

Data sheet

Order No.: 1754643

Type: MSTB 2,5/12-ST

Plug component, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



• No. of pos.	12	• 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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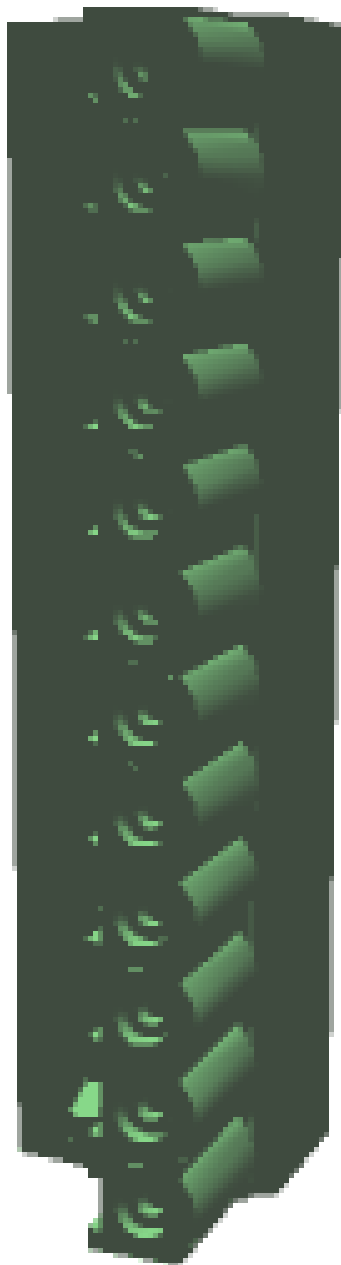
It can be downloaded at: phoenixcontact.net/product/1754643

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1754643 MSTB 2,5/12-ST

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



1754643 MSTB 2,5/12-ST**5 item properties**

Order No.	1754643
Type	MSTB 2,5/12-ST
Type of contact	Female connector
Range of articles	MSTB 2,5/...-ST
Pitch	5 mm
Number of positions	12
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	
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

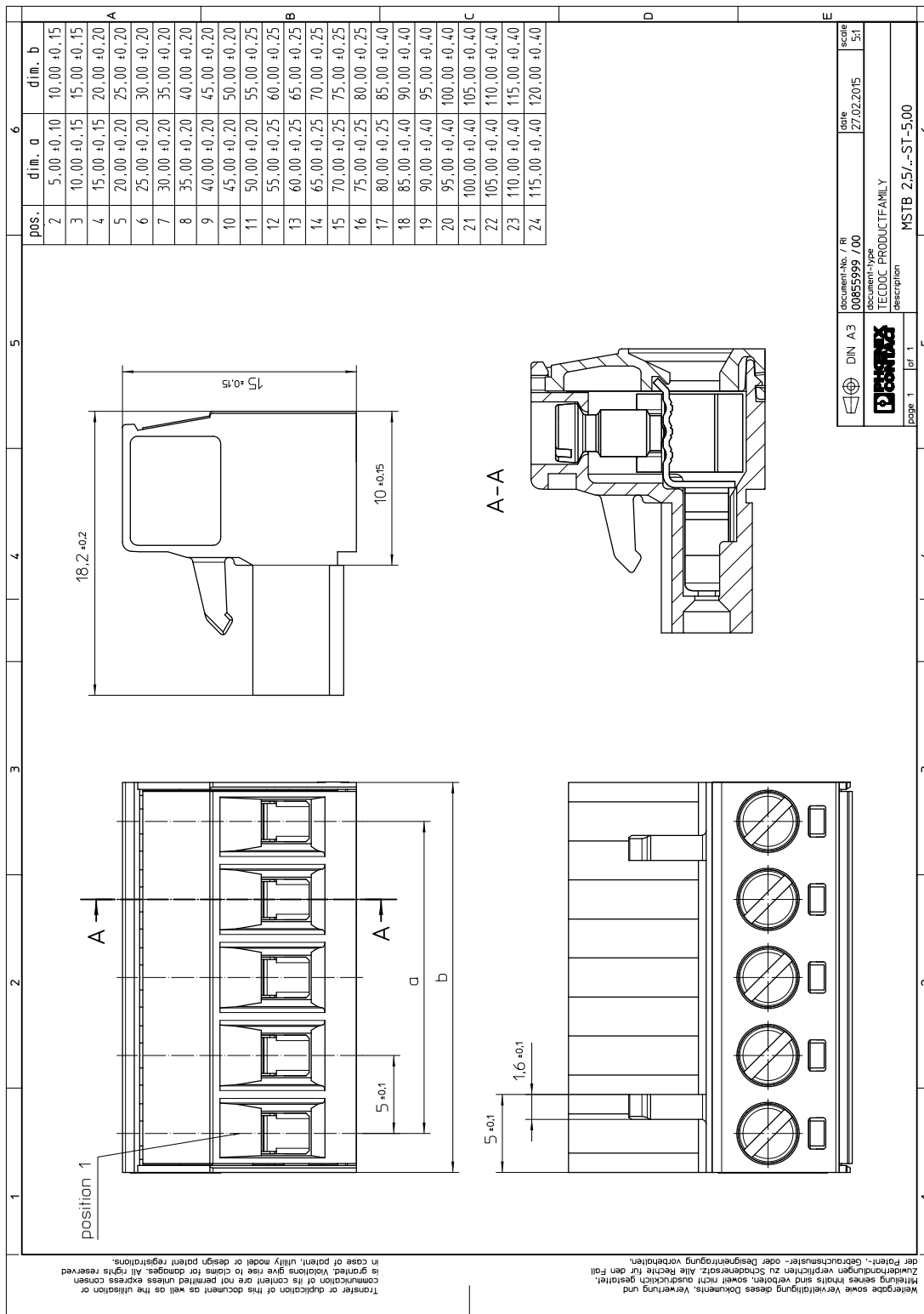
1754643 MSTB 2,5/12-ST

6.1 Dimensions for the product

Length	18.2 mm
Width	60 mm
Total height	15 mm
Dimension a	55 mm

1754643 MSTB 2,5/12-ST

7 Series drawing



1754643 MSTB 2,5/12-ST**8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

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)

1754643 MSTB 2,5/12-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

1754643 MSTB 2,5/12-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

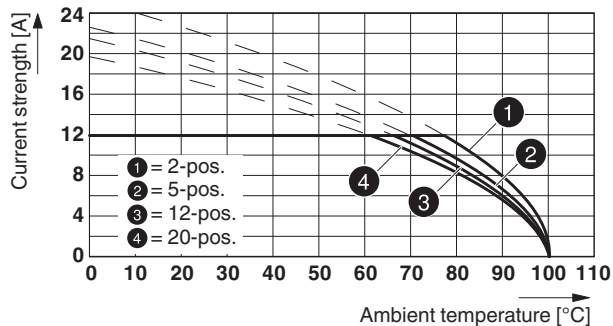
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	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

1754643 MSTB 2,5/12-ST

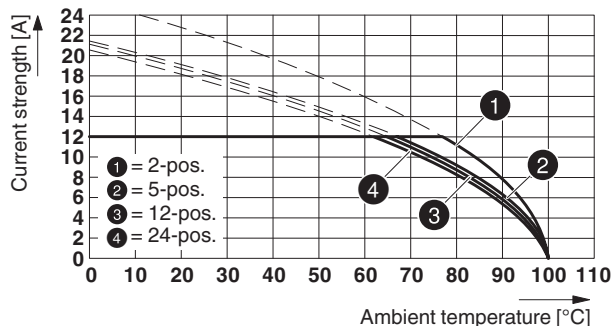
12 Current carrying capacity/derating curves

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 mm ²

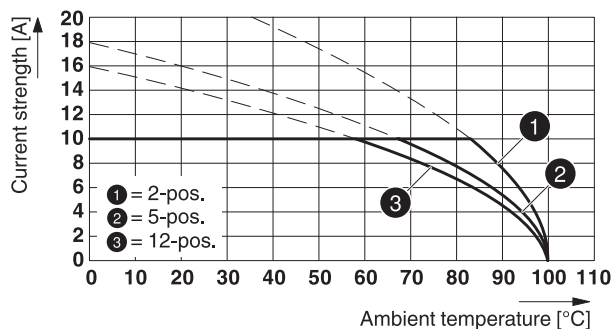
Type: MSTB 2,5/...-ST with MSTBW 2,5/...-G



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

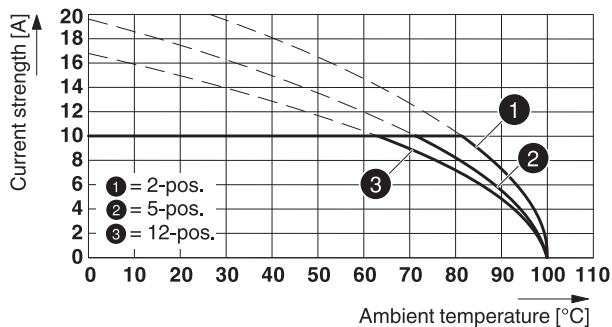


Type: MSTB 2,5/...-ST with MDSTB 2,5/...-G

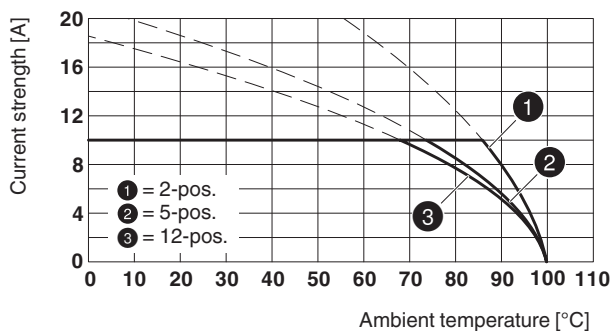


1754643 MSTB 2,5/12-ST

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

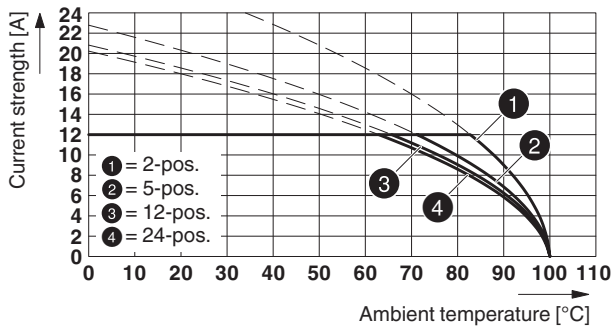
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Type: MSTB 2,5/...-ST(-5,08) with EMSTBVA 2,5/...-G(-5,08)

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1754643 MSTB 2,5/12-ST

Type: MSTB 2,5/...-STF with CCV 2,5/...-GF-LR P20 THR




1754643 MSTB 2,5/12-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	10 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		

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Product version 03

Document revision 0

1754643 MSTB 2,5/12-ST

EAC ENEC

1754643 MSTB 2,5/12-ST**16 Commercial Data**

Order No.	1754643
Type	MSTB 2,5/12-ST
Pieces per package	50
Net weight	19.882 g
GTIN	4017918028817
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding headers


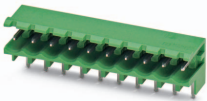
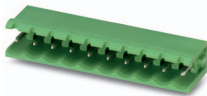
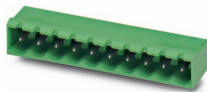

Order No.	Type
1736014	MSTBW 2,5/12-G
1753631	MSTBV 2,5/12-G
1754630	MSTB 2,5/12-G
1755600	MSTBVA 2,5/12-G
1757569	MSTBA 2,5/12-G
1762790	MDSTB 2,5/12-G1
1762949	MDSTBV 2,5/12-G1
1768286	MSTB 2,5/12-G-LA
1769337	SMSTB 2,5/12-G
1769900	SMSTBA 2,5/12-G
1770588	MSTBA 2,5/12-G-LA
1845882	MDSTBVA 2,5/12-G
1846030	MDSTBV 2,5/12-G
1846467	MDSTB 2,5/12-G
1846616	MDSTBA 2,5/12-G
1846917	MDSTBW 2,5/12-G
1899948	EMSTBA 2,5/12-G
1914959	EMSTBVA 2,5/12-G

18 Accessories

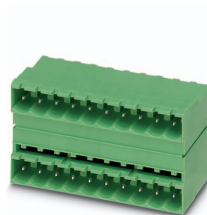
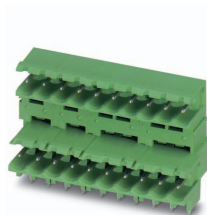
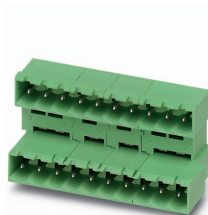
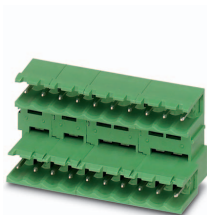
Description	Order No.	Type
Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	1205053	SZS 0,6X3,5
	0804183	SK 5/3,8:FORTL.ZAHLEN
	1783818	KGS-MSTB 2,5/12
Coding profile, is inserted into the 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

1754643 MSTB 2,5/12-ST

19 Combination tests

					
	MSTB 2,5/12-ST	MSTBW 2,5/12-G	MSTB 2,5/12-G	MSTBA 2,5/12-G	SMSTB 2,5/12-G
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)					
Insertion/withdrawal force per position		approx. 8 N / 7 N		approx. 8 N / 6 N	
Polarization when inserted Requirement >20 N		Test passed		Test passed	
Contact holder in insert Requirements >20 N		Test passed		Test passed	
Durability tests (B)					
Contact resistance R ₁		1.4 mΩ		1.4 mΩ	
Insertion/withdrawal cycles		25		25	
Contact resistance R ₂		1.5 mΩ		1.5 mΩ	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV		4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV		2.21 kV	
Insulation resistance Requirements > 5 MΩ		11 TΩ		> 1 TΩ	
Thermal tests (C)					
Tested number of positions		20		24	
Tested conductor cross section		2.5 mm ²		2.5 mm ²	
Test current		12 A DC		12 A	
Upper limiting temperature Requirements < 100°C		Test passed		Test passed	
Climatic tests (D)					
Test sequence 1: low temperature storage		-40 °C/2 h		-40 °C/2 h	
Test sequence 2: heat storage		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	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV		4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV		2.21 kV	
Environmental and endurance tests (E)					
Specification		IEC 61984:2008-10		IEC 61984:2008-10	
Degree of protection		Finger safety with IP20 test finger		Finger safety with IP20 test finger	

1754643 MSTB 2,5/12-ST



MSTB 2,5/12-ST

MDSTB 2,5/12-G

MDSTBA 2,5/12-G

MDSTBW 2,5/12-G

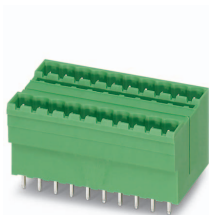
MDSTB 2,5/12-G1

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	
Polarization when inserted Requirement >20 N	Test passed		Test passed	
Contact holder in insert Requirements >20 N	Test passed		Test passed	
Durability tests (B)				
Contact resistance R ₁	1.8 mΩ		1.7 mΩ	
Insertion/withdrawal cycles	25		25	
Contact resistance R ₂	1.8 mΩ		1.8 mΩ	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV		4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV		2.21 kV	
Insulation resistance Requirements > 5 MΩ	> 80 GΩ		> 50 GΩ	
Thermal tests (C)				
Tested number of positions	12		12	
Tested conductor cross section	2.5 mm ²		2.5 mm ²	
Test current	10 A		10 A	
Upper limiting temperature Requirements < 100°C	Test passed		Test passed	
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h		-40 °C/2 h	
Test sequence 2: heat storage	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	
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV		4.8 kV	
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV		2.21 kV	
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10		IEC 61984:2008-10	
Degree of protection	Finger safety with IP20 test finger		Finger safety with IP20 test finger	

1754643 MSTB 2,5/12-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		
Durability 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		

1754643 MSTB 2,5/12-ST



MSTB 2,5/12-ST

MSTBVA 2,5/12-G

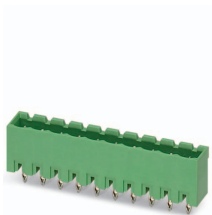
MSTBO 2,5/12-G1R

SMSTBA 2,5/12-G

MSTBO 2,5/12-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
Durability tests (B)				
Contact resistance R ₁	2.5 mΩ	1.6 mΩ	1.3 mΩ	1.5 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R ₂	2.5 mΩ	1.6 mΩ	1.4 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	> 0.4 TΩ	> 0.3 TΩ	> 0.1 TΩ	> 0.3 TΩ
Thermal tests (C)				
Tested number of positions	24	4	24	4
Tested conductor cross section	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²
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 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

1754643 MSTB 2,5/12-ST



MSTB 2,5/...-ST

EMSTBVA 2,5/...-G

CCVA 2,5/...-G

Specification

DIN VDE 0627 (in parts)

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 5 N / 4 N

approx. 8 N / 6 N

Polarization when inserted
Requirement >20 N

Test passed

Contact holder in insert
Requirements >20 N

Test passed

Durability tests (B)

Contact resistance R₁

1.1 mΩ

1.2 mΩ

Insertion/withdrawal cycles

100

25

Contact resistance R₂

1.5 mΩ

1.2 mΩ

Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

Insulation resistance
Requirements > 5 MΩ

> 8 TΩ

> 1 TΩ

Thermal tests (C)

Tested number of positions

6

24

Tested conductor cross section

2.5 mm²

2.5 mm²

Test current

12 A

12 A

Upper limiting temperature
Requirements < 100°C

Test passed

Climatic tests (D)

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

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 cycle

0.2 dm³ SO₂ 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

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

2.21 kV

2.21 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test finger

Finger safety with IP20
test finger



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