2017-09-29
Product version 04
Document revision 0

Data sheet

Order No.: 1757022

Type: MSTB 2,5/ 3-ST-5,08

Plug component, Screw connection with tension sleeve

The figure shows a 10-position version of the product

1 Main features

- No. of pos. 3
- Conductor cross section 2.5 mm²
- Color green
- Pitch 5.08 mm
- Connection method Screw connection with tension sleeve
- Nominal current 12 A
- Nominal voltage 320 V
- Connection direction 0 °
- Type of packaging packed in cardboard

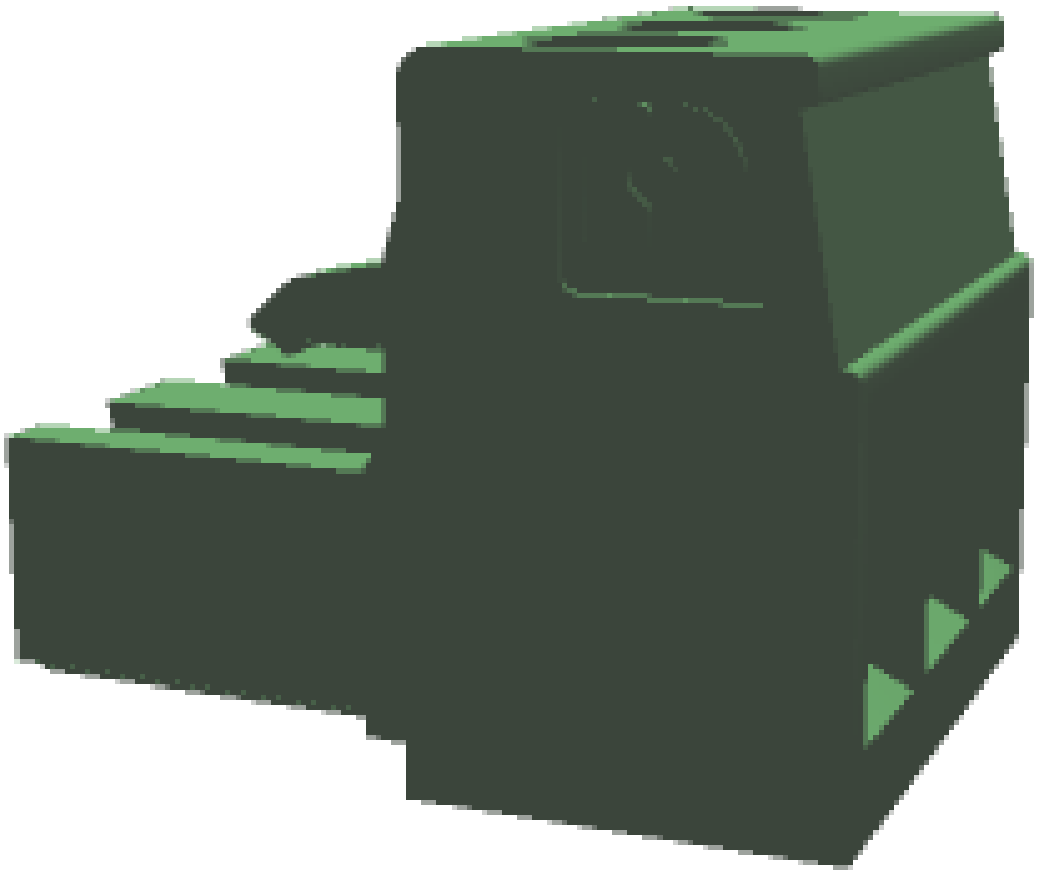
2 Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1757022

3 Table of contents

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



5 item properties

Order No.	1757022
Type	MSTB 2,5/ 3-ST-5,08
Type of contact	Female connector
Range of articles	MSTB 2,5/..-ST
Pitch	5.08 mm
Number of positions	3
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Locking	without

5.1 Connection capacity

Conductor cross section, solid	0.2 mm^2 to 2.5 mm^2
Conductor cross section, flexible	0.2 mm^2 to 2.5 mm^2
Conductor cross section AWG/kcmil	24 to 12
2 conductors with same cross section, solid	0.2 mm^2 to 1 mm^2
2 conductors with same cross section, stranded	0.2 mm^2 to 1.5 mm^2
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm^2 to 2.5 mm^2
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm^2 to 2.5 mm^2
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm^2 to 1 mm^2
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm^2 to 1.5 mm^2
Cylindrical gauge a x b / diameter	2.8 mm x 2.4 mm / 2.5 mm
Stripping length	7 mm

5.2 Material data

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	Sn 5 µm ... 7 µm	
Surface contact area	Sn 5 µm ... 7 µm	
Surface characteristics	hot-dip tin-plated	

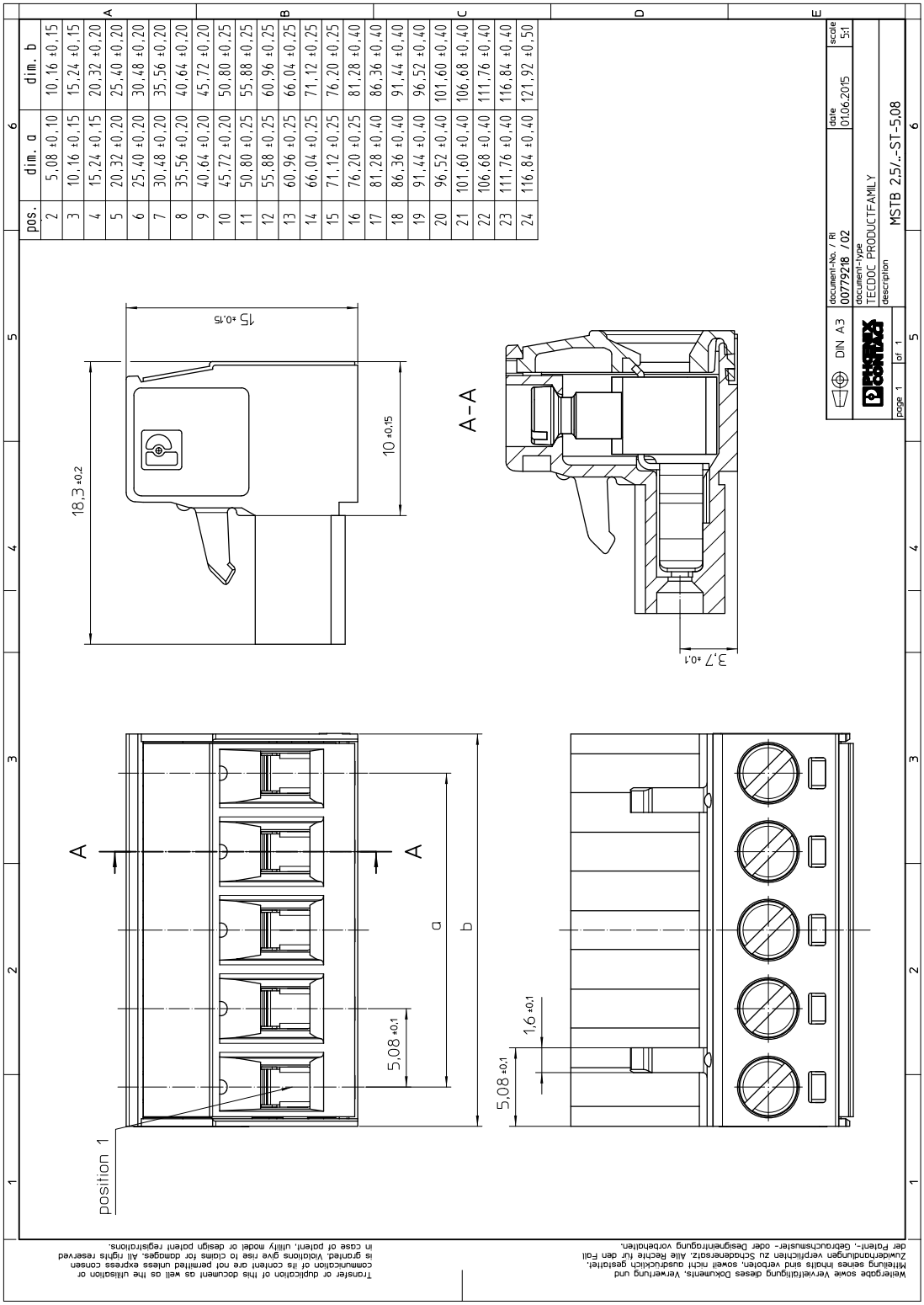
Insulating material data	Housing	
Insulating material	PA	
CTI according to IEC 60112	600	
Flammability rating according to UL 94	V0	
Color	green (6021)	
Glow wire flammability index GWFI according to EN 60695-2-12	850	
Glow wire ignition temperature GWIT according to EN 60695-2-13	775	
Temperature for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

6 Dimensions

6.1 Dimensions for the product

Length	18.3 mm
Width	15.24 mm
Total height	15 mm
Dimension a	10.16 mm

7 Series drawing



8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	100

9 Application

9.1 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C (dependent on the derating curve)

10 Mechanical tests

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual test	Test passed
Specification	IEC 60512-1-1:2002-02
Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02
Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12
Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N
Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	27 N

10.1 Termination and connection method

Specification	IEC 60999-1:1999-11
Check for damage to conductor or loosening	Test passed

10.2 Pull-out test

Termination and connection method: pull-out test	
Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm² / stranded / > 50 N
Conductor cross section/conductor type/tractive force actual value	AWG 12 / stranded / > 60 N

11 Electrical tests

11.1 Electrical data

Rated current / conductor cross section	12 A / 2.5 mm²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.3 mΩ
Degree of pollution	2

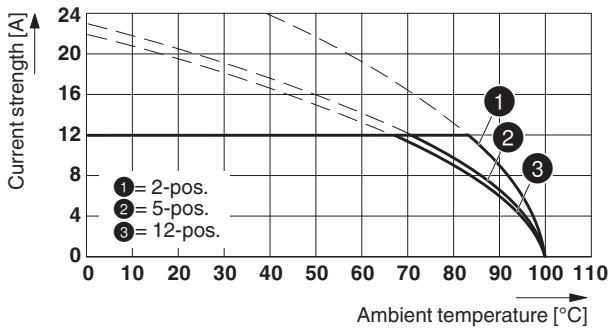
11.2 Air and creepage distances

Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 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	3 mm	3.2 mm

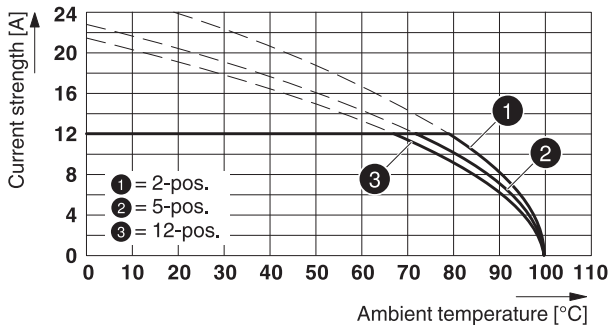
12 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Reduction factor	0.8
Number of positions	See diagram
Conductor cross section	2.5 mm²

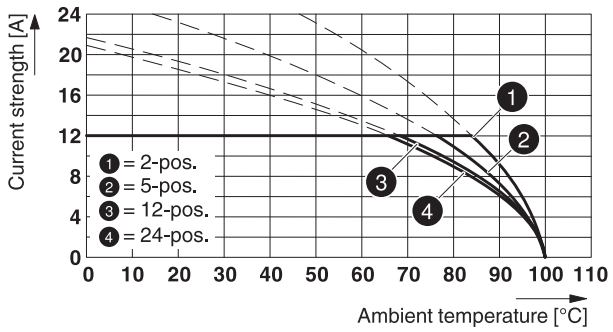
Type: MSTB 2,5/...-ST-5,08 with CC 2,5/...-G-5,08 P26THR



Type: MSTB 2,5/...-ST-5,08 with CCV 2,5/...-G-5,08 P26THR

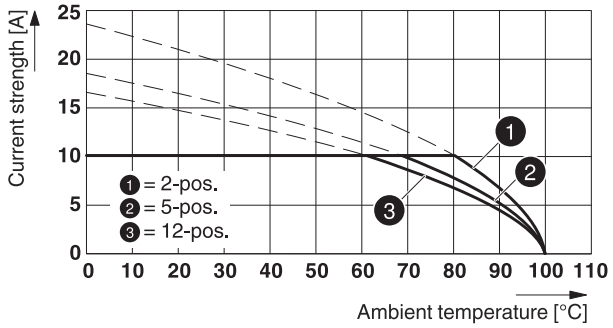


Type: MSTB 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR

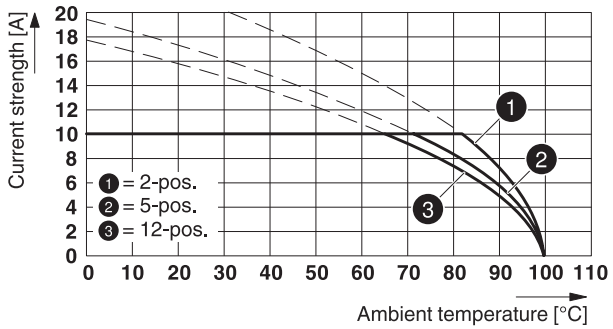


1757022 MSTB 2,5/ 3-ST-5,08

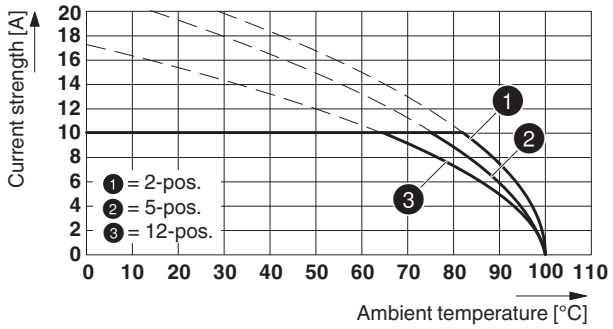
Type: MSTB 2,5/...-ST-5,08 with MDSTB 2,5/...-G-5,08



Type: MSTB 2,5/...-ST-5,08 with MDSTBA 2,5/...-G-5,08



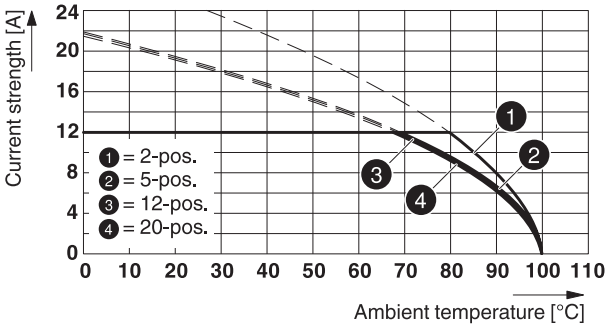
Type: MSTB 2,5/...-ST-5,08 with MDSTBW 2,5/...-G-5,08



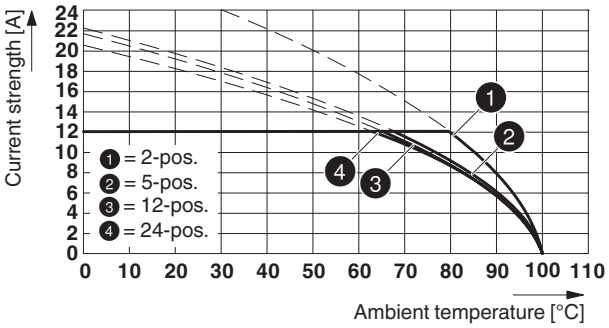
Type: MSTB 2,5/...-ST-5,08 with MDSTBV 2,5/...-G-5,08

1757022 MSTB 2,5/ 3-ST-5,08

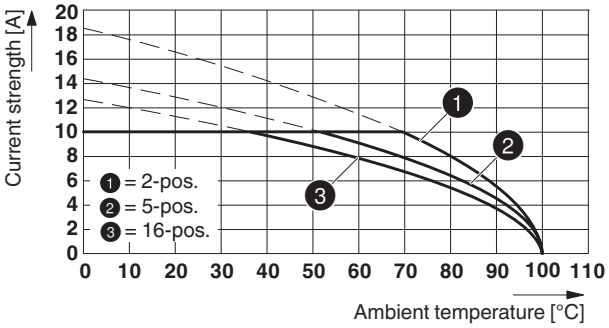
Type: MSTB 2,5/...-ST-5,08 with MVSTBU 2,5/...-GB-5,08



Type: MSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



Type: MSTBP 2,5/...-ST-5,08 with MDSTBVA 2,5/...-G-5,08



Type: MSTB 2,5/..-ST(-5,08) with EMSTBVA 2,5/...-G(-5,08)

86981_1000_en

Type: MSTB 2,5/...-ST-5,08 with MSTBW 2,5/...-G-5,08

Type: MSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

87454_1000_en

Type: MSTB 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08

87683_1000_en

13 Environmental and durability tests

13.1 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

14 Classification for connectors

Specification	IEC 61984:2008-10
Main features	Connectors without switching capacity (COC)
Construction form	Fixed connectors
Strain relief elements	without strain relief
Connection method	Can be reconnected
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protective conductor	without PE
Lock	no
Connection method	Screw terminal points

15 Approvals

CSA				
Use group	B	D		
mm²/AWG/kcmil	28-12	28-12		
Voltage	300 V	300 V		
Current	10 A	10 A		

VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

IECEE CB Scheme				
mm²/AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil	30-12	30-12		
Voltage	300 V	150 V		
Current	15 A	15 A		

1757022 MSTB 2,5/ 3-ST-5,08

EAC

16 Commercial Data

Order No.	1757022
Type	MSTB 2,5/ 3-ST-5,08
Pieces per package	100
Net weight	5.153 g
GTIN	4017918029555
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

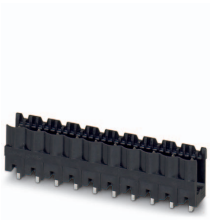
17 corresponding headers

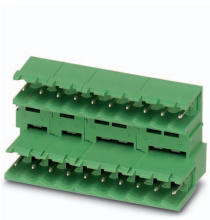
Order No.	Type
1735879	MSTBW 2,5/ 3-G-5,08
1736742	MDSTBV 2,5/ 3-G1-5,08
1755749	MSTBVA 2,5/ 3-G-5,08
1757255	MSTBA 2,5/ 3-G-5,08
1758021	MSTBV 2,5/ 3-G-5,08
1759020	MSTB 2,5/ 3-G-5,08
1762075	MDSTB 2,5/ 3-G-5,08
1762376	MDSTB 2,5/ 3-G1-5,08
1763087	MDSTBV 2,5/ 3-G-5,08
1767384	SMSTBA 2,5/ 3-G-5,08
1769476	SMSTB 2,5/ 3-G-5,08
1770957	MSTBA 2,5/ 3-G-5,08-LA
1802414	MDSTBW 2,5/ 3-G-5,08
1842076	MDSTBA 2,5/ 3-G-5,08
1845345	MDSTBVA 2,5/ 3-G-5,08
1847110	MSTBO 2,5/ 3-GR-5,08
1850440	MSTBO 2,5/ 3-GL-5,08
1859522	EMSTBVA 2,5/ 3-G-5,08
1874714	MDSTBA 2,5/ 3-GL-5,08
1874727	MDSTBA 2,5/ 3-GR-5,08
1874756	MDSTBVA 2,5/ 3-GL-5,08
1874769	MDSTBVA 2,5/ 3-GR-5,08
1880313	EMSTBA 2,5/ 3-G-5,08
1898842	DFK-MSTBA 2,5/ 3-G-5,08
1899142	DFK-MSTBVA 2,5/ 3-G-5,08
1902754	MSTBA 2,5/ 3-G-5,08 THT
1902822	MSTBVA 2,5/ 3-G-5,08 THT
1937240	MSTBA 2,5/ 3-G-5,08 THT-R32
1940428	MSTBVA 2,5/ 3-G-5,08 THT-R56
1954391	CC 2,5/ 3-G-5,08 P26THR
1954595	CC 2,5/ 3-G-5,08 P26THRR32
1954922	CCA 2,5/ 3-G-5,08 P26THR
1955044	CCA 2,5/ 3-G-5,08 P26THRR32
1955390	CCV 2,5/ 3-G-5,08 P26THR
1955536	CCV 2,5/ 3-G-5,08 P26THRR32
1955866	CCVA 2,5/ 3-G-5,08 P26THR
1955976	CCVA 2,5/ 3-G-5,08 P26THRR32

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
	1803947	KGG-MSTB 2,5/ 3
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0803883	SK U/2,8 WH:UNBEDRUCKT
	0805108	SK 5,08/2,8:SO
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

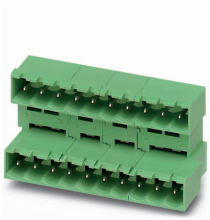
19 Combination tests

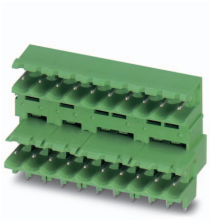


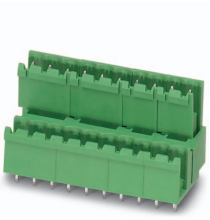


	MSTB 2,5/..-ST	**CC 2,5/..-G**	**CCV 2,5/..-G**	**CCVA 2,5/..-G**	**MDSTB 2,5/..-G**
Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)					
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed	
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed	
Durability tests (B)					
Contact resistance R_1	1.3 mΩ	1.2 mΩ	1.3 mΩ	1.6 mΩ	
Insertion/withdrawal cycles	25	25	25	25	
Contact resistance R_2	1.4 mΩ	1.2 mΩ	1.4 mΩ	1.6 mΩ	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV	
Insulation resistance Requirements > 5 MΩ	> 2 TΩ	> 0.1 TΩ	> 7.0 TΩ	> 0.1 TΩ	
Thermal tests (C)					
Tested number of positions	12	12	24	12	
Tested conductor cross section	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	
Test current	12 A	12 A	12 A DC	10 A	
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed	
Climatic tests (D)					
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h	
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV	
Environmental and endurance tests (E)					
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	

1757022 MSTB 2,5/ 3-ST-5,08

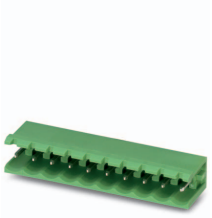


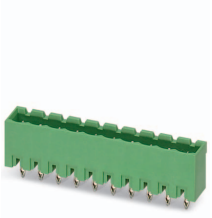




	MSTB 2,5/..-ST	MDSTBA 2,5/..-G	MDSTBW 2,5/..-G	MDSTBV 2,5/..-G	DFK-MSTBA 2,5/ ..-G
Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)					
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N		
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed		
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed		
Durability tests (B)					
Contact resistance R_1	1.6 mΩ	1.6 mΩ	2.6 mΩ		
Insertion/withdrawal cycles	25	25	25		
Contact resistance R_2	1.6 mΩ	1.7 mΩ	2.6 mΩ		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV		
Insulation resistance Requirements > 5 MΩ	> 50 GΩ	> 0.3 TΩ	> 50 GΩ		
Thermal tests (C)					
Tested number of positions	12	12	12		
Tested conductor cross section	2.5 mm²	2.5 mm²	2.5 mm²		
Test current	10 A	10 A	10 A		
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed		
Climatic tests (D)					
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h		
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °C/168 h		
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV		
Environmental and endurance tests (E)					
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10		
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger		

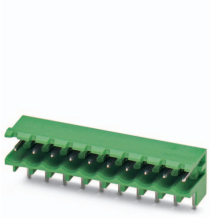
1757022 MSTB 2,5/ 3-ST-5,08

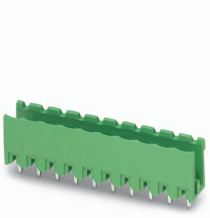




	MSTB 2,5/..-ST	MVSTBU 2,5/..-GB	MSTB 2,5/..-G	MDSTBVA 2,5/..-G	EMSTBVA 2,5/..-G
Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984	DIN VDE 0627 (in parts)
Mechanical tests (A)					
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 5 N / 4 N	
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed		
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed		
Durability tests (B)					
Contact resistance R_1	1.9 mΩ	1.4 mΩ	2.5 mΩ	1.1 mΩ	
Insertion/withdrawal cycles	25	25	25	100	
Contact resistance R_2	2.2 mΩ	1.4 mΩ	2.5 mΩ	1.5 mΩ	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV	
Insulation resistance Requirements > 5 MΩ	> 0.7 TΩ	> 0.3 TΩ	> 0.2 TΩ	> 8 TΩ	
Thermal tests (C)					
Tested number of positions	20	24	16	6	
Tested conductor cross section	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	
Test current	12 A	12 A	10 A	12 A	
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed		
Climatic tests (D)					
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h	
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV	
Environmental and endurance tests (E)					
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	

1757022 MSTB 2,5/ 3-ST-5,08





	MSTB 2,5/..-ST	MSTBW 2,5/..-G	MSTBVA 2,5/..-G	MSTBV 2,5/..-G	
Specification		IEC 61984	IEC 61984	IEC 61984	
Mechanical tests (A)					
Insertion/withdrawal force per position		approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	
Polarization when inserted Requirement >20 N		Test passed	Test passed	Test passed	
Contact holder in insert Requirements >20 N		Test passed	Test passed	Test passed	
Durability tests (B)					
Contact resistance R_1		1.3 mΩ	2.4 mΩ	2.4 mΩ	
Insertion/withdrawal cycles		25	25	25	
Contact resistance R_2		1.3 mΩ	2.5 mΩ	2.4 mΩ	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)		4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	
Insulation resistance Requirements > 5 MΩ		> 0.2 TΩ	> 0.2 TΩ	> 0.2 TΩ	
Thermal tests (C)					
Tested number of positions		20	24	20	
Tested conductor cross section		2.5 mm²	2.5 mm²	2.5 mm²	
Test current				12 A	
Upper limiting temperature Requirements < 100°C		Test passed	Test passed	Test passed	
Climatic tests (D)					
Test sequence 1: low temperature storage		-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	
Test sequence 2: heat storage		100 °C/168 h	100 °C/168 h	100 °C/168 h	
Test sequence 3: noxious gas storage (ISO 6988)		0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)		4.8 kV	4.8 kV	4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	
Environmental and endurance tests (E)					
Specification		IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	
Degree of protection		Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	