

Order No.: 1754449

Type: MSTB 2,5/ 2-ST

Plug component, Screw connection with tension sleeve



The figure shows a 10-pos. version of the product in green

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • Number of positions | 2 | • Nominal current | 12 A |
| • Conductor cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green | • Connection direction | 0 ° |
| • Pitch | 5 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



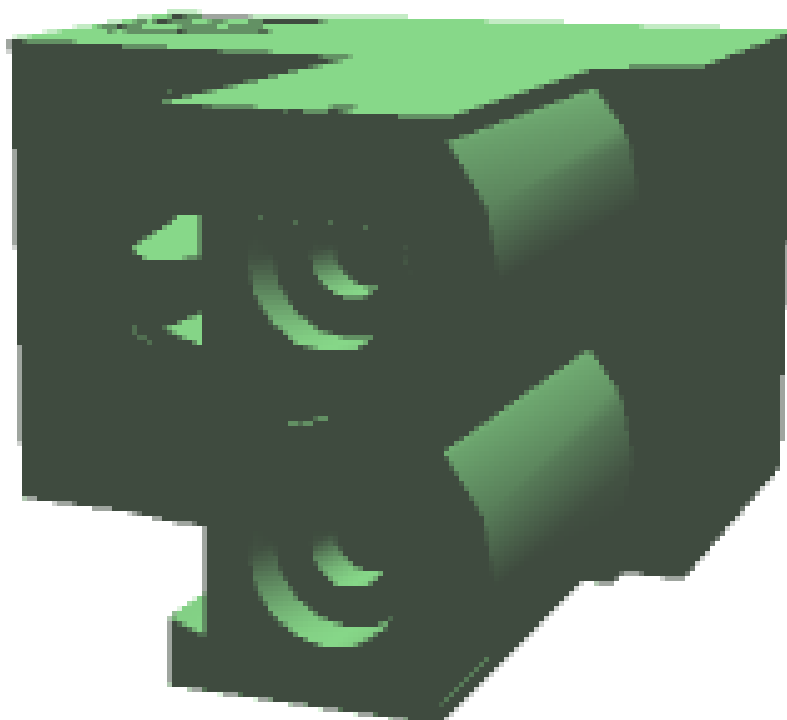
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It can be downloaded at: phoenixcontact.net/product/1754449

1754449 MSTB 2,5/ 2-ST**3 Table of contents**

1	Main features	1
2	Your advantages	1
3	Table of contents	2
4	3D model in PDF can be activated (Acrobat Reader only)	3
5	Item properties	4
5.1	Connection capacity	4
5.2	Material data	4
6	Dimensions	4
6.1	Dimensions for the product	5
7	Series drawing	6
8	Packaging information	7
9	Application	7
9.1	Temperature limit values	7
10	Mechanical tests	8
10.1	Termination and connection method	8
10.2	Pull-out test	8
11	Electrical tests	9
11.1	Electrical data	9
11.2	Air and creepage distances	9
12	Current carrying capacity/derating curves	10
13	Environmental and durability tests	12
13.1	Vibration test	12
14	Classification for connectors	12
15	Approvals	12
16	Commercial Data	14
17	Corresponding headers	14
18	Accessories	14
19	Combination tests	16

1754449 MSTB 2,5/ 2-ST

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



1754449 MSTB 2,5/ 2-ST**5 Item properties**

Order No.	1754449
Type	MSTB 2,5/ 2-ST
Type of contact	Female connector
Range of articles	MSTB 2,5/...-ST
Pitch	5 mm
Number of positions	2
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Note on tightening torque	
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

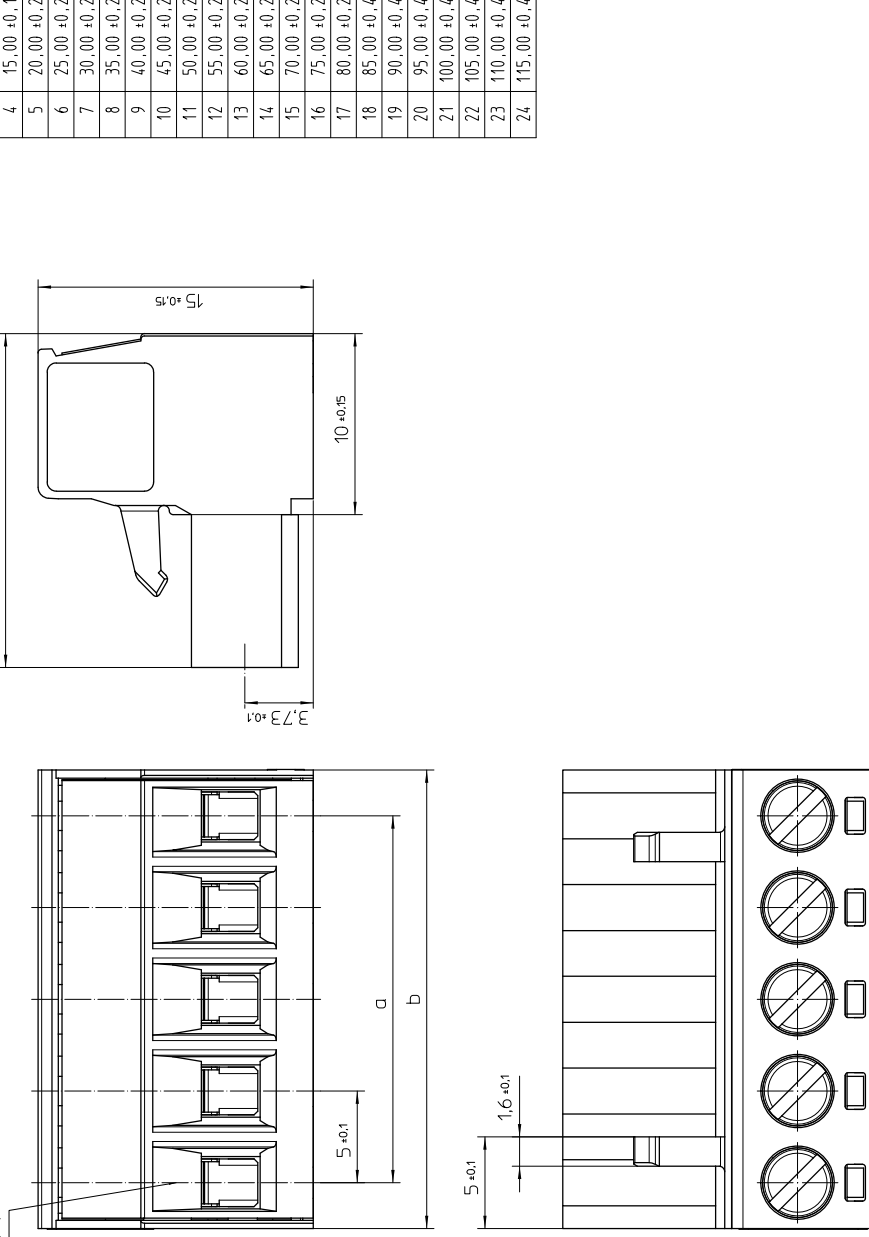
1754449 MSTB 2,5/ 2-ST

6.1 Dimensions for the product

Length	18.2 mm
Width	10.00 mm
Total height	15 mm
Dimension a	5.00 mm

7 Series drawing

Technical drawing of a mechanical component, showing a side view (left) and a front view (right). The side view includes dimensions: 18,2 ±0,2 (total height), 15 ±0,15 (top section height), 10 ±0,15 (middle section height), 3,73 ±0,1 (bottom section height), and 10 ±0,15 (width). The front view includes dimensions: 5 ±0,1 (width), 1,6 ±0,1 (width), and 5 ±0,1 (width). The drawing is labeled with 'position 1' and 'A'.



pos.	dim. a	dim. b
2	5,00 ±0,10	10,00 ±0,15
3	10,00 ±0,15	15,00 ±0,15
4	15,00 ±0,15	20,00 ±0,20
5	20,00 ±0,20	25,00 ±0,20
6	25,00 ±0,20	30,00 ±0,20
7	30,00 ±0,20	35,00 ±0,20
8	35,00 ±0,20	40,00 ±0,20
9	40,00 ±0,20	45,00 ±0,20
10	45,00 ±0,20	50,00 ±0,20
11	50,00 ±0,20	55,00 ±0,25
12	55,00 ±0,25	60,00 ±0,25
13	60,00 ±0,25	65,00 ±0,25
14	65,00 ±0,25	70,00 ±0,25
15	70,00 ±0,25	75,00 ±0,25
16	75,00 ±0,25	80,00 ±0,25
17	80,00 ±0,25	85,00 ±0,40
18	85,00 ±0,40	90,00 ±0,40
19	90,00 ±0,40	95,00 ±0,40
20	95,00 ±0,40	100,00 ±0,40
21	100,00 ±0,40	105,00 ±0,40
22	105,00 ±0,40	110,00 ±0,40
23	110,00 ±0,40	115,00 ±0,40
24	115,00 ±0,40	120,00 ±0,40

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document type TECDOC PRODUCTFAMILY description

page 1 of 1

MSIB 2.5/-ST-5.00

1754449 MSTB 2,5/ 2-ST**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)

1754449 MSTB 2,5/ 2-ST**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.	7 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 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / stranded / > 50 N

1754449 MSTB 2,5/ 2-ST**11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.4 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 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

1754449 MSTB 2,5/ 2-ST

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

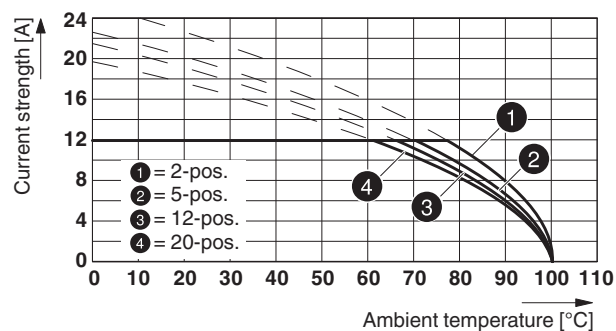
Number of positions

See diagram

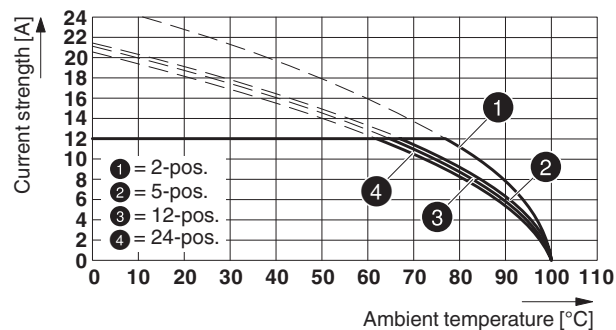
Conductor cross section

2.5 mm²

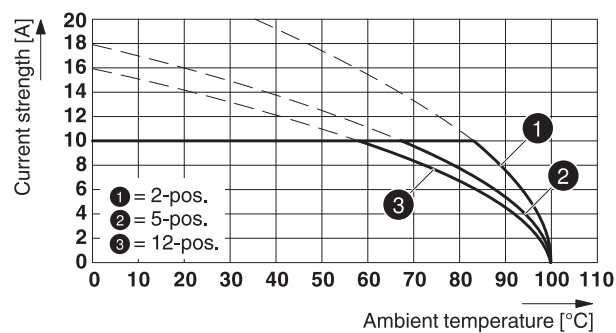
Type: MSTB 2,5/...-ST with MSTBW 2,5/...-G

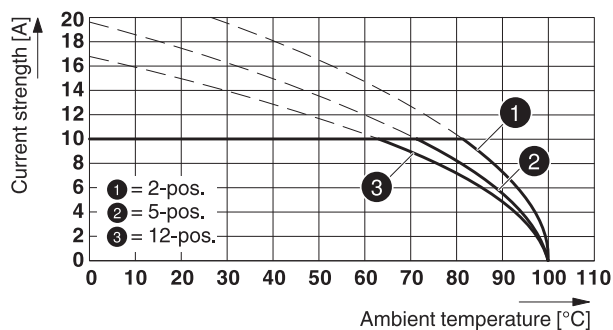
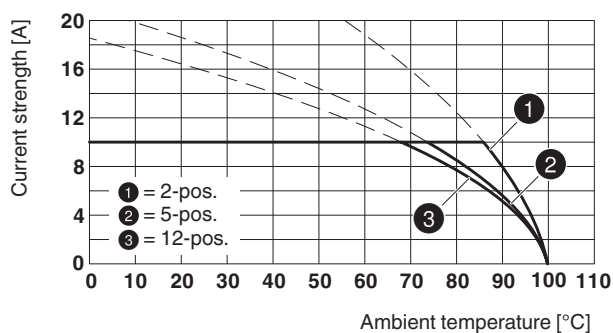


Type: MSTB 2,5/...-ST with MSTBA 2,5/...-G



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



1754449 MSTB 2,5/ 2-ST**Type: MSTB 2,5/...-ST with MDSTBW 2,5/...-G****Type: MSTB 2,5/...-ST with MDSTBV 2,5/...-G****Type: MSTB 2,5/...-ST with MSTBVA 2,5/...-G**

86480_2000_en

Type: MSTB 2,5/...-ST with MSTBO 2,5/...-G1R

86551_2000_en

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

86580_2000_en

Type: MSTB 2,5/...-ST with MSTBO 2,5/...-G1L

86639_2000_en

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

86981_1000_en


1754449 MSTB 2,5/ 2-ST**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		
mm ² /AWG/kcmil	28-12	28-12		
Voltage	300 V	300 V		
Current	15 A	10 A		

VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

IECEE CB Scheme 				
mm ² /AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

cULus Recognized 				
Use group	B	D		
mm ² /AWG/kcmil	30-12	30-12		
Voltage	300 V	150 V		
Current	15 A	15 A		

1754449 MSTB 2,5/ 2-ST

EAC 

1754449 MSTB 2,5/ 2-ST**16 Commercial Data**

Order No.	1754449
Type	MSTB 2,5/ 2-ST
Pieces per package	100
Net weight	3.444 g
GTIN	4017918028619
Customs tariff number	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
1736111	MSTBW 2,5/ 2-G
1753437	MSTBV 2,5/ 2-G
1754436	MSTB 2,5/ 2-G
1755516	MSTBVA 2,5/ 2-G
1757475	MSTBA 2,5/ 2-G
1762046	MDSTB 2,5/ 2-G
1763032	MDSTBV 2,5/ 2-G
1768189	MSTB 2,5/ 2-G-LA
1769230	SMSTB 2,5/ 2-G
1769803	SMSTBA 2,5/ 2-G
1770481	MSTBA 2,5/ 2-G-LA
1802443	MDSTBW 2,5/ 2-G
1845785	MDSTBVA 2,5/ 2-G
1846519	MDSTBA 2,5/ 2-G
1861044	MSTBO 2,5/ 2-G1R
1861057	MSTBO 2,5/ 2-G1L
1877708	MDSTBA 2,5/ 2-GL
1877711	MDSTBA 2,5/ 2-GR
1877724	MDSTBVA 2,5/ 2-GL
1877737	MDSTBVA 2,5/ 2-GR
1899841	EMSTBA 2,5/ 2-G
1914852	EMSTBVA 2,5/ 2-G
1927496	MSTBA 2,5/ 2-G THT
1941003	MSTBVA 2,5/ 2-G THT
1963874	MSTB 2,5/ 2-G THT
1963942	MSTBV 2,5/ 2-G THT
2200251	MSTBO 2,5/ 2-G1L THRR32 BK
2200252	MSTBO 2,5/ 2-G1R THRR32 BK
2854788	MSTBO 2,5/ 2-G1L KMGY
2854791	MSTBO 2,5/ 2-G1R KMGY

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
	0804183	SK 5/3,8:FORTL.ZAHLEN
	1803934	KGG-MSTB 2,5/ 2

1754449 MSTB 2,5/ 2-ST

Description	Order No.	Type
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
Insertion bridge, fully insulated, for connectors with 5.0 or 5.08 mm pitch, no. of positions: 2	1733169	EBP 2- 5
	0805409	SK 5/3,8:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

1754449 MSTB 2,5/ 2-ST

19 Combination tests

**MSTB 2,5/..-ST**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted

Requirement > 20 N

Contact holder in insert

Requirements > 20 N

Endurance tests (B)Contact resistance R_1

Insertion/withdrawal cycles

Contact resistance R_2 Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ Insulation resistance
Requirements > 5 M Ω **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C**Climatic tests (D)**

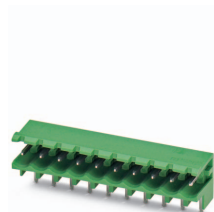
Test sequence 1: low temperature storage

Test sequence 2: heat storage

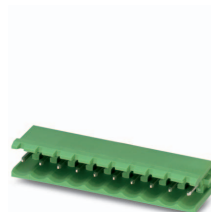
Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

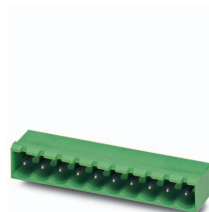
Degree of protection

**MSTBW 2,5/..-G**

IEC 61984

**MSTB 2,5/..-G**

IEC 61984

**MSTBA 2,5/..-G**

IEC 61984

**SMSTB 2,5/..-G**

IEC 61984

approx. 8 N / 7 N

Test passed

Test passed

1.4 m Ω

25

1.5 m Ω

4.8 kV

2.21 kV

11 T Ω

20

2.5 mm²

12 A DC

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

approx. 8 N / 6 N

Test passed

Test passed

1.4 m Ω

25

1.5 m Ω

4.8 kV

2.21 kV

> 1 T Ω

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1754449 MSTB 2,5/ 2-ST**MSTB 2,5/..-ST**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement > 20 NContact holder in insert
Requirements > 20 N**Endurance tests (B)**Contact resistance R_1

Insertion/withdrawal cycles

Contact resistance R_2 Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ Insulation resistance
Requirements > 5 M Ω **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C**Climatic tests (D)**

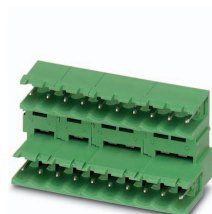
Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**MDSTB 2,5/..-G**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.8 m Ω

25

1.8 m Ω

4.8 kV

2.21 kV

> 80 G Ω

12

2.5 mm²

10 A

Test passed

-40 °C/2 h

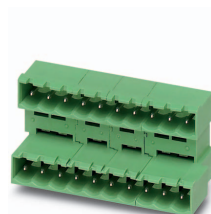
100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

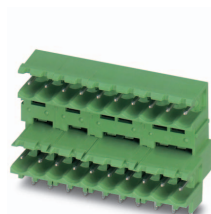
4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MDSTBA 2,5/..-G**

IEC 61984

**MDSTBW 2,5/..-G**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.7 m Ω

25

1.8 m Ω

4.8 kV

2.21 kV

> 50 G Ω

12

2.5 mm²

10 A

Test passed

-40 °C/2 h

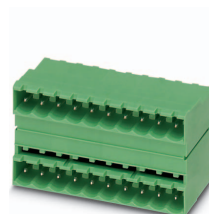
100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

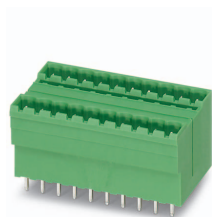
4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MDSTB 2,5/..-G1**

IEC 61984

1754449 MSTB 2,5/ 2-ST**MSTB 2,5/...-ST****MDSTBV 2,5/...-G1****MDSTBV 2,5/...-G****MDSTBVA 2,5/...-G****DFK-MSTB 2,5/...-G**

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position		approx. 8 N / 6 N		
Polarization when inserted Requirement > 20 N		Test passed		
Contact holder in insert Requirements > 20 N		Test passed		
Endurance tests (B)				
Insertion/withdrawal cycles		25		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu s)$		4.8 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV		
Insulation resistance Requirements > 5 M Ω		> 0.2 T Ω		
Thermal tests (C)				
Tested number of positions		12		
Tested conductor cross section		2.5 mm ²		
Test current		10 A		
Upper limiting temperature Requirements < 100°C		Test passed		
Climatic tests (D)				
Test sequence 1: low temperature storage		-40 °C/2 h		
Test sequence 2: heat storage		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		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu s)$		4.8 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV		
Environmental and endurance tests (E)				
Specification		IEC 61984:2008-10		
Degree of protection		Finger safety with IP20 test finger		

1754449 MSTB 2,5/ 2-ST**MSTB 2,5/..-ST****MSTBVA 2,5/..-G****MSTBO 2,5/..-G1R****SMSTBA 2,5/..-G****MSTBO 2,5/..-G1L**

Specification

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

Endurance tests (B)Contact resistance R_1 2.5 m Ω 1.6 m Ω 1.3 m Ω 1.5 m Ω

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R_2 2.5 m Ω 1.6 m Ω 1.4 m Ω 1.5 m Ω Rated impulse voltage at sea level
Voltage waveform \geq (1.2/50 μ s)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

Power-frequency withstand voltage
Voltage waveform \geq (50/60 Hz)

2.21 kV

2.21 kV

2.21 kV

2.21 kV

Insulation resistance
Requirements > 5 M Ω > 0.4 T Ω > 0.3 T Ω > 0.1 T Ω > 0.3 T Ω **Thermal tests (C)**

Tested number of positions

24

4

24

4

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²2.5 mm²

Test current

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 SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycleRated impulse voltage at sea level
Voltage waveform \geq (1.2/50 μ s)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

Power-frequency withstand voltage
Voltage waveform \geq (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 fingerFinger safety with IP20
test fingerFinger safety with IP20
test fingerFinger safety with IP20
test finger

1754449 MSTB 2,5/ 2-ST**MSTB 2,5/..-ST**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement > 20 NContact holder in insert
Requirements > 20 N**Endurance tests (B)**Contact resistance R_1

Insertion/withdrawal cycles

Contact resistance R_2 Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ Insulation resistance
Requirements > 5 M Ω **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C**Climatic tests (D)**

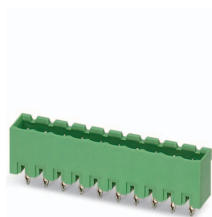
Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**EMSTBVA 2,5/..-G**

DIN VDE 0627 (in parts)

approx. 5 N / 4 N

1.1 m Ω

100

1.5 m Ω

4.8 kV

2.21 kV

> 8 T Ω

6

2.5 mm²

12 A

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger