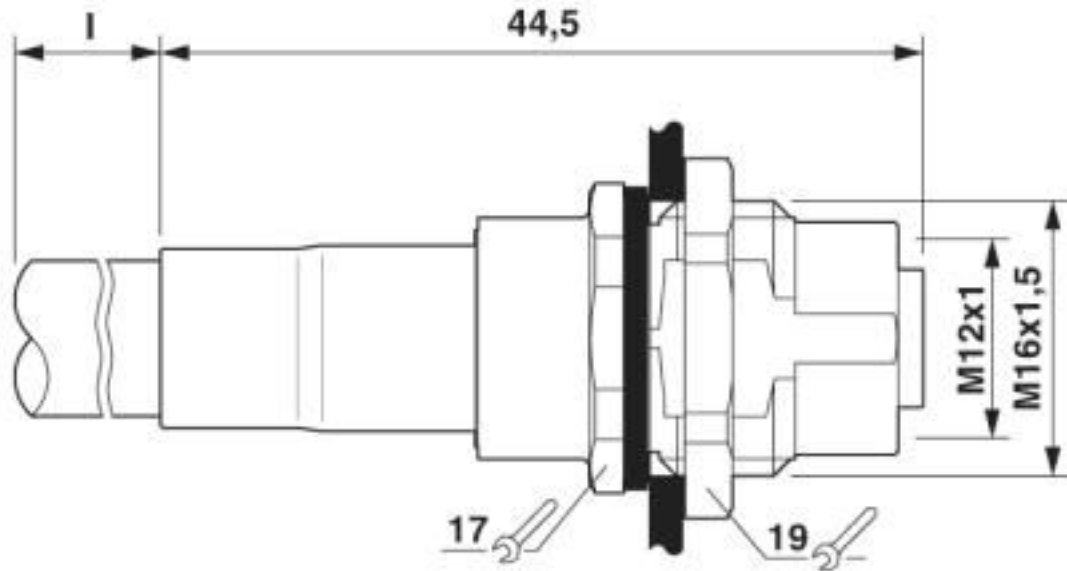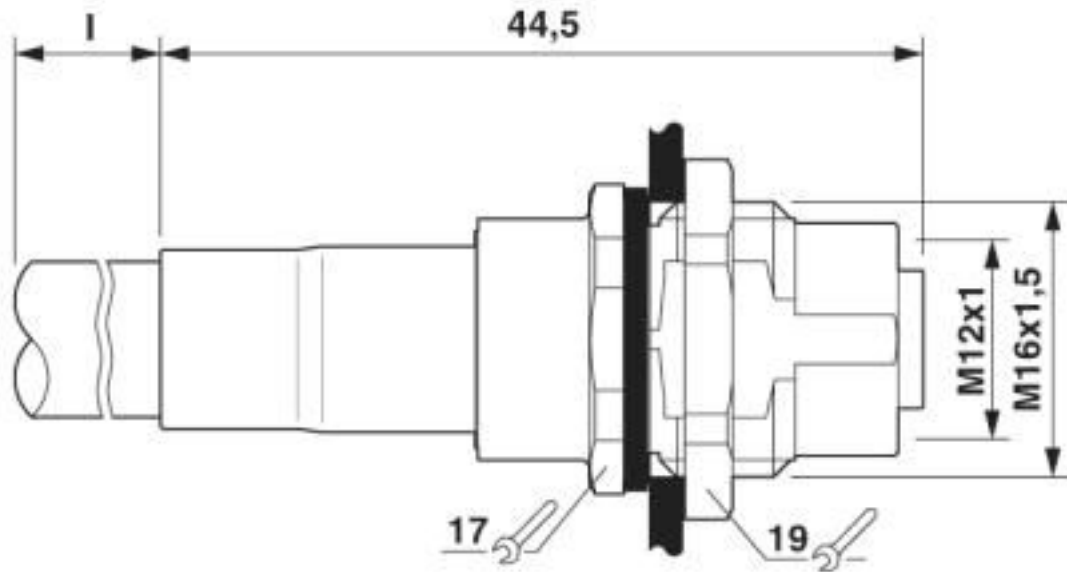
I = current strength, T = ambient temperature

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Dimensional drawing
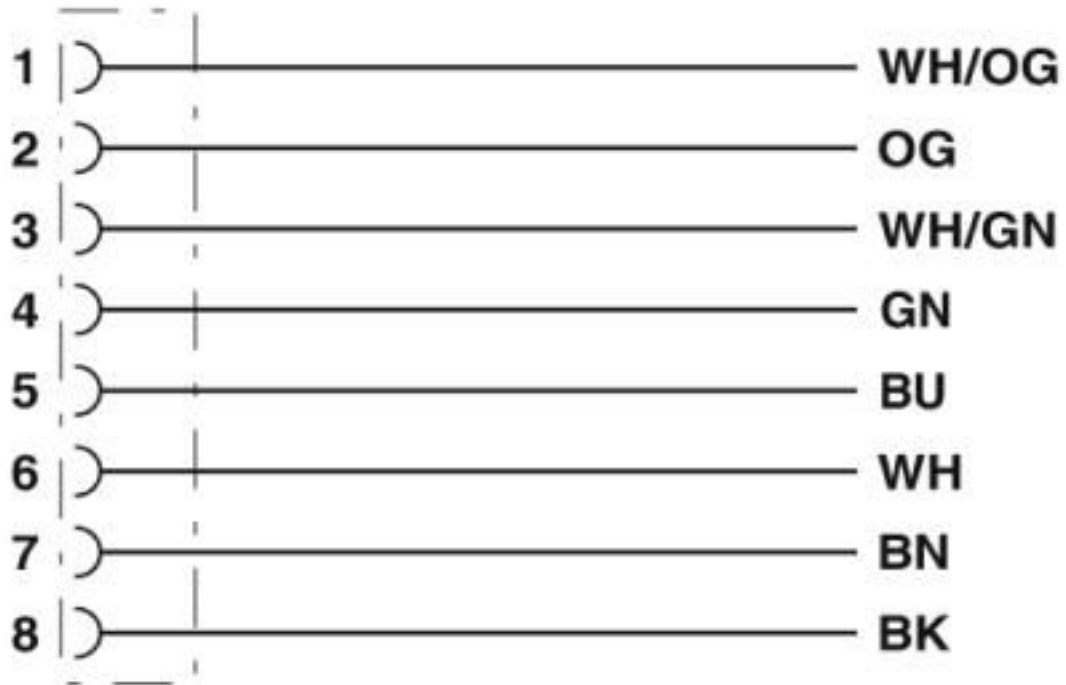

M12 socket, straight, shielded,

Dimensional drawing

M12 flush-type connector

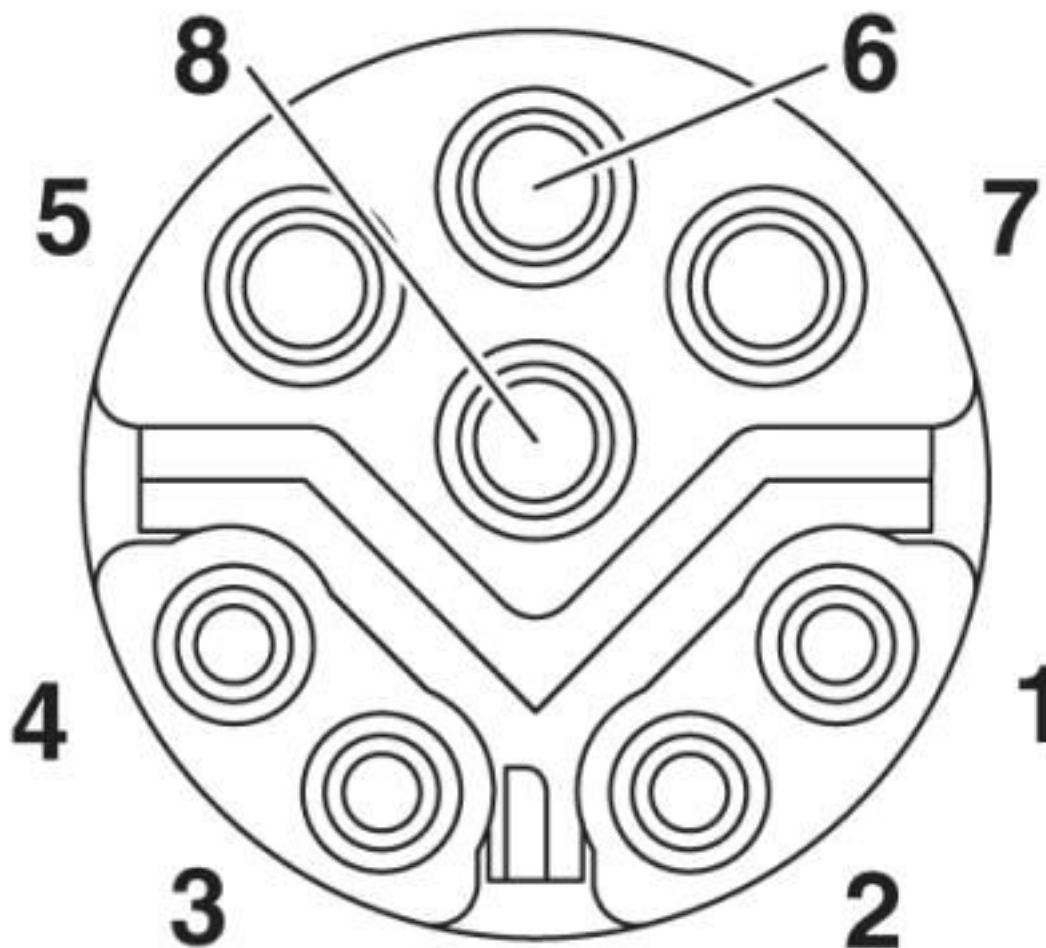# Flush-type socket - VS-FSBPYS-OE-94H/5,0 SCO - 1407507

Circuit diagram

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1  )——————————————————  WH/OG
2  )——————————————————  OG
3  )——————————————————  WH/GN
4  )——————————————————  GN
5  )——————————————————  BU
6  )——————————————————  WH
7  )——————————————————  BN
8  )——————————————————  BK
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Contact assignment of the M12 connector

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Schematic diagram

Pin assignment of socket, 8-pos., Y-coded, socket side view

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Cable cross section

Ethernet hybrid [94H]

Classifications

eCl@ss

eCl@ss 10.0.1	27440102
eCl@ss 4.0	27140800
eCl@ss 4.1	27140800
eCl@ss 5.0	27143400
eCl@ss 5.1	27143400
eCl@ss 6.0	27279200
eCl@ss 7.0	27440103
eCl@ss 8.0	27440103
eCl@ss 9.0	27440102

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Classifications

ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC002061
ETIM 6.0	EC002061

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	39121413
UNSPSC 18.0	39121413
UNSPSC 19.0	39121413
UNSPSC 20.0	39121413
UNSPSC 21.0	39121413

Approvals

Approvals

Approvals

UL Recognized / cUL Recognized / EAC / cULus Recognized

Ex Approvals

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm E335024-20120308
Nominal voltage UN		30 V
Nominal current IN		4.5 A

cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm E335024-20120308
Nominal voltage UN		30 V
Nominal current IN		4.5 A

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Approvals

EAC	EAC	B.01687

cULus Recognized	c (UL) us

Accessories

Accessories

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

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

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Accessories

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

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Plug for cable screw gland

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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Stripping tool

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

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Accessories

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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