

# Data sheet

Order No.: 1754504

Type: MSTB 2,5/ 5-ST

Plug component, Screw connection with tension sleeve



The figure shows a 5-pos. version of the product

## 1 Main features



- |                           |                                      |                        |                     |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos.             | 5                                    | • Nominal current      | 12 A                |
| • Conductor cross section | 2.5 mm <sup>2</sup>                  | • 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



Make sure you always use the latest documentation.

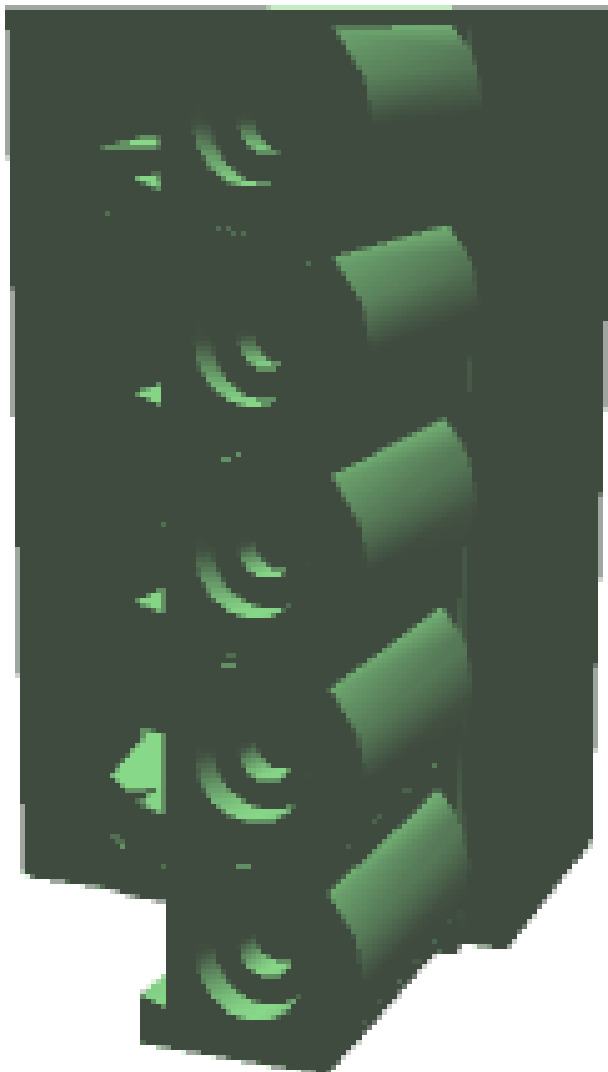
It can be downloaded at: [phoenixcontact.net/product/1754504](http://phoenixcontact.net/product/1754504)

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1754504 MSTB 2,5/ 5-ST

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



**1754504 MSTB 2,5/ 5-ST****5 item properties**

Order No.	1754504
Type	MSTB 2,5/ 5-ST
Type of contact	Female connector
Range of articles	MSTB 2,5/...ST
Pitch	5 mm
Number of positions	5
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 <sup>2</sup> to 2.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil	24 to 12
2 conductors with same cross section, solid	0.2 mm <sup>2</sup> to 1 mm <sup>2</sup>
2 conductors with same cross section, stranded	0.2 mm <sup>2</sup> to 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> to 1 mm <sup>2</sup>
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm <sup>2</sup> to 1.5 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.8 mm x 2.4 mm / 2.5 mm
Stripping length	7 mm

**5.2 Material data**

<b>Material of metal parts</b>	
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
<b>Insulating material data</b>	
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**

**1754504 MSTB 2,5/ 5-ST**

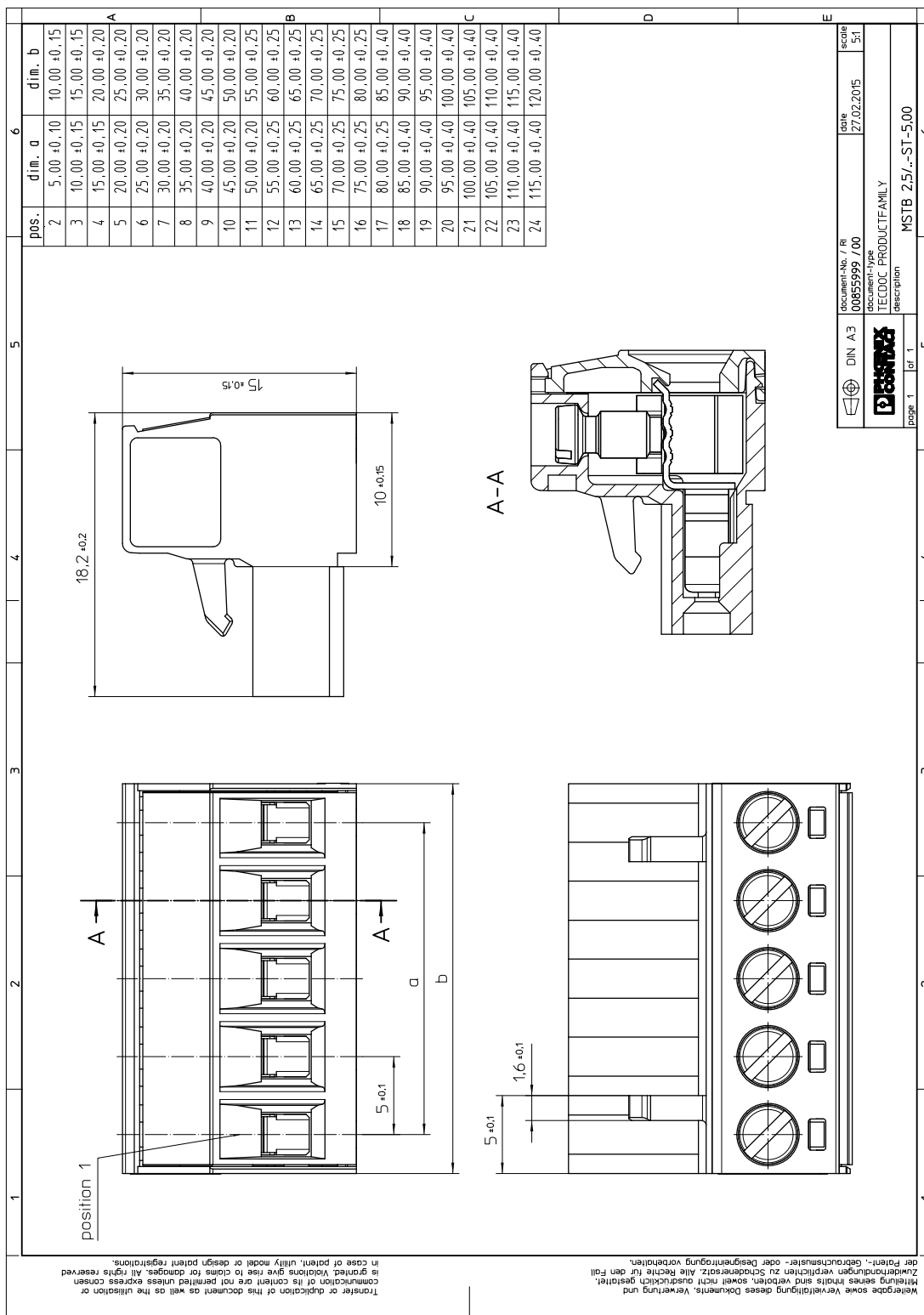
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**6.1 Dimensions for the product**

Length	18.2 mm
Width	25 mm
Total height	15 mm
Dimension a	20 mm

1754504 MSTB 2,5/ 5-ST

7 Series drawing



**1754504 MSTB 2,5/ 5-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)

**1754504 MSTB 2,5/ 5-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 <sup>2</sup> / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm <sup>2</sup> / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm <sup>2</sup> / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm <sup>2</sup> / stranded / > 50 N

**1754504 MSTB 2,5/ 5-ST****11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	12 A / 2.5 mm <sup>2</sup>
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**

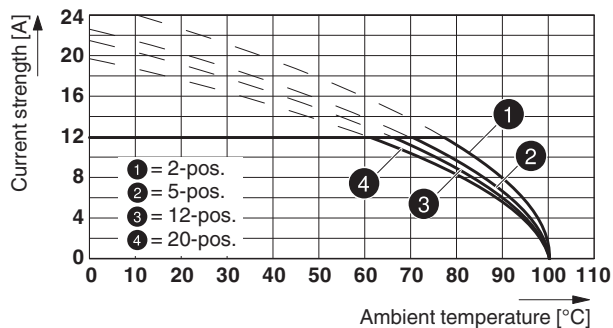
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overtoltage category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

1754504 MSTB 2,5/ 5-ST

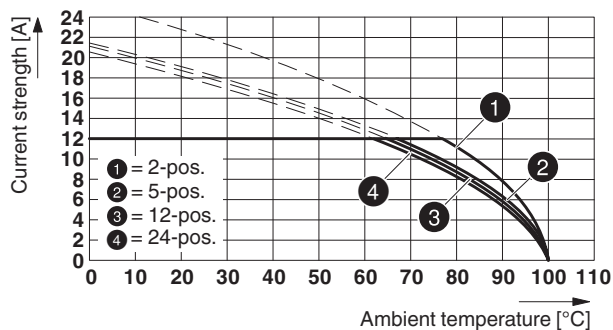
12 Current carrying capacity/derating curves

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 <sup>2</sup>

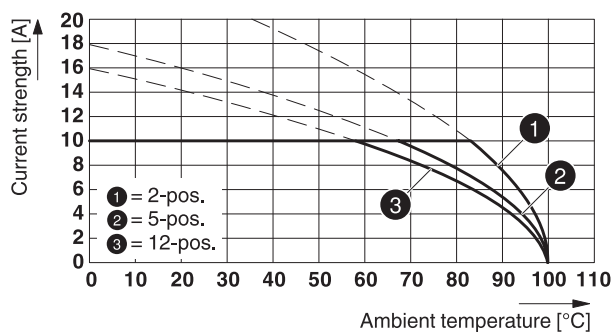
Type: MSTB 2,5/...-ST with MSTBW 2,5/...-G



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

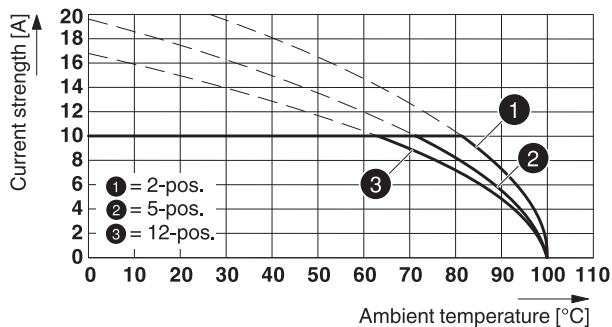


Type: MSTB 2,5/...-ST with MDSTB 2,5/...-G

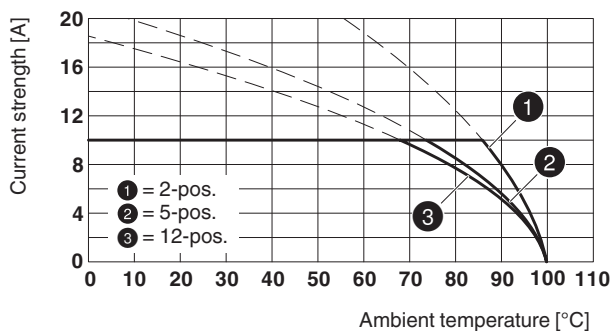


**1754504 MSTB 2,5/ 5-ST**

**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**

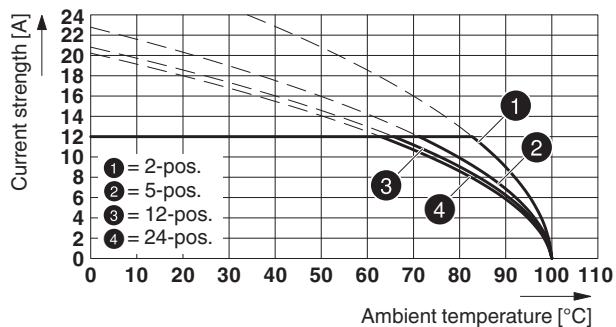
86639\_2000\_en

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

86981\_1000\_en

**1754504 MSTB 2,5/ 5-ST**

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




**1754504 MSTB 2,5/ 5-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 <sup>2</sup> /AWG/kcmil	28-12	28-12		
Voltage	300 V	300 V		
Current	10 A	10 A		

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

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

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

2017-09-29

Product version 04

Document revision 0

**1754504 MSTB 2,5/ 5-ST**

EAC ENEC

**1754504 MSTB 2,5/ 5-ST****16 Commercial Data**

Order No.	1754504
Type	MSTB 2,5/ 5-ST
Pieces per package	100
Net weight	8.111 g
GTIN	4017918028671
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**17 corresponding headers**

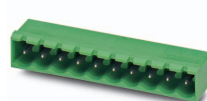
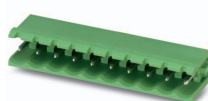
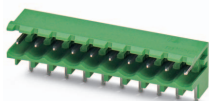
Order No.	Type
1736085	MSTBW 2,5/ 5-G
1753495	MSTBV 2,5/ 5-G
1754494	MSTB 2,5/ 5-G
1755545	MSTBVA 2,5/ 5-G
1757501	MSTBA 2,5/ 5-G
1768215	MSTB 2,5/ 5-G-LA
1769269	SMSTB 2,5/ 5-G
1769832	SMSTBA 2,5/ 5-G
1770517	MSTBA 2,5/ 5-G-LA
1837133	MDSTB 2,5/ 5-G
1845811	MDSTBVA 2,5/ 5-G
1845963	MDSTBV 2,5/ 5-G
1846548	MDSTBA 2,5/ 5-G
1846849	MDSTBW 2,5/ 5-G
1899870	EMSTBA 2,5/ 5-G
1914881	EMSTBVA 2,5/ 5-G
1927522	MSTBA 2,5/ 5-G THT
1941032	MSTBVA 2,5/ 5-G THT
1963900	MSTB 2,5/ 5-G THT
1963971	MSTBV 2,5/ 5-G THT

**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
	1803895	KGK-MSTB 2,5/ 5
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

1754504 MSTB 2,5/ 5-ST

19 Combination tests



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

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

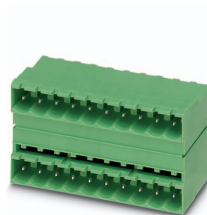
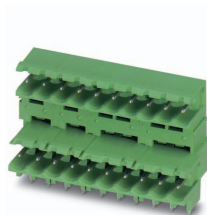
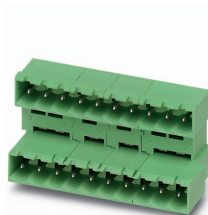
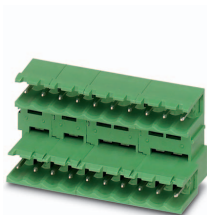
**MSTB 2,5/..-G**

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

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

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>				
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	
<b>Durability tests (B)</b>				
Contact resistance R <sub>1</sub>	1.4 mΩ		1.4 mΩ	
Insertion/withdrawal cycles	25		25	
Contact resistance R <sub>2</sub>	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	
<b>Thermal tests (C)</b>				
Tested number of positions	20		24	
Tested conductor cross section	2.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>	
Test current	12 A DC		12 A	
Upper limiting temperature Requirements < 100°C	Test passed		Test passed	
<b>Climatic tests (D)</b>				
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 <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle		0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 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	
<b>Environmental and endurance tests (E)</b>				
Specification	IEC 61984:2008-10		IEC 61984:2008-10	
Degree of protection	Finger safety with IP20 test finger		Finger safety with IP20 test finger	

**1754504 MSTB 2,5/ 5-ST**



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

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

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

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

**MDSTB 2,5/..-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<sub>1</sub>

1.8 mΩ

1.7 mΩ

Insertion/withdrawal cycles

25

25

Contact resistance R<sub>2</sub>

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<sup>2</sup>

2.5 mm<sup>2</sup>

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<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
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

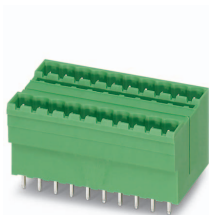
Finger safety with IP20  
test finger

Finger safety with IP20  
test finger

**1754504 MSTB 2,5/ 5-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
<b>Mechanical tests (A)</b>				
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		
<b>Durability tests (B)</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 $\Omega$		> 0.2 T $\Omega$		
<b>Thermal tests (C)</b>				
Tested number of positions		12		
Tested conductor cross section		2.5 mm <sup>2</sup>		
Test current		10 A		
Upper limiting temperature Requirements < 100°C		Test passed		
<b>Climatic tests (D)</b>				
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 <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 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		
<b>Environmental and endurance tests (E)</b>				
Specification		IEC 61984:2008-10		
Degree of protection		Finger safety with IP20 test finger		

**1754504 MSTB 2,5/ 5-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

**Durability tests (B)**

Contact resistance R<sub>1</sub>

2.5 mΩ

1.6 mΩ

1.3 mΩ

1.5 mΩ

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R<sub>2</sub>

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<sup>2</sup>

2.5 mm<sup>2</sup>

2.5 mm<sup>2</sup>

2.5 mm<sup>2</sup>

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<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

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0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
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

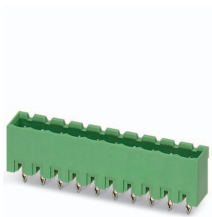
Finger safety with IP20  
test finger

Finger safety with IP20  
test finger

Finger safety with IP20  
test finger

Finger safety with IP20  
test finger

**1754504 MSTB 2,5/ 5-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 R<sub>1</sub>

1.1 mΩ

1.2 mΩ

Insertion/withdrawal cycles

100

25

Contact resistance R<sub>2</sub>

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 mm<sup>2</sup>

2.5 mm<sup>2</sup>

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 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
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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ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

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