

# Data sheet

Order No.: 1777387

Type: FRONT-MSTB 2,5/12-ST-5,08

Plug component, Front screw connection



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 <sup>2</sup>    | • Nominal voltage      | 320 V               |
| • Color                   | green                  | • Connection direction | 0°                  |
| • Pitch                   | 5.08 mm                | • Type of packaging    | packed in cardboard |
| • Connection method       | Front screw connection |                        |                     |

## 2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Optimized for tight installation situations: operation and conductor connection from one direction
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors



Make sure you always use the latest documentation.

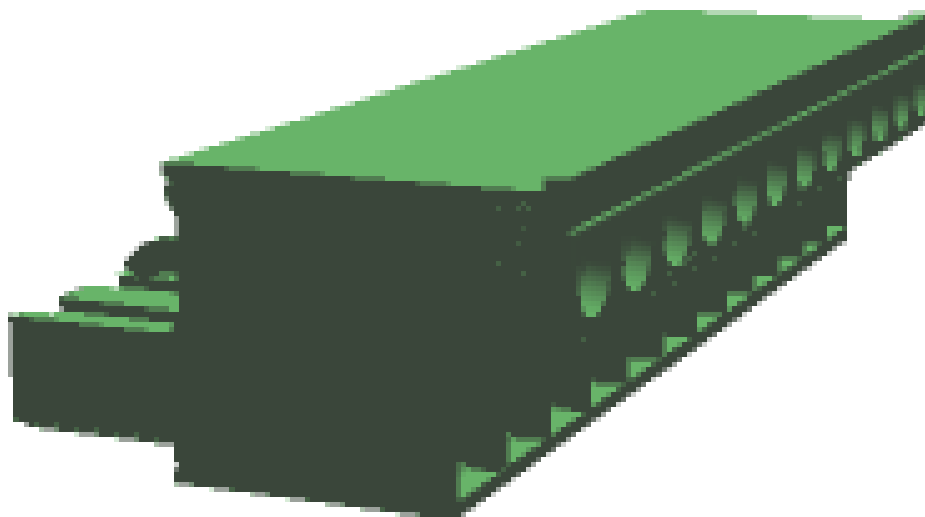
It can be downloaded at: [phoenixcontact.net/product/1777387](http://phoenixcontact.net/product/1777387)

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**1777387 FRONT-MSTB 2,5/12-ST-5,08**

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



**1777387 FRONT-MSTB 2,5/12-ST-5,08****5 item properties**

Order No.	1777387
Type	FRONT-MSTB 2,5/12-ST-5,08
Type of contact	Female connector
Range of articles	FRONT-MSTB 2,5/...-ST
Pitch	5.08 mm
Number of positions	12
Connection method	Front screw connection
Drive form screw head	Slotted (L)
Screw thread	M2,5
Tightening torque	0.5 Nm ... 0.6 Nm
Locking	without

**5.1 Connection capacity**

Conductor cross section, solid	0.34 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 2.0 mm / 2.4 mm
Stripping length	10 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 4 µm ... 8 µm
Surface contact area	Sn 4 µm ... 8 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**

**1777387 FRONT-MSTB 2,5/12-ST-5,08**

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**6.1 Dimensions for the product**

Length	27.2 mm
Width	60.96 mm
Total height	14.9 mm
Dimension a	55.88 mm

**1777387 FRONT-MSTB 2,5/12-ST-5,08****7 Series drawing****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)

**1777387 FRONT-MSTB 2,5/12-ST-5,08****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.	35 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	0.34 mm <sup>2</sup> / solid / > 15 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

**1777387 FRONT-MSTB 2,5/12-ST-5,08****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	1.5 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

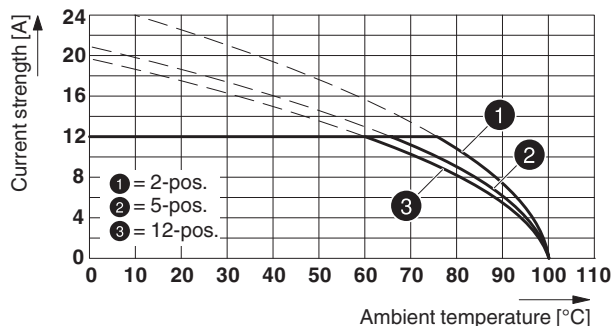
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category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

1777387 FRONT-MSTB 2,5/12-ST-5,08

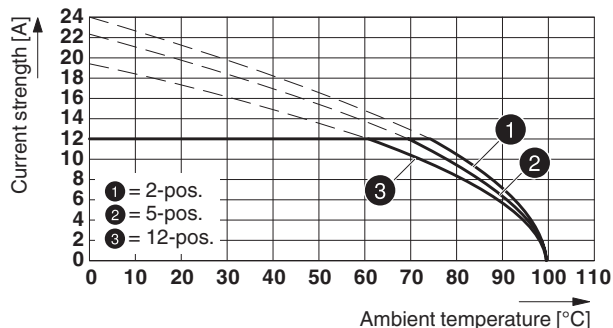
12 Current carrying capacity/derating curves

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>

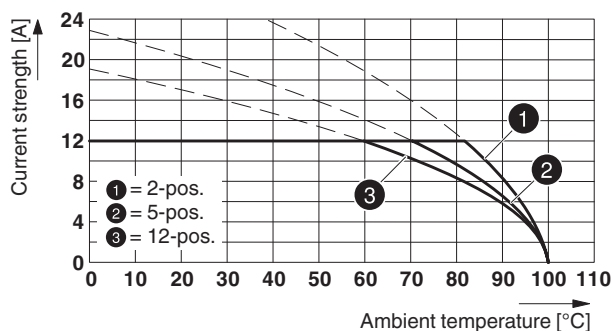
Type: FRONT-MSTB 2,5/...-ST-5,08 with CC 2,5/...-G-5,08 P26THR



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



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

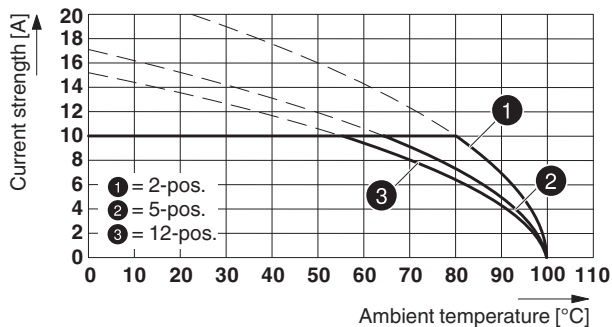


Type: FRONT-MSTB 2,5/...-ST-5,08 with MSTBA 2,5/...-G-5,08

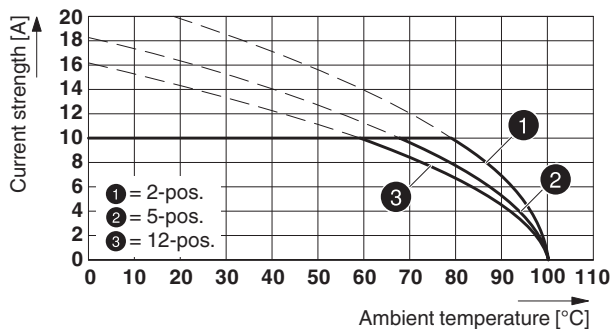
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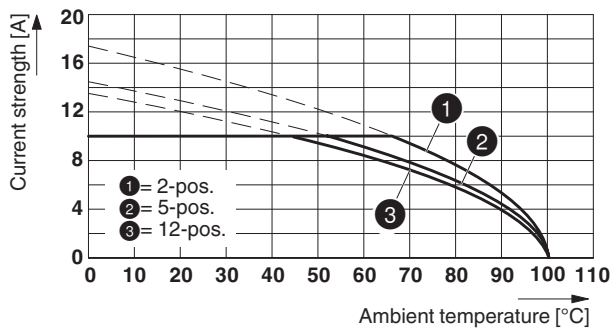
Type: FRONT-MSTB 2,5/...-ST-5,08 with MDSTB 2,5/...-G-5,08



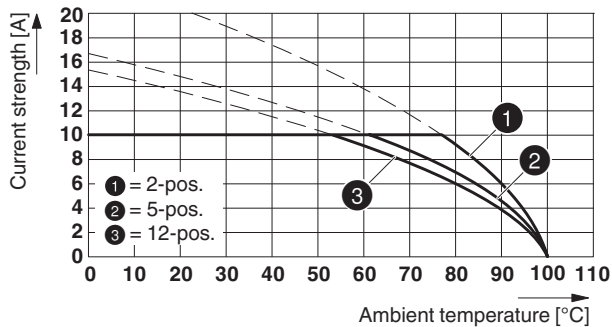
Type: FRONT-MSTB 2,5/...-ST-5,08 with MDSTBA 2,5/...-G-5,08



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

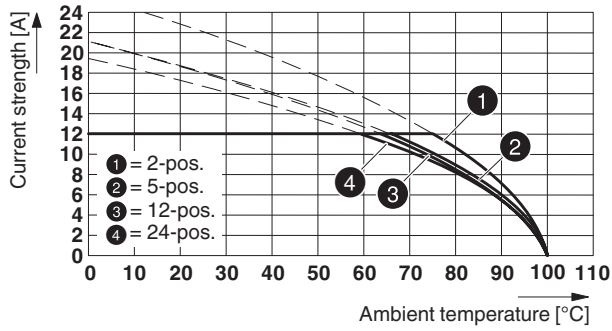


Type: FRONT-MSTB 2,5/...-ST-5,08 with MDSTBW 2,5/...-G-5,08



**1777387 FRONT-MSTB 2,5/12-ST-5,08**

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



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


**1777387 FRONT-MSTB 2,5/12-ST-5,08****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**

<b>CSA</b> 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil	22-12	22-12		
Voltage	300 V	300 V		
Current	15 A	10 A		

<b>VDE Gutachten mit Fertigungsüberwachung</b> 				
mm <sup>2</sup> /AWG/kcmil	0.34-2.5			
Voltage	250 V			
Current	12 A			

<b>IECEE CB Scheme</b> 				
mm <sup>2</sup> /AWG/kcmil	0.34-2.5			
Voltage	250 V			
Current	12 A			

<b>cULus Recognized</b> 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil	30-12	30-12		
Voltage	300 V	300 V		
Current	15 A	10 A		

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Product version 05

Document revision 0

**1777387 FRONT-MSTB 2,5/12-ST-5,08**

EAC ENEC

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**1777387 FRONT-MSTB 2,5/12-ST-5,08****16 Commercial Data**

Order No.	1777387
Type	FRONT-MSTB 2,5/12-ST-5,08
Pieces per package	50
Net weight	35.2 g
GTIN	4017918039530
	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
1735785	MSTBW 2,5/12-G-5,08
1755833	MSTBVA 2,5/12-G-5,08
1757349	MSTBA 2,5/12-G-5,08
1758115	MSTBV 2,5/12-G-5,08
1759114	MSTB 2,5/12-G-5,08
1762606	MDSTBV 2,5/12-G1-5,08
1762703	MDSTB 2,5/12-G1-5,08
1767478	SMSTBA 2,5/12-G-5,08
1768040	MSTBA 2,5/12-G-5,08-LA
1769560	SMSTB 2,5/12-G-5,08
1808560	MSTBV 2,5/12-GEH-5,08
1842160	MDSTBA 2,5/12-G-5,08
1842319	MDSTBW 2,5/12-G-5,08
1842610	MDSTB 2,5/12-G-5,08
1845439	MDSTBVA 2,5/12-G-5,08
1845581	MDSTBV 2,5/12-G-5,08
1859616	EMSTBVA 2,5/12-G-5,08
1880407	EMSTBA 2,5/12-G-5,08
1898936	DFK-MSTBA 2,5/12-G-5,08
1899236	DFK-MSTBVA 2,5/12-G-5,08
1954579	CC 2,5/12-G-5,08 P26THR
1954689	CC 2,5/12-G-5,08 P26THRR88
1955028	CCA 2,5/12-G-5,08 P26THR
1955138	CCA 2,5/12-G-5,08 P26THRR88
1955510	CCV 2,5/12-G-5,08 P26THR
1955620	CCV 2,5/12-G-5,08 P26THRR88
1955950	CCVA 2,5/12-G-5,08 P26THR
1956069	CCVA 2,5/12-G-5,08 P26THRR88

**18 Accessories**

Description	Order No.	Type
Removal aid, for FRONT-MSTB, facilitates extraction of several plugs mounted behind each other	1763058	FRONT-MSTB-EW
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
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

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Product version 05

Document revision 0

**1777387 FRONT-MSTB 2,5/12-ST-5,08**

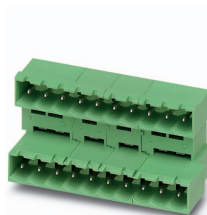
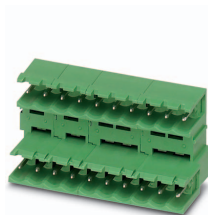
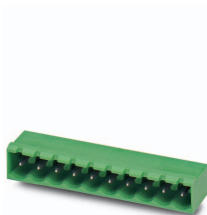
Description	Order No.	Type
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0803883	SK U/2,8 WH:UNBEDRUCKT
	0805108	SK 5,08/2,8:SO
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

## 1777387 FRONT-MSTB 2,5/12-ST-5,08

## 19 Combination tests

					
	<b>FRONT-MSTB 2,5/12-ST</b>	<b>CC 2,5/12-G</b>	<b>CCA 2,5/12-G</b>	<b>CCV 2,5/12-G</b>	<b>CCVA 2,5/12-G</b>
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>					
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
<b>Durability tests (B)</b>					
Contact resistance R <sub>1</sub>		1.5 mΩ		1.6 mΩ	1.7 mΩ
Insertion/withdrawal cycles		25		25	25
Contact resistance R <sub>2</sub>		1.5 mΩ		1.6 mΩ	1.8 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		> 0.5 TΩ	> 12 TΩ
<b>Thermal tests (C)</b>					
Tested number of positions		12		12	12
Tested conductor cross section		2.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current		12 A		12 A	12 A DC
Upper limiting temperature Requirements < 100°C		Test passed		Test passed	Test passed
<b>Climatic tests (D)</b>					
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 <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	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
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV		2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>					
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

**1777387 FRONT-MSTB 2,5/12-ST-5,08**



**FRONT-MSTB 2,5/12-ST**

**MSTBA 2,5/12-G**

**MDSTB 2,5/12-G**

**MDSTBA 2,5/12-G**

**MDSTBV 2,5/12-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	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
<b>Durability tests (B)</b>				
Contact resistance R <sub>1</sub>	1.4 mΩ	1.8 mΩ	1.9 mΩ	2.8 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R <sub>2</sub>	1.4 mΩ	1.9 mΩ	1.9 mΩ	2.8 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
Insulation resistance Requirements > 5 MΩ	> 0.2 TΩ	> 20 GΩ	> 0.1 TΩ	> 20 GΩ
<b>Thermal tests (C)</b>				
Tested number of positions	24	12	12	12
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	12 A	10 A	10 A	10 A
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>				
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	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	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
<b>Environmental and endurance tests (E)</b>				
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

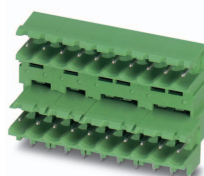
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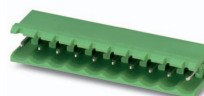
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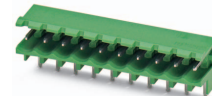
**DFK-MSTBA 2,5/12-ST-5,08**



**MDSTBW 2,5/12-ST-5,08**



**MSTB 2,5/12-ST-5,08**



**MSTBW 2,5/12-ST-5,08**

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>				
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
<b>Durability tests (B)</b>				
Insertion/withdrawal cycles		25	25	25
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu s)$		4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 M $\Omega$		> 0.3 T $\Omega$	> 0.3 T $\Omega$	> 0.2 T $\Omega$
<b>Thermal tests (C)</b>				
Tested number of positions		12	24	24
Tested conductor cross section		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current		10 A	12 A	12 A
Upper limiting temperature Requirements < 100°C		Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>				
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 <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	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	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV	2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>				
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



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