

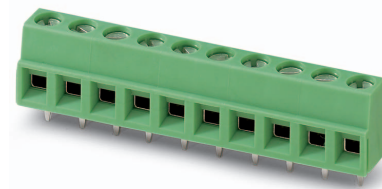
Data sheet

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Product version 07
Document revision 02

Order No.: 1729128

Type: MKDSN 1,5/ 2-5,08

PCB terminal block, Wave soldering, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 2 | • Nominal current | 13.5 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 400 V |
| • Color | green (6021) | • Connection direction | 0 ° |
| • Pitch | 5.08 mm | • Type of packaging | packed in cardboard |
| • Connection method | Screw connection with tension sleeve | | |

2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors
- ✓ Extremely small design for the respective conductor cross section
- ✓ The latching on the side enables various numbers of positions to be combined



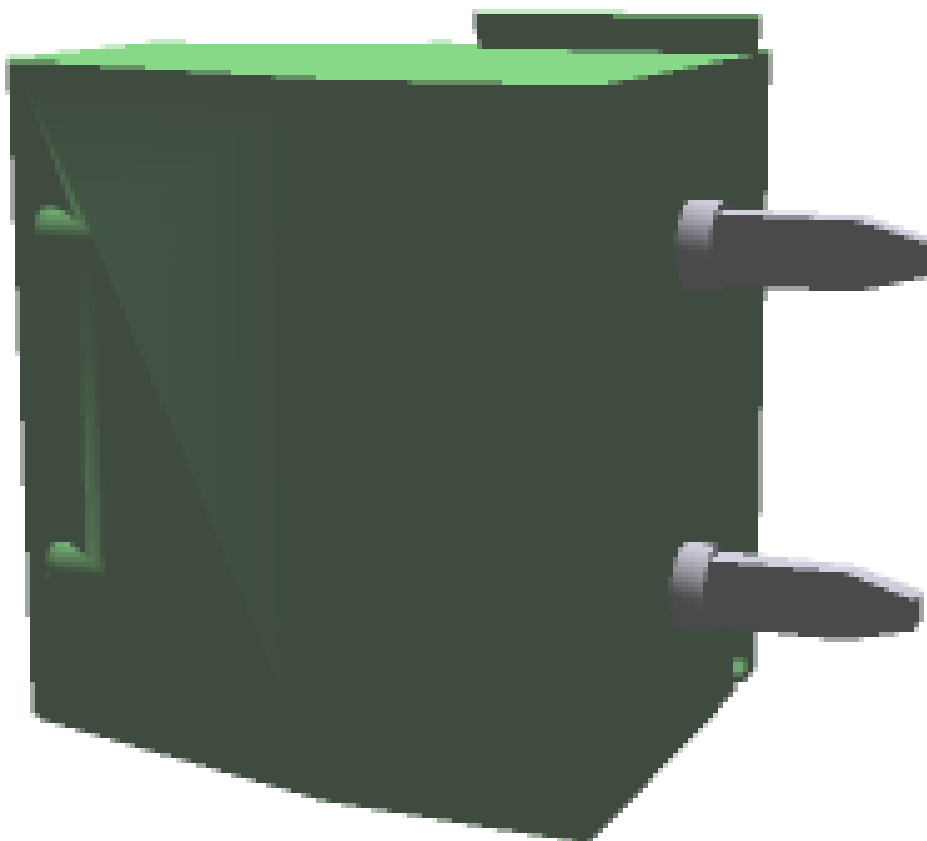
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1729128

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



1729128 MKDSN 1,5/ 2-5,08**5 General Technical Data****5.1 item properties**

Order No.	1729128
Type	MKDSN 1,5/ 2-5,08
Product type	PCB terminal block
Range of articles	MKDSN 1,5
Pitch	5.08 mm
Range of positions	2...30
Number of positions	2
Number of levels	1
Number of connections	2
Number of potentials	2
Connection method	Screw connection with tension sleeve
Screw thread	M3
Drive form screw head	Slotted (L)
Mounting type	Wave soldering
Connection direction of the conductor to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	PC termination block

5.2 Connection capacity

Conductor cross section, solid	0.14 mm ² ... 1.5 mm ²
Conductor cross section, flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 1.5 mm ²
2 conductors with same cross section, solid	0.14 mm ² ... 0.75 mm ²
2 conductors with same cross section, stranded	0.14 mm ² ... 0.75 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² ... 0.5 mm ²
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm ² ... 0.75 mm ²
Stripping length	6 mm
Tightening torque	0.5 Nm ... 0.6 Nm

5.3 Connection capacity AWG

Conductor cross section AWG	26 ... 16
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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

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Terminal point surface	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Soldering area surface	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Surface characteristics	Tin-plated

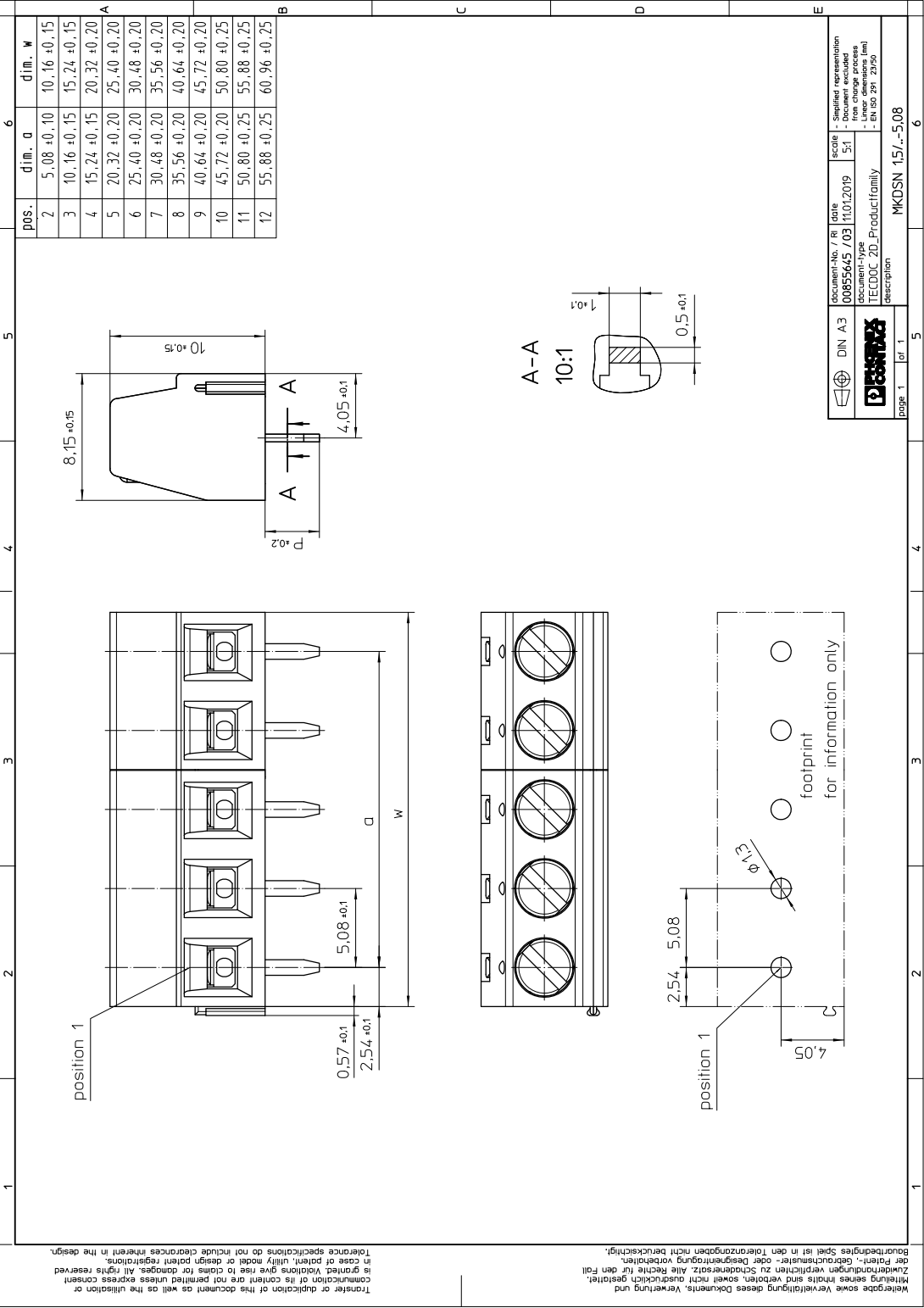
6.2 Material of plastic parts

	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C

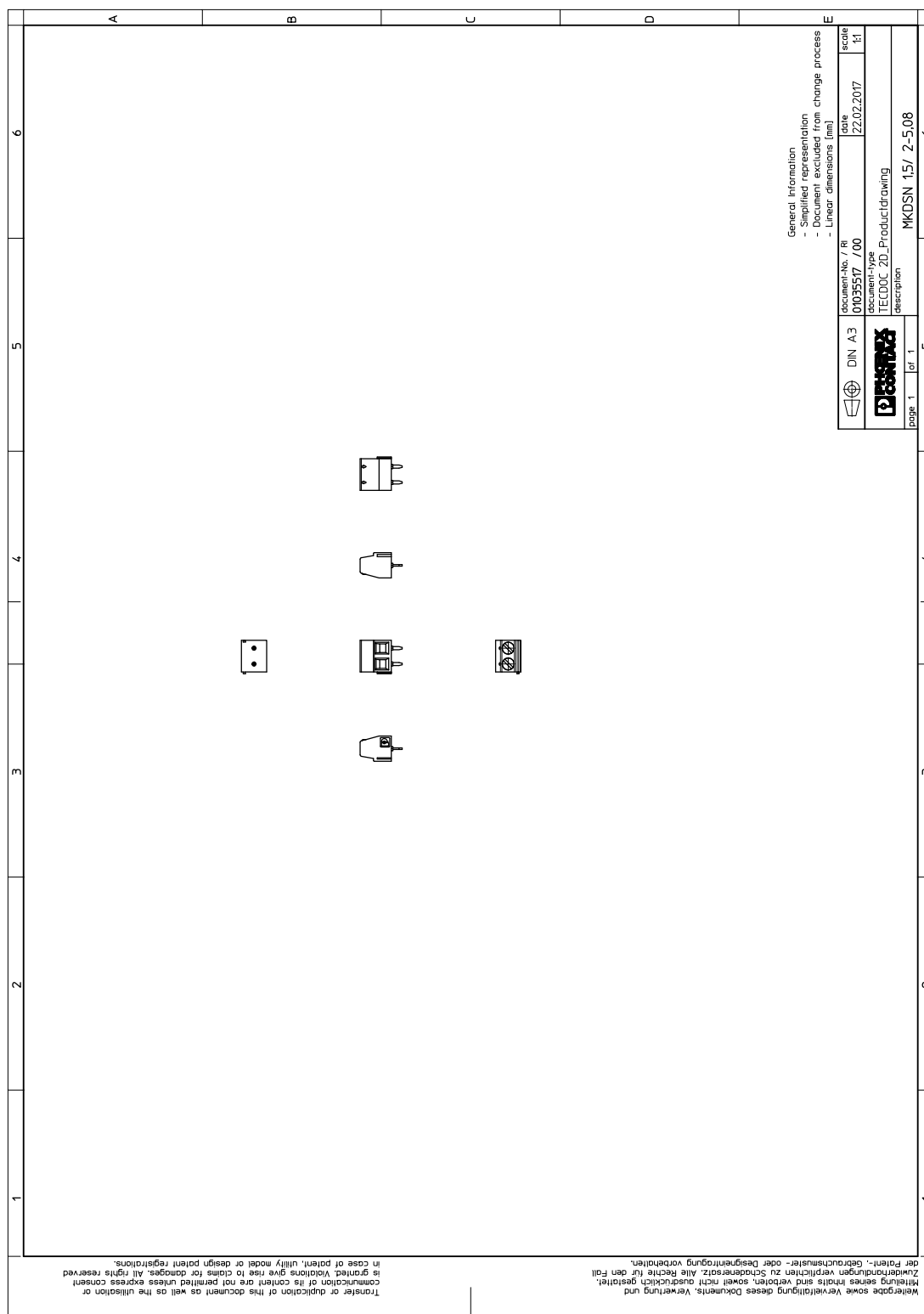
1729128 MKDSN 1,5/ 2-5,08**7 Dimensions****7.1 Dimensions for the product**

Length	8.1 mm
Width	10.16 mm
Height (without solder pin)	10 mm
Total height	13.5 mm
Solder pin [P]	3.5 mm
Dimension a	5.08 mm

8 Series drawing



9 Product drawing



1729128 MKDSN 1,5/ 2-5,08**9.1 Dimensions for PCB design**

Hole diameter	1.3 mm
Pin dimensions	0.5 x 1 mm

10 Application**10.1 General information**

Note on application	For safe conductor connection, always adhere to a defined tightening torque. Particularly in the case of PCB terminal blocks with two or three positions, the individual solder pin for each contact point cannot compensate for this. That is why the terminal blocks must be supported during conductor connection (held with one hand, support on the housing).
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11 Packaging information

Type of packaging	packed in cardboard
Pieces per package	250

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 ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (Depending on the current carrying capacity/derating curve)

1729128 MKDSN 1,5/ 2-5,08**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	0.14 mm ² / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / flexible / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / solid / > 40 N

12.2 Check for damage to conductor or loosening

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

1729128 MKDSN 1,5/ 2-5,08**13 Electrical tests****13.1 Electrical data**

Rated current / conductor cross section	13.5 A / 1.5 mm ²
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	250 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	3.2 mm	2 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	1.5 mm ² / 60 A

13.4 Aging test (climatic impact and corrosion testing)

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Contact resistance R ₁	1.7 mΩ / 1.5 mm ²
Test sequence 1: low temperature storage	-40 °C / 2 h
Test sequence 2: heat storage	168 h/100°C
Test sequence 3: noxious gas storage (ISO 6988)	KFW 0.2 S/1 cycle
Contact resistance R ₂	1.7 mΩ / 1.5 mm ²
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	
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

1729128 MKDSN 1,5/ 2-5,08**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	1.5 mm ² / 13 A / 32.5 K

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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

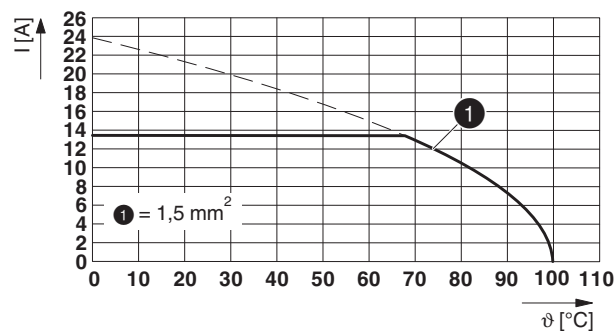
Number of positions

4

Conductor cross section

1.5 mm²

Type: MKDSN 1,5/...



1729128 MKDSN 1,5/ 2-5,08**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		

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16 Approvals / Certificates

IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	13.5 A	-	1.5
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	10 A	30 - 14	-
Mehrleiteranschluss	300 V	10 A	2x - 18	-
Usegroup D				
	300 V	10 A	30 - 14	-
Mehrleiteranschluss	300 V	10 A	2x - 18	-
DNV GL 				
SEV 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	13.5 A	-	1.5

1729128 MKDSN 1,5/ 2-5,08**17 Commercial Data**

Order No.	1729128
Type	MKDSN 1,5/ 2-5,08
Pieces per package	250
Net weight	1.8 g
GTIN	4017918025991
	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, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	1205053	SZS 0,6X3,5
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	0805412	SK 5,08/3,8:UNBEDRUCKT
	0805085	SK 5,08/3,8:SO
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT