

# Data sheet

Order No.: 1777811

Type: FRONT-MSTB 2,5/ 3-STF-5,08

Plug component, Front screw connection



The figure shows a 10-position version of the product

## 1 Main features



- |                           |                        |                        |                     |
|---------------------------|------------------------|------------------------|---------------------|
| • No. of pos.             | 3                      | • 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
- ✓ Screwable flange for superior mechanical stability
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors



Make sure you always use the latest documentation.

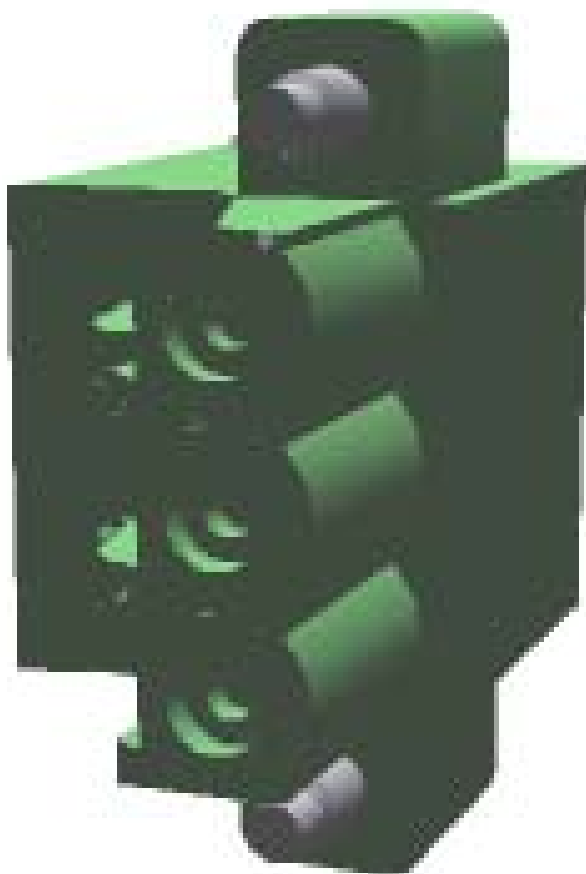
It can be downloaded at: [phoenixcontact.net/product/1777811](http://phoenixcontact.net/product/1777811)

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08****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 Specifications for ferrules .....	4
	5.3 Material data .....	4
6	Dimensions.....	5
	6.1 Dimensions for the product .....	5
7	Series drawing.....	6
8	Packaging information .....	6
9	Application.....	6
	9.1 Temperature limit values .....	6
10	Mechanical tests.....	7
	10.1 Termination and connection method.....	7
	10.2 Pull-out test .....	7
11	Electrical tests .....	8
	11.1 Electrical data .....	8
	11.2 Air and creepage distances .....	8
12	Current carrying capacity/derating curves .....	9
13	Environmental and durability tests .....	10
	13.1 Vibration test .....	10
14	Classification for connectors.....	10
15	Approvals .....	10
16	Commercial Data.....	12
17	corresponding headers.....	12
18	Accessories .....	12
19	Combination tests.....	13

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08**

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



**1777811 FRONT-MSTB 2,5/ 3-STF-5,08****5 item properties**

Order No.	1777811
Type	FRONT-MSTB 2,5/ 3-STF-5,08
Type of contact	Female connector
Range of articles	FRONT-MSTB 2,5/...-STF
Pitch	5.08 mm
Number of positions	3
Connection method	Front screw connection
Drive form screw head	Slotted
Screw thread	M2,5
Tightening torque	0.5 Nm ... 0.6 Nm
Locking	Screw flange

**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 1.5 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 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 Specifications for ferrules**

Ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 2.5 mm <sup>2</sup> ; Length: 10 mm
Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm Cross section: 2.5 mm <sup>2</sup> ; Length: 10 mm

**5.3 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 4 µm ... 8 µm
Surface characteristics	hot-dip tin-plated

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08**

Insulating material data	Housing	
Insulating material	PA	
CTI according to IEC 60112	600	
Flammability rating according to UL 94	V0	
Color	green (6021)	

**6 Dimensions****6.1 Dimensions for the product**

Length		27.2 mm
Width		25.04 mm
Total height		15 mm
Dimension a		10.16 mm

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08****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)

**1777811 FRONT-MSTB 2,5/ 3-STF-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.	12 N
Withdraw strength per pos. approx.	9 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.	44 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

**1777811 FRONT-MSTB 2,5/ 3-STF-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	1.9 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

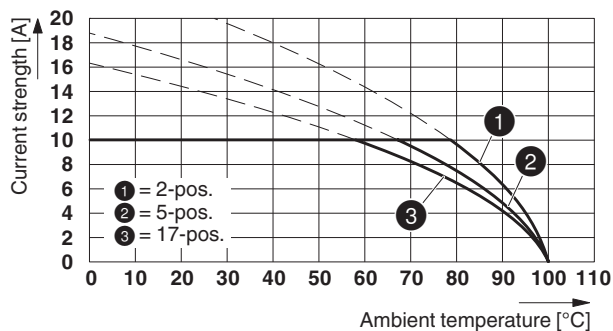
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category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

**1777811 FRONT-MSTB 2,5/ 3-STF-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/...-STF-5,08 with MDSTB 2,5/...-GF-5,08**



**Type: FRONT-MSTB 2,5/...-STF-5,08 with MDSTBV 2,5/...-GF-5,08**

93029\_1000\_en

**Type: FRONT-MSTB 2,5/...-STF-5,08 with CC 2,5/...-GF-5,08 P26THR**

93060\_1000\_en

**Type: FRONT-MSTB 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08**

**Type: FRONT-MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR**


**1777811 FRONT-MSTB 2,5/ 3-STF-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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Document revision 0

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08**

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EAC ERI

DNV GL

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08****16 Commercial Data**

Order No.	1777811
Type	FRONT-MSTB 2,5/ 3-STF-5,08
Pieces per package	100
Net weight	9.715 g
GTIN	4017918039684
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**17 corresponding headers**


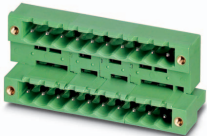
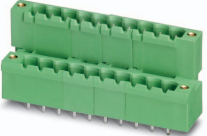


Order No.	Type
1776511	MSTB 2,5/ 3-GF-5,08
1777086	MSTBV 2,5/ 3-GF-5,08
1842377	MDSTB 2,5/ 3-GF-5,08
1845646	MDSTBV 2,5/ 3-GF-5,08
1874633	MDSTB 2,5/ 3-GFL-5,08
1874646	MDSTB 2,5/ 3-GFR-5,08
1874675	MDSTBV 2,5/ 3-GFL-5,08
1874688	MDSTBV 2,5/ 3-GFR-5,08
1898648	EMSTBV 2,5/ 3-GF-5,08
1898994	DFK-MSTBA 2,5/ 3-GF-5,08
1899294	DFK-MSTBVA 2,5/ 3-GF-5,08
1899621	EMSTB 2,5/ 3-GF-5,08
1927577	MSTB 2,5/ 3-GF-5,08 THT
1940907	MSTBV 2,5/ 3-GF-5,08 THT
1954702	CC 2,5/ 3-GF-5,08 P26THR
1954812	CC 2,5/ 3-GF-5,08 P26THRR56
1955646	CCV 2,5/ 3-GF-5,08 P26THR
1955756	CCV 2,5/ 3-GF-5,08 P26THRR56

**18 Accessories**

Description	Order No.	Type
Removal aid, for FRONT-MSTB, facilitates extraction of several plugs mounted behind each other	1763058	FRONT-MSTB-EW
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
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	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

1777811 FRONT-MSTB 2,5/ 3-STF-5,08

19 Combination tests

					
	<b>FRONT-MSTB 2,5/...-STF</b>	<b>MDSTB 2,5/...-GF</b>	<b>MDSTBV 2,5/...-GF</b>	<b>CC 2,5/...-GF</b>	<b>MSTB 2,5/...-GF</b>
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>					
Insertion/withdrawal force per position		approx. 12 N / 9 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>		1.9 mΩ	2.6 mΩ	1.4 mΩ	1.4 mΩ
Insertion/withdrawal cycles		25	25	25	25
Contact resistance R <sub>2</sub>		1.9 mΩ	2.6 mΩ	1.4 mΩ	1.4 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		> 0.2 TΩ	> 0.2 TΩ	> 0.2 TΩ	> 0.2 TΩ
<b>Thermal tests (C)</b>					
Tested number of positions		17	18	12	24
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		10 A	10 A	12 A	12 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	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

**1777811 FRONT-MSTB 2,5/ 3-STF-5,08**



**FRONT-MSTB 2,5/..-STF**

Specification

**Mechanical tests (A)**

Insertion/withdrawal force per position

Polarization when inserted  
Requirement >20 N

Contact holder in insert  
Requirements >20 N

**Durability tests (B)**

Contact resistance R<sub>1</sub>

Insertion/withdrawal cycles

Contact resistance R<sub>2</sub>

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

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

Insulation resistance  
Requirements > 5 MΩ

**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 ≥ (1.2/50 μs)

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

**Environmental and endurance tests (E)**

Specification

Degree of protection



**CCV 2,5/..-GF**

Specification

approx. 8 N / 6 N

Test passed

Test passed

1.3 mΩ

25

1.4 mΩ

4.8 kV

2.21 kV

> 0.1 TΩ

12

2.5 mm<sup>2</sup>

12 A

Test passed

-40 °C/2 h

100 °C/168 h

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

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20  
test finger



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