

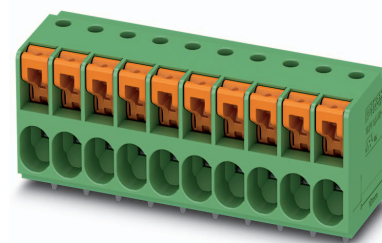
# Data sheet

2020-01-31  
Product version 00  
Document revision 01

**Order No.: 1017503**

**Type: TDPT 2,5/ 2-SP-5,08**

**PCB terminal block, Wave soldering, Push-in spring connection**



The figure shows a 10-position version of the product

## 1 Main features



- |                           |                           |                        |                     |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos.             | 2                         | • Nominal current      | 32 A                |
| • Conductor cross section | 2.5 mm <sup>2</sup>       | • Nominal voltage      | 400 V               |
| • Color                   | green (6021)              | • Connection direction | 0 °                 |
| • Pitch                   | 5.08 mm                   | • Type of packaging    | packed in cardboard |
| • Connection method       | Push-in spring connection |                        |                     |

## 2 Your advantages

- ✓ Easy to adapt, thanks to their identical size and the same pinning for Push-in spring connections as for screw connections
- ✓ Time saving push-in connection, tools not required
- ✓ Defined contact force ensures that contact remains stable over the long term
- ✓ Intuitive use through colour coded actuation lever



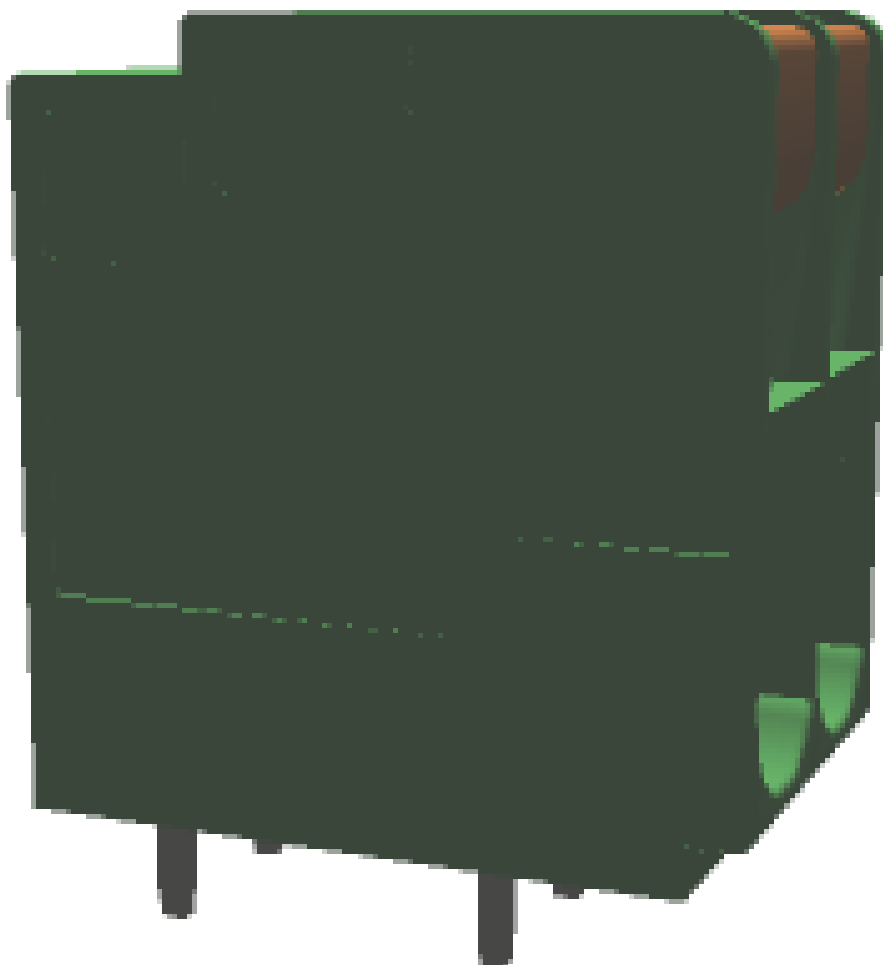
Make sure you always use the latest documentation.  
It can be downloaded at: [phoenixcontact.net/product/1017503](https://phoenixcontact.net/product/1017503)

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#### 4 3D model in PDF can be activated (Acrobat Reader only)



**1017503 TDPT 2,5/ 2-SP-5,08****5 General Technical Data****5.1 item properties**

Order No.	1017503
Type	TDPT 2,5/ 2-SP-5,08
Product type	PCB terminal block
Range of articles	TDPT 2,5/...-SP
Pitch	5.08 mm
Range of positions	2...12
Number of positions	2
Number of levels	1
Number of connections	2
Number of potentials	2
Connection method	Push-in spring connection
Mounting type	Wave soldering
Connection direction of the conductor to the PCB	0 °
Pin layout	Linear double pinning
Solder pins per potential	2

**5.2 Connection capacity**

Conductor cross section, solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (Conductor connection with open terminal point)
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Stripping length	10 mm

**5.3 Connection capacity AWG**

Conductor cross section AWG	24 ... 12
-----------------------------	-----------

**6 Material properties****6.1 Material of metal parts**

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Terminal point surface	Tin (10 - 16 µm Sn)
Soldering area surface	Tin (10 - 16 µm Sn)
Surface characteristics	Tin-plated

**6.2 Material of plastic parts**

	Housing	Actuation element
Color	green (6021)	orange (2003)
Insulating material	PA	PA
Insulating material group	I	I

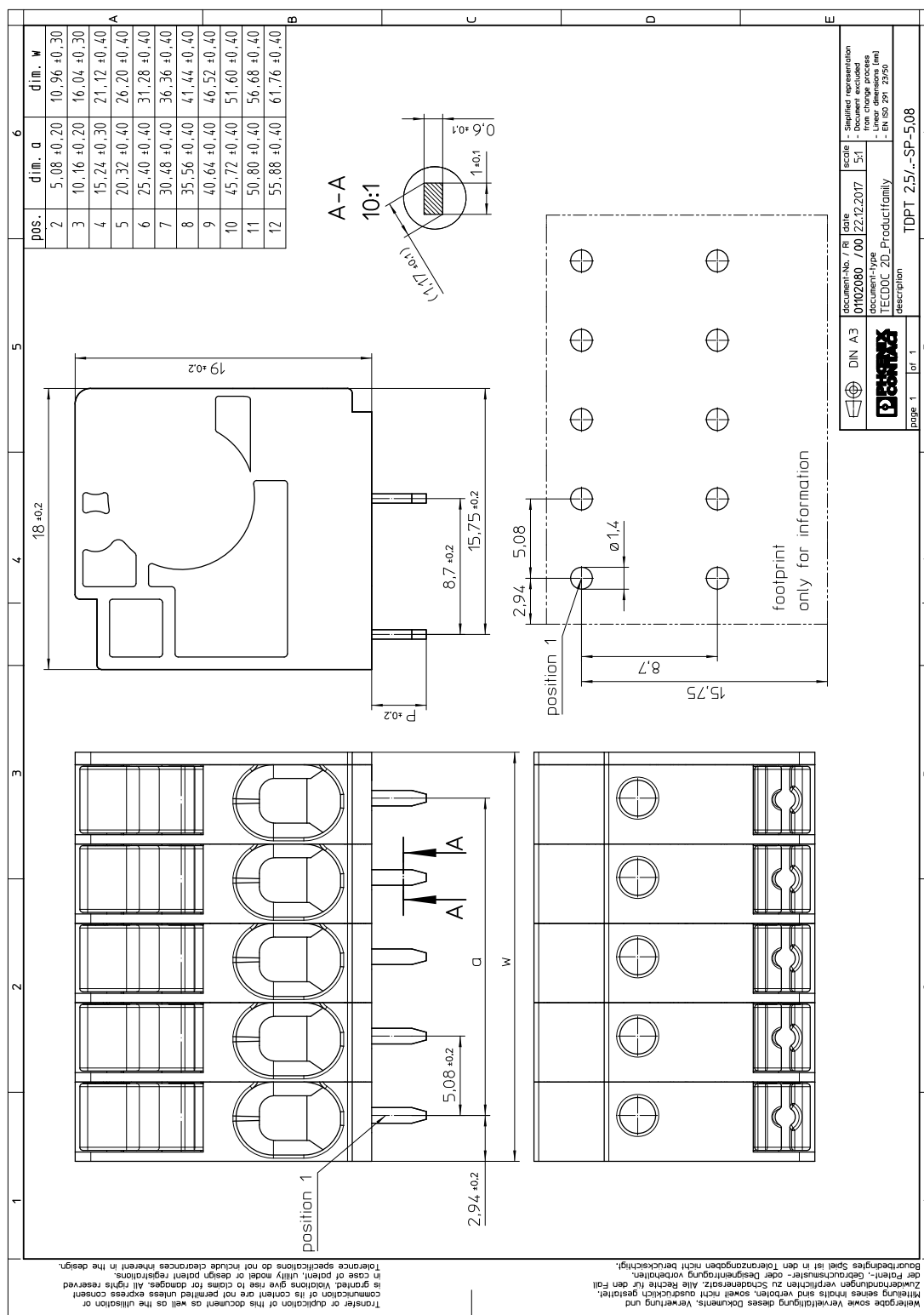
**1017503 TDPT 2,5/ 2-SP-5,08**

	Housing	Actuation element
CTI according to IEC 60112	600	600
Flammability rating according to UL 94	V0	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C	125 °C

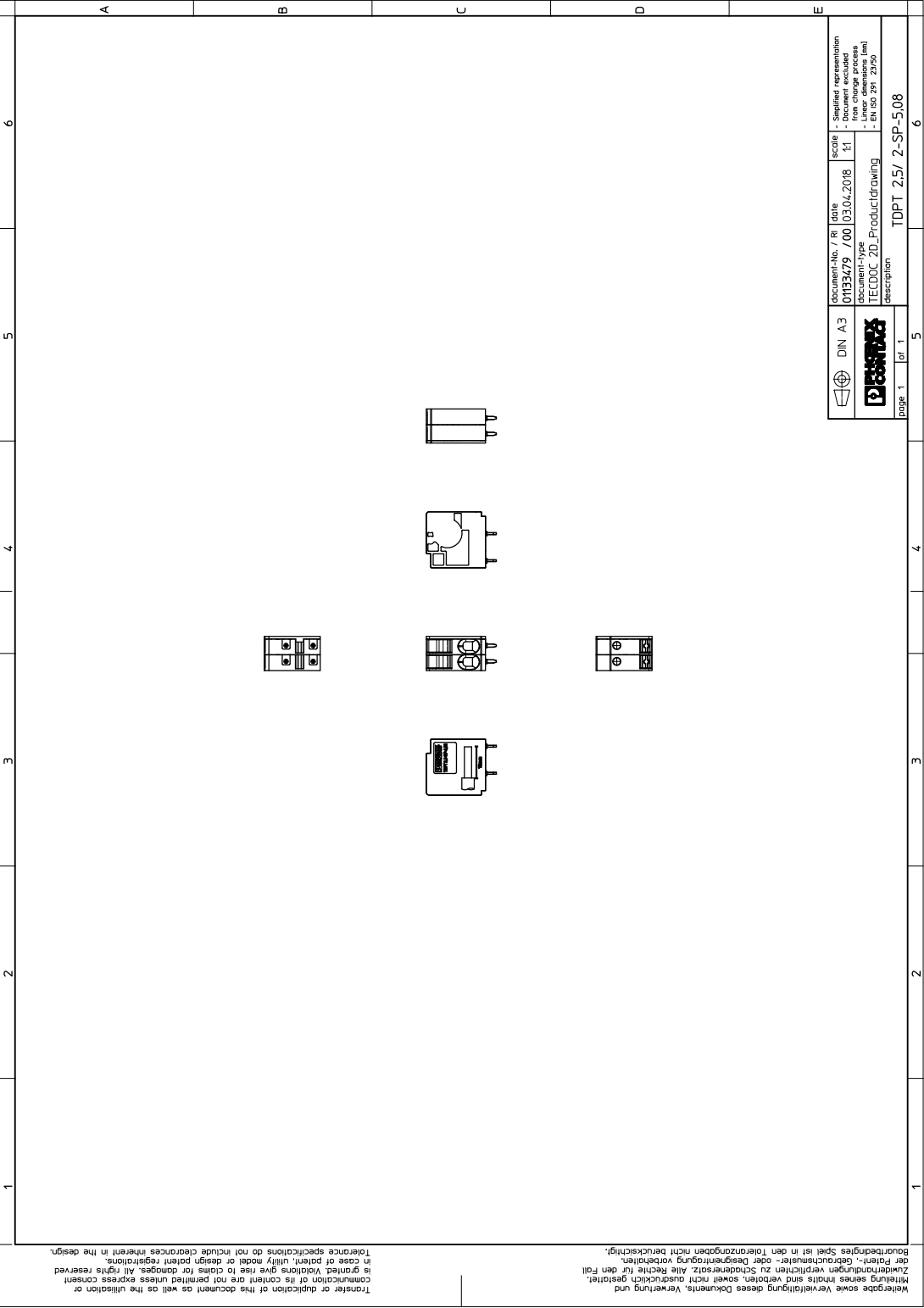
**1017503 TDPT 2,5/ 2-SP-5,08****7 Dimensions****7.1 Dimensions for the product**

Length	18 mm
Width	10.96 mm
Height (without solder pin)	19 mm
Total height	22.5 mm
Solder pin [P]	3.5 mm
Dimension a	5.08 mm

## 8 Series drawing



9 Product drawing





**1017503 TDPT 2,5/ 2-SP-5,08****9.1 Dimensions for PCB design**

Pin dimensions	0.8 x 0.8 mm
Pin spacing	8.7 mm

**10 Application****11 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50
Outer packaging type	Carton

**11.1 Processing notes**

Process	Wave soldering
Specification	Following IEC 61760-1:2006-04
Specification	Following IEC 60068-2-54:2006-04

**11.2 Temperature limit values**

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 105 °C
Ambient temperature (operation)	-40 °C ... 105 °C (Depending on the current carrying capacity/derating curve)

**1017503 TDPT 2,5/ 2-SP-5,08****12 Mechanical tests****12.1 Pull-out test**

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm <sup>2</sup> / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm <sup>2</sup> / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	4 mm <sup>2</sup> / solid / > 60 N
Conductor cross section/conductor type/tractive force actual value	4 mm <sup>2</sup> / flexible / > 60 N

**12.2 Check for damage to conductor or loosening**

Specification	IEC 60999-1:1999-11
Result	Test passed

**1017503 TDPT 2,5/ 2-SP-5,08****13 Electrical tests****13.1 Electrical data**

Rated current / conductor cross section	32 A / 2.5 mm <sup>2</sup>
Rated insulation voltage (III/2)	400 V
Rated surge voltage (III/2)	4 kV
Contact resistance	
Degree of pollution	2

**13.2 Air and creepage distances**

Component	PCB terminal block		
Specification	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	320 V	400 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	4 mm	3 mm	3.2 mm

**13.3 Short-time withstand current test**

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Conductor cross section/short-time current	4 mm <sup>2</sup> / 144 A

**13.4 Aging test (climatic impact and corrosion testing)**

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Contact resistance R <sub>1</sub>	1.13 mΩ / 4 mm <sup>2</sup>
Test sequence 1: low temperature storage	-40 °C / 2 h
Test sequence 2: heat storage	168 h/105 °C
Test sequence 3: noxious gas storage (ISO 6988)	KFW 0.2 S/1 cycle
Contact resistance R <sub>2</sub>	1.13 mΩ / 4 mm <sup>2</sup>
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	3.1 kV

**13.5 Mechanical connection test for the PCB terminal block**

Specification	IEC 60947-7-4:2013-08
Result	Test passed

**1017503 TDPT 2,5/ 2-SP-5,08****13.6 Temperature rise test**

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Requirement temperature-rise test	The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature.
Conductor cross section/test current/temperature rise	4 mm <sup>2</sup> / 32 A / 37.4 K

## 1017503 TDPT 2,5/ 2-SP-5,08

## 14 Current carrying capacity/derating curves

Specification

IEC 60947-7-4:2013-08

Note

Representation based on IEC 60512-5-2:2002-02

Reduction factor

1

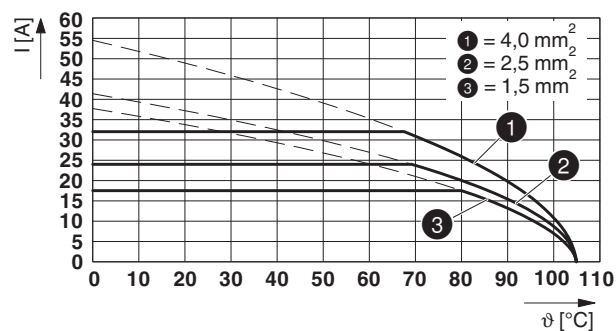
Number of positions

4

Conductor cross section

2.5 mm<sup>2</sup>

Type: TDPT 2,5/...-SP-5,08



**1017503 TDPT 2,5/ 2-SP-5,08****15 Environmental and durability tests****15.1 Vibration test**

Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

**15.2 Assessment of fire risk (glow wire test)**

Specification	IEC 60695-2-10:2013-04		
Result	Test passed		
Temperature	850 °C		
Time of exposure	5 s		




**15.3 Shock protection**

Specification	IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08
Back of the hand protection (Ball ø 50)	guaranteed
Finger protection (movable test finger)	guaranteed
Note	

**15.4 Test for substances that would hinder coating with paint or varnish**

Specification	WN-CS 21-1:2010-09
Result	Test passed

**1017503 TDPT 2,5/ 2-SP-5,08****16 Approvals / Certificates**

IECEE CB Scheme 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	400 V	32 A	-	0.2 - 4
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
	300 V	20 A	24 - 12	-
<b>Usegroup C</b>				
	150 V	20 A	24 - 12	-
<b>Usegroup D</b>				
	300 V	10 A	24 - 12	-

**1017503 TDPT 2,5/ 2-SP-5,08****17 Commercial Data**

Order No.	1017503
Type	TDPT 2,5/ 2-SP-5,08
Pieces per package	50
Net weight	2.78 g
GTIN	4055626501376
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**18 Accessories**

Description	Order No.	Type
Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.8 x 4.0 x 100 mm, 2-component grip, with non-slip grip	1204520	SZF 2-0,8X4,0
Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm <sup>2</sup> ... 6.0 mm <sup>2</sup> , lateral entry, trapezoidal crimp	1212034	CRIMPFOX 6