2017-10-24
Product version 04
Document revision 0

Data sheet

Order No.: 1777837

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

Plug component, Front screw connection

The figure shows a 10-position version of the product

1 Main features

- No. of pos. 5
- Conductor cross section 2.5 mm²
- Color green
- Pitch 5.08 mm
- Connection method Front screw connection
- Nominal current 12 A
- Nominal voltage 320 V
- Connection direction 0 °
- Type of packaging packed in cardboard

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/1777837

3 Table of contents

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

5 item properties

Order No.	1777837
Type	FRONT-MSTB 2,5/ 5-STF-5,08
Type of contact	Female connector
Range of articles	FRONT-MSTB 2,5/..-STF
Pitch	5.08 mm
Number of positions	5
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 mm² to 2.5 mm²
Conductor cross section, flexible	0.2 mm² to 2.5 mm²
Conductor cross section AWG/kcmil	24 to 12
2 conductors with same cross section, solid	0.2 mm² to 1.5 mm²
2 conductors with same cross section, stranded	0.2 mm² to 1.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² to 2.5 mm²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm² to 2.5 mm²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm² to 1 mm²
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm² to 1 mm²
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 mm²; Length: 8 mm ... 10 mm Cross section: 0.75 mm²; Length: 8 mm ... 10 mm Cross section: 1 mm²; Length: 8 mm ... 10 mm Cross section: 1.5 mm²; Length: 8 mm ... 10 mm Cross section: 2.5 mm²; Length: 10 mm
Ferrules with insulating collar, according to DIN 46228–4	Cross section: 0.5 mm²; Length: 8 mm ... 10 mm Cross section: 0.75 mm²; Length: 8 mm ... 10 mm Cross section: 1 mm²; Length: 8 mm ... 10 mm Cross section: 1.5 mm²; Length: 8 mm ... 10 mm Cross section: 2.5 mm²; 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

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	35.2 mm
Total height	15 mm
Dimension a	20.32 mm

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)

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 mm² / solid / > 15 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm² / stranded / > 50 N

11 Electrical tests

11.1 Electrical data

Rated current / conductor cross section	12 A / 2.5 mm²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.9 mΩ
Degree of pollution	2

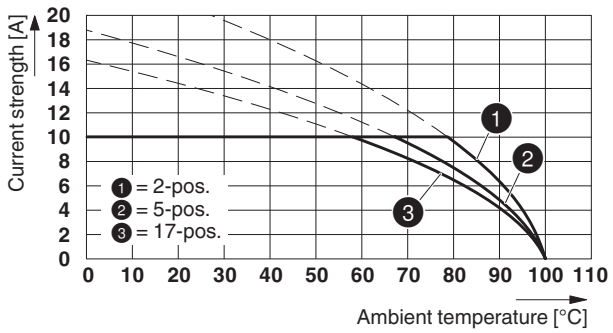
11.2 Air and creepage distances

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

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: 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

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

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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

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		
mm²/AWG/kcmil	22-12	22-12		
Voltage	300 V	300 V		
Current	15 A	10 A		

VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil	0.34-2.5			
Voltage	250 V			
Current	12 A			

IECEE CB Scheme				
mm²/AWG/kcmil	0.34-2.5			
Voltage	250 V			
Current	12 A			

cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil	30-12	30-12		
Voltage	300 V	300 V		
Current	15 A	10 A		

1777837 FRONT-MSTB 2,5/ 5-STF-5,08

EAC

DNV GL

16 Commercial Data

Order No.	1777837
Type	FRONT-MSTB 2,5/ 5-STF-5,08
Pieces per package	50
Net weight	15.359 g
GTIN	4017918039707
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

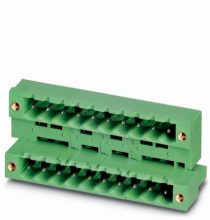
17 corresponding headers

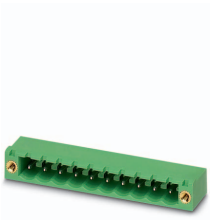
Order No.	Type
1776537	MSTB 2,5/ 5-GF-5,08
1777109	MSTBV 2,5/ 5-GF-5,08
1842393	MDSTB 2,5/ 5-GF-5,08
1845662	MDSTBV 2,5/ 5-GF-5,08
1899016	DFK-MSTBA 2,5/ 5-GF-5,08
1899317	DFK-MSTBVA 2,5/ 5-GF-5,08
1899647	EMSTB 2,5/ 5-GF-5,08
1915246	EMSTBV 2,5/ 5-GF-5,08
1927593	MSTB 2,5/ 5-GF-5,08 THT
1940923	MSTBV 2,5/ 5-GF-5,08 THT BK
1954728	CC 2,5/ 5-GF-5,08 P26THR
1954838	CC 2,5/ 5-GF-5,08 P26THRR56
1955662	CCV 2,5/ 5-GF-5,08 P26THR
1955772	CCV 2,5/ 5-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

19 Combination tests





	FRONT-MSTB 2,5/..-STF	**MDSTB 2,5/..-GF**	**MDSTBV 2,5/..-GF**	**CC 2,5/..-GF**	**MSTB 2,5/..-GF**
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)					
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
Durability tests (B)					
Contact resistance R_1		1.9 mΩ	2.6 mΩ	1.4 mΩ	1.4 mΩ
Insertion/withdrawal cycles		25	25	25	25
Contact resistance R_2		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
Thermal tests (C)					
Tested number of positions		17	18	12	24
Tested conductor cross section		2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²
Test current		10 A	10 A	12 A	12 A
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

1777837 FRONT-MSTB 2,5/ 5-STF-5,08

FRONT-MSTB 2,5/..-STF	CCV 2,5/..-GF
Specification	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)	
Contact resistance R_1	1.3 mΩ
Insertion/withdrawal cycles	25
Contact resistance R_2	1.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 0.1 TΩ
Thermal tests (C)	
Tested number of positions	12
Tested conductor cross section	2.5 mm^2
Test current	12 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 ≥ (1.2/50 µs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV
Environmental and endurance tests (E)	
Specification	IEC 61984:2008-10
Degree of protection	Finger safety with IP20 test finger

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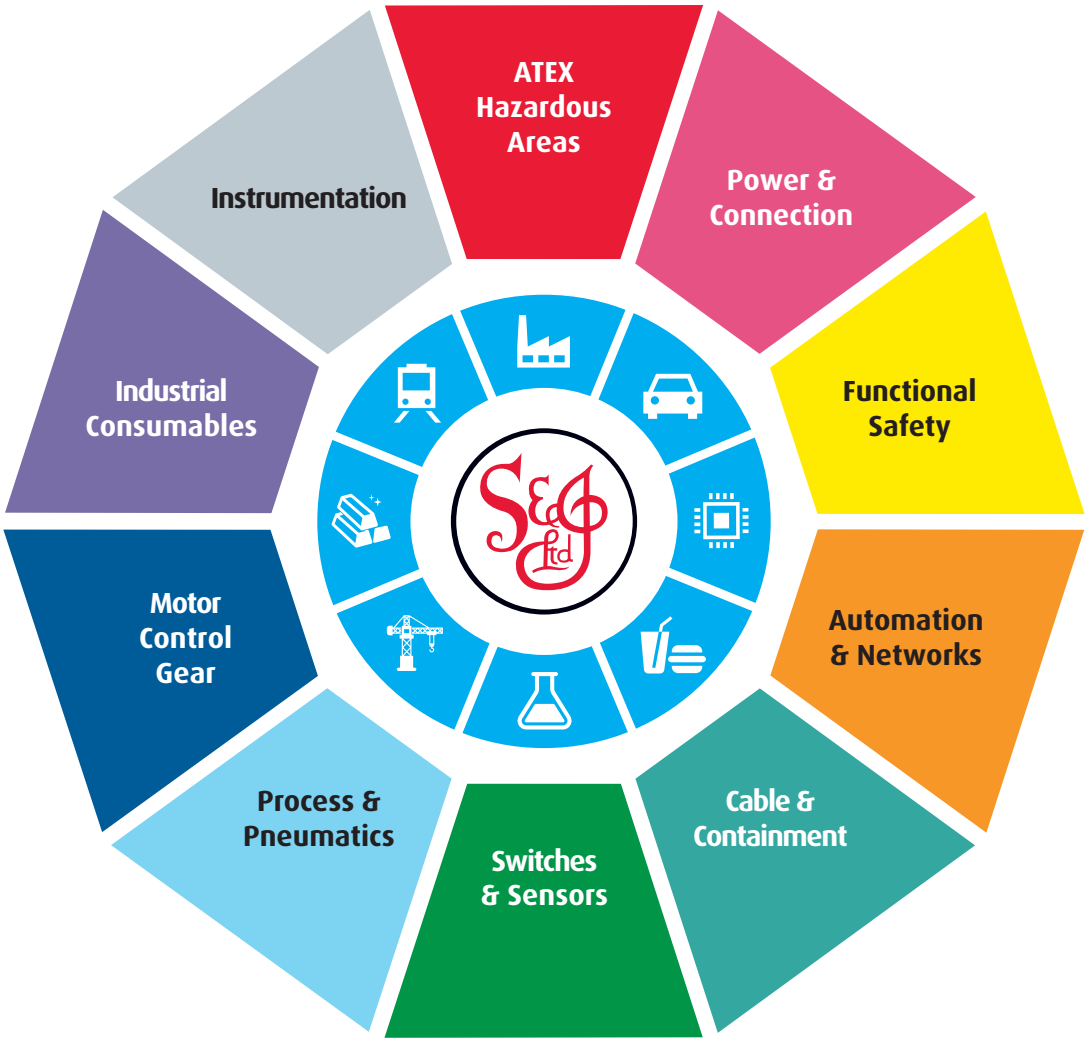

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